LABELLA Associates, D.P.C.
Engineering
Architecture
Environmental
Planning

Property-Specific Soil Vapor Intrusion Investigation Report: 1645-1685 Emerson Street

Former Emerson Street Landfill
NYSDEC Site #828023

Location:

Former Emerson Street Landfill
1645-1685 Emerson Street
Rochester, New York

Prepared for:

City of Rochester
Division of Environmental Quality
Room 300-B
Rochester, New York 14614

LaBella Project No. 210173

July 2017

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I. Executive Summary

1645-1685 Emerson Street ("the Site") is located on the Former Emerson Street Landfill (FESL) which operated as a municipal landfill by the City of Rochester ("the City") from sometime between the 1940s and 1951 until 1971. Based on an initial assessment of all buildings across the FESL conducted from 2009-2011 by LaBella Associates D.P.C. ("LaBella") on behalf of the City, the Site was recommended for soil vapor intrusion (SVI) testing. Subsequently, LaBella conducted SVI testing at the Site on behalf of the City to evaluate the presence of SVI due to the FESL. A passive sub-slab depressurization system (SSDS) is installed in the Site building. This report documents the SVI testing completed and presents the findings and conclusions of the testing.

Summary of Testing

The SVI testing was completed on March 26, 2016 and consisted of the collection of two (2) sub-slab samples with collocated indoor air samples within the office area, and one (1) outdoor air sample to evaluate background conditions. The samples were collected over an approximate 6-hour timeframe and analyzed for a select list of volatile organic compounds (VOCs) known to be associated with the FESL. In addition, sub-slab pressure monitoring was conducted on three (3) occasions to evaluate the efficacy of the passive SSDS.

The testing was completed in accordance with a New York State Department of Environmental Conservation (NYSDEC) and New York State Department of Health (NYSDOH) approved *Soil Vapor Intrusion Investigation Work Plan: Phase II: Parcel Specific Investigation* dated January 2016 and the *NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York* dated October 2006 and subsequent updates dated September 2013 and August 2015 ("NYSDOH Guidance"). It should be noted the NYSDOH Guidance Decision Matrices were updated in May 2017 and the updated values do not change the conclusions and recommendations of this assessment.

Conclusions and Recommendations

The SVI testing results were compared to the NYSDOH Guidance decision matrices. The results indicated no further action is warranted. Based on the assessments completed to date, no further action related to SVI is warranted at the Site.

1.0 Introduction

This Property-Specific Sol Vapor Intrusion Investigation report is for the property located at 1645-1685 Emerson Street, City of Rochester, Monroe County, New York ("the Site"). The Site is located within the Former Emerson Street Landfill (FESL) which operated as a municipal landfill by the City of Rochester ("the City") from the sometime between the 1930s and 1951 until 1971. The City entered into an Order-on-Consent with the New York State Department of Environmental Conservation (NYSDEC) in August 2009 which requires an evaluation of soil vapor intrusion (SVI) due to FESL-related releases. The Order-on-Consent also requires additional remedial investigations, remedial measures, and other mitigation and corrective actions associated with the FESL.

An initial SVI assessment consisting of building inventory and field screening of indoor air was conducted at buildings across the FESL by LaBella Associates, D.P.C. ("LaBella") on behalf of the City from 2009-2011. The results of the initial SVI assessment were summarized in a report titled *Soil Vapor Intrusion Assessment Report: Data Review, Site Screening and Site Prioritization* dated June 2011 (hereinafter referred to as the "SVI Assessment Report"). The initial SVI assessment ranked buildings on the FESL for likelihood for SVI-related issues due to the FESL. The Preliminary Building Assessment and Site Reconnaissance conducted for the Site is included as Appendix 4. The NYSDEC and New York State Department of Health (NYSDOH) provided comments to this report on May 24, 2013.

Based on the initial SVI assessment, a Work Plan titled *Soil Vapor Intrusion Investigation Work Plan: Phase II: Parcel Specific Investigation* (hereinafter referred to as the "SVI Work Plan") was submitted to the NYSDEC and NYSDOH in April 2013. The SVI Work Plan proposed SVI investigations at properties that were ranked at greatest risk for SVI during the initial assessment. The NYSDEC and NYSDOH provided comments to the SVI Work Plan on April 23, 2015 and the SVI Work Plan was resubmitted in January 2016 to address NYSDEC and NYSDOH comments. SVI investigations were completed beginning in March 2016.

This property-specific SVI report summarizes the investigation completed at the Site. The Site has an approximate 70,000 square feet (sq. ft.) building occupied by EG Industries and used for plastic injection molding. A passive sub-slab depressurization system (SSDS) was installed in the Site building during building construction. The SSDS consists of six (6) vertical risers connected to sub-slab piping (refer to Figure 2 for approximate locations of vertical risers). The exact location of sub-slab piping is unknown. The Site was recommended for SVI testing (sub-slab/indoor air testing). The SVI testing was completed in the office areas only. In addition, sub-slab pressure testing was completed in the office and manufacturing areas to evaluate the efficacy of the existing passive SSDS. This report details the testing completed and the results.

2.0 Former Emerson Street Landfill Description and History

The FESL consists of approximately 250-acres of land comprised of 45 individual parcels, seven (7) of which are owned by the City. The remaining 38 parcels are owned by 25 private owners. The FESL is predominantly occupied by industrial and commercial properties (15 and 20, respectively based on use codes). In addition, City use codes indicate 5 parcels as vacant land, one (1) parcel as unknown

(McCrackenville Street) and four (4) parcels are listed as community/public service (one of which is a school, Edison Tech). The surrounding area also contains industrial and commercial properties; however, residential properties are also located to the northeast. Figure 1 provides a project locus map that indicates the area of the FESL.

Prior to FESL operation, the area was primarily vacant and relatively flat lying, with a wetland located in the north-central portion of the site. As a result of landfilling activities, the FESL has been elevated approximately 15+ feet above the surrounding area. An industrial park with existing buildings constructed as early as 1971, presently occupies most of the FESL, including larger facilities and various smaller industrial/commercial facilities, as well as several undeveloped parcels and undeveloped land on otherwise developed parcels.

The FESL was operated by the City beginning between sometime in the 1940's and 1951 to 1971 as a landfill. The landfill was used to dispose of ash derived from the incineration of municipal waste at the City's incinerators. Ash fill and construction and demolition debris were the primary waste materials placed in the landfill. Information pertaining to the incinerator operational status and efficiency indicates that the incinerated materials were completely combusted until approximately 1964 when the incinerator efficiency decreased. Landfilling began south of Emerson Street and gradually expanded northward and eastward to include areas between Emerson Street and Lexington Avenue and east of Colfax Street and south of Emerson Street. Open burning of refuse reportedly occurred in the late 1960s and early 1970s due to operational problems with the incinerators. Fill during this time frame was reportedly being placed north of Emerson Street. In May of 1971 the City's incinerators were shut down; however un-incinerated municipal refuse continued to be placed north of Emerson Street until August of 1971. In August 1971, refuse disposal was ceased at FESL and disposal shifted to a different county landfill. In 1971 the landfill was officially closed and a contract for the closure of the eastern half of the landfill specified 2 feet of cover material (preferred to be a sandy loam) to be placed and compacted to 30% in 1 foot lifts. In September 1971 a contract was awarded for the closure of the western portion of the landfill. Since closure, the majority of the Site has been developed for commercial and industrial uses in addition to one high school.

The general types of wastes encountered in investigations at the FESL site include the following:

- Municipal Incinerator Ash - generally consisting of ash, cinders, charred refuse, glass and metal slag. Most ash observed in site investigations appears to be fly ash and bottom ash (clinker) from the municipal solid waste incinerators. This generally consists of soil and rock fill with traces of plastic, metal, wood, concrete, bricks, tiles, and asphalt. Construction and demolition debris observed in past investigations generally fits the definition of construction demolition debris contained in NYSDEC's Part 360. Construction demolition debris fill is common in areas adjacent to current and former roadways on site, and particularly in the lobe of fill south of Emerson Street and east of Colfax Street.
- Soil and Municipal Refuse - This material generally consists of silty sand cover material and disposed, un-incinerated municipal refuse.
- Low-activity Radioactive Waste - This material generally consisted of a sludge-like waste material associated with glass lenses. The sludge was found to contain low levels of radioactive thorium. This material was primarily encountered in the southwest portion of the FESL and was believed to be associated with incinerator ash and refuse fills. This material was removed by

Sevenson Environmental Services on behalf of the City of Rochester (refer to Section 3.0 Previous Investigations).

- The majority of the existing landfill has a soil cover. Cover ranges in thickness from 0 ft. up to approximately 6 ft. Cover materials generally consist of topsoil with grass, gravel, asphalt, or glacial till-derived sandy silt.

