2018 PERIODIC REVIEW REPORT

FORMER A.C. DUTTON LUMBER YARD
DUTCHESS COUNTY, NEW YORK

NYSDEC Site # C314081

REPORTING PERIOD (March 30, 2018 – July 8, 2019)

prepared for:

THE O'NEILL GROUP – DUTTON, LLC
24 Hudson Street
Hackensack, New Jersey 07601

prepared by:

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August 22, 2019

Project No.: 9039

PERIODIC REVIEW REPORT

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LIST OF ACRONYMS

Acronym	Definition
AOC	Area of Concern
AST	Aboveground Storage Tank
BCA	Brownfield Cleanup Agreement
BCP	Brownfield Cleanup Program
bgs	Below ground surface
CAMP	Community Air Monitoring Plan
C&D	Construction & Demolition Materials
COC	Contaminant of Concern
COPEC	Constituents of Potential Ecological Concern
CY	Cubic yard
DER	Division of Environmental Remediation
DER-10	NYSDEC Technical Guidance for Site Investigation & Remediation
DUSR	Data Usability Summary Report
ECs	Engineering Controls
ECL	Environmental Conservation Law
ESA	Environmental Site Assessment
FER	Final Engineering Report
FWRIA	Fish and Wildlife Resources Impact Analysis
gpm	Gallons per minute
HHEA	Human Health Exposure Assessment
ICs	Institutional Controls
MW	Monitoring Well
NYSDEC	New York State Department of Environmental Conservation
PCB	Polychlorinated Biphenyls
PID	Photoionization Detector
ppm	Parts per million
QAPP	Quality Assurance Project Plan
RA	Remedial Action

Acronym	Definition
RASR	Remedial Action Selection Report
RAWP	Remedial Action Work Plan
RCRA	Resource Conservation and Recovery Act
RDD	Remedial Design Document
RI	Remedial Investigation
RIR	Remedial Investigation Report
RIWP	Remedial Investigation Work Plan
SCG	Standards, Criteria, and Guidance
SCO	Soil Cleanup Objectives
SESI	SESI Consulting Engineers, PC
SMP	Site Management Plan
SSDS	Sub-Slab Depressurization System
SVOCs	Semi-Volatile Organic Compounds
S&W	S&W Redevelopment of North America, LLC.
TAGM	Technical and Administrative Guidance Memorandum
TAL	Target Analyte List
TOGS	Technical and Operations Guidance Series
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VOCs	Volatile Organic Compounds

1.0 INTRODUCTION

1.1 SUMMARY

This is the Periodic Review Report (PRR) for the period March 30, 2018 to March 30, 2019. The PRR is required as an element of the remedial program at the Former AC Dutton Lumber Yard (hereinafter referred to as the "Site") under the New York State (NYS) Brownfield Cleanup Program (BCP) administered by New York State Department of Environmental Conservation (NYSDEC). The Site was remediated in accordance with Brownfield Cleanup Agreement (BCA) Index W# 1066-05-05, Site #C314081, which was executed on July 6, 2005 and last amended on February 4, 2011. The Site area is 11.8 acres; a Site location map is provided in Figure 1.1. Engineering Controls (ECs) have been constructed on the Site to prevent exposure to the remaining residual contamination during Site use. An Environmental Easement granted to the NYSDEC, and recorded with the Dutchess County Clerk, requires compliance with the Site Management Plan (SMP) dated December 2014 and all ECs and institutional controls (ICs) placed on the Site. The ICs place restrictions on Site use, and mandate operation, maintenance, monitoring and reporting measures for all ECs and ICs.

This PRR reports the required inspection and monitoring activities that were conducted during the current reporting period. The inspection and monitoring were conducted to ensure compliance with all ECs and ICs required by the Environmental Easement and as stated in the SMP as approved by NYSDEC.

1.2 Effectiveness of Remedial Program

Residual contamination remains on the Site, which has been managed according to the requirements of the SMP to keep the Site safe for commercial and restricted residential uses.

The composite cover system remains intact on the site. The cover system has been and will continue to be effective in preventing public exposure to the residual contamination. During this period the construction on the proposed building has continued. The building foundations were constructed and therefore the demarcation layer was breached and replaced with the concrete hard surface within the footings footprint

The annual sampling of the monitoring well network to determine the effectiveness of the natural degradation of the residual contaminants of concern was

conducted on March 19, 2019. Arsenic was detected at levels that exceeded the NYSDEC effluent TOGS. A summary of the analytical data for the March 19, 2019 sampling event is provided in Table 1.1.

The monitoring plan as required in the SMP is effective and protective of the human health and the environment.

1.3 Compliance

SESI completed a site inspection on March 19, 2019 to verify the integrity of the EC's in accordance with the Inspection Checklist provided in Appendix A.

The groundwater monitoring wells were sampled once in the current reporting period on March 19, 2019 and analyzed for Metals in accordance with the monitoring program in the SMP.

1.4 Recommendations

SESI has verified that the EC's and IC's developed for the site are in compliance with the SMP. Based on the current and historic groundwater results SESI recommends continuing the monitoring of groundwater for Metals on an annual basis for only monitoring well PR-MW-1, PR-MW2, and PR-MW-4 for the next reporting periods. In addition, SESI recommends abandonment of monitoring Well PR-MW-3. Finally, SESI recommends continuing the yearly monitoring of the cover system.

2.0 SITE OVERVIEW

2.1 Site Location and Description

The site is located in the City and Town of Poughkeepsie, County of Dutchess, New York and is comprised of two lots (City of Poughkeepsie Tax ID: 6062-59-766443 and Town of Poughkeepsie Tax ID: 6062-02-763508) on the City and Town of Poughkeepsie Tax Maps. The site is an approximately 11.8-acre area bounded by Hudson River Rowing Association Dock (owned by Vassar College) to the north, a former natural gas regulation station (owned by Central Hudson Gas & Electric) to the south, North Water Street to the east, and a 2.45-acre parcel along the Hudson River Bank owned by the State of New York to the west.

2.2 Site History

The Site was utilized for industrial use from the mid-19th century to 1995. Before 1913, uses of the Site included an iron works and a glass works at the southern portion of the property. Several kilns were associated with the glass works and kiln ash and slag was reportedly used as fill material on the site. The on-site pressure treatment of lumber using chromated copper arsenate (CCA) has reportedly began in 1966 by the A.C. Dutton Lumber Corporation and continued until 1995, when on-site operations ceased. During lumber processing activities, raw lumber was brought to the site by truck, boat, and rail. Lumber was processed in the on-site pressure treatment plants and then dried and stored outside. Complete site history can be found in the following documents:

- Phase I Investigation Report, dated November 1987, prepared by EnviroPlan Associates, Inc.
- Phase I Environmental Site Assessment, dated August 8, 2002, prepared by Ecosystems Strategies, Inc.;
- Summary Report of Sub-structure Investigations, dated October 3, 2002, prepared by Ecosystems Strategies, Inc.; and
- Summary Report of Supplemental Subsurface Investigation, dated November 25, 2002, prepared by Ecosystems Strategies Inc.

2.2.1 Remedial Investigation (RI) conducted at Site

Soil

The areas surrounding the two pre-existing pressure treatment buildings were the most highly impacted by metals contamination. Investigations showed impacts to deposit/soil in the interior collection drains of one of the pressure treatment buildings as high as 138,000 parts per million (ppm) of arsenic. Chromium and copper were detected in that same location at 98,600 ppm and 8,290 ppm, respectively. That was the maximum concentration of chromium detected at the site. The highest concentration of copper detected at the site was 30,700 ppm.

Surface soil - The entire site is impacted by arsenic, likely the result of storage of treated lumber in exposed areas. Concentrations of arsenic in surface soil identified during the RI ranged from non-detect to 811 ppm.

Subsurface soil- Subsurface soil was impacted by arsenic across the site. Concentrations tended to decrease with increasing depth and most impacts were limited to 1 foot below the ground surface with areas of deeper impacts to 3 feet. The soils in the vicinity of the chemical storage tanks in the pressure treatment buildings were impacted by arsenic and chromium to greater depths (8 feet or more). There were four areas of petroleum impacted soils. Soil samples from these areas showed very limited impacts by volatile organic compounds or semi-volatile organic compounds.

Site-Related Groundwater

Limited impacts to groundwater by metals were identified during the RI. Impacts were limited to isolated locations near the pressure treatment buildings. Contaminants associated with petroleum products (i.e., volatile organic compounds and semi-volatile organic compounds) were not detected during the RI in groundwater samples collected from the vicinity of the petroleum impacted areas.

Site-Related Soil Vapor Intrusion

There was no soil vapor intrusion investigation conducted on site due to the low levels of volatile organic compounds detected in the soil and groundwater.

Underground Storage Tanks

Four areas of known or suspected petroleum impacted soil have been documented on-site at the locations of known or suspected underground storage tanks (USTs). Limited associated groundwater contamination has also been documented. Petroleum impacted soils have been document at the following locations: south and southwest of the northern former pressure treatment plant building; under and around the large office building; immediately northeast of the southern former pressure treatment plant building; and, southwest of the former garage/automotive repair building at the southern end of the Site.

2.2.2 Description of Remedial Actions

The site was remediated in accordance with the NYSDEC-approved Remedial Design Work Plan (RDWP) dated May 2011, an Addendum to the approved RDWP, dated November 7, 2011, and a minor modification to the RDWP dated December 4, 2012.

The following is a summary of the Remedial Actions performed at the site:

1. Excavation of asphalt/soil/fill/concrete exceeding the site-specific guidance level of 300 mg/kg (ppm) for arsenic and restricted residential SCOs for other COCs. The guidance level for arsenic was modified by the NYSDEC during remediation and included the stipulation that a four foot barrier layer of clean fill be installed.
2. Removal of all CBS tanks, their contents, and associated CCS impacted debris;
3. Scarification of the floor of the Southern Pressure Plant Building to a depth of ½" or until there was no visual evidence of staining;
4. Removal of five (5) petroleum bulk storage (PBS) tanks from the site;
5. Demolition of on-site structures;
6. Construction and maintenance of a soil cover system to prevent human exposure to remaining contaminated soil/fill remaining at the site will consist of 2 feet of clean soil, a demarcation layer and 4-6 feet of fill with slight PAH exceedance of the restricted residential SCO approved by the DEC. The cover will also include a minimum of 6-inch newly installed paving system or concrete during the site development into restricted-residential/commercial use;
7. The site was dynamically compacted and any proposed buildings will be surcharged for settlement. This combined compaction will minimize the disturbance of the site soils because it will require shallower foundation.
8. Groundwater monitoring; 4 groundwater monitoring wells (MW) were installed on site after the completion of the remediation. The MWs were sampled semi-annually for the first year. Additional subsequent sampling was approved for a reduction to an annual sampling frequency.

9. Execution and recording of an Environmental Easement to restrict land use and prevent future exposure to any contamination remaining at the site;
10. Development and implementation of a Site Management Plan for long term management of remaining contamination as required by the Environmental Easement, which includes plans for: (1) Institutional and Engineering Controls, (2) monitoring, (3) operation and maintenance and (4) reporting.

2.2.3 Removal of Contaminated Materials from the Site

As part of Remedial Action, various contaminated materials were removed and disposed off-site. The materials removed from the site and their quantities are listed in Table 2.1.

Table 2.1: Summary of materials removed for off-site disposal

Material Removed	Volume of material Removed	Disposal Location	Disposal Period/Date
Non-Haz waste water from STP secondary containment area	21,625-gallons	Paradise Heating Oil	10/10/11 through 10/11/11
Hazardous CBS tank residue from tanks in NTP and STP	2,900-gallons	Pro-Teck	10/13/11
Non-Haz CBS/PBS tank residues from NTP and STP	1088-gallons diesel/fuel oil 100-gallons non-haz liquid 2,390 non-haz liquid	AB Oil Services	10/19/11 10/21/11
Scarification waste from STP	(39) 55-gallon drums scarification waste. (1) 55-gallon drum debris	Model City	10/08/2012
CCA contaminated a soil and concrete from NTP and STP (FO35 hazardous waste direct landfill disposal)	792.77 tons	Envirowaste of Ohio, Inc.	11/27/2012- 01/09/2013
CCA contaminated soil and concrete and CCA contaminated debris (STP only)	97.61 tons	Model city	10/08/2012
Hazardous FO35 liquid waste from sumps in NTP	(4) 55-gallon drums	Pro-Teck	05/2/2013
Cans of oil based paints found in on-site	(1) 55-gallon drum	Pro-Teck	05/2/2013

2.2.4 On-Site and Off-Site Treatment Systems

No long-term treatment systems were required to be installed as part of the site remedy.

2.2.5 Description of Residual Contamination

- The excavation for metal contaminated soils was conducted to the site-specific levels for arsenic, chromium and copper as specified in the SMP.
- A soil cap that ranges in thickness from 4 to 10 feet covers the entire site. The installed soil cap forms a capping system to cover the impacted soils and it acts as grading to raise the site above the flooding levels. The cap consists of 2-feet of clean soil that meets the restricted residential SCOs over a demarcation layer. The balance of the soils underneath the demarcation layer consists of soils that meet the restricted residential with few exceedances in the poly-aromatic hydrocarbons (PAHs) allowed and approved by the NYDEC.

Figures 1-7, 1-7B and 1-7C from SMP (provided in Appendix D) represent the contaminated soils remaining at the site after completion of Remedial Action that exceed the Track 1 (unrestricted) SCOs.

2.2.6 Management of Residual Contamination through Engineering and Institutional Controls in the Environmental Easement

The SMP lists the ECs and ICs required by the NYSDEC to manage the residual contamination present at this Site to protect public health and the environment in the future and keep the Site safe for reuse. The primary Engineering Controls at the site are: (1) a composite cover system comprised, from top to bottom, of a minimum of 24 inches of clean soil, a demarcation layer and 2-6 feet of soils that meet the restricted residential SCO with few PAH exceedances allowed and approved by the NYSDEC since the material is under the demarcation layer; and (2) monitoring of groundwater. The Applicant and Applicant's successors or assigns, must manage the controls and monitoring in full compliance with the terms of the remedial program.

3.0 REMEDY PERFORMANCE, EFFECTIVENESS, AND PROTECTIVENESS

The goal of the SMP is to manage the residual contamination at the site through implementation of ICs and ECs. At present, SESI is conducting monitoring/inspection of the ICs and ECs on the Site in accordance with the SMP dated December 2014.

The overall Site remedy was designed to ensure that residual soil contamination that remains on-site in fill materials below the two-foot clean soil cap does not significantly exceed the more stringent of the applicable NYSDEC restricted residential SCO.

In order to monitor the effectiveness of the contaminant removal and the Site natural attenuation, an onsite monitoring well network is sampled on an annual basis. Table 1.1 provides a tabular summary of the groundwater monitoring results of the March 15, 2019 sampling event. Arsenic resulted in an exceedance of the NYSDEC groundwater effluent TOGS during the annual sampling event in one (1) monitoring well (PR-MW2). The monitoring well locations are depicted in Figure 1.3 of the SMP (provided in Appendix D). The laboratory analytical data packages are provided in Appendix B. Table 3.1 Below presents the historic data of Arsenic.

Table 3.1: Historic data for Arsenic in groundwater

	Effluent Limitation Class GA	6/23/2015	1/26/2016	10/14/2016	11/21/2017	3/15/2019
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
PR-MW1	50	16	16	6.6	5.6	NA
PR-MW2	50	27	130	176	302	200
PR-MW3	50	2.3	9.9	2.3	2.9	NA
PR-MW4	50	8.9	80	23.9	32.5	31.4

4.0 IC/EC PLAN COMPLIANCE

4.1 IC/EC Requirements and Compliance

Institutional Controls

The Institutional Controls (ICs) in-place at the site consist of (1) implement, maintain and monitor Engineering Control systems; (2) prevent future exposure to remaining contamination by controlling disturbances of the subsurface contamination; and, (3) limit the use and development of the site to restricted residential, which will also permit commercial and industrial uses.

The land-use restriction remains in-place and is effective to prohibit the use of the site for anything other than the restricted residential. It also prohibits vegetable gardens and farming on the site.

The Monitoring Plan is intended as a means to observe the long-term effectiveness of the engineering controls at the site. If at any time, the results of the monitoring plan indicate that the site remedy is no longer effective or protective of human health, then ICs will be adjusted and/or added based on the monitoring data.

The SMP is intended to provide guidance for any and all intrusive activities on the site including building construction/expansion, utility line repair/construction and any new construction activities that will cause a disturbance of the soil beneath the demarcation layer. The Site Management Plan remains in-place and is effective.

Engineering Controls

The Engineering Controls (ECs) in-place at the Site consist of (1) site cover system, and (2) a monitoring well network.

The site cover system consists of a minimum 24 inches of clean soil, a demarcation layer and 2-6 feet of soils that meet the restricted residential SCO with few PAH exceedances allowed and approved by the NYSDEC since the material is under the demarcation layer. The objective of this is to prevent the public from being exposed to the residual contamination present beneath the soil cover. The site cover system remains in-place and is effective.

An onsite monitoring well network is in-place. The monitoring wells are sampled annually to determine the effectiveness of the natural attenuation/degradation. The monitoring wells are all currently in-place and effective for their purpose.

4.2 IC/EC CERTIFICATION

The NYSDEC Institutional and Engineering Controls Certification Form has been completed and is included in Appendix C.

5.0 MONITORING PLAN COMPLIANCE

Table 5.1: Monitoring Program Frequency

Monitoring Program	Frequency*	Matrix	Analysis
Cover System	Annually	Soil	Visual
Groundwater	Annually for the current Reporting Period	Water	Metals

Monitoring Completed During Current Reporting Period

Inspection of Composite Cover System was conducted on March 15, 2019. Monitoring wells PR-MW-2, and PR-MW-4 were sampled on March 15, 2019.

Comparison with Remedial Objectives

The remedial objectives for the composite cover system are being met. The cover system continues to be protective of the human health and the environment for the intended restricted residential use of the property.

The composite cover system was found to include the foundations of the building during the visual inspection that was conducted on March 15, 2019. The building construction will continue for the next 12-18 months. Once the building and the surrounding areas are completed the SMP will be updated to reflect the new cover system components and as-built. The composite cover system inspection form is included with the Site Inspection Forms denoted as Appendix A.

During the annual monitoring well sampling event conducted on March 15, 2019, one monitoring well (PR-MW2) resulted in a level of Arsenic that exceeded the NYSDEC TOGS effluent for groundwater of 50 ug/L. Detections for Arsenic were also observed in PR-MW4, but at levels below the effluent TOGS. Secondary metals such as Iron and Manganese resulted in levels that exceeded the effluent TOGS. A summary of the analytical data for the March 15, 2019 sampling event is provided in Table 1.1.

Monitoring Deficiencies

All aspects of the monitoring plan were in accordance with NYDEC applicable regulations.

Conclusions and Recommendations

All aspects of the remedial program appear to be meeting the site remedy design goal.

We recommend the following for the next reporting period:

- Groundwater Monitoring: monitoring of groundwater for Metals on an annual basis for only monitoring well PPR-MW2 and PR-MW-4 for the next reporting periods. SESI recommends abandonment of monitoring Well PR-MW-3.
- Cover system: continue the annual visual inspection of the cover system.

6.0 OPERATION AND MAINTENANCE PLAN COMPLIANCE

The site remedy does not rely on any mechanical systems, such as sub-slab depressurization systems or air sparge/ soil vapor extraction systems to protect public health and the environment. Therefore, the operation and maintenance of such components is not applicable.

7.0 CONCLUSIONS AND RECOMMENDATIONS

Compliance with the SMP

All aspects of the SMP including IC/EC and monitoring have met the requirements. The O&M is not required at this time for the site.

There are no new exposure pathways resulting in an unacceptable risk.

Performance and Effectiveness of the Remedy

The composite cover system has changed due to the addition of the proposed building footings. The SMP will be updated with the new cover system elements and as-built once the building construction has been completed. The cover system has been and will continue to be effective in preventing public exposure to the residual contamination left onsite beneath the cover system.

The sampling of the monitoring well network is determining the effectiveness of the site's ability to naturally degrade the contaminants of concern in groundwater.

The proposed periodic monitoring plan for the cover system and groundwater monitoring are effective and protective of the previously approved overall site remedy.

Future PRR Submittals

We do not recommend any changes to the frequency of the PRR submittal at this time because IC's and EC's remain in-place and are effective. The next PRR will be submitted in August 2020.

Recommendations

We recommend the following for the next reporting period:

- Groundwater Monitoring: monitoring of groundwater for Metals on an annual basis for only monitoring well PR-MW2 and PR-MW-4 for the next reporting periods. SESI recommends abandonment of monitoring Well PR-MW-3.
- Cover system: continue the annual visual inspection of the cover system.

APPENDIX A – SITE INSPECTION FORMS

INSPECTION CHECKLIST

FORMER AC DUTTON
POUGHKEEPSIE , NEW YORK
NYSDEC BCP No. C314081

SESI CONSULTING ENGINEERS **Inspection Date: 3.15.2019**

COMPOSITE COVER SYSTEM

- Is the integrity of the cover system in tact? Yes _X_ No ___
- Do the maintenance records indicate any invasive subsurface work has been completed after the last inspection? Yes _X_ No __
- Has any soil been removed or imported from the Site since the last inspection? Yes _X_ No ___
- If soil has been disposed off-Site or imported, has this been completed in accordance with the NYSDEC approved Soil Management Plan for the Site? Yes _X_ No ___
- If subsurface invasive work was undertaken, has the demarcation geotextile and the "clean soil cover" been restored? Yes __ No ___
- Did a Professional Engineer or a qualified environmental professional (approved by the NYSDEC) oversee the above work? Yes _X_ No ___
- Was NYSDEC notified of disturbances to the "Clean Soil Cover" ? Yes _X_ No ___
- List of all reported disturbances since last inspection:

NONE

MONITORING WELL NETWORK

- Are all the on-Site monitoring wells accessible for annual compliance sampling (i.e., they are not covered by soil, dumpsters, etc.)? Yes _X_ No ___
- Is the integrity of the flush-mount/stickup manhole covers And associated concrete pads intact? Yes _X_ No ___
- Are the monitoring wells locked and the locks functioning? Yes _X_ No ___

INSPECTION CHECKLIST
FORMER AC DUTTON
POUGHKEEPSIE, NEW YORK
NYSDEC BCP No. C314081

SESI CONSULTING ENGINEERS **Inspection Date: 3.15.2019**

COMPOSITE COVER SYSTEM

- Is the integrity of the cover system in tact? Yes _X_ No ___
- Do the maintenance records indicate any invasive subsurface work has been completed after the last inspection? Yes _X_ No ___
- Has any soil been removed or imported from the Site since the last inspection? Yes _X_ No ___
- If soil has been disposed off-Site or imported, has this been completed in accordance with the NYSDEC approved Soil Management Plan for the Site? Yes _X_ No __
- If subsurface invasive work was undertaken, has the demarcation geotextile and the "clean soil cover" been restored? Yes ___ No ___
- Did a Professional Engineer or a qualified environmental professional (approved by the NYSDEC) oversee the above work? Yes _X_ No ___
- Was NYSDEC notified of disturbances to the "Clean Soil Cover" ? Yes _X_ No ___
- List of all reported disturbances since last inspection:

NONE

APPENDIX B – LABORATORY ANALYTICAL REPORTS

Table 1.1 - Analytical Results for Metals
Former A.C. Dutton Lumber Yard
Poughkeepsie, New York

Analyte	CAS Number	Units	Effluent Limitation Class GA	460-177512-1 PR-MW2 3/15/2019 6:20 PM	460-177512-2 PR-MW4 3/15/2019 4:10 PM	460-177512-3 DUP 3/15/2019 12:00 AM
Mercury	7439-97-6	ug/L	1.4	0.12 U	0.12 U	0.12 U
Aluminum	7429-90-5	ug/L	2000	**40.5**	**132**	**102**
Antimony	7440-36-0	ug/L	6	**4.8 B**	**3.4 B**	**2.8 B**
Arsenic	7440-38-2	ug/L	50	**200**	**31.4**	**30.2**
Barium	7440-39-3	ug/L	2000	**67.2**	**21.2**	**20.8**
Beryllium	7440-41-7	ug/L	3	0.25 U	0.25 U	0.25 U
Cadmium	7440-43-9	ug/L	10	0.81 U	0.81 U	0.81 U
Calcium	7440-70-2	ug/L		**66400**	**63500**	**63600**
Chromium	7440-47-3	ug/L	100	2.3 U	2.3 U	2.3 U
Cobalt	7440-48-4	ug/L		1.6 U	1.6 U	1.6 U
Copper	7440-50-8	ug/L	1000	2.0 U	**2.0 J**	**2.4 J**
Iron	7439-89-6	ug/L	600	**4220**	**606**	**525**
Lead	7439-92-1	ug/L	50	0.55 U	**0.60 J**	**0.55 J**
Magnesium	7439-95-4	ug/L	35000	**4780**	**12500**	**12300**
Manganese	7439-96-5	ug/L	600	**1100**	**215**	**205**
Nickel	7440-02-0	ug/L	200	2.4 U	2.4 U	2.4 U
Potassium	7440-09-7	ug/L		**6720**	**3370**	**3280**
Selenium	7782-49-2	ug/L	20	5.4 U	5.4 U	5.4 U
Silver	7440-22-4	ug/L	100	0.59 U	0.59 U	0.59 U
Sodium	7440-23-5	ug/L		**118000**	**29900**	**29400**
Thallium	7440-28-0	ug/L	0.5	0.16 U	0.16 U	0.16 U
Vanadium	7440-62-2	ug/L		1.1 U	1.1 U	1.1 U
Zinc	7440-66-6	ug/L	5000	11.1 U	11.1 U	11.1 U

B : Compound was found in the blank and sample.

J : Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

U : Indicates the analyte was analyzed for but not detected.

Yellow Highlighted cells exceed NYSDEC Water Quality Effluent Standard

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 460-177512-1

Job Description: A.C. Dalton Poughkeepsie

For:
SESI Consulting Engineers
12 A Maple Avenue
Pine Brook, NJ 07058

Attention: Fuad Dahan

Approved for release.
Grace Chang
Project Manager II
3/25/2019 1:15 PM

Grace Chang, Project Manager II
777 New Durham Road, Edison, NJ, 08817
(732)593-2579
grace.chang@testamericainc.com
03/25/2019

TestAmerica Edison Certifications and Approvals: Connecticut: CTDOH #PH-0200, New Jersey: NJDEP (NELAP) #12028, New York: NYDOH (NELAP) #11452, NYDOH (ELAP) #11452, Pennsylvania: PADEP (NELAP) 68-00522 and Rhode Island: RIDOH LAO00132

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CASE NARRATIVE

Client: SESI Consulting Engineers

Project: A.C. Dalton Poughkeepsie

Report Number: 460-177512-1

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) as a result of a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes or interferences which exceed the calibration range of the instrument.

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

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

RECEIPT
The samples were received on 3/18/2019 11:10 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.1º C.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

METALS
Samples PR-MW2 (460-177512-1), PR-MW4 (460-177512-2) and DUP (460-177512-3) were analyzed for Metals in accordance with 6020B. The samples were prepared on 03/21/2019 and analyzed on 03/22/2019.

Antimony was detected in method blank MB 460-596854/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Calcium, Magnesium and Sodium failed the recovery criteria low for the MS of sample 460-177420-2 in batch 460-597314.

The presence of the '4' qualifier in the data indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

Refer to the QC report for details.

The method blank for preparation batch 460-596854 and analytical batch 460-597314 contained antimony above the method detection limit. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction and re-analysis of samples was not performed.

No other difficulties were encountered during the Metals analysis.

All other quality control parameters were within the acceptance limits.

TOTAL MERCURY
Samples PR-MW2 (460-177512-1), PR-MW4 (460-177512-2) and DUP (460-177512-3) were analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 03/21/2019.

No difficulties were encountered during the Hg analysis.

All quality control parameters were within the acceptance limits.

Sample Summary

Client: SESI Consulting Engineers
Project/Site: A.C. Dalton Poughkeepsie

TestAmerica Job ID: 460-177512-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
460-177512-1	PR-MW2	Water	03/15/19 18:20	03/18/19 11:10
460-177512-2	PR-MW4	Water	03/15/19 16:10	03/18/19 11:10
460-177512-3	DUP	Water	03/15/19 00:00	03/18/19 11:10

Detection Summary

Client: SESI Consulting Engineers
Project/Site: A.C. Dalton Poughkeepsie

TestAmerica Job ID: 460-177512-1

Client Sample ID: PR-MW2 — Lab Sample ID: 460-177512-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	40.5		40.0	18.8	ug/L	2		6020B	Total/NA
Antimony	4.8	B	2.0	0.40	ug/L	2		6020B	Total/NA
Arsenic	200		2.0	0.73	ug/L	2		6020B	Total/NA
Barium	67.2		4.0	1.2	ug/L	2		6020B	Total/NA
Calcium	66400		200	98.8	ug/L	2		6020B	Total/NA
Iron	4220		120	51.1	ug/L	2		6020B	Total/NA
Magnesium	4780		200	73.7	ug/L	2		6020B	Total/NA
Manganese	1100		8.0	2.9	ug/L	2		6020B	Total/NA
Potassium	6720		200	86.7	ug/L	2		6020B	Total/NA
Sodium	118000		200	128	ug/L	2		6020B	Total/NA

Client Sample ID: PR-MW4 — Lab Sample ID: 460-177512-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	132		40.0	18.8	ug/L	2		6020B	Total/NA
Antimony	3.4	B	2.0	0.40	ug/L	2		6020B	Total/NA
Arsenic	31.4		2.0	0.73	ug/L	2		6020B	Total/NA
Barium	21.2		4.0	1.2	ug/L	2		6020B	Total/NA
Calcium	63500		200	98.8	ug/L	2		6020B	Total/NA
Copper	2.0	J	4.0	2.0	ug/L	2		6020B	Total/NA
Iron	606		120	51.1	ug/L	2		6020B	Total/NA
Lead	0.60	J	1.2	0.55	ug/L	2		6020B	Total/NA
Magnesium	12500		200	73.7	ug/L	2		6020B	Total/NA
Manganese	215		8.0	2.9	ug/L	2		6020B	Total/NA
Potassium	3370		200	86.7	ug/L	2		6020B	Total/NA
Sodium	29900		200	128	ug/L	2		6020B	Total/NA

Client Sample ID: DUP — Lab Sample ID: 460-177512-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	102		40.0	18.8	ug/L	2		6020B	Total/NA
Antimony	2.8	B	2.0	0.40	ug/L	2		6020B	Total/NA
Arsenic	30.2		2.0	0.73	ug/L	2		6020B	Total/NA
Barium	20.8		4.0	1.2	ug/L	2		6020B	Total/NA
Calcium	63600		200	98.8	ug/L	2		6020B	Total/NA
Copper	2.4	J	4.0	2.0	ug/L	2		6020B	Total/NA
Iron	525		120	51.1	ug/L	2		6020B	Total/NA
Lead	0.55	J	1.2	0.55	ug/L	2		6020B	Total/NA
Magnesium	12300		200	73.7	ug/L	2		6020B	Total/NA
Manganese	205		8.0	2.9	ug/L	2		6020B	Total/NA
Potassium	3280		200	86.7	ug/L	2		6020B	Total/NA
Sodium	29400		200	128	ug/L	2		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: SESI Consulting Engineers
Project/Site: A.C. Dalton Poughkeepsie

TestAmerica Job ID: 460-177512-1

Method	Method Description	Protocol	Laboratory
6020B	Metals (ICP/MS)	SW846	TAL EDI
7470A	Mercury (CVAA)	SW846	TAL EDI
3010A	Preparation, Total Metals	SW846	TAL EDI
7470A	Preparation, Mercury	SW846	TAL EDI

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL EDI = TestAmerica Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Client Sample ID: PR-MW2

Date Collected: 03/15/19 18:20
Date Received: 03/18/19 11:10

Lab Sample ID: 460-177512-1

Matrix: Water

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**40.5**		40.0	18.8	ug/L		03/21/19 08:30	03/22/19 17:21	2
Antimony	**4.8**	**B**	2.0	0.40	ug/L		03/21/19 08:30	03/22/19 17:21	2
Arsenic	**200**		2.0	0.73	ug/L		03/21/19 08:30	03/22/19 17:21	2
Barium	**67.2**		4.0	1.2	ug/L		03/21/19 08:30	03/22/19 17:21	2
Beryllium	0.25	U	0.80	0.25	ug/L		03/21/19 08:30	03/22/19 17:21	2
Cadmium	0.81	U	2.0	0.81	ug/L		03/21/19 08:30	03/22/19 17:21	2
Calcium	**66400**		200	98.8	ug/L		03/21/19 08:30	03/22/19 17:21	2
Chromium	2.3	U	4.0	2.3	ug/L		03/21/19 08:30	03/22/19 17:21	2
Cobalt	1.6	U	4.0	1.6	ug/L		03/21/19 08:30	03/22/19 17:21	2
Copper	2.0	U	4.0	2.0	ug/L		03/21/19 08:30	03/22/19 17:21	2
Iron	**4220**		120	51.1	ug/L		03/21/19 08:30	03/22/19 17:21	2
Lead	0.55	U	1.2	0.55	ug/L		03/21/19 08:30	03/22/19 17:21	2
Magnesium	**4780**		200	73.7	ug/L		03/21/19 08:30	03/22/19 17:21	2
Manganese	**1100**		8.0	2.9	ug/L		03/21/19 08:30	03/22/19 17:21	2
Nickel	2.4	U	4.0	2.4	ug/L		03/21/19 08:30	03/22/19 17:21	2
Potassium	**6720**		200	86.7	ug/L		03/21/19 08:30	03/22/19 17:21	2
Selenium	5.4	U	10.0	5.4	ug/L		03/21/19 08:30	03/22/19 17:21	2
Silver	0.59	U	2.0	0.59	ug/L		03/21/19 08:30	03/22/19 17:21	2
Sodium	**118000**		200	128	ug/L		03/21/19 08:30	03/22/19 17:21	2
Thallium	0.16	U	0.80	0.16	ug/L		03/21/19 08:30	03/22/19 17:21	2
Vanadium	1.1	U	4.0	1.1	ug/L		03/21/19 08:30	03/22/19 17:21	2
Zinc	11.1	U	16.0	11.1	ug/L		03/21/19 08:30	03/22/19 17:21	2

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.12	U	0.20	0.12	ug/L		03/21/19 12:37	03/21/19 15:23	1

Client Sample ID: PR-MW4

Date Collected: 03/15/19 16:10
Date Received: 03/18/19 11:10

Lab Sample ID: 460-177512-2

Matrix: Water

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**132**		40.0	18.8	ug/L		03/21/19 08:30	03/22/19 17:24	2
Antimony	**3.4**	**B**	2.0	0.40	ug/L		03/21/19 08:30	03/22/19 17:24	2
Arsenic	**31.4**		2.0	0.73	ug/L		03/21/19 08:30	03/22/19 17:24	2
Barium	**21.2**		4.0	1.2	ug/L		03/21/19 08:30	03/22/19 17:24	2
Beryllium	0.25	U	0.80	0.25	ug/L		03/21/19 08:30	03/22/19 17:24	2
Cadmium	0.81	U	2.0	0.81	ug/L		03/21/19 08:30	03/22/19 17:24	2
Calcium	**63500**		200	98.8	ug/L		03/21/19 08:30	03/22/19 17:24	2
Chromium	2.3	U	4.0	2.3	ug/L		03/21/19 08:30	03/22/19 17:24	2
Cobalt	1.6	U	4.0	1.6	ug/L		03/21/19 08:30	03/22/19 17:24	2
Copper	**2.0**	**J**	4.0	2.0	ug/L		03/21/19 08:30	03/22/19 17:24	2
Iron	**606**		120	51.1	ug/L		03/21/19 08:30	03/22/19 17:24	2
Lead	**0.60**	**J**	1.2	0.55	ug/L		03/21/19 08:30	03/22/19 17:24	2
Magnesium	**12500**		200	73.7	ug/L		03/21/19 08:30	03/22/19 17:24	2
Manganese	**215**		8.0	2.9	ug/L		03/21/19 08:30	03/22/19 17:24	2
Nickel	2.4	U	4.0	2.4	ug/L		03/21/19 08:30	03/22/19 17:24	2
Potassium	**3370**		200	86.7	ug/L		03/21/19 08:30	03/22/19 17:24	2
Selenium	5.4	U	10.0	5.4	ug/L		03/21/19 08:30	03/22/19 17:24	2

Client Sample ID: PR-MW4

Date Collected: 03/15/19 16:10
Date Received: 03/18/19 11:10

Lab Sample ID: 460-177512-2
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	0.59	U	2.0	0.59	ug/L		03/21/19 08:30	03/22/19 17:24	2
Sodium	**29900**		200	128	ug/L		03/21/19 08:30	03/22/19 17:24	2
Thallium	0.16	U	0.80	0.16	ug/L		03/21/19 08:30	03/22/19 17:24	2
Vanadium	1.1	U	4.0	1.1	ug/L		03/21/19 08:30	03/22/19 17:24	2
Zinc	11.1	U	16.0	11.1	ug/L		03/21/19 08:30	03/22/19 17:24	2

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.12	U	0.20	0.12	ug/L		03/21/19 12:37	03/21/19 15:25	1

Client Sample ID: DUP

Date Collected: 03/15/19 00:00
Date Received: 03/18/19 11:10

Lab Sample ID: 460-177512-3
Matrix: Water

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**102**		40.0	18.8	ug/L		03/21/19 08:30	03/22/19 17:27	2
Antimony	**2.8**	**B**	2.0	0.40	ug/L		03/21/19 08:30	03/22/19 17:27	2
Arsenic	**30.2**		2.0	0.73	ug/L		03/21/19 08:30	03/22/19 17:27	2
Barium	**20.8**		4.0	1.2	ug/L		03/21/19 08:30	03/22/19 17:27	2
Beryllium	0.25	U	0.80	0.25	ug/L		03/21/19 08:30	03/22/19 17:27	2
Cadmium	0.81	U	2.0	0.81	ug/L		03/21/19 08:30	03/22/19 17:27	2
Calcium	**63600**		200	98.8	ug/L		03/21/19 08:30	03/22/19 17:27	2
Chromium	2.3	U	4.0	2.3	ug/L		03/21/19 08:30	03/22/19 17:27	2
Cobalt	1.6	U	4.0	1.6	ug/L		03/21/19 08:30	03/22/19 17:27	2
Copper	**2.4**	**J**	4.0	2.0	ug/L		03/21/19 08:30	03/22/19 17:27	2
Iron	**525**		120	51.1	ug/L		03/21/19 08:30	03/22/19 17:27	2
Lead	**0.55**	**J**	1.2	0.55	ug/L		03/21/19 08:30	03/22/19 17:27	2
Magnesium	**12300**		200	73.7	ug/L		03/21/19 08:30	03/22/19 17:27	2
Manganese	**205**		8.0	2.9	ug/L		03/21/19 08:30	03/22/19 17:27	2
Nickel	2.4	U	4.0	2.4	ug/L		03/21/19 08:30	03/22/19 17:27	2
Potassium	**3280**		200	86.7	ug/L		03/21/19 08:30	03/22/19 17:27	2
Selenium	5.4	U	10.0	5.4	ug/L		03/21/19 08:30	03/22/19 17:27	2
Silver	0.59	U	2.0	0.59	ug/L		03/21/19 08:30	03/22/19 17:27	2
Sodium	**29400**		200	128	ug/L		03/21/19 08:30	03/22/19 17:27	2
Thallium	0.16	U	0.80	0.16	ug/L		03/21/19 08:30	03/22/19 17:27	2
Vanadium	1.1	U	4.0	1.1	ug/L		03/21/19 08:30	03/22/19 17:27	2
Zinc	11.1	U	16.0	11.1	ug/L		03/21/19 08:30	03/22/19 17:27	2

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.12	U	0.20	0.12	ug/L		03/21/19 12:37	03/21/19 14:40	1

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 460-596854/1-A ^2
Matrix: Water
Analysis Batch: 597314

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 596854

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	18.8	U	40.0	18.8	ug/L		03/21/19 07:28	03/22/19 16:31	2
Antimony	0.824	J	2.0	0.40	ug/L		03/21/19 07:28	03/22/19 16:31	2
Arsenic	0.73	U	2.0	0.73	ug/L		03/21/19 07:28	03/22/19 16:31	2
Barium	1.2	U	4.0	1.2	ug/L		03/21/19 07:28	03/22/19 16:31	2
Beryllium	0.25	U	0.80	0.25	ug/L		03/21/19 07:28	03/22/19 16:31	2
Cadmium	0.81	U	2.0	0.81	ug/L		03/21/19 07:28	03/22/19 16:31	2
Calcium	98.8	U	200	98.8	ug/L		03/21/19 07:28	03/22/19 16:31	2
Chromium	2.3	U	4.0	2.3	ug/L		03/21/19 07:28	03/22/19 16:31	2
Cobalt	1.6	U	4.0	1.6	ug/L		03/21/19 07:28	03/22/19 16:31	2
Copper	2.0	U	4.0	2.0	ug/L		03/21/19 07:28	03/22/19 16:31	2
Iron	51.1	U	120	51.1	ug/L		03/21/19 07:28	03/22/19 16:31	2
Lead	0.55	U	1.2	0.55	ug/L		03/21/19 07:28	03/22/19 16:31	2
Magnesium	73.7	U	200	73.7	ug/L		03/21/19 07:28	03/22/19 16:31	2
Manganese	2.9	U	8.0	2.9	ug/L		03/21/19 07:28	03/22/19 16:31	2
Nickel	2.4	U	4.0	2.4	ug/L		03/21/19 07:28	03/22/19 16:31	2
Potassium	86.7	U	200	86.7	ug/L		03/21/19 07:28	03/22/19 16:31	2
Selenium	5.4	U	10.0	5.4	ug/L		03/21/19 07:28	03/22/19 16:31	2
Silver	0.59	U	2.0	0.59	ug/L		03/21/19 07:28	03/22/19 16:31	2
Sodium	128	U	200	128	ug/L		03/21/19 07:28	03/22/19 16:31	2
Thallium	0.16	U	0.80	0.16	ug/L		03/21/19 07:28	03/22/19 16:31	2
Vanadium	1.1	U	4.0	1.1	ug/L		03/21/19 07:28	03/22/19 16:31	2
Zinc	11.1	U	16.0	11.1	ug/L		03/21/19 07:28	03/22/19 16:31	2

Lab Sample ID: LCS 460-596854/2-A ^2
Matrix: Water
Analysis Batch: 597314

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 596854

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	2500	2419		ug/L		97	80 - 120
Antimony	25.0	25.58		ug/L		102	80 - 120
Arsenic	50.0	48.26		ug/L		97	80 - 120
Barium	50.0	50.15		ug/L		100	80 - 120
Beryllium	25.0	26.73		ug/L		107	80 - 120
Cadmium	25.0	25.12		ug/L		100	80 - 120
Calcium	2500	2468		ug/L		99	80 - 120
Chromium	50.0	51.46		ug/L		103	80 - 120
Cobalt	25.0	24.89		ug/L		100	80 - 120
Copper	50.0	50.88		ug/L		102	80 - 120
Iron	2500	2523		ug/L		101	80 - 120
Lead	25.0	25.46		ug/L		102	80 - 120
Magnesium	2500	2495		ug/L		100	80 - 120
Manganese	250	249.6		ug/L		100	80 - 120
Nickel	50.0	51.34		ug/L		103	80 - 120
Potassium	2500	2511		ug/L		100	80 - 120
Selenium	50.0	49.70		ug/L		99	80 - 120
Silver	25.0	25.76		ug/L		103	80 - 120
Sodium	2500	2592		ug/L		104	80 - 120
Thallium	20.0	20.13		ug/L		101	80 - 120

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

Lab Sample ID: LCS 460-596854/2-A ^2
Matrix: Water
Analysis Batch: 597314

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 596854

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Vanadium			50.0	50.85		ug/L		102	80 - 120		
Zinc			250	240.3		ug/L		96	80 - 120		

Lab Sample ID: 460-177420-F-2-C MS ^2
Matrix: Water
Analysis Batch: 597314

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 596854

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Aluminum	18.8	U	2500	2470		ug/L		99	75 - 125		
Antimony	8.0	B	25.0	33.27		ug/L		101	75 - 125		
Arsenic	0.73	U	50.0	46.26		ug/L		93	75 - 125		
Barium	49.7		50.0	100.8		ug/L		102	75 - 125		
Beryllium	0.25	U	25.0	27.54		ug/L		110	75 - 125		
Cadmium	40.4		25.0	65.93		ug/L		102	75 - 125		
Calcium	129000		2500	130300	4	ug/L		45	75 - 125		
Chromium	2.3	U	50.0	51.62		ug/L		103	75 - 125		
Cobalt	1.6	U	25.0	25.23		ug/L		101	75 - 125		
Copper	62.9		50.0	112.2		ug/L		99	75 - 125		
Iron	51.1	U	2500	2542		ug/L		102	75 - 125		
Lead	28.6		25.0	54.83		ug/L		105	75 - 125		
Magnesium	25900		2500	27750	4	ug/L		74	75 - 125		
Manganese	5.0	J	250	256.0		ug/L		100	75 - 125		
Nickel	37.9		50.0	87.28		ug/L		99	75 - 125		
Potassium	9970		2500	12340		ug/L		95	75 - 125		
Selenium	5.4	U	50.0	50.94		ug/L		102	75 - 125		
Silver	0.59	U	25.0	26.04		ug/L		104	75 - 125		
Sodium	69800		2500	71050	4	ug/L		51	75 - 125		
Thallium	0.30	J	20.0	21.41		ug/L		106	75 - 125		
Vanadium	1.1	U	50.0	51.60		ug/L		103	75 - 125		

Lab Sample ID: 460-177420-F-2-B DU ^2
Matrix: Water
Analysis Batch: 597314

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 596854

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Aluminum	18.8	U		18.8	U	ug/L				NC	20
Antimony	8.0	B		8.06		ug/L				1	20
Arsenic	0.73	U		0.73	U	ug/L				NC	20
Barium	49.7			50.73		ug/L				2	20
Beryllium	0.25	U		0.25	U	ug/L				NC	20
Cadmium	40.4			42.21		ug/L				4	20
Calcium	129000			133300		ug/L				3	20
Chromium	2.3	U		2.3	U	ug/L				NC	20
Cobalt	1.6	U		1.6	U	ug/L				NC	20
Copper	62.9			64.04		ug/L				2	20
Iron	51.1	U		51.1	U	ug/L				NC	20
Lead	28.6			29.33		ug/L				3	20
Magnesium	25900			26210		ug/L				1	20
Manganese	5.0	J		5.27	J	ug/L				5	20

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

Lab Sample ID: 460-177420-F-2-B DU ^2
Matrix: Water
Analysis Batch: 597314

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 596854

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Nickel	37.9		38.97		ug/L		3	20
Potassium	9970		10170		ug/L		2	20
Selenium	5.4	U	5.4	U	ug/L		NC	20
Silver	0.59	U	0.59	U	ug/L		NC	20
Sodium	69800		71060		ug/L		2	20
Thallium	0.30	J	0.308	J	ug/L		4	20
Vanadium	1.1	U	1.1	U	ug/L		NC	20

Lab Sample ID: LRC 460-597314/12
Matrix: Water
Analysis Batch: 597314

Client Sample ID: Lab Control Sample

Analyte	Spike Added	LRC Result	LRC Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	2000	1989		ug/L		99	90 - 110
Barium	5000	5158		ug/L		103	90 - 110
Beryllium	1000	1024		ug/L		102	90 - 110
Cadmium	2000	1982		ug/L		99	90 - 110
Chromium	4000	3959		ug/L		99	90 - 110
Cobalt	1000	958.3		ug/L		96	90 - 110
Copper	1000	957.7		ug/L		96	90 - 110
Lead	5000	4900		ug/L		98	90 - 110
Manganese	5000	4806		ug/L		96	90 - 110
Nickel	1000	992.6		ug/L		99	90 - 110
Selenium	1000	1009		ug/L		101	90 - 110
Thallium	1000	968.0		ug/L		97	90 - 110
Vanadium	2000	1991		ug/L		100	90 - 110
Zinc	1000	1013		ug/L		101	90 - 110

Lab Sample ID: LRC 460-597314/13
Matrix: Water
Analysis Batch: 597314

Client Sample ID: Lab Control Sample

Analyte	Spike Added	LRC Result	LRC Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	50000	51910		ug/L		104	90 - 110
Calcium	150000	148400		ug/L		99	90 - 110
Magnesium	150000	139100		ug/L		93	90 - 110
Potassium	200000	195800		ug/L		98	90 - 110
Sodium	200000	191700		ug/L		96	90 - 110

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 460-596940/1-A
Matrix: Water
Analysis Batch: 596981

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 596940

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.12	U	0.20	0.12	ug/L		03/21/19 12:37	03/21/19 14:37	1

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

Lab Sample ID: LCS 460-596940/2-A
Matrix: Water
Analysis Batch: 596981

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 596940

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	1.00	1.03		ug/L		103	80 - 120

Lab Sample ID: 460-177512-3 MS
Matrix: Water
Analysis Batch: 596981

Client Sample ID: DUP
Prep Type: Total/NA
Prep Batch: 596940

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.12	U	1.00	0.984		ug/L		98	75 - 125

Lab Sample ID: 460-177512-3 DU
Matrix: Water
Analysis Batch: 596981

Client Sample ID: DUP
Prep Type: Total/NA
Prep Batch: 596940

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Mercury	0.12	U	0.12	U	ug/L		NC	20

Qualifiers

Metals

Qualifier	Qualifier Description
W	PS: Post-digestion spike was outside control limits
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
B	Compound was found in the blank and sample.

Glossary

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

Metals

Prep Batch: 596854

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-177512-1	PR-MW2	Total/NA	Water	3010A	
460-177512-2	PR-MW4	Total/NA	Water	3010A	
460-177512-3	DUP	Total/NA	Water	3010A	
MB 460-596854/1-A ^2	Method Blank	Total/NA	Water	3010A	
LCS 460-596854/2-A ^2	Lab Control Sample	Total/NA	Water	3010A	
460-177420-F-2-C MS ^2	Matrix Spike	Total/NA	Water	3010A	
460-177420-F-2-B DU ^2	Duplicate	Total/NA	Water	3010A	

Prep Batch: 596940

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-177512-1	PR-MW2	Total/NA	Water	7470A	
460-177512-2	PR-MW4	Total/NA	Water	7470A	
460-177512-3	DUP	Total/NA	Water	7470A	
MB 460-596940/1-A	Method Blank	Total/NA	Water	7470A	
LCS 460-596940/2-A	Lab Control Sample	Total/NA	Water	7470A	
460-177512-3 MS	DUP	Total/NA	Water	7470A	
460-177512-3 DU	DUP	Total/NA	Water	7470A	

Analysis Batch: 596981

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-177512-1	PR-MW2	Total/NA	Water	7470A	596940
460-177512-2	PR-MW4	Total/NA	Water	7470A	596940
460-177512-3	DUP	Total/NA	Water	7470A	596940
MB 460-596940/1-A	Method Blank	Total/NA	Water	7470A	596940
LCS 460-596940/2-A	Lab Control Sample	Total/NA	Water	7470A	596940
460-177512-3 MS	DUP	Total/NA	Water	7470A	596940
460-177512-3 DU	DUP	Total/NA	Water	7470A	596940

Analysis Batch: 597314

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-177512-1	PR-MW2	Total/NA	Water	6020B	596854
460-177512-2	PR-MW4	Total/NA	Water	6020B	596854
460-177512-3	DUP	Total/NA	Water	6020B	596854
MB 460-596854/1-A ^2	Method Blank	Total/NA	Water	6020B	596854
LCS 460-596854/2-A ^2	Lab Control Sample	Total/NA	Water	6020B	596854
LRC 460-597314/12	Lab Control Sample		Water	6020B	
LRC 460-597314/13	Lab Control Sample		Water	6020B	
LRC 460-597314/14	Lab Control Sample		Water	6020B	
460-177420-F-2-C MS ^2	Matrix Spike	Total/NA	Water	6020B	596854
460-177420-F-2-B DU ^2	Duplicate	Total/NA	Water	6020B	596854

Client Sample ID: PR-MW2

Lab Sample ID: 460-177512-1

Date Collected: 03/15/19 18:20

Matrix: Water

Date Received: 03/18/19 11:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			596854	03/21/19 08:30	QZY	TAL EDI
Total/NA	Analysis	6020B		2	597314	03/22/19 17:21	PHP	TAL EDI
Total/NA	Prep	7470A			596940	03/21/19 12:37	RBS	TAL EDI
Total/NA	Analysis	7470A		1	596981	03/21/19 15:23	RBS	TAL EDI

Client Sample ID: PR-MW4

Lab Sample ID: 460-177512-2

Date Collected: 03/15/19 16:10

Matrix: Water

Date Received: 03/18/19 11:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			596854	03/21/19 08:30	QZY	TAL EDI
Total/NA	Analysis	6020B		2	597314	03/22/19 17:24	PHP	TAL EDI
Total/NA	Prep	7470A			596940	03/21/19 12:37	RBS	TAL EDI
Total/NA	Analysis	7470A		1	596981	03/21/19 15:25	RBS	TAL EDI

Client Sample ID: DUP

Lab Sample ID: 460-177512-3

Date Collected: 03/15/19 00:00

Matrix: Water

Date Received: 03/18/19 11:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			596854	03/21/19 08:30	QZY	TAL EDI
Total/NA	Analysis	6020B		2	597314	03/22/19 17:27	PHP	TAL EDI
Total/NA	Prep	7470A			596940	03/21/19 12:37	RBS	TAL EDI
Total/NA	Analysis	7470A		1	596981	03/21/19 14:40	RBS	TAL EDI

Laboratory References:

TAL EDI = TestAmerica Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Accreditation/Certification Summary

Client: SESI Consulting Engineers
Project/Site: A.C. Dalton Poughkeepsie

TestAmerica Job ID: 460-177512-1

Laboratory: TestAmerica Edison

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	11452	04-01-19

METALS

COVER PAGE
METALS

Lab Name: TestAmerica Edison Job Number: 460-177512-1

SDG No.:

Project: A.C. Dalton Poughkeepsie

Client Sample ID	Lab Sample ID
PR-MW2	460-177512-1
PR-MW4	460-177512-2
DUP	460-177512-3

Comments:

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PR-MW2 | Lab Sample ID: 460-177512-1

Lab Name: TestAmerica Edison | Job No.: 460-177512-1

SDG ID.:

Matrix: Water | Date Sampled: 03/15/2019 18:20

Reporting Basis: WET | Date Received: 03/18/2019 11:10

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	40.5	40.0	18.8	ug/L			2	6020B
7440-36-0	Antimony	4.8	2.0	0.40	ug/L		B	2	6020B
7440-38-2	Arsenic	200	2.0	0.73	ug/L			2	6020B
7440-39-3	Barium	67.2	4.0	1.2	ug/L			2	6020B
7440-41-7	Beryllium	0.25	0.80	0.25	ug/L	U		2	6020B
7440-43-9	Cadmium	0.81	2.0	0.81	ug/L	U		2	6020B
7440-70-2	Calcium	66400	200	98.8	ug/L			2	6020B
7440-47-3	Chromium	2.3	4.0	2.3	ug/L	U		2	6020B
7440-48-4	Cobalt	1.6	4.0	1.6	ug/L	U		2	6020B
7440-50-8	Copper	2.0	4.0	2.0	ug/L	U		2	6020B
7439-89-6	Iron	4220	120	51.1	ug/L			2	6020B
7439-92-1	Lead	0.55	1.2	0.55	ug/L	U		2	6020B
7439-95-4	Magnesium	4780	200	73.7	ug/L			2	6020B
7439-96-5	Manganese	1100	8.0	2.9	ug/L			2	6020B
7440-02-0	Nickel	2.4	4.0	2.4	ug/L	U		2	6020B
7440-09-7	Potassium	6720	200	86.7	ug/L			2	6020B
7782-49-2	Selenium	5.4	10.0	5.4	ug/L	U		2	6020B
7440-22-4	Silver	0.59	2.0	0.59	ug/L	U		2	6020B
7440-23-5	Sodium	118000	200	128	ug/L			2	6020B
7440-28-0	Thallium	0.16	0.80	0.16	ug/L	U		2	6020B
7440-62-2	Vanadium	1.1	4.0	1.1	ug/L	U		2	6020B
7440-66-6	Zinc	11.1	16.0	11.1	ug/L	U		2	6020B
7439-97-6	Mercury	0.12	0.20	0.12	ug/L	U		1	7470A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PR-MW4 Lab Sample ID: 460-177512-2

Lab Name: TestAmerica Edison Job No.: 460-177512-1

SDG ID.:

Matrix: Water Date Sampled: 03/15/2019 16:10

Reporting Basis: WET Date Received: 03/18/2019 11:10

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	132	40.0	18.8	ug/L			2	6020B
7440-36-0	Antimony	3.4	2.0	0.40	ug/L		B	2	6020B
7440-38-2	Arsenic	31.4	2.0	0.73	ug/L			2	6020B
7440-39-3	Barium	21.2	4.0	1.2	ug/L			2	6020B
7440-41-7	Beryllium	0.25	0.80	0.25	ug/L	U		2	6020B
7440-43-9	Cadmium	0.81	2.0	0.81	ug/L	U		2	6020B
7440-70-2	Calcium	63500	200	98.8	ug/L			2	6020B
7440-47-3	Chromium	2.3	4.0	2.3	ug/L	U		2	6020B
7440-48-4	Cobalt	1.6	4.0	1.6	ug/L	U		2	6020B
7440-50-8	Copper	2.0	4.0	2.0	ug/L	J		2	6020B
7439-89-6	Iron	606	120	51.1	ug/L			2	6020B
7439-92-1	Lead	0.60	1.2	0.55	ug/L	J		2	6020B
7439-95-4	Magnesium	12500	200	73.7	ug/L			2	6020B
7439-96-5	Manganese	215	8.0	2.9	ug/L			2	6020B
7440-02-0	Nickel	2.4	4.0	2.4	ug/L	U		2	6020B
7440-09-7	Potassium	3370	200	86.7	ug/L			2	6020B
7782-49-2	Selenium	5.4	10.0	5.4	ug/L	U		2	6020B
7440-22-4	Silver	0.59	2.0	0.59	ug/L	U		2	6020B
7440-23-5	Sodium	29900	200	128	ug/L			2	6020B
7440-28-0	Thallium	0.16	0.80	0.16	ug/L	U		2	6020B
7440-62-2	Vanadium	1.1	4.0	1.1	ug/L	U		2	6020B
7440-66-6	Zinc	11.1	16.0	11.1	ug/L	U		2	6020B
7439-97-6	Mercury	0.12	0.20	0.12	ug/L	U		1	7470A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: DUP
Lab Sample ID: 460-177512-3
Lab Name: TestAmerica Edison
Job No.: 460-177512-1
SDG ID.:
Matrix: Water
Date Sampled: 03/15/2019 00:00
Reporting Basis: WET
Date Received: 03/18/2019 11:10

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	102	40.0	18.8	ug/L			2	6020B
7440-36-0	Antimony	2.8	2.0	0.40	ug/L		B	2	6020B
7440-38-2	Arsenic	30.2	2.0	0.73	ug/L			2	6020B
7440-39-3	Barium	20.8	4.0	1.2	ug/L			2	6020B
7440-41-7	Beryllium	0.25	0.80	0.25	ug/L	U		2	6020B
7440-43-9	Cadmium	0.81	2.0	0.81	ug/L	U		2	6020B
7440-70-2	Calcium	63600	200	98.8	ug/L			2	6020B
7440-47-3	Chromium	2.3	4.0	2.3	ug/L	U		2	6020B
7440-48-4	Cobalt	1.6	4.0	1.6	ug/L	U		2	6020B
7440-50-8	Copper	2.4	4.0	2.0	ug/L	J		2	6020B
7439-89-6	Iron	525	120	51.1	ug/L			2	6020B
7439-92-1	Lead	0.55	1.2	0.55	ug/L	J		2	6020B
7439-95-4	Magnesium	12300	200	73.7	ug/L			2	6020B
7439-96-5	Manganese	205	8.0	2.9	ug/L			2	6020B
7440-02-0	Nickel	2.4	4.0	2.4	ug/L	U		2	6020B
7440-09-7	Potassium	3280	200	86.7	ug/L			2	6020B
7782-49-2	Selenium	5.4	10.0	5.4	ug/L	U		2	6020B
7440-22-4	Silver	0.59	2.0	0.59	ug/L	U		2	6020B
7440-23-5	Sodium	29400	200	128	ug/L			2	6020B
7440-28-0	Thallium	0.16	0.80	0.16	ug/L	U		2	6020B
7440-62-2	Vanadium	1.1	4.0	1.1	ug/L	U		2	6020B
7440-66-6	Zinc	11.1	16.0	11.1	ug/L	U		2	6020B
7439-97-6	Mercury	0.12	0.20	0.12	ug/L	U		1	7470A

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Edison Job No.: 460-177512-1

SDG No.:

ICV Source: ME_msICV_00228 Concentration Units: ug/L

CCV Source: ME_msCal4_00096

Analyte	ICV 460-597314/7 03/22/2019 15:56				CCV 460-597314/18 03/22/2019 16:25				CCV 460-597314/30 03/22/2019 16:57			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Aluminum	405.6		400	101	493.1		500	99	492.6		500	99
Antimony	39.63		40.0	99	49.90		50.0	100	49.41		50.0	99
Arsenic	39.72		40.0	99	51.11		50.0	102	50.24		50.0	100
Barium	39.91		40.0	100	51.80		50.0	104	51.71		50.0	103
Beryllium	40.48		40.0	101	52.90		50.0	106	53.27		50.0	107
Cadmium	40.14		40.0	100	50.86		50.0	102	49.52		50.0	99
Calcium	4045		4000	101	5027		5000	101	5007		5000	100
Chromium	40.34		40.0	101	49.88		50.0	100	49.23		50.0	98
Cobalt	39.41		40.0	99	48.88		50.0	98	47.88		50.0	96
Copper	40.44		40.0	101	49.16		50.0	98	47.87		50.0	96
Iron	4028		4000	101	4908		5000	98	4835		5000	97
Lead	40.41		40.0	101	50.14		50.0	100	50.13		50.0	100
Magnesium	4045		4000	101	4968		5000	99	4961		5000	99
Manganese	403.0		400	101	493.3		500	99	489.9		500	98
Nickel	40.27		40.0	101	49.01		50.0	98	48.33		50.0	97
Potassium	3999		4000	100	5053		5000	101	5042		5000	101
Selenium	40.71		40.0	102	52.47		50.0	105	50.81		50.0	102
Silver	39.66		40.0	99	49.50		50.0	99	48.88		50.0	98
Sodium	4076		4000	102	5030		5000	101	5089		5000	102
Thallium	8.10		8.00	101	9.99		10.0	100	10.12		10.0	101
Vanadium	40.18		40.0	100	50.34		50.0	101	49.75		50.0	100
Zinc	39.96		40.0	100	50.19		50.0	100	48.72		50.0	97

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Edison Job No.: 460-177512-1

SDG No.:

ICV Source: ME_msICV_00228 Concentration Units: ug/L

CCV Source: ME_msCal4_00096

Analyte	CCV 460-597314/42 03/22/2019 17:29											
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Aluminum	491.1		500	98								
Antimony	49.70		50.0	99								
Arsenic	48.87		50.0	98								
Barium	50.23		50.0	100								
Beryllium	51.46		50.0	103								
Cadmium	50.00		50.0	100								
Calcium	4915		5000	98								
Chromium	49.91		50.0	100								
Cobalt	48.96		50.0	98								
Copper	49.66		50.0	99								
Iron	4886		5000	98								
Lead	49.72		50.0	99								
Magnesium	5019		5000	100								
Manganese	487.5		500	98								
Nickel	49.56		50.0	99								
Potassium	4961		5000	99								
Selenium	51.08		50.0	102								
Silver	49.75		50.0	100								
Sodium	5141		5000	103								
Thallium	9.97		10.0	100								
Vanadium	50.49		50.0	101								
Zinc	49.37		50.0	99								

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Edison Job No.: 460-177512-1

SDG No.:

ICV Source: ME_DQCS-INT_02958 Concentration Units: ug/L

CCV Source: ME_DCAL-IN_03226

Analyte	ICV 460-596935/31-A 03/21/2019 13:35				CCV 460-596935/33-A 03/21/2019 14:25				CCV 460-596935/33-A 03/21/2019 14:45			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Mercury	5.11		5.00	102	5.12		5.00	102	5.19		5.00	104

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Edison Job No.: 460-177512-1

SDG No.:

ICV Source: ME_DQCS-INT_02958 Concentration Units: ug/L

CCV Source: ME_DCAL-IN_03226

Analyte	CCV 460-596935/33-A 03/21/2019 15:06				CCV 460-596935/33-A 03/21/2019 15:27							
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Mercury	5.10		5.00	102	5.18		5.00	104				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: TestAmerica Edison Job No.: 460-177512-1

SDG No.:

Method: 7470A Instrument ID: LEEMAN6

Lab Sample ID: CRI 460-596981/12 Concentration Units: ug/L

CRQL Check Standard Source:

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Mercury		0.195	J		

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

FORM IIB-IN

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Edison Job No.: 460-177512-1

SDG No.:

Concentration Units: ug/L

Analyte	RL	ICB 460-597314/8 03/22/2019 15:59		CCB 460-597314/19 03/22/2019 16:28		CCB 460-597314/31 03/22/2019 17:00		CCB 460-597314/43 03/22/2019 17:32	
		Found	C	Found	C	Found	C	Found	C
Aluminum	20.0	9.4	U	9.4	U	9.4	U	9.4	U
Antimony	1.0	0.20	U	0.20	U	0.20	U	0.275	J
Arsenic	1.0	0.37	U	0.37	U	0.37	U	0.37	U
Barium	2.0	0.58	U	0.58	U	0.58	U	0.58	U
Beryllium	0.40	0.12	U	0.12	U	0.12	U	0.12	U
Cadmium	1.0	0.40	U	0.40	U	0.40	U	0.40	U
Calcium	100	49.4	U	49.4	U	49.4	U	49.4	U
Chromium	2.0	1.2	U	1.2	U	1.2	U	1.2	U
Cobalt	2.0	0.80	U	0.80	U	0.80	U	0.80	U
Copper	2.0	0.99	U	0.99	U	0.99	U	0.99	U
Iron	60.0	25.6	U	25.6	U	25.6	U	25.6	U
Lead	0.60	0.28	U	0.28	U	0.28	U	0.28	U
Magnesium	100	36.9	U	36.9	U	36.9	U	36.9	U
Manganese	4.0	1.4	U	1.4	U	1.4	U	1.4	U
Nickel	2.0	1.2	U	1.2	U	1.2	U	1.2	U
Potassium	100	43.3	U	43.3	U	43.3	U	43.3	U
Selenium	5.0	2.7	U	2.7	U	2.7	U	2.7	U
Silver	1.0	0.30	U	0.30	U	0.30	U	0.30	U
Sodium	100	63.8	U	63.8	U	63.8	U	63.8	U
Thallium	0.40	0.078	U	0.078	U	0.078	U	0.078	U
Vanadium	2.0	0.56	U	0.56	U	0.56	U	0.56	U
Zinc	8.0	5.6	U	5.6	U	5.6	U	5.6	U

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Edison Job No.: 460-177512-1

SDG No.:

Concentration Units: ug/L

Analyte	RL	ICB 460-596981/11 03/21/2019 13:37		CCB 460-596981/40 03/21/2019 14:27		CCB 460-596981/52 03/21/2019 14:47		CCB 460-596981/64 03/21/2019 15:08	
		Found	C	Found	C	Found	C	Found	C
Mercury	0.20	0.12	U	0.12	U	0.12	U	0.12	U

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Edison Job No.: 460-177512-1

SDG No.:

Concentration Units: ug/L

Analyte	RL	CCB 460-596981/76 03/21/2019 15:28							
		Found	C	Found	C	Found	C	Found	C
Mercury	0.20	0.12	U						

Italicized analytes were not requested for this sequence.

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Edison Job No.: 460-177512-1

SDG No.:

Concentration Units: ug/L Lab Sample ID: MB 460-596854/1-A ^2

Instrument Code: ICPMS3 Batch No.: 597314

CAS No.	Analyte	Concentration	C	Q	Method
7429-90-5	Aluminum	18.8	U		6020B
7440-36-0	Antimony	0.824	J		6020B
7440-38-2	Arsenic	0.73	U		6020B
7440-39-3	Barium	1.2	U		6020B
7440-41-7	Beryllium	0.25	U		6020B
7440-43-9	Cadmium	0.81	U		6020B
7440-70-2	Calcium	98.8	U		6020B
7440-47-3	Chromium	2.3	U		6020B
7440-48-4	Cobalt	1.6	U		6020B
7440-50-8	Copper	2.0	U		6020B
7439-89-6	Iron	51.1	U		6020B
7439-92-1	Lead	0.55	U		6020B
7439-95-4	Magnesium	73.7	U		6020B
7439-96-5	Manganese	2.9	U		6020B
7440-02-0	Nickel	2.4	U		6020B
7440-09-7	Potassium	86.7	U		6020B
7782-49-2	Selenium	5.4	U		6020B
7440-22-4	Silver	0.59	U		6020B
7440-23-5	Sodium	128	U		6020B
7440-28-0	Thallium	0.16	U		6020B
7440-62-2	Vanadium	1.1	U		6020B
7440-66-6	Zinc	11.1	U		6020B

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Edison Job No.: 460-177512-1

SDG No.:

Concentration Units: ug/L Lab Sample ID: MB 460-596940/1-A

Instrument Code: LEEMAN6 Batch No.: 596981

CAS No.	Analyte	Concentration	C	Q	Method
7439-97-6	Mercury	0.12	U		7470A

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Edison Job No.: 460-177512-1

SDG No.:

Lab Sample ID: ICSA 460-597314/10 Instrument ID: ICPMS3

Lab File ID: 013ICSA.d ICS Source: ME_ICSA_ms_00576

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Aluminum	**50000**	**53352**	**107**
Antimony		**-0.0440**	
Arsenic		**0.0540**	
Barium		**0.0840**	
Beryllium		**0.0270**	
Cadmium		**0.0590**	
Calcium	**150000**	**152198**	**101**
Chromium		**1.38**	
Cobalt		**0.0200**	
Copper		**0.120**	
Iron	**125000**	**121474**	**97**
Lead		**0.0610**	
Magnesium	**50000**	**49058**	**98**
Manganese		**0.517**	
Nickel		**0.0710**	
Potassium	**50000**	**49768**	**100**
Selenium		**0.0160**	
Silver		**0.0500**	
Sodium	**125000**	**125270**	**100**
Thallium		**0.0600**	
Vanadium		**-0.0110**	
Zinc		**0.357**	
Boron		*-0.950*	
Molybdenum	*1000*	*1006*	*101*
Strontium		*1.50*	
Tin		*-0.0870*	
Titanium	*1000*	*1023*	*102*

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

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Edison Job No.: 460-177512-1

SDG No.:

Lab Sample ID: ICSAB 460-597314/11 Instrument ID: ICPMS3

Lab File ID: 014ICSB.d ICS Source: ME_ICSAB_ms_00421

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Percent Recovery
Aluminum	**50000**	**53091**	**106**
Antimony		**-0.0410**	
Arsenic	**100**	**104**	**104**
Barium		**0.0870**	
Beryllium		**-0.0010**	
Cadmium	**100**	**98.1**	**98**
Calcium	**150000**	**154262**	**103**
Chromium	**200**	**195**	**98**
Cobalt	**200**	**186**	**93**
Copper	**200**	**176**	**88**
Iron	**125000**	**118468**	**95**
Lead		**0.0730**	
Magnesium	**50000**	**49246**	**98**
Manganese	**200**	**195**	**97**
Nickel	**200**	**182**	**91**
Potassium	**50000**	**50509**	**101**
Selenium	**100**	**102**	**102**
Silver	**200**	**187**	**93**
Sodium	**125000**	**126757**	**101**
Thallium		**0.0610**	
Vanadium	**200**	**199**	**99**
Zinc	**100**	**89.5**	**89**
Boron		*-1.54*	
Molybdenum	*1000*	*1027*	*103*
Strontium		*1.54*	
Tin		*-0.0900*	
Titanium	*1000*	*1012*	*101*

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

FORM IVA-IN

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS

Client ID: DUP MS
Lab ID: 460-177512-3 MS
Lab Name: TestAmerica Edison
Job No.: 460-177512-1
SDG No.:
Matrix: Water
Concentration Units: ug/L
% Solids:

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Mercury	0.984		0.12	U	1.00	98	75-125		7470A

SSR = Spiked Sample Result

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

FORM VA - IN

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS

Client ID: Lab ID: 460-177420-F-2-C MS ^2

Lab Name: TestAmerica Edison Job No.: 460-177512-1

SDG No.:

Matrix: Water Concentration Units: ug/L

% Solids:

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Aluminum	2470		18.8	U	2500	99	75-125		6020B
Antimony	33.27		8.0		25.0	101	75-125		6020B
Arsenic	46.26		0.73	U	50.0	93	75-125		6020B
Barium	100.8		49.7		50.0	102	75-125		6020B
Beryllium	27.54		0.25	U	25.0	110	75-125		6020B
Cadmium	65.93		40.4		25.0	102	75-125		6020B
Calcium	130300		129000		2500	45	75-125	4	6020B
Chromium	51.62		2.3	U	50.0	103	75-125		6020B
Cobalt	25.23		1.6	U	25.0	101	75-125		6020B
Copper	112.2		62.9		50.0	99	75-125		6020B
Iron	2542		51.1	U	2500	102	75-125		6020B
Lead	54.83		28.6		25.0	105	75-125		6020B
Magnesium	27750		25900		2500	74	75-125	4	6020B
Manganese	256.0		5.0	J	250	100	75-125		6020B
Nickel	87.28		37.9		50.0	99	75-125		6020B
Potassium	12340		9970		2500	95	75-125		6020B
Selenium	50.94		5.4	U	50.0	102	75-125		6020B
Silver	26.04		0.59	U	25.0	104	75-125		6020B
Sodium	71050		69800		2500	51	75-125	4	6020B
Thallium	21.41		0.30	J	20.0	106	75-125		6020B
Vanadium	51.60		1.1	U	50.0	103	75-125		6020B

SSR = Spiked Sample Result

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

FORM VA - IN

5B-IN
POST DIGESTION SPIKE SAMPLE RECOVERY
METALS

Client ID: Lab ID: 460-177420-F-2-A PDS ^2

Lab Name: TestAmerica Edison Job No.: 460-177512-1

SDG No.:

Matrix: Water Concentration Units: ug/L

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Aluminum	1081		18.8	U	1000	108	75-125		6020B
Antimony	18.71		8.0		10.0	108	75-125		6020B
Arsenic	20.31		0.73	U	20.0	102	75-125		6020B
Barium	71.60		49.7		20.0	110	75-125		6020B
Beryllium	11.83		0.25	U	10.0	118	75-125		6020B
Cadmium	53.96		40.4		10.0	135	75-125	W	6020B
Calcium	131900		129000		1000	NC	75-125		6020B
Chromium	22.82		2.3	U	20.0	114	75-125		6020B
Cobalt	11.47		1.6	U	10.0	115	75-125		6020B
Copper	86.44		62.9		20.0	118	75-125		6020B
Iron	1136		51.1	U	1000	114	75-125		6020B
Lead	40.26		28.6		10.0	117	75-125		6020B
Magnesium	27510		25900		1000	NC	75-125		6020B
Manganese	113.8		5.0	J	100	109	75-125		6020B
Nickel	60.47		37.9		20.0	113	75-125		6020B
Potassium	11250		9970		1000	127	75-125	W	6020B
Selenium	24.01		5.4	U	20.0	120	75-125		6020B
Silver	8.60		0.59	U	10.0	86	75-125		6020B
Sodium	72050		69800		1000	NC	75-125		6020B
Thallium	9.31		0.30	J	8.00	113	75-125		6020B
Vanadium	22.68		1.1	U	20.0	113	75-125		6020B

SSR = Spiked Sample Result

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

FORM VB - IN

6-IN
DUPLICATES
METALS

Client ID: DUP DU | Lab ID: 460-177512-3 DU

Lab Name: TestAmerica Edison | Job No.: 460-177512-1

SDG No.:

% Solids for Sample: | % Solids for Duplicate:

Matrix: Water | Concentration Units: ug/L

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	Method
Mercury	0.20	0.12	U	0.12	U	NC		7470A

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

FORM VI-IN

6-IN
DUPLICATES
METALS

Client ID: Lab ID: 460-177420-F-2-B DU ^2

Lab Name: TestAmerica Edison Job No.: 460-177512-1

SDG No.:

% Solids for Sample: % Solids for Duplicate:

Matrix: Water Concentration Units: ug/L

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	Method
Aluminum	40.0	18.8	U	18.8	U	NC		6020B
Antimony	2.0	8.0		8.06		1		6020B
Arsenic	2.0	0.73	U	0.73	U	NC		6020B
Barium	4.0	49.7		50.73		2		6020B
Beryllium	0.80	0.25	U	0.25	U	NC		6020B
Cadmium	2.0	40.4		42.21		4		6020B
Calcium	200	129000		133300		3		6020B
Chromium	4.0	2.3	U	2.3	U	NC		6020B
Cobalt	4.0	1.6	U	1.6	U	NC		6020B
Copper	4.0	62.9		64.04		2		6020B
Iron	120	51.1	U	51.1	U	NC		6020B
Lead	1.2	28.6		29.33		3		6020B
Magnesium	200	25900		26210		1		6020B
Manganese	8.0	5.0	J	5.27	J	5		6020B
Nickel	4.0	37.9		38.97		3		6020B
Potassium	200	9970		10170		2		6020B
Selenium	10.0	5.4	U	5.4	U	NC		6020B
Silver	2.0	0.59	U	0.59	U	NC		6020B
Sodium	200	69800		71060		2		6020B
Thallium	0.80	0.30	J	0.308	J	4		6020B
Vanadium	4.0	1.1	U	1.1	U	NC		6020B

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

FORM VI-IN

LINEAR RANGE CHECK STANDARD
METALS -

Lab ID: LRC 460-597314/12

Lab Name: TestAmerica Edison Job No.: 460-177512-1

Sample Matrix: Water LCS Source:

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Aluminum		13.39	J					6020B
Antimony		0.239	J					6020B
Arsenic	2000	1989		99	90	110		6020B
Barium	5000	5158		103	90	110		6020B
Beryllium	1000	1024		102	90	110		6020B
Cadmium	2000	1982		99	90	110		6020B
Calcium		49.4	U					6020B
Chromium	4000	3959		99	90	110		6020B
Cobalt	1000	958.3		96	90	110		6020B
Copper	1000	957.7		96	90	110		6020B
Iron		25.6	U					6020B
Lead	5000	4900		98	90	110		6020B
Magnesium		36.9	U					6020B
Manganese	5000	4806		96	90	110		6020B
Nickel	1000	992.6		99	90	110		6020B
Potassium		43.3	U					6020B
Selenium	1000	1009		101	90	110		6020B
Silver		0.30	U					6020B
Sodium		63.8	U					6020B
Thallium	1000	968.0		97	90	110		6020B
Vanadium	2000	1991		100	90	110		6020B
Zinc	1000	1013		101	90	110		6020B

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

LINEAR RANGE CHECK STANDARD
METALS -

Lab ID: LRC 460-597314/13

Lab Name: TestAmerica Edison Job No.: 460-177512-1

Sample Matrix: Water LCS Source: me_LRC-B_00004

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Aluminum	50000	51910		104	90	110		6020B
Antimony		0.283	J					6020B
Arsenic		0.687	J					6020B
Barium		0.58	U					6020B
Beryllium		0.12	U					6020B
Cadmium		0.40	U					6020B
Calcium	150000	148400		99	90	110		6020B
Chromium		1.2	U					6020B
Cobalt		4.10						6020B
Copper		0.99	U					6020B
Lead		0.648						6020B
Magnesium	150000	139100		93	90	110		6020B
Manganese		1.52	J					6020B
Nickel		3.05						6020B
Potassium	200000	195800		98	90	110		6020B
Selenium		2.7	U					6020B
Silver		0.30	U					6020B
Sodium	200000	191700		96	90	110		6020B
Thallium		0.137	J					6020B
Vanadium		0.56	U					6020B
Zinc		5.6	U					6020B

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

LINEAR RANGE CHECK STANDARD
METALS -

Lab ID: LRC 460-597314/14

Lab Name: TestAmerica Edison Job No.: 460-177512-1

Sample Matrix: Water LCS Source:

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Aluminum		9.4	U					6020B
Antimony		0.20	U					6020B
Arsenic		0.37	U					6020B
Barium		0.58	U					6020B
Beryllium		0.12	U					6020B
Cadmium		0.40	U					6020B
Calcium		49.4	U					6020B
Chromium		1.2	U					6020B
Cobalt		0.80	U					6020B
Copper		0.99	U					6020B
Iron		25.6	U					6020B
Lead		0.28	U					6020B
Magnesium		36.9	U					6020B
Manganese		1.4	U					6020B
Nickel		1.2	U					6020B
Potassium		43.3	U					6020B
Selenium		2.7	U					6020B
Silver		0.30	U					6020B
Sodium		63.8	U					6020B
Thallium		0.078	U					6020B
Vanadium		0.56	U					6020B
Zinc		5.6	U					6020B

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

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 460-596854/2-A ^2

Lab Name: TestAmerica Edison Job No.: 460-177512-1

Sample Matrix: Water LCS Source: ME_ipmsSPK_00035

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Aluminum	2500	2419		97	80	120		6020B
Antimony	25.0	25.58		102	80	120		6020B
Arsenic	50.0	48.26		97	80	120		6020B
Barium	50.0	50.15		100	80	120		6020B
Beryllium	25.0	26.73		107	80	120		6020B
Cadmium	25.0	25.12		100	80	120		6020B
Calcium	2500	2468		99	80	120		6020B
Chromium	50.0	51.46		103	80	120		6020B
Cobalt	25.0	24.89		100	80	120		6020B
Copper	50.0	50.88		102	80	120		6020B
Iron	2500	2523		101	80	120		6020B
Lead	25.0	25.46		102	80	120		6020B
Magnesium	2500	2495		100	80	120		6020B
Manganese	250	249.6		100	80	120		6020B
Nickel	50.0	51.34		103	80	120		6020B
Potassium	2500	2511		100	80	120		6020B
Selenium	50.0	49.70		99	80	120		6020B
Silver	25.0	25.76		103	80	120		6020B
Sodium	2500	2592		104	80	120		6020B
Thallium	20.0	20.13		101	80	120		6020B
Vanadium	50.0	50.85		102	80	120		6020B
Zinc	250	240.3		96	80	120		6020B

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

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 460-596940/2-A

Lab Name: TestAmerica Edison Job No.: 460-177512-1

Sample Matrix: Water LCS Source: ME_DCAL-IN_03226

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Mercury	1.00	1.03		103	80	120		7470A

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

FORM VIIA - IN

8-IN
ICP-AES AND ICP-MS SERIAL DILUTIONS
METALS

Lab ID: 460-177420-F-2-A SD ^10

SDG No:

Lab Name: TestAmerica Edison Job No: 460-177512-1

Matrix: Water Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	Method
Aluminum	18.8	U	94.0	U	NC		6020B
Antimony	8.0		8.59	J	NC		6020B
Arsenic	0.73	U	3.7	U	NC		6020B
Barium	49.7		48.19		NC		6020B
Beryllium	0.25	U	1.2	U	NC		6020B
Cadmium	40.4		39.84		NC		6020B
Calcium	129000		128100		0.83		6020B
Chromium	2.3	U	11.5	U	NC		6020B
Cobalt	1.6	U	8.0	U	NC		6020B
Copper	62.9		63.39		NC		6020B
Iron	51.1	U	256	U	NC		6020B
Lead	28.6		27.44		NC		6020B
Magnesium	25900		25710		0.75		6020B
Manganese	5.0	J	14.4	U	NC		6020B
Nickel	37.9		37.84		NC		6020B
Potassium	9970		9814		NC		6020B
Selenium	5.4	U	26.8	U	NC		6020B
Silver	0.59	U	3.0	U	NC		6020B
Sodium	69800		68870		1.3		6020B
Thallium	0.30	J	0.79	U	NC		6020B
Vanadium	1.1	U	5.6	U	NC		6020B

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

FORM VIII-IN

8-IN
ICP-AES AND ICP-MS SERIAL DILUTIONS
METALS

Lab ID: 460-177512-3

SDG No:

Lab Name: TestAmerica Edison Job No: 460-177512-1

Matrix: Water Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	Method
Mercury	0.12	U	0.58	U	NC		7470A

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

FORM VIII-IN

9-IN
DETECTION LIMITS
METALS

Lab Name: TestAmerica Edison Job Number: 460-177512-1

SDG Number:

Matrix: Water Instrument ID: ICPMS3

Method: 6020B MDL Date: 11/01/2018 09:03

Prep Method: 3010A

Analyte	Wavelength/ Mass	RL (ug/L)	MDL (ug/L)
Aluminum		40	18.8
Antimony		2	0.399
Arsenic		2	0.734
Barium		4	1.16
Beryllium		0.8	0.245
Cadmium		2	0.808
Calcium		200	98.8
Chromium		4	2.3
Cobalt		4	1.6
Copper		4	1.99
Iron		120	51.1
Lead		1.2	0.552
Magnesium		200	73.7
Manganese		8	2.88
Nickel		4	2.36
Potassium		200	86.7
Selenium		10	5.35
Silver		2	0.591
Sodium		200	128
Thallium		0.8	0.157
Vanadium		4	1.11
Zinc		16	11.1

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: TestAmerica Edison Job Number: 460-177512-1

SDG Number:

Matrix: Water Instrument ID: ICPMS3

Method: 6020B XMDL Date: 11/01/2018 09:05

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Aluminum		20	9.39
Antimony		1	0.199
Arsenic		1	0.367
Barium		2	0.578
Beryllium		0.4	0.123
Cadmium		1	0.404
Calcium		100	49.4
Chromium		2	1.15
Cobalt		2	0.8
Copper		2	0.994
Iron		60	25.6
Lead		0.6	0.276
Magnesium		100	36.9
Manganese		4	1.44
Nickel		2	1.18
Potassium		100	43.3
Selenium		5	2.67
Silver		1	0.296
Sodium		100	63.8
Thallium		0.4	0.078
Vanadium		2	0.557
Zinc		8	5.55

9-IN
DETECTION LIMITS
METALS

Lab Name: TestAmerica Edison Job Number: 460-177512-1

SDG Number:

Matrix: Water Instrument ID: LEEMAN6

Method: 7470A MDL Date: 04/16/2018 13:37

Prep Method: 7470A

Analyte	Wavelength/ Mass	RL (ug/L)	MDL (ug/L)
Mercury		0.2	0.115

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: TestAmerica Edison Job Number: 460-177512-1

SDG Number:

Matrix: Water Instrument ID: LEEMAN6

Method: 7470A XMDL Date: 04/16/2018 13:37

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Mercury		0.2	0.115

11-IN
LINEAR RANGES
METALS

Lab Name: TestAmerica Edison Job No: 460-177512-1

SDG No.:

Instrument ID: ICPMS3 Date: 07/27/2018 13:00

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	Method
Aluminum		50000	6020B
Antimony		100	6020B
Arsenic		2000	6020B
Barium		5000	6020B
Beryllium		1000	6020B
Cadmium		2000	6020B
Calcium		150000	6020B
Chromium		4000	6020B
Cobalt		1000	6020B
Copper		1000	6020B
Iron		100000	6020B
Lead		5000	6020B
Magnesium		150000	6020B
Manganese		5000	6020B
Nickel		1000	6020B
Potassium		200000	6020B
Selenium		1000	6020B
Silver		100	6020B
Sodium		200000	6020B
Thallium		1000	6020B
Vanadium		2000	6020B
Zinc		1000	6020B

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Edison Job No.: 460-177512-1

SDG No.:

Prep Method: 3010A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
MB 460-596854/1-A ^2	03/21/2019 07:28	596854		50	50
LCS 460-596854/2-A ^2	03/21/2019 07:28	596854		50	50
460-177420-F-2-B DU ^2	03/21/2019 07:28	596854		50	50
460-177420-F-2-C MS ^2	03/21/2019 07:28	596854		50	50
460-177512-1	03/21/2019 08:30	596854		50	50
460-177512-2	03/21/2019 08:30	596854		50	50
460-177512-3	03/21/2019 08:30	596854		50	50

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Edison Job No.: 460-177512-1

SDG No.:

Prep Method: 7470A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
MB 460-596940/1-A	03/21/2019 12:37	596940		30	30
LCS 460-596940/2-A	03/21/2019 12:37	596940		30	30
460-177512-3	03/21/2019 12:37	596940		30	30
460-177512-3 DU	03/21/2019 12:37	596940		30	30
460-177512-3 MS	03/21/2019 12:37	596940		30	30
460-177512-1	03/21/2019 12:37	596940		30	30
460-177512-2	03/21/2019 12:37	596940		30	30

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Edison Job No.: 460-177512-1

SDG No.:

Instrument ID: ICPMS3 Method: 6020B

Start Date: 03/22/2019 15:39 End Date: 03/22/2019 21:46

Lab Sample ID	D/F	Type	Time	Analytes																			
				Ag	Al	As	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Na	Ni	Pb	Sb	Se	Tl
IC 460-597314/1	1		15:39	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
IC 460-597314/2	1		15:42	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
IC 460-597314/3	1		15:45	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
IC 460-597314/4	1		15:47	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
IC 460-597314/5	1		15:50	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
IC 460-597314/6	1		15:53	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICV 460-597314/7	1		15:56	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICB 460-597314/8	1		15:59	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CRI 460-597314/9			16:01																				
ICSA 460-597314/10	1		16:04	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSAB 460-597314/11	1		16:07	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LRC 460-597314/12	1		16:09	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LRC 460-597314/13	1		16:12	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X
LRC 460-597314/14	1		16:15	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			16:17																				
ZZZZZZ			16:20																				
ZZZZZZ			16:23																				
CCV 460-597314/18	1		16:25	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 460-597314/19	1		16:28	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MB 460-596854/1-A ^2	2	T	16:31	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LCS 460-596854/2-A ^2	2	T	16:33	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
460-177420-F-2-A PDS ^2	2	T	16:36	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
460-177420-F-2-C MS ^2	2	T	16:39	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
460-177420-F-2-B DU ^2	2	T	16:41	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			16:44																				
460-177420-F-2-A SD ^10	10	T	16:47	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			16:49																				
ZZZZZZ			16:52																				
ZZZZZZ			16:55																				
CCV 460-597314/30	1		16:57	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 460-597314/31	1		17:00	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			17:03																				
ZZZZZZ			17:05																				
ZZZZZZ			17:08																				
ZZZZZZ			17:11																				
ZZZZZZ			17:13																				
ZZZZZZ			17:16																				
ZZZZZZ			17:19																				
460-177512-1	2	T	17:21	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
460-177512-2	2	T	17:24	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Edison Job No.: 460-177512-1

SDG No.:

Instrument ID: ICPMS3 Method: 6020B

Start Date: 03/22/2019 15:39 End Date: 03/22/2019 21:46

Lab Sample ID	D/F	Type	Time	Analytes																			
				Ag	Al	As	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Na	Ni	Pb	Sb	Se	Tl
460-177512-3	2	T	17:27	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCV 460-597314/42	1		17:29	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 460-597314/43	1		17:32	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			17:34																				
ZZZZZZ			17:37																				
ZZZZZZ			17:40																				
ZZZZZZ			17:42																				
CCV 460-597314/48			17:45																				
CCB 460-597314/49			17:48																				
ZZZZZZ			17:50																				
ZZZZZZ			17:53																				
ZZZZZZ			17:56																				
ZZZZZZ			17:58																				
ZZZZZZ			18:01																				
ZZZZZZ			18:04																				
ZZZZZZ			18:06																				
ZZZZZZ			18:09																				
ZZZZZZ			18:11																				
ZZZZZZ			18:14																				
CCV 460-597314/60			18:17																				
CCB 460-597314/61			18:19																				
ZZZZZZ			18:22																				
ZZZZZZ			18:25																				
ZZZZZZ			18:27																				
ZZZZZZ			18:30																				
ZZZZZZ			18:33																				
ZZZZZZ			18:35																				
ZZZZZZ			18:38																				
ZZZZZZ			18:41																				
ZZZZZZ			18:43																				
CCV 460-597314/71			18:46																				
CCB 460-597314/72			18:48																				
ZZZZZZ			18:51																				
ZZZZZZ			18:54																				
ZZZZZZ			18:56																				
ZZZZZZ			18:59																				
ZZZZZZ			19:02																				
ZZZZZZ			19:04																				
ZZZZZZ			19:07																				
CCV 460-597314/80			19:10																				
CCB 460-597314/81			19:12																				
ZZZZZZ			19:15																				

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Edison Job No.: 460-177512-1

SDG No.:

Instrument ID: ICPMS3 Method: 6020B

Start Date: 03/22/2019 15:39 End Date: 03/22/2019 21:46

Lab Sample ID	D / F	Type	Time	Analytes																				
				Ag	Al	As	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Na	Ni	Pb	Sb	Se	Tl
ZZZZZZ			19:17																				
ZZZZZZ			19:20																				
ZZZZZZ			19:23																				
ZZZZZZ			19:25																				
ZZZZZZ			19:28																				
ZZZZZZ			19:31																				
ZZZZZZ			19:33																				
ZZZZZZ			19:36																				
ZZZZZZ			19:39																				
CCV 460-597314/92			19:41																				
CCB 460-597314/93			19:44																				
ZZZZZZ			19:47																				
ZZZZZZ			19:49																				
ZZZZZZ			19:52																				
ZZZZZZ			19:54																				
ZZZZZZ			19:57																				
ZZZZZZ			20:00																				
ZZZZZZ			20:02																				
ZZZZZZ			20:05																				
ZZZZZZ			20:08																				
ZZZZZZ			20:10																				
CCV 460-597314/104			20:13																				
CCB 460-597314/105			20:16																				
ZZZZZZ			20:18																				
ZZZZZZ			20:21																				
ZZZZZZ			20:24																				
ZZZZZZ			20:26																				
ZZZZZZ			20:29																				
ZZZZZZ			20:32																				
ZZZZZZ			20:34																				
ZZZZZZ			20:37																				
CCV 460-597314/114			20:40																				
CCB 460-597314/115			20:42																				
ZZZZZZ			20:45																				
ZZZZZZ			20:47																				
ZZZZZZ			20:50																				
ZZZZZZ			20:53																				
ZZZZZZ			20:55																				
ZZZZZZ			20:58																				
ZZZZZZ			21:01																				
ZZZZZZ			21:03																				
ZZZZZZ			21:06																				

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Edison Job No.: 460-177512-1

SDG No.:

Instrument ID: ICPMS3 Method: 6020B

Start Date: 03/22/2019 15:39 End Date: 03/22/2019 21:46

Lab Sample ID	D / F	Type	Time	Analytes																				
				Ag	Al	As	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Na	Ni	Pb	Sb	Se	Tl
ZZZZZZ			21:09																					
CCV 460-597314/126			21:12																					
CCB 460-597314/127			21:14																					
ZZZZZZ			21:17																					
ZZZZZZ			21:19																					
ZZZZZZ			21:22																					
ZZZZZZ			21:25																					
ZZZZZZ			21:28																					
ZZZZZZ			21:30																					
ZZZZZZ			21:33																					
ZZZZZZ			21:36																					
ZZZZZZ			21:38																					
ZZZZZZ			21:41																					
CCV 460-597314/138			21:43																					
CCB 460-597314/139			21:46																					

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Edison Job No.: 460-177512-1

SDG No.:

Instrument ID: ICPMS3 Method: 6020B

Start Date: 03/22/2019 15:39 End Date: 03/22/2019 21:46

Lab Sample ID	D / F	Type	Time	Analytes																			
				V	Zn																		
IC 460-597314/1	1		15:39	X	X																		
IC 460-597314/2	1		15:42	X	X																		
IC 460-597314/3	1		15:45	X	X																		
IC 460-597314/4	1		15:47	X	X																		
IC 460-597314/5	1		15:50	X	X																		
IC 460-597314/6	1		15:53	X	X																		
ICV 460-597314/7	1		15:56	X	X																		
ICB 460-597314/8	1		15:59	X	X																		
CRI 460-597314/9			16:01																				
ICSA 460-597314/10	1		16:04	X	X																		
ICSAB 460-597314/11	1		16:07	X	X																		
LRC 460-597314/12	1		16:09	X	X																		
LRC 460-597314/13	1		16:12	X	X																		
LRC 460-597314/14	1		16:15	X	X																		
ZZZZZZ			16:17																				
ZZZZZZ			16:20																				
ZZZZZZ			16:23																				
CCV 460-597314/18	1		16:25	X	X																		
CCB 460-597314/19	1		16:28	X	X																		
MB 460-596854/1-A ^2	2	T	16:31	X	X																		
LCS 460-596854/2-A ^2	2	T	16:33	X	X																		
460-177420-F-2-A PDS ^2	2	T	16:36	X																			
460-177420-F-2-C MS ^2	2	T	16:39	X																			
460-177420-F-2-B DU ^2	2	T	16:41	X																			
ZZZZZZ			16:44																				
460-177420-F-2-A SD ^10	10	T	16:47	X																			
ZZZZZZ			16:49																				
ZZZZZZ			16:52																				
ZZZZZZ			16:55																				
CCV 460-597314/30	1		16:57	X	X																		
CCB 460-597314/31	1		17:00	X	X																		
ZZZZZZ			17:03																				
ZZZZZZ			17:05																				
ZZZZZZ			17:08																				
ZZZZZZ			17:11																				
ZZZZZZ			17:13																				
ZZZZZZ			17:16																				
ZZZZZZ			17:19																				
460-177512-1	2	T	17:21	X	X																		
460-177512-2	2	T	17:24	X	X																		

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Edison Job No.: 460-177512-1

SDG No.:

Instrument ID: ICPMS3 Method: 6020B

Start Date: 03/22/2019 15:39 End Date: 03/22/2019 21:46

Lab Sample ID	D / F	Type	Time	Analytes																			
				V	Zn																		
460-177512-3	2	T	17:27	X	X																		
CCV 460-597314/42	1		17:29	X	X																		
CCB 460-597314/43	1		17:32	X	X																		
ZZZZZZ			17:34																				
ZZZZZZ			17:37																				
ZZZZZZ			17:40																				
ZZZZZZ			17:42																				
CCV 460-597314/48			17:45																				
CCB 460-597314/49			17:48																				
ZZZZZZ			17:50																				
ZZZZZZ			17:53																				
ZZZZZZ			17:56																				
ZZZZZZ			17:58																				
ZZZZZZ			18:01																				
ZZZZZZ			18:04																				
ZZZZZZ			18:06																				
ZZZZZZ			18:09																				
ZZZZZZ			18:11																				
ZZZZZZ			18:14																				
CCV 460-597314/60			18:17																				
CCB 460-597314/61			18:19																				
ZZZZZZ			18:22																				
ZZZZZZ			18:25																				
ZZZZZZ			18:27																				
ZZZZZZ			18:30																				
ZZZZZZ			18:33																				
ZZZZZZ			18:35																				
ZZZZZZ			18:38																				
ZZZZZZ			18:41																				
ZZZZZZ			18:43																				
CCV 460-597314/71			18:46																				
CCB 460-597314/72			18:48																				
ZZZZZZ			18:51																				
ZZZZZZ			18:54																				
ZZZZZZ			18:56																				
ZZZZZZ			18:59																				
ZZZZZZ			19:02																				
ZZZZZZ			19:04																				
ZZZZZZ			19:07																				
CCV 460-597314/80			19:10																				
CCB 460-597314/81			19:12																				
ZZZZZZ			19:15																				

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Edison Job No.: 460-177512-1

SDG No.:

Instrument ID: ICPMS3 Method: 6020B

Start Date: 03/22/2019 15:39 End Date: 03/22/2019 21:46

Lab Sample ID	D / F	Type	Time	Analytes																			
				V	Zn																		
ZZZZZZ			19:17																				
ZZZZZZ			19:20																				
ZZZZZZ			19:23																				
ZZZZZZ			19:25																				
ZZZZZZ			19:28																				
ZZZZZZ			19:31																				
ZZZZZZ			19:33																				
ZZZZZZ			19:36																				
ZZZZZZ			19:39																				
CCV 460-597314/92			19:41																				
CCB 460-597314/93			19:44																				
ZZZZZZ			19:47																				
ZZZZZZ			19:49																				
ZZZZZZ			19:52																				
ZZZZZZ			19:54																				
ZZZZZZ			19:57																				
ZZZZZZ			20:00																				
ZZZZZZ			20:02																				
ZZZZZZ			20:05																				
ZZZZZZ			20:08																				
ZZZZZZ			20:10																				
CCV 460-597314/104			20:13																				
CCB 460-597314/105			20:16																				
ZZZZZZ			20:18																				
ZZZZZZ			20:21																				
ZZZZZZ			20:24																				
ZZZZZZ			20:26																				
ZZZZZZ			20:29																				
ZZZZZZ			20:32																				
ZZZZZZ			20:34																				
ZZZZZZ			20:37																				
CCV 460-597314/114			20:40																				
CCB 460-597314/115			20:42																				
ZZZZZZ			20:45																				
ZZZZZZ			20:47																				
ZZZZZZ			20:50																				
ZZZZZZ			20:53																				
ZZZZZZ			20:55																				
ZZZZZZ			20:58																				
ZZZZZZ			21:01																				
ZZZZZZ			21:03																				
ZZZZZZ			21:06																				

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Edison Job No.: 460-177512-1

SDG No.:

Instrument ID: ICPMS3 Method: 6020B

Start Date: 03/22/2019 15:39 End Date: 03/22/2019 21:46

Lab Sample ID	D / F	Type	Time	Analytes																			
				V	Zn																		
ZZZZZZ			21:09																				
CCV 460-597314/126			21:12																				
CCB 460-597314/127			21:14																				
ZZZZZZ			21:17																				
ZZZZZZ			21:19																				
ZZZZZZ			21:22																				
ZZZZZZ			21:25																				
ZZZZZZ			21:28																				
ZZZZZZ			21:30																				
ZZZZZZ			21:33																				
ZZZZZZ			21:36																				
ZZZZZZ			21:38																				
ZZZZZZ			21:41																				
CCV 460-597314/138			21:43																				
CCB 460-597314/139			21:46																				

Prep Types

E = SPLP East

T = Total/NA

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Edison Job No.: 460-177512-1

SDG No.:

Instrument ID: LEEMAN6 Method: 7470A

Start Date: 03/21/2019 13:19 End Date: 03/21/2019 16:24

Lab Sample ID	D/F	Type	Time	Analytes																			
				Hg																			
ZZZZZZ			13:19																				
ZZZZZZ			13:21																				
ZZZZZZ			13:23																				
ICIS 460-596981/4			13:24	X																			
IC 460-596935/26-A			13:26	X																			
IC 460-596935/27-A			13:28	X																			
IC 460-596935/28-A			13:30	X																			
IC 460-596935/29-A			13:31	X																			
IC 460-596935/30-A			13:33	X																			
ICV 460-596935/31-A	1		13:35	X																			
ICB 460-596981/11	1		13:37	X																			
CRI 460-596981/12	1		13:38	X																			
ZZZZZZ			13:40																				
ZZZZZZ			13:42																				
CCV 460-596935/33-A			13:44																				
CCB 460-596981/16			13:45																				
ZZZZZZ			13:47																				
ZZZZZZ			13:49																				
ZZZZZZ			13:51																				
ZZZZZZ			13:52																				
ZZZZZZ			13:54																				
ZZZZZZ			13:56																				
ZZZZZZ			13:57																				
ZZZZZZ			13:59																				
ZZZZZZ			14:01																				
ZZZZZZ			14:03																				
CCV 460-596935/33-A			14:04																				
CCB 460-596981/28			14:06																				
ZZZZZZ			14:08																				
ZZZZZZ			14:09																				
ZZZZZZ			14:11																				
ZZZZZZ			14:13																				
ZZZZZZ			14:15																				
ZZZZZZ			14:16																				
ZZZZZZ			14:18																				
ZZZZZZ			14:20																				
ZZZZZZ			14:21																				
ZZZZZZ			14:23																				
CCV 460-596935/33-A	1		14:25	X																			
CCB 460-596981/40	1		14:27	X																			
ZZZZZZ			14:28																				
ZZZZZZ			14:30																				

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Edison Job No.: 460-177512-1

SDG No.:

Instrument ID: LEEMAN6 Method: 7470A

Start Date: 03/21/2019 13:19 End Date: 03/21/2019 16:24

Lab Sample ID	D/F	Type	Time	Analytes																			
				Hg																			
ZZZZZZ			14:32																				
ZZZZZZ			14:33																				
ZZZZZZ			14:35																				
MB 460-596940/1-A	1	T	14:37	X																			
LCS 460-596940/2-A	1	T	14:39	X																			
460-177512-3	1	T	14:40	X																			
460-177512-3 DU	1	T	14:42	X																			
460-177512-3 MS	1	T	14:44	X																			
CCV 460-596935/33-A	1		14:45	X																			
CCB 460-596981/52	1		14:47	X																			
460-177512-3 SD	5	T	14:49	X																			
ZZZZZZ			14:51																				
ZZZZZZ			14:52																				
ZZZZZZ			14:54																				
ZZZZZZ			14:56																				
ZZZZZZ			14:57																				
ZZZZZZ			14:59																				
ZZZZZZ			15:01																				
ZZZZZZ			15:03																				
ZZZZZZ			15:04																				
CCV 460-596935/33-A	1		15:06	X																			
CCB 460-596981/64	1		15:08	X																			
ZZZZZZ			15:10																				
ZZZZZZ			15:11																				
ZZZZZZ			15:13																				
ZZZZZZ			15:15																				
ZZZZZZ			15:16																				
ZZZZZZ			15:18																				
ZZZZZZ			15:20																				
ZZZZZZ			15:22																				
460-177512-1	1	T	15:23	X																			
460-177512-2	1	T	15:25	X																			
CCV 460-596935/33-A	1		15:27	X																			
CCB 460-596981/76	1		15:28	X																			
ZZZZZZ			15:30																				
ZZZZZZ			15:32																				
ZZZZZZ			15:34																				
ZZZZZZ			15:35																				
ZZZZZZ			15:37																				
ZZZZZZ			15:39																				
ZZZZZZ			15:40																				
ZZZZZZ			15:42																				

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Edison Job No.: 460-177512-1

SDG No.:

Instrument ID: LEEMAN6 Method: 7470A

Start Date: 03/21/2019 13:19 End Date: 03/21/2019 16:24

Lab Sample ID	D / F	Type	Time	Analytes																			
				Hg																			
ZZZZZZ			15:44																				
ZZZZZZ			15:46																				
CCV 460-596935/33-A			15:47																				
CCB 460-596981/88			15:49																				
ZZZZZZ			15:51																				
ZZZZZZ			15:53																				
ZZZZZZ			15:54																				
ZZZZZZ			15:56																				
ZZZZZZ			15:58																				
ZZZZZZ			15:59																				
ZZZZZZ			16:01																				
ZZZZZZ			16:03																				
ZZZZZZ			16:05																				
ZZZZZZ			16:06																				
CCV 460-596935/33-A			16:08																				
CCB 460-596981/100			16:10																				
ZZZZZZ			16:12																				
ZZZZZZ			16:13																				
ZZZZZZ			16:15																				
ZZZZZZ			16:17																				
ZZZZZZ			16:18																				
ZZZZZZ			16:20																				
CCV 460-596935/33-A			16:22																				
CCB 460-596981/108			16:24																				

Prep Types

T = Total/NA

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: TestAmerica Edison Job No.: 460-177512-1

SDG No.:

ICP-MS Instrument ID: ICPMS3 Start Date: 03/22/2019 End Date: 03/22/2019

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Li-6	Q	Element Sc/2	Q	Element Sc/3	Q	Element Ge/2	Q	Element Ge/3	Q
IC 460-597314/1	15:39	100		100		100		100		100	
IC 460-597314/2	15:42	98		96		97		98		99	
IC 460-597314/3	15:45	100		97		99		98		97	
IC 460-597314/4	15:47	96		98		99		102		103	
IC 460-597314/5	15:50	101		103		103		110		108	
IC 460-597314/6	15:53	100		102		103		111		109	
ICV 460-597314/7	15:56	100		100		101		108		107	
ICB 460-597314/8	15:59	97		97		99		96		97	
CRI 460-597314/9	16:01	100		97		98		98		98	
ICSA 460-597314/10	16:04	100		108		113		111		115	
ICSAB 460-597314/11	16:07	102		114		120		116		120	
LRC 460-597314/12	16:09	105		115		113		128		121	
LRC 460-597314/13	16:12	105		113		136		112		130	
LRC 460-597314/14	16:15	110		132		134		131		132	
CCV 460-597314/18	16:25	102		113		115		118		120	
CCB 460-597314/19	16:28	99		103		108		101		106	
MB 460-596854/1-A ^2	16:31	96		102		105		98		104	
LCS 460-596854/2-A ^2	16:33	94		99		103		105		111	
460-177420-F-2-A PDS ^2	16:36	95		103		103		117		124	
460-177420-F-2-C MS ^2	16:39	96		105		107		121		127	
460-177420-F-2-B DU ^2	16:41	97		105		108		120		129	
460-177420-F-2-A SD ^10	16:47	102		115		117		122		126	
CCV 460-597314/30	16:57	111		124		125		129		129	
CCB 460-597314/31	17:00	105		111		113		108		110	
460-177512-1	17:21	103		105		108		119		130	
460-177512-2	17:24	106		109		108		123		129	
460-177512-3	17:27	102		107		107		121		125	
CCV 460-597314/42	17:29	113		118		116		123		124	
CCB 460-597314/43	17:32	106		107		108		103		107	

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: TestAmerica Edison Job No.: 460-177512-1

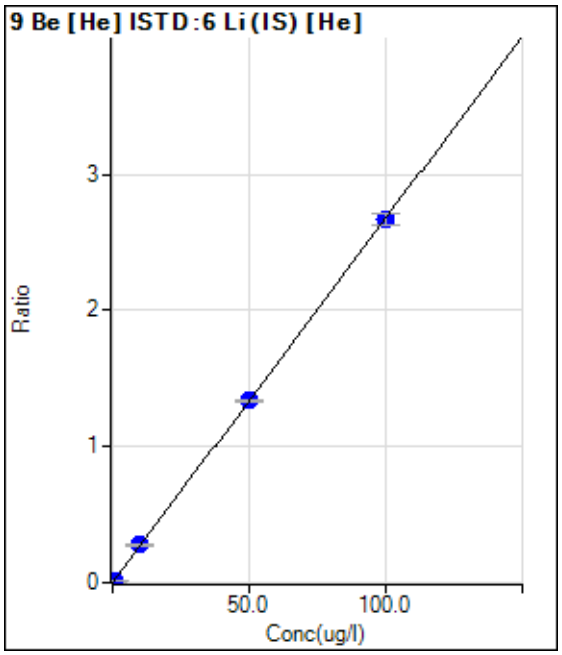
SDG No.:

ICP-MS Instrument ID: ICPMS3 Start Date: 03/22/2019 End Date: 03/22/2019

Lab Sample ID	Time	Internal Standards %RI For:									
		Element In	Q	Element Tb	Q	Element Bi	Q	Element	Q	Element	Q
IC 460-597314/1	15:39	100		100		100					
IC 460-597314/2	15:42	98		98		98					
IC 460-597314/3	15:45	98		98		98					
IC 460-597314/4	15:47	98		98		97					
IC 460-597314/5	15:50	101		102		100					
IC 460-597314/6	15:53	101		103		100					
ICV 460-597314/7	15:56	100		100		98					
ICB 460-597314/8	15:59	99		99		98					
CRI 460-597314/9	16:01	98		99		98					
ICSA 460-597314/10	16:04	103		102		93					
ICSAB 460-597314/11	16:07	102		99		89					
LRC 460-597314/12	16:09	107		103		101					
LRC 460-597314/13	16:12	109		103		90					
LRC 460-597314/14	16:15	117		106		104					
CCV 460-597314/18	16:25	106		103		100					
CCB 460-597314/19	16:28	100		97		96					
MB 460-596854/1-A ^2	16:31	95		91		90					
LCS 460-596854/2-A ^2	16:33	94		91		89					
460-177420-F-2-A PDS ^2	16:36	92		91		86					
460-177420-F-2-C MS ^2	16:39	95		93		87					
460-177420-F-2-B DU ^2	16:41	96		93		87					
460-177420-F-2-A SD ^10	16:47	106		102		99					
CCV 460-597314/30	16:57	114		110		106					
CCB 460-597314/31	17:00	106		102		101					
460-177512-1	17:21	97		96		91					
460-177512-2	17:24	99		97		93					
460-177512-3	17:27	97		96		93					
CCV 460-597314/42	17:29	109		108		106					
CCB 460-597314/43	17:32	103		102		102					

Batch Folder: D:\Agilent\ICPMH\1\DATA\BM032219_#5.b\
Analysis File: BM032219_#5.batch.bin
DA Date-Time: 2019-03-22 15:55:19
Calibration Title:
Calibration Method: External Calibration
VIS Interpolation Fit:

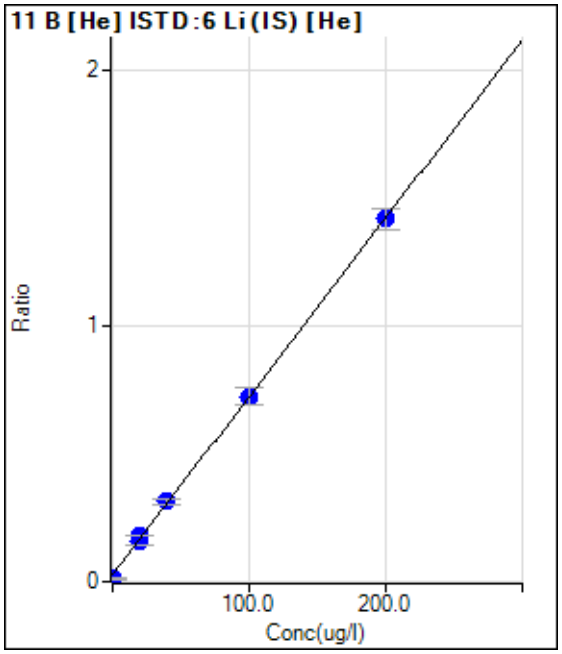
Level	Standard Data File	Sample Name	Acq. Date-Time
1	004CALB.d	IC CAL BLK	2019-03-22 15:39:33
2	005CALS.d	IC Cal-1 6782575	2019-03-22 15:42:12
3	006CALS.d	IC Cal-2 6782580	2019-03-22 15:45:05
4	007CALS.d	IC Cal-3 6782582	2019-03-22 15:47:59
5	008CALS.d	IC Cal-4 6782584	2019-03-22 15:50:51
6	009CALS.d	IC Cal-5 6782586	2019-03-22 15:53:41



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.001	0.17	0.0002	P	173.
2	☐	0.200	0.204	6.17	0.0056	P	16.6
3	☐	0.400	0.458	13.67	0.0124	P	39.1
4	☐	10.000	10.378	297.82	0.2776	P	3.7
5	☐	50.000	49.941	1502.01	1.3353	P	1.4
6	☐	100.000	99.643	2960.15	2.6640	P	3.3

y = 0.026734 * x + 1.793789E-004
R = 1.0000
DL = 0.02969
BEC = 0.00671

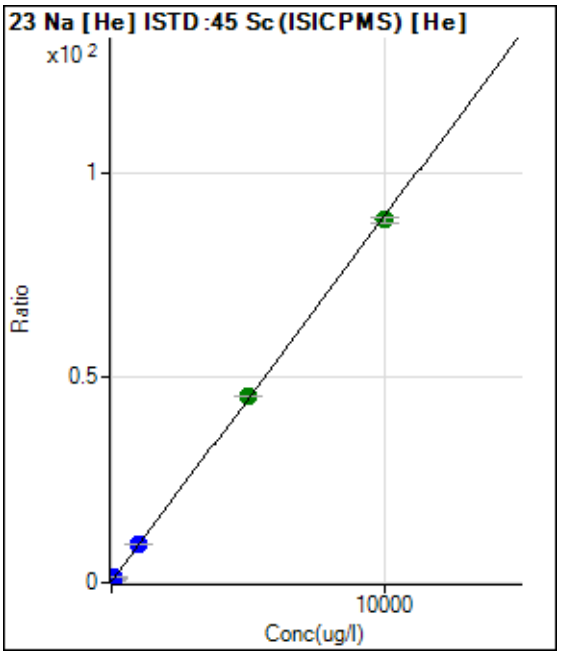
Weight: 1/y
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-2.137	13.33	0.0120	P	48.7
2	☐	20.000	19.269	176.58	0.1612	P	20.9
3	☐	40.000	40.980	346.51	0.3125	P	9.0
4	☐	20.000	22.195	194.91	0.1816	P	2.7
5	☐	100.000	100.068	814.65	0.7244	P	9.2
6	☐	200.000	199.623	1575.16	1.4183	P	5.7

y = 0.006970 * x + 0.026876
R = 0.9998
DL = 2.51
BEC = 3.856

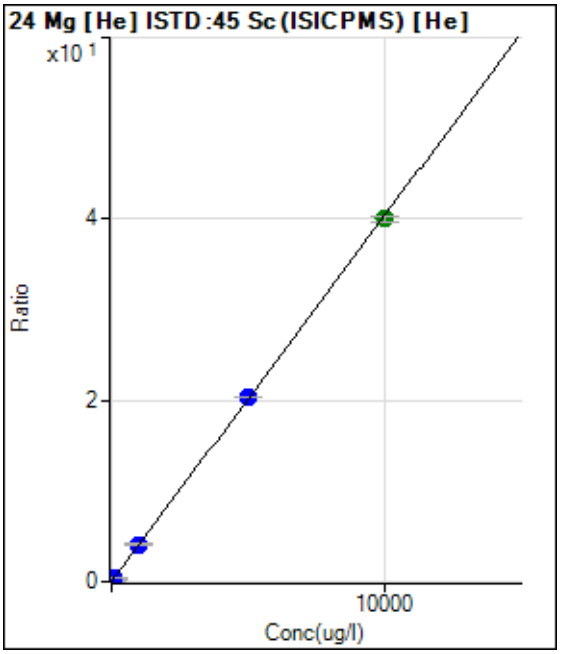
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-2.131	9929.13	0.2657	P	2.2
2	☐	50.000	53.570	27681.29	0.7623	P	0.6
3	☐	100.000	100.489	43571.86	1.1805	P	1.2
4	☐	1000.000	1021.213	345993.22	9.3885	P	1.7
5	☐	5000.000	5083.454	1753983.43	45.6019	A	0.6
6	☐	10000.00	9896.574	3403687.41	88.5092	A	1.3

y = 0.008915 * x + 0.284716
R = 0.9999
DL = 1.976
BEC = 31.94

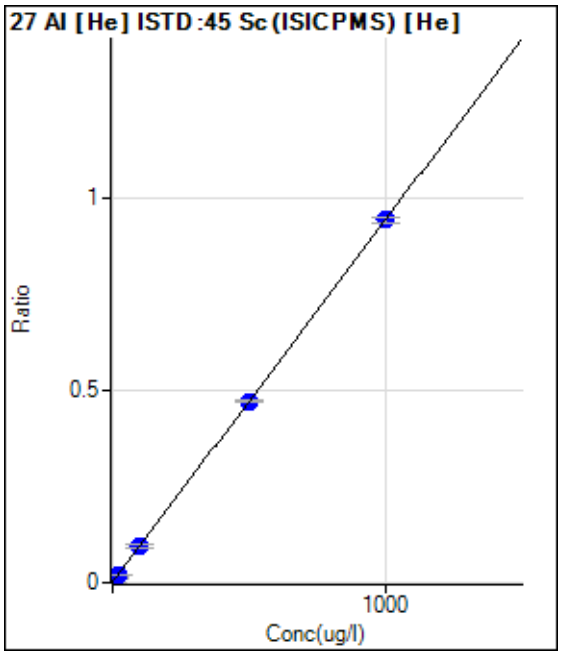
Weight: 1/y
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.041	60.00	0.0016	P	33.0
2	☐	50.000	52.256	7722.19	0.2127	P	3.2
3	☐	100.000	103.847	15535.05	0.4209	P	2.2
4	☐	1000.000	1020.783	151915.49	4.1220	P	1.0
5	☐	5000.000	5058.883	785430.49	20.4211	P	0.4
6	☐	10000.00	9916.330	1539206.56	40.0274	A	1.9

y = 0.004036 * x + 0.001767
R = 1.0000
DL = 0.3925
BEC = 0.4377

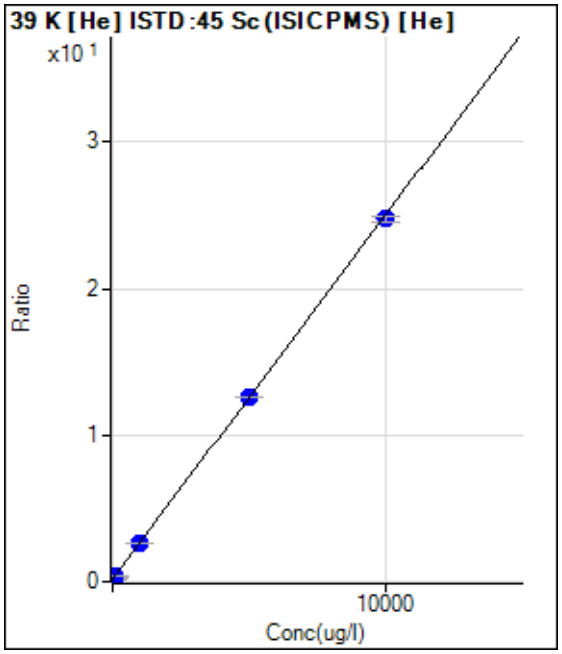
Weight: 1/y
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.080	33.33	0.0009	P	10.9
2	☐	10.000	12.061	447.80	0.0123	P	5.7
3	☐	20.000	18.555	681.15	0.0185	P	3.6
4	☐	100.000	100.148	3512.75	0.0954	P	7.2
5	☐	500.000	499.771	18154.66	0.4720	P	1.2
6	☐	1000.000	999.984	36282.95	0.9435	P	1.2

y = 9.425360E-004 * x + 9.679944E-004
R = 1.0000
DL = 0.3084
BEC = 1.027

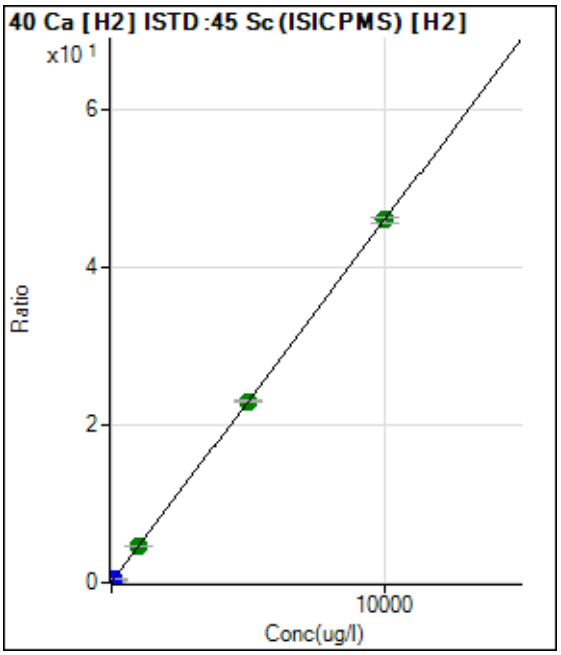
Weight: 1/y
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	1.351	6100.32	0.1633	P	5.7
2	☐	50.000	49.999	10316.08	0.2841	P	3.6
3	☐	100.000	97.924	14881.10	0.4032	P	2.7
4	☐	1000.000	1002.367	97668.89	2.6504	P	2.3
5	☐	5000.000	5004.640	484398.28	12.5943	P	0.4
6	☐	10000.00	9898.386	951898.74	24.7532	P	1.4

y = 0.0025 * x + 0.1599
R = 1.0000
DL = 11.18
BEC = 64.36

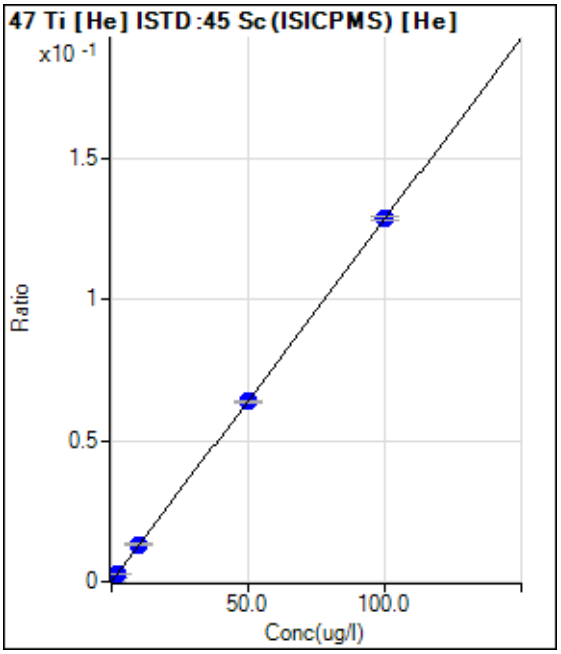
Weight: 1/SD^2
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-6.878	11433.72	0.0220	P	3.2
2	☐	50.000	51.587	145252.24	0.2903	P	0.9
3	☐	100.000	106.238	272588.93	0.5410	P	1.4
4	☐	1000.000	1008.467	2369593.00	4.6805	A	0.2
5	☐	5000.000	4983.005	12199402.7	22.9160	A	1.2
6	☐	10000.00	10007.58	24368966.6	45.9692	A	1.3

y = 0.004588 * x + 0.053588
R = 1.0000
DL = 0.4551
BEC = 11.68

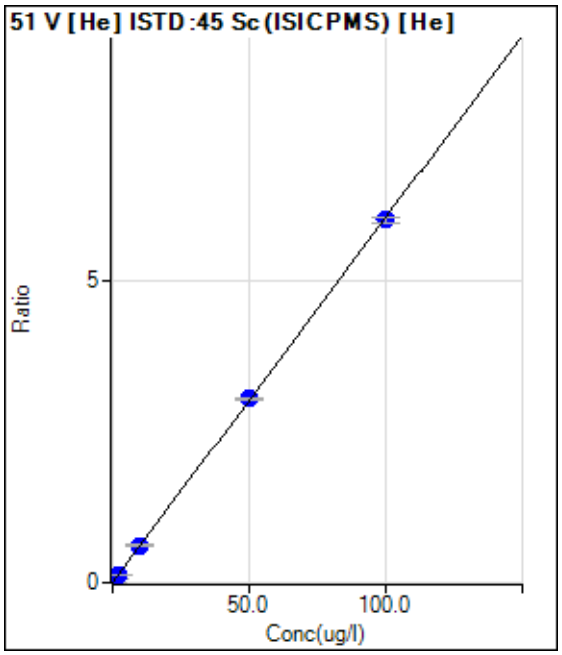
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.035	1.00	0.0000	P	49.0
2	☐	1.000	0.985	45.17	0.0012	P	15.7
3	☐	2.000	1.977	93.00	0.0025	P	4.6
4	☐	10.000	10.196	481.66	0.0131	P	5.5
5	☐	50.000	49.651	2451.09	0.0637	P	1.7
6	☐	100.000	100.155	4944.75	0.1286	P	1.1

y = 0.001284 * x - 1.878584E-005
R = 1.0000
DL = 0.03057
BEC = -0.01463

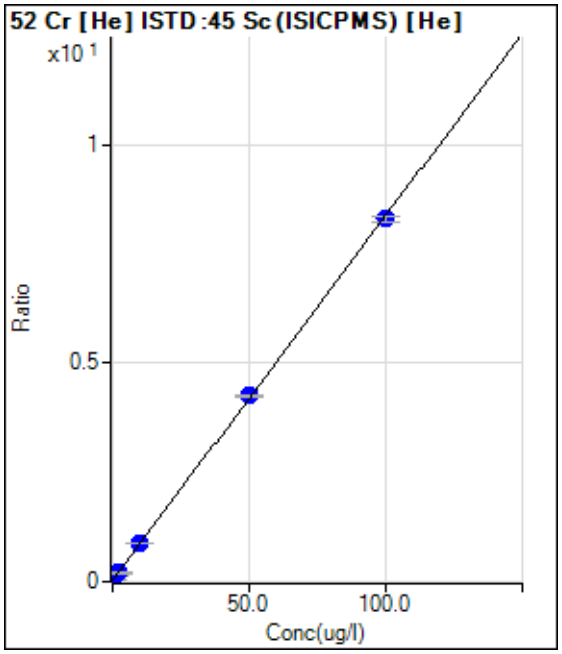
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.001	73.34	0.0020	P	8.6
2	☐	1.000	1.018	2306.93	0.0635	P	5.2
3	☐	2.000	2.006	4550.85	0.1233	P	5.7
4	☐	10.000	10.114	22606.59	0.6135	P	2.8
5	☐	50.000	50.401	117270.79	3.0490	P	0.5
6	☐	100.000	99.470	231331.21	6.0155	P	1.4

y = 0.060455 * x + 0.002028
R = 1.0000
DL = 0.008326
BEC = 0.03354

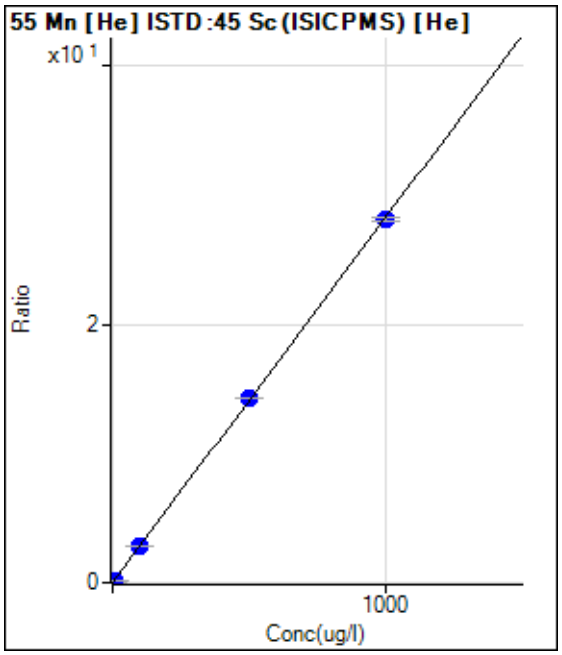
Weight: 1/y
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.029	955.62	0.0256	P	4.4
2	☐	1.000	1.078	4285.20	0.1180	P	2.6
3	☐	2.000	2.055	7364.30	0.1995	P	3.0
4	☐	10.000	10.138	32216.60	0.8742	P	1.7
5	☐	50.000	50.579	163452.30	4.2498	P	0.7
6	☐	100.000	99.202	319497.41	8.3084	P	1.6

y = 0.083470 * x + 0.027994
R = 1.0000
DL = 0.04058
BEC = 0.3354

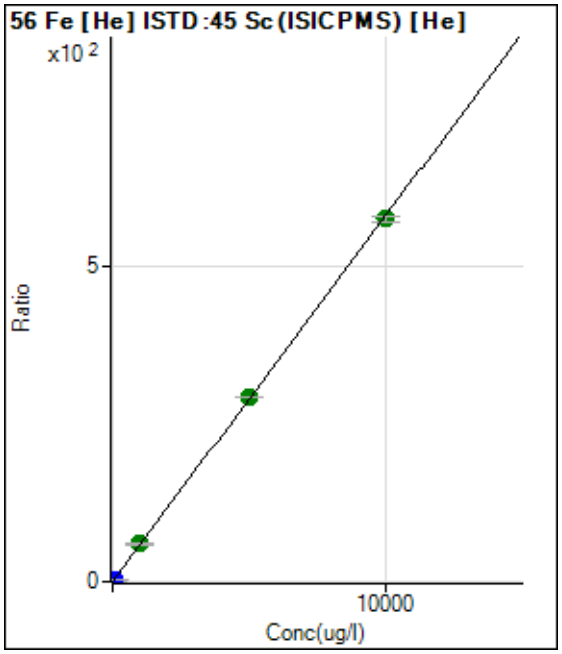
Weight: 1/y
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.004	48.89	0.0013	P	15.6
2	☐	2.000	2.157	2264.69	0.0624	P	7.3
3	☐	4.000	4.009	4231.85	0.1147	P	3.0
4	☐	100.000	101.211	105417.80	2.8602	P	0.3
5	☐	500.000	504.633	548268.18	14.2550	P	0.5
6	☐	1000.000	994.097	1079861.56	28.0800	P	1.1

y = 0.028245 * x + 0.001426
R = 1.0000
DL = 0.02175
BEC = 0.0505

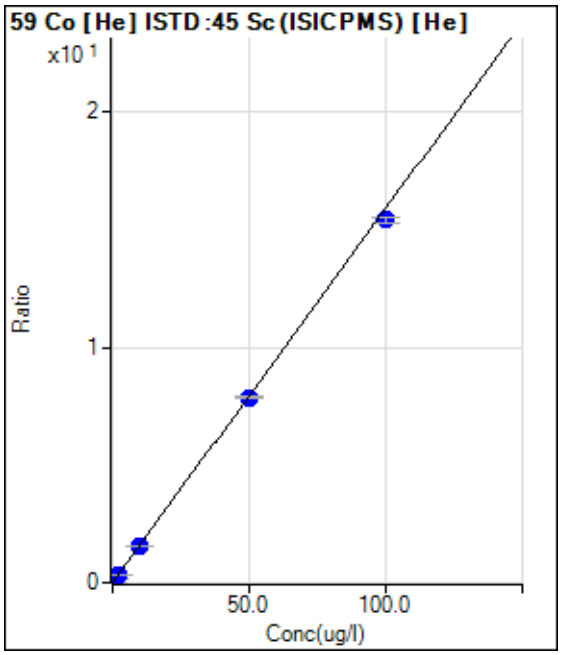
Weight: 1/y
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.132	2131.34	0.0570	P	3.6
2	☐	30.000	32.162	69861.64	1.9240	P	0.7
3	☐	60.000	62.406	135541.76	3.6725	P	0.8
4	☐	1000.000	1030.071	2197015.07	59.6150	A	1.4
5	☐	5000.000	5047.329	11225354.1	291.860	A	0.6
6	☐	10000.00	9920.372	22057220.7	573.579	A	1.4

y = 0.057812 * x + 0.064656
R = 1.0000
DL = 0.1069
BEC = 1.118

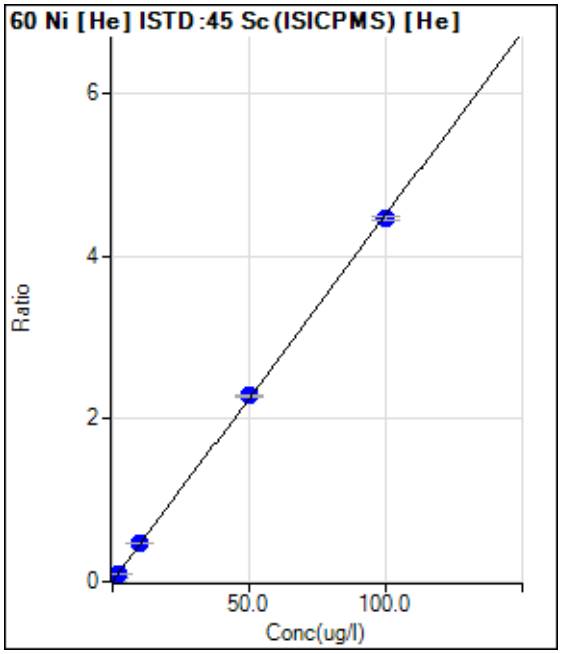
Weight: 1/y
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	12.22	0.0003	P	30.1
2	☐	1.000	1.054	6092.55	0.1678	P	1.3
3	☐	2.000	2.046	12006.35	0.3253	P	3.5
4	☐	10.000	9.938	58183.03	1.5787	P	1.1
5	☐	50.000	49.579	302849.11	7.8743	P	1.1
6	☐	100.000	97.047	592722.55	15.4130	P	1.3

y = 0.1588 * x + 3.4447E-004
R = 0.9999
DL = 0.001853
BEC = 0.002169

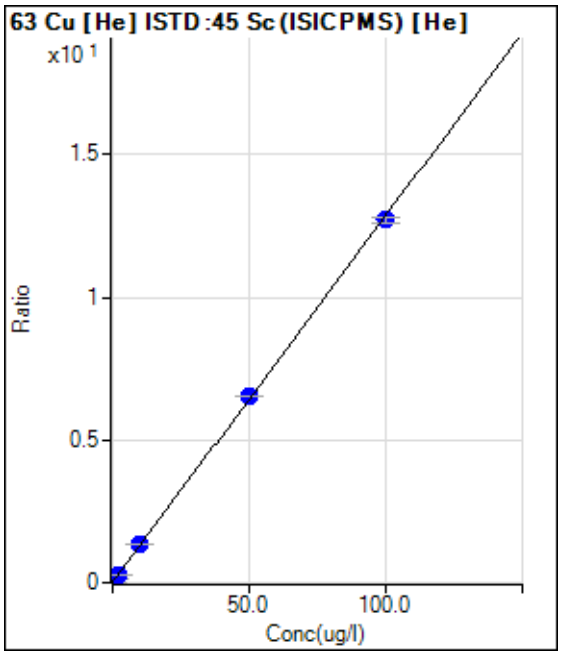
Weight: 1/SD^2
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.004	122.23	0.0033	P	23.5
2	☐	1.000	1.032	1810.17	0.0499	P	2.0
3	☐	2.000	1.962	3382.73	0.0917	P	2.6
4	☐	10.000	10.364	17301.68	0.4694	P	1.2
5	☐	50.000	50.706	87816.39	2.2832	P	0.8
6	☐	100.000	98.973	171258.89	4.4534	P	1.2

y = 0.044961 * x + 0.003438
R = 0.9999
DL = 0.05141
BEC = 0.07646

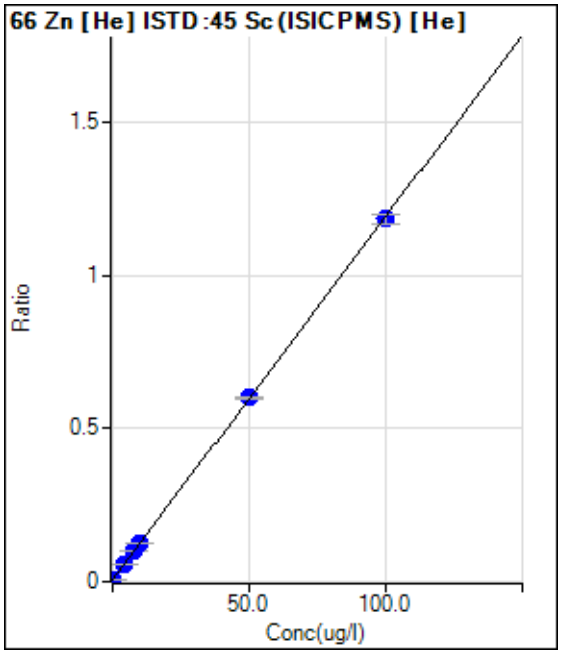
Weight: 1/y
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.008	383.35	0.0103	P	5.7
2	☐	1.000	1.057	5340.05	0.1471	P	0.7
3	☐	2.000	2.058	10176.05	0.2757	P	1.5
4	☐	10.000	10.242	48900.06	1.3268	P	0.6
5	☐	50.000	50.753	251154.97	6.5300	P	0.4
6	☐	100.000	98.932	489084.85	12.7181	P	1.4

y = 0.128439 * x + 0.011322
R = 0.9999
DL = 0.01374
BEC = 0.08815

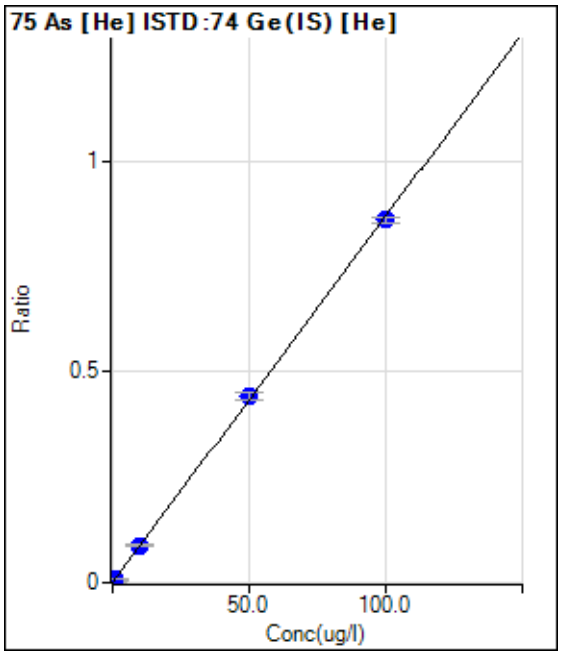
Weight: 1/y
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.034	203.34	0.0054	P	10.1
2	☐	4.000	4.275	2053.55	0.0566	P	1.6
3	☐	8.000	8.061	3745.06	0.1015	P	2.9
4	☐	10.000	10.133	4645.32	0.1260	P	0.8
5	☐	50.000	50.140	23101.91	0.6006	P	0.8
6	☐	100.000	99.449	45587.60	1.1855	P	2.3

y = 0.011862 * x + 0.005842
R = 1.0000
DL = 0.1382
BEC = 0.4924

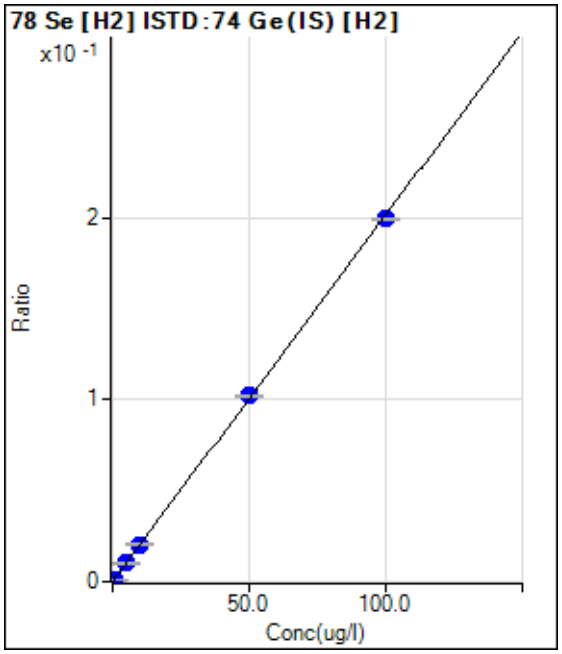
Weight: 1/y
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.002	4.45	0.0002	P	86.6
2	☐	0.500	0.513	130.01	0.0046	P	3.1
3	☐	1.000	1.076	261.12	0.0095	P	10.5
4	☐	10.000	10.058	2558.10	0.0875	P	4.3
5	☐	50.000	50.802	13523.32	0.4415	P	4.2
6	☐	100.000	99.080	26507.90	0.8608	P	1.2

y = 0.008687 * x + 1.747209E-004
R = 0.9999
DL = 0.04725
BEC = 0.02011

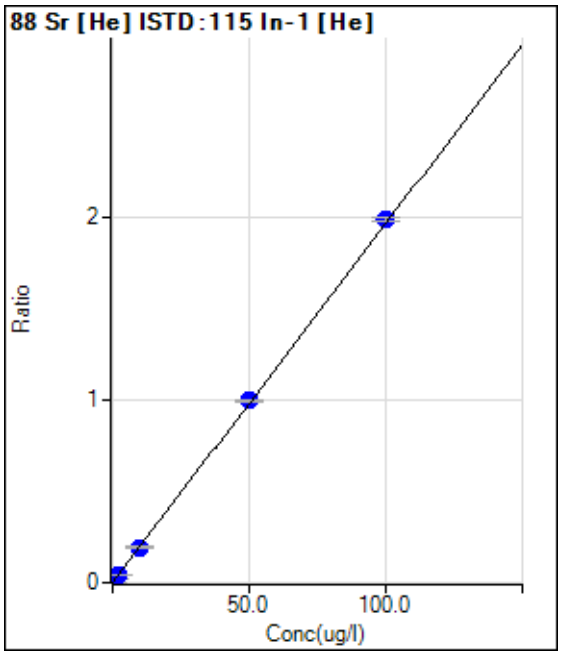
Weight: 1/y
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3.33	0.0000	P	98.9
2	☐	0.500	0.504	148.89	0.0010	P	20.7
3	☐	5.000	5.037	1461.23	0.0102	P	6.5
4	☐	10.000	10.166	3080.43	0.0205	P	2.8
5	☐	50.000	50.769	16530.89	0.1023	P	1.5
6	☐	100.000	99.048	32583.48	0.1995	P	0.4

y = 0.002014 * x + 2.320057E-005
R = 0.9999
DL = 0.03296
BEC = 0.01152

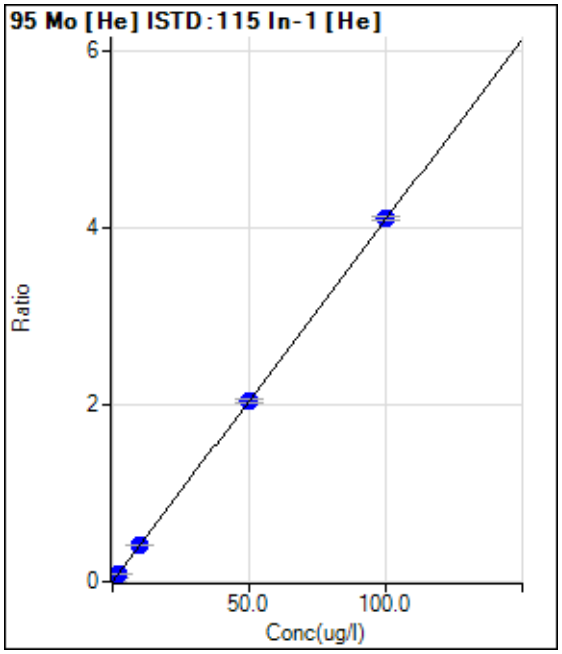
Weight: 1/y
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	4.44	0.0001	P	115.
2	☐	1.000	1.027	1073.41	0.0202	P	5.6
3	☐	2.000	2.004	2078.00	0.0394	P	4.1
4	☐	10.000	9.907	10243.90	0.1947	P	0.6
5	☐	50.000	50.761	54444.48	0.9971	P	1.2
6	☐	100.000	101.153	108341.02	1.9868	P	1.0

y = 0.0196 * x + 7.7160E-005
R = 1.0000
DL = 0.01459
BEC = 0.003929

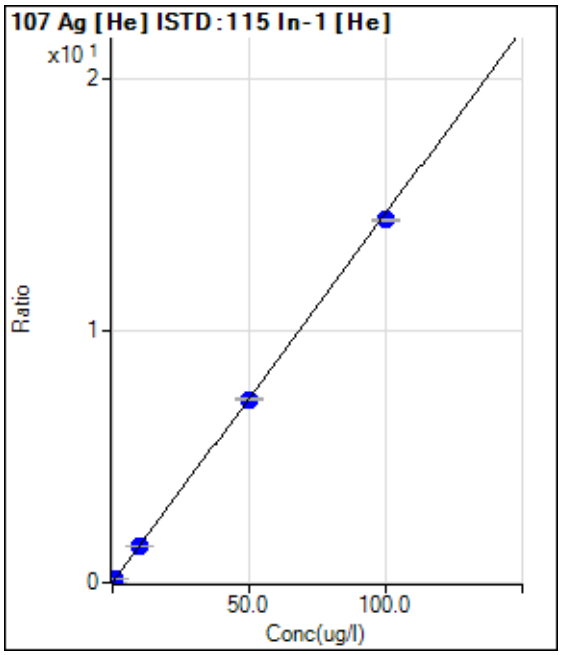
Weight: 1/SD^2
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	30.00	0.0006	P	22.7
2	☐	1.000	0.979	2151.35	0.0406	P	2.9
3	☐	2.000	1.932	4195.20	0.0796	P	3.0
4	☐	10.000	10.107	21793.56	0.4142	P	1.7
5	☐	50.000	49.986	111717.41	2.0462	P	2.2
6	☐	100.000	100.325	223913.87	4.1063	P	1.0

y = 0.0409 * x + 5.3956E-004
R = 1.0000
DL = 0.009241
BEC = 0.01318

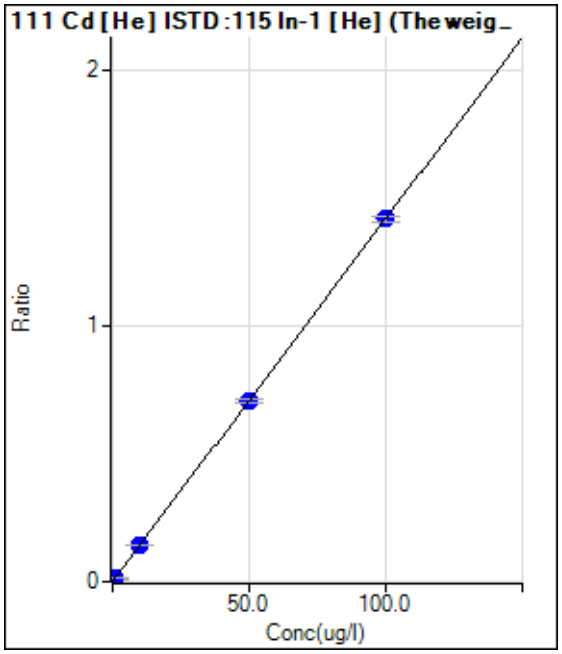
Weight: 1/SD^2
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	45.56	0.0008	P	44.8
2	☐	1.000	0.992	7740.10	0.1460	P	1.1
3	☐	1.000	1.013	7854.65	0.1490	P	1.1
4	☐	10.000	10.019	77162.27	1.4663	P	0.3
5	☐	50.000	49.690	396894.22	7.2687	P	1.4
6	☐	100.000	98.304	784101.25	14.3791	P	0.8

y = 0.1463 * x + 9.0172E-004
R = 1.0000
DL = 0.007781
BEC = 0.006165

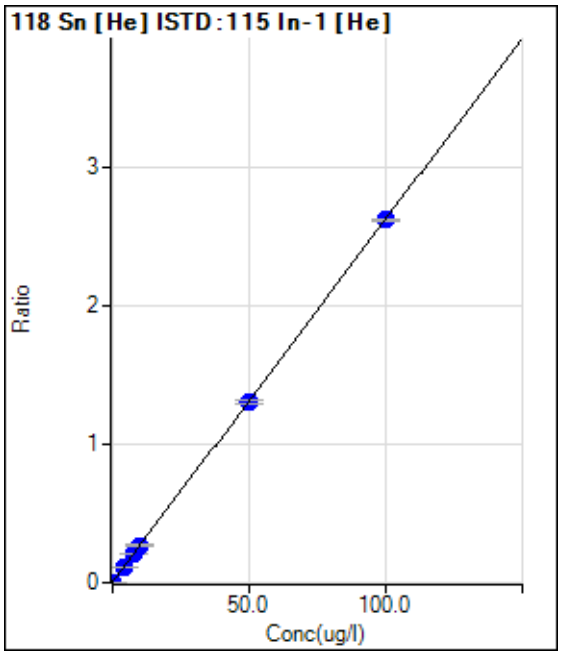
Weight: 1/SD^2
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.028	0.00	0.0000	P	
2	☐	0.500	0.473	376.69	0.0071	P	9.9
3	☐	1.000	1.057	811.16	0.0154	P	2.8
4	☐	10.000	10.040	7513.31	0.1428	P	0.9
5	☐	50.000	49.925	38674.07	0.7083	P	2.0
6	☐	100.000	100.033	77362.82	1.4188	P	1.6

y = 0.014179 * x + 4.014558E-004
R = 1.0000
DL = 0
BEC = 0.02831

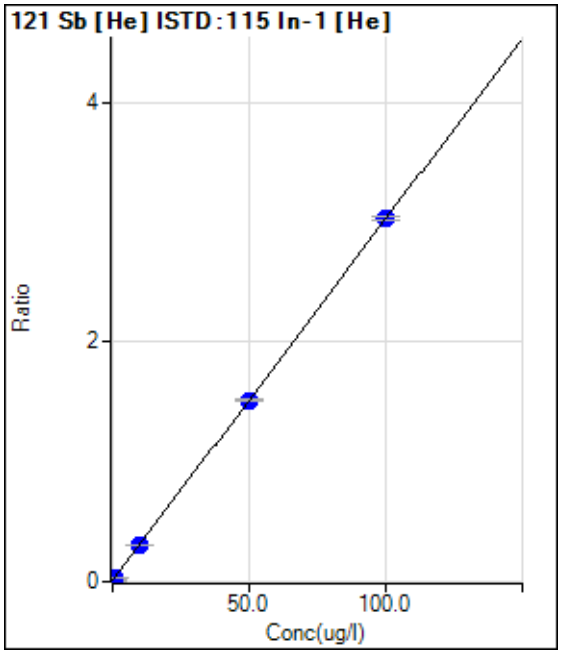
Weight: 1/y
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.004	306.68	0.0057	P	6.2
2	☐	4.000	4.031	5898.11	0.1113	P	0.8
3	☐	8.000	7.840	11118.01	0.2109	P	2.3
4	☐	10.000	10.005	14079.58	0.2676	P	3.1
5	☐	50.000	49.457	70977.63	1.2999	P	1.8
6	☐	100.000	99.869	142820.68	2.6191	P	0.7

y = 0.0262 * x + 0.0058
R = 1.0000
DL = 0.04068
BEC = 0.2206

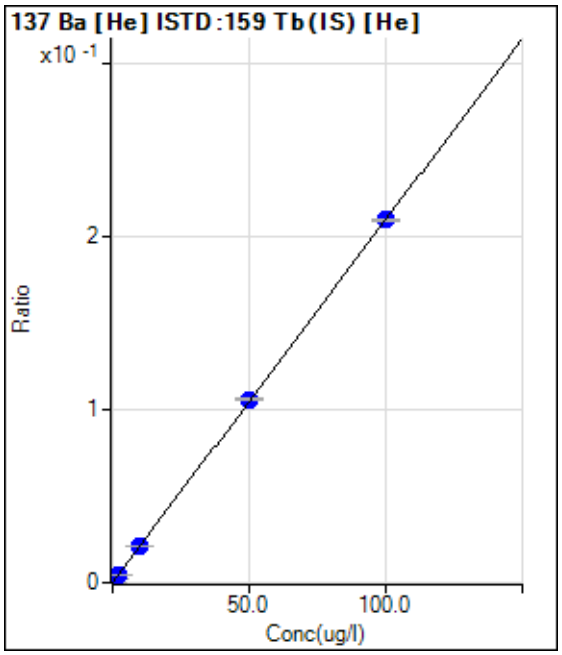
Weight: 1/SD^2
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.021	421.13	0.0078	P	12.2
2	☐	0.500	0.573	1363.45	0.0257	P	2.8
3	☐	1.000	0.996	2026.88	0.0385	P	3.9
4	☐	10.000	9.996	16300.94	0.3097	P	1.5
5	☐	50.000	49.845	82500.57	1.5109	P	1.4
6	☐	100.000	100.119	165028.79	3.0263	P	0.9

y = 0.030143 * x + 0.008431
R = 1.0000
DL = 0.09458
BEC = 0.2797

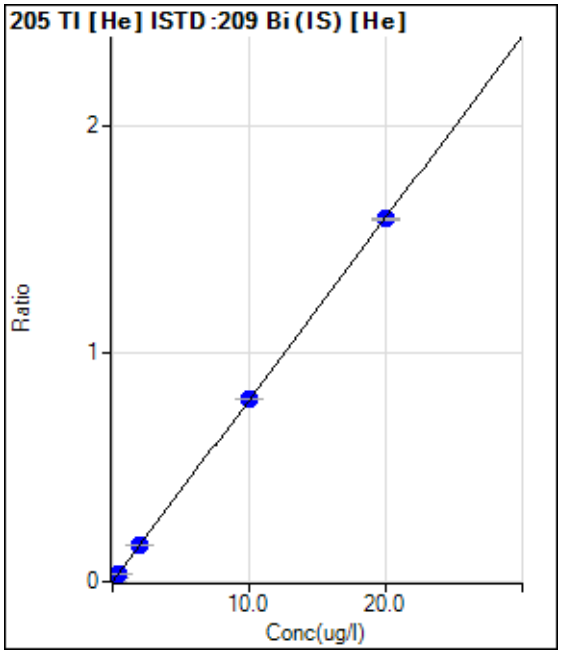
Weight: 1/y
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.005	6.66	0.0000	P	86.3
2	☐	1.000	1.001	581.15	0.0021	P	9.2
3	☐	2.000	1.936	1125.64	0.0041	P	1.7
4	☐	10.000	10.081	5846.96	0.0211	P	3.2
5	☐	50.000	50.505	30432.43	0.1059	P	1.0
6	☐	100.000	100.045	60793.63	0.2098	P	0.8

y = 0.0021 * x + 1.3201E-005
R = 1.0000
DL = 0.02914
BEC = 0.006296

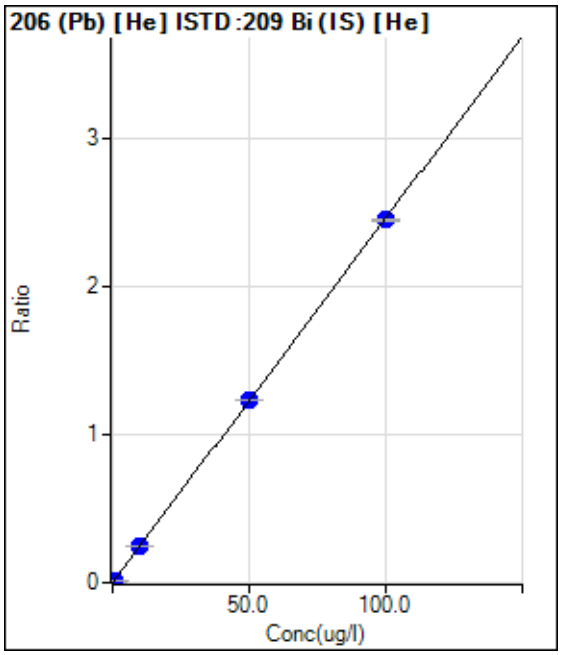
Weight: 1/SD^2
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	28.89	0.0001	P	14.3
2	☐	0.200	0.199	3459.47	0.0160	P	2.1
3	☐	0.400	0.398	6916.45	0.0319	P	2.4
4	☐	2.000	2.034	34760.00	0.1623	P	1.4
5	☐	10.000	10.036	177206.44	0.8004	P	0.6
6	☐	20.000	19.949	351824.51	1.5910	P	0.4

y = 0.0797 * x + 1.3044E-004
R = 1.0000
DL = 0.0007052
BEC = 0.001636

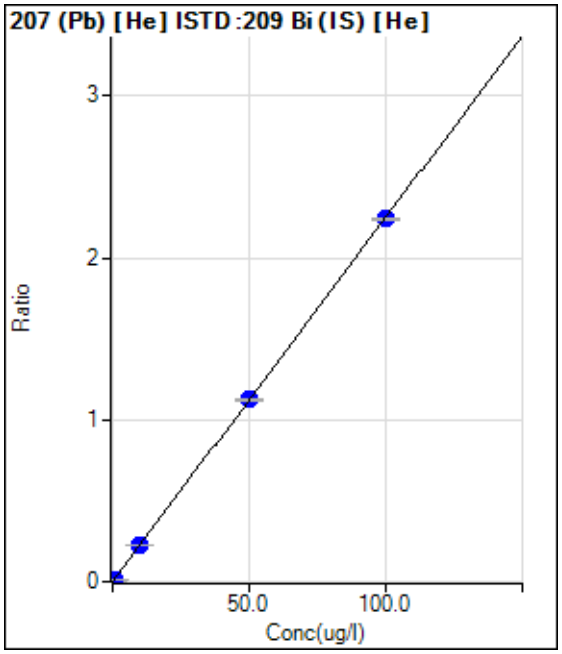
Weight: 1/SD^2
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	58.89	0.0003	P	15.5
2	☐	0.300	0.302	1671.28	0.0077	P	6.4
3	☐	0.600	0.606	3294.96	0.0152	P	0.6
4	☐	10.000	10.118	53398.59	0.2494	P	0.5
5	☐	50.000	50.213	273734.73	1.2365	P	0.3
6	☐	100.000	99.664	542635.25	2.4539	P	0.4

y = 0.024619 * x + 2.743086E-004
R = 1.0000
DL = 0.005021
BEC = 0.01114

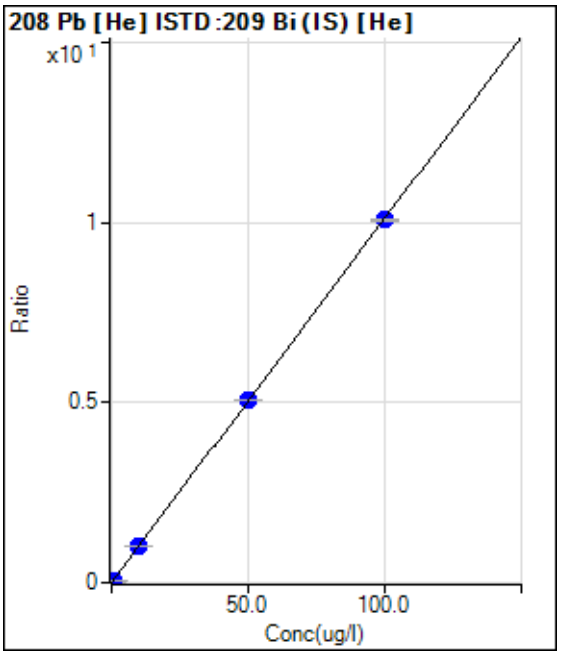
Weight: 1/y
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	46.67	0.0002	P	39.6
2	☐	0.300	0.296	1485.69	0.0069	P	1.7
3	☐	0.600	0.614	3039.33	0.0140	P	3.6
4	☐	10.000	10.189	49048.85	0.2291	P	1.6
5	☐	50.000	50.103	249175.98	1.1256	P	1.0
6	☐	100.000	99.704	495250.51	2.2396	P	0.7

y = 0.022461 * x + 2.161577E-004
R = 1.0000
DL = 0.01113
BEC = 0.009624

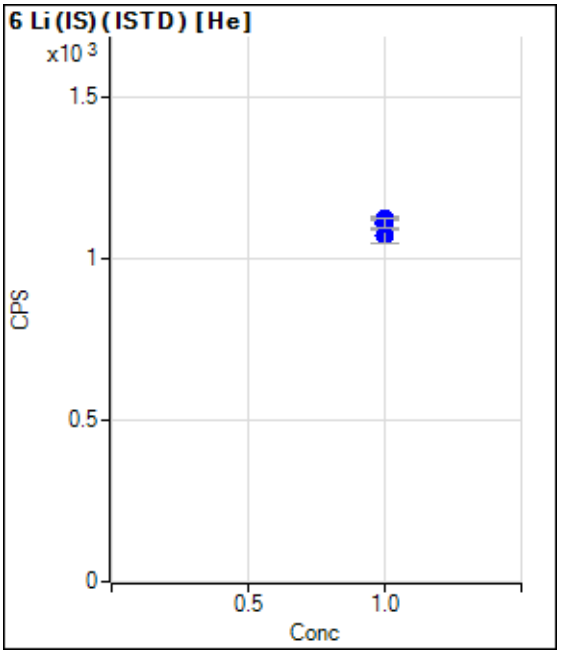
Weight: 1/y
Min Conc: <None>



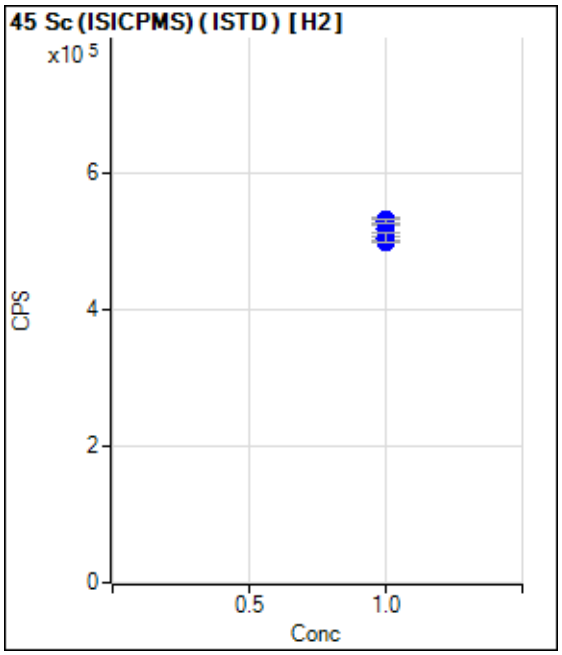
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	227.78	0.0010	P	10.0
2	☐	0.300	0.300	6805.38	0.0314	P	2.3
3	☐	0.600	0.605	13503.14	0.0623	P	1.2
4	☐	10.000	10.113	219239.55	1.0239	P	0.5
5	☐	50.000	50.161	1123283.64	5.0740	P	0.7
6	☐	100.000	99.724	2230426.18	10.0865	P	0.7

y = 0.101134 * x + 0.001051
R = 1.0000
DL = 0.003058
BEC = 0.01039

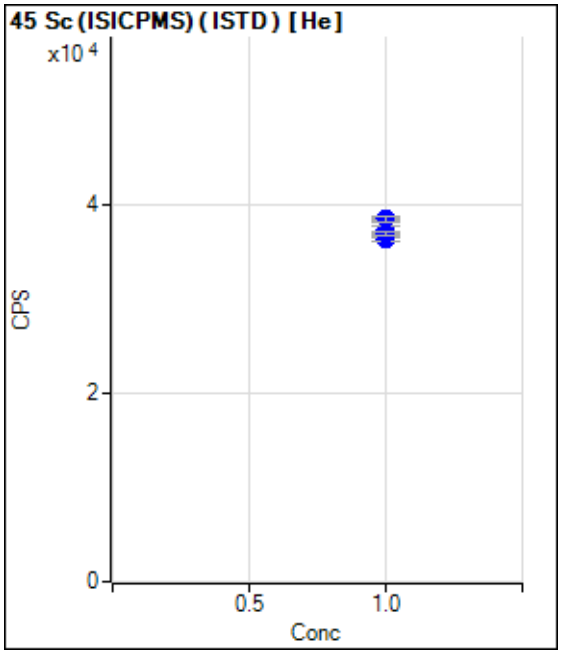
Weight: 1/y
Min Conc: <None>



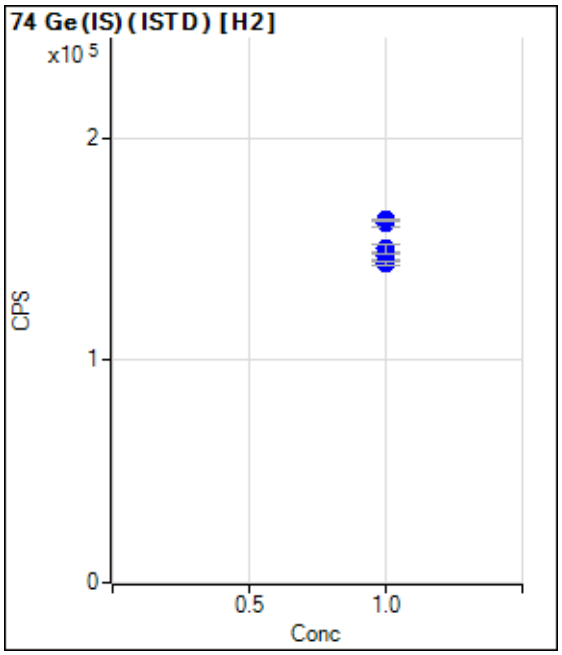
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		1114.99		P	3.3
2	☐	1.000		1094.99		P	0.6
3	☐	1.000		1110.16		P	3.3
4	☐	1.000		1073.99		P	4.6
5	☐	1.000		1124.82		P	0.3
6	☐	1.000		1111.82		P	3.0



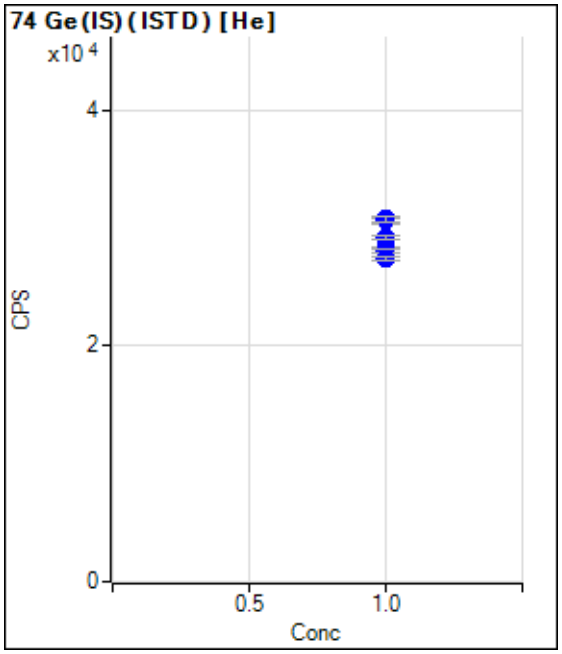
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		518935.81		P	2.0
2	☐	1.000		500416.29		P	0.9
3	☐	1.000		503910.40		P	1.6
4	☐	1.000		506281.31		P	2.4
5	☐	1.000		532416.79		P	1.6
6	☐	1.000		530129.99		P	1.4



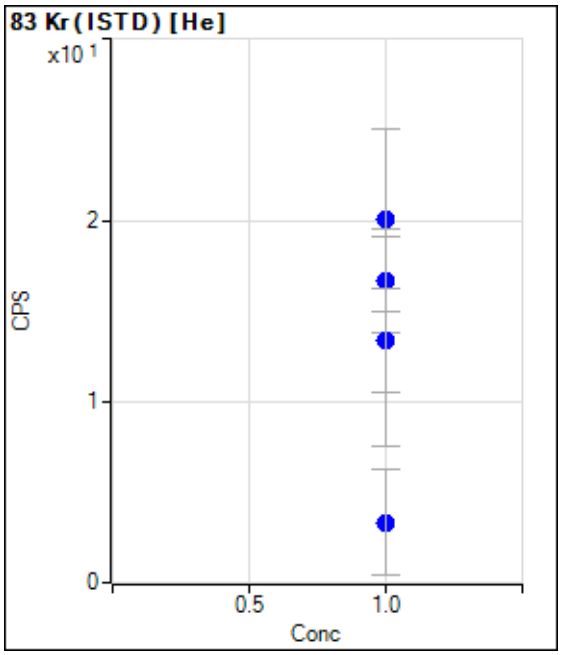
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		37372.77		P	1.5
2	☐	1.000		36312.23		P	1.2
3	☐	1.000		36908.21		P	0.3
4	☐	1.000		36858.15		P	1.4
5	☐	1.000		38462.29		P	0.6
6	☐	1.000		38459.91		P	1.3



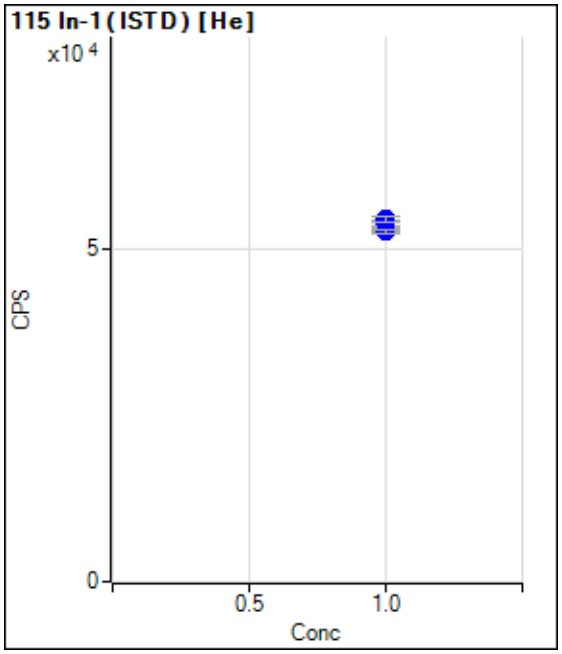
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		146818.75		P	2.3
2	☐	1.000		143520.53		P	1.1
3	☐	1.000		143726.69		P	1.0
4	☐	1.000		150312.28		P	2.6
5	☐	1.000		161635.33		P	1.4
6	☐	1.000		163295.46		P	0.7



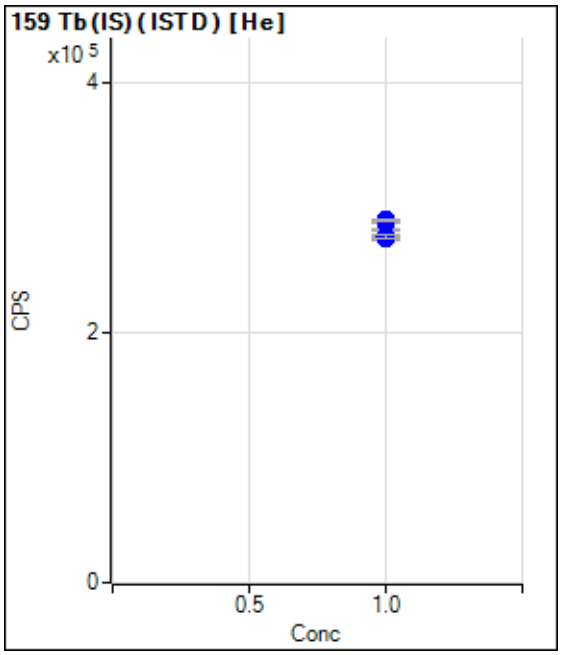
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		28323.59		P	1.1
2	☐	1.000		28084.13		P	0.7
3	☐	1.000		27396.10		P	1.6
4	☐	1.000		29226.31		P	1.2
5	☐	1.000		30645.89		P	1.7
6	☐	1.000		30795.22		P	1.4



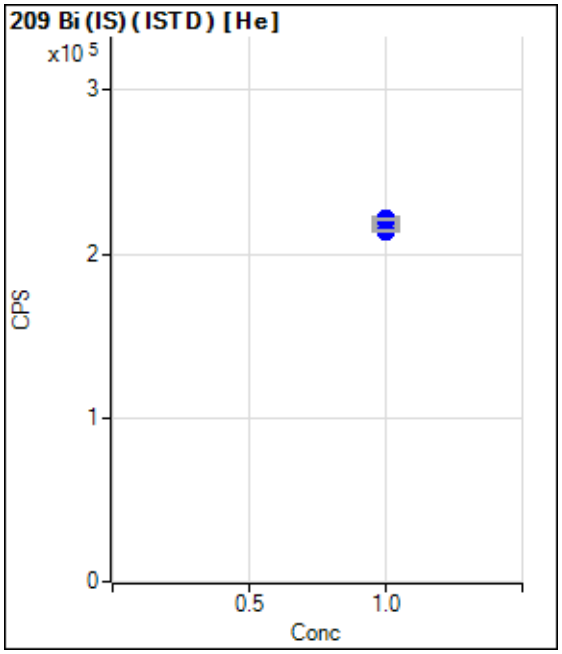
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		16.68		P	34.6
2	☐	1.000		13.35		P	86.6
3	☐	1.000		20.02		P	50.0
4	☐	1.000		3.34		P	173.
5	☐	1.000		13.35		P	43.3
6	☐	1.000		3.34		P	173.