A majority of the Site has been delisted; however, three (3) parcels (1660,1740, and 1700 Emerson Street (formerly 1655 Lexington Avenue) comprising approximately sixteen (16) acres are currently listed as a Class "3" site (No. 828023) on the NYSDEC Registry of Inactive Hazardous Waste Disposal Sites (IHWDS). A "3" classification indicates a site "at which contamination does not presently constitute significant threat to public health or the environment." The most recent delisting occurred when LaBella submitted a Delisting Petition on December 9th, 2014, for the parcel currently addressed as1655 Lexington Avenue (formerly 1635 Lexington Avenue and a portion of former 1655 Lexington Avenue) to delist approximately 13.3 acres of land from the NYSDEC Registry of IHWDS. NYSDEC approved this delisting on March 19th, 2015, and the newly delisted land was combined into one parcel with address 1655 Lexington Avenue. The remaining portion of former 1655 Lexington Avenue was renamed 1700 Emerson Street.

3.0 Previous Investigations Related to Soil Vapor Intrusion

A significant number of investigations have been previously conducted at the Site. This section presents pertinent and significant findings in relation to SVI from select previous investigations; a more detailed review can be obtained from each individual report.

Former Emerson Street Landfill Sub-Slab Ventilation Guidance (SSVG) Document Update 2013 dated October 2013*:*

This document was an update of the 2007 version which evaluated and mapped historical information regarding the variable composition of the landfill and analytical data at specific locations. The 2013 document provided an update on SSVG based on additional SVI investigations at the FESL. In 2010, the City of Rochester began a SVI investigation to systematically assess potential vapor intrusion issues at the FESL. This work included detailed assessments of each existing building on the FESL, installation of additional monitoring wells, and sampling of these new wells and several existing wells, catalogue and review of existing historical data regarding the FESL, and review of stereoscopic historic aerial photographs. The results were documented in a report dated June 2010 titled "*Soil Vapor Intrusion Assessment Report: Data Review, Site Screening & Site Prioritization, Former Emerson Street Landfill, NYSDEC Site #828023"*. The 2013 SSVG details methodology for selecting an appropriate ventilation system dependent on landfill gas and VOC measurements. In addition, previous reports are summarized providing pertinent information on types and concentrations of contaminants detected.

Available analytical data types relevant to soil vapor migration include the following:

- ground surface landfill gas flux measurements throughout the landfill;
- soil gas measurements for methane, vinyl chloride (a Chlorinated-VOC), and the VOCs: benzene, toluene, ethylbenzene, and xylenes (BTEX) across a limited area (portions of the state-listed IHWDS portion of the landfill);

- photo-ionization detector (PID) measurements taken in utility vaults and sewers along roadways surrounding the landfill;
- soil samples for select Chlorinated-VOCs from borings across the landfill; and
- groundwater samples for select Chlorinated-VOCs from wells installed across the landfill.

The FESL SSVG 2013 also summarized the existing soil gas contamination information included in *"Former Emerson Street Landfill, Modified Remedial Investigation", H&A of New York, January 1994*. During this investigation, landfill gas measurements were obtained across the landfill area with specially-designed gas flux chambers. As summarized in the report, landfill gas is typically composed of 58% methane, 42% carbon dioxide, and trace amounts of hydrogen sulfide and other organic compounds. Methane emission rates varied in the FESL samples from a minimum of 7.8 to a maximum of 1200 $\mu g/m^2$-minute. The H&A report also contains analytical information for Chlorinated-VOCs in soil, groundwater, and utility vault water samples, and PID readings for utility vaults and manholes. Analytical results indicated the presence of Chlorinated-VOCs at various locations throughout the landfill, but concentrated in the IHWDS portion.

The report "*Former Emerson Street Landfill Remedial Investigation Report for Parcels 4, 10, and 11*", LaBella Associates P.C., and Geomatrix Consultants, Inc., March 2001, describes sampling completed in the IHWDS portion of the landfill. Sampling was completed in soil, groundwater, sewers, and extensive soil gas points. Analytical results confirmed and further delineated the presence of CVOCs in the IHWDS portion of the landfill. These parcels are located in Quadrant A, an area likely to contain direct burial municipal waste without significant incineration. The soil gas results for the specific constituents detected in this summary are briefly summarized below:

- Vinyl chloride concentrations ranged from 0.02 milligrams per cubic meter (mg/m3) to 9 mg/m3
- Benzene concentrations ranged from 0.02 mg/m^3 to 0.6 mg/m^3
- Total BTEX concentrations ranged from 0.48 mg/m^3 to 499 mg/m^3
- Chlorobenzene concentrations ranged from 0.02 mg/m^3 to 1.6 mg/m^3
- Methane concentrations ranged from 380 parts per million (ppm) (or 0.038%) to 790,000 ppm (or 79%)

The FESL can be separated into four general geographic regions (FESL Quadrants) based on the landfill waste composition and historic analytical data. The Site is located in Quadrant C (refer to Figure 1).

Quadrant C is characterized by thinner fill, lower percentage of potentially putrescible solid waste and more incinerated ash, and intermediate landfill gas flux at the surface relative to other FESL areas sampled. This area is characterized by landfill gas flux measurements below 50 $\mu g/m^2$-minute. It has been hypothesized that this may be related to the presence of organic rich marsh-derived soils at depth in this area, as opposed to landfill related gas. There is also an area of Chlorinated-VOC contamination in this quadrant.

Soil Vapor Intrusion Assessment Report (SVI Assessment Report) dated June 2011:

LaBella was retained by the City of Rochester in January 2010 to complete a Soil Vapor Intrusion Assessment Report: Data Review, Site Screening and Site Prioritization and submitted a SVI

Assessment report (June 2011) to NYSDEC. This SVI Assessment by LaBella included a detailed review of historic information available for the Site. The historic information included not only previous subsurface environmental investigations but also a detailed review of aerial photography, subsurface data from redevelopment projects (i.e., geotechnical borings and test pits), available newspaper articles from the time the landfill was operating, and reports/papers relating to City of Rochester and Monroe County waste handling and disposal practices both historically and in particular in the 1960s/1970s. In addition, groundwater sampling of existing wells was completed, additional groundwater monitoring wells were installed, developed and sampled and a site reconnaissance was conducted at every parcel where access was granted by the property owner.

The results of the cumulative work were utilized in a ranking system that use weighted numerous criteria for each building. The criteria can be separated in to two major categories, Non-FESL related factors (e.g., how many people occupy the building, building use/ potential receptor population, building construction and condition, type of heating, ventilation system, etc.) and FESL related factors (e.g., building location in relation to the P-1 plume, location in relation to filling, readings detected during Site walkthrough, etc.). The overall scores were separated into three "Tiers" of sites. Tier 1 sites were determined to be of the highest concern for SVI due to the FESL, Tier 2 sites were determined to be of moderate to low concern for SVI due to the FESL and Tier 3 sites were determined to be of low to no concern for SVI due to FESL.

The Site is located in Quadrant C of the FESL and is approximately 1,000 feet south of the P-1 Plume. The Site building was ranked Tier 1 during the SVI Assessment.

4.0 Objectives

The objective of this assessment was to evaluate the potential for SVI at the Site via sub-slab and indoor air testing and to assess the efficacy of the existing passive SSDS. Work was completed in accordance with the NYSDEC and NYSDOH-approved 2016 SVI Work Plan and the *NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York* dated October 2006 and subsequent updates dated September 2013 and August 2015 (NYSDOH Guidance).

5.0 Standards, Criteria and Guidelines

This section identifies the applicable Standards, Criteria and Guidelines (SCGs) for the Site related to SVI.

Sub-Slab Soil Vapor and Indoor Air SCGs: The NYSDOH *Guidance for Evaluating Soil Vapor Intrusion in the State of New York* dated October 2006 and subsequent updates for PCE and TCE in 2013 and 2015, respectively (including the USEPA Building Assessment and Survey Evaluation (BASE) Database (90th Percentile), in Appendix C of the NYSDOH document) is utilized for the SCG for soil vapor and indoor air. It should be noted the NYSDOH Guidance decision matrices were updated in May 2017 after the testing was completed. The results were also compared to the May 2017 updates.

6.0 Sampling Procedures

Sub-Slab Vapor Point Installations

Two (2) sub-slab soil vapor points were installed on March 20, 2016 in the office area (refer to Figure 2 for locations). The sub-slab vapor sampling points consisted of the Vapor Pin ® sampling system. Points were installed by coring a 1.5-inch diameter hole approximately 2-inches into the floor slab. Subsequently, a 5/8-inch diameter hole was drilled through the center of the 1.5-inch diameter hole using a guide through the floor slab. A 5/8-inch diameter polyethylene sleeve fitted over a metal barbed fitting was installed within the 5/8-inch diameter core hole. Sub-slab soil vapor points were fitted with a threaded cap flush to the finished floor. Figure 3 illustrates the typical construction of a sub-slab vapor sampling point.

Purging Procedures

Sub-slab vapor sampling points were first evaluated for pressure using a Test Products International Digital Manometer 621. Sub-slab pressures at the SVI monitoring points ranged from -0.0029 to -0.0025 inches of water column ("wc).

After installation of the probes, one (1) to three (3) volumes (i.e., the volume of the sample probe and tube) was purged prior to collecting the samples to ensure samples collected are representative. Flow rates for purging did not exceed 0.2 liters per minute to minimize the ambient air infiltration during sampling.