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		53962.68		P	1.4
2	☐	1.000		53013.48		P	1.3
3	☐	1.000		52721.58		P	1.5
4	☐	1.000		52624.94		P	0.8
5	☐	1.000		54612.29		P	1.8
6	☐	1.000		54534.89		P	1.4



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		281602.75		P	0.5
2	☐	1.000		275304.20		P	0.8
3	☐	1.000		276361.29		P	0.1
4	☐	1.000		276447.20		P	0.6
5	☐	1.000		287369.48		P	0.4
6	☐	1.000		289822.95		P	0.6



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		221273.38		P	1.3
2	☐	1.000		216672.67		P	1.1
3	☐	1.000		216897.59		P	0.2
4	☐	1.000		214131.73		P	0.1
5	☐	1.000		221387.53		P	0.5
6	☐	1.000		221141.25		P	1.0

Sample Report

File Name 002SMPL.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 15:34:14

Sample Name **rn.chk**

Comment ---

Dilution **1.0000**

Vial # 2

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	High Value	QC Flag
Be	9	6	He		ug/l		1000	
B	11	6	He		ug/l		500	
Na	23	45	He		ug/l		200000	
Mg	24	45	He		ug/l		150000	
Al	27	45	He		ug/l		50000	
K	39	45	He		ug/l		200000	
Ca	40	45	H2		ug/l		150000	
Ti	47	45	He		ug/l		1000	
V	51	45	He		ug/l		2000	
Cr	52	45	He		ug/l		4000	
Mn	55	45	He		ug/l		5000	
Fe	56	45	He		ug/l		100000	
Co	59	45	He		ug/l		1000	
Ni	60	45	He		ug/l		1000	
Cu	63	45	He		ug/l		1000	
Zn	66	45	He		ug/l		1000	
As	75	74	He		ug/l		2000	
Se	78	74	H2		ug/l		1000	
Sr	88	115	He		ug/l		2000	
Mo	95	115	He		ug/l		1000	
Ag	107	115	He		ug/l		100	
Cd	111	115	He		ug/l		2000	
Sn	118	115	He		ug/l		100	
Sb	121	115	He		ug/l		100	
Ba	137	159	He		ug/l		5000	
Tl	205	209	He		ug/l		1000	
(Pb)	206	209	He		ug/l			
(Pb)	207	209	He		ug/l			
Pb	208	209	He		ug/l		5000	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Li (IS)	6	He	1080.82	0.8		70	120	
Sc (ISICPMS)	45	H2	525612.94	0.9		70	120	
Sc (ISICPMS)	45	He	38547.97	0.4		70	120	
Ge (IS)	74	H2	162011.48	1.4		70	120	
Ge (IS)	74	He	31206.05	2.7		70	120	
Kr	83	He	20.02	132.3				
In-1	115	He	57461.59	0.6		70	120	
Tb (IS)	159	He	299803.94	0.8		70	120	
Bi (IS)	209	He	234710.85	1.3		70	120	

Sample Report

File Name 003SMPL.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 15:36:53

Sample Name **rn.chk**

Comment ---

Dilution **1.0000**

Vial # 5

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	High Value	QC Flag
Be	9	6	He		ug/l		1000	
B	11	6	He		ug/l		500	
Na	23	45	He		ug/l		200000	
Mg	24	45	He		ug/l		150000	
Al	27	45	He		ug/l		50000	
K	39	45	He		ug/l		200000	
Ca	40	45	H2		ug/l		150000	
Ti	47	45	He		ug/l		1000	
V	51	45	He		ug/l		2000	
Cr	52	45	He		ug/l		4000	
Mn	55	45	He		ug/l		5000	
Fe	56	45	He		ug/l		100000	
Co	59	45	He		ug/l		1000	
Ni	60	45	He		ug/l		1000	
Cu	63	45	He		ug/l		1000	
Zn	66	45	He		ug/l		1000	
As	75	74	He		ug/l		2000	
Se	78	74	H2		ug/l		1000	
Sr	88	115	He		ug/l		2000	
Mo	95	115	He		ug/l		1000	
Ag	107	115	He		ug/l		100	
Cd	111	115	He		ug/l		2000	
Sn	118	115	He		ug/l		100	
Sb	121	115	He		ug/l		100	
Ba	137	159	He		ug/l		5000	
Tl	205	209	He		ug/l		1000	
(Pb)	206	209	He		ug/l			
(Pb)	207	209	He		ug/l			
Pb	208	209	He		ug/l		5000	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Li (IS)	6	He	1157.82	2.4		70	120	
Sc (ISICPMS)	45	H2	542154.95	0.8		70	120	
Sc (ISICPMS)	45	He	39880.25	0.2		70	120	
Ge (IS)	74	H2	157414.81	1.2		70	120	
Ge (IS)	74	He	30196.01	1.5		70	120	
Kr	83	He	23.36	49.5				
In-1	115	He	57722.99	0.6		70	120	
Tb (IS)	159	He	297303.71	0.5		70	120	
Bi (IS)	209	He	233585.43	0.4		70	120	

Calibration Blank

File Name 004CALB.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 15:39:33

Sample Name **IC CAL BLK**

Comment ---

Dilution 1.0000

Vial # **FullQuant Table** 1101

Element	Mass	ISTD	Tune Mode	CPS	CPS RSD
Be	9	6	He	0.17	173.2
B	11	6	He	13.33	47.2
Na	23	45	He	9929.13	1.5
Mg	24	45	He	60.00	33.8
Al	27	45	He	33.33	10.0
K	39	45	He	6100.32	5.2
Ca	40	45	H2	11433.72	4.4
Ti	47	45	He	1.00	50.0
V	51	45	He	73.34	9.1
Cr	52	45	He	955.62	4.9
Mn	55	45	He	48.89	14.2
Fe	56	45	He	2131.34	2.2
Co	59	45	He	12.22	31.5
Ni	60	45	He	122.23	22.2
Cu	63	45	He	383.35	7.1
Zn	66	45	He	203.34	11.5
As	75	74	He	4.45	86.6
Se	78	74	H2	3.33	100.1
Sr	88	115	He	4.44	114.6
Mo	95	115	He	30.00	22.2
Ag	107	115	He	45.56	44.1
Cd	111	115	He	0.00	N/A
Sn	118	115	He	306.68	7.6
Sb	121	115	He	421.13	12.7
Ba	137	159	He	6.66	86.6
Tl	205	209	He	28.89	13.3
(Pb)	206	209	He	58.89	14.2
(Pb)	207	209	He	46.67	39.8
Pb	208	209	He	227.78	9.7

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %
Li (IS)	6	He	1114.99	3.3	100.0
Sc (ISICPMS)	45	H2	518935.81	2.0	100.0
Sc (ISICPMS)	45	He	37372.77	1.5	100.0
Ge (IS)	74	H2	146818.75	2.3	100.0
Ge (IS)	74	He	28323.59	1.1	100.0
Kr	83	He	16.68	34.6	100.0
In-1	115	He	53962.68	1.4	100.0
Tb (IS)	159	He	281602.75	0.5	100.0
Bi (IS)	209	He	221273.38	1.3	100.0

Calibration Standard

File Name 005CALS.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 15:42:12

Sample Name **IC Cal-1 6782575**

Comment ---

Dilution 1.0000

Vial # 1102

FullQuant Table

Element	Mass	ISTD	Tune Mode	CPS	CPS RSD
Be	9	6	He	6.17	16.9
B	11	6	He	176.58	21.2
Na	23	45	He	27681.29	1.8
Mg	24	45	He	7722.19	2.8
Al	27	45	He	447.80	5.0
K	39	45	He	10316.08	3.2
Ca	40	45	H2	145252.24	0.8
Ti	47	45	He	45.17	14.6
V	51	45	He	2306.93	4.5
Cr	52	45	He	4285.20	3.7
Mn	55	45	He	2264.69	7.9
Fe	56	45	He	69861.64	1.0
Co	59	45	He	6092.55	2.4
Ni	60	45	He	1810.17	1.0
Cu	63	45	He	5340.05	1.0
Zn	66	45	He	2053.55	2.0
As	75	74	He	130.01	2.6
Se	78	74	H2	148.89	20.3
Sr	88	115	He	1073.41	6.7
Mo	95	115	He	2151.35	2.2
Ag	107	115	He	7740.10	1.7
Cd	111	115	He	376.69	8.5
Sn	118	115	He	5898.11	1.4
Sb	121	115	He	1363.45	3.6
Ba	137	159	He	581.15	8.5
Tl	205	209	He	3459.47	1.0
(Pb)	206	209	He	1671.28	5.9
(Pb)	207	209	He	1485.69	1.3
Pb	208	209	He	6805.38	2.2

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Li (IS)	6	He	1094.99	0.6	98.2	70	120	
Sc (ISICPMS)	45	H2	500416.29	0.9	96.4	70	120	
Sc (ISICPMS)	45	He	36312.23	1.2	97.2	70	120	
Ge (IS)	74	H2	143520.53	1.1	97.8	70	120	
Ge (IS)	74	He	28084.13	0.7	99.2	70	120	
Kr	83	He	13.35	86.6	80.0			
In-1	115	He	53013.48	1.3	98.2	70	120	
Tb (IS)	159	He	275304.20	0.8	97.8	70	120	

Calibration Standard

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Bi (IS)	209	He	216672.67	1.1	97.9	70	120	

Calibration Standard

File Name 006CALS.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 15:45:05

Sample Name **IC Cal-2 6782580**

Comment ---

Dilution 1.0000

Vial # 1103

FullQuant Table

Element	Mass	ISTD	Tune Mode	CPS	CPS RSD
Be	9	6	He	13.67	35.5
B	11	6	He	346.51	7.4
Na	23	45	He	43571.86	1.3
Mg	24	45	He	15535.05	2.0
Al	27	45	He	681.15	3.3
K	39	45	He	14881.10	2.5
Ca	40	45	H2	272588.93	0.6
Ti	47	45	He	93.00	4.3
V	51	45	He	4550.85	5.4
Cr	52	45	He	7364.30	2.7
Mn	55	45	He	4231.85	2.7
Fe	56	45	He	135541.76	0.5
Co	59	45	He	12006.35	3.2
Ni	60	45	He	3382.73	2.3
Cu	63	45	He	10176.05	1.8
Zn	66	45	He	3745.06	3.1
As	75	74	He	261.12	11.9
Se	78	74	H2	1461.23	5.9
Sr	88	115	He	2078.00	2.6
Mo	95	115	He	4195.20	2.3
Ag	107	115	He	7854.65	0.8
Cd	111	115	He	811.16	2.9
Sn	118	115	He	11118.01	1.0
Sb	121	115	He	2026.88	2.6
Ba	137	159	He	1125.64	1.7
Tl	205	209	He	6916.45	2.6
(Pb)	206	209	He	3294.96	0.7
(Pb)	207	209	He	3039.33	3.5
Pb	208	209	He	13503.14	1.0

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Li (IS)	6	He	1110.16	3.3	99.6	70	120	
Sc (ISICPMS)	45	H2	503910.40	1.6	97.1	70	120	
Sc (ISICPMS)	45	He	36908.21	0.3	98.8	70	120	
Ge (IS)	74	H2	143726.69	1.0	97.9	70	120	
Ge (IS)	74	He	27396.10	1.6	96.7	70	120	
Kr	83	He	20.02	50.0	120.0			
In-1	115	He	52721.58	1.5	97.7	70	120	
Tb (IS)	159	He	276361.29	0.1	98.1	70	120	

Calibration Standard

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Bi (IS)	209	He	216897.59	0.2	98.0	70	120	

Calibration Standard

File Name 007CALS.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 15:47:59

Sample Name **IC Cal-3 6782582**

Comment ---

Dilution 1.0000

Vial # 1104

FullQuant Table

Element	Mass	ISTD	Tune Mode	CPS	CPS RSD
Be	9	6	He	297.82	0.9
B	11	6	He	194.91	3.4
Na	23	45	He	345993.22	0.8
Mg	24	45	He	151915.49	0.6
Al	27	45	He	3512.75	6.0
K	39	45	He	97668.89	1.3
Ca	40	45	H2	2369593.00	2.2
Ti	47	45	He	481.66	4.6
V	51	45	He	22606.59	2.0
Cr	52	45	He	32216.60	0.5
Mn	55	45	He	105417.80	1.2
Fe	56	45	He	2197015.07	0.1
Co	59	45	He	58183.03	0.5
Ni	60	45	He	17301.68	1.7
Cu	63	45	He	48900.06	0.9
Zn	66	45	He	4645.32	0.6
As	75	74	He	2558.10	3.6
Se	78	74	H2	3080.43	2.3
Sr	88	115	He	10243.90	1.4
Mo	95	115	He	21793.56	0.8
Ag	107	115	He	77162.27	0.8
Cd	111	115	He	7513.31	1.6
Sn	118	115	He	14079.58	2.9
Sb	121	115	He	16300.94	1.9
Ba	137	159	He	5846.96	3.7
Tl	205	209	He	34760.00	1.4
(Pb)	206	209	He	53398.59	0.4
(Pb)	207	209	He	49048.85	1.7
Pb	208	209	He	219239.55	0.5

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Li (IS)	6	He	1073.99	4.6	96.3	70	120	
Sc (ISICPMS)	45	H2	506281.31	2.4	97.6	70	120	
Sc (ISICPMS)	45	He	36858.15	1.4	98.6	70	120	
Ge (IS)	74	H2	150312.28	2.6	102.4	70	120	
Ge (IS)	74	He	29226.31	1.2	103.2	70	120	
Kr	83	He	3.34	173.2	20.0			
In-1	115	He	52624.94	0.8	97.5	70	120	
Tb (IS)	159	He	276447.20	0.6	98.2	70	120	

Calibration Standard

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Bi (IS)	209	He	214131.73	0.1	96.8	70	120	

Calibration Standard

File Name 008CALS.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 15:50:51

Sample Name **IC Cal-4 6782584**

Comment ---

Dilution 1.0000

Vial # 1105

FullQuant Table

Element	Mass	ISTD	Tune Mode	CPS	CPS RSD
Be	9	6	He	1502.01	1.6
B	11	6	He	814.65	8.9
Na	23	45	He	1753983.43	1.1
Mg	24	45	He	785430.49	0.3
Al	27	45	He	18154.66	1.2
K	39	45	He	484398.28	0.3
Ca	40	45	H2	12199402.72	0.4
Ti	47	45	He	2451.09	1.0
V	51	45	He	117270.79	0.1
Cr	52	45	He	163452.30	0.2
Mn	55	45	He	548268.18	0.3
Fe	56	45	He	11225354.14	0.2
Co	59	45	He	302849.11	0.5
Ni	60	45	He	87816.39	0.7
Cu	63	45	He	251154.97	0.5
Zn	66	45	He	23101.91	1.3
As	75	74	He	13523.32	2.7
Se	78	74	H2	16530.89	0.2
Sr	88	115	He	54444.48	0.6
Mo	95	115	He	111717.41	0.7
Ag	107	115	He	396894.22	0.5
Cd	111	115	He	38674.07	1.0
Sn	118	115	He	70977.63	0.9
Sb	121	115	He	82500.57	0.5
Ba	137	159	He	30432.43	0.7
Tl	205	209	He	177206.44	0.5
(Pb)	206	209	He	273734.73	0.4
(Pb)	207	209	He	249175.98	0.5
Pb	208	209	He	1123283.64	0.3

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Li (IS)	6	He	1124.82	0.3	100.9	70	120	
Sc (ISICPMS)	45	H2	532416.79	1.6	102.6	70	120	
Sc (ISICPMS)	45	He	38462.29	0.6	102.9	70	120	
Ge (IS)	74	H2	161635.33	1.4	110.1	70	120	
Ge (IS)	74	He	30645.89	1.7	108.2	70	120	
Kr	83	He	13.35	43.3	80.0			
In-1	115	He	54612.29	1.8	101.2	70	120	
Tb (IS)	159	He	287369.48	0.4	102.0	70	120	

Calibration Standard

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Bi (IS)	209	He	221387.53	0.5	100.1	70	120	

Calibration Standard

File Name 009CALS.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 15:53:41

Sample Name **IC Cal-5 6782586**

Comment ---

Dilution 1.0000

Vial # 1106

FullQuant Table

Element	Mass	ISTD	Tune Mode	CPS	CPS RSD
Be	9	6	He	2960.15	1.2
B	11	6	He	1575.16	2.8
Na	23	45	He	3403687.41	0.3
Mg	24	45	He	1539206.56	0.7
Al	27	45	He	36282.95	0.4
K	39	45	He	951898.74	0.2
Ca	40	45	H2	24368966.65	1.6
Ti	47	45	He	4944.75	1.0
V	51	45	He	231331.21	0.7
Cr	52	45	He	319497.41	0.4
Mn	55	45	He	1079861.56	0.4
Fe	56	45	He	22057220.78	0.2
Co	59	45	He	592722.55	0.3
Ni	60	45	He	171258.89	0.4
Cu	63	45	He	489084.85	0.5
Zn	66	45	He	45587.60	1.3
As	75	74	He	26507.90	1.2
Se	78	74	H2	32583.48	1.1
Sr	88	115	He	108341.02	0.6
Mo	95	115	He	223913.87	0.4
Ag	107	115	He	784101.25	0.6
Cd	111	115	He	77362.82	0.5
Sn	118	115	He	142820.68	0.7
Sb	121	115	He	165028.79	0.8
Ba	137	159	He	60793.63	0.3
Tl	205	209	He	351824.51	0.6
(Pb)	206	209	He	542635.25	0.5
(Pb)	207	209	He	495250.51	0.4
Pb	208	209	He	2230426.18	0.2

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Li (IS)	6	He	1111.82	3.0	99.7	70	120	
Sc (ISICPMS)	45	H2	530129.99	1.4	102.2	70	120	
Sc (ISICPMS)	45	He	38459.91	1.3	102.9	70	120	
Ge (IS)	74	H2	163295.46	0.7	111.2	70	120	
Ge (IS)	74	He	30795.22	1.4	108.7	70	120	
Kr	83	He	3.34	173.2	20.0			
In-1	115	He	54534.89	1.4	101.1	70	120	
Tb (IS)	159	He	289822.95	0.6	102.9	70	120	

Calibration Standard

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Bi (IS)	209	He	221141.25	1.0	99.9	70	120	

Initial Calibration Verification (ICV)

File Name 010_ICV.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 15:56:29

Sample Name **ICV**

Comment ---

Dilution 1.0000

Vial # 1201

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	ExpectedValue	Lower Lmt	Upper Lmt	QC Flag
Be	9	6	He	40.481	ug/l	4.0	40	36	44	
B	11	6	He	78.325	ug/l	10.7	80	72	88	
Na	23	45	He	4076.430	ug/l	0.7	4000	3600	4400	
Mg	24	45	He	4044.983	ug/l	0.6	4000	3600	4400	
Al	27	45	He	405.550	ug/l	3.0	400	360	440	
K	39	45	He	3999.128	ug/l	0.6	4000	3600	4400	
Ca	40	45	H2	4045.039	ug/l	0.3	4000	3600	4400	
Ti	47	45	He	39.745	ug/l	0.6	40	36	44	
V	51	45	He	40.184	ug/l	1.3	40	36	44	
Cr	52	45	He	40.336	ug/l	1.4	40	36	44	
Mn	55	45	He	402.977	ug/l	1.3	400	360	440	
Fe	56	45	He	4028.399	ug/l	0.5	4000	3600	4400	
Co	59	45	He	39.409	ug/l	0.4	40	36	44	
Ni	60	45	He	40.265	ug/l	0.1	40	36	44	
Cu	63	45	He	40.439	ug/l	0.4	40	36	44	
Zn	66	45	He	39.956	ug/l	0.3	40	36	44	
As	75	74	He	39.724	ug/l	1.5	40	36	44	
Se	78	74	H2	40.708	ug/l	1.5	40	36	44	
Sr	88	115	He	40.237	ug/l	1.4	40	36	44	
Mo	95	115	He	39.775	ug/l	2.5	40	36	44	
Ag	107	115	He	39.661	ug/l	1.0	40	36	44	
Cd	111	115	He	40.142	ug/l	3.1	40	36	44	
Sn	118	115	He	39.635	ug/l	1.6	40	36	44	
Sb	121	115	He	39.629	ug/l	2.1	40	36	44	
Ba	137	159	He	39.905	ug/l	1.5	40	36	44	
Tl	205	209	He	8.100	ug/l	0.5	8	7.2	8.8	
(Pb)	206	209	He	40.319	ug/l	1.2				
(Pb)	207	209	He	40.403	ug/l	2.0				
Pb	208	209	He	40.406	ug/l	1.1	40	36	44	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower %Lmt	Upper %Lmt	QC Flag
Li (IS)	6	He	1118.32	2.1	100.3	70	120	
Sc (ISICPMS)	45	H2	519349.90	0.5	100.1	70	120	
Sc (ISICPMS)	45	He	37914.11	0.8	101.4	70	120	
Ge (IS)	74	H2	158876.91	0.5	108.2	70	120	
Ge (IS)	74	He	30323.04	0.4	107.1	70	120	
Kr	83	He	16.68	91.7	100.0			
In-1	115	He	53678.60	1.5	99.5	70	120	
Tb (IS)	159	He	282813.78	0.5	100.4	70	120	
Bi (IS)	209	He	217123.93	0.1	98.1	70	120	

Initial/Continuing Calibration Blank (ICB/CCB)

File Name 011_CCB.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 15:59:07

Sample Name **ICB**

Comment ---

Dilution 1.0000

Vial #

IntQuant Table 1302

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	ExpectedValue	Lower Lmt	Upper Lmt	QC Flag
Be	9	6	He	0.011	ug/l	165.0	0.2	-0.2	0.2	
B	11	6	He	0.136	ug/l	996.2	20	-20	20	
Na	23	45	He	-0.980	ug/l	N/A	50	-50	50	
Mg	24	45	He	0.084	ug/l	169.3	50	-50	50	
Al	27	45	He	-0.612	ug/l	N/A	10	-10	10	
K	39	45	He	2.469	ug/l	125.5	50	-50	50	
Ca	40	45	H2	-7.101	ug/l	N/A	50	-50	50	
Ti	47	45	He	0.085	ug/l	43.6	1	-1	1	
V	51	45	He	-0.003	ug/l	N/A	1	-1	1	
Cr	52	45	He	0.001	ug/l	408.5	1	-1	1	
Mn	55	45	He	0.013	ug/l	23.7	2	-2	2	
Fe	56	45	He	0.227	ug/l	33.2	30	-30	30	
Co	59	45	He	0.001	ug/l	91.7	1	-1	1	
Ni	60	45	He	-0.006	ug/l	N/A	1	-1	1	
Cu	63	45	He	-0.014	ug/l	N/A	1	-1	1	
Zn	66	45	He	-0.112	ug/l	N/A	4	-4	4	
As	75	74	He	0.012	ug/l	169.8	0.5	-0.5	0.5	
Se	78	74	H2	0.004	ug/l	328.6	0.5	-0.5	0.5	
Sr	88	115	He	0.000	ug/l	1585.5	1	-1	1	
Mo	95	115	He	0.005	ug/l	124.7	1	-1	1	
Ag	107	115	He	0.003	ug/l	145.0	1	-1	1	
Cd	111	115	He	-0.027	ug/l	N/A	0.5	-0.5	0.5	
Sn	118	115	He	0.094	ug/l	15.8	4	-4	4	
Sb	121	115	He	0.097	ug/l	15.0	0.5	-0.5	0.5	
Ba	137	159	He	0.017	ug/l	34.7	1	-1	1	
Tl	205	209	He	0.002	ug/l	45.3	0.2	-0.2	0.2	
(Pb)	206	209	He	0.008	ug/l	32.6				
(Pb)	207	209	He	0.010	ug/l	48.3				
Pb	208	209	He	0.008	ug/l	21.6	0.3	-0.3	0.3	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower %Lmt	Upper %Lmt	QC Flag
Li (IS)	6	He	1078.32	2.1	96.7	70	120	
Sc (ISICPMS)	45	H2	501528.28	0.5	96.6	70	120	
Sc (ISICPMS)	45	He	36940.49	0.1	98.8	70	120	
Ge (IS)	74	H2	140927.20	0.9	96.0	70	120	
Ge (IS)	74	He	27446.23	1.7	96.9	70	120	
Kr	83	He	30.03	66.7	180.0			
In-1	115	He	53213.85	0.6	98.6	70	120	
Tb (IS)	159	He	278394.79	0.6	98.9	70	120	
Bi (IS)	209	He	216623.73	1.0	97.9	70	120	

CRQL Check Standard (CRI)

File Name 012_CRI.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 16:01:47

Sample Name **CRI 6782575**

Comment ---

Dilution 1.0000

Vial # 1102

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	ExpectedValue	Lower Lmt	Upper Lmt	QC Flag
Be	9	6	He	0.188	ug/l	17.7	0.2	0.1	0.3	
B	11	6	He	20.086	ug/l	20.8	20	10	30	
Na	23	45	He	51.312	ug/l	1.0	50	25	75	
Mg	24	45	He	52.452	ug/l	4.7	50	25	75	
Al	27	45	He	10.425	ug/l	9.0	10	5	15	
K	39	45	He	53.444	ug/l	10.0	50	25	75	
Ca	40	45	H2	51.274	ug/l	0.8	50	25	75	
Ti	47	45	He	1.072	ug/l	5.2	1	0.5	1.5	
V	51	45	He	1.006	ug/l	4.7	1	0.5	1.5	
Cr	52	45	He	1.023	ug/l	4.8	1	0.5	1.5	
Mn	55	45	He	2.010	ug/l	5.1	2	1	3	
Fe	56	45	He	31.923	ug/l	0.6	30	15	45	
Co	59	45	He	1.020	ug/l	1.7	1	0.5	1.5	
Ni	60	45	He	1.055	ug/l	2.4	1	0.5	1.5	
Cu	63	45	He	1.039	ug/l	2.8	1	0.5	1.5	
Zn	66	45	He	4.195	ug/l	2.6	4	2	6	
As	75	74	He	0.506	ug/l	32.3	0.5	0.25	0.75	
Se	78	74	H2	0.631	ug/l	9.6	0.5	0.25	0.75	
Sr	88	115	He	1.043	ug/l	3.7	1	0.5	1.5	
Mo	95	115	He	0.968	ug/l	3.5	1	0.5	1.5	
Ag	107	115	He	1.000	ug/l	3.1	1	0.5	1.5	
Cd	111	115	He	0.474	ug/l	8.0	0.5	0.25	0.75	
Sn	118	115	He	3.980	ug/l	2.7	4	2	6	
Sb	121	115	He	0.574	ug/l	8.8	0.5	0.25	0.75	
Ba	137	159	He	1.050	ug/l	7.0	1	0.5	1.5	
Tl	205	209	He	0.204	ug/l	2.5	0.2	0.1	0.3	
(Pb)	206	209	He	0.309	ug/l	7.3				
(Pb)	207	209	He	0.304	ug/l	1.4				
Pb	208	209	He	0.309	ug/l	3.6	0.3	0.15	0.45	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower %Lmt	Upper %Lmt	QC Flag
Li (IS)	6	He	1117.49	4.7	100.2	70	120	
Sc (ISICPMS)	45	H2	502587.68	0.8	96.8	70	120	
Sc (ISICPMS)	45	He	36580.86	1.9	97.9	70	120	
Ge (IS)	74	H2	143418.31	0.4	97.7	70	120	
Ge (IS)	74	He	27754.64	1.1	98.0	70	120	
Kr	83	He	10.01	100.0	60.0			
In-1	115	He	53052.35	1.3	98.3	70	120	
Tb (IS)	159	He	278493.89	0.6	98.9	70	120	

CRQL Check Standard (CRI)

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower %Lmt	Upper %Lmt	QC Flag
Bi (IS)	209	He	216866.32	1.0	98.0	70	120	

Interference Check Standard-A (ICSA)

File Name 013ICSA.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 16:04:27

Sample Name **ICSA 6782599**

Comment ---

Dilution 1.0000

Quant Table 4508

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	ExpectedValue	Lower Lmt	Upper Lmt	QC Flag
Be	9	6	He	0.027	ug/l	61.5	0.2	-0.4	0.4	
B	11	6	He	-0.950	ug/l	N/A	20	-40	40	
Na	23	45	He	125269.612	ug/l	0.2	125000	100000	150000	
Mg	24	45	He	49057.935	ug/l	0.2	50000	40000	60000	
Al	27	45	He	53351.992	ug/l	0.6	50000	40000	60000	
K	39	45	He	49767.692	ug/l	0.6	50000	40000	60000	
Ca	40	45	H2	152197.805	ug/l	0.8	150000	120000	180000	
Ti	47	45	He	1022.597	ug/l	0.2	1000	800	1200	
V	51	45	He	-0.011	ug/l	N/A	1	-2	2	
Cr	52	45	He	1.382	ug/l	3.7	1	-2	2	
Mn	55	45	He	0.517	ug/l	4.8	2	-4	4	
Fe	56	45	He	121474.003	ug/l	1.2	125000	100000	150000	
Co	59	45	He	0.020	ug/l	15.0	1	-2	2	
Ni	60	45	He	0.071	ug/l	18.2	1	-2	2	
Cu	63	45	He	0.120	ug/l	26.3	1	-2	2	
Zn	66	45	He	0.357	ug/l	10.7	4	-8	8	
As	75	74	He	0.054	ug/l	52.5	0.5	-1	1	
Se	78	74	H2	0.016	ug/l	75.1	0.5	-1	1	
Sr	88	115	He	1.502	ug/l	4.5	1	-2	2	
Mo	95	115	He	1005.751	ug/l	0.9	1000	-2000	2000	
Ag	107	115	He	0.050	ug/l	5.3	1	-2	2	
Cd	111	115	He	0.059	ug/l	37.4	1	-2	2	
Sn	118	115	He	-0.087	ug/l	N/A	4	-8	8	
Sb	121	115	He	-0.044	ug/l	N/A	1	-2	2	
Ba	137	159	He	0.084	ug/l	19.5	1	-2	2	
Tl	205	209	He	0.060	ug/l	8.3	0.2	-0.4	0.4	
(Pb)	206	209	He	0.063	ug/l	17.3				
(Pb)	207	209	He	0.055	ug/l	16.2				
Pb	208	209	He	0.061	ug/l	2.2	0.3	-0.6	0.6	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower %Lmt	Upper %Lmt	QC Flag
Li (IS)	6	He	1115.82	1.8	100.1	70	120	
Sc (ISICPMS)	45	H2	558127.72	1.1	107.6	70	120	
Sc (ISICPMS)	45	He	42059.52	3.6	112.5	70	120	
Ge (IS)	74	H2	162339.17	0.2	110.6	70	120	
Ge (IS)	74	He	32601.29	3.6	115.1	70	120	
Kr	83	He	13.35	114.6	80.0			
In-1	115	He	55435.48	1.3	102.7	70	120	
Tb (IS)	159	He	288077.28	0.6	102.3	70	120	
Bi (IS)	209	He	204937.49	0.9	92.6	70	120	

Interference Check Standard-AB (ICSAB)

File Name 014ICSB.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 16:07:10

Sample Name **ICSAB 6782603**

Comment ---

Dilution 1.0000

Quant Table 4509

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	ExpectedValue	Lower Lmt	Upper Lmt	QC Flag
Be	9	6	He	-0.001	ug/l	N/A	0.2	-0.4	0.4	
B	11	6	He	-1.536	ug/l	N/A	20	-40	40	
Na	23	45	He	126757.436	ug/l	1.1	125000	100000	150000	
Mg	24	45	He	49246.169	ug/l	0.8	50000	40000	60000	
Al	27	45	He	53090.819	ug/l	0.8	50000	40000	60000	
K	39	45	He	50508.735	ug/l	0.7	50000	40000	60000	
Ca	40	45	H2	154262.475	ug/l	1.2	150000	120000	180000	
Ti	47	45	He	1012.381	ug/l	0.3	1000	800	1200	
V	51	45	He	198.857	ug/l	0.3	200	160	240	
Cr	52	45	He	195.356	ug/l	0.2	200	160	240	
Mn	55	45	He	194.500	ug/l	0.7	200	160	240	
Fe	56	45	He	118468.081	ug/l	0.2	125000	100000	150000	
Co	59	45	He	185.639	ug/l	0.2	200	160	240	
Ni	60	45	He	182.341	ug/l	0.5	200	160	240	
Cu	63	45	He	176.125	ug/l	0.5	200	160	240	
Zn	66	45	He	89.451	ug/l	1.2	100	80	120	
As	75	74	He	104.139	ug/l	2.2	100	80	120	
Se	78	74	H2	102.064	ug/l	0.9	100	80	120	
Sr	88	115	He	1.535	ug/l	4.0	1	-2	2	
Mo	95	115	He	1026.840	ug/l	1.2	1000	800	1200	
Ag	107	115	He	186.510	ug/l	0.5	200	160	240	
Cd	111	115	He	98.113	ug/l	0.5	100	80	120	
Sn	118	115	He	-0.090	ug/l	N/A	1	-2	2	
Sb	121	115	He	-0.041	ug/l	N/A	1	-2	2	
Ba	137	159	He	0.087	ug/l	35.7	1	-2	2	
Tl	205	209	He	0.061	ug/l	6.7	0.2	-0.4	0.4	
(Pb)	206	209	He	0.072	ug/l	10.1				
(Pb)	207	209	He	0.077	ug/l	11.3				
Pb	208	209	He	0.073	ug/l	3.6	0.3	-0.6	0.6	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower %Lmt	Upper %Lmt	QC Flag
Li (IS)	6	He	1132.66	3.3	101.6	70	120	
Sc (ISICPMS)	45	H2	593191.83	0.5	114.3	70	120	
Sc (ISICPMS)	45	He	44836.52	1.1	120.0	70	120	
Ge (IS)	74	H2	169646.04	0.8	115.5	70	120	
Ge (IS)	74	He	34081.33	1.5	120.3	70	120	failed
Kr	83	He	16.68	69.3	100.0			
In-1	115	He	55259.36	0.5	102.4	70	120	
Tb (IS)	159	He	279570.00	0.8	99.3	70	120	
Bi (IS)	209	He	196734.44	0.4	88.9	70	120	

Linear Range Check (LRC)

File Name 015LRCA.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 16:09:53

Sample Name **LRC 6734638**

Comment LRC-A

Dilution 1.0000

Vial # 4510

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	ExpectedValue	Lower Lmt	Upper Lmt	QC Flag
Be	9	6	He	1024.100	ug/l	1.4	1000	900	1100	
B	11	6	He	2.300	ug/l	74.0				
Na	23	45	He	53.829	ug/l	1.8				
Mg	24	45	He	12.280	ug/l	2.1				
Al	27	45	He	13.386	ug/l	6.2				
K	39	45	He	8.491	ug/l	57.5				
Ca	40	45	H2	24.669	ug/l	4.1				
Ti	47	45	He	980.740	ug/l	1.5	1000	900	1100	
V	51	45	He	1991.294	ug/l	1.4	2000	1800	2200	
Cr	52	45	He	3958.865	ug/l	1.5	4000	3600	4400	
Mn	55	45	He	4805.550	ug/l	1.7	5000	4500	5500	
Fe	56	45	He	20.340	ug/l	3.4				
Co	59	45	He	958.308	ug/l	1.2	1000	900	1100	
Ni	60	45	He	992.568	ug/l	1.3	1000	900	1100	
Cu	63	45	He	957.727	ug/l	1.4	1000	900	1100	
Zn	66	45	He	1013.349	ug/l	1.0	1000	900	1100	
As	75	74	He	1989.258	ug/l	0.7	2000	1800	2200	
Se	78	74	H2	1008.633	ug/l	0.9	1000	900	1100	
Sr	88	115	He	1999.956	ug/l	0.4	2000	1800	2200	
Mo	95	115	He	0.227	ug/l	14.9				
Ag	107	115	He	0.029	ug/l	15.1				
Cd	111	115	He	1982.275	ug/l	0.4	2000	1800	2200	
Sn	118	115	He	-0.110	ug/l	N/A				
Sb	121	115	He	0.239	ug/l	23.8				
Ba	137	159	He	5157.719	ug/l	0.4	5000	4500	5500	
Tl	205	209	He	968.026	ug/l	0.9	1000	900	1100	
(Pb)	206	209	He	4973.128	ug/l	0.1				
(Pb)	207	209	He	4827.467	ug/l	0.2				
Pb	208	209	He	4899.927	ug/l	0.3	5000	4500	5500	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower %Lmt	Upper %Lmt	QC Flag
Li (IS)	6	He	1165.32	2.7	104.5	70	120	
Sc (ISICPMS)	45	H2	596447.70	1.9	114.9	70	120	
Sc (ISICPMS)	45	He	42365.98	0.2	113.4	70	120	
Ge (IS)	74	H2	188291.72	2.1	128.2	70	120	failed
Ge (IS)	74	He	34372.02	0.6	121.4	70	120	failed
Kr	83	He	23.36	107.9	140.0			
In-1	115	He	57498.39	0.9	106.6	70	120	
Tb (IS)	159	He	289440.91	1.0	102.8	70	120	

Linear Range Check (LRC)

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower %Lmt	Upper %Lmt	QC Flag
Bi (IS)	209	He	224003.19	0.3	101.2	70	120	

Linear Range Check (LRC)

File Name 016LRCB.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 16:12:22

Sample Name **LRC 6649024**

Comment LRC-B

Dilution 1.0000

Vial # 4511

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	ExpectedValue	Lower Lmt	Upper Lmt	QC Flag
Be	9	6	He	0.031	ug/l	79.3				
B	11	6	He	-0.263	ug/l	N/A				
Na	23	45	He	191711.917	ug/l	2.1	200000	180000	220000	
Mg	24	45	He	139095.681	ug/l	2.0	150000	135000	165000	
Al	27	45	He	51905.587	ug/l	1.6	50000	45000	55000	
K	39	45	He	195803.848	ug/l	1.0	200000	180000	220000	
Ca	40	45	H2	148403.208	ug/l	1.0	150000	135000	165000	
Ti	47	45	He	0.197	ug/l	24.6				
V	51	45	He	0.050	ug/l	35.8				
Cr	52	45	He	0.242	ug/l	18.0				
Mn	55	45	He	1.520	ug/l	5.1				
Fe	56	45	He	87461.587	ug/l	3.9	100000	90000	110000	failed
Co	59	45	He	4.100	ug/l	5.2				
Ni	60	45	He	3.051	ug/l	3.4				
Cu	63	45	He	0.605	ug/l	8.5				
Zn	66	45	He	2.041	ug/l	14.8				
As	75	74	He	0.687	ug/l	10.4				
Se	78	74	H2	0.143	ug/l	30.5				
Sr	88	115	He	1.435	ug/l	1.1				
Mo	95	115	He	0.167	ug/l	2.6				
Ag	107	115	He	0.026	ug/l	37.5				
Cd	111	115	He	0.020	ug/l	125.7				
Sn	118	115	He	-0.135	ug/l	N/A				
Sb	121	115	He	0.283	ug/l	19.7				
Ba	137	159	He	0.569	ug/l	28.1				
Tl	205	209	He	0.137	ug/l	7.6				
(Pb)	206	209	He	0.634	ug/l	10.5				
(Pb)	207	209	He	0.654	ug/l	10.4				
Pb	208	209	He	0.648	ug/l	7.8				

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower %Lmt	Upper %Lmt	QC Flag
Li (IS)	6	He	1165.16	0.8	104.5	70	120	
Sc (ISICPMS)	45	H2	586521.05	0.8	113.0	70	120	
Sc (ISICPMS)	45	He	50938.44	8.1	136.3	70	120	failed
Ge (IS)	74	H2	164445.79	1.5	112.0	70	120	
Ge (IS)	74	He	36797.92	4.5	129.9	70	120	failed
Kr	83	He	30.03	33.3	180.0			
In-1	115	He	59050.55	3.3	109.4	70	120	
Tb (IS)	159	He	290738.42	0.7	103.2	70	120	

Linear Range Check (LRC)

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower %Lmt	Upper %Lmt	QC Flag
Bi (IS)	209	He	199351.79	1.0	90.1	70	120	

Linear Range Check (LRC)

File Name 017LRCC.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 16:15:06

Sample Name **LRC 6734642**

Comment LRC-C

Dilution 1.0000

Vial # 4512

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	ExpectedValue	Lower Lmt	Upper Lmt	QC Flag
Be	9	6	He	0.024	ug/l	64.8				
B	11	6	He	518.901	ug/l	3.3	500	450	550	
Na	23	45	He	48.190	ug/l	10.2				
Mg	24	45	He	4.638	ug/l	11.0				
Al	27	45	He	2.932	ug/l	35.3				
K	39	45	He	25.316	ug/l	29.1				
Ca	40	45	H2	6.741	ug/l	2.0				
Ti	47	45	He	0.914	ug/l	3.1				
V	51	45	He	-0.004	ug/l	N/A				
Cr	52	45	He	-0.156	ug/l	N/A				
Mn	55	45	He	0.027	ug/l	27.0				
Fe	56	45	He	3.339	ug/l	6.2				
Co	59	45	He	0.009	ug/l	20.6				
Ni	60	45	He	-0.031	ug/l	N/A				
Cu	63	45	He	0.106	ug/l	11.1				
Zn	66	45	He	0.078	ug/l	44.6				
As	75	74	He	0.052	ug/l	34.3				
Se	78	74	H2	0.011	ug/l	115.0				
Sr	88	115	He	0.057	ug/l	23.1				
Mo	95	115	He	926.171	ug/l	1.2	1000	900	1100	
Ag	107	115	He	0.018	ug/l	27.7				
Cd	111	115	He	0.053	ug/l	17.8				
Sn	118	115	He	-0.129	ug/l	N/A				
Sb	121	115	He	-0.118	ug/l	N/A				
Ba	137	159	He	0.485	ug/l	7.9				
Tl	205	209	He	0.033	ug/l	8.4				
(Pb)	206	209	He	0.192	ug/l	5.5				
(Pb)	207	209	He	0.189	ug/l	13.0				
Pb	208	209	He	0.252	ug/l	29.4				

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower %Lmt	Upper %Lmt	QC Flag
Li (IS)	6	He	1228.32	1.2	110.2	70	120	
Sc (ISICPMS)	45	H2	685387.33	0.5	132.1	70	120	failed
Sc (ISICPMS)	45	He	49892.59	3.9	133.5	70	120	failed
Ge (IS)	74	H2	192711.24	0.3	131.3	70	120	failed
Ge (IS)	74	He	37350.31	1.6	131.9	70	120	failed
Kr	83	He	26.70	21.7	160.0			
In-1	115	He	62989.40	0.5	116.7	70	120	
Tb (IS)	159	He	297872.02	0.1	105.8	70	120	

Linear Range Check (LRC)

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower %Lmt	Upper %Lmt	QC Flag
Bi (IS)	209	He	230330.77	0.4	104.1	70	120	

Sample Report

File Name 018SMPL.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 16:17:44

Sample Name **rn.chk**

Comment ---

Dilution **1.0000**

Vial # 2

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	High Value	QC Flag
Be	9	6	He	0.021	ug/l	164.8	1000	
B	11	6	He	7.727	ug/l	21.9	500	
Na	23	45	He	16.456	ug/l	10.2	200000	
Mg	24	45	He	1.421	ug/l	20.2	150000	
Al	27	45	He	1.018	ug/l	31.7	50000	
K	39	45	He	10.706	ug/l	26.5	200000	
Ca	40	45	H2	-2.611	ug/l	N/A	150000	
Ti	47	45	He	0.081	ug/l	38.2	1000	
V	51	45	He	-0.016	ug/l	N/A	2000	
Cr	52	45	He	-0.089	ug/l	N/A	4000	
Mn	55	45	He	0.001	ug/l	1286.5	5000	
Fe	56	45	He	1.140	ug/l	9.4	100000	
Co	59	45	He	0.005	ug/l	64.1	1000	
Ni	60	45	He	-0.030	ug/l	N/A	1000	
Cu	63	45	He	-0.026	ug/l	N/A	1000	
Zn	66	45	He	-0.152	ug/l	N/A	1000	
As	75	74	He	0.018	ug/l	72.5	2000	
Se	78	74	H2	0.021	ug/l	109.1	1000	
Sr	88	115	He	0.013	ug/l	22.0	2000	
Mo	95	115	He	0.237	ug/l	25.5	1000	
Ag	107	115	He	0.003	ug/l	18.7	100	
Cd	111	115	He	-0.019	ug/l	N/A	2000	
Sn	118	115	He	-0.174	ug/l	N/A	100	
Sb	121	115	He	-0.264	ug/l	N/A	100	
Ba	137	159	He	0.019	ug/l	66.1	5000	
Tl	205	209	He	0.045	ug/l	6.8	1000	
(Pb)	206	209	He	0.091	ug/l	20.9		
(Pb)	207	209	He	0.087	ug/l	11.1		
Pb	208	209	He	0.091	ug/l	12.5	5000	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Li (IS)	6	He	1103.16	1.8	98.9	70	120	
Sc (ISICPMS)	45	H2	581452.17	0.9	112.0	70	120	
Sc (ISICPMS)	45	He	42724.63	1.6	114.3	70	120	
Ge (IS)	74	H2	172514.61	0.6	117.5	70	120	
Ge (IS)	74	He	33817.36	1.5	119.4	70	120	
Kr	83	He	6.67	86.6	40.0			
In-1	115	He	59145.04	0.3	109.6	70	120	
Tb (IS)	159	He	290206.13	1.3	103.1	70	120	
Bi (IS)	209	He	225903.45	1.0	102.1	70	120	

Sample Report

File Name 019SMPL.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 16:20:24

Sample Name **rn.chk**

Comment ---

Dilution **1.0000**

Vial # 4

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	High Value	QC Flag
Be	9	6	He	0.014	ug/l	65.0	1000	
B	11	6	He	0.547	ug/l	241.9	500	
Na	23	45	He	20.832	ug/l	10.8	200000	
Mg	24	45	He	0.933	ug/l	25.4	150000	
Al	27	45	He	-0.183	ug/l	N/A	50000	
K	39	45	He	6.678	ug/l	71.5	200000	
Ca	40	45	H2	-6.322	ug/l	N/A	150000	
Ti	47	45	He	0.082	ug/l	18.2	1000	
V	51	45	He	-0.006	ug/l	N/A	2000	
Cr	52	45	He	-0.136	ug/l	N/A	4000	
Mn	55	45	He	0.033	ug/l	36.6	5000	
Fe	56	45	He	0.483	ug/l	12.3	100000	
Co	59	45	He	0.002	ug/l	14.1	1000	
Ni	60	45	He	-0.040	ug/l	N/A	1000	
Cu	63	45	He	0.008	ug/l	18.8	1000	
Zn	66	45	He	-0.128	ug/l	N/A	1000	
As	75	74	He	0.010	ug/l	177.7	2000	
Se	78	74	H2	0.020	ug/l	117.6	1000	
Sr	88	115	He	0.008	ug/l	98.6	2000	
Mo	95	115	He	0.048	ug/l	3.6	1000	
Ag	107	115	He	0.011	ug/l	32.2	100	
Cd	111	115	He	-0.021	ug/l	N/A	2000	
Sn	118	115	He	-0.136	ug/l	N/A	100	
Sb	121	115	He	-0.157	ug/l	N/A	100	
Ba	137	159	He	0.006	ug/l	219.9	5000	
Tl	205	209	He	0.009	ug/l	10.7	1000	
(Pb)	206	209	He	0.056	ug/l	7.3		
(Pb)	207	209	He	0.052	ug/l	16.9		
Pb	208	209	He	0.055	ug/l	1.9	5000	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Li (IS)	6	He	1189.49	2.0	106.7	70	120	
Sc (ISICPMS)	45	H2	618969.09	1.7	119.3	70	120	
Sc (ISICPMS)	45	He	46075.85	1.5	123.3	70	120	failed
Ge (IS)	74	H2	176354.16	1.8	120.1	70	120	failed
Ge (IS)	74	He	34445.43	0.2	121.6	70	120	failed
Kr	83	He	10.01	100.0	60.0			
In-1	115	He	60838.08	0.5	112.7	70	120	
Tb (IS)	159	He	299829.84	0.3	106.5	70	120	
Bi (IS)	209	He	233094.29	0.4	105.3	70	120	