A tracer gas evaluation was conducted to verify the integrity of the sub-slab soil vapor probe seal using helium. Tubing was connected to the metal barbed fitting and an enclosure was placed over the sampling point. Subsequently, the enclosure was enriched with the tracer gas. The sub-slab and the enclosure were then tested for the tracer gas using a MDG-2002 Helium Gas Leak Detector. The tracer gas was measured at concentrations between 0% and 1% of the enclosure.

Sampling and Handling Procedures

On March 26, 2016, sub-slab soil vapor, indoor air, and outdoor air samples were collected using 1-liter Summa Canisters® equipped with pre-calibrated laboratory supplied flow regulators set for a sampling time of six (6) hours. Sub-slab samples were designated "1645-SVI-1" and "1645-SVI-2". At each sub-slab vapor sample location an indoor air sample was also collected. The collocated indoor air samples were collected from approximately 3 to 5 feet above the floor slab and were collected in the same manner and general time period as the sub-slab sample. Indoor air samples were designated "1645-IAQ-1" and "1645-IAQ-2". In addition, an outdoor air sample was collected to evaluate the ambient air conditions. The outdoor ambient air sample was collected from the general upwind direction based on prevailing wind directions. The outdoor air sample was designated "Outdoor-1645". Sampling logs are included in Appendix 3.

All samples were submitted under standard chain of custody procedures to Centek Laboratory in Syracuse, New York for analysis of a select list of VOCs using USEPA Method TO-15. Based on the historic data, the detailed evaluation completed as part of the SVI Report and the current heavy manufacturing setting of the FESL, the analytical testing work was limited to compounds suspected to be

due to FESL, including the following:

Compound
Tetrachloroethene
Trichloroethene
cis-1,2-Dichloroethene
trans-1,2-Dichloroethene
Vinyl Chloride
1,1,1-Trichloroethane
1,1-Dichloroethane
1,1-Dichloroethene
Chloroethane
Chloromethane

Quality Assurance/Quality Control

The Summa® Canisters were certified clean by the laboratory. Blind duplicates were collected at a rate of one (1) per ten (10) samples, or one (1) per shipment to the laboratory. Matrix spike/ matrix spike duplicate (MS/MSD) samples were collected using a 1.4-liter Summa® canister at a rate of one (1) per twenty (20) samples or one per shipment to the laboratory. The laboratory provided ASP Category B-like reports and NYSDEC EQUIS Electronic Data Deliverables (EDDs). A data usability summary report (DUSR) was prepared by Dataval, Inc.

Pressure Testing

Following the SVI sampling event, on November 26, 2016, sub-slab pressure was measured and recorded from all accessible monitoring points in the office and manufacturing area using a Test Products International EBT720 Micromanometer to evaluate the efficacy of the existing passive SSDS. The monitoring points in the manufacturing area were installed as part of the initial SVI assessment in 2010.

7.0 Results

SVI sampling and analysis consisted of the collection of two (2) collocated sub-slab and indoor air samples in addition to one (1) outdoor air sample on March 26, 2016 over an approximate 6-hour timeframe. Follow-up pressure monitoring was conducted on November 26, 2016.

Sub-Slab/ Indoor/ Outdoor Air Sampling

SVI sampling results were compared to the decision matrices in *NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York* Guidance Document dated October 2006 and subsequent updates for PCE and TCE in 2013 and 2015, respectively (NYSDOH Guidance Document). Targeted compounds were not-detected in the indoor air above laboratory reporting limits. The NYSDOH matrices indicated no further action is warranted regarding SVI at this Site. It should be noted the NYSDOH Guidance Decision Matrices were updated in May 2017 and the updated values do not change the conclusions and recommendations of this assessment. Refer to Figure 2 for sample locations.

Pressure Monitoring

To confirm the effectiveness of the existing passive venting system, pressure monitoring was completed at the pressure monitoring points installed during the initial SVI assessment in 2010 within the manufacturing area, and in 2016 within the office area which served the dual purpose of SVI sampling and pressure monitoring. Refer to Figure 2 for monitoring point locations.

Sub-slab pressure has been monitored on three (3) occasions since 2010 as listed in the below table. Sub-slab pressure has been negative during the monitoring events, with readings ranging from -0.002 "wc to -0.048 "wc.

Monitoring Point	Location	Sub-Slab Pressure Reading ("wc)		
		March 28, 2010	**March 26, 2016**	**November 26, 2016**
C-1	Manufacturing Area	-0.002 to -0.003	Not Collected	Inaccessible[(1)]
C-2		-0.032 to -0.042		-0.006 to -0.009
C-3		-0.015 to -0.024		Inaccessible[(1)]
C-4		-0.048		-0.004
1645-SVI/IAQ-1	Office Area	Not Collected	-0.029	-0.002 to -0.006
1645-SVI/IAQ-2			-0.025	-0.008 to -0.010

Pressure readings in inches of water column ("wc)

[(1)]During the most recent round of pressure monitoring in November 2016, two (2) of the monitoring points (C-1 and C-3) within the manufacturing area were covered with equipment; as such, these two (2) monitoring locations were not accessible for testing.

Based on the SVI testing and the pressure monitoring performed, the passive SSDS appears to be adequate in creating negative sub-slab pressure (i.e., positive building pressure). It should be noted that building operations also create positive building pressure (i.e., clean rooms and HVAC units).

8.0 Conclusions

The Site is located south of the P-1 Plume in Quadrant C of the FESL. The Site is currently utilized industrially for plastic injection molding with approximately 7,000 of the 70,000 square feet utilized as office space.

Two (2) collocated sub-slab and indoor air samples, in addition to one (1) outdoor air sample, were collected on March 26, 2017 to evaluate SVI in the Site building. The work was conducted in accordance with the NYSDEC and NYSDOH-approved work plan dated January 2016. Targeted compounds were not detected in indoor air. Based on the lack of detected compounds in the indoor air sampled in the office area and observed negative pressure beneath the floor slab throughout the Site building, there is no SVI concern due to the FESL. Based on the assessments completed to date, no further action related to SVI is warranted at the Site.

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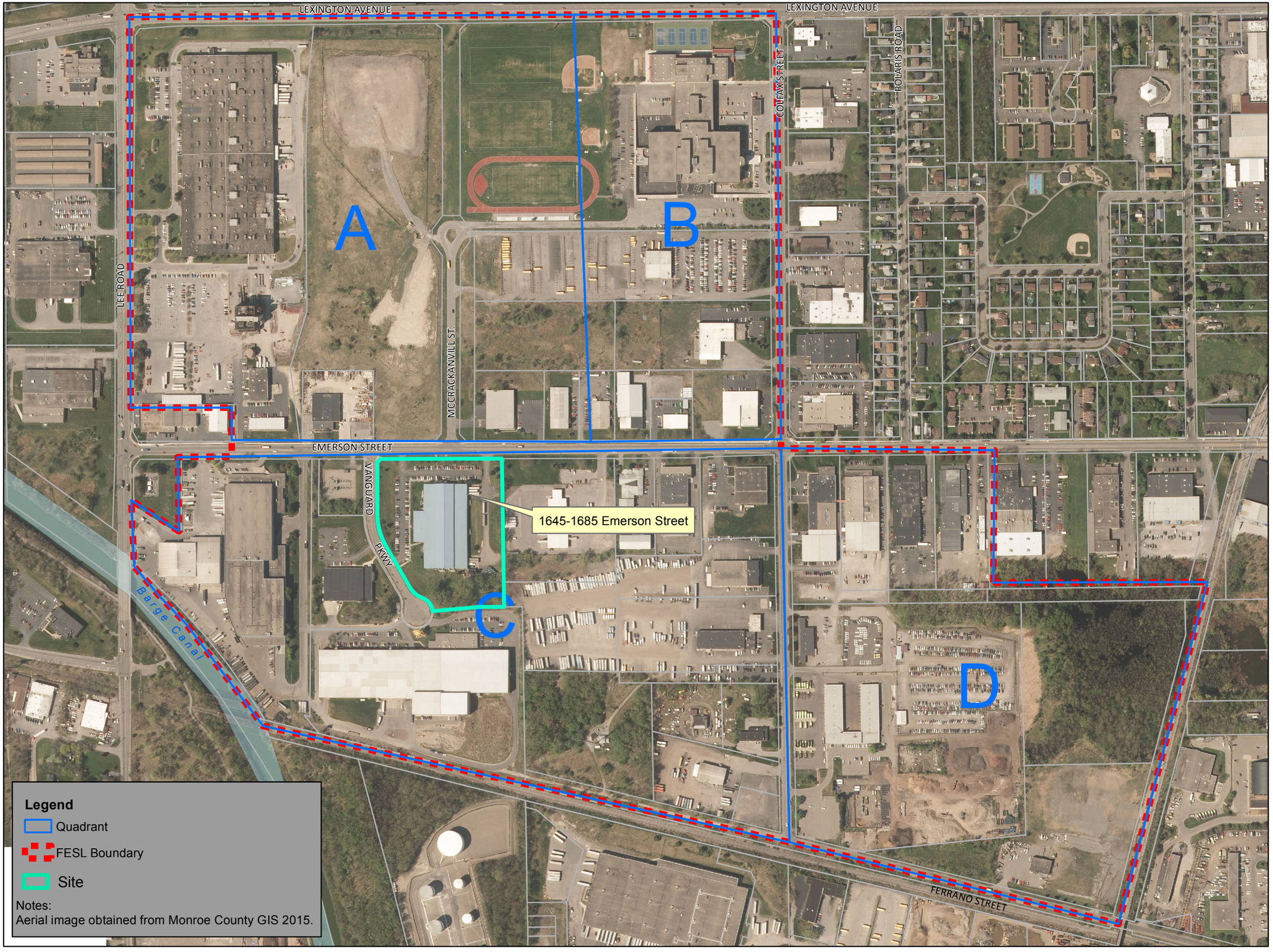
Figures



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CITY OF ROCHESTER

FORMER EMERSON STREET LANDFILL ROCHESTER, NEW YORK

SOIL VAPOR INTRUSION INVESTIGATION

FORMER EMERSON STREET LANDFILL PROJECT MAP

N
W E
S

0 400 Feet

1 inch = 400 feet

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FIGURE 1

Legend

- Crack Evaluation Core/Sub-Slab Pressure Monitoirng Point
- Outdoor Air Sample Location
- Sub-slab/ Indoor Air Sample Location
- Passive Vent System Risers
- Office Area
- FESL Boundary
- Parcel Boundaries
- Site

Notes:
Sub-slab, indoor, and outdoor air concentrations expressed in micrograms per cubic meter (ug/m3). Samples collected on March 26, 2016.
The NYSDOH decision matrices result is based on worst-case concentrations.
Pressure readings in inches water column ("wc)
Locations of sampling points and risers are approximate.

March 26, 2016
SAMPLE TYPE: Sub-Slab
SAMPLE ID: 1645-SVI-1
Sub-slab pressure= -0.029 "wc

cis-1,2-Dichloroethene	2.6
Trichloroethene	13

SAMPLE TYPE: Indoor Air
SAMPLE ID: 1645-IAQ-1
Non-detect

NYSDOH Guidance Decision Matrices Result:
No further action

March 26, 2016
SAMPLE TYPE: Sub-Slab
SAMPLE ID: 1645-SVI-2
Sub-slab pressure= -0.025 "wc

Trichloroethene	0.91

SAMPLE TYPE: Indoor Air
SAMPLE ID: 1645-IAQ-1
Non-detect

NYSDOH Guidance Decision Matrices Result:
No Further Action

Office
1645-SVI/IAQ-1
1645-SVI/IAQ-2
C-4
C-3
Manufacturing Area
C-2
C-1
1645-Outdoor

March 26, 2016
SAMPLE TYPE: Outdoor Air
SAMPLE ID: 1645-Outdoor

Chloromethane	1.8
Tetrachloroethylene	1.1
Trichloroethene	0.91

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CITY OF ROCHESTER

FORMER EMERSON STREET LANDFILL
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SOIL VAPOR INTRUSION INVESTIGATION

SOIL VAPOR INTRUSION SAMPLING RESULTS

1645-1685 EMERSON ST

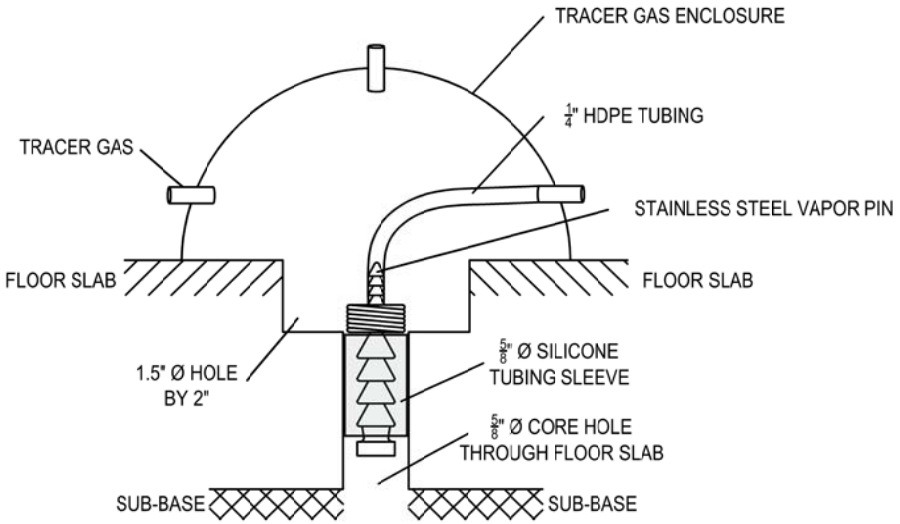
W S N E

0 35 Feet
1 inch = 35 feet

210173

FIGURE 2

Path: \\Projects2\ProjectsNZ-2\Rochester, City\210173 FESL\Drawings\SVI Testing\For Property Specific Reports\Figure 2 1645-1685 Emerson.mxd



DETAIL 1

SUB-SLAB SOIL VAPOR SAMPLING POINT DETAIL

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PROJECT/CLIENT
FORMER EMERSON STREET LANDFILL
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DRAWING TITLE
SUB-SLAB SOIL VAPOR POINT DETAILS

ISSUED FOR:
FINAL

DESIGNED BY: DPN
DRAWN BY: DEP
REVIEWED BY: DPN

DATE: MARCH, 2017

PROJECT/DRAWING NUMBER
210173

FIGURE 3

J:\Rochester, City\210173 FESL\Drawings\SVI Testing\For Property Specific Reports\SSDS_details

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Tables

Former Emerson Street Landfill
1645-1685 Emerson Street
Table 1
Soil Vapor Intrusion Testing Results
March 2016

Sample ID	1645-SVI-1	1645-SVI-2	1645-IAQ-1	1645-IAQ-2	Outdoor-1645	NYSDOH Sub-Slab Vapor Concentration Decision Matrix (minimum action level) [1]	NYSDOH Indoor Air Concentration (minimum action level) [1]	USEPA (2001) (BASE) Database - 90th Percentile [2]
Sample Location	**Sub-Slab**	**Sub-Slab**	**Indoor Air**	**Indoor Air**	**Outdoor Air**			
Sample Date	**3/26/2016**	**3/26/2016**	**3/26/2016**	**3/26/2016**	**3/26/2016**			
1,1,1-Trichloroethane	<0.82	<0.82	<0.82	<0.82	<0.82	<100***	<3***	20.6
1,1-Dichloroethane	<0.61	<0.61	<0.61	<0.61	<0.61	NL	NL	<0.7
1,1-Dichloroethene	<0.59	<0.59	<0.59	<0.59	<0.59	<100***	<3***	<1.4
Chloroethane	<0.40	<0.40	<0.40	<0.40	<0.40	NL	NL	<1.1
Chloromethane	<0.31	<0.31	<0.31	<0.31	1.8	NL	NL	3.7
cis-1,2-Dichloroethene	2.6	<0.59	<0.59	<0.59	<0.59	<100***	<3***	<1.9
Tetrachloroethylene	<1.0	<1.0	<1.0	<1.0	1.1	<100***	<3*** / 30*	15.9
trans-1,2-Dichloroethene	<0.59	<0.59	<0.59	<0.59	<0.59	NL	NL	NL
Trichloroethene	**13**	0.91 J	0.21 U	<0.21	0.91	<5 **	<0.25** / 2*	4.2
Vinyl Chloride	<0.38	<0.38	<0.10	<0.38	<0.10	<5**	<0.25**	<1.9

Notes:

Concentrations in micrograms per cubic meter (ug/m^3)

Samples analyzed by USEPA Method TO-15

< indicates the concentration was not detected above the reporting limit

(1) New York State Department of Health (NYSDOH), Guidance for Evaluating Soil Vapor Intrusion in the State of New York. [Note: This Guidance uses a combination of indoor air and sub-slab soil vapor when comparing to the matrices. In addition, for compounds not listed in the matrices an overall site approach is employed which utilizes the USEPA BASE Database (see 2. below) as typical background for commercial buildings and also uses the outdoor air sample, refer to Guidance document for details.]

(2) USEPA Building Assessment and Survey Evaluation (BASE) Database (90th Percentile). As recommended in Section 3.2.4 of the NYSDOH Guidance (Refer to Footnote "1") this database is referenced for the indoor air sampling results. This database is also referenced to provide initial benchmarks for comparison to the air sampling data and does not represent regulatory standards or compliance values.

***** = Air Guideline Values obtained from Table 3.1, NYSDOH, Guidance for Evaluating Soil Vapor Intrusion in the State of New York as updated by a September 2013 Fact Sheet for PCE and an August 2015 Fact Sheet for TCE.

****** = Guideline Value obtained from Soil Vapor/Indoor Air Matrix 1 (minimum action level), NYSDOH, Guidance for Evaluating Soil Vapor Intrusion in the State of New York.

******* = Guidance Value obtained from Soil Vapor/Indoor Air Matrix 2 (minimum action level), NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York.

Bold type denotes that the compound was detected at a concentration that was found to exceed the NYSDOH Sub-Slab Vapor Concentration Decision Matrix (minimum action level).

Underlined type denotes that the compound was detected at a concentration that was found to exceed the NYSDOH Indoor Air Concentration (minimum action level).