Sample Report

File Name 020SMPL.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 16:23:04

Sample Name **rn.chk**

Comment ---

Dilution **1.0000**

Vial # 5

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	High Value	QC Flag
Be	9	6	He	-0.001	ug/l	N/A	1000	
B	11	6	He	-1.014	ug/l	N/A	500	
Na	23	45	He	10.664	ug/l	6.9	200000	
Mg	24	45	He	0.123	ug/l	61.3	150000	
Al	27	45	He	-0.055	ug/l	N/A	50000	
K	39	45	He	4.312	ug/l	63.0	200000	
Ca	40	45	H2	-7.714	ug/l	N/A	150000	
Ti	47	45	He	0.086	ug/l	10.5	1000	
V	51	45	He	-0.010	ug/l	N/A	2000	
Cr	52	45	He	-0.120	ug/l	N/A	4000	
Mn	55	45	He	-0.011	ug/l	N/A	5000	
Fe	56	45	He	0.086	ug/l	68.2	100000	
Co	59	45	He	0.000	ug/l	1472.2	1000	
Ni	60	45	He	-0.024	ug/l	N/A	1000	
Cu	63	45	He	0.012	ug/l	52.3	1000	
Zn	66	45	He	-0.163	ug/l	N/A	1000	
As	75	74	He	0.003	ug/l	346.2	2000	
Se	78	74	H2	0.002	ug/l	650.0	1000	
Sr	88	115	He	0.002	ug/l	3.3	2000	
Mo	95	115	He	0.020	ug/l	15.8	1000	
Ag	107	115	He	0.006	ug/l	32.4	100	
Cd	111	115	He	-0.027	ug/l	N/A	2000	
Sn	118	115	He	-0.110	ug/l	N/A	100	
Sb	121	115	He	-0.132	ug/l	N/A	100	
Ba	137	159	He	-0.003	ug/l	N/A	5000	
Tl	205	209	He	0.005	ug/l	20.6	1000	
(Pb)	206	209	He	0.043	ug/l	32.5		
(Pb)	207	209	He	0.036	ug/l	9.1		
Pb	208	209	He	0.038	ug/l	9.6	5000	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Li (IS)	6	He	1137.66	3.2	102.0	70	120	
Sc (ISICPMS)	45	H2	597165.91	1.9	115.1	70	120	
Sc (ISICPMS)	45	He	43699.84	0.9	116.9	70	120	
Ge (IS)	74	H2	167174.59	1.5	113.9	70	120	
Ge (IS)	74	He	32623.51	0.5	115.2	70	120	
Kr	83	He	6.67	86.6	40.0			
In-1	115	He	59198.46	1.1	109.7	70	120	
Tb (IS)	159	He	290480.58	0.5	103.2	70	120	
Bi (IS)	209	He	228004.30	0.4	103.0	70	120	

Continuing Calibration Verification (CCV)

File Name 021_CCV.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 16:25:47

Sample Name **CCV 6782584**

Comment ---

Dilution 1.0000

Vial # 1301

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	ExpectedValue	Lower Lmt	Upper Lmt	QC Flag
Be	9	6	He	52.903	ug/l	1.8	50	45	55	
B	11	6	He	101.548	ug/l	7.0	100	90	110	
Na	23	45	He	5030.322	ug/l	0.7	5000	4500	5500	
Mg	24	45	He	4967.916	ug/l	1.0	5000	4500	5500	
Al	27	45	He	493.145	ug/l	0.6	500	450	550	
K	39	45	He	5053.027	ug/l	0.4	5000	4500	5500	
Ca	40	45	H2	5026.615	ug/l	0.5	5000	4500	5500	
Ti	47	45	He	49.461	ug/l	1.4	50	45	55	
V	51	45	He	50.337	ug/l	1.4	50	45	55	
Cr	52	45	He	49.883	ug/l	1.2	50	45	55	
Mn	55	45	He	493.277	ug/l	0.9	500	450	550	
Fe	56	45	He	4908.326	ug/l	0.6	5000	4500	5500	
Co	59	45	He	48.878	ug/l	0.5	50	45	55	
Ni	60	45	He	49.010	ug/l	1.1	50	45	55	
Cu	63	45	He	49.158	ug/l	0.4	50	45	55	
Zn	66	45	He	50.189	ug/l	1.0	50	45	55	
As	75	74	He	51.108	ug/l	2.8	50	45	55	
Se	78	74	H2	52.469	ug/l	0.3	50	45	55	
Sr	88	115	He	51.651	ug/l	1.8	50	45	55	
Mo	95	115	He	50.760	ug/l	0.7	50	45	55	
Ag	107	115	He	49.503	ug/l	0.8	50	45	55	
Cd	111	115	He	50.855	ug/l	0.8	50	45	55	
Sn	118	115	He	49.470	ug/l	1.2	50	45	55	
Sb	121	115	He	49.895	ug/l	2.2	50	45	55	
Ba	137	159	He	51.796	ug/l	0.7	50	45	55	
Tl	205	209	He	9.991	ug/l	0.9	10	9	11	
(Pb)	206	209	He	49.952	ug/l	1.0				
(Pb)	207	209	He	50.073	ug/l	1.0				
Pb	208	209	He	50.139	ug/l	0.8	50	45	55	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower %Lmt	Upper %Lmt	QC Flag
Li (IS)	6	He	1135.32	1.8	101.8	70	120	
Sc (ISICPMS)	45	H2	583908.20	0.2	112.5	70	120	
Sc (ISICPMS)	45	He	43015.48	0.7	115.1	70	120	
Ge (IS)	74	H2	173016.78	0.4	117.8	70	120	
Ge (IS)	74	He	34098.95	1.8	120.4	70	120	failed
Kr	83	He	10.01	NaN	60.0			
In-1	115	He	57240.28	0.7	106.1	70	120	
Tb (IS)	159	He	288788.94	0.5	102.6	70	120	

Continuing Calibration Verification (CCV)

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower %Lmt	Upper %Lmt	QC Flag
Bi (IS)	209	He	221671.12	0.9	100.2	70	120	

Initial/Continuing Calibration Blank (ICB/CCB)

File Name 022_CCB.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 16:28:24

Sample Name **CCB**

Comment ---

Dilution 1.0000

Vial #

QuantTable 1302

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	ExpectedValue	Lower Lmt	Upper Lmt	QC Flag
Be	9	6	He	0.005	ug/l	209.7	0.2	-0.2	0.2	
B	11	6	He	-0.613	ug/l	N/A	20	-20	20	
Na	23	45	He	9.786	ug/l	9.3	50	-50	50	
Mg	24	45	He	0.140	ug/l	7.9	50	-50	50	
Al	27	45	He	-0.269	ug/l	N/A	10	-10	10	
K	39	45	He	7.300	ug/l	47.8	50	-50	50	
Ca	40	45	H2	-6.871	ug/l	N/A	50	-50	50	
Ti	47	45	He	0.069	ug/l	28.7	1	-1	1	
V	51	45	He	-0.008	ug/l	N/A	1	-1	1	
Cr	52	45	He	-0.002	ug/l	N/A	1	-1	1	
Mn	55	45	He	0.021	ug/l	27.4	2	-2	2	
Fe	56	45	He	0.244	ug/l	4.5	30	-30	30	
Co	59	45	He	0.001	ug/l	93.2	1	-1	1	
Ni	60	45	He	-0.005	ug/l	N/A	1	-1	1	
Cu	63	45	He	0.032	ug/l	15.3	1	-1	1	
Zn	66	45	He	-0.095	ug/l	N/A	4	-4	4	
As	75	74	He	0.014	ug/l	104.8	0.5	-0.5	0.5	
Se	78	74	H2	0.044	ug/l	43.5	0.5	-0.5	0.5	
Sr	88	115	He	-0.002	ug/l	N/A	1	-1	1	
Mo	95	115	He	0.023	ug/l	11.8	1	-1	1	
Ag	107	115	He	0.013	ug/l	23.9	1	-1	1	
Cd	111	115	He	-0.024	ug/l	N/A	0.5	-0.5	0.5	
Sn	118	115	He	0.073	ug/l	28.1	4	-4	4	
Sb	121	115	He	0.042	ug/l	21.3	0.5	-0.5	0.5	
Ba	137	159	He	0.013	ug/l	92.0	1	-1	1	
Tl	205	209	He	0.005	ug/l	16.8	0.2	-0.2	0.2	
(Pb)	206	209	He	0.036	ug/l	19.3				
(Pb)	207	209	He	0.041	ug/l	17.6				
Pb	208	209	He	0.039	ug/l	3.3	0.3	-0.3	0.3	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower %Lmt	Upper %Lmt	QC Flag
Li (IS)	6	He	1101.82	1.8	98.8	70	120	
Sc (ISICPMS)	45	H2	534842.37	1.2	103.1	70	120	
Sc (ISICPMS)	45	He	40467.66	0.5	108.3	70	120	
Ge (IS)	74	H2	148015.65	1.3	100.8	70	120	
Ge (IS)	74	He	30122.67	0.6	106.4	70	120	
Kr	83	He	20.02	NaN	120.0			
In-1	115	He	54159.98	1.7	100.4	70	120	
Tb (IS)	159	He	271775.74	0.7	96.5	70	120	
Bi (IS)	209	He	211327.99	1.3	95.5	70	120	

Sample Report

File Name 023SMPL.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 16:31:04

Sample Name **mb 460-596854/1-a@2**

Comment ---

Dilution **1.0000**

Vial # 2101

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	High Value	QC Flag
Be	9	6	He	0.010	ug/l	284.9	1000	
B	11	6	He	-0.057	ug/l	N/A	500	
Na	23	45	He	12.794	ug/l	5.2	200000	
Mg	24	45	He	0.364	ug/l	10.3	150000	
Al	27	45	He	2.824	ug/l	25.3	50000	
K	39	45	He	7.797	ug/l	70.2	200000	
Ca	40	45	H2	-3.803	ug/l	N/A	150000	
Ti	47	45	He	0.094	ug/l	28.7	1000	
V	51	45	He	0.012	ug/l	74.3	2000	
Cr	52	45	He	0.101	ug/l	40.7	4000	
Mn	55	45	He	0.059	ug/l	43.4	5000	
Fe	56	45	He	0.732	ug/l	6.9	100000	
Co	59	45	He	0.002	ug/l	156.6	1000	
Ni	60	45	He	-0.022	ug/l	N/A	1000	
Cu	63	45	He	0.097	ug/l	7.4	1000	
Zn	66	45	He	-0.033	ug/l	N/A	1000	
As	75	74	He	0.031	ug/l	105.5	2000	
Se	78	74	H2	0.031	ug/l	21.8	1000	
Sr	88	115	He	0.010	ug/l	127.9	2000	
Mo	95	115	He	0.012	ug/l	61.2	1000	
Ag	107	115	He	0.013	ug/l	16.4	100	
Cd	111	115	He	-0.025	ug/l	N/A	2000	
Sn	118	115	He	0.140	ug/l	21.3	100	
Sb	121	115	He	0.412	ug/l	5.0	100	
Ba	137	159	He	0.021	ug/l	87.1	5000	
Tl	205	209	He	0.005	ug/l	17.2	1000	
(Pb)	206	209	He	0.039	ug/l	27.2		
(Pb)	207	209	He	0.034	ug/l	31.3		
Pb	208	209	He	0.038	ug/l	11.8	5000	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Li (IS)	6	He	1070.82	1.8	96.0	70	120	
Sc (ISICPMS)	45	H2	527790.81	1.7	101.7	70	120	
Sc (ISICPMS)	45	He	39127.29	1.5	104.7	70	120	
Ge (IS)	74	H2	144246.97	1.6	98.2	70	120	
Ge (IS)	74	He	29563.73	1.8	104.4	70	120	
Kr	83	He	26.69	57.3	160.0			
In-1	115	He	51118.12	1.0	94.7	70	120	
Tb (IS)	159	He	256973.22	0.5	91.3	70	120	
Bi (IS)	209	He	199716.21	1.3	90.3	70	120	

Sample Report

File Name 024SMPL.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 16:33:43

Sample Name **lcs 460-596854/2-a@2**

Comment ---

Dilution **1.0000**

Vial # 2102

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	High Value	QC Flag
Be	9	6	He	13.366	ug/l	4.3	1000	
B	11	6	He	266.516	ug/l	6.2	500	
Na	23	45	He	1296.074	ug/l	1.1	200000	
Mg	24	45	He	1247.623	ug/l	0.4	150000	
Al	27	45	He	1209.438	ug/l	0.7	50000	
K	39	45	He	1255.285	ug/l	0.6	200000	
Ca	40	45	H2	1234.134	ug/l	1.2	150000	
Ti	47	45	He	24.407	ug/l	0.7	1000	
V	51	45	He	25.426	ug/l	0.7	2000	
Cr	52	45	He	25.730	ug/l	0.6	4000	
Mn	55	45	He	124.819	ug/l	0.1	5000	
Fe	56	45	He	1261.568	ug/l	1.2	100000	
Co	59	45	He	12.447	ug/l	0.6	1000	
Ni	60	45	He	25.671	ug/l	0.9	1000	
Cu	63	45	He	25.442	ug/l	0.6	1000	
Zn	66	45	He	120.165	ug/l	0.8	1000	
As	75	74	He	24.131	ug/l	2.5	2000	
Se	78	74	H2	24.849	ug/l	1.3	1000	
Sr	88	115	He	25.618	ug/l	0.7	2000	
Mo	95	115	He	24.530	ug/l	1.4	1000	
Ag	107	115	He	12.881	ug/l	2.1	100	
Cd	111	115	He	12.560	ug/l	2.0	2000	
Sn	118	115	He	24.969	ug/l	1.7	100	
Sb	121	115	He	12.791	ug/l	0.2	100	
Ba	137	159	He	25.074	ug/l	0.4	5000	
Tl	205	209	He	10.067	ug/l	0.8	1000	
(Pb)	206	209	He	13.030	ug/l	1.2		
(Pb)	207	209	He	12.513	ug/l	0.8		
Pb	208	209	He	12.728	ug/l	0.4	5000	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Li (IS)	6	He	1049.49	1.3	94.1	70	120	
Sc (ISICPMS)	45	H2	515886.43	0.8	99.4	70	120	
Sc (ISICPMS)	45	He	38416.55	1.2	102.8	70	120	
Ge (IS)	74	H2	154207.01	1.8	105.0	70	120	
Ge (IS)	74	He	31565.73	0.7	111.4	70	120	
Kr	83	He	33.37	17.3	200.0			
In-1	115	He	50707.70	1.7	94.0	70	120	
Tb (IS)	159	He	255430.21	1.1	90.7	70	120	
Bi (IS)	209	He	196238.02	1.0	88.7	70	120	

Sample Report

File Name 025SMPL.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 16:36:21

Sample Name **PDS 460-177420-f-2-a@2**

Comment ---

Dilution **1.0000**

Vial # 2103

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	High Value	QC Flag
Be	9	6	He	5.913	ug/l	5.0	1000	
B	11	6	He	1620.094	ug/l	2.5	500	failed
Na	23	45	He	36024.580	ug/l	1.3	200000	
Mg	24	45	He	13754.479	ug/l	1.1	150000	
Al	27	45	He	540.396	ug/l	1.6	50000	
K	39	45	He	5623.004	ug/l	0.9	200000	
Ca	40	45	H2	65945.782	ug/l	0.3	150000	
Ti	47	45	He	11.139	ug/l	2.6	1000	
V	51	45	He	11.342	ug/l	2.2	2000	
Cr	52	45	He	11.409	ug/l	2.0	4000	
Mn	55	45	He	56.885	ug/l	1.1	5000	
Fe	56	45	He	567.807	ug/l	1.1	100000	
Co	59	45	He	5.735	ug/l	1.2	1000	
Ni	60	45	He	30.234	ug/l	0.9	1000	
Cu	63	45	He	43.222	ug/l	1.2	1000	
Zn	66	45	He	3018.930	ug/l	0.9	1000	failed
As	75	74	He	10.153	ug/l	4.1	2000	
Se	78	74	H2	12.005	ug/l	2.5	1000	
Sr	88	115	He	287.545	ug/l	0.8	2000	
Mo	95	115	He	15.454	ug/l	0.6	1000	
Ag	107	115	He	4.298	ug/l	1.3	100	
Cd	111	115	He	26.982	ug/l	2.1	2000	
Sn	118	115	He	11.078	ug/l	0.7	100	
Sb	121	115	He	9.355	ug/l	2.3	100	
Ba	137	159	He	35.799	ug/l	0.7	5000	
Tl	205	209	He	4.653	ug/l	0.6	1000	
(Pb)	206	209	He	21.072	ug/l	0.6		
(Pb)	207	209	He	19.356	ug/l	0.8		
Pb	208	209	He	20.130	ug/l	0.3	5000	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Li (IS)	6	He	1063.99	1.2	95.4	70	120	
Sc (ISICPMS)	45	H2	535412.15	1.6	103.2	70	120	
Sc (ISICPMS)	45	He	38344.04	2.1	102.6	70	120	
Ge (IS)	74	H2	171546.97	2.1	116.8	70	120	
Ge (IS)	74	He	35144.87	0.4	124.1	70	120	failed
Kr	83	He	6.67	173.2	40.0			
In-1	115	He	49631.02	2.3	92.0	70	120	
Tb (IS)	159	He	257104.84	1.3	91.3	70	120	
Bi (IS)	209	He	191266.44	1.9	86.4	70	120	

Sample Report

File Name 026SMPL.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 16:39:02

Sample Name **460-177420-f-2-c ms@2**

Comment ---

Dilution **1.0000**

Vial # 2104

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	High Value	QC Flag
Be	9	6	He	13.770	ug/l	2.7	1000	
B	11	6	He	1785.205	ug/l	2.7	500	failed
Na	23	45	He	35526.781	ug/l	2.7	200000	
Mg	24	45	He	13876.836	ug/l	3.3	150000	
Al	27	45	He	1235.156	ug/l	2.8	50000	
K	39	45	He	6170.935	ug/l	3.3	200000	
Ca	40	45	H2	65151.252	ug/l	1.4	150000	
Ti	47	45	He	25.467	ug/l	4.2	1000	
V	51	45	He	25.799	ug/l	2.8	2000	
Cr	52	45	He	25.812	ug/l	3.7	4000	
Mn	55	45	He	128.021	ug/l	2.9	5000	
Fe	56	45	He	1270.816	ug/l	3.1	100000	
Co	59	45	He	12.613	ug/l	2.6	1000	
Ni	60	45	He	43.640	ug/l	3.8	1000	
Cu	63	45	He	56.108	ug/l	3.2	1000	
Zn	66	45	He	2949.471	ug/l	3.0	1000	failed
As	75	74	He	23.128	ug/l	1.9	2000	
Se	78	74	H2	25.471	ug/l	2.0	1000	
Sr	88	115	He	294.380	ug/l	0.5	2000	
Mo	95	115	He	29.910	ug/l	1.0	1000	
Ag	107	115	He	13.022	ug/l	1.7	100	
Cd	111	115	He	32.966	ug/l	2.4	2000	
Sn	118	115	He	25.522	ug/l	1.8	100	
Sb	121	115	He	16.637	ug/l	1.0	100	
Ba	137	159	He	50.386	ug/l	1.0	5000	
Tl	205	209	He	10.706	ug/l	0.5	1000	
(Pb)	206	209	He	28.446	ug/l	0.8		
(Pb)	207	209	He	26.467	ug/l	0.7		
Pb	208	209	He	27.415	ug/l	0.3	5000	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Li (IS)	6	He	1072.32	0.7	96.2	70	120	
Sc (ISICPMS)	45	H2	546235.62	1.4	105.3	70	120	
Sc (ISICPMS)	45	He	39959.37	2.5	106.9	70	120	
Ge (IS)	74	H2	177002.75	0.4	120.6	70	120	failed
Ge (IS)	74	He	35884.44	1.3	126.7	70	120	failed
Kr	83	He	10.01	100.0	60.0			
In-1	115	He	51194.44	1.0	94.9	70	120	
Tb (IS)	159	He	261069.06	0.3	92.7	70	120	
Bi (IS)	209	He	192220.18	0.7	86.9	70	120	

Sample Report

File Name 027SMPL.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 16:41:46

Sample Name **460-177420-f-2-b du@2**

Comment ---

Dilution **1.0000**

Vial # 2105

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	High Value	QC Flag
Be	9	6	He	0.005	ug/l	204.6	1000	
B	11	6	He	1626.050	ug/l	2.4	500	failed
Na	23	45	He	35531.817	ug/l	0.5	200000	
Mg	24	45	He	13107.319	ug/l	1.0	150000	
Al	27	45	He	7.295	ug/l	9.7	50000	
K	39	45	He	5086.925	ug/l	0.5	200000	
Ca	40	45	H2	66651.271	ug/l	0.8	150000	
Ti	47	45	He	0.340	ug/l	19.2	1000	
V	51	45	He	0.135	ug/l	3.2	2000	
Cr	52	45	He	0.239	ug/l	16.0	4000	
Mn	55	45	He	2.634	ug/l	1.0	5000	
Fe	56	45	He	11.529	ug/l	0.6	100000	
Co	59	45	He	0.303	ug/l	2.6	1000	
Ni	60	45	He	19.485	ug/l	0.7	1000	
Cu	63	45	He	32.020	ug/l	0.7	1000	
Zn	66	45	He	2947.500	ug/l	0.4	1000	failed
As	75	74	He	0.228	ug/l	10.2	2000	
Se	78	74	H2	2.326	ug/l	8.1	1000	
Sr	88	115	He	276.767	ug/l	1.0	2000	
Mo	95	115	He	4.100	ug/l	2.2	1000	
Ag	107	115	He	0.029	ug/l	14.7	100	
Cd	111	115	He	21.105	ug/l	0.7	2000	
Sn	118	115	He	0.093	ug/l	27.6	100	
Sb	121	115	He	4.032	ug/l	1.7	100	
Ba	137	159	He	25.364	ug/l	2.6	5000	
Tl	205	209	He	0.154	ug/l	4.7	1000	
(Pb)	206	209	He	15.510	ug/l	1.6		
(Pb)	207	209	He	14.061	ug/l	0.4		
Pb	208	209	He	14.665	ug/l	0.6	5000	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Li (IS)	6	He	1076.16	4.3	96.5	70	120	
Sc (ISICPMS)	45	H2	543833.30	0.8	104.8	70	120	
Sc (ISICPMS)	45	He	40354.99	2.1	108.0	70	120	
Ge (IS)	74	H2	176741.09	0.2	120.4	70	120	failed
Ge (IS)	74	He	36594.96	2.7	129.2	70	120	failed
Kr	83	He	0.00	N/A	0.0			
In-1	115	He	51668.49	2.3	95.7	70	120	
Tb (IS)	159	He	262079.37	1.7	93.1	70	120	
Bi (IS)	209	He	193381.66	2.2	87.4	70	120	

Sample Report

File Name 028SMPL.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 16:44:28

Sample Name **460-177420-f-2-a@2**

Comment ---

Dilution **1.0000**

Vial # 2106

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	High Value	QC Flag
Be	9	6	He	0.004	ug/l	220.4	1000	
B	11	6	He	1526.117	ug/l	2.3	500	failed
Na	23	45	He	34888.007	ug/l	0.3	200000	
Mg	24	45	He	12949.542	ug/l	0.3	150000	
Al	27	45	He	6.375	ug/l	7.9	50000	
K	39	45	He	4986.266	ug/l	0.5	200000	
Ca	40	45	H2	64584.137	ug/l	0.7	150000	
Ti	47	45	He	0.309	ug/l	18.3	1000	
V	51	45	He	0.142	ug/l	13.5	2000	
Cr	52	45	He	0.256	ug/l	15.9	4000	
Mn	55	45	He	2.499	ug/l	5.9	5000	
Fe	56	45	He	10.980	ug/l	0.9	100000	
Co	59	45	He	0.311	ug/l	2.7	1000	
Ni	60	45	He	18.939	ug/l	1.0	1000	
Cu	63	45	He	31.457	ug/l	0.6	1000	
Zn	66	45	He	2884.497	ug/l	0.3	1000	failed
As	75	74	He	0.158	ug/l	31.4	2000	
Se	78	74	H2	2.518	ug/l	8.5	1000	
Sr	88	115	He	271.944	ug/l	0.8	2000	
Mo	95	115	He	4.013	ug/l	1.7	1000	
Ag	107	115	He	0.024	ug/l	8.5	100	
Cd	111	115	He	20.222	ug/l	1.7	2000	
Sn	118	115	He	0.102	ug/l	18.8	100	
Sb	121	115	He	3.980	ug/l	4.9	100	
Ba	137	159	He	24.843	ug/l	2.9	5000	
Tl	205	209	He	0.148	ug/l	3.9	1000	
(Pb)	206	209	He	14.980	ug/l	0.7		
(Pb)	207	209	He	13.774	ug/l	0.6		
Pb	208	209	He	14.289	ug/l	0.3	5000	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Li (IS)	6	He	1124.82	1.1	100.9	70	120	
Sc (ISICPMS)	45	H2	572712.01	0.6	110.4	70	120	
Sc (ISICPMS)	45	He	41889.13	0.1	112.1	70	120	
Ge (IS)	74	H2	183820.14	0.9	125.2	70	120	failed
Ge (IS)	74	He	37995.30	0.7	134.1	70	120	failed
Kr	83	He	26.69	43.3	160.0			
In-1	115	He	53546.15	0.9	99.2	70	120	
Tb (IS)	159	He	270805.90	0.1	96.2	70	120	
Bi (IS)	209	He	199645.34	0.5	90.2	70	120	

Sample Report

File Name 029SMPL.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 16:47:10

Sample Name **SD 460-177420-f-2-a@10**

Comment ---

Dilution **1.0000**

Vial # 2107

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	High Value	QC Flag
Be	9	6	He	0.010	ug/l	170.5	1000	
B	11	6	He	335.494	ug/l	2.7	500	
Na	23	45	He	6887.205	ug/l	1.5	200000	
Mg	24	45	He	2570.518	ug/l	0.9	150000	
Al	27	45	He	1.541	ug/l	20.3	50000	
K	39	45	He	981.376	ug/l	0.9	200000	
Ca	40	45	H2	12809.373	ug/l	0.6	150000	
Ti	47	45	He	0.116	ug/l	20.5	1000	
V	51	45	He	0.075	ug/l	3.8	2000	
Cr	52	45	He	0.056	ug/l	28.6	4000	
Mn	55	45	He	0.536	ug/l	9.7	5000	
Fe	56	45	He	2.097	ug/l	6.3	100000	
Co	59	45	He	0.062	ug/l	14.6	1000	
Ni	60	45	He	3.784	ug/l	1.9	1000	
Cu	63	45	He	6.339	ug/l	1.5	1000	
Zn	66	45	He	584.326	ug/l	0.8	1000	
As	75	74	He	0.066	ug/l	43.1	2000	
Se	78	74	H2	0.560	ug/l	8.1	1000	
Sr	88	115	He	52.514	ug/l	2.5	2000	
Mo	95	115	He	0.819	ug/l	0.9	1000	
Ag	107	115	He	0.012	ug/l	38.4	100	
Cd	111	115	He	3.984	ug/l	0.5	2000	
Sn	118	115	He	0.068	ug/l	17.5	100	
Sb	121	115	He	0.859	ug/l	6.1	100	
Ba	137	159	He	4.819	ug/l	2.7	5000	
Tl	205	209	He	0.027	ug/l	11.8	1000	
(Pb)	206	209	He	2.888	ug/l	1.5		
(Pb)	207	209	He	2.631	ug/l	3.4		
Pb	208	209	He	2.744	ug/l	1.0	5000	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Li (IS)	6	He	1141.32	2.0	102.4	70	120	
Sc (ISICPMS)	45	H2	595142.35	0.8	114.7	70	120	
Sc (ISICPMS)	45	He	43655.34	1.2	116.8	70	120	
Ge (IS)	74	H2	179612.15	1.2	122.3	70	120	failed
Ge (IS)	74	He	35568.14	1.7	125.6	70	120	failed
Kr	83	He	20.02	86.6	120.0			
In-1	115	He	57149.21	0.5	105.9	70	120	
Tb (IS)	159	He	287934.85	0.8	102.2	70	120	
Bi (IS)	209	He	218871.62	0.3	98.9	70	120	

Sample Report

File Name 030SMPL.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 16:49:48

Sample Name **460-177420-f-1-a@2**

Comment ---

Dilution **1.0000**

Vial # 2108

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	High Value	QC Flag
Be	9	6	He	0.045	ug/l	37.2	1000	
B	11	6	He	93.912	ug/l	7.6	500	
Na	23	45	He	30372.101	ug/l	0.7	200000	
Mg	24	45	He	3384.821	ug/l	0.2	150000	
Al	27	45	He	830.775	ug/l	1.0	50000	
K	39	45	He	11438.238	ug/l	0.8	200000	
Ca	40	45	H2	22701.948	ug/l	1.2	150000	
Ti	47	45	He	44.177	ug/l	2.0	1000	
V	51	45	He	5.219	ug/l	1.6	2000	
Cr	52	45	He	9.320	ug/l	1.2	4000	
Mn	55	45	He	56.031	ug/l	1.8	5000	
Fe	56	45	He	3672.942	ug/l	0.7	100000	
Co	59	45	He	1.167	ug/l	1.7	1000	
Ni	60	45	He	3.801	ug/l	1.5	1000	
Cu	63	45	He	41.740	ug/l	0.7	1000	
Zn	66	45	He	147.075	ug/l	0.8	1000	
As	75	74	He	3.320	ug/l	7.8	2000	
Se	78	74	H2	0.184	ug/l	28.3	1000	
Sr	88	115	He	112.851	ug/l	0.2	2000	
Mo	95	115	He	5.110	ug/l	1.3	1000	
Ag	107	115	He	0.039	ug/l	3.0	100	
Cd	111	115	He	0.097	ug/l	8.3	2000	
Sn	118	115	He	1.896	ug/l	3.1	100	
Sb	121	115	He	2.435	ug/l	6.2	100	
Ba	137	159	He	141.282	ug/l	0.2	5000	
Tl	205	209	He	0.015	ug/l	18.7	1000	
(Pb)	206	209	He	77.143	ug/l	0.4		
(Pb)	207	209	He	74.033	ug/l	0.3		
Pb	208	209	He	75.615	ug/l	0.1	5000	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Li (IS)	6	He	1087.82	1.4	97.6	70	120	
Sc (ISICPMS)	45	H2	564610.52	0.1	108.8	70	120	
Sc (ISICPMS)	45	He	40947.66	0.5	109.6	70	120	
Ge (IS)	74	H2	180927.32	0.9	123.2	70	120	failed
Ge (IS)	74	He	36535.02	2.3	129.0	70	120	failed
Kr	83	He	3.34	173.2	20.0			
In-1	115	He	52662.00	0.2	97.6	70	120	
Tb (IS)	159	He	271892.47	0.5	96.6	70	120	
Bi (IS)	209	He	203635.64	0.9	92.0	70	120	

Sample Report

File Name 031SMPL.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 16:52:25

Sample Name **rn.chk**

Comment ---

Dilution **1.0000**

Vial # 2

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	High Value	QC Flag
Be	9	6	He	0.009	ug/l	3.2	1000	
B	11	6	He	9.349	ug/l	13.8	500	
Na	23	45	He	5.836	ug/l	22.9	200000	
Mg	24	45	He	0.414	ug/l	22.8	150000	
Al	27	45	He	0.428	ug/l	93.9	50000	
K	39	45	He	-2.364	ug/l	N/A	200000	
Ca	40	45	H2	-3.193	ug/l	N/A	150000	
Ti	47	45	He	0.060	ug/l	21.9	1000	
V	51	45	He	-0.020	ug/l	N/A	2000	
Cr	52	45	He	-0.122	ug/l	N/A	4000	
Mn	55	45	He	-0.019	ug/l	N/A	5000	
Fe	56	45	He	-0.151	ug/l	N/A	100000	
Co	59	45	He	0.000	ug/l	275.0	1000	
Ni	60	45	He	-0.038	ug/l	N/A	1000	
Cu	63	45	He	-0.022	ug/l	N/A	1000	
Zn	66	45	He	-0.097	ug/l	N/A	1000	
As	75	74	He	-0.002	ug/l	N/A	2000	
Se	78	74	H2	-0.009	ug/l	N/A	1000	
Sr	88	115	He	0.010	ug/l	30.3	2000	
Mo	95	115	He	-0.002	ug/l	N/A	1000	
Ag	107	115	He	0.001	ug/l	213.4	100	
Cd	111	115	He	-0.027	ug/l	N/A	2000	
Sn	118	115	He	-0.155	ug/l	N/A	100	
Sb	121	115	He	-0.262	ug/l	N/A	100	
Ba	137	159	He	0.004	ug/l	129.8	5000	
Tl	205	209	He	0.003	ug/l	49.5	1000	
(Pb)	206	209	He	0.020	ug/l	20.8		
(Pb)	207	209	He	0.019	ug/l	24.4		
Pb	208	209	He	0.020	ug/l	8.6	5000	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Li (IS)	6	He	1202.32	1.8	107.8	70	120	
Sc (ISICPMS)	45	H2	621684.74	1.4	119.8	70	120	
Sc (ISICPMS)	45	He	46199.51	0.6	123.6	70	120	failed
Ge (IS)	74	H2	183324.20	1.6	124.9	70	120	failed
Ge (IS)	74	He	36233.02	1.1	127.9	70	120	failed
Kr	83	He	6.67	173.2	40.0			
In-1	115	He	63049.08	0.6	116.8	70	120	
Tb (IS)	159	He	311166.04	0.8	110.5	70	120	
Bi (IS)	209	He	242730.01	0.5	109.7	70	120	

Sample Report

File Name 032SMPL.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 16:55:05

Sample Name **460-177420-f-3-a@2**

Comment ---

Dilution **1.0000**

Vial # 2109

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	High Value	QC Flag
Be	9	6	He	0.058	ug/l	33.8	1000	
B	11	6	He	128.354	ug/l	14.7	500	
Na	23	45	He	420510.714	ug/l	1.1	200000	failed
Mg	24	45	He	3484.665	ug/l	1.1	150000	
Al	27	45	He	782.894	ug/l	2.1	50000	
K	39	45	He	43137.943	ug/l	1.3	200000	
Ca	40	45	H2	169550.654	ug/l	0.7	150000	failed
Ti	47	45	He	33.754	ug/l	1.7	1000	
V	51	45	He	6.642	ug/l	0.5	2000	
Cr	52	45	He	3.422	ug/l	0.9	4000	
Mn	55	45	He	23.694	ug/l	1.2	5000	
Fe	56	45	He	1400.459	ug/l	0.5	100000	
Co	59	45	He	1.571	ug/l	1.1	1000	
Ni	60	45	He	17.679	ug/l	1.1	1000	
Cu	63	45	He	11.161	ug/l	1.2	1000	
Zn	66	45	He	40.905	ug/l	3.5	1000	
As	75	74	He	3.964	ug/l	4.5	2000	
Se	78	74	H2	0.435	ug/l	16.7	1000	
Sr	88	115	He	1145.778	ug/l	1.5	2000	
Mo	95	115	He	49.441	ug/l	0.7	1000	
Ag	107	115	He	0.071	ug/l	8.1	100	
Cd	111	115	He	0.046	ug/l	40.7	2000	
Sn	118	115	He	0.719	ug/l	3.2	100	
Sb	121	115	He	1.084	ug/l	4.8	100	
Ba	137	159	He	33.968	ug/l	0.9	5000	
Tl	205	209	He	0.011	ug/l	4.9	1000	
(Pb)	206	209	He	18.718	ug/l	0.5		
(Pb)	207	209	He	17.199	ug/l	0.9		
Pb	208	209	He	17.934	ug/l	0.6	5000	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Li (IS)	6	He	1058.82	3.2	95.0	70	120	
Sc (ISICPMS)	45	H2	558523.71	1.6	107.6	70	120	
Sc (ISICPMS)	45	He	42641.20	0.4	114.1	70	120	
Ge (IS)	74	H2	171567.48	1.9	116.9	70	120	
Ge (IS)	74	He	36555.00	1.5	129.1	70	120	failed
Kr	83	He	23.36	24.7	140.0			
In-1	115	He	51545.86	0.6	95.5	70	120	
Tb (IS)	159	He	258553.81	0.1	91.8	70	120	
Bi (IS)	209	He	179534.12	0.5	81.1	70	120	

Continuing Calibration Verification (CCV)

File Name 033_CCV.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 16:57:50

Sample Name **CCV 6782584**

Comment ---

Dilution 1.0000

Vial # 1301

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	ExpectedValue	Lower Lmt	Upper Lmt	QC Flag
Be	9	6	He	53.269	ug/l	3.2	50	45	55	
B	11	6	He	109.462	ug/l	3.0	100	90	110	
Na	23	45	He	5089.319	ug/l	0.9	5000	4500	5500	
Mg	24	45	He	4961.013	ug/l	1.0	5000	4500	5500	
Al	27	45	He	492.607	ug/l	1.7	500	450	550	
K	39	45	He	5042.408	ug/l	0.7	5000	4500	5500	
Ca	40	45	H2	5006.556	ug/l	0.7	5000	4500	5500	
Ti	47	45	He	47.915	ug/l	0.8	50	45	55	
V	51	45	He	49.751	ug/l	0.8	50	45	55	
Cr	52	45	He	49.229	ug/l	1.3	50	45	55	
Mn	55	45	He	489.902	ug/l	1.1	500	450	550	
Fe	56	45	He	4834.899	ug/l	1.0	5000	4500	5500	
Co	59	45	He	47.883	ug/l	0.9	50	45	55	
Ni	60	45	He	48.333	ug/l	1.1	50	45	55	
Cu	63	45	He	47.873	ug/l	0.8	50	45	55	
Zn	66	45	He	48.721	ug/l	1.9	50	45	55	
As	75	74	He	50.239	ug/l	2.9	50	45	55	
Se	78	74	H2	50.812	ug/l	1.5	50	45	55	
Sr	88	115	He	51.478	ug/l	1.2	50	45	55	
Mo	95	115	He	50.040	ug/l	1.0	50	45	55	
Ag	107	115	He	48.876	ug/l	1.4	50	45	55	
Cd	111	115	He	49.522	ug/l	1.4	50	45	55	
Sn	118	115	He	49.193	ug/l	0.9	50	45	55	
Sb	121	115	He	49.412	ug/l	1.2	50	45	55	
Ba	137	159	He	51.711	ug/l	1.2	50	45	55	
Tl	205	209	He	10.119	ug/l	0.9	10	9	11	
(Pb)	206	209	He	50.282	ug/l	0.4				
(Pb)	207	209	He	50.129	ug/l	0.4				
Pb	208	209	He	50.126	ug/l	0.2	50	45	55	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower %Lmt	Upper %Lmt	QC Flag
Li (IS)	6	He	1241.82	2.7	111.4	70	120	
Sc (ISICPMS)	45	H2	642219.53	0.3	123.8	70	120	failed
Sc (ISICPMS)	45	He	46780.25	2.0	125.2	70	120	failed
Ge (IS)	74	H2	189130.72	0.4	128.8	70	120	failed
Ge (IS)	74	He	36517.12	2.3	128.9	70	120	failed
Kr	83	He	6.67	173.2	40.0			
In-1	115	He	61528.40	0.8	114.0	70	120	
Tb (IS)	159	He	308553.78	0.4	109.6	70	120	

Continuing Calibration Verification (CCV)

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower %Lmt	Upper %Lmt	QC Flag
Bi (IS)	209	He	234106.72	0.2	105.8	70	120	

Initial/Continuing Calibration Blank (ICB/CCB)

File Name 034_CCB.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 17:00:27

Sample Name **CCB**

Comment ---

Dilution 1.0000

Autoquant Table 1302

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	ExpectedValue	Lower Lmt	Upper Lmt	QC Flag
Be	9	6	He	-0.007	ug/l	0.0	0.2	-0.2	0.2	
B	11	6	He	6.546	ug/l	34.0	20	-20	20	
Na	23	45	He	30.906	ug/l	4.3	50	-50	50	
Mg	24	45	He	0.116	ug/l	125.6	50	-50	50	
Al	27	45	He	-0.024	ug/l	N/A	10	-10	10	
K	39	45	He	4.149	ug/l	61.8	50	-50	50	
Ca	40	45	H2	-3.642	ug/l	N/A	50	-50	50	
Ti	47	45	He	0.067	ug/l	20.9	1	-1	1	
V	51	45	He	-0.006	ug/l	N/A	1	-1	1	
Cr	52	45	He	-0.021	ug/l	N/A	1	-1	1	
Mn	55	45	He	0.016	ug/l	118.1	2	-2	2	
Fe	56	45	He	0.215	ug/l	22.7	30	-30	30	
Co	59	45	He	0.001	ug/l	246.1	1	-1	1	
Ni	60	45	He	-0.001	ug/l	N/A	1	-1	1	
Cu	63	45	He	0.050	ug/l	28.2	1	-1	1	
Zn	66	45	He	-0.120	ug/l	N/A	4	-4	4	
As	75	74	He	-0.016	ug/l	N/A	0.5	-0.5	0.5	
Se	78	74	H2	0.013	ug/l	168.9	0.5	-0.5	0.5	
Sr	88	115	He	0.023	ug/l	22.7	1	-1	1	
Mo	95	115	He	0.013	ug/l	58.5	1	-1	1	
Ag	107	115	He	0.012	ug/l	19.1	1	-1	1	
Cd	111	115	He	-0.028	ug/l	0.0	0.5	-0.5	0.5	
Sn	118	115	He	0.038	ug/l	130.2	4	-4	4	
Sb	121	115	He	0.033	ug/l	80.1	0.5	-0.5	0.5	
Ba	137	159	He	0.008	ug/l	100.0	1	-1	1	
Tl	205	209	He	0.001	ug/l	71.8	0.2	-0.2	0.2	
(Pb)	206	209	He	0.013	ug/l	6.4				
(Pb)	207	209	He	0.013	ug/l	22.4				
Pb	208	209	He	0.012	ug/l	7.8	0.3	-0.3	0.3	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower %Lmt	Upper %Lmt	QC Flag
Li (IS)	6	He	1170.16	1.9	104.9	70	120	
Sc (ISICPMS)	45	H2	573986.90	0.6	110.6	70	120	
Sc (ISICPMS)	45	He	42309.21	0.3	113.2	70	120	
Ge (IS)	74	H2	158793.90	0.7	108.2	70	120	
Ge (IS)	74	He	31272.78	0.5	110.4	70	120	
Kr	83	He	23.36	24.7	140.0			
In-1	115	He	57357.17	0.1	106.3	70	120	
Tb (IS)	159	He	287952.82	0.3	102.3	70	120	
Bi (IS)	209	He	222521.57	1.0	100.6	70	120	

Sample Report

File Name 035SMPL.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 17:03:08

Sample Name **460-177420-f-6-a@2**

Comment ---

Dilution **1.0000**

Vial # 2112

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	High Value	QC Flag
Be	9	6	He	0.026	ug/l	218.1	1000	
B	11	6	He	7.384	ug/l	8.9	500	
Na	23	45	He	551.733	ug/l	0.9	200000	
Mg	24	45	He	41.150	ug/l	1.6	150000	
Al	27	45	He	0.364	ug/l	130.9	50000	
K	39	45	He	42.626	ug/l	8.7	200000	
Ca	40	45	H2	466.523	ug/l	1.6	150000	
Ti	47	45	He	0.109	ug/l	17.8	1000	
V	51	45	He	0.029	ug/l	64.1	2000	
Cr	52	45	He	0.119	ug/l	14.7	4000	
Mn	55	45	He	1.086	ug/l	5.1	5000	
Fe	56	45	He	4.552	ug/l	1.9	100000	
Co	59	45	He	0.007	ug/l	23.4	1000	
Ni	60	45	He	0.000	ug/l	267384.0	1000	
Cu	63	45	He	0.158	ug/l	3.3	1000	
Zn	66	45	He	4.855	ug/l	2.9	1000	
As	75	74	He	0.021	ug/l	110.0	2000	
Se	78	74	H2	0.018	ug/l	54.3	1000	
Sr	88	115	He	1.697	ug/l	2.3	2000	
Mo	95	115	He	0.087	ug/l	9.1	1000	
Ag	107	115	He	0.019	ug/l	7.8	100	
Cd	111	115	He	-0.027	ug/l	N/A	2000	
Sn	118	115	He	0.633	ug/l	6.0	100	
Sb	121	115	He	0.391	ug/l	13.2	100	
Ba	137	159	He	0.065	ug/l	26.6	5000	
Tl	205	209	He	0.001	ug/l	133.9	1000	
(Pb)	206	209	He	0.028	ug/l	14.1		
(Pb)	207	209	He	0.029	ug/l	30.2		
Pb	208	209	He	0.030	ug/l	13.8	5000	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Li (IS)	6	He	1136.99	3.6	102.0	70	120	
Sc (ISICPMS)	45	H2	541841.92	0.7	104.4	70	120	
Sc (ISICPMS)	45	He	39760.02	1.1	106.4	70	120	
Ge (IS)	74	H2	166948.20	0.3	113.7	70	120	
Ge (IS)	74	He	33926.49	0.3	119.8	70	120	
Kr	83	He	10.01	100.0	60.0			
In-1	115	He	52832.78	1.3	97.9	70	120	
Tb (IS)	159	He	268445.55	0.9	95.3	70	120	
Bi (IS)	209	He	209919.78	0.1	94.9	70	120	

Sample Report

File Name 036SMPL.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 17:05:47

Sample Name **460-177482-e-14-a@2**

Comment ---

Dilution **1.0000**

Vial # 2204

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	High Value	QC Flag
Be	9	6	He	0.027	ug/l	63.1	1000	
B	11	6	He	4.139	ug/l	57.4	500	
Na	23	45	He	24.289	ug/l	5.2	200000	
Mg	24	45	He	0.255	ug/l	35.0	150000	
Al	27	45	He	0.788	ug/l	86.9	50000	
K	39	45	He	5.370	ug/l	84.7	200000	
Ca	40	45	H2	-1.241	ug/l	N/A	150000	
Ti	47	45	He	0.108	ug/l	13.9	1000	
V	51	45	He	0.032	ug/l	13.9	2000	
Cr	52	45	He	0.118	ug/l	11.9	4000	
Mn	55	45	He	0.077	ug/l	12.3	5000	
Fe	56	45	He	0.411	ug/l	7.3	100000	
Co	59	45	He	0.002	ug/l	33.3	1000	
Ni	60	45	He	-0.012	ug/l	N/A	1000	
Cu	63	45	He	0.165	ug/l	13.3	1000	
Zn	66	45	He	0.045	ug/l	32.9	1000	
As	75	74	He	-0.007	ug/l	N/A	2000	
Se	78	74	H2	0.056	ug/l	73.7	1000	
Sr	88	115	He	0.015	ug/l	35.0	2000	
Mo	95	115	He	0.017	ug/l	49.2	1000	
Ag	107	115	He	0.008	ug/l	50.3	100	
Cd	111	115	He	-0.028	ug/l	0.0	2000	
Sn	118	115	He	0.109	ug/l	11.6	100	
Sb	121	115	He	0.463	ug/l	10.5	100	
Ba	137	159	He	0.033	ug/l	68.6	5000	
Tl	205	209	He	0.000	ug/l	329.7	1000	
(Pb)	206	209	He	0.011	ug/l	44.0		
(Pb)	207	209	He	0.013	ug/l	40.1		
Pb	208	209	He	0.012	ug/l	7.6	5000	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Li (IS)	6	He	1109.16	1.6	99.5	70	120	
Sc (ISICPMS)	45	H2	531390.39	1.1	102.4	70	120	
Sc (ISICPMS)	45	He	39022.58	2.3	104.4	70	120	
Ge (IS)	74	H2	148145.10	1.3	100.9	70	120	
Ge (IS)	74	He	30230.58	1.3	106.7	70	120	
Kr	83	He	13.35	43.3	80.0			
In-1	115	He	52525.61	1.3	97.3	70	120	
Tb (IS)	159	He	269485.69	0.8	95.7	70	120	
Bi (IS)	209	He	208977.70	1.9	94.4	70	120	

Sample Report

File Name 037SMPL.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 17:08:26

Sample Name **460-177420-f-4-a@2**

Comment ---

Dilution **1.0000**

Vial # 2110

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	High Value	QC Flag
Be	9	6	He	0.010	ug/l	2.5	1000	
B	11	6	He	514.104	ug/l	0.8	500	failed
Na	23	45	He	244069.730	ug/l	1.2	200000	failed
Mg	24	45	He	24268.072	ug/l	1.1	150000	
Al	27	45	He	197.954	ug/l	1.1	50000	
K	39	45	He	16912.123	ug/l	1.8	200000	
Ca	40	45	H2	148454.359	ug/l	0.7	150000	
Ti	47	45	He	6.647	ug/l	2.6	1000	
V	51	45	He	1.348	ug/l	1.0	2000	
Cr	52	45	He	1.327	ug/l	1.7	4000	
Mn	55	45	He	530.649	ug/l	0.8	5000	
Fe	56	45	He	1840.204	ug/l	0.8	100000	
Co	59	45	He	4.171	ug/l	0.1	1000	
Ni	60	45	He	21.869	ug/l	1.0	1000	
Cu	63	45	He	15.810	ug/l	1.3	1000	
Zn	66	45	He	1161.811	ug/l	0.6	1000	failed
As	75	74	He	1.168	ug/l	2.5	2000	
Se	78	74	H2	0.216	ug/l	43.8	1000	
Sr	88	115	He	820.897	ug/l	1.2	2000	
Mo	95	115	He	15.433	ug/l	0.2	1000	
Ag	107	115	He	0.068	ug/l	7.9	100	
Cd	111	115	He	0.995	ug/l	11.1	2000	
Sn	118	115	He	1.118	ug/l	4.9	100	
Sb	121	115	He	1.340	ug/l	4.5	100	
Ba	137	159	He	58.028	ug/l	2.3	5000	
Tl	205	209	He	0.007	ug/l	30.0	1000	
(Pb)	206	209	He	18.607	ug/l	1.2		
(Pb)	207	209	He	17.434	ug/l	0.4		
Pb	208	209	He	17.984	ug/l	0.7	5000	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Li (IS)	6	He	1108.82	1.5	99.4	70	120	
Sc (ISICPMS)	45	H2	524641.64	1.3	101.1	70	120	
Sc (ISICPMS)	45	He	39620.92	2.0	106.0	70	120	
Ge (IS)	74	H2	167333.74	1.0	114.0	70	120	
Ge (IS)	74	He	35837.58	3.0	126.5	70	120	failed
Kr	83	He	23.36	49.5	140.0			
In-1	115	He	49757.87	0.9	92.2	70	120	
Tb (IS)	159	He	259257.93	0.9	92.1	70	120	
Bi (IS)	209	He	184714.82	1.1	83.5	70	120	

Sample Report

File Name 038SMPL.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 17:11:07

Sample Name **460-177420-f-6-a@2**

Comment ---

Dilution **1.0000**

Vial # 2112

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	High Value	QC Flag
Be	9	6	He	-0.007	ug/l	0.0	1000	
B	11	6	He	8.451	ug/l	11.1	500	
Na	23	45	He	566.503	ug/l	1.1	200000	
Mg	24	45	He	43.035	ug/l	2.0	150000	
Al	27	45	He	0.348	ug/l	84.9	50000	
K	39	45	He	43.363	ug/l	9.7	200000	
Ca	40	45	H2	439.400	ug/l	1.9	150000	
Ti	47	45	He	0.087	ug/l	16.7	1000	
V	51	45	He	0.092	ug/l	14.1	2000	
Cr	52	45	He	0.127	ug/l	15.5	4000	
Mn	55	45	He	1.178	ug/l	3.4	5000	
Fe	56	45	He	4.459	ug/l	2.1	100000	
Co	59	45	He	0.003	ug/l	23.9	1000	
Ni	60	45	He	0.005	ug/l	136.5	1000	
Cu	63	45	He	0.169	ug/l	4.3	1000	
Zn	66	45	He	5.088	ug/l	5.7	1000	
As	75	74	He	0.016	ug/l	100.0	2000	
Se	78	74	H2	0.021	ug/l	73.0	1000	
Sr	88	115	He	1.747	ug/l	4.4	2000	
Mo	95	115	He	0.091	ug/l	4.8	1000	
Ag	107	115	He	0.019	ug/l	1.8	100	
Cd	111	115	He	-0.028	ug/l	0.0	2000	
Sn	118	115	He	0.632	ug/l	8.6	100	
Sb	121	115	He	0.464	ug/l	7.0	100	
Ba	137	159	He	0.062	ug/l	27.3	5000	
Tl	205	209	He	0.000	ug/l	N/A	1000	
(Pb)	206	209	He	0.025	ug/l	37.8		
(Pb)	207	209	He	0.025	ug/l	13.5		
Pb	208	209	He	0.026	ug/l	1.8	5000	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Li (IS)	6	He	1135.66	3.5	101.9	70	120	
Sc (ISICPMS)	45	H2	561026.21	0.6	108.1	70	120	
Sc (ISICPMS)	45	He	41149.24	0.7	110.1	70	120	
Ge (IS)	74	H2	172551.59	1.1	117.5	70	120	
Ge (IS)	74	He	35412.22	1.8	125.0	70	120	failed
Kr	83	He	0.00	N/A	0.0			
In-1	115	He	54597.84	0.8	101.2	70	120	
Tb (IS)	159	He	273542.53	0.5	97.1	70	120	
Bi (IS)	209	He	212616.71	1.3	96.1	70	120	

Sample Report

File Name 039SMPL.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 17:13:46

Sample Name **460-177420-f-7-a@2**

Comment ---

Dilution **1.0000**

Vial # 2201

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	High Value	QC Flag
Be	9	6	He	-0.001	ug/l	N/A	1000	
B	11	6	He	336.240	ug/l	11.6	500	
Na	23	45	He	239673.042	ug/l	1.1	200000	failed
Mg	24	45	He	21189.440	ug/l	1.0	150000	
Al	27	45	He	84.274	ug/l	2.4	50000	
K	39	45	He	19403.837	ug/l	0.6	200000	
Ca	40	45	H2	228059.284	ug/l	0.3	150000	failed
Ti	47	45	He	3.604	ug/l	1.0	1000	
V	51	45	He	1.647	ug/l	3.2	2000	
Cr	52	45	He	0.790	ug/l	6.3	4000	
Mn	55	45	He	528.664	ug/l	1.1	5000	
Fe	56	45	He	1695.992	ug/l	1.4	100000	
Co	59	45	He	1.432	ug/l	1.5	1000	
Ni	60	45	He	9.266	ug/l	2.3	1000	
Cu	63	45	He	8.866	ug/l	1.5	1000	
Zn	66	45	He	8.852	ug/l	1.1	1000	
As	75	74	He	3.050	ug/l	6.6	2000	
Se	78	74	H2	0.322	ug/l	4.7	1000	
Sr	88	115	He	1049.017	ug/l	1.7	2000	
Mo	95	115	He	53.764	ug/l	1.6	1000	
Ag	107	115	He	0.057	ug/l	4.5	100	
Cd	111	115	He	0.003	ug/l	201.6	2000	
Sn	118	115	He	0.327	ug/l	1.5	100	
Sb	121	115	He	1.252	ug/l	3.1	100	
Ba	137	159	He	15.917	ug/l	2.4	5000	
Tl	205	209	He	0.004	ug/l	63.0	1000	
(Pb)	206	209	He	4.537	ug/l	0.4		
(Pb)	207	209	He	4.267	ug/l	1.4		
Pb	208	209	He	4.407	ug/l	1.3	5000	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Li (IS)	6	He	1100.82	2.4	98.7	70	120	
Sc (ISICPMS)	45	H2	540897.61	0.5	104.2	70	120	
Sc (ISICPMS)	45	He	40311.52	1.3	107.9	70	120	
Ge (IS)	74	H2	170553.50	1.0	116.2	70	120	
Ge (IS)	74	He	35719.53	0.9	126.1	70	120	failed
Kr	83	He	26.70	78.1	160.0			
In-1	115	He	50516.09	0.9	93.6	70	120	
Tb (IS)	159	He	260535.69	1.1	92.5	70	120	
Bi (IS)	209	He	184457.55	0.3	83.4	70	120	

Sample Report

File Name 040SMPL.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 17:16:26

Sample Name **460-177477-a-1-a@2**

Comment ---

Dilution **1.0000**

Vial # 2202

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	High Value	QC Flag
Be	9	6	He	0.008	ug/l	180.4	1000	
B	11	6	He	20612.677	ug/l	2.9	500	failed
Na	23	45	He	426995.951	ug/l	0.4	200000	failed
Mg	24	45	He	590.092	ug/l	1.4	150000	
Al	27	45	He	187.895	ug/l	2.9	50000	
K	39	45	He	184254.127	ug/l	0.4	200000	
Ca	40	45	H2	21004.190	ug/l	0.2	150000	
Ti	47	45	He	5.770	ug/l	5.3	1000	
V	51	45	He	3.651	ug/l	2.9	2000	
Cr	52	45	He	3.960	ug/l	2.2	4000	
Mn	55	45	He	196.135	ug/l	1.1	5000	
Fe	56	45	He	1272.683	ug/l	1.8	100000	
Co	59	45	He	5.239	ug/l	2.2	1000	
Ni	60	45	He	24.911	ug/l	2.7	1000	
Cu	63	45	He	40.747	ug/l	2.3	1000	
Zn	66	45	He	18556.009	ug/l	1.9	1000	failed
As	75	74	He	8.244	ug/l	2.8	2000	
Se	78	74	H2	0.318	ug/l	5.5	1000	
Sr	88	115	He	27.730	ug/l	1.4	2000	
Mo	95	115	He	29.224	ug/l	0.6	1000	
Ag	107	115	He	0.133	ug/l	5.7	100	
Cd	111	115	He	0.225	ug/l	10.9	2000	
Sn	118	115	He	9.245	ug/l	1.2	100	
Sb	121	115	He	16.822	ug/l	4.3	100	
Ba	137	159	He	14.052	ug/l	2.0	5000	
Tl	205	209	He	0.034	ug/l	1.7	1000	
(Pb)	206	209	He	68.822	ug/l	0.5		
(Pb)	207	209	He	63.660	ug/l	0.7		
Pb	208	209	He	66.026	ug/l	0.5	5000	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Li (IS)	6	He	1251.00	2.3	112.2	70	120	
Sc (ISICPMS)	45	H2	544611.63	1.4	104.9	70	120	
Sc (ISICPMS)	45	He	43945.00	3.6	117.6	70	120	
Ge (IS)	74	H2	165806.74	1.0	112.9	70	120	
Ge (IS)	74	He	36947.22	3.6	130.4	70	120	failed
Kr	83	He	10.01	100.0	60.0			
In-1	115	He	49562.06	1.5	91.8	70	120	
Tb (IS)	159	He	247345.26	0.9	87.8	70	120	
Bi (IS)	209	He	186426.43	0.3	84.3	70	120	

Sample Report

File Name 041SMPL.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 17:19:05

Sample Name **460-177477-a-2-a@2**

Comment ---

Dilution **1.0000**

Vial # 2203

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	High Value	QC Flag
Be	9	6	He	0.004	ug/l	231.2	1000	
B	11	6	He	271.745	ug/l	21.3	500	
Na	23	45	He	90.318	ug/l	6.2	200000	
Mg	24	45	He	1.381	ug/l	22.6	150000	
Al	27	45	He	4.618	ug/l	8.8	50000	
K	39	45	He	52.782	ug/l	7.4	200000	
Ca	40	45	H2	8.974	ug/l	4.5	150000	
Ti	47	45	He	0.189	ug/l	35.9	1000	
V	51	45	He	0.078	ug/l	24.6	2000	
Cr	52	45	He	0.181	ug/l	17.9	4000	
Mn	55	45	He	0.207	ug/l	4.0	5000	
Fe	56	45	He	1.821	ug/l	9.2	100000	
Co	59	45	He	0.006	ug/l	36.3	1000	
Ni	60	45	He	0.054	ug/l	40.4	1000	
Cu	63	45	He	0.370	ug/l	6.7	1000	
Zn	66	45	He	1.604	ug/l	9.7	1000	
As	75	74	He	0.119	ug/l	43.7	2000	
Se	78	74	H2	0.144	ug/l	20.9	1000	
Sr	88	115	He	0.029	ug/l	56.0	2000	
Mo	95	115	He	0.092	ug/l	8.4	1000	
Ag	107	115	He	0.045	ug/l	2.9	100	
Cd	111	115	He	-0.027	ug/l	N/A	2000	
Sn	118	115	He	0.062	ug/l	69.0	100	
Sb	121	115	He	3.822	ug/l	9.4	100	
Ba	137	159	He	0.087	ug/l	30.4	5000	
Tl	205	209	He	0.001	ug/l	128.7	1000	
(Pb)	206	209	He	0.019	ug/l	43.0		
(Pb)	207	209	He	0.028	ug/l	11.4		
Pb	208	209	He	0.022	ug/l	19.2	5000	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Li (IS)	6	He	1166.32	3.5	104.6	70	120	
Sc (ISICPMS)	45	H2	587694.68	2.0	113.2	70	120	
Sc (ISICPMS)	45	He	42603.32	1.5	114.0	70	120	
Ge (IS)	74	H2	177287.33	0.5	120.8	70	120	failed
Ge (IS)	74	He	36681.94	1.4	129.5	70	120	failed
Kr	83	He	10.01	100.0	60.0			
In-1	115	He	53932.55	0.7	99.9	70	120	
Tb (IS)	159	He	267735.97	0.6	95.1	70	120	
Bi (IS)	209	He	209014.66	0.9	94.5	70	120	

Sample Report

File Name 042SMPL.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 17:21:44

Sample Name **460-177512-a-1-a@2**

Comment ---

Dilution **1.0000**

Vial # 2205

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	High Value	QC Flag
Be	9	6	He	-0.007	ug/l	0.0	1000	
B	11	6	He	185.887	ug/l	0.6	500	
Na	23	45	He	58904.870	ug/l	1.5	200000	
Mg	24	45	He	2389.693	ug/l	1.8	150000	
Al	27	45	He	20.249	ug/l	2.9	50000	
K	39	45	He	3360.374	ug/l	1.6	200000	
Ca	40	45	H2	33209.257	ug/l	0.9	150000	
Ti	47	45	He	0.611	ug/l	7.9	1000	
V	51	45	He	0.250	ug/l	6.9	2000	
Cr	52	45	He	0.392	ug/l	0.0	4000	
Mn	55	45	He	549.292	ug/l	1.6	5000	
Fe	56	45	He	2112.375	ug/l	2.1	100000	
Co	59	45	He	0.137	ug/l	3.7	1000	
Ni	60	45	He	0.932	ug/l	2.6	1000	
Cu	63	45	He	0.732	ug/l	3.2	1000	
Zn	66	45	He	0.865	ug/l	8.9	1000	
As	75	74	He	99.794	ug/l	3.4	2000	
Se	78	74	H2	0.125	ug/l	5.1	1000	
Sr	88	115	He	152.650	ug/l	0.3	2000	
Mo	95	115	He	3.448	ug/l	1.6	1000	
Ag	107	115	He	0.026	ug/l	19.7	100	
Cd	111	115	He	-0.019	ug/l	N/A	2000	
Sn	118	115	He	0.068	ug/l	30.7	100	
Sb	121	115	He	2.406	ug/l	5.0	100	
Ba	137	159	He	33.619	ug/l	0.4	5000	
Tl	205	209	He	0.000	ug/l	N/A	1000	
(Pb)	206	209	He	0.134	ug/l	5.9		
(Pb)	207	209	He	0.121	ug/l	10.6		
Pb	208	209	He	0.131	ug/l	1.6	5000	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Li (IS)	6	He	1143.82	3.1	102.6	70	120	
Sc (ISICPMS)	45	H2	546527.55	1.8	105.3	70	120	
Sc (ISICPMS)	45	He	40499.77	1.8	108.4	70	120	
Ge (IS)	74	H2	174001.60	0.8	118.5	70	120	
Ge (IS)	74	He	36699.77	2.9	129.6	70	120	failed
Kr	83	He	3.34	173.2	20.0			
In-1	115	He	52197.49	0.7	96.7	70	120	
Tb (IS)	159	He	270259.99	1.2	96.0	70	120	
Bi (IS)	209	He	202120.49	2.1	91.3	70	120	

Sample Report

File Name 043SMPL.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 17:24:22

Sample Name **460-177512-a-2-a@2**

Comment ---

Dilution **1.0000**

Vial # 2206

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	High Value	QC Flag
Be	9	6	He	0.015	ug/l	168.2	1000	
B	11	6	He	80.922	ug/l	12.2	500	
Na	23	45	He	14963.542	ug/l	2.4	200000	
Mg	24	45	He	6231.832	ug/l	2.0	150000	
Al	27	45	He	65.770	ug/l	1.6	50000	
K	39	45	He	1683.003	ug/l	1.7	200000	
Ca	40	45	H2	31770.220	ug/l	2.1	150000	
Ti	47	45	He	2.199	ug/l	7.2	1000	
V	51	45	He	0.317	ug/l	7.7	2000	
Cr	52	45	He	0.388	ug/l	5.7	4000	
Mn	55	45	He	107.526	ug/l	2.2	5000	
Fe	56	45	He	303.046	ug/l	2.1	100000	
Co	59	45	He	0.105	ug/l	10.6	1000	
Ni	60	45	He	0.268	ug/l	9.2	1000	
Cu	63	45	He	0.980	ug/l	3.2	1000	
Zn	66	45	He	2.027	ug/l	3.4	1000	
As	75	74	He	15.696	ug/l	1.9	2000	
Se	78	74	H2	0.471	ug/l	9.6	1000	
Sr	88	115	He	109.358	ug/l	0.6	2000	
Mo	95	115	He	0.445	ug/l	1.4	1000	
Ag	107	115	He	0.024	ug/l	9.6	100	
Cd	111	115	He	-0.024	ug/l	N/A	2000	
Sn	118	115	He	0.126	ug/l	13.8	100	
Sb	121	115	He	1.691	ug/l	1.5	100	
Ba	137	159	He	10.603	ug/l	2.6	5000	
Tl	205	209	He	0.001	ug/l	110.1	1000	
(Pb)	206	209	He	0.314	ug/l	7.3		
(Pb)	207	209	He	0.280	ug/l	9.9		
Pb	208	209	He	0.298	ug/l	2.9	5000	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Li (IS)	6	He	1183.82	1.3	106.2	70	120	
Sc (ISICPMS)	45	H2	564233.76	1.6	108.7	70	120	
Sc (ISICPMS)	45	He	40386.02	1.6	108.1	70	120	
Ge (IS)	74	H2	180873.41	0.8	123.2	70	120	failed
Ge (IS)	74	He	36546.14	0.7	129.0	70	120	failed
Kr	83	He	6.67	86.6	40.0			
In-1	115	He	53523.28	1.2	99.2	70	120	
Tb (IS)	159	He	273290.70	0.2	97.0	70	120	
Bi (IS)	209	He	206020.04	0.3	93.1	70	120	

Sample Report

File Name 044SMPL.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 17:27:00

Sample Name **460-177512-a-3-a@2**

Comment ---

Dilution **1.0000**

Vial # 2207

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	High Value	QC Flag
Be	9	6	He	0.026	ug/l	165.9	1000	
B	11	6	He	66.225	ug/l	12.0	500	
Na	23	45	He	14695.227	ug/l	0.4	200000	
Mg	24	45	He	6125.962	ug/l	0.7	150000	
Al	27	45	He	51.137	ug/l	4.8	50000	
K	39	45	He	1641.132	ug/l	0.8	200000	
Ca	40	45	H2	31797.847	ug/l	0.5	150000	
Ti	47	45	He	1.576	ug/l	4.4	1000	
V	51	45	He	0.285	ug/l	9.2	2000	
Cr	52	45	He	0.384	ug/l	7.8	4000	
Mn	55	45	He	102.309	ug/l	1.2	5000	
Fe	56	45	He	262.733	ug/l	0.9	100000	
Co	59	45	He	0.085	ug/l	8.0	1000	
Ni	60	45	He	0.393	ug/l	4.2	1000	
Cu	63	45	He	1.211	ug/l	4.7	1000	
Zn	66	45	He	2.185	ug/l	6.9	1000	
As	75	74	He	15.119	ug/l	1.3	2000	
Se	78	74	H2	0.428	ug/l	11.9	1000	
Sr	88	115	He	109.722	ug/l	0.5	2000	
Mo	95	115	He	0.456	ug/l	2.0	1000	
Ag	107	115	He	0.017	ug/l	41.4	100	
Cd	111	115	He	-0.021	ug/l	N/A	2000	
Sn	118	115	He	0.131	ug/l	16.2	100	
Sb	121	115	He	1.380	ug/l	8.0	100	
Ba	137	159	He	10.384	ug/l	1.0	5000	
Tl	205	209	He	0.000	ug/l	N/A	1000	
(Pb)	206	209	He	0.291	ug/l	4.3		
(Pb)	207	209	He	0.269	ug/l	4.4		
Pb	208	209	He	0.276	ug/l	2.0	5000	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Li (IS)	6	He	1139.66	0.7	102.2	70	120	
Sc (ISICPMS)	45	H2	552649.50	1.3	106.5	70	120	
Sc (ISICPMS)	45	He	39819.04	0.6	106.5	70	120	
Ge (IS)	74	H2	176882.94	1.0	120.5	70	120	failed
Ge (IS)	74	He	35497.95	2.1	125.3	70	120	failed
Kr	83	He	13.35	114.6	80.0			
In-1	115	He	52075.89	0.4	96.5	70	120	
Tb (IS)	159	He	270438.99	0.0	96.0	70	120	
Bi (IS)	209	He	204838.04	0.1	92.6	70	120	

Continuing Calibration Verification (CCV)

File Name 045_CCV.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 17:29:38

Sample Name **CCV 6782584**

Comment ---

Dilution 1.0000

Vial # 1301

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	ExpectedValue	Lower Lmt	Upper Lmt	QC Flag
Be	9	6	He	51.461	ug/l	2.9	50	45	55	
B	11	6	He	121.831	ug/l	5.9	100	90	110	failed
Na	23	45	He	5141.030	ug/l	1.3	5000	4500	5500	
Mg	24	45	He	5019.412	ug/l	1.1	5000	4500	5500	
Al	27	45	He	491.082	ug/l	0.1	500	450	550	
K	39	45	He	4960.682	ug/l	1.2	5000	4500	5500	
Ca	40	45	H2	4915.175	ug/l	0.5	5000	4500	5500	
Ti	47	45	He	48.388	ug/l	0.7	50	45	55	
V	51	45	He	50.494	ug/l	1.1	50	45	55	
Cr	52	45	He	49.912	ug/l	1.1	50	45	55	
Mn	55	45	He	487.539	ug/l	0.6	500	450	550	
Fe	56	45	He	4886.465	ug/l	0.9	5000	4500	5500	
Co	59	45	He	48.963	ug/l	0.8	50	45	55	
Ni	60	45	He	49.564	ug/l	1.1	50	45	55	
Cu	63	45	He	49.660	ug/l	1.1	50	45	55	
Zn	66	45	He	49.370	ug/l	0.3	50	45	55	
As	75	74	He	48.865	ug/l	0.2	50	45	55	
Se	78	74	H2	51.079	ug/l	1.0	50	45	55	
Sr	88	115	He	49.390	ug/l	0.7	50	45	55	
Mo	95	115	He	50.663	ug/l	0.9	50	45	55	
Ag	107	115	He	49.753	ug/l	0.4	50	45	55	
Cd	111	115	He	50.002	ug/l	1.7	50	45	55	
Sn	118	115	He	49.002	ug/l	0.2	50	45	55	
Sb	121	115	He	49.698	ug/l	0.5	50	45	55	
Ba	137	159	He	50.234	ug/l	1.6	50	45	55	
Tl	205	209	He	9.969	ug/l	0.6	10	9	11	
(Pb)	206	209	He	49.571	ug/l	0.2				
(Pb)	207	209	He	49.873	ug/l	0.6				
Pb	208	209	He	49.715	ug/l	0.4	50	45	55	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower %Lmt	Upper %Lmt	QC Flag
Li (IS)	6	He	1260.99	0.9	113.1	70	120	
Sc (ISICPMS)	45	H2	612018.55	1.4	117.9	70	120	
Sc (ISICPMS)	45	He	43235.14	0.6	115.7	70	120	
Ge (IS)	74	H2	180191.00	1.1	122.7	70	120	failed
Ge (IS)	74	He	35062.51	0.4	123.8	70	120	failed
Kr	83	He	13.35	86.6	80.0			
In-1	115	He	58982.04	0.6	109.3	70	120	
Tb (IS)	159	He	305109.94	0.8	108.3	70	120	

Continuing Calibration Verification (CCV)

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower %Lmt	Upper %Lmt	QC Flag
Bi (IS)	209	He	234845.91	0.6	106.1	70	120	

Initial/Continuing Calibration Blank (ICB/CCB)

File Name 046_CCB.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 17:32:16

Sample Name **CCB**

Comment ---

Dilution 1.0000

Autotune/IntQuant Table 1302

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	ExpectedValue	Lower Lmt	Upper Lmt	QC Flag
Be	9	6	He	-0.001	ug/l	N/A	0.2	-0.2	0.2	
B	11	6	He	23.974	ug/l	7.0	20	-20	20	failed
Na	23	45	He	23.555	ug/l	6.5	50	-50	50	
Mg	24	45	He	0.267	ug/l	21.4	50	-50	50	
Al	27	45	He	-0.323	ug/l	N/A	10	-10	10	
K	39	45	He	2.434	ug/l	160.4	50	-50	50	
Ca	40	45	H2	-5.143	ug/l	N/A	50	-50	50	
Ti	47	45	He	0.070	ug/l	42.4	1	-1	1	
V	51	45	He	0.001	ug/l	679.9	1	-1	1	
Cr	52	45	He	-0.009	ug/l	N/A	1	-1	1	
Mn	55	45	He	0.022	ug/l	101.3	2	-2	2	
Fe	56	45	He	0.238	ug/l	59.5	30	-30	30	
Co	59	45	He	0.001	ug/l	214.6	1	-1	1	
Ni	60	45	He	-0.012	ug/l	N/A	1	-1	1	
Cu	63	45	He	0.045	ug/l	21.6	1	-1	1	
Zn	66	45	He	-0.008	ug/l	N/A	4	-4	4	
As	75	74	He	-0.003	ug/l	N/A	0.5	-0.5	0.5	
Se	78	74	H2	0.021	ug/l	178.0	0.5	-0.5	0.5	
Sr	88	115	He	0.006	ug/l	123.1	1	-1	1	
Mo	95	115	He	0.018	ug/l	19.4	1	-1	1	
Ag	107	115	He	0.010	ug/l	57.1	1	-1	1	
Cd	111	115	He	-0.023	ug/l	N/A	0.5	-0.5	0.5	
Sn	118	115	He	0.040	ug/l	53.8	4	-4	4	
Sb	121	115	He	0.275	ug/l	17.5	0.5	-0.5	0.5	
Ba	137	159	He	0.020	ug/l	82.7	1	-1	1	
Tl	205	209	He	0.001	ug/l	104.7	0.2	-0.2	0.2	
(Pb)	206	209	He	0.001	ug/l	179.4				
(Pb)	207	209	He	0.010	ug/l	26.7				
Pb	208	209	He	0.006	ug/l	10.9	0.3	-0.3	0.3	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower %Lmt	Upper %Lmt	QC Flag
Li (IS)	6	He	1176.66	1.8	105.5	70	120	
Sc (ISICPMS)	45	H2	553631.30	1.0	106.7	70	120	
Sc (ISICPMS)	45	He	40265.79	2.4	107.7	70	120	
Ge (IS)	74	H2	150963.93	0.7	102.8	70	120	
Ge (IS)	74	He	30325.27	1.4	107.1	70	120	
Kr	83	He	3.34	173.2	20.0			
In-1	115	He	55667.17	0.8	103.2	70	120	
Tb (IS)	159	He	286797.23	0.7	101.8	70	120	
Bi (IS)	209	He	225157.37	1.0	101.8	70	120	

Sample Report

File Name 047SMPL.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 17:34:55

Sample Name **460-177420-f-5-a@2**

Comment ---

Dilution **1.0000**

Vial # 2111

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	High Value	QC Flag
Be	9	6	He	0.005	ug/l	202.0	1000	
B	11	6	He	331.804	ug/l	2.0	500	
Na	23	45	He	211631.863	ug/l	0.7	200000	failed
Mg	24	45	He	20848.151	ug/l	1.1	150000	
Al	27	45	He	165.287	ug/l	3.4	50000	
K	39	45	He	17457.010	ug/l	0.6	200000	
Ca	40	45	H2	221711.419	ug/l	1.1	150000	failed
Ti	47	45	He	6.850	ug/l	5.7	1000	
V	51	45	He	1.795	ug/l	4.8	2000	
Cr	52	45	He	1.117	ug/l	2.8	4000	
Mn	55	45	He	541.516	ug/l	1.1	5000	
Fe	56	45	He	2066.532	ug/l	1.0	100000	
Co	59	45	He	1.533	ug/l	3.7	1000	
Ni	60	45	He	8.682	ug/l	1.0	1000	
Cu	63	45	He	13.474	ug/l	1.4	1000	
Zn	66	45	He	16.425	ug/l	1.5	1000	
As	75	74	He	3.635	ug/l	7.2	2000	
Se	78	74	H2	0.258	ug/l	32.1	1000	
Sr	88	115	He	972.879	ug/l	1.3	2000	
Mo	95	115	He	52.296	ug/l	1.6	1000	
Ag	107	115	He	0.064	ug/l	7.3	100	
Cd	111	115	He	0.010	ug/l	46.9	2000	
Sn	118	115	He	0.586	ug/l	7.1	100	
Sb	121	115	He	1.338	ug/l	1.9	100	
Ba	137	159	He	17.672	ug/l	0.3	5000	
Tl	205	209	He	0.004	ug/l	16.5	1000	
(Pb)	206	209	He	8.396	ug/l	0.7		
(Pb)	207	209	He	7.987	ug/l	2.4		
Pb	208	209	He	8.204	ug/l	1.0	5000	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Li (IS)	6	He	1070.16	1.4	96.0	70	120	
Sc (ISICPMS)	45	H2	522702.82	2.0	100.7	70	120	
Sc (ISICPMS)	45	He	39375.67	3.3	105.4	70	120	
Ge (IS)	74	H2	157645.14	1.3	107.4	70	120	
Ge (IS)	74	He	33226.09	2.2	117.3	70	120	
Kr	83	He	20.02	100.0	120.0			
In-1	115	He	49210.81	0.5	91.2	70	120	
Tb (IS)	159	He	253323.00	0.2	90.0	70	120	
Bi (IS)	209	He	180385.27	0.3	81.5	70	120	

Sample Report

File Name 048SMPL.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 17:37:36

Sample Name **rn.chk**

Comment ---

Dilution **1.0000**

Vial # 3

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	High Value	QC Flag
Be	9	6	He	-0.002	ug/l	N/A	1000	
B	11	6	He	19.096	ug/l	3.8	500	
Na	23	45	He	47.606	ug/l	2.4	200000	
Mg	24	45	He	1.746	ug/l	5.7	150000	
Al	27	45	He	0.470	ug/l	76.1	50000	
K	39	45	He	7.713	ug/l	24.7	200000	
Ca	40	45	H2	3.054	ug/l	2.5	150000	
Ti	47	45	He	0.070	ug/l	7.7	1000	
V	51	45	He	0.033	ug/l	40.4	2000	
Cr	52	45	He	-0.057	ug/l	N/A	4000	
Mn	55	45	He	0.060	ug/l	27.2	5000	
Fe	56	45	He	0.574	ug/l	4.3	100000	
Co	59	45	He	0.001	ug/l	195.0	1000	
Ni	60	45	He	-0.014	ug/l	N/A	1000	
Cu	63	45	He	0.065	ug/l	8.3	1000	
Zn	66	45	He	0.142	ug/l	11.4	1000	
As	75	74	He	0.009	ug/l	250.5	2000	
Se	78	74	H2	0.007	ug/l	129.6	1000	
Sr	88	115	He	0.065	ug/l	4.3	2000	
Mo	95	115	He	0.007	ug/l	120.7	1000	
Ag	107	115	He	0.009	ug/l	17.1	100	
Cd	111	115	He	-0.027	ug/l	N/A	2000	
Sn	118	115	He	-0.088	ug/l	N/A	100	
Sb	121	115	He	0.438	ug/l	12.5	100	
Ba	137	159	He	0.037	ug/l	58.2	5000	
Tl	205	209	He	0.000	ug/l	N/A	1000	
(Pb)	206	209	He	0.006	ug/l	80.5		
(Pb)	207	209	He	0.011	ug/l	24.9		
Pb	208	209	He	0.007	ug/l	2.5	5000	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Li (IS)	6	He	1233.66	3.1	110.6	70	120	
Sc (ISICPMS)	45	H2	612425.20	2.4	118.0	70	120	
Sc (ISICPMS)	45	He	44887.77	0.6	120.1	70	120	failed
Ge (IS)	74	H2	174856.29	1.1	119.1	70	120	
Ge (IS)	74	He	35011.28	0.6	123.6	70	120	failed
Kr	83	He	6.67	86.6	40.0			
In-1	115	He	59092.04	0.1	109.5	70	120	
Tb (IS)	159	He	293163.79	0.3	104.1	70	120	
Bi (IS)	209	He	229209.63	0.9	103.6	70	120	

Sample Report

File Name 049SMPL.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 17:40:16

Sample Name **rn.chk**

Comment ---

Dilution **1.0000**

Vial # 5

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	High Value	QC Flag
Be	9	6	He	0.003	ug/l	262.1	1000	
B	11	6	He	14.241	ug/l	14.0	500	
Na	23	45	He	28.024	ug/l	3.3	200000	
Mg	24	45	He	0.408	ug/l	9.1	150000	
Al	27	45	He	-0.484	ug/l	N/A	50000	
K	39	45	He	2.257	ug/l	145.0	200000	
Ca	40	45	H2	-3.608	ug/l	N/A	150000	
Ti	47	45	He	0.046	ug/l	28.8	1000	
V	51	45	He	0.001	ug/l	177.9	2000	
Cr	52	45	He	-0.142	ug/l	N/A	4000	
Mn	55	45	He	0.006	ug/l	372.8	5000	
Fe	56	45	He	-0.166	ug/l	N/A	100000	
Co	59	45	He	-0.001	ug/l	N/A	1000	
Ni	60	45	He	-0.037	ug/l	N/A	1000	
Cu	63	45	He	0.018	ug/l	12.5	1000	
Zn	66	45	He	-0.112	ug/l	N/A	1000	
As	75	74	He	-0.009	ug/l	N/A	2000	
Se	78	74	H2	0.004	ug/l	129.2	1000	
Sr	88	115	He	0.014	ug/l	100.5	2000	
Mo	95	115	He	-0.003	ug/l	N/A	1000	
Ag	107	115	He	0.005	ug/l	63.8	100	
Cd	111	115	He	-0.024	ug/l	N/A	2000	
Sn	118	115	He	-0.120	ug/l	N/A	100	
Sb	121	115	He	-0.026	ug/l	N/A	100	
Ba	137	159	He	-0.005	ug/l	N/A	5000	
Tl	205	209	He	-0.001	ug/l	N/A	1000	
(Pb)	206	209	He	0.000	ug/l	N/A		
(Pb)	207	209	He	0.002	ug/l	144.4		
Pb	208	209	He	0.001	ug/l	48.2	5000	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Li (IS)	6	He	1241.32	2.1	111.3	70	120	
Sc (ISICPMS)	45	H2	622245.62	1.8	119.9	70	120	
Sc (ISICPMS)	45	He	45570.91	0.8	121.9	70	120	failed
Ge (IS)	74	H2	173875.39	2.0	118.4	70	120	
Ge (IS)	74	He	34080.10	1.5	120.3	70	120	failed
Kr	83	He	13.35	43.3	80.0			
In-1	115	He	60356.76	0.5	111.8	70	120	
Tb (IS)	159	He	304250.19	0.3	108.0	70	120	
Bi (IS)	209	He	237028.35	0.3	107.1	70	120	

Sample Report

File Name 050SMPL.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 17:42:55

Sample Name **rn.chk**

Comment ---

Dilution **1.0000**

Vial # 4

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	High Value	QC Flag
Be	9	6	He	0.003	ug/l	588.7	1000	
B	11	6	He	7.747	ug/l	4.5	500	
Na	23	45	He	30.983	ug/l	3.4	200000	
Mg	24	45	He	0.520	ug/l	30.4	150000	
Al	27	45	He	-0.248	ug/l	N/A	50000	
K	39	45	He	1.426	ug/l	110.3	200000	
Ca	40	45	H2	-4.650	ug/l	N/A	150000	
Ti	47	45	He	0.038	ug/l	35.0	1000	
V	51	45	He	0.002	ug/l	197.2	2000	
Cr	52	45	He	-0.159	ug/l	N/A	4000	
Mn	55	45	He	0.011	ug/l	117.7	5000	
Fe	56	45	He	-0.074	ug/l	N/A	100000	
Co	59	45	He	0.000	ug/l	N/A	1000	
Ni	60	45	He	-0.045	ug/l	N/A	1000	
Cu	63	45	He	-0.009	ug/l	N/A	1000	
Zn	66	45	He	-0.092	ug/l	N/A	1000	
As	75	74	He	-0.016	ug/l	N/A	2000	
Se	78	74	H2	0.004	ug/l	129.1	1000	
Sr	88	115	He	0.020	ug/l	34.9	2000	
Mo	95	115	He	-0.003	ug/l	N/A	1000	
Ag	107	115	He	0.003	ug/l	33.9	100	
Cd	111	115	He	-0.028	ug/l	0.0	2000	
Sn	118	115	He	-0.126	ug/l	N/A	100	
Sb	121	115	He	-0.090	ug/l	N/A	100	
Ba	137	159	He	0.006	ug/l	51.8	5000	
Tl	205	209	He	0.000	ug/l	N/A	1000	
(Pb)	206	209	He	-0.001	ug/l	N/A		
(Pb)	207	209	He	0.003	ug/l	4.9		
Pb	208	209	He	0.000	ug/l	420.8	5000	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Li (IS)	6	He	1298.00	1.8	116.4	70	120	
Sc (ISICPMS)	45	H2	627246.10	0.9	120.9	70	120	failed
Sc (ISICPMS)	45	He	45450.63	0.8	121.6	70	120	failed
Ge (IS)	74	H2	175951.19	1.1	119.8	70	120	
Ge (IS)	74	He	34078.94	0.7	120.3	70	120	failed
Kr	83	He	10.01	100.0	60.0			
In-1	115	He	61309.96	0.6	113.6	70	120	
Tb (IS)	159	He	308810.76	0.3	109.7	70	120	
Bi (IS)	209	He	241710.42	1.1	109.2	70	120	

Continuing Calibration Verification (CCV)

File Name 051_CCV.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 17:45:35

Sample Name **CCV 6782584**

Comment ---

Dilution 1.0000

Vial # 1301

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	ExpectedValue	Lower Lmt	Upper Lmt	QC Flag
Be	9	6	He	51.774	ug/l	2.8	50	45	55	
B	11	6	He	110.888	ug/l	5.0	100	90	110	failed
Na	23	45	He	5041.170	ug/l	0.7	5000	4500	5500	
Mg	24	45	He	4903.172	ug/l	0.6	5000	4500	5500	
Al	27	45	He	479.035	ug/l	0.7	500	450	550	
K	39	45	He	4850.549	ug/l	0.9	5000	4500	5500	
Ca	40	45	H2	4919.442	ug/l	0.9	5000	4500	5500	
Ti	47	45	He	47.694	ug/l	3.3	50	45	55	
V	51	45	He	48.637	ug/l	0.7	50	45	55	
Cr	52	45	He	48.606	ug/l	0.8	50	45	55	
Mn	55	45	He	477.143	ug/l	0.8	500	450	550	
Fe	56	45	He	4769.157	ug/l	0.9	5000	4500	5500	
Co	59	45	He	47.468	ug/l	0.6	50	45	55	
Ni	60	45	He	48.045	ug/l	1.1	50	45	55	
Cu	63	45	He	47.882	ug/l	0.5	50	45	55	
Zn	66	45	He	49.124	ug/l	0.5	50	45	55	
As	75	74	He	49.748	ug/l	3.7	50	45	55	
Se	78	74	H2	52.040	ug/l	1.9	50	45	55	
Sr	88	115	He	49.127	ug/l	1.6	50	45	55	
Mo	95	115	He	49.368	ug/l	0.8	50	45	55	
Ag	107	115	He	48.475	ug/l	0.6	50	45	55	
Cd	111	115	He	48.955	ug/l	1.7	50	45	55	
Sn	118	115	He	47.717	ug/l	1.4	50	45	55	
Sb	121	115	He	48.498	ug/l	0.9	50	45	55	
Ba	137	159	He	49.228	ug/l	0.3	50	45	55	
Tl	205	209	He	9.859	ug/l	1.0	10	9	11	
(Pb)	206	209	He	48.907	ug/l	0.6				
(Pb)	207	209	He	48.985	ug/l	0.7				
Pb	208	209	He	48.987	ug/l	0.5	50	45	55	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower %Lmt	Upper %Lmt	QC Flag
Li (IS)	6	He	1221.66	2.0	109.6	70	120	
Sc (ISICPMS)	45	H2	592755.56	0.8	114.2	70	120	
Sc (ISICPMS)	45	He	43410.16	0.7	116.2	70	120	
Ge (IS)	74	H2	173643.79	1.3	118.3	70	120	
Ge (IS)	74	He	33695.90	1.2	119.0	70	120	
Kr	83	He	13.35	86.6	80.0			
In-1	115	He	58631.76	0.8	108.7	70	120	
Tb (IS)	159	He	300457.80	0.4	106.7	70	120	

Continuing Calibration Verification (CCV)

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower %Lmt	Upper %Lmt	QC Flag
Bi (IS)	209	He	230560.78	0.8	104.2	70	120	

Initial/Continuing Calibration Blank (ICB/CCB)

File Name 052_CCB.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 17:48:12

Sample Name **CCB**

Comment ---

Dilution 1.0000

Quant Table 1302

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	ExpectedValue	Lower Lmt	Upper Lmt	QC Flag
Be	9	6	He	0.004	ug/l	464.9	0.2	-0.2	0.2	
B	11	6	He	12.533	ug/l	23.6	20	-20	20	
Na	23	45	He	20.604	ug/l	2.5	50	-50	50	
Mg	24	45	He	0.004	ug/l	2666.7	50	-50	50	
Al	27	45	He	-0.183	ug/l	N/A	10	-10	10	
K	39	45	He	5.225	ug/l	57.8	50	-50	50	
Ca	40	45	H2	-5.531	ug/l	N/A	50	-50	50	
Ti	47	45	He	0.082	ug/l	11.9	1	-1	1	
V	51	45	He	0.001	ug/l	345.5	1	-1	1	
Cr	52	45	He	-0.020	ug/l	N/A	1	-1	1	
Mn	55	45	He	0.026	ug/l	60.3	2	-2	2	
Fe	56	45	He	0.155	ug/l	26.4	30	-30	30	
Co	59	45	He	0.001	ug/l	148.7	1	-1	1	
Ni	60	45	He	-0.009	ug/l	N/A	1	-1	1	
Cu	63	45	He	0.025	ug/l	22.7	1	-1	1	
Zn	66	45	He	-0.071	ug/l	N/A	4	-4	4	
As	75	74	He	0.010	ug/l	151.0	0.5	-0.5	0.5	
Se	78	74	H2	0.021	ug/l	50.8	0.5	-0.5	0.5	
Sr	88	115	He	0.005	ug/l	100.2	1	-1	1	
Mo	95	115	He	0.009	ug/l	51.9	1	-1	1	
Ag	107	115	He	0.010	ug/l	15.2	1	-1	1	
Cd	111	115	He	-0.024	ug/l	N/A	0.5	-0.5	0.5	
Sn	118	115	He	0.054	ug/l	10.5	4	-4	4	
Sb	121	115	He	0.086	ug/l	17.2	0.5	-0.5	0.5	
Ba	137	159	He	0.005	ug/l	113.5	1	-1	1	
Tl	205	209	He	0.001	ug/l	50.8	0.2	-0.2	0.2	
(Pb)	206	209	He	0.007	ug/l	73.2				
(Pb)	207	209	He	0.006	ug/l	57.8				
Pb	208	209	He	0.006	ug/l	23.8	0.3	-0.3	0.3	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower %Lmt	Upper %Lmt	QC Flag
Li (IS)	6	He	1167.99	1.6	104.8	70	120	
Sc (ISICPMS)	45	H2	556379.89	0.6	107.2	70	120	
Sc (ISICPMS)	45	He	40501.93	0.5	108.4	70	120	
Ge (IS)	74	H2	153255.18	0.7	104.4	70	120	
Ge (IS)	74	He	30001.22	1.6	105.9	70	120	
Kr	83	He	10.01	100.0	60.0			
In-1	115	He	55147.19	1.1	102.2	70	120	
Tb (IS)	159	He	282417.93	0.2	100.3	70	120	
Bi (IS)	209	He	219896.02	0.4	99.4	70	120	

Sample Report

File Name 053SMPL.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 17:50:52

Sample Name **mb 460-597149/1-a@2**

Comment ---

Dilution **1.0000**

Vial # 2301

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	High Value	QC Flag
Be	9	6	He	-0.001	ug/l	N/A	1000	
B	11	6	He	10.013	ug/l	29.2	500	
Na	23	45	He	29.806	ug/l	4.5	200000	
Mg	24	45	He	0.248	ug/l	52.0	150000	
Al	27	45	He	1.940	ug/l	21.1	50000	
K	39	45	He	8.972	ug/l	44.6	200000	
Ca	40	45	H2	-1.465	ug/l	N/A	150000	
Ti	47	45	He	0.154	ug/l	34.8	1000	
V	51	45	He	0.029	ug/l	21.5	2000	
Cr	52	45	He	0.125	ug/l	6.1	4000	
Mn	55	45	He	0.115	ug/l	16.7	5000	
Fe	56	45	He	1.632	ug/l	6.8	100000	
Co	59	45	He	0.002	ug/l	70.6	1000	
Ni	60	45	He	0.004	ug/l	282.0	1000	
Cu	63	45	He	0.140	ug/l	9.4	1000	
Zn	66	45	He	0.046	ug/l	29.1	1000	
As	75	74	He	0.003	ug/l	375.4	2000	
Se	78	74	H2	0.016	ug/l	75.4	1000	
Sr	88	115	He	0.007	ug/l	27.2	2000	
Mo	95	115	He	0.006	ug/l	87.4	1000	
Ag	107	115	He	0.014	ug/l	11.6	100	
Cd	111	115	He	-0.027	ug/l	N/A	2000	
Sn	118	115	He	0.135	ug/l	7.9	100	
Sb	121	115	He	0.525	ug/l	7.1	100	
Ba	137	159	He	0.026	ug/l	58.2	5000	
Tl	205	209	He	0.000	ug/l	N/A	1000	
(Pb)	206	209	He	0.011	ug/l	40.8		
(Pb)	207	209	He	0.011	ug/l	29.2		
Pb	208	209	He	0.011	ug/l	16.6	5000	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Li (IS)	6	He	1131.49	3.0	101.5	70	120	
Sc (ISICPMS)	45	H2	526264.79	0.4	101.4	70	120	
Sc (ISICPMS)	45	He	38990.12	1.6	104.3	70	120	
Ge (IS)	74	H2	160702.11	0.5	109.5	70	120	
Ge (IS)	74	He	33121.33	1.5	116.9	70	120	
Kr	83	He	6.67	86.6	40.0			
In-1	115	He	51355.61	0.2	95.2	70	120	
Tb (IS)	159	He	262410.93	1.1	93.2	70	120	
Bi (IS)	209	He	205696.00	0.6	93.0	70	120	

Sample Report

File Name 054SMPL.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 17:53:31

Sample Name **lcs 460-597149/2-a@2**

Comment ---

Dilution **1.0000**

Vial # 2302

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	High Value	QC Flag
Be	9	6	He	12.461	ug/l	2.5	1000	
B	11	6	He	265.008	ug/l	0.9	500	
Na	23	45	He	1273.504	ug/l	1.1	200000	
Mg	24	45	He	1214.297	ug/l	1.6	150000	
Al	27	45	He	1161.010	ug/l	1.6	50000	
K	39	45	He	1189.700	ug/l	1.1	200000	
Ca	40	45	H2	1167.638	ug/l	0.6	150000	
Ti	47	45	He	22.760	ug/l	1.0	1000	
V	51	45	He	23.995	ug/l	0.2	2000	
Cr	52	45	He	24.340	ug/l	1.7	4000	
Mn	55	45	He	119.207	ug/l	0.9	5000	
Fe	56	45	He	1204.864	ug/l	1.4	100000	
Co	59	45	He	11.830	ug/l	0.5	1000	
Ni	60	45	He	24.304	ug/l	0.6	1000	
Cu	63	45	He	24.426	ug/l	0.7	1000	
Zn	66	45	He	115.512	ug/l	2.2	1000	
As	75	74	He	22.939	ug/l	2.0	2000	
Se	78	74	H2	23.531	ug/l	1.7	1000	
Sr	88	115	He	23.756	ug/l	0.4	2000	
Mo	95	115	He	23.707	ug/l	2.3	1000	
Ag	107	115	He	12.493	ug/l	0.7	100	
Cd	111	115	He	12.142	ug/l	1.3	2000	
Sn	118	115	He	23.997	ug/l	2.4	100	
Sb	121	115	He	12.212	ug/l	1.4	100	
Ba	137	159	He	23.409	ug/l	0.3	5000	
Tl	205	209	He	9.593	ug/l	0.8	1000	
(Pb)	206	209	He	12.315	ug/l	1.2		
(Pb)	207	209	He	11.868	ug/l	1.7		
Pb	208	209	He	12.071	ug/l	1.1	5000	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Li (IS)	6	He	1127.16	1.1	101.1	70	120	
Sc (ISICPMS)	45	H2	536937.17	1.4	103.5	70	120	
Sc (ISICPMS)	45	He	38106.85	1.3	102.0	70	120	
Ge (IS)	74	H2	161589.93	0.6	110.1	70	120	
Ge (IS)	74	He	32497.72	1.2	114.7	70	120	
Kr	83	He	13.35	114.6	80.0			
In-1	115	He	50990.92	1.2	94.5	70	120	
Tb (IS)	159	He	264237.71	0.7	93.8	70	120	
Bi (IS)	209	He	204205.92	0.9	92.3	70	120	

Sample Report

File Name 055SMPL.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 17:56:10

Sample Name **PDS 460-176926-a-1-h@2**

Comment ---

Dilution **1.0000**

Vial # 2303

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	High Value	QC Flag
Be	9	6	He	5.656	ug/l	4.5	1000	
B	11	6	He	152.222	ug/l	3.2	500	
Na	23	45	He	7169.099	ug/l	0.5	200000	
Mg	24	45	He	1766.513	ug/l	0.3	150000	
Al	27	45	He	4423.635	ug/l	0.5	50000	
K	39	45	He	1185.363	ug/l	1.1	200000	
Ca	40	45	H2	3796.271	ug/l	0.7	150000	
Ti	47	45	He	170.077	ug/l	0.8	1000	
V	51	45	He	18.581	ug/l	0.5	2000	
Cr	52	45	He	16.694	ug/l	0.6	4000	
Mn	55	45	He	61.523	ug/l	0.3	5000	
Fe	56	45	He	3591.570	ug/l	0.6	100000	
Co	59	45	He	5.804	ug/l	0.5	1000	
Ni	60	45	He	12.873	ug/l	0.8	1000	
Cu	63	45	He	27.919	ug/l	0.3	1000	
Zn	66	45	He	59.308	ug/l	0.6	1000	
As	75	74	He	10.398	ug/l	2.9	2000	
Se	78	74	H2	9.865	ug/l	1.6	1000	
Sr	88	115	He	27.532	ug/l	1.3	2000	
Mo	95	115	He	13.194	ug/l	1.4	1000	
Ag	107	115	He	4.099	ug/l	1.7	100	
Cd	111	115	He	5.326	ug/l	1.3	2000	
Sn	118	115	He	10.842	ug/l	0.8	100	
Sb	121	115	He	5.692	ug/l	1.5	100	
Ba	137	159	He	42.544	ug/l	0.1	5000	
Tl	205	209	He	4.327	ug/l	0.4	1000	
(Pb)	206	209	He	8.032	ug/l	0.7		
(Pb)	207	209	He	7.586	ug/l	2.7		
Pb	208	209	He	7.839	ug/l	0.6	5000	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Li (IS)	6	He	1129.32	1.6	101.3	70	120	
Sc (ISICPMS)	45	H2	531561.07	0.4	102.4	70	120	
Sc (ISICPMS)	45	He	38331.82	0.7	102.6	70	120	
Ge (IS)	74	H2	166298.47	0.2	113.3	70	120	
Ge (IS)	74	He	34109.14	0.5	120.4	70	120	failed
Kr	83	He	16.68	34.6	100.0			
In-1	115	He	50620.33	1.3	93.8	70	120	
Tb (IS)	159	He	266618.20	0.8	94.7	70	120	
Bi (IS)	209	He	204310.93	0.7	92.3	70	120	

Sample Report

File Name 056SMPL.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 17:58:47

Sample Name **460-176926-a-1-j ms@2**

Comment ---

Dilution **1.0000**

Vial # 2304

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	High Value	QC Flag
Be	9	6	He	13.144	ug/l	0.4	1000	
B	11	6	He	303.339	ug/l	5.0	500	
Na	23	45	He	7972.677	ug/l	0.0	200000	
Mg	24	45	He	2443.708	ug/l	0.7	150000	
Al	27	45	He	4417.603	ug/l	0.2	50000	
K	39	45	He	1725.087	ug/l	0.1	200000	
Ca	40	45	H2	4580.322	ug/l	1.0	150000	
Ti	47	45	He	111.214	ug/l	0.7	1000	
V	51	45	He	31.468	ug/l	0.6	2000	
Cr	52	45	He	30.244	ug/l	0.8	4000	
Mn	55	45	He	129.412	ug/l	0.8	5000	
Fe	56	45	He	4225.166	ug/l	0.4	100000	
Co	59	45	He	12.685	ug/l	0.8	1000	
Ni	60	45	He	26.595	ug/l	0.4	1000	
Cu	63	45	He	42.472	ug/l	0.3	1000	
Zn	66	45	He	125.765	ug/l	1.2	1000	
As	75	74	He	22.065	ug/l	2.0	2000	
Se	78	74	H2	22.425	ug/l	0.7	1000	
Sr	88	115	He	41.235	ug/l	0.9	2000	
Mo	95	115	He	26.642	ug/l	1.1	1000	
Ag	107	115	He	12.752	ug/l	1.0	100	
Cd	111	115	He	12.156	ug/l	2.3	2000	
Sn	118	115	He	23.516	ug/l	0.3	100	
Sb	121	115	He	12.185	ug/l	1.6	100	
Ba	137	159	He	54.539	ug/l	1.1	5000	
Tl	205	209	He	9.978	ug/l	1.2	1000	
(Pb)	206	209	He	15.144	ug/l	0.5		
(Pb)	207	209	He	14.483	ug/l	0.6		
Pb	208	209	He	14.803	ug/l	0.3	5000	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Li (IS)	6	He	1121.66	1.8	100.6	70	120	
Sc (ISICPMS)	45	H2	533682.87	1.2	102.8	70	120	
Sc (ISICPMS)	45	He	38271.70	1.2	102.4	70	120	
Ge (IS)	74	H2	171411.87	0.3	116.8	70	120	
Ge (IS)	74	He	34668.18	2.0	122.4	70	120	failed
Kr	83	He	10.01	100.0	60.0			
In-1	115	He	51162.70	0.6	94.8	70	120	
Tb (IS)	159	He	267855.40	1.2	95.1	70	120	
Bi (IS)	209	He	203210.83	1.1	91.8	70	120	

Sample Report

File Name 057SMPL.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 18:01:25

Sample Name **460-176926-a-1-i du@2**

Comment ---

Dilution **1.0000**

Vial # 2305

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	High Value	QC Flag
Be	9	6	He	0.135	ug/l	30.2	1000	
B	11	6	He	49.021	ug/l	6.6	500	
Na	23	45	He	6581.259	ug/l	1.3	200000	
Mg	24	45	He	1225.355	ug/l	1.6	150000	
Al	27	45	He	3907.036	ug/l	0.9	50000	
K	39	45	He	661.945	ug/l	0.8	200000	
Ca	40	45	H2	3305.051	ug/l	1.1	150000	
Ti	47	45	He	162.876	ug/l	0.9	1000	
V	51	45	He	8.208	ug/l	2.1	2000	
Cr	52	45	He	6.039	ug/l	2.9	4000	
Mn	55	45	He	9.290	ug/l	2.3	5000	
Fe	56	45	He	3062.366	ug/l	1.6	100000	
Co	59	45	He	0.587	ug/l	2.1	1000	
Ni	60	45	He	1.983	ug/l	1.8	1000	
Cu	63	45	He	17.162	ug/l	1.6	1000	
Zn	66	45	He	7.603	ug/l	1.1	1000	
As	75	74	He	1.346	ug/l	16.0	2000	
Se	78	74	H2	0.217	ug/l	16.8	1000	
Sr	88	115	He	17.108	ug/l	2.5	2000	
Mo	95	115	He	2.661	ug/l	2.1	1000	
Ag	107	115	He	0.011	ug/l	16.7	100	
Cd	111	115	He	-0.021	ug/l	N/A	2000	
Sn	118	115	He	0.283	ug/l	1.6	100	
Sb	121	115	He	0.631	ug/l	8.2	100	
Ba	137	159	He	32.376	ug/l	0.6	5000	
Tl	205	209	He	0.036	ug/l	9.0	1000	
(Pb)	206	209	He	2.529	ug/l	1.1		
(Pb)	207	209	He	2.292	ug/l	4.9		
Pb	208	209	He	2.402	ug/l	2.0	5000	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Li (IS)	6	He	1109.16	5.7	99.5	70	120	
Sc (ISICPMS)	45	H2	530271.90	1.3	102.2	70	120	
Sc (ISICPMS)	45	He	38798.63	2.0	103.8	70	120	
Ge (IS)	74	H2	168617.38	1.4	114.8	70	120	
Ge (IS)	74	He	34307.47	1.3	121.1	70	120	failed
Kr	83	He	13.35	43.3	80.0			
In-1	115	He	50967.16	0.5	94.4	70	120	
Tb (IS)	159	He	269551.58	0.4	95.7	70	120	
Bi (IS)	209	He	205877.56	0.6	93.0	70	120	

Sample Report

File Name 058SMPL.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 18:04:02

Sample Name **460-176926-a-1-h@2**

Comment ---

Dilution **1.0000**

Vial # 2306

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	High Value	QC Flag
Be	9	6	He	0.162	ug/l	7.4	1000	
B	11	6	He	43.241	ug/l	2.6	500	
Na	23	45	He	6532.528	ug/l	1.2	200000	
Mg	24	45	He	1221.231	ug/l	0.8	150000	
Al	27	45	He	3853.880	ug/l	1.5	50000	
K	39	45	He	652.380	ug/l	1.0	200000	
Ca	40	45	H2	3273.091	ug/l	0.6	150000	
Ti	47	45	He	159.235	ug/l	0.9	1000	
V	51	45	He	7.995	ug/l	1.6	2000	
Cr	52	45	He	6.032	ug/l	2.4	4000	
Mn	55	45	He	9.281	ug/l	2.1	5000	
Fe	56	45	He	3053.719	ug/l	1.5	100000	
Co	59	45	He	0.570	ug/l	5.4	1000	
Ni	60	45	He	2.017	ug/l	2.7	1000	
Cu	63	45	He	16.975	ug/l	0.8	1000	
Zn	66	45	He	7.575	ug/l	3.9	1000	
As	75	74	He	1.298	ug/l	18.3	2000	
Se	78	74	H2	0.239	ug/l	36.5	1000	
Sr	88	115	He	16.780	ug/l	0.6	2000	
Mo	95	115	He	2.552	ug/l	3.5	1000	
Ag	107	115	He	0.013	ug/l	17.4	100	
Cd	111	115	He	-0.022	ug/l	N/A	2000	
Sn	118	115	He	0.270	ug/l	4.8	100	
Sb	121	115	He	0.618	ug/l	11.7	100	
Ba	137	159	He	32.128	ug/l	1.0	5000	
Tl	205	209	He	0.035	ug/l	6.9	1000	
(Pb)	206	209	He	2.470	ug/l	3.8		
(Pb)	207	209	He	2.267	ug/l	2.0		
Pb	208	209	He	2.377	ug/l	1.9	5000	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Li (IS)	6	He	1104.16	3.5	99.0	70	120	
Sc (ISICPMS)	45	H2	531712.98	1.8	102.5	70	120	
Sc (ISICPMS)	45	He	38077.91	1.4	101.9	70	120	
Ge (IS)	74	H2	167777.87	1.6	114.3	70	120	
Ge (IS)	74	He	33685.97	0.5	118.9	70	120	
Kr	83	He	43.38	70.5	260.0			
In-1	115	He	50800.11	1.6	94.1	70	120	
Tb (IS)	159	He	265748.06	0.1	94.4	70	120	
Bi (IS)	209	He	203501.92	1.0	92.0	70	120	

Sample Report

File Name 059SMPL.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 18:06:39

Sample Name **SD 460-176926-a-1-h@10**

Comment ---

Dilution **1.0000**

Vial # 2307

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	High Value	QC Flag
Be	9	6	He	0.037	ug/l	68.1	1000	
B	11	6	He	13.630	ug/l	5.6	500	
Na	23	45	He	1285.748	ug/l	0.9	200000	
Mg	24	45	He	239.938	ug/l	1.4	150000	
Al	27	45	He	771.910	ug/l	2.4	50000	
K	39	45	He	129.770	ug/l	1.7	200000	
Ca	40	45	H2	652.247	ug/l	0.2	150000	
Ti	47	45	He	31.149	ug/l	4.2	1000	
V	51	45	He	1.653	ug/l	1.4	2000	
Cr	52	45	He	1.170	ug/l	2.8	4000	
Mn	55	45	He	1.855	ug/l	2.5	5000	
Fe	56	45	He	611.055	ug/l	1.0	100000	
Co	59	45	He	0.113	ug/l	11.4	1000	
Ni	60	45	He	0.459	ug/l	7.4	1000	
Cu	63	45	He	3.388	ug/l	1.4	1000	
Zn	66	45	He	1.552	ug/l	16.1	1000	
As	75	74	He	0.267	ug/l	21.3	2000	
Se	78	74	H2	0.072	ug/l	33.0	1000	
Sr	88	115	He	3.303	ug/l	2.6	2000	
Mo	95	115	He	0.494	ug/l	7.0	1000	
Ag	107	115	He	0.006	ug/l	68.1	100	
Cd	111	115	He	-0.027	ug/l	N/A	2000	
Sn	118	115	He	0.083	ug/l	13.3	100	
Sb	121	115	He	0.203	ug/l	30.7	100	
Ba	137	159	He	6.394	ug/l	0.5	5000	
Tl	205	209	He	0.005	ug/l	19.5	1000	
(Pb)	206	209	He	0.547	ug/l	15.7		
(Pb)	207	209	He	0.428	ug/l	3.6		
Pb	208	209	He	0.471	ug/l	3.8	5000	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Li (IS)	6	He	1141.49	0.6	102.4	70	120	
Sc (ISICPMS)	45	H2	546900.92	0.6	105.4	70	120	
Sc (ISICPMS)	45	He	39336.70	0.8	105.3	70	120	
Ge (IS)	74	H2	164907.44	0.7	112.3	70	120	
Ge (IS)	74	He	32505.53	0.7	114.8	70	120	
Kr	83	He	10.01	NaN	60.0			
In-1	115	He	53289.90	1.3	98.8	70	120	
Tb (IS)	159	He	277663.81	0.2	98.6	70	120	
Bi (IS)	209	He	217017.96	0.8	98.1	70	120	