Red values are above Air Guideline Derived by NYSDOH in Table 3.1 of NYSDOH Guidance titled "Evaluating Soil Vapor Intrusion in the State of New York", October 2006 (and subsequent updates).

Blue font represents changes made in the Data Usability Summary Report (DUSR)

U indicates the DUSR deemed the concentration undetected

Former Emerson Street Landfill
1645-1685 Emerson Street
Table 1
Soil Vapor Intrusion Testing
March 2016

NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006 Decision Matrices

			MATRIX 1- TRICHLOROETHENE INDOOR AIR CONCENTRATION (ug/m^3)			
	Sample IDs		**IAQ-1 (0.21U) IAQ-2 (<0.21)**			
			<0.25	0.25 to <1	1 to <5.0	5.0 and above
SUB-SLAB VAPOR CONCENTRATION (ug/m^3)	**SVI-2 (0.91)**	<5	1. No further action	2. Take reasonable and practical actions to identify source(s) and reduce exposure	3. Take reasonable and practical actions to identify source(s) and reduce exposure	4. Take reasonable and practical actions to identify source(s) and reduce exposure
	SVI-1 (13)	5 to <50	5. No further action	6. MONITOR	7. MONITOR	8. MITIGATE
		50 to <250	9. MONITOR	10. MONITOR/ MITIGATE	11. MITIGATE	12. MITIGATE
		250 and above	13. MITIGATE	14. MITIGATE	15. MITIGATE	16. MITIGATE

			MATRIX 2- CIS-1,2-DICHLOROETHENE INDOOR AIR CONCENTRATION (ug/m^3)			
	Sample IDs		**IAQ-1 (<0.59)**			
			<3	3 to <30	30 to <100	100 and above
SUB-SLAB VAPOR CONCENTRATION (ug/m^3)	**SVI-1 (2.6)**	<100	1. No further action	2. Take reasonable and practical actions to identify source(s) and reduce exposure	3. Take reasonable and practical actions to identify source(s) and reduce exposure	4. Take reasonable and practical actions to identify source(s) and reduce exposure
		100 to <1,000	5. MONITOR	6. MONITOR/ MITIGATE	7. MITIGATE	8. MITIGATE
		1,000 and above	9. MITIGATE	10. MITIGATE	11. MITIGATE	12. MITIGATE

No further action: Given that the compound was not detected in the indoor air sample and that the concentration detected in the sub-slab vapor sample is not expected to significantly affect indoor air quality, no additional actions are needed to address human exposures.

Take steps to identify source(s) and reduce exposures: The concentration detected in the indoor air sample is likely due to indoor and/or outdoor sources rather than soil vapor intrusion given the concentration detected in the sub-slab vapor sample. Therefore, steps should be taken to identify potential source(s) and to reduce exposures accordingly (e.g., by keeping containers tightly capped or by storing volatile organic compound-containing products in places where people do not spend much time, such as a garage or outdoor shed).

Monitor: Monitoring, including sub-slab vapor, basement air, lowest occupied living space air, and outdoor air sampling, is needed to determine whether concentrations in the indoor air or sub-slab vapor have changed. Monitoring may also be needed to determine whether existing building conditions (e.g., positive pressure heating, ventilation and air-conditioning systems) are maintaining the desired mitigation endpoint and to determine whether changes are needed. The type and frequency of monitoring is determined on a site-specific and building-specific basis, taking into account applicable environmental data and building operating conditions. Monitoring is an interim measure required to evaluate exposures related to soil vapor intrusion until contaminated environmental media are remediated.

Mitigate: Mitigation is needed to minimize current or potential exposures associated with soil vapor intrusion. The most common mitigation methods are sealing preferential pathways in conjunction with installing a sub-slab depressurization system, and changing the pressurization of the building in conjunction with monitoring. The type, or combination of types, of mitigation is determined on a building-specific basis, taking into account building construction and operating conditions. Mitigation is an interim measure implemented to address exposures related to soil vapor intrusion until contaminated environmental media are remediated.

LaBella Associates, D.P.C.
300 State Street

Rochester, New York 14614

Appendix 1

Laboratory Report

TO-15 Package Review Checklist

Client: LABELLA Project: EMERSON LANDFILL SDG: C1603076

		YES	NO	NA
Analytical Results	Present and Complete	✓		
TIC's present	Present and Complete	✓		
	Holding Times Met	✓		

Comments:

Chain-of-Custody	Present and Complete	✓		
Surrogate Recovery	Present and Complete	✓		
	Recoveries within limits	✓		
	Sample(s) reanalyzed			✓
Internal Standards Recovery	Present and Complete	✓		
	Recoveries within limits	✓		
	Sample(s) reanalyzed			✓

Comments:

Lab Control Sample (LCS)	Present and Complete	✓		
	Recoveries within limits	✓		
Lab Control Sample Dupe (LCSD)	Present and Complete	✓		
	Recoveries within limits	✓		
MS/MSD	Present and Complete			✓
	Recoveries within limits			✓

Comments: NO MS/MSD

Sample Raw Data	Present and Complete	✓		
	Spectra present for all samples	✓		

Comments:

TO-15 Package Review Checklist

Client: LABELLA Project: EMERSON LANDFILL SDG: C1603075

		YES	NO	NA
Standards Data				
Initial Calibration Summary	Present and Complete	✓		
	Calibration(s) met criteria	✓		
Continuing Calibration Summary	Present and Complete	✓		
	Calibration(s) met criteria	✓		
Standards Raw Data	Present and Complete	✓		

Comments:

Raw Quality Control Data

Tune Criteria Report	Present and Complete	✓		
Method Blank Data	MB Results <PQL	✓		
	Associated results flagged "B"			✓
LCS sample data	Present and Complete	✓		
LCSD sample data	Present and Complete	✓		
MS/MSD sample data	Present and Complete			✓

Comments:

Logbooks

Injection Log	Present and Complete	✓		
Standards Log	Present and Complete	✓		
Can Cleaning Log	Present and Complete	✓		
	Raw Data Present	✓		
Calculation sheet	Present and Complete	✓		
IDL's	Present and Complete	✓		
Bottle Order Form	Present and Complete	✓		
Sample Tracking Form	Present and Complete	✓		

Additional Comments:

Section Supervisor: [signature] Date: 4/26/16

QC Supervisor: [signature] Date: 4/27/16

CENTEK LABORATORIES, LLC

143 Midler Park Drive * Syracuse, NY 13206
Phone (315) 431-9730 * Emergency 24/7 (315) 416-2752
NYSDOH ELAP Certificate No. 11830

Analytical Report

Daniel Noll
LaBella Associates, P.C.
300 State Street, Suite 201
Rochester, NY 14614

TEL: (585) 454-6110
FAX (585) 454-3066

Monday, April 04, 2016
Order No.: C1603075

RE: FESL Emerson Landfill

Dear Daniel Noll:

Centek Laboratories, LLC received 5 sample(s) on 3/29/2016 for the analyses presented in the following report.

I certify that this data package is in compliance with the terms and conditions of the Contract, both technically and for completeness. Release of the data contained in this hardcopy data package and/or in the computer readable data submitted has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objective except as indicated in the case narrative. All samples were received and analyzed within the EPA recommended holding times. Test results are not Method Blank (MB) corrected for contamination.

Centek Laboratories is distinctively qualified to meet your needs for precise and timely volatile organic compound analysis. We perform all analyses according to EPA, NIOSH or OSHA-approved analytical methods. Centek Laboratories is dedicated to providing quality analyses and exceptional customer service. Samples were analyzed using the methods outlined in the following references:

Compendium of Methods for the Determination of Toxic Organic Compounds, Compendium Method TO-15, January 1999.

Centek Laboratories SOP TS-80

Analytical results relate to samples as received at laboratory. We do our best to make our reporting format clear and understandable and hope you are thoroughly satisfied with our services.

Please contact your client service representative at (315) 431-9730 or myself, if you would like any additional information regarding this report.

This report cannot be reproduced except in its entirety, without prior written authorization.

Sincerely,

William Dobbin
Lead Technical Director

Disclaimer: The test results and procedures utilized, and laboratory interpretations of the data obtained by Centek as contained in this report are believed by Centek to be accurate and reliable for sample(s) tested. In accepting this report, the customer agrees that the full extent of any and all liability for actual and consequential damages of Centek for the services performed shall be equal to the fee charged to the customer for the services as liquidated damages. ELAP does not offer certification for the following parameters by this method at present time, they are: 4-ethyltoluene, ethyl acetate, propylene, 4-PCH, sulfur derived and silcon series compounds.

Centek Laboratories, LLC Terms and Conditions

Sample Submission

All samples sent to Centek Laboratories should be accompanied by our Request for Analysis Form or Chain of Custody Form. A Chain of Custody will be provided with each order shipped for all sampling events, or if needed, one is available at our website www.CentekLabs.com. Samples received after 3:00pm are considered to be a part of the next day's business.

Sample Media

Samples can be collected in an canister or a Tedlar bag. Depending on your analytical needs, Centek Laboratories may receive a bulk, liquid, soil or other matrix sample for headspace analysis.

Blanks

Every sample is run with a surrogate or tracer compound at a pre-established concentration. The surrogate compound run with each sample is used as a standard to measure the performance of each run of the instrument. If required, a Minican can be provided containing nitrogen to be run as a trip blank with your samples.