Sample Report

File Name 060SMPL.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 18:09:18

Sample Name **lb 460-596683/1-d@2**

Comment ---

Dilution **1.0000**

Vial # 2310

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	High Value	QC Flag
Be	9	6	He	0.005	ug/l	214.4	1000	
B	11	6	He	7.972	ug/l	17.2	500	
Na	23	45	He	18.659	ug/l	2.6	200000	
Mg	24	45	He	0.104	ug/l	30.8	150000	
Al	27	45	He	1.927	ug/l	17.3	50000	
K	39	45	He	5.402	ug/l	56.8	200000	
Ca	40	45	H2	-1.162	ug/l	N/A	150000	
Ti	47	45	He	0.141	ug/l	33.7	1000	
V	51	45	He	0.054	ug/l	9.5	2000	
Cr	52	45	He	0.150	ug/l	25.1	4000	
Mn	55	45	He	0.065	ug/l	9.4	5000	
Fe	56	45	He	0.867	ug/l	4.9	100000	
Co	59	45	He	0.002	ug/l	87.9	1000	
Ni	60	45	He	0.013	ug/l	64.3	1000	
Cu	63	45	He	1.852	ug/l	0.8	1000	
Zn	66	45	He	1.461	ug/l	2.7	1000	
As	75	74	He	-0.001	ug/l	N/A	2000	
Se	78	74	H2	0.037	ug/l	107.5	1000	
Sr	88	115	He	0.007	ug/l	71.2	2000	
Mo	95	115	He	0.014	ug/l	22.1	1000	
Ag	107	115	He	0.008	ug/l	45.1	100	
Cd	111	115	He	-0.028	ug/l	0.0	2000	
Sn	118	115	He	0.092	ug/l	31.1	100	
Sb	121	115	He	0.535	ug/l	15.3	100	
Ba	137	159	He	0.014	ug/l	50.9	5000	
Tl	205	209	He	0.000	ug/l	N/A	1000	
(Pb)	206	209	He	0.135	ug/l	5.2		
(Pb)	207	209	He	0.126	ug/l	9.0		
Pb	208	209	He	0.132	ug/l	4.0	5000	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Li (IS)	6	He	1102.32	1.3	98.9	70	120	
Sc (ISICPMS)	45	H2	511946.59	2.0	98.7	70	120	
Sc (ISICPMS)	45	He	39123.88	0.6	104.7	70	120	
Ge (IS)	74	H2	160628.89	1.4	109.4	70	120	
Ge (IS)	74	He	33361.79	0.9	117.8	70	120	
Kr	83	He	16.68	124.9	100.0			
In-1	115	He	51254.77	1.3	95.0	70	120	
Tb (IS)	159	He	262736.98	0.6	93.3	70	120	
Bi (IS)	209	He	205114.49	1.7	92.7	70	120	

Sample Report

File Name 061SMPL.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 18:11:58

Sample Name **460-176854-f-3-b@2**

Comment ---

Dilution **1.0000**

Vial # 2308

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	High Value	QC Flag
Be	9	6	He	0.513	ug/l	28.3	1000	
B	11	6	He	65.193	ug/l	2.0	500	
Na	23	45	He	10288.706	ug/l	0.6	200000	
Mg	24	45	He	1442.567	ug/l	0.7	150000	
Al	27	45	He	7294.547	ug/l	0.2	50000	
K	39	45	He	3504.435	ug/l	0.6	200000	
Ca	40	45	H2	1575.891	ug/l	1.4	150000	
Ti	47	45	He	86.216	ug/l	0.9	1000	
V	51	45	He	26.182	ug/l	0.9	2000	
Cr	52	45	He	49.181	ug/l	0.7	4000	
Mn	55	45	He	10.805	ug/l	1.0	5000	
Fe	56	45	He	14699.404	ug/l	0.2	100000	
Co	59	45	He	1.139	ug/l	0.4	1000	
Ni	60	45	He	3.028	ug/l	0.5	1000	
Cu	63	45	He	3.630	ug/l	1.3	1000	
Zn	66	45	He	18.169	ug/l	2.8	1000	
As	75	74	He	7.752	ug/l	3.8	2000	
Se	78	74	H2	0.255	ug/l	16.1	1000	
Sr	88	115	He	5.009	ug/l	3.8	2000	
Mo	95	115	He	0.717	ug/l	5.3	1000	
Ag	107	115	He	0.017	ug/l	12.7	100	
Cd	111	115	He	-0.012	ug/l	N/A	2000	
Sn	118	115	He	0.427	ug/l	4.5	100	
Sb	121	115	He	0.673	ug/l	3.8	100	
Ba	137	159	He	47.631	ug/l	0.6	5000	
Tl	205	209	He	0.067	ug/l	6.7	1000	
(Pb)	206	209	He	3.459	ug/l	1.3		
(Pb)	207	209	He	3.264	ug/l	0.9		
Pb	208	209	He	3.363	ug/l	1.5	5000	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Li (IS)	6	He	1119.49	1.6	100.4	70	120	
Sc (ISICPMS)	45	H2	533469.69	1.0	102.8	70	120	
Sc (ISICPMS)	45	He	37871.73	1.0	101.3	70	120	
Ge (IS)	74	H2	167478.94	0.8	114.1	70	120	
Ge (IS)	74	He	33436.42	1.2	118.1	70	120	
Kr	83	He	33.37	45.8	200.0			
In-1	115	He	49717.13	1.4	92.1	70	120	
Tb (IS)	159	He	266040.39	1.1	94.5	70	120	
Bi (IS)	209	He	203347.32	1.4	91.9	70	120	

Sample Report

File Name 062SMPL.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 18:14:35

Sample Name **460-176854-f-4-j@2**

Comment ---

Dilution **1.0000**

Vial # 2309

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	High Value	QC Flag
Be	9	6	He	0.106	ug/l	18.1	1000	
B	11	6	He	35.700	ug/l	9.8	500	
Na	23	45	He	5610.060	ug/l	1.4	200000	
Mg	24	45	He	571.938	ug/l	1.4	150000	
Al	27	45	He	1072.075	ug/l	1.0	50000	
K	39	45	He	1197.171	ug/l	0.8	200000	
Ca	40	45	H2	871.862	ug/l	0.7	150000	
Ti	47	45	He	17.268	ug/l	3.9	1000	
V	51	45	He	4.432	ug/l	0.9	2000	
Cr	52	45	He	13.052	ug/l	1.6	4000	
Mn	55	45	He	1.972	ug/l	4.7	5000	
Fe	56	45	He	2957.120	ug/l	1.5	100000	
Co	59	45	He	0.315	ug/l	3.6	1000	
Ni	60	45	He	1.000	ug/l	2.8	1000	
Cu	63	45	He	1.054	ug/l	1.6	1000	
Zn	66	45	He	4.992	ug/l	2.6	1000	
As	75	74	He	2.219	ug/l	6.1	2000	
Se	78	74	H2	0.095	ug/l	16.7	1000	
Sr	88	115	He	3.316	ug/l	5.7	2000	
Mo	95	115	He	0.360	ug/l	6.2	1000	
Ag	107	115	He	0.007	ug/l	28.4	100	
Cd	111	115	He	-0.017	ug/l	N/A	2000	
Sn	118	115	He	0.145	ug/l	34.8	100	
Sb	121	115	He	0.533	ug/l	5.0	100	
Ba	137	159	He	9.079	ug/l	2.3	5000	
Tl	205	209	He	0.010	ug/l	16.6	1000	
(Pb)	206	209	He	0.576	ug/l	5.6		
(Pb)	207	209	He	0.530	ug/l	1.7		
Pb	208	209	He	0.553	ug/l	0.9	5000	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Li (IS)	6	He	1109.99	2.1	99.6	70	120	
Sc (ISICPMS)	45	H2	512692.71	1.1	98.8	70	120	
Sc (ISICPMS)	45	He	37059.78	1.5	99.2	70	120	
Ge (IS)	74	H2	165148.21	0.7	112.5	70	120	
Ge (IS)	74	He	33472.08	0.1	118.2	70	120	
Kr	83	He	3.34	173.2	20.0			
In-1	115	He	50238.28	1.1	93.1	70	120	
Tb (IS)	159	He	263280.77	0.7	93.5	70	120	
Bi (IS)	209	He	202943.98	0.8	91.7	70	120	

Continuing Calibration Verification (CCV)

File Name 063_CCV.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 18:17:13

Sample Name **CCV 6782584**

Comment ---

Dilution 1.0000

Vial # 1301

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	ExpectedValue	Lower Lmt	Upper Lmt	QC Flag
Be	9	6	He	49.883	ug/l	2.8	50	45	55	
B	11	6	He	100.660	ug/l	4.7	100	90	110	
Na	23	45	He	5026.136	ug/l	1.1	5000	4500	5500	
Mg	24	45	He	4951.634	ug/l	1.2	5000	4500	5500	
Al	27	45	He	483.504	ug/l	1.2	500	450	550	
K	39	45	He	4884.221	ug/l	1.4	5000	4500	5500	
Ca	40	45	H2	4900.211	ug/l	0.3	5000	4500	5500	
Ti	47	45	He	48.083	ug/l	1.4	50	45	55	
V	51	45	He	49.387	ug/l	1.5	50	45	55	
Cr	52	45	He	49.187	ug/l	2.2	50	45	55	
Mn	55	45	He	484.991	ug/l	1.5	500	450	550	
Fe	56	45	He	4849.531	ug/l	1.6	5000	4500	5500	
Co	59	45	He	48.251	ug/l	1.4	50	45	55	
Ni	60	45	He	48.960	ug/l	0.7	50	45	55	
Cu	63	45	He	49.019	ug/l	0.7	50	45	55	
Zn	66	45	He	49.397	ug/l	1.1	50	45	55	
As	75	74	He	48.980	ug/l	1.9	50	45	55	
Se	78	74	H2	50.561	ug/l	0.9	50	45	55	
Sr	88	115	He	48.981	ug/l	0.5	50	45	55	
Mo	95	115	He	49.899	ug/l	1.5	50	45	55	
Ag	107	115	He	49.283	ug/l	0.9	50	45	55	
Cd	111	115	He	49.374	ug/l	0.4	50	45	55	
Sn	118	115	He	48.919	ug/l	0.9	50	45	55	
Sb	121	115	He	49.085	ug/l	1.3	50	45	55	
Ba	137	159	He	49.114	ug/l	1.1	50	45	55	
Tl	205	209	He	9.848	ug/l	1.2	10	9	11	
(Pb)	206	209	He	49.115	ug/l	1.0				
(Pb)	207	209	He	49.338	ug/l	0.8				
Pb	208	209	He	49.331	ug/l	0.5	50	45	55	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower %Lmt	Upper %Lmt	QC Flag
Li (IS)	6	He	1209.82	1.1	108.5	70	120	
Sc (ISICPMS)	45	H2	558918.22	1.0	107.7	70	120	
Sc (ISICPMS)	45	He	40739.34	1.6	109.0	70	120	
Ge (IS)	74	H2	167946.16	1.3	114.4	70	120	
Ge (IS)	74	He	32796.08	0.8	115.8	70	120	
Kr	83	He	13.35	43.3	80.0			
In-1	115	He	56463.00	0.6	104.6	70	120	
Tb (IS)	159	He	295330.42	0.6	104.9	70	120	

Continuing Calibration Verification (CCV)

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower %Lmt	Upper %Lmt	QC Flag
Bi (IS)	209	He	227051.83	0.7	102.6	70	120	

Initial/Continuing Calibration Blank (ICB/CCB)

File Name 064_CCB.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 18:19:51

Sample Name **CCB**

Comment ---

Dilution 1.0000

Autoquant Table 1302

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	ExpectedValue	Lower Lmt	Upper Lmt	QC Flag
Be	9	6	He	-0.001	ug/l	N/A	0.2	-0.2	0.2	
B	11	6	He	3.000	ug/l	74.8	20	-20	20	
Na	23	45	He	8.944	ug/l	7.5	50	-50	50	
Mg	24	45	He	-0.020	ug/l	N/A	50	-50	50	
Al	27	45	He	-0.266	ug/l	N/A	10	-10	10	
K	39	45	He	1.543	ug/l	170.9	50	-50	50	
Ca	40	45	H2	-5.931	ug/l	N/A	50	-50	50	
Ti	47	45	He	0.038	ug/l	30.6	1	-1	1	
V	51	45	He	0.004	ug/l	366.9	1	-1	1	
Cr	52	45	He	-0.050	ug/l	N/A	1	-1	1	
Mn	55	45	He	0.011	ug/l	187.7	2	-2	2	
Fe	56	45	He	0.250	ug/l	33.6	30	-30	30	
Co	59	45	He	0.001	ug/l	204.0	1	-1	1	
Ni	60	45	He	-0.011	ug/l	N/A	1	-1	1	
Cu	63	45	He	0.014	ug/l	94.9	1	-1	1	
Zn	66	45	He	-0.135	ug/l	N/A	4	-4	4	
As	75	74	He	-0.011	ug/l	N/A	0.5	-0.5	0.5	
Se	78	74	H2	0.025	ug/l	65.0	0.5	-0.5	0.5	
Sr	88	115	He	0.006	ug/l	101.5	1	-1	1	
Mo	95	115	He	0.011	ug/l	110.8	1	-1	1	
Ag	107	115	He	0.001	ug/l	112.9	1	-1	1	
Cd	111	115	He	-0.028	ug/l	0.0	0.5	-0.5	0.5	
Sn	118	115	He	0.025	ug/l	69.8	4	-4	4	
Sb	121	115	He	0.046	ug/l	27.7	0.5	-0.5	0.5	
Ba	137	159	He	0.009	ug/l	36.6	1	-1	1	
Tl	205	209	He	0.000	ug/l	260.2	0.2	-0.2	0.2	
(Pb)	206	209	He	0.004	ug/l	30.4				
(Pb)	207	209	He	0.005	ug/l	66.8				
Pb	208	209	He	0.003	ug/l	9.1	0.3	-0.3	0.3	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower %Lmt	Upper %Lmt	QC Flag
Li (IS)	6	He	1164.49	2.7	104.4	70	120	
Sc (ISICPMS)	45	H2	536094.43	1.3	103.3	70	120	
Sc (ISICPMS)	45	He	38800.75	0.8	103.8	70	120	
Ge (IS)	74	H2	149905.90	1.2	102.1	70	120	
Ge (IS)	74	He	28917.92	0.8	102.1	70	120	
Kr	83	He	10.01	100.0	60.0			
In-1	115	He	55074.18	0.7	102.1	70	120	
Tb (IS)	159	He	284891.63	0.8	101.2	70	120	
Bi (IS)	209	He	224235.69	1.1	101.3	70	120	

Sample Report

File Name 065SMPL.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 18:22:30

Sample Name **mb 460-597129/1-a@5**

Comment ---

Dilution **1.0000**

Vial # 2401

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	High Value	QC Flag
Be	9	6	He	0.004	ug/l	242.3	1000	
B	11	6	He	2.496	ug/l	45.9	500	
Na	23	45	He	9.472	ug/l	5.9	200000	
Mg	24	45	He	0.055	ug/l	243.1	150000	
Al	27	45	He	0.256	ug/l	180.0	50000	
K	39	45	He	1.219	ug/l	281.6	200000	
Ca	40	45	H2	-1.583	ug/l	N/A	150000	
Ti	47	45	He	0.092	ug/l	53.8	1000	
V	51	45	He	0.015	ug/l	55.9	2000	
Cr	52	45	He	-0.042	ug/l	N/A	4000	
Mn	55	45	He	0.018	ug/l	128.6	5000	
Fe	56	45	He	0.132	ug/l	34.5	100000	
Co	59	45	He	0.001	ug/l	263.4	1000	
Ni	60	45	He	-0.002	ug/l	N/A	1000	
Cu	63	45	He	0.031	ug/l	34.8	1000	
Zn	66	45	He	0.046	ug/l	50.8	1000	
As	75	74	He	-0.007	ug/l	N/A	2000	
Se	78	74	H2	0.036	ug/l	79.1	1000	
Sr	88	115	He	0.011	ug/l	46.5	2000	
Mo	95	115	He	0.005	ug/l	124.8	1000	
Ag	107	115	He	0.003	ug/l	18.0	100	
Cd	111	115	He	-0.027	ug/l	N/A	2000	
Sn	118	115	He	0.027	ug/l	177.3	100	
Sb	121	115	He	0.061	ug/l	20.1	100	
Ba	137	159	He	-0.001	ug/l	N/A	5000	
Tl	205	209	He	0.000	ug/l	83.0	1000	
(Pb)	206	209	He	0.004	ug/l	21.9		
(Pb)	207	209	He	0.004	ug/l	67.1		
Pb	208	209	He	0.003	ug/l	12.4	5000	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Li (IS)	6	He	1186.66	1.3	106.4	70	120	
Sc (ISICPMS)	45	H2	540004.12	0.6	104.1	70	120	
Sc (ISICPMS)	45	He	38630.34	0.8	103.4	70	120	
Ge (IS)	74	H2	151493.99	2.0	103.2	70	120	
Ge (IS)	74	He	29367.77	2.1	103.7	70	120	
Kr	83	He	3.34	173.2	20.0			
In-1	115	He	54364.84	1.5	100.7	70	120	
Tb (IS)	159	He	282867.56	1.0	100.4	70	120	
Bi (IS)	209	He	223085.55	1.0	100.8	70	120	

Sample Report

File Name 066SMPL.d

File Path D:\Agilent\ICPMH\1\DATA\BM032219_#5.b

Acq Time 2019-03-22 18:25:09

Sample Name **lcs 460-597129/2-a@5**

Comment ---

Dilution **1.0000**

Vial # 2402

FullQuant Table

Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	High Value	QC Flag
Be	9	6	He	4.741	ug/l	11.3	1000	
B	11	6	He	99.335	ug/l	1.5	500	
Na	23	45	He	494.754	ug/l	1.1	200000	
Mg	24	45	He	482.426	ug/l	0.9	150000	
Al	27	45	He	475.288	ug/l	1.1	50000	
K	39	45	He	470.102	ug/l	2.0	200000	
Ca	40	45	H2	474.778	ug/l	0.3	150000	
Ti	47	45	He	9.390	ug/l	4.2	1000	
V	51	45	He	9.466	ug/l	1.1	2000	
Cr	52	45	He	9.462	ug/l	2.8	4000	
Mn	55	45	He	47.717	ug/l	1.1	5000	
Fe	56	45	He	489.441	ug/l	1.3	100000	
Co	59	45	He	4.714	ug/l	0.9	1000	
Ni	60	45	He	9.759	ug/l	0.5	1000	
Cu	63	45	He	9.705	ug/l	2.2	1000	
Zn	66	45	He	47.583	ug/l	2.1	1000	
As	75	74	He	9.575	ug/l	3.1	2000	
Se	78	74	H2	9.957	ug/l	5.1	1000	
Sr	88	115	He	9.477	ug/l	1.0	2000	
Mo	95	115	He	9.262	ug/l	0.8	1000	
Ag	107	115	He	4.864	ug/l	0.5	100	
Cd	111	115	He	4.735	ug/l	2.8	2000	
Sn	118	115	He	9.570	ug/l	0.8	100	
Sb	121	115	He	4.729	ug/l	2.6	100	
Ba	137	159	He	9.392	ug/l	2.1	5000	
Tl	205	209	He	3.780	ug/l	0.5	1000	
(Pb)	206	209	He	4.901	ug/l	1.4		
(Pb)	207	209	He	4.719	ug/l	0.9		
Pb	208	209	He	4.796	ug/l	0.4	5000	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Recovery %	Lower Limit	Upper Limit	QC Flag
Li (IS)	6	He	1169.82	1.8	104.9	70	120	
Sc (ISICPMS)	45	H2	541382.51	0.8	104.3	70	120	
Sc (ISICPMS)	45	He	38486.76	1.2	103.0	70	120	
Ge (IS)	74	H2	155556.40	0.8	106.0	70	120	
Ge (IS)	74	He	29928.90	0.8	105.7	70	120	
Kr	83	He	3.34	173.2	20.0			
In-1	115	He	53756.56	0.6	99.6	70	120	
Tb (IS)	159	He	281103.17	0.3	99.8	70	120	
Bi (IS)	209	He	219673.92	0.3	99.3	70	120	

Tune Report

Batch Folder D:\Agilent\ICPMH\1\DATA\BM032219.b
Acq. Date-Time 2019-03-22 13:17
Report Comment EPA TUNE REPORT
Instrument Name G8403A JP16121357

[No Gas]

Mass	Range	Count (Actual)	Response (Actual) [cps/ug/l]	Response (Required) [cps/ug/l]	Response (Flag)
9		38009	380090.30	0.00	
24		173313	1733133.36	0.00	
25		25372	253719.71	0.00	
26		29479	294786.15	0.00	
59		325479	3254791.74	0.00	
115		425127	4251268.99	0.00	
206		124954	1249537.53	0.00	
207		115930	1159302.67	0.00	
208		272886	2728855.63	0.00	

Mass	Resp Ratio (Actual)	Resp Ratio (Required)	Resp Ratio (Flag)
9		-	
24		-	
25		-	
26		-	
59		-	
115		-	
206		-	
207		-	
208		-	

Mass	RSD% (Actual)	RSD% (Required)	RSD% (Flag)
9	0.57	5.00	
24	0.37	5.00	
25	0.26	5.00	
26	0.25	5.00	
59	0.71	5.00	
115	0.73	5.00	
206	0.86	5.00	
207	0.38	5.00	
208	0.44	5.00	

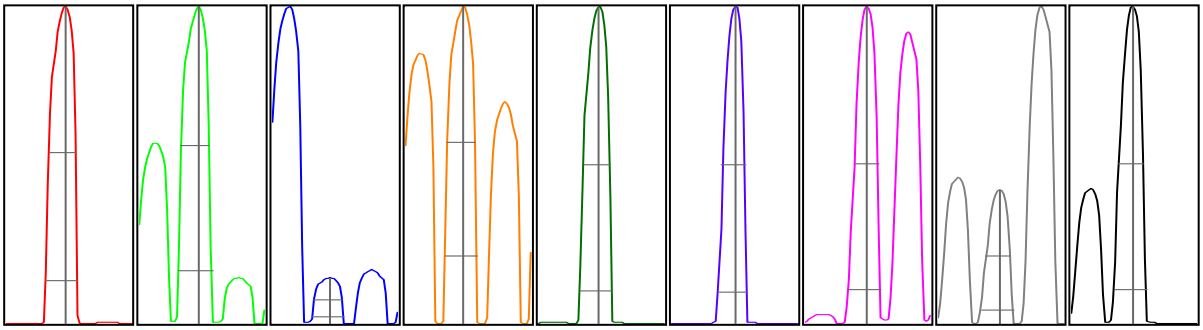
Mass	Background (Actual)	Background (Required)	Background (Flag)
9			
24			
25			
26			
59			
115			
206			
207			
208			

Mass	Rep. 1 Count	Rep. 2 Count	Rep. 3 Count	Rep. 4 Count	Rep. 5 Count

Tune Report

9	37656	38018	38053	38074	38244
24	173082	172284	173684	173895	173621
25	25451	25283	25331	25381	25413
26	29596	29417	29431	29502	29447
59	322749	324226	326857	324870	328693
115	420999	424074	425710	429552	425300
206	124100	124702	126646	124038	125283
207	115353	115738	116219	116508	115834
208	272635	271032	272990	274291	273480

Integration Time [sec] 0.1



Mass	Peak Height	Axis (Actual)	Axis (Required)	Axis (Flag)	W-50%	W-10% (Actual)	W-10% (Required)	W-10% (Flag)
9	62272.63	8.95	8.9 - 9.1		0.63	0.750	0.900	
24	274758.84	23.95	23.9 - 24.1		0.65	0.781	0.900	
25	39558.29	24.90	24.9 - 25.1		0.66	0.733	0.900	
26	46385.28	25.90	25.9 - 26.1		0.65	0.745	0.900	
59	547651.11	58.95	58.9 - 59.1		0.62	0.760	0.900	
115	828691.25	115.05	114.9 - 115.1		0.53	0.683	0.900	
206	223855.55	206.00	205.9 - 206.1		0.57	0.753	0.900	
207	205868.56	207.00	206.9 - 207.1		0.57	0.764	0.900	
208	484645.43	208.00	207.9 - 208.1		0.58	0.760	0.900	

Integration Time [sec] 0.1 **Acquisition Time [sec]** 235 **Y Axis** Linear

Tune Parameters
Plasma Paramters

RF Power	1550 W	Nebulizer Pump	0.10 rps
RF Matching	1.80 V	S/C Temp	2 ℃
Smpl Depth	8.0 mm	Gas Switch	Dilution Gas
Carrier Gas	0.86 L/min	Makeup/Dilution Gas	0.22 L/min
Option Gas	0.0 %		

Lenses Parameters

Extract 1	0.0 V	Cell Entrance	-30 V
Extract 2	-235.0 V	Cell Exit	-50 V
Omega Bias	-94 V	Deflect	13.4 V
Omega Lens	10.0 V	Plate Bias	-35 V

Cell Parameters

Use Gas	No	OctP Bias	-8.0 V
He Flow	0.0 mL/min	OctP RF	180 V
H2 Flow	0.0 mL/min	Energy Discrimination	5.0 V

03212019-w

Method: 245.1_7470A Operator: Admin Date of Analysis: 21 Mar 2019 13:13:09

Sample ID	Extended ID	µ Abs.	Conc.	Chapter	Method	Date	Element
Cal Blank - 1		137	-	596935hg1	245.1_7470A	21 Mar 2019 13:19:45	Hg
0.2 ug/L - 1		1207	-	596935hg1	245.1_7470A	21 Mar 2019 13:21:28	Hg
1.0 ug/L - 1		0	-	596935hg1	245.1_7470A	21 Mar 2019 13:23:11	Hg
Cal Blank - 1		-14	-	596935hg1	245.1_7470A	21 Mar 2019 13:24:55	Hg
0.2 ug/L - 1		1124	-	596935hg1	245.1_7470A	21 Mar 2019 13:26:37	Hg
1.0 ug/L - 1		5556	-	596935hg1	245.1_7470A	21 Mar 2019 13:28:21	Hg
2.0 ug/L - 1		11105	-	596935hg1	245.1_7470A	21 Mar 2019 13:30:04	Hg
5.0 ug/L - 1		27562	-	596935hg1	245.1_7470A	21 Mar 2019 13:31:48	Hg
10.0 ug/L - 1		55528	-	596935hg1	245.1_7470A	21 Mar 2019 13:33:32	Hg
ICV - 1		28358	102.3% 5.1149	596935hg1	245.1_7470A	21 Mar 2019 13:35:16	Hg
ICB - 1		-204	-0.0336	596935hg1	245.1_7470A	21 Mar 2019 13:37:07	Hg
CRI - 1		1065	97.6% 0.1951	596935hg1	245.1_7470A	21 Mar 2019 13:38:52	Hg
QCS - 1		28678	103.5% 5.1726	596935hg1	245.1_7470A	21 Mar 2019 13:40:37	Hg
MCL - 1		11170	100.8% 2.0166	596935hg1	245.1_7470A	21 Mar 2019 13:42:20	Hg
CCV - 1		28461	102.7% 5.1335	596935hg1	245.1_7470A	21 Mar 2019 13:44:05	Hg
CCB - 1		-190	-0.0311	596935hg1	245.1_7470A	21 Mar 2019 13:45:50	Hg
MB 460-596935/1-A - 1		-16	0.0003	596935hg1	245.1_7470A	21 Mar 2019 13:47:36	Hg
LCS 460-596935/2-A - 1		5509	0.9962	596935hg1	245.1_7470A	21 Mar 2019 13:49:18	Hg
460-177222-D-1-B - 1		-15	0.0004	596935hg1	245.1_7470A	21 Mar 2019 13:51:00	Hg
460-177222-D-1-C DU - 1		18	0.0064	596935hg1	245.1_7470A	21 Mar 2019 13:52:44	Hg
460-177222-D-1-D MS - 1		5177	0.9363	596935hg1	245.1_7470A	21 Mar 2019 13:54:26	Hg
sd 460-177222-D-1-B@5 - 1		52	0.0125	596935hg1	245.1_7470A	21 Mar 2019 13:56:08	Hg
460-177060-C-1-B - 1		71	0.0159	596935hg1	245.1_7470A	21 Mar 2019 13:57:51	Hg
460-177063-C-1-B - 1		52	0.0125	596935hg1	245.1_7470A	21 Mar 2019 13:59:34	Hg
460-177420-F-1-B - 1		11419	2.0615	596935hg1	245.1_7470A	21 Mar 2019 14:01:16	Hg
460-177420-F-2-D - 1		2386	0.4332	596935hg1	245.1_7470A	21 Mar 2019 14:03:00	Hg
CCV - 1		28781	103.8% 5.1912	596935hg1	245.1_7470A	21 Mar 2019 14:04:45	Hg
CCB - 1		-151	-0.0241	596935hg1	245.1_7470A	21 Mar 2019 14:06:26	Hg
460-177420-F-3-B - 1		788	0.1452	596935hg1	245.1_7470A	21 Mar 2019 14:08:12	Hg
460-177420-F-4-B - 1		344	0.0651	596935hg1	245.1_7470A	21 Mar 2019 14:09:55	Hg
460-177420-F-5-B - 1		482	0.0900	596935hg1	245.1_7470A	21 Mar 2019 14:11:40	Hg
460-177420-F-6-B - 1		12	0.0053	596935hg1	245.1_7470A	21 Mar 2019 14:13:21	Hg
460-177420-F-7-B - 1		308	0.0587	596935hg1	245.1_7470A	21 Mar 2019 14:15:03	Hg
460-177222-D-2-B - 1		52	0.0125	596935hg1	245.1_7470A	21 Mar 2019 14:16:45	Hg
460-177222-D-3-B - 1		89	0.0192	596935hg1	245.1_7470A	21 Mar 2019 14:18:27	Hg
460-177222-C-4-B - 1		98	0.0208	596935hg1	245.1_7470A	21 Mar 2019 14:20:09	Hg
460-177029-D-1-B - 1		6424	1.1611	596935hg1	245.1_7470A	21 Mar 2019 14:21:51	Hg
460-177029-D-2-B - 1		3627	0.6569	596935hg1	245.1_7470A	21 Mar 2019 14:23:34	Hg
CCV - 1		28405	102.5% 5.1234	596935hg1	245.1_7470A	21 Mar 2019 14:25:17	Hg
CCB - 1		-216	-0.0358	596935hg1	245.1_7470A	21 Mar 2019 14:27:00	Hg
460-177029-D-3-B - 1		1302	0.2378	596935hg1	245.1_7470A	21 Mar 2019 14:28:46	Hg
460-177029-D-4-B - 1		883	0.1623	596935hg1	245.1_7470A	21 Mar 2019 14:30:29	Hg
460-177029-D-5-B - 1		1053	0.1929	596935hg1	245.1_7470A	21 Mar 2019 14:32:12	Hg
460-177029-D-6-B - 1		1144	0.2094	596935hg1	245.1_7470A	21 Mar 2019 14:33:55	Hg
460-177029-D-7-B - 1		617	0.1144	596935hg1	245.1_7470A	21 Mar 2019 14:35:40	Hg
MB 460-596940/1-A - 1		15	0.0058	596935hg1	245.1_7470A	21 Mar 2019 14:37:22	Hg
LCS 460-596940/2-A - 1		5669	1.0250	596935hg1	245.1_7470A	21 Mar 2019 14:39:04	Hg
460-177512-A-3-B - 1		-11	0.0012	596935hg1	245.1_7470A	21 Mar 2019 14:40:46	Hg
460-177512-A-3-C DU - 1		32	0.0089	596935hg1	245.1_7470A	21 Mar 2019 14:42:30	Hg
460-177512-A-3-D MS - 1		5441	0.9839	596935hg1	245.1_7470A	21 Mar 2019 14:44:12	Hg
CCV - 1		28776	103.8% 5.1903	596935hg1	245.1_7470A	21 Mar 2019 14:45:54	Hg
CCB - 1		-222	-0.0369	596935hg1	245.1_7470A	21 Mar 2019 14:47:37	Hg
sd 460-177512-A-3-B@5 - 1		76	0.0168	596935hg1	245.1_7470A	21 Mar 2019 14:49:22	Hg
460-177029-D-8-B - 1		1881	0.3422	596935hg1	245.1_7470A	21 Mar 2019 14:51:05	Hg
460-177029-D-9-B - 1		1802	0.3280	596935hg1	245.1_7470A	21 Mar 2019 14:52:47	Hg
460-177029-D-10-B - 1		1567	0.2856	596935hg1	245.1_7470A	21 Mar 2019 14:54:30	Hg
460-177320-F-1-B - 1		1520	0.2771	596935hg1	245.1_7470A	21 Mar 2019 14:56:14	Hg
460-177073-A-1-B - 1		51	0.0123	596935hg1	245.1_7470A	21 Mar 2019 14:57:57	Hg
460-177073-A-2-B - 1		138	0.0280	596935hg1	245.1_7470A	21 Mar 2019 14:59:42	Hg
460-177223-D-1-B - 1		6508	1.1763	596935hg1	245.1_7470A	21 Mar 2019 15:01:24	Hg
460-177223-D-2-B - 1		5970	1.0793	596935hg1	245.1_7470A	21 Mar 2019 15:03:06	Hg
460-177223-D-3-B - 1		3669	0.6645	596935hg1	245.1_7470A	21 Mar 2019 15:04:51	Hg
CCV - 1		28268	102.0% 5.0987	596935hg1	245.1_7470A	21 Mar 2019 15:06:34	Hg
CCB - 1		-177	-0.0288	596935hg1	245.1_7470A	21 Mar 2019 15:08:17	Hg
460-177223-D-4-B - 1		2208	0.4012	596935hg1	245.1_7470A	21 Mar 2019 15:10:04	Hg
460-177223-D-5-B - 1		1235	0.2258	596935hg1	245.1_7470A	21 Mar 2019 15:11:46	Hg
460-177223-D-6-B - 1		1493	0.2723	596935hg1	245.1_7470A	21 Mar 2019 15:13:29	Hg
460-177223-D-7-B - 1		789	0.1454	596935hg1	245.1_7470A	21 Mar 2019 15:15:11	Hg
460-177223-D-8-B - 1		2703	0.4904	596935hg1	245.1_7470A	21 Mar 2019 15:16:53	Hg
460-177223-D-9-B - 1		5684	1.0277	596935hg1	245.1_7470A	21 Mar 2019 15:18:36	Hg
460-177451-G-1-B - 1		9064	1.6370	596935hg1	245.1_7470A	21 Mar 2019 15:20:20	Hg
460-177482-E-14-B - 1		-55	-0.0068	596935hg1	245.1_7470A	21 Mar 2019 15:22:04	Hg
460-177512-A-1-B - 1		30	0.0085	596935hg1	245.1_7470A	21 Mar 2019 15:23:50	Hg
460-177512-A-2-B - 1		34	0.0093	596935hg1	245.1_7470A	21 Mar 2019 15:25:32	Hg
CCV - 1		28705	103.5% 5.1775	596935hg1	245.1_7470A	21 Mar 2019 15:27:15	Hg
CCB - 1		-188	-0.0308	596935hg1	245.1_7470A	21 Mar 2019 15:28:57	Hg
MB 460-596933/1-B - 1		4	0.0039	596935hg1	245.1_7470A	21 Mar 2019 15:30:42	Hg
LCS 460-596942/2-A - 1		5526	0.9993	596935hg1	245.1_7470A	21 Mar 2019 15:32:24	Hg
460-177487-E-1-H - 1		-15	0.0004	596935hg1	245.1_7470A	21 Mar 2019 15:34:07	Hg
460-177487-E-1-I DU - 1		48	0.0118	596935hg1	245.1_7470A	21 Mar 2019 15:35:50	Hg
460-177487-E-1-J MS - 1		5611	1.0146	596935hg1	245.1_7470A	21 Mar 2019 15:37:33	Hg
sd 460-177487-E-1-H@5 - 1		50	0.0121	596935hg1	245.1_7470A	21 Mar 2019 15:39:15	Hg
MB 460-596966/1-A - 1		23	0.0073	596935hg1	245.1_7470A	21 Mar 2019 15:40:59	Hg
LCS 460-596966/2-A - 1		27979	5.0466	596935hg1	245.1_7470A	21 Mar 2019 15:42:42	Hg

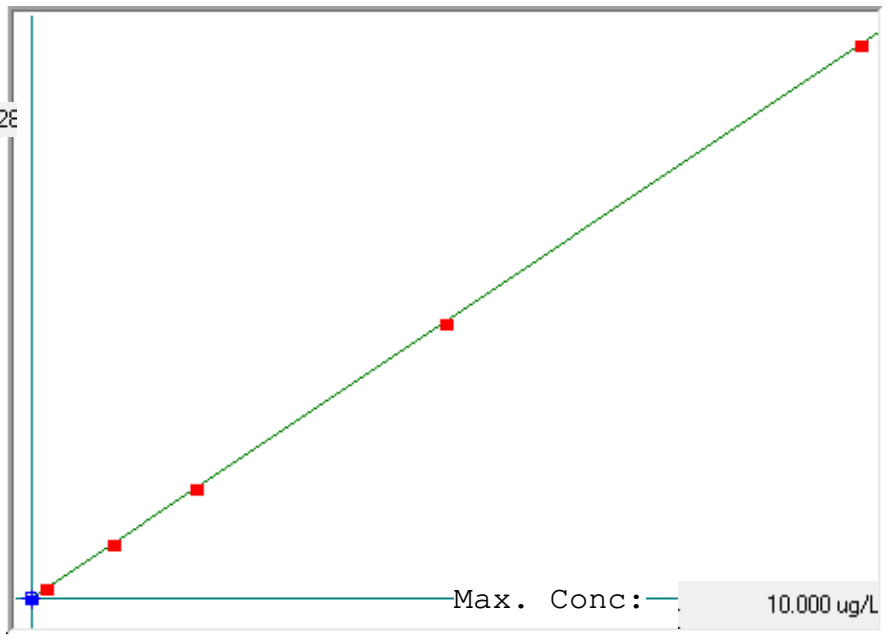
03212019-w

Method: 245.1_7470A Operator: Admin Date of Analysis: 21 Mar 2019 13:13:09

Sample ID	Extended ID	µ Abs.	Conc.	Chapter	Method	Date	Element
460-177566-E-1-C - 1		-155	-0.0248	596935hg1	245.1_7470A	21 Mar 2019 15:44:25	Hg
460-177566-E-1-D DU - 1		28	0.0082	596935hg1	245.1_7470A	21 Mar 2019 15:46:12	Hg
CCV - 1		28130	101.5% 5.0738	596935hg1	245.1_7470A	21 Mar 2019 15:47:55	Hg
CCB - 1		-199	-0.0327	596935hg1	245.1_7470A	21 Mar 2019 15:49:37	Hg
460-177566-E-1-E MS - 1		26721	4.8199	596935hg1	245.1_7470A	21 Mar 2019 15:51:22	Hg
sd 460-177566-E-1-C@5 - 1		-135	-0.0212	596935hg1	245.1_7470A	21 Mar 2019 15:53:05	Hg
460-177415-B-1-C - 1		2268	0.412	0596935hg1	245.1_7470A	21 Mar 2019 15:54:50	Hg
460-177484-K-1-H - 1		10	0.0049	596935hg1	245.1_7470A	21 Mar 2019 15:56:33	Hg
460-177247-A-1-T - 1		71	0.0159	596935hg1	245.1_7470A	21 Mar 2019 15:58:15	Hg
460-177509-E-1-C - 1		20	0.0067	596935hg1	245.1_7470A	21 Mar 2019 15:59:58	Hg
460-177566-F-2-C - 1		1277	0.2333	596935hg1	245.1_7470A	21 Mar 2019 16:01:41	Hg
460-177361-E-7-K - 1		27	0.008	0596935hg1	245.1_7470A	21 Mar 2019 16:03:24	Hg
460-177361-E-8-K - 1		40	0.0103	596935hg1	245.1_7470A	21 Mar 2019 16:05:06	Hg
460-177361-E-9-K - 1		57	0.0134	596935hg1	245.1_7470A	21 Mar 2019 16:06:49	Hg
CCV - 1		28021	101.1% 5.0542	596935hg1	245.1_7470A	21 Mar 2019 16:08:33	Hg
CCB - 1		-198	-0.0326	596935hg1	245.1_7470A	21 Mar 2019 16:10:15	Hg
460-177166-A-1-H - 1		148	0.0298	596935hg1	245.1_7470A	21 Mar 2019 16:12:01	Hg
460-177166-A-2-H - 1		56	0.0132	596935hg1	245.1_7470A	21 Mar 2019 16:13:44	Hg
460-177568-J-1-D - 1		46	0.0114	596935hg1	245.1_7470A	21 Mar 2019 16:15:28	Hg
LB 460-596681/1-D - 1		82	0.0179	596935hg1	245.1_7470A	21 Mar 2019 16:17:11	Hg
LB 460-596639/1-C - 1		103	0.0217	596935hg1	245.1_7470A	21 Mar 2019 16:18:53	Hg
LB 460-595939/1-F - 1		42	0.0107	596935hg1	245.1_7470A	21 Mar 2019 16:20:36	Hg
CCV - 1		27318	98.5% 4.9275	596935hg1	245.1_7470A	21 Mar 2019 16:22:19	Hg
CCB - 1		-195	-0.0320	596935hg1	245.1_7470A	21 Mar 2019 16:24:01	Hg

245.1_7470A

Linear



A= 0.0000e+000

B= 1.8026e-004

C= 3.1364e-003

Rho= 0.9999930

Accept=Accepted

Accepted Date=

03/21/19 13:35

Std ID	Conc.	Calc.	Dev.	Mean	SD or %RSD	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
Cal Blank	0.000	0.001	0.001	-14	0.000	-14				
0.2 ug/L	0.200	0.206	0.006	1124	0.0 %	1124				
1.0 ug/L	1.000	1.005	0.005	5556	0.0 %	5556				
2.0 ug/L	2.000	2.005	0.005	11105	0.0 %	11105				
5.0 ug/L	5.000	4.971	-0.029	27562	0.0 %	27562				
10.0 ug/L	10.000	10.013	0.013	55528	0.0 %	55528				

METALS BATCH WORKSHEET

Lab Name: TestAmerica Edison Job No.: 460-177512-1

SDG No.:

Batch Number: 596854 Batch Start Date: 03/21/19 07:28 Batch Analyst: Yang, Qin

Batch Method: 3010A Batch End Date: 03/21/19 12:30

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	ME_ipmsSPK 00035			
MB 460-596854/1		3010A, 6020B		50 mL	50 mL				
LCS 460-596854/2		3010A, 6020B		50 mL	50 mL	0.25 mL			
460-177420-F-2 DU		3010A, 6020B	T	50 mL	50 mL				
460-177420-F-2 MS		3010A, 6020B	T	50 mL	50 mL	0.25 mL			
460-177512-A-1	PR-MW2	3010A, 6020B	T	50 mL	50 mL				
460-177512-A-2	PR-MW4	3010A, 6020B	T	50 mL	50 mL				
460-177512-A-3	DUP	3010A, 6020B	T	50 mL	50 mL				

Batch Notes	
Batch Comment	1:1 HCL MPR 361
Temperature - Corrected - End	95 corr Degrees C
Temperature - Corrected - Start	95 corr Degrees C
Digestion Unit ID	# 3
Nitric Acid ID	0000216908
Pipette/Syringe/Dispenser ID	# 43
Thermometer ID	ICP -3 (CF -3)
Digestion Tube/Cup ID	324449-4564 (100ml Digi T ube)
Temperature - Uncorrected - End	97 uncorr Degrees C
Temperature - Uncorrected - Start	98 uncorr Degrees C

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Edison Job No.: 460-177512-1

SDG No.:

Batch Number: 596935 Batch Start Date: 03/21/19 09:30 Batch Analyst: Sheikh, Razia B

Batch Method: 245.1 Batch End Date: 03/21/19 13:30

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	ME_DCAL-IN 03226	ME_DQCS-INT 02958		
ICV 460-596935/31		245.1, 7470A		30 mL	30 mL		1.5 mL		
CCV 460-596935/33		245.1, 7470A		30 mL	30 mL	1.5 mL			

Batch Notes	
Temperature - Corrected - End	95 Degrees C
Temperature - Corrected - Start	95 Degrees C
Digestion End Time	03/21/2019 12:30
Digestion Start Time	03/21/2019 10:30
Digestion Unit ID	12
Sulfuric Acid Lot Number	0000211749
Nitric Acid ID	0000216908
Hydroxylamine ID	ME_NACLHYDHCL_00114
Potassium Persulfate ID	ME_PotPersSol_00051
Potassium Permanganate ID	ME_potPermSol_00112
Pipette/Syringe/Dispenser ID	86
Thermometer ID	hg-2(cf+3)
Digestion Tube/Cup ID	j315911-4503
Temperature - Uncorrected - End	92 Degrees C
Temperature - Uncorrected - Start	92 Degrees C

Basis	Basis Description

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Edison Job No.: 460-177512-1

SDG No.:

Batch Number: 596940 Batch Start Date: 03/21/19 09:30 Batch Analyst: Sheikh, Razia B

Batch Method: 7470A Batch End Date: 03/21/19 13:30

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	ME_DCAL-IN 03226			
MB 460-596940/1		7470A, 7470A		30 mL	30 mL				
LCS 460-596940/2		7470A, 7470A		30 mL	30 mL	0.3 mL			
460-177512-A-3	DUP	7470A, 7470A	T	30 mL	30 mL				
460-177512-A-3 DU	DUP	7470A, 7470A	T	30 mL	30 mL				
460-177512-A-3 MS	DUP	7470A, 7470A	T	30 mL	30 mL	0.3 mL			
460-177512-A-1	PR-MW2	7470A, 7470A	T	30 mL	30 mL				
460-177512-A-2	PR-MW4	7470A, 7470A	T	30 mL	30 mL				

Batch Notes	
Temperature - Corrected - End	95 Degrees C
Temperature - Corrected - Start	95 Degrees C
Digestion End Time	03/21/2019 13:00
Digestion Start Time	03/21/2019 11:00
Digestion Unit ID	12
Sulfuric Acid Lot Number	0000211749
Nitric Acid ID	0000216908
Hydroxylamine ID	ME_NACLHYDHCL_00114
Potassium Persulfate ID	ME_PotPersSol_00051
Potassium Permanganate ID	ME_potPermSol_00112
Pipette/Syringe/Dispenser ID	86
Thermometer ID	hg-2(cf+3)
Digestion Tube/Cup ID	j315911-4503
Temperature - Uncorrected - End	92 Degrees C
Temperature - Uncorrected - Start	92 Degrees C

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Shipping and Receiving Documents

777 New Durham Road
Edison, New Jersey 08817
Phone: (732) 549-3900 Fax: (732) 549-3679

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

CHAIN OF CUSTODY / ANALYSIS REQUEST

Name (for report and invoice) Fuad Dahan	Samplers Name (Printed) Jack Norgard	Site/Project Identification A.C. Dutton Poughkeepsie
Company SESI Consulting Engineers	P. O. # ~~PO~~ SW 90398P1	State (Location of site): NJ: ☐ NY: ☒ Other:
Address 12a Maple Ave	Analysis Turnaround Time: Standard ☒	Regulatory Program: DKQP: ☐
City Pine Brook State NJ	Rush Charges Authorized For: 2 Week ☐ 1 Week ☐ Other ☐	LAB USE ONLY Project No:
Phone 973-808-9050 Fax FD@SESI.ORG		Job No: 177512

ANALYSIS REQUESTED (ENTER "X" BELOW TO INDICATE REQUEST)

TAL Metals w/ Hg

460-177512 Chain of Custody

Sample Identification	Date	Time	Matrix	No. of Cont.	Sample Numbers
PR-MW2	3-15-19	18:20	GW	1	1
PR-MW4	—	16:10	GW	1	2
DUP	—	—	GW	1	3

Preservation Used: 1 = ICE, 2 = HCl, 3 = H_2SO_4, 4 = HNO_3, 5 = NaOH Soil:
6 = Other _____, 7 = Other _____ Water: 1,4

Special Instructions Water Metals Filtered (Yes/No)? _____

Relinquished by	Company	Date / Time	Received by	Company
1) John Norgard	SESI	3/15/19 0940	1) Johnny Greene	TA Edi
2) Johnny Greene	TA Edi	3/15/19 1110	2)	TA 3/18/19 1110
3)			3)	
4)			4)	

Laboratory Certifications: New Jersey (12028), New York (11452), Pennsylvania (68-522), Connecticut (PH-0200), Rhode Island (132).
Massachusetts (M-NJ312), North Carolina (No. 578) l.l.c NJCS IR 9

TAL - 0016 (0715)

TestAmerica Edison
Receipt Temperature and pH Log

Job Number: 177512

Number of Coolers: 1 | IR Gun #: 9

Cooler Temperatures

	RAW	CORRECTED		RAW	CORRECTED		RAW	CORRECTED
Cooler #1:	1.7 °C	2.4 °C	Cooler #4:	°C	°C	Cooler #7:	°C	°C
Cooler #2:	°C	°C	Cooler #5:	°C	°C	Cooler #8:	°C	°C
Cooler #3:	°C	°C	Cooler #6:	°C	°C	Cooler #9:	°C	°C

TALS Sample Number	Ammonia (pH<2)	COD (pH<2)	Nitrate Nitrite (pH<2)	Metals* (pH<2)	Hardness (pH<2)	Pest (pH 5-9)	EPH or QAM (pH<2)	Phenols (pH<2)	Sulfide (pH>9)	TKN (pH<2)	TOC (pH<2)	Total Cyanide (pH>12)	Total Phos (pH<2)	Other	Other
1				<2											
2				<2											
3				<2											

If pH adjustments are required record the information below:

Sample No(s). adjusted: _____

Preservative Name/Conc.: _____ Volume of Preservative used (ml): _____

Lot # of Preservative(s): _____ Expiration Date: _____

The appropriate Project Manager and Department Manager should be notified about the samples which were pH adjusted.

**Samples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.*

Initials: JG Date: 3-8-19

Login Sample Receipt Checklist

Client: SESI Consulting Engineers

Job Number: 460-177512-1

Login Number: 177512
List Number: 1
Creator: Cabaron, Christopher V

List Source: TestAmerica Edison

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

APPENDIX C – NYSDEC – IC & EC CERTIFICATION FORM

Enclosure 2
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Site Management Periodic Review Report Notice
Institutional and Engineering Controls Certification Form

Site Details **Box 1**

Site No. C314081

Site Name Former A.C. Dutton Lumber Yard

Site Address: 1 Dutchess Avenue Zip Code: 12601
City/Town: Poughkeepsie
County: Dutchess
Site Acreage: 11.840

Reporting Period: March 30, 2018 to July 08, 2019

	YES	NO
1. Is the information above correct?	X	☐
If NO, include handwritten above or on a separate sheet.		
2. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?	☐	X
3. Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?	☐	X
4. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?	☐	X
If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.		
5. Is the site currently undergoing development?	X	☐

Box 2

	YES	NO
6. Is the current site use consistent with the use(s) listed below? Restricted-Residential, Commercial, and Industrial	X	☐
7. Are all ICs/ECs in place and functioning as designed?	X	☐

IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative Date

	Box 2A	
	YES	NO
8. Has any new information revealed that assumptions made in the Qualitative Exposure Assessment regarding offsite contamination are no longer valid?	☐	X
If you answered YES to question 8, include documentation or evidence that documentation has been previously submitted with this certification form.		
9. Are the assumptions in the Qualitative Exposure Assessment still valid? (The Qualitative Exposure Assessment must be certified every five years)	X	
If you answered NO to question 9, the Periodic Review Report must include an updated Qualitative Exposure Assessment based on the new assumptions.		

SITE NO. C314081 **Box 3**

Description of Institutional Controls

Parcel	Owner	Institutional Control
6062-02-763508	The O'Neill Group-Dutton, LLC	Site Management Plan Ground Water Use Restriction Landuse Restriction Soil Management Plan Monitoring Plan IC/EC Plan

The property may be used for: Restricted Residential as described in 6 NYCRR Part 375-1.8(g)(2)(ii), Commercial as described in 6 NYCRR Part 375-1.8(g)(2)(iii) and Industrial as described in 6 NYCRR Part 375-1.8(g)(2)(iv);

The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Dutchess County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department;

Groundwater monitoring must be performed as defined in the SMP;

The potential for vapor intrusion must be evaluated for any buildings developed on the site, and any potential impacts that are identified must be monitored or mitigated;

All future activities on the property that will disturb remaining contaminated material must be conducted in addordance with the SMP;

6062-59-766443	The O'Neill Group-Dutton, LLC	Site Management Plan Soil Management Plan Monitoring Plan IC/EC Plan Ground Water Use Restriction Landuse Restriction

The property may be used for: Restricted Residential as described in 6 NYCRR Part 375-1.8(g)(2)(ii), Commercial as described in 6 NYCRR Part 375-1.8(g)(2)(iii) and Industrial as described in 6 NYCRR Part 375-1.8(g)(2)(iv);

The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Dutchess County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department;

Groundwater monitoring must be performed as defined in the SMP;

The potential for vapor intrusion must be evaluated for any buildings developed on the site, and any potential impacts that are identified must be monitored or mitigated;

All future activities on the property that will disturb remaining contaminated material must be conducted in addordance with the SMP;

Box 4

Description of Engineering Controls

Parcel	Engineering Control
6062-02-763508	Cover System

Exposure to remaining contamination at the site is prevented by a soil cover system placed over the site. This cover system is comprised of a minimum of 24 inches of clean soil. Asphalt pavement, concrete-covered sidewalks, and concrete building slabs and two-feet of clean soil in landscaped areas will be part of the covers system when the site is developed.

6062-59-766443	Cover System

Parcel	Engineering Control
Exposure to remaining contamination at the site is prevented by a soil cover system placed over the site. This cover system is comprised of a minimum of 24 inches of clean soil. Asphalt pavement, concrete-covered sidewalks, and concrete building slabs and two-feet of clean soil in landscaped areas will be part of the covers system when the site is developed.	

Box 5

Periodic Review Report (PRR) Certification Statements

1. I certify by checking "YES" below that:

   a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

   b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and compete.

YES	NO
X	☐

2. If this site has an IC/EC Plan (or equivalent as required in the Decision Document), for each Institutional or Engineering control listed in Boxes 3 and/or 4, I certify by checking "YES" below that all of the following statements are true:

   (a) the Institutional Control and/or Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

   (b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

   (c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;

   (d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and

   (e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

YES	NO
X	☐

IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

_____ _____

Signature of Owner, Remedial Party or Designated Representative — Date

IC CERTIFICATIONS
SITE NO. C314081

Box 6

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in Boxes 1,2, and 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Paula O'Neill at 241 Hackensack St. Hackensack NJ 07601
print name print business address

am certifying as _____(Owner or Remedial Party)

for the Site named in the Site Details Section of this form.