Sampling Equipment

Centek Laboratories will be happy to provide the canisters to carry-out your sampling event at no charge. The necessary accessories, such as regulators, tubing or personal sampling belts, are also provided to meet your sampling needs. The customer is responsible for all shipping charges to the client's destination and return shipping to the laboratory. Client assumes all responsibility for lost, stolen and any dameges of equipment.

Turn Around time (TAT)

Centek Laboratories will provide results to its clients in one business-week by 6:00pm EST after receipt of samples. For example, if samples are received on a Monday they are due on the following Monday by 6:00pm EST. Results are faxed or emailed to the requested location indicated on the Chain of Custody. Non-routine analysis may require more than the one business-week turnaround time. Please confirm non-routine sample turnaround times.

Reporting

Results are emailed or faxed at no additional charge. A hard copy of the result report is mailed within 24 hours of the faxing or emailing of your results. Cat "B" like packages are within 3-4 weeks from time of analysis. Standard Electronic Disk Deliverables (EDD) is also available at no additional charge.

Payment Terms

Payment for all purchases shall be due within 30 days from date of invoice. The client agrees to pay a finance charge of 1.5% per month on the overdue balance and cost of collection, including attorney fees, if collection proceedings are necessary. You must have a completed credit application on file to extend credit. Purchase orders or checks information must be submitted for us to release results

Rush Turnaround Samples

Expedited turn around times is available. Please confirm rush turnaround times with Client Services before submitting samples.

Applicable Surcharges for Rush Turnaround Samples:
Same day TAT = 200%
Next business day TAT by Noon = 150%
Next business day TAT by 6:00pm = 100%
Second business day TAT by 6:00pm = 75%
Third business day TAT by 6:00pm = 50%
Fourth business day TAT by 6:00pm = 35%
Fifth business day = Standard

Statement of Confidentiality

Centek Laboratories, LLC is aware of the importance of the confidentiality of results to many of our clients. Your name and data will be held in the strictest of confidence. We will not accept business that may constitute a conflict of interest. We commonly sign Confidential Nondisclosure Agreements with clients prior to beginning work. All research, results and reports will be kept strictly confidential. Secrecy Agreements and Disclosure Statements will be signed for the client if so specified. Results will be provided only to the addressee specified on the Chain of Custody Form submitted with the samples unless law requires release. Written permission is required from the addressee to release results to any other party.

Limitation on Liability

Centek Laboratories, LLC warrants the test results to be accurate to the methodology and sample type for each sample submitted to Centek Laboratories, LLC. In no event shall Centek Laboratories, LLC be liable for direct, indirect, special, punitive, incidental, exemplary or consequential damages, or any damages whatsoever, even if Centek Laboratories, LLC has been previously advised of the possibility of such damages whether in an action under contract, negligence, or any other theory, arising out of or in connection with the use, inability to use or performance of the information, services, products and materials available from the laboratory or this site. These limitations shall apply notwithstanding any failure of essential purpose of any limited remedy. Because some jurisdictions do not allow limitations on how long an implied warranty lasts, or the exclusion or limitation of liability for consequential or incidental damages, the above limitations may not apply to you. This is a comprehensive limitation of liability that applies to all damages of any kind, including (without limitation) compensatory,

direct, indirect or consequential damages, loss of data, income or profit and or loss of or damage to property and claims of third parties.

ASP CAT B DELIVERABLE PACKAGE
Table of Contents

CENTEK LABORATORIES, LLC

Date: *27-Apr-16*

CLIENT: LaBella Associates, P.C.

Project: FESL Emerson Landfill

Lab Order: C1603075

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Centek Laboratories, LLC SOP TS-80
Compendium of Methods for the Determination of Toxic Organic Compounds, Compendium Method TO-15, January 1999

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objective except as indicated in the corrective action report(s). All samples were received and analyzed within the EPA recommended holding times. Test results are not Method Blank (MB) corrected for contamination.

NYSDEC ASP samples:
Canisters should be evacuated to a reading of less than or equal to 50 millitorr prior to shipment to sampling personnel. The vacuum in the canister will be field checked prior to sampling, and must read 28" of Hg (±2", vacuum, absolute) before a sample can be collected. After the sample has been collected, the pressure of the canister will be read and recorded again, and must be 5" of Hg (±1", vacuum, absolute) for the sample to be valid. Once received at the laboratory, the canister vacuum should be confirmed to be 5" of Hg,±1". Please record and report the pressure/vacuum of received canisters on the sample receipt paperwork. A pressure/vacuum reading should also be taken just prior to the withdrawal of sample from the canister, and recorded on the sample preparation log sheet. All regulators are calibrated to meet these requirements before they leave the laboratory. However, due to environmental conditions and use of the equipment Centek can not guarantee that this criteria can always be achieved.

Centek Chain of Custody

Centek Laboratories
143 Midler Park Drive
Syracuse, NY 13206
315-431-9730
www.CentekLabs.com
Vapor Intrusion & IAQ

Site Name: FESL
Project: EMERSON LANDFILL
PO#: 210173
Quote #: Q-39/180567?
Other:

Detection Limit	Report Level
☐ 5ppbv	☐ Level I
☒ 1ug/M3	☐ Level II
☐ 1ug/M3 +TCE .25	☐ Cat "B" Like

TAT Turnaround Time:	Check One	Rush TAT Surcharge %	Due Date:
5 Business Days	☒	0%	
4 Business Days	☐	25%	
3 Business Days	☐	50%	
2 Business Days	☐	75%	
*Next Day by 5pm	☐	100%	
*Next Day by Noon	☐	150%	
*Same Day	☐	200%	

*For Same and Next Day TAT Please Notify Lab

Company: LaBella Assoc. DPC

Report to:
Address: 300 State Street
City, State, Zip: Rochester, NY 14614
Email: dnoll@labellapc.com
Phone: (585) 454-6110

Company:
Check Here If Same: ☒

Invoice to:
Address: SAME
City, State, Zip:
Email:
Phone:

Sample ID	Date Sampled	Canister Number	Regulator Number	Analysis Request	Comments	Vacuum Start/Stop ("Hg)
1645-SVI-1	3/26/2016	507	301	select list		30"+/2"
1645-IAQ-1	↓	93	1165	VOCs by		30"/2"
1645-SVI-2		332	387	TO-15		30"/2"
1645-IAQ-2		483	438	↓	MS/MSD	28"/1.5
OUTDOOR-1645	↓	1178	174			30"+/2.75"

Chain of Custody	Print Name	Signature	Date/Time	Courier: CIRCLE ONE
Sampled by:	Kyle R. Miller	Kyle R. Miller	3/28/16	FedEx UPS Pickup/Dropoff
Relinquished by:				For LAB USE ONLY
Received at Lab by:	Jay Scala		3-29-16	Work Order # C1603075

*** By signing Centek Labs Chain of Custody, you are accepting Centek Labs Terms and Conditions listed on the reverse side.

Centek Laboratories

CENTEK LABORATORIES, LLC

Date: *27-Apr-16*

CLIENT: LaBella Associates, P.C.
Project: FESL Emerson Landfill
Lab Order: C1603075

Work Order Sample Summary

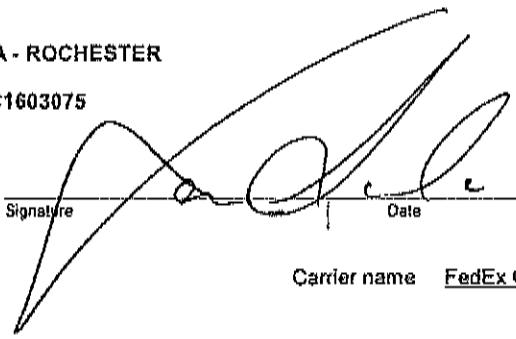
Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
C1603075-001A	1645-SVI-1	567,301	3/26/2016	3/29/2016
C1603075-002A	1645-IAQ-1	93,1165	3/26/2016	3/29/2016
C1603075-003A	1645-SVI-2	332,387	3/26/2016	3/29/2016
C1603075-004A	1645-IAQ-2	483,438	3/26/2016	3/29/2016
C1603075-005A	Outdoor-1645	1178,174	3/26/2016	3/29/2016

CENTEK LABORATORIES, LLC

Sample Receipt Checklist

Client Name LABELLA - ROCHESTER | Date and Time Receive 3/29/2016

Work Order Numbe C1603075 | Received by JDS

Checklist completed by  3-29-16 (Signature / Date) | Reviewed by GD 3/29/16 (Initials / Date)

Matrix: | Carrier name FedEx Ground

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Presen ☐
Custody seals intact on shippping container/cooler?	Yes ☐	No ☐	Not Presen ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Presen ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Water - VOA vials have zero headspace?	No VOA vials submitted ☑	Yes ☐	No ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☑	

Adjusted? _____ Checked b _____

Any No and/or NA (not applicable) response must be detailed in the comments section be

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

Lab Order: C1603075
Client: LaBella Associates, P.C.
Project: FESL Emerson Landfill