_____ _____
Signature of Owner, Remedial Party, or Designated Representative Rendering Certification Date

IC/EC CERTIFICATIONS

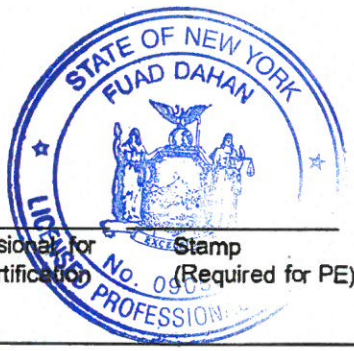
Box7

Qualified Environmental Professional Signature

I certify that all information in Boxes 4 and 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

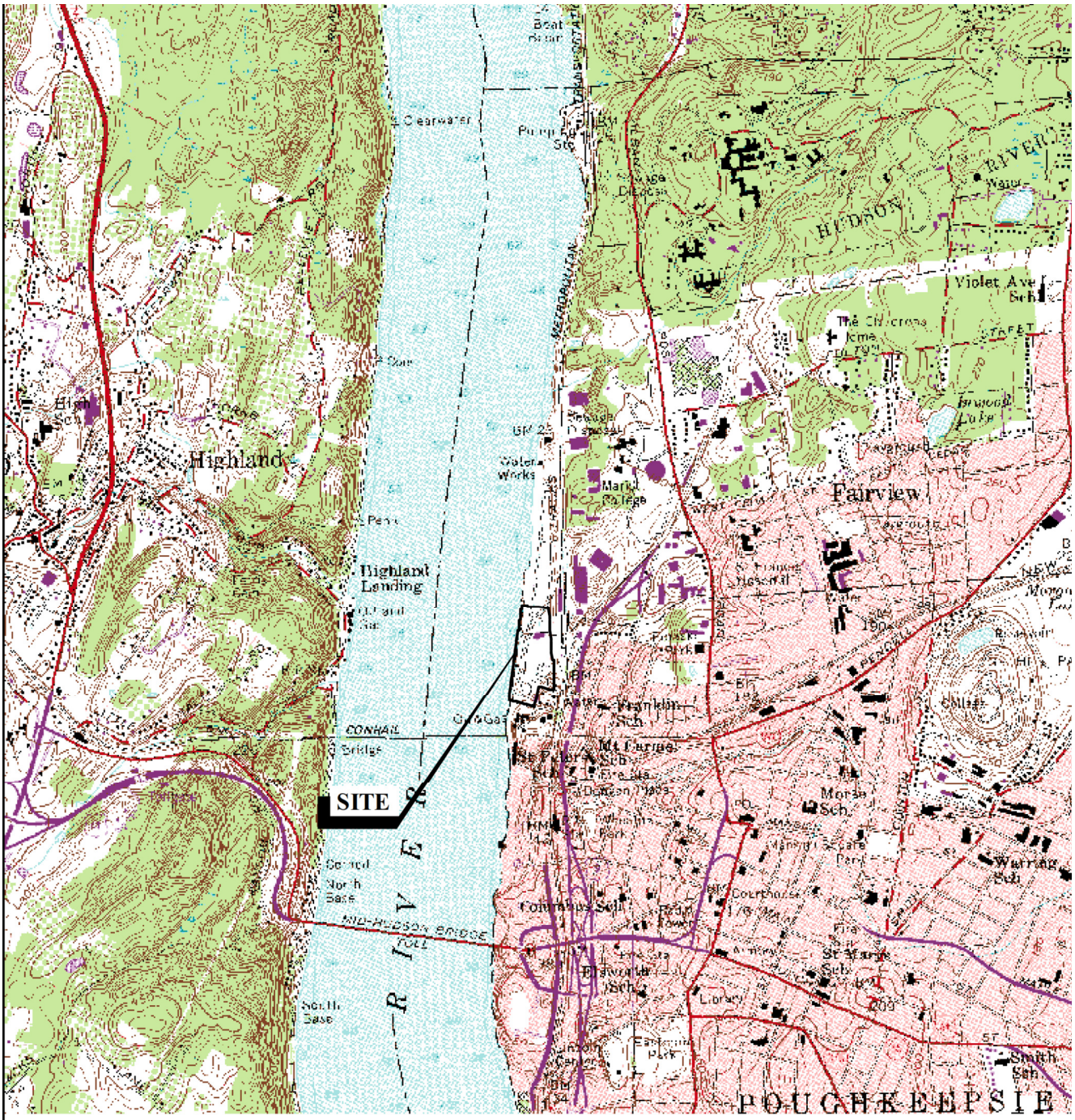
I Fuad Dahan (print name) at SESI Consulting Engineers DPC (print business address),

am certifying as a Qualified Environmental Professional for the Owner (Owner or Remedial Party)



Signature of Qualified Environmental Professional, for the Owner or Remedial Party, Rendering Certification — Stamp (Required for PE) — Date: 8/21/19

APPENDIX D – SITE MANAGEMENT PLAN (SMP) FIGURES



MAP REFERENCE
THIS MAP WAS PREPARED FROM THE FOLLOWING 7.5 MINUTE USGS MAP:
Poughkeepsie, 1957 Photorevised 1982.

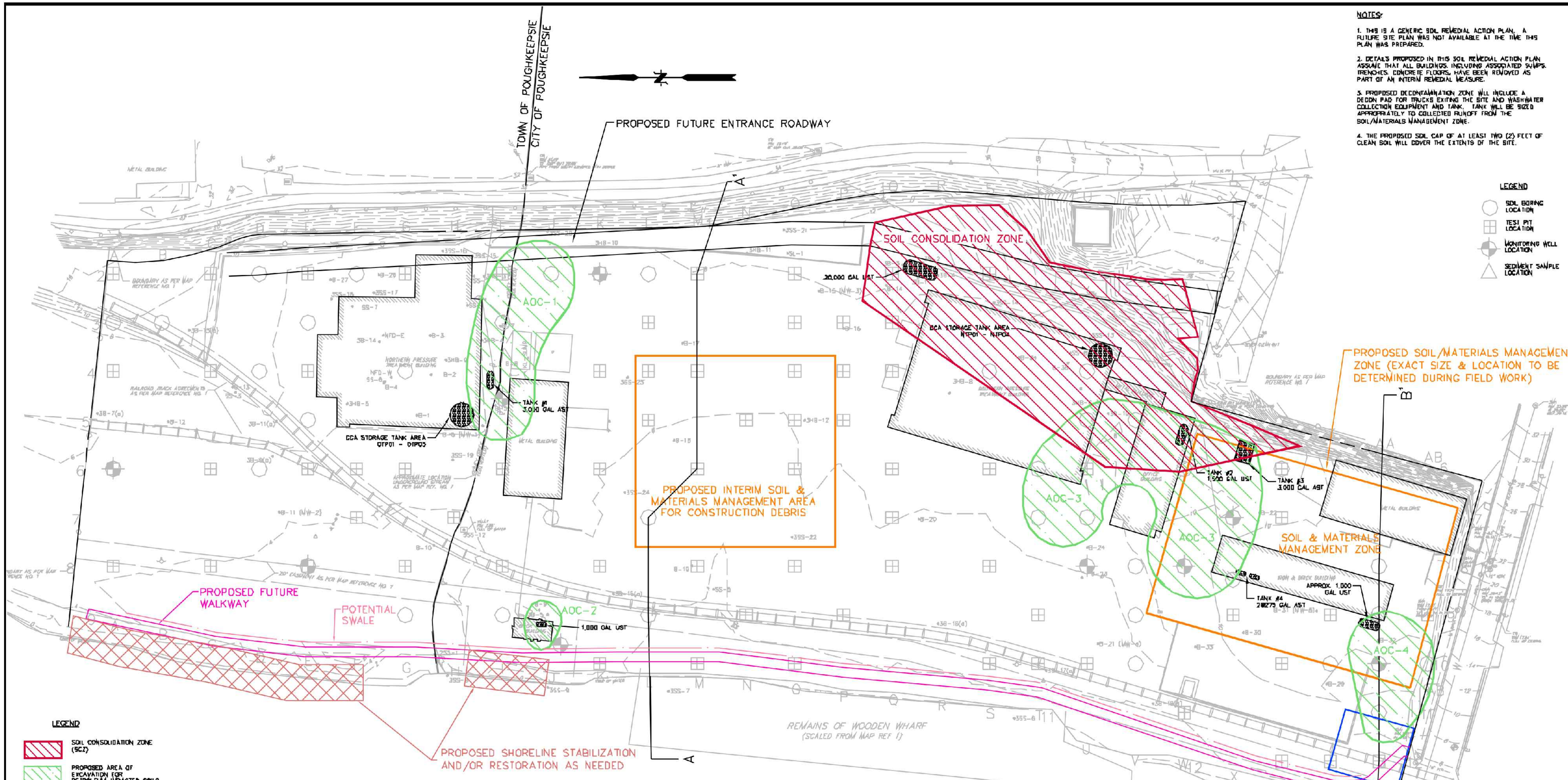
FIGURE 1.1

PROPERTY LOCATION MAP
FORMER A.C. DUTTON LUMBER YARD
1 DUTCHESS AVENUE AND 2 HOFFMAN STREET
POUGHKEEPSIE, NEW YORK

SITE PLAN

SESI
CONSULTING ENGINEERS, PC
SOILS / FOUNDATIONS
SITE DESIGN
ENVIRONMENTAL
12A MAPLE AVE. PINE BROOK, N.J. 07058 PH: 973-808-9050

DRAWN BY: YY
CHECKED BY: FD
SCALE: N.T.S.
DATE: 12/17/14
JOB NO.: 8604



NOTES:

1. THIS IS A GENERIC SOIL REMEDIAL ACTION PLAN. A FUTURE SITE PLAN WAS NOT AVAILABLE AT THE TIME THIS PLAN WAS PREPARED.

2. DETAILS PROPOSED IN THIS SOIL REMEDIAL ACTION PLAN ASSUME THAT ALL BUILDINGS, INCLUDING ASSOCIATED SUMPS, TRENCHES, CONCRETE FLOORS, HAVE BEEN REMOVED AS PART OF AN INTERIM REMEDIAL MEASURE.

3. PROPOSED DECONTAMINATION ZONE WILL INCLUDE A DECON PAD FOR TRUCKS EXITING THE SITE AND WASHWATER COLLECTION EQUIPMENT AND TANK. TANK WILL BE SIZED APPROPRIATELY TO COLLECTED RUNOFF FROM THE SOIL/MATERIALS MANAGEMENT ZONE.

4. THE PROPOSED SOIL CAP OF AT LEAST TWO (2) FEET OF CLEAN SOIL WILL COVER THE EXTENTS OF THE SITE.

MAP REFERENCES

1. EXISTING CONDITIONS SHOWN ON THIS PLAN WERE PROVIDED BY GILBERT VANGUILDER (ACDUTTON.DWG) DATED 1/14/2005.

2. MAP REFERENCE 1. IS A MAP ENTITLED "SURVEY MAP LANDS OF A.C. DUTTON LUMBER CORP. TO BE CONVEYED TO SCENIC HUDSON INC.", PREPARED BY CHAZEN ENGINEERING AND LAND SURVEYING CO., P.C. DATED AUGUST 20, 2003.

3. HISTORIC SAMPLING LOCATIONS SHOWN ARE BASED ON A PLAN ENTITLED "ARSENIC >30mg/Kg AND/OR CHROMIUM >50 SOILS mg/Kg A.C. DUTTON PROPERTY 2 HOFFMAN STREET CITY AND TOWN OF POUGHKEEPSIE DUTCHESS COUNTY, NEW YORK" DATED NOVEMBER 2002 BY ECOSYSTEM STRATEGIES, INC.

MAP NOTES

1. HORIZONTAL COORDINATES ARE RELATIVE TO THE NEW YORK STATE PLANE COORDINATE SYSTEM BASED ON THE NORTH AMERICAN DATUM OF 1983(CORS96)(EPOCH 2002). COORDINATES HAVE BEEN MODIFIED BY AN AVERAGE SITE SCALE FACTOR OF 0.99993069797. A NORTHING SHIFT OF -100000.0 AND AN EASTING SHIFT OF -600000.0 WAS APPLIED AFTER THE SCALE FACTOR WAS APPLIED.

2. ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.

3. ALL COORDINATE UNITS ARE U.S. SURVEY FEET.

No.	DATE	DESCRIPTION	BY
1.			

REVISIONS

PROJ. MANAGER:
CHIEF DESIGNER:
REVIEWED BY: DATE

SCALE: HORZ: 1" = 100' VERT:
DATUM: HORZ: VERT:
0 50 100
GRAPHIC SCALE

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THE O'NEILL GROUP - DUTTON, LLC
PROPOSED SOIL REMEDIAL ACTION PLAN
FORMER A.C. DUTTON LUMBER FACILITY
2 HOFFMAN STREET
POUGHKEEPSIE NEW YORK

PROJ. No.: 20040764A1N
DATE: SEPTEMBER 2007

FIG. 5

dwg by: LH
chk by: FD
scale: NTS
date: 12/16/14

SOILS / FOUNDATIONS
SITE DESIGN
ENVIRONMENTAL

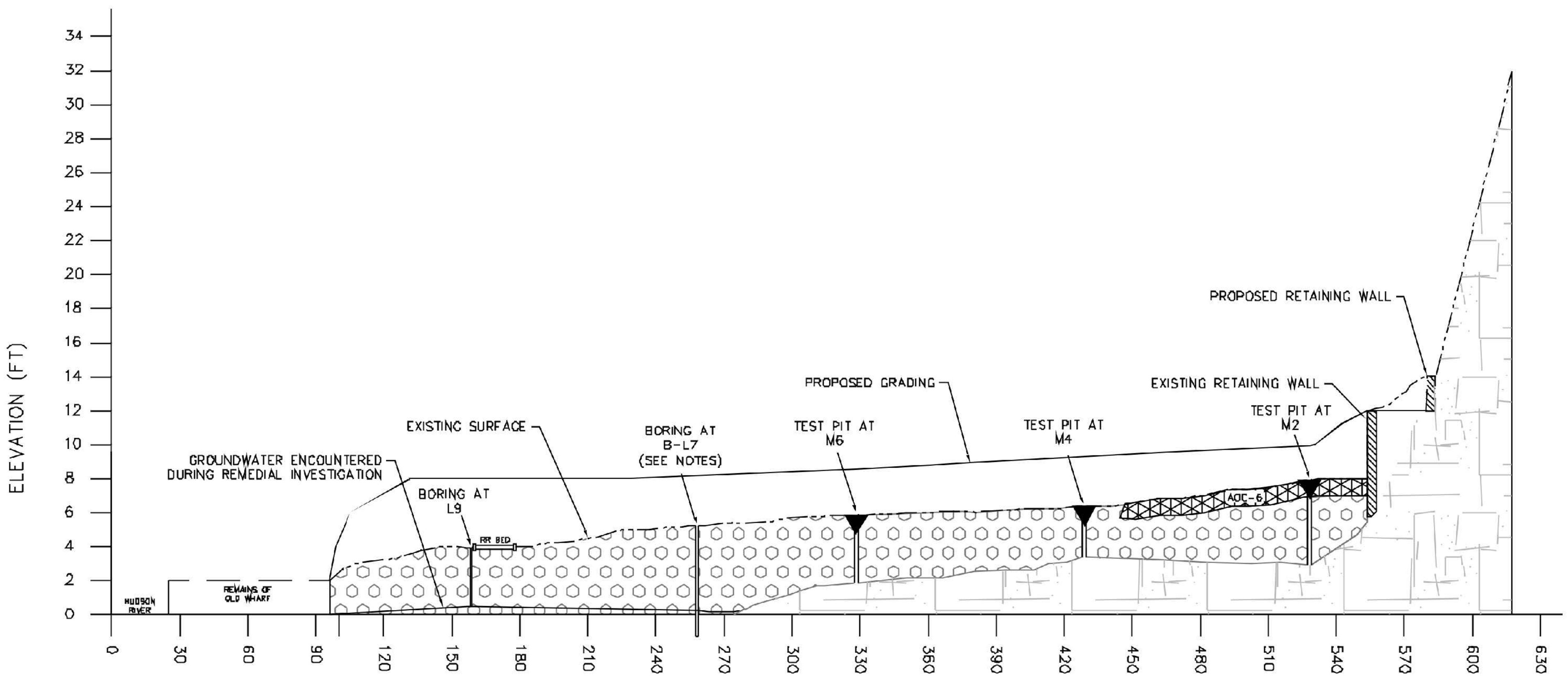
SESI
CONSULTING ENGINEERS, P.C.
12A MAPLE AVE, PINE BROOK, N.J. 07058 PH: 973-808-9050

project: THE O'NEILL GROUP - DUTTON LLC
CITY/TOWN OF POUGHKEEPSIE
DUTCHESS COUNTY, NY

drawing title: SITE GEOLOGICAL SECTIONS

job no: 8604
drawing no:

FIG. 1.2A



SECTION A-A'

LEGEND

- EXISTING SURFACE
- PROPOSED SURFACE
- APPROXIMATED ENTRANCE ROADWAY AND RAMPS INTO SITE
- ZONE OF METALS CONCENTRATIONS EXCEEDING ACTION LEVELS
- FILL MATERIAL
- BEDROCK

NOTES

1. FILL MATERIAL GENERALLY CONSISTS OF FINE TO MEDIUM SAND, GRAVEL, SOLIDIFIED KILN ASH, CRUSHED BRICK, AND CRUSHED SHALE/BLAST ROCK.

2. SUBSURFACE CONDITIONS ARE ESTIMATED BASED ON TEST PIT AND BORING DATA COLLECTED FROM THE LOCATIONS SHOWN, AS WELL AS LOCATIONS IN THE VICINITY OF THIS CROSS SECTION.

3. BORING B-L9 EXTENDS 1.5 FEET BELOW THE 0 FOOT ELEVATION (RIVER ELEVATION).

4. PROPOSED CONDITIONS (RAMP, ROAD, & RETAINING WALL) ARE APPROXIMATED. NO APPROVED SITE PLAN IS AVAILABLE FROM THE DEVELOPER FOR PLANNING PURPOSES. THIS SOIL RAP WAS DESIGNED IN GENERIC TERMS SO THAT IT MAY BE EASILY ADAPTABLE TO AN APPROVED SITE PLAN IN THE FUTURE.

No.	DATE	DESCRIPTION	BY
1.			

REVISIONS

PROJ. MANAGER:
CHIEF DESIGNER:
REVIEWED BY: DATE

TO MY KNOWLEDGE AND BELIEF, THESE MAPS ARE SUBSTANTIALLY CORRECT AS NOTED HEREON.

LAWRENCE R. GEISSLER, JR. — 12327 LICENSE No.

SCALE: HORZ: NTS VERT:
DATUM: HORZ: VERT:
0 NTS GRAPHIC SCALE

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THE O'NEILL GROUP - DUTTON, LLC
CROSS SECTION A-A'
FORMER A.C. DUTTON LUMBER FACILITY
2 HOFFMAN STREET

POUGHKEEPSIE NEW YORK

PROJ. No. 20040764A2N
DATE: SEPTEMBER 2007

FIG. 9A

dwg by: LH
chk by: FD
scale: NTS
date: 12/16/14

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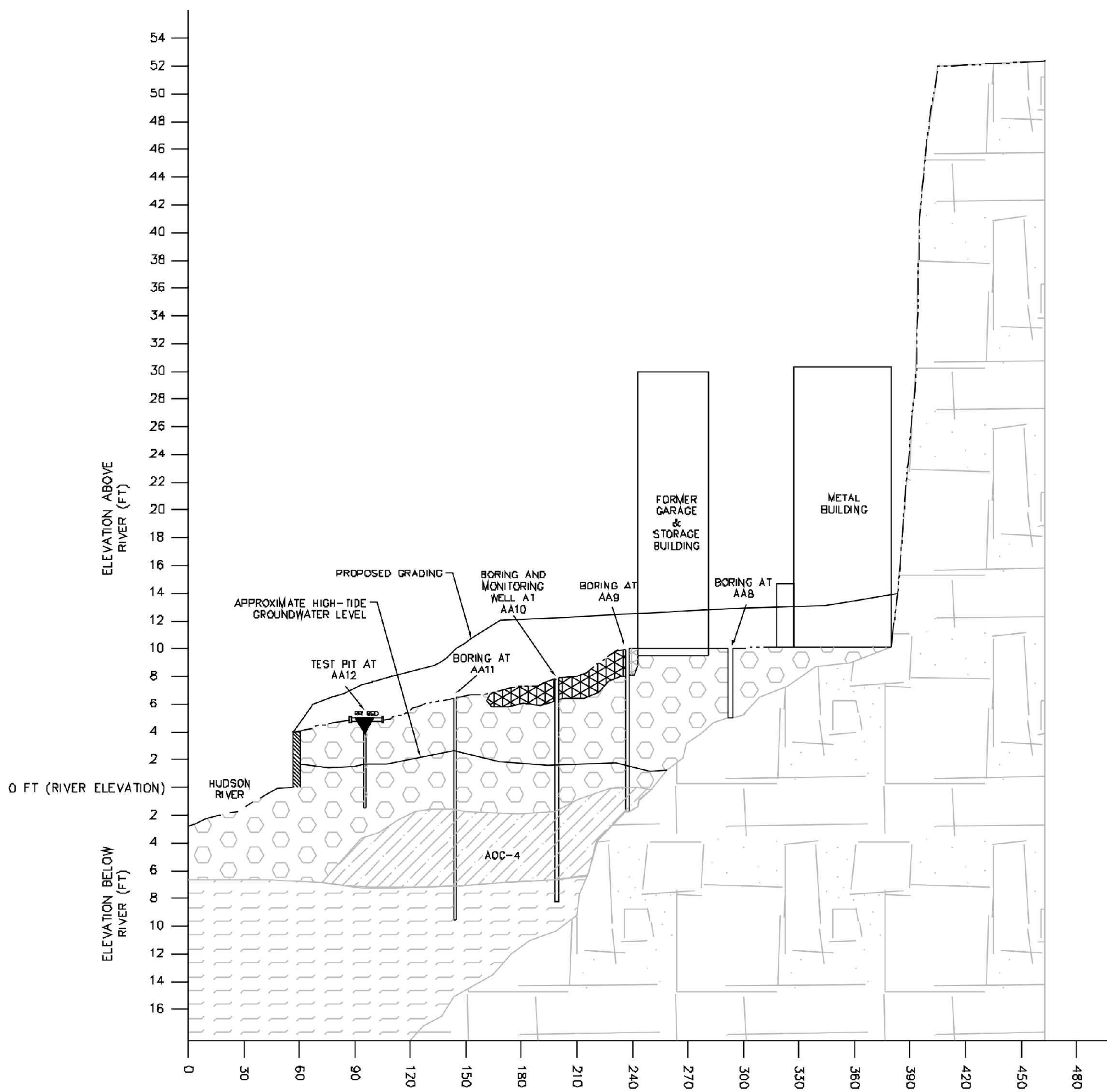
SOILS / FOUNDATIONS
SITE DESIGN
ENVIRONMENTAL
12A MAPLE AVE, PINE BROOK, N.J. 07058 PH: 973-808-9050

project: THE O'NELL GROUP - DUTTON LLC
CITY/TOWN OF POUGHKEEPSIE
DUTCHESS COUNTY, NY

drawing title: SITE GEOLOGICAL SECTIONS

job no: 8604
drawing no:

FIG. 1.2B



SECTION B-B'

LEGEND

- EXISTING SURFACE
- PROPOSED SURFACE
- APPROXIMATE PETROLEUM-IMPACTED AREA OF CONCERN
- ZONE OF METALS CONCENTRATIONS EXCEEDING ACTION LEVELS
- FILL MATERIAL
- NATIVE MATERIAL
- BEDROCK

NOTES

1. FILL MATERIAL GENERALLY CONSISTS OF FINE TO MEDIUM SAND, GRAVEL, SOLIDIFIED KILN ASH, CRUSHED BRICK, AND CRUSHED SHALE/BLAST ROCK.

2. NATIVE MATERIAL GENERALLY CONSISTS OF TIGHTLY PACKED LIGHT BROWN FINE SAND AND SILT.

3. SUBSURFACE CONDITIONS ARE ESTIMATED BASED ON TEST PIT AND BORING DATA.

No.	DATE	DESCRIPTION	BY	
1.				PROJ. MANAGER:
				CHIEF DESIGNER:
				REVIEWED BY: DATE
REVISIONS				

TO MY KNOWLEDGE AND BELIEF, THESE MAPS ARE SUBSTANTIALLY CORRECT AS NOTED HEREON.

LAWRENCE R. GEISSLER, JR. — LICENSE No. 12327

SCALE: HORZ: NTS VERT:
DATUM: HORZ: VERT:
0 NTS GRAPHIC SCALE

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THE O'NEILL GROUP - DUTTON, LLC
CROSS SECTION B-B'
SOIL REMEDIAL ACTION PLAN
2 HOFFMAN STREET
POUGHKEEPSIE NEW YORK

PROJ. No.: 20040764A2N
DATE: SEPTEMBER 2007

FIG. 9B

dwg by: LH
chk by: FD
scale: NTS
date: 12/16/14

SOILS / FOUNDATIONS
SITE DESIGN
ENVIRONMENTAL

SESI CONSULTING ENGINEERS, PC
12A MAPLE AVE, PINE BROOK, N.J. 07058 PH: 973-808-9050

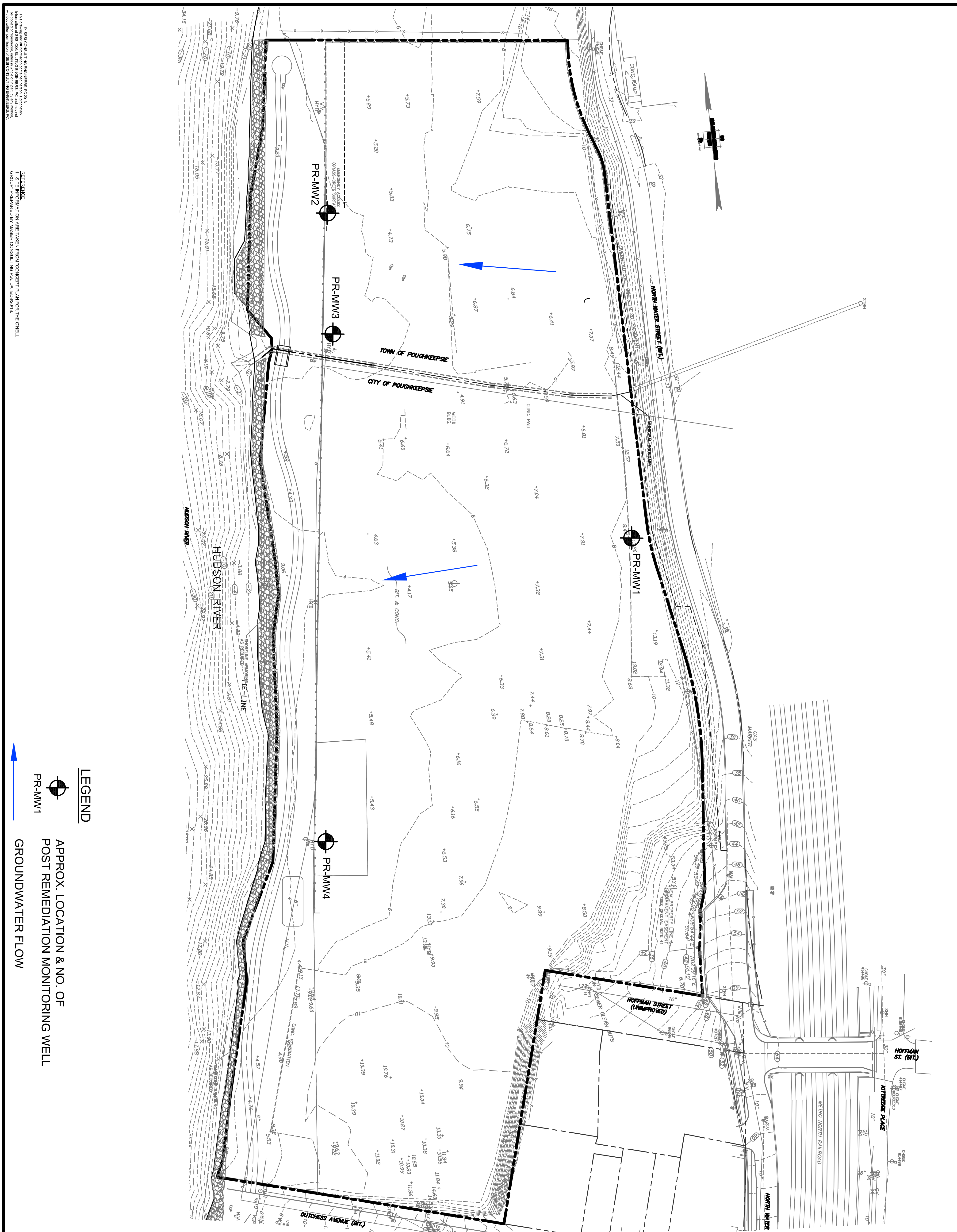
project: THE O'NEILL GROUP - DUTTON LLC
CITY/TOWN OF POUGHKEEPSIE
DUTCHESS COUNTY, NY

drawing title: SITE GEOLOGICAL SECTIONS

job no: 8604
drawing no:

FIG. 1.2C

N:\ACAD\8604\8604 FIG 1.3 GW FLOW.dwg, 12/16/2014 8:51:00 AM



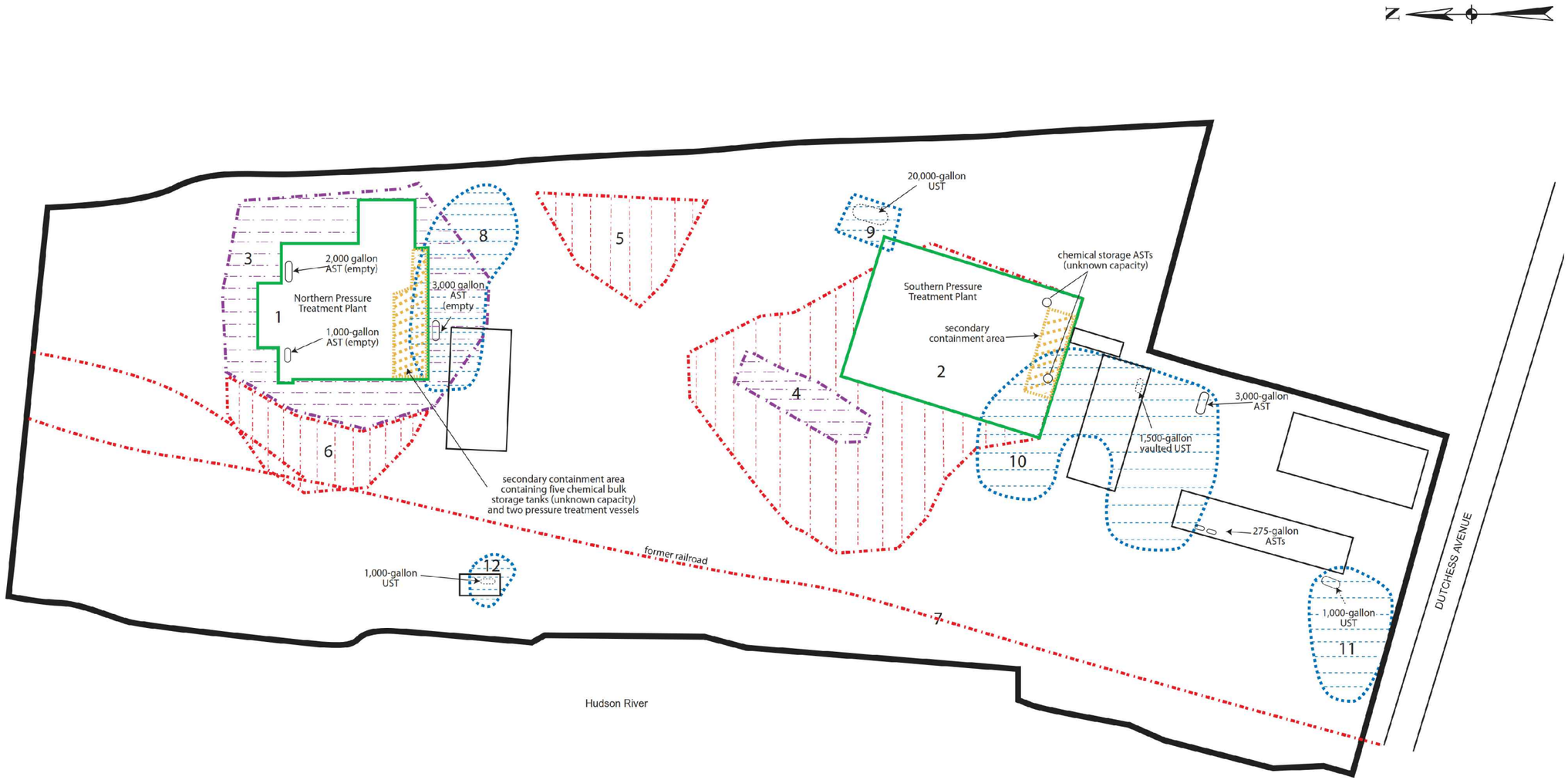
project: THE O'NELL GROUP - DUTTON LLC CITY/TOWN OF POUGHKEEPSIE DUTCHESS COUNTY, NY		SESI CONSULTING ENGINEERS, PC — SOILS / FOUNDATIONS, SITE DESIGN, ENVIRONMENTAL 12A MAPLE AVE, PINE BROOK, N.J. 07058 PH: 973-808-9050
drawing title: GROUNDWATER FLOW (2014 DATA)	FUAD DAHAN, P.E. PROFESSIONAL ENGINEER N.Y. LIC. NO. 090531	

drawn by:	yy
checked by:	FD
scale:	N.T.S.
date:	9/15/14

job no. 8604

drawing no. FIG 1.3

rev	date	description	by



Notes:

Map based on Fuss and O'Neill proposed "Remedial Action Map" (July 2006)

Legend:

- property outline
- pressure treatment plant buildings
- existing buildings
- area of petroleum impacts
- area of arsenic contamination above 32 mg/Kg (0-1')
- area of arsenic contamination above 32 mg/Kg (0-3')

1 = area #

Figure 2 - Proposed Remediation Map - Excavation/Treatment (Partial Source Removal/Treatment - Arsenic Remediated to SBL of 32 mg/kg)

Former A.C. Dutton Facility
1 Dutchess Avenue and 2 Hoffman Street
Poughkeepsie, New York

ESI File: OP08022.41

September 2008 | Appendix B

Ecosystems Strategies, Inc.

dwg by: LH
chk by: FD
scale: NTS
date: 12/16/14

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SITE DESIGN
ENVIRONMENTAL
12A MAPLE AVE. PINE BROOK, N.J. 07058 PH: 973-808-9050

project: THE O'NELL GROUP - DUTTON LLC
CITY/TOWN OF POUGHKEEPSIE
DUTCHESS COUNTY, NY

drawing title: 2008 INVESTIGATION RESULTS

job no: 8604
drawing no:

FIG. 1.4

Ecosystems Strategies, Inc.

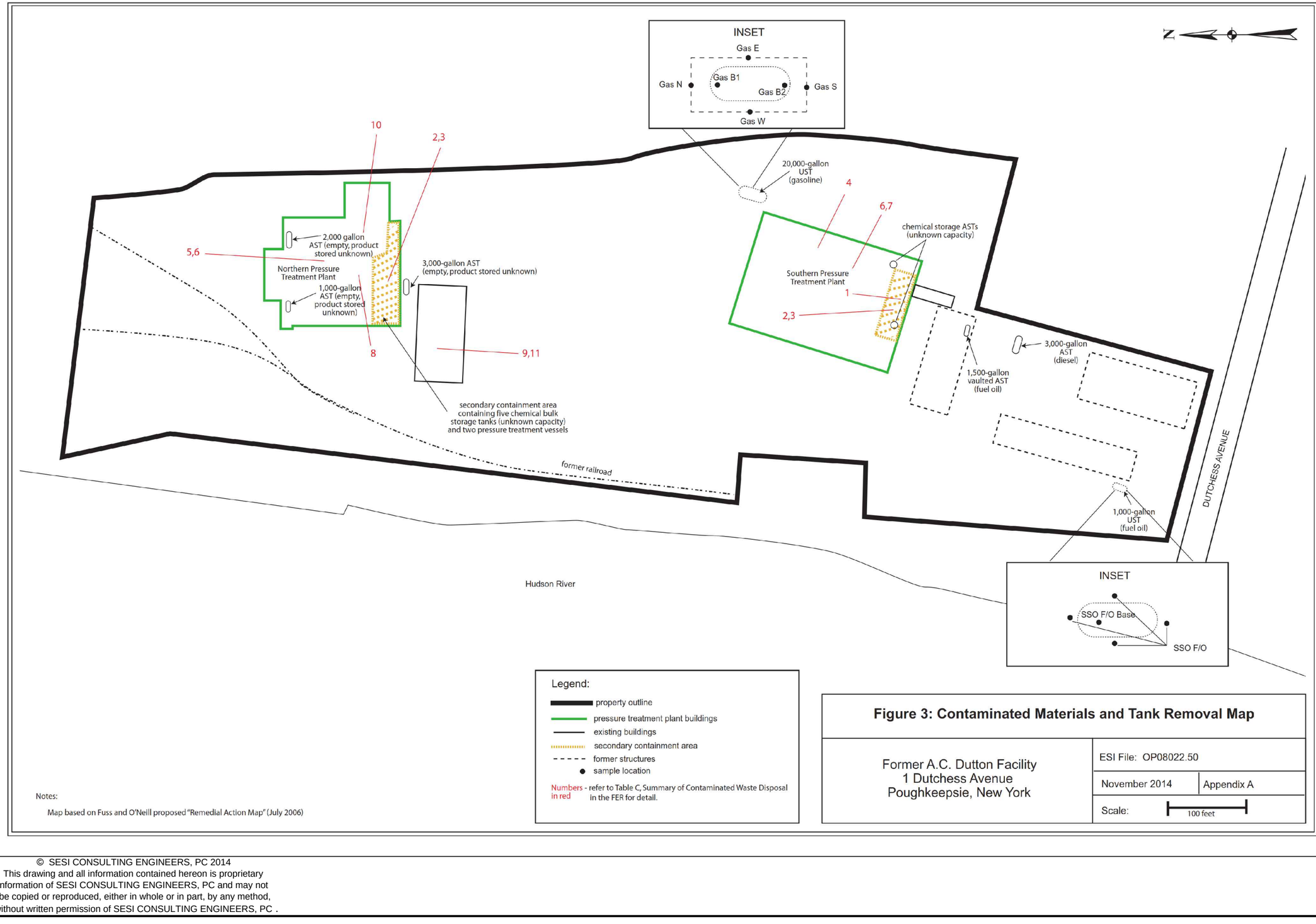

Figure 3: Contaminated Materials and Tank Removal Map

Former A.C. Dutton Facility
1 Dutchess Avenue
Poughkeepsie, New York

ESI File: OP08022.50

November 2014 | Appendix A

Scale: 100 feet

dwg by: LH
chk by: FD
scale: NTS
date: 12/16/14

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SOILS / FOUNDATIONS
SITE DESIGN
ENVIRONMENTAL
12A MAPLE AVE. PINE BROOK, N.J. 07058 PH: 973-808-9050

project: THE O'NELL GROUP - DUTTON LLC
CITY/TOWN OF POUGHKEEPSIE
DUTCHESS COUNTY, NY

drawing title: UST LOCATIONS

job no: 8604
drawing no:

FIG. 1.5

Ecosystems Strategies, Inc.

Area of sub-asphalt floor comprised of soil and/or aggregate

Areas of concrete slab encountered subsequent to removal of asphalt floor

Areas of concrete flloor visible at surface prior to removal of asphalt floor

concrete proposed to remain

Contrete vault (possible truck scale/UST)

Excavation to 5'below underside of former floor level

Excavation to 3'below underside of former floor level

Excavation to 2'below underside of former floor level

Excavation to 1'below underside of former floor level

All feature locations are approximate. This map is intended as a schematic to be used in conjunction with the associated report, and it should not be relied upon as a survey for planning or other activities.

Figure 7 - Excavation Depths at NTP as of 11/13/2012
Northern Treatment Plant
former A.C. Dutton Property
1 Dutchess Avenue
Poughkeepsie, New York

Legend:
- building outline
- floor drain
- sample location red = arsenic - blue = chromium (all results in mg/kg)
- concrete core sample and subslab soil sample location (10/25/12)

ESI File: OP08022.50
October 2014
Scale: 20'
Appendix A

FIG. 1.6

job no: 8604
drawing no:

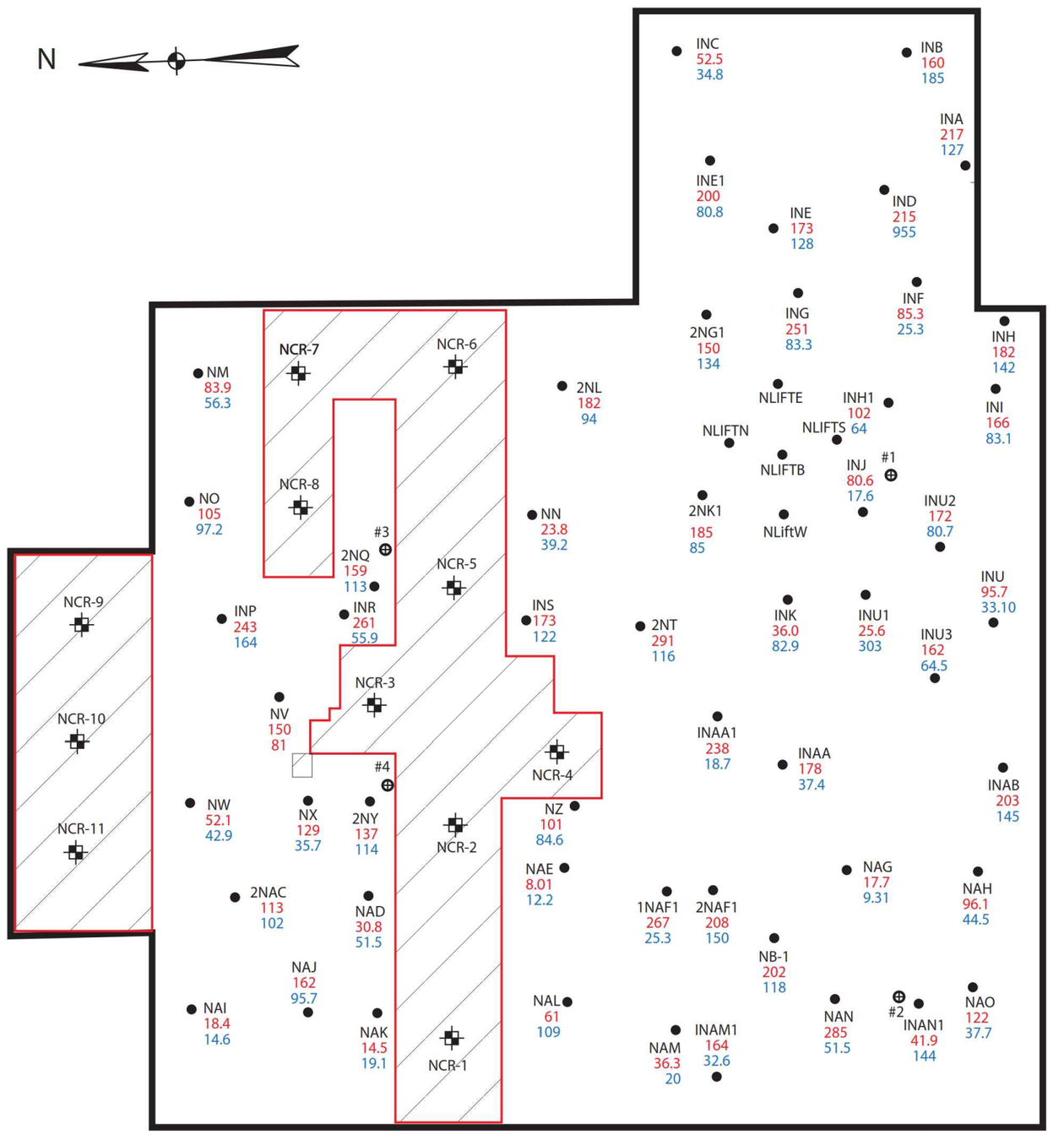
project: THE O'NELL GROUP - DUTTON LLC
CITY/TOWN OF POUGHKEEPSIE
DUTCHESS COUNTY, NY

drawing title: EXCAVATION LOCATIONS & DEPTHS

SESI CONSULTING ENGINEERS, PC
SOILS / FOUNDATIONS
SITE DESIGN
ENVIRONMENTAL
12A MAPLE AVE. PINE BROOK, N.J. 07058 PH: 973-808-9050

dwg by: LH
chk by: FD
scale: NTS
date: 12/16/14

Ecosystems Strategies, Inc.



All feature locations are approximate. This map is intended as a schematic to be used in conjunction with the associated report, and it should not be relied upon as a survey for planning or other activities.

Figure 4: Northern Pressure Treatment Plant Remediation Endpoint Sampling Map

Former A.C. Dutton Property
1 Dutchess Avenue
Poughkeepsie, New York

Legend:
- building outline
- floor drain
- sample location red = arsenic - blue = chromium (all results in mg/kg)
- concrete core sample and subslab soil sample location (10/25/12)

ESI File: OP08022.50
October 2014
Scale: 20'
Appendix A

FIG. 1.7A

job no:
drawing no: 8604

project: THE O'NELL GROUP - DUTTON LLC
CITY/TOWN OF POUGHKEEPSIE
DUTCHESS COUNTY, NY

drawing title: POST EXCAVATION SAMPLES & RESULTS

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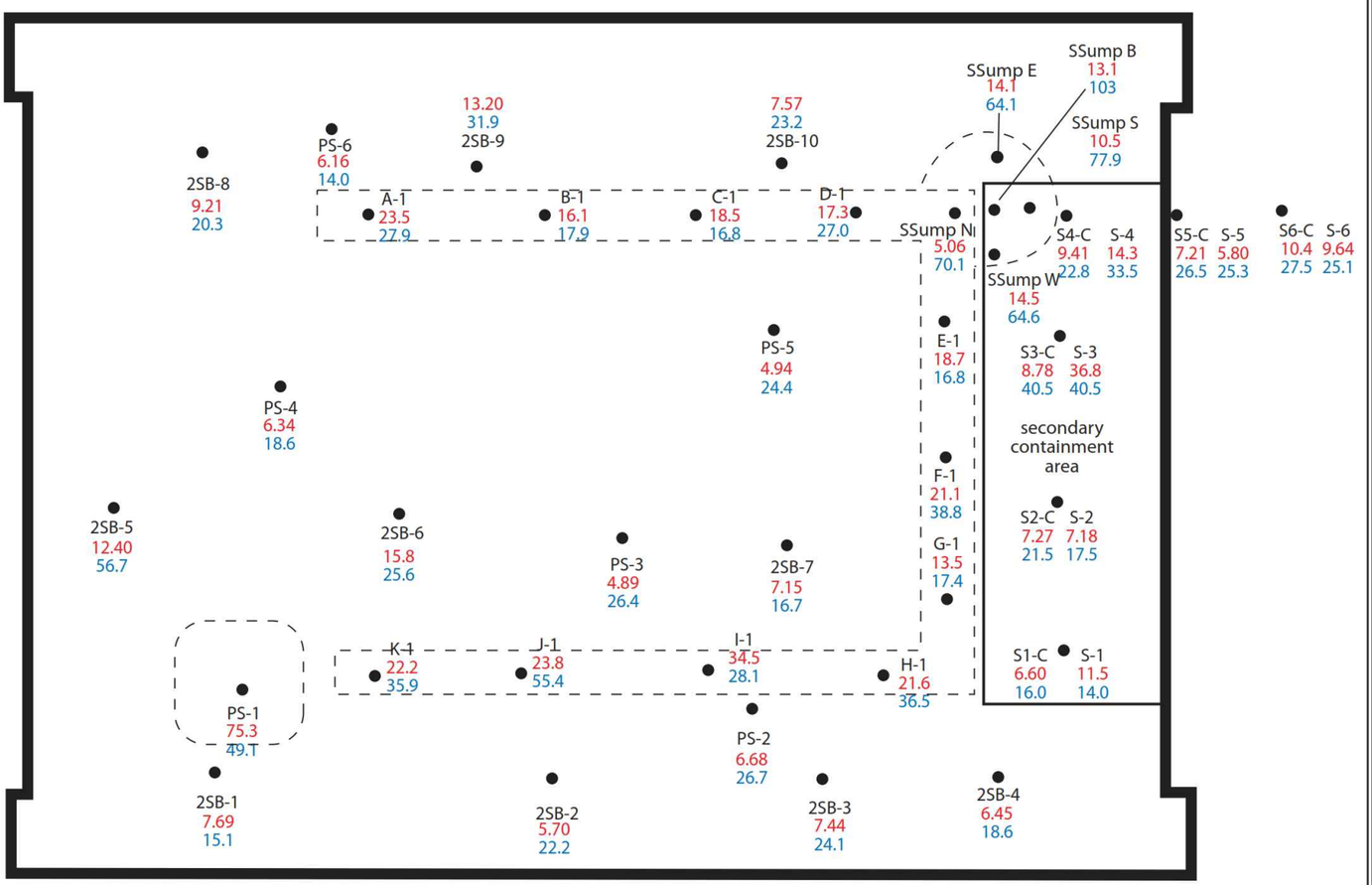
SOILS / FOUNDATIONS
SITE DESIGN
ENVIRONMENTAL
12A MAPLE AVE. PINE BROOK, N.J. 07058 PH: 973-808-9050

dwg by: LH
chk by: FD
scale: NTS
date: 12/16/14

Ecosystems Strategies, Inc.

N

STATE OF NEW YORK
PHILIP A. BELL
LICENSED PROFESSIONAL ENGINEER
081943



2SB = subslab soil sample 9/24/2012
PS = post scarification concrete sample 9/04/2012
B and B-# = post excavation end point soil sample 10/11/2012 and 10/17/2012
S#-C = secondary containment concrete sample 11/19/2012
S-# secondary containment subconcrete soil sample 11/19/2012
SSump# = sump endpoint sample 11/19/2012

40 feet

All feature locations are approximate. This map is intended as a schematic to be used in conjunction with the associated report, and it should not be relied upon as a survey for planning or other activities.

Figure 5: Southern Treatment Plant Post Remediation End Point Sampling Map

Former A.C. Dutton Property
1 Dutchess Avenue and 2 Hoffman Street
Poughkeepsie, New York

Legend:
- building outline
- excavation area
- sample location red = arsenic - blue = chromium (all results in mg/kg)

ESI File: OP08022.50
October 2014
Scale: 1" = 40'
Appendix A

FIG. 1.7B

job no:
drawing no: 8604

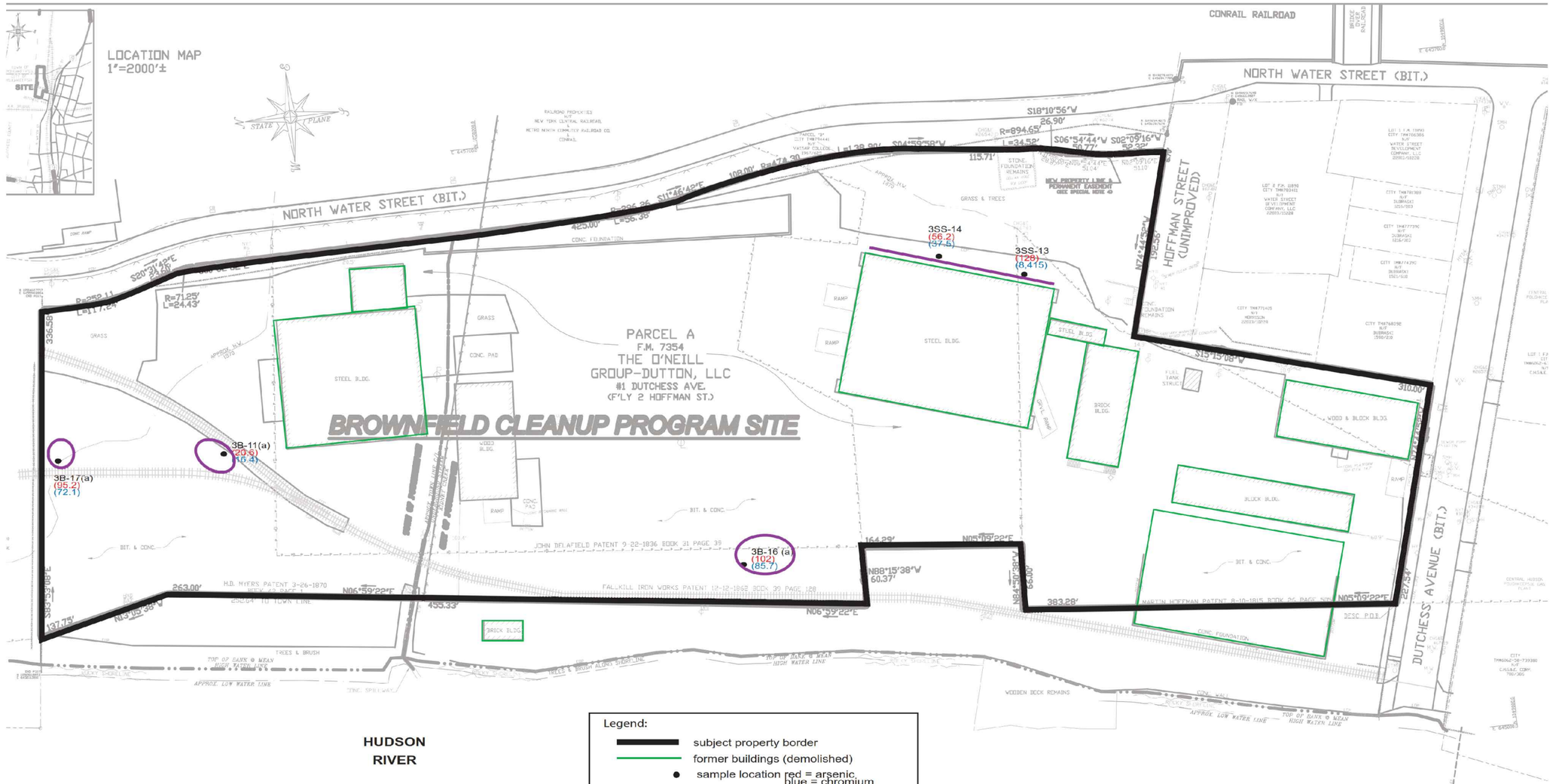
project: THE O'NELL GROUP - DUTTON LLC
CITY/TOWN OF POUGHKEEPSIE
DUTCHESS COUNTY, NY

drawing title: POST EXCAVATION SAMPLES & RESULTS

SESI CONSULTING ENGINEERS, PC
SOILS / FOUNDATIONS
SITE DESIGN
ENVIRONMENTAL
12A MAPLE AVE. PINE BROOK, N.J. 07058 PH: 973-808-9050

dwg by: LH
chk by: FD
scale: NTS
date: 12/16/14

Ecosystems Strategies, Inc.



STEM NOTES:
: NEW YORK EAST, NAD 83 ZONE 3001
THIS PROJECT. BEARINGS WERE
RID NORTH.

" PARCEL WAS SURVEYED USING SURVEY
IPMENT. NYS COR STATION #039
'S USED AS A BASE. THE DATA FOR
IS:
N SCALE FACTOR = 0.999919330561
I FACTOR = 0.999999623235
ARA'TION = -1033.9863

STATE OF NEW YORK
PHILIP A. BELL
081943
LICENSED PROFESSIONAL ENGINEER

Figure 6: Exterior Areas - Post Remediation Endpoint Sample Map

Former A.C. Dutton Property 1 Dutchess Avenue Poughkeepsie, New York	ESI File: OP08022.50	
	October 2014	Appendix A

dwg by: LH
chk by: FD
scale: NTS
date: 12/16/14

SESI CONSULTING ENGINEERS, PC
SOILS / FOUNDATIONS
SITE DESIGN
ENVIRONMENTAL
12A MAPLE AVE. PINE BROOK, N.J. 07058 PH: 973-808-9050

project: THE O'NELL GROUP - DUTTON LLC
CITY/TOWN OF POUGHKEEPSIE
DUTCHESS COUNTY, NY

drawing title: POST EXCAVATION SAMPLES & RESULTS

job no: 8604
drawing no:

FIG. 1.7C