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
C1603075-001A	1645-SVI-1	3/26/2016	Air	1ug/M3 by Method TO15			4/1/2016
				1ug/M3 by Method TO15			4/1/2016
C1603075-002A	1645-IAQ-1			1ug/m3 w/ 0.25ug/M3 CT-TCE-VC			4/1/2016
C1603075-003A	1645-SVI-2			1ug/M3 by Method TO15			4/1/2016
C1603075-004A	1645-IAQ-2			1ug/m3 w/ 0.25ug/M3 CT-TCE-VC			3/31/2016
C1603075-005A	Outdoor-1645			1ug/m3 w/ 0.25ug/M3 CT-TCE-VC			4/1/2016

CANISTER ORDER

CENTEK LABORATORIES, LLC
Air Quality Testing...It's a Gas
143 Midler Park Drive * Syracuse, NY 13206
TEL: 315-431-9730 * FAX: 315-431-9731

5692
27-Apr-16

SHIPPED TO:

Company: LaBella Associates, P.C.
Contact: Ann Aquilina
Address: 300 State Street, Suite 201
Rochester, NY 14614
Phone: (585) 454-6110
Quote ID: 0
Project:
PO: Emerson Landfill

Submitted By:
MadeBy: rjp
Ship Date: 3/16/2016
VIA: FedEx Ground
Due Date: 3/17/2016

Bottle Code	Bottle Type	TEST(s)	QTY
MC1400CC	1.4L Mini-Can	1ug/M3 by Method TO15	1
MC1000CC	1L Mini-Can	1ug/M3 by Method TO15	22
DOME	Encloser Dome	Helium Leak Test	2

Can / Reg ID	Description
89	1L Mini-Can - 1090 VI
93	1L Mini-Can - 1109 VI
128	1L Mini-Can - 1076 VI
131	1L Mini-Can - 1079 VI
136	1L Mini-Can - 1110 VI
139	1L Mini-Can - 1113 VI
141	1L Mini-Can - 1115 VI
174	Time-Set Reg - 659 VI
187	Time-Set Reg - 625 VI
188	1L Mini-Can - 1143 VI
192	1L Mini-Can - 1147 VI
223	1L Mini-Can - 1185 VI
249	Time-Set Reg - 687 VI
258	Time-Set Reg - 696 VI
266	Time-Set Reg - 704 VI
286	1L Mini-Can - 1262 VI
292	Time-Set Reg - 715 VI
296	Time-Set Reg - 719 VI
297	Time-Set Reg - 720 VI
301	Time-Set Reg - 724 VI
308	Time-Set Reg - 809R VI
332	1L Mini-Can - 1295 VI
339	Time-Set Reg - 736 VI
342	Time-Set Reg - 739 VI
343	Time-Set Reg - 740 VI
366	1L Mini-Can - 1315 VI
387	Time-Set Reg - 761 VI
388	Time-Set Reg - 762 VI
419	1L Mini-Can - 1343 VI
447	Time-Set Reg - 826 VI
465	1L Mini-Can - 1369 VI

SHIPPED TO:

Company:	LaBella Associates, P.C.	Submitted By:	
Contact:	Ann Aquilina	MadeBy:	rjp
Address:	300 State Street, Suite 201 Rochester, NY 14614	Ship Date:	3/16/2016
Phone:	(585) 454-6110	VIA:	FedEx Ground
Quote ID:	0	Due Date:	3/17/2016
Project:			
PO:	Emerson Landfill		

Bottle Code	Bottle Type	TEST(s)	QTY
564	1L Mini-Can - 135 VI		
567	1L Mini-Can - 136 VI		
1157	Time-Set Reg-VI		
1160	Time-Set Reg-0673 VI		
1165	Time-Set Reg-0678 VI		
1166	Time-Set Reg-0791 VI		
1178	1L Mini-Can - 1236 VI		
1179	1L Mini-Can - 1249 VI		
1183	1L Mini-Can - 1250 VI		
1193	1L Mini-Can - 1246 VI		
1195	1L Mini-Can - 1254 VI		
1320	1.4L Mini-Can - 1197 VI		

Comments: 20 1L @ 6hr + 2 dupe + 1.4L @ 6hr + 10'tubing + 2 dome (updated) wac 021916 j-k, 030816 a-f

GC/MS-Whole Air Calculations

Relative Response Factor (RRF)

$$RRF = \frac{Ax * Cis}{Ais * Cx}$$

where: Ax = area of the characteristic ion for the compound being measured
Ais = area of the characteristic ion for the specific internal standard of the compound being measured
Cx = concentration of the compound being measured (ppbv)
Cis = concentration of the internal standard (ppbv)

Percent Relative Standard Deviation (%RSD)

$$\% RSD = \frac{\text{Standard deviation of RRF values} * 100}{\text{mean RRF}}$$

Percent Difference (%D)

$$\% D = \frac{(RRFc - \text{mean } RRFi) * 100}{\text{mean } RRFi}$$

where: RRFc = relative response factor from the continuing calibration
mean RRFi = mean relative response factor from the initial calibration

Sample Calculations

$$ppbv = \frac{Ax * Is * Df}{Ais * RRF}$$

where: Ax = area of the characteristic ion for the compound being measured
Ais = area of the characteristic ion for the specific internal standard of the compound being measured
Is = Concentration of the internal standard injected (ppbv)
RRF= relative response factor for the compound being measured
Df = Dilution factor

GC/MS VOLATILES-WHOLE AIR

METHOD TO-15

ANALYTICAL RESULTS

Centek Laboratories, LLC

Date: *26-Apr-16*

CLIENT:	LaBella Associates, P.C.	**Client Sample ID:**	1645-SVI-1
Lab Order:	C1603075	**Tag Number:**	567,301
Project:	FESL Emerson Landfill	**Collection Date:**	3/26/2016
Lab ID:	C1603075-001A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS		FLD				Analyst:
Lab Vacuum In	-2			"Hg		3/29/2016
Lab Vacuum Out	-30			"Hg		3/29/2016
1UG/M3 BY METHOD TO15		TO-15				Analyst: RJP
1,1,1-Trichloroethane	< 0.15	0.15		ppbV	1	4/1/2016 8:10:00 AM
1,1-Dichloroethane	< 0.15	0.15		ppbV	1	4/1/2016 8:10:00 AM
1,1-Dichloroethene	< 0.15	0.15		ppbV	1	4/1/2016 8:10:00 AM
Chloroethane	< 0.15	0.15		ppbV	1	4/1/2016 8:10:00 AM
Chloromethane	< 0.15	0.15		ppbV	1	4/1/2016 8:10:00 AM
cis-1,2-Dichloroethene	0.66	0.15		ppbV	1	4/1/2016 8:10:00 AM
Tetrachloroethylene	< 0.15	0.15		ppbV	1	4/1/2016 8:10:00 AM
trans-1,2-Dichloroethene	< 0.15	0.15		ppbV	1	4/1/2016 8:10:00 AM
Trichloroethene	2.3	0.30		ppbV	2	4/1/2016 1:59:00 PM
Vinyl chloride	< 0.15	0.15		ppbV	1	4/1/2016 8:10:00 AM
Surr: Bromofluorobenzene	83.0	70-130		%REC	1	4/1/2016 8:10:00 AM

Qualifiers:

**	Reporting Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *26-Apr-16*

CLIENT:	LaBella Associates, P.C.	**Client Sample ID:**	1645-SVI-1
Lab Order:	C1603075	**Tag Number:**	567,301
Project:	FESL Emerson Landfill	**Collection Date:**	3/26/2016
Lab ID:	C1603075-001A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		**TO-15**				Analyst: RJP
1,1,1-Trichloroethane	< 0.82	0.82		ug/m3	1	4/1/2016 8:10:00 AM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	4/1/2016 8:10:00 AM
1,1-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 8:10:00 AM
Chloroethane	< 0.40	0.40		ug/m3	1	4/1/2016 8:10:00 AM
Chloromethane	< 0.31	0.31		ug/m3	1	4/1/2016 8:10:00 AM
cis-1,2-Dichloroethene	2.6	0.59		ug/m3	1	4/1/2016 8:10:00 AM
Tetrachloroethylene	< 1.0	1.0		ug/m3	1	4/1/2016 8:10:00 AM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 8:10:00 AM
Trichloroethene	13	1.6		ug/m3	2	4/1/2016 1:59:00 PM
Vinyl chloride	< 0.38	0.38		ug/m3	1	4/1/2016 8:10:00 AM

Qualifiers:

**	Reporting Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *26-Apr-16*

CLIENT:	LaBella Associates, P.C.	**Client Sample ID:**	1645-IAQ-1
Lab Order:	C1603075	**Tag Number:**	93,1165
Project:	FESL Emerson Landfill	**Collection Date:**	3/26/2016
Lab ID:	C1603075-002A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS		FLD				Analyst:
Lab Vacuum In	-2			"Hg		3/29/2016
Lab Vacuum Out	-30			"Hg		3/29/2016
1UG/M3 W/ 0.25UG/M3 CT-TCE-VC		TO-15				Analyst: RJP
1,1,1-Trichloroethane	< 0.15	0.15		ppbV	1	4/1/2016 1:04:00 AM
1,1-Dichloroethane	< 0.15	0.15		ppbV	1	4/1/2016 1:04:00 AM
1,1-Dichloroethene	< 0.15	0.15		ppbV	1	4/1/2016 1:04:00 AM
Chloroethane	< 0.15	0.15		ppbV	1	4/1/2016 1:04:00 AM
Chloromethane	< 0.15	0.15		ppbV	1	4/1/2016 1:04:00 AM
cis-1,2-Dichloroethene	< 0.15	0.15		ppbV	1	4/1/2016 1:04:00 AM
Tetrachloroethylene	< 0.15	0.15		ppbV	1	4/1/2016 1:04:00 AM
trans-1,2-Dichloroethene	< 0.15	0.15		ppbV	1	4/1/2016 1:04:00 AM
Trichloroethene	0.070	0.040		ppbV	1	4/1/2016 1:04:00 AM
Vinyl chloride	< 0.040	0.040		ppbV	1	4/1/2016 1:04:00 AM
Surr: Bromofluorobenzene	122	70-130		%REC	1	4/1/2016 1:04:00 AM

Qualifiers:

**	Reporting Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *26-Apr-16*

CLIENT:	LaBella Associates, P.C.	**Client Sample ID:**	1645-IAQ-1
Lab Order:	C1603075	**Tag Number:**	93,1165
Project:	FESL Emerson Landfill	**Collection Date:**	3/26/2016
Lab ID:	C1603075-002A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.25UG/M3 CT-TCE-VC		TO-15				Analyst: RJP
1,1,1-Trichloroethane	< 0.82	0.82		ug/m3	1	4/1/2016 1:04:00 AM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	4/1/2016 1:04:00 AM
1,1-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 1:04:00 AM
Chloroethane	< 0.40	0.40		ug/m3	1	4/1/2016 1:04:00 AM
Chloromethane	< 0.31	0.31		ug/m3	1	4/1/2016 1:04:00 AM
cis-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 1:04:00 AM
Tetrachloroethylene	< 1.0	1.0		ug/m3	1	4/1/2016 1:04:00 AM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 1:04:00 AM
Trichloroethene	0.38	0.21		ug/m3	1	4/1/2016 1:04:00 AM
Vinyl chloride	< 0.10	0.10		ug/m3	1	4/1/2016 1:04:00 AM

Qualifiers:

**	Reporting Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *26-Apr-16*

CLIENT:	LaBella Associates, P.C.	**Client Sample ID:**	1645-SVI-2
Lab Order:	C1603075	**Tag Number:**	332,387
Project:	FESL Emerson Landfill	**Collection Date:**	3/26/2016
Lab ID:	C1603075-003A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS		FLD				Analyst:
Lab Vacuum In	-2			"Hg		3/29/2016
Lab Vacuum Out	-30			"Hg		3/29/2016
1UG/M3 BY METHOD TO15		TO-15				Analyst: RJP
1,1,1-Trichloroethane	< 0.15	0.15		ppbV	1	4/1/2016 8:49:00 AM
1,1-Dichloroethane	< 0.15	0.15		ppbV	1	4/1/2016 8:49:00 AM
1,1-Dichloroethene	< 0.15	0.15		ppbV	1	4/1/2016 8:49:00 AM
Chloroethane	< 0.15	0.15		ppbV	1	4/1/2016 8:49:00 AM
Chloromethane	< 0.15	0.15		ppbV	1	4/1/2016 8:49:00 AM
cis-1,2-Dichloroethene	< 0.15	0.15		ppbV	1	4/1/2016 8:49:00 AM
Tetrachloroethylene	< 0.15	0.15		ppbV	1	4/1/2016 8:49:00 AM
trans-1,2-Dichloroethene	< 0.15	0.15		ppbV	1	4/1/2016 8:49:00 AM
Trichloroethene	0.17	0.15		ppbV	1	4/1/2016 8:49:00 AM
Vinyl chloride	< 0.15	0.15		ppbV	1	4/1/2016 8:49:00 AM
Surr: Bromofluorobenzene	128	70-130		%REC	1	4/1/2016 8:49:00 AM

Qualifiers:

**	Reporting Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *26-Apr-16*

CLIENT:	LaBella Associates, P.C.	**Client Sample ID:**	1645-SVI-2
Lab Order:	C1603075	**Tag Number:**	332,387
Project:	FESL Emerson Landfill	**Collection Date:**	3/26/2016
Lab ID:	C1603075-003A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		TO-15				Analyst: RJP
1,1,1-Trichloroethane	< 0.82	0.82		ug/m3	1	4/1/2016 8:49:00 AM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	4/1/2016 8:49:00 AM
1,1-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 8:49:00 AM
Chloroethane	< 0.40	0.40		ug/m3	1	4/1/2016 8:49:00 AM
Chloromethane	< 0.31	0.31		ug/m3	1	4/1/2016 8:49:00 AM
cis-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 8:49:00 AM
Tetrachloroethylene	< 1.0	1.0		ug/m3	1	4/1/2016 8:49:00 AM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 8:49:00 AM
Trichloroethene	0.91	0.81		ug/m3	1	4/1/2016 8:49:00 AM
Vinyl chloride	< 0.38	0.38		ug/m3	1	4/1/2016 8:49:00 AM

Qualifiers:

**	Reporting Limit
B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
JN	Non-routine analyte. Quantitation estimated.
S	Spike Recovery outside accepted recovery limits
.	Results reported are not blank corrected
E	Value above quantitation range
J	Analyte detected at or below quantitation limits
ND	Not Detected at the Reporting Limit

Centek Laboratories, LLC

Date: *26-Apr-16*

CLIENT:	LaBella Associates, P.C.	**Client Sample ID:**	1645-IAQ-2
Lab Order:	C1603075	**Tag Number:**	483,438
Project:	FESL Emerson Landfill	**Collection Date:**	3/26/2016
Lab ID:	C1603075-004A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS		FLD				Analyst:
Lab Vacuum In	-2			"Hg		3/29/2016
Lab Vacuum Out	-30			"Hg		3/29/2016
1UG/M3 W/ 0.25UG/M3 CT-TCE-VC		TO-15				Analyst: RJP
1,1,1-Trichloroethane	< 0.15	0.15		ppbV	1	3/31/2016 11:01:00 PM
1,1-Dichloroethane	< 0.15	0.15		ppbV	1	3/31/2016 11:01:00 PM
1,1-Dichloroethene	< 0.15	0.15		ppbV	1	3/31/2016 11:01:00 PM
Chloroethane	< 0.15	0.15		ppbV	1	3/31/2016 11:01:00 PM
Chloromethane	< 0.15	0.15		ppbV	1	3/31/2016 11:01:00 PM
cis-1,2-Dichloroethene	< 0.15	0.15		ppbV	1	3/31/2016 11:01:00 PM
Tetrachloroethylene	< 0.15	0.15		ppbV	1	3/31/2016 11:01:00 PM
trans-1,2-Dichloroethene	< 0.15	0.15		ppbV	1	3/31/2016 11:01:00 PM
Trichloroethene	< 0.040	0.040		ppbV	1	3/31/2016 11:01:00 PM
Vinyl chloride	< 0.040	0.040		ppbV	1	3/31/2016 11:01:00 PM
Surr: Bromofluorobenzene	125	70-130		%REC	1	3/31/2016 11:01:00 PM

Qualifiers:

**	Reporting Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *26-Apr-16*

CLIENT:	LaBella Associates, P.C.	**Client Sample ID:**	1645-IAQ-2
Lab Order:	C1603075	**Tag Number:**	483,438
Project:	FESL Emerson Landfill	**Collection Date:**	3/26/2016
Lab ID:	C1603075-004A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.25UG/M3 CT-TCE-VC		TO-15				Analyst: RJP
1,1,1-Trichloroethane	< 0.82	0.82		ug/m3	1	3/31/2016 11:01:00 PM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	3/31/2016 11:01:00 PM
1,1-Dichloroethene	< 0.59	0.59		ug/m3	1	3/31/2016 11:01:00 PM
Chloroethane	< 0.40	0.40		ug/m3	1	3/31/2016 11:01:00 PM
Chloromethane	< 0.31	0.31		ug/m3	1	3/31/2016 11:01:00 PM
cis-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	3/31/2016 11:01:00 PM
Tetrachloroethylene	< 1.0	1.0		ug/m3	1	3/31/2016 11:01:00 PM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	3/31/2016 11:01:00 PM
Trichloroethene	< 0.21	0.21		ug/m3	1	3/31/2016 11:01:00 PM
Vinyl chloride	< 0.10	0.10		ug/m3	1	3/31/2016 11:01:00 PM

Qualifiers:

**	Reporting Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *26-Apr-16*

CLIENT:	LaBella Associates, P.C.	**Client Sample ID:**	Outdoor-1645
Lab Order:	C1603075	**Tag Number:**	1178,174
Project:	FESL Emerson Landfill	**Collection Date:**	3/26/2016
Lab ID:	C1603075-005A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS		FLD				Analyst:
Lab Vacuum In	-3			"Hg		3/29/2016
Lab Vacuum Out	-30			"Hg		3/29/2016
1UG/M3 W/ 0.25UG/M3 CT-TCE-VC		TO-15				Analyst: RJP
1,1,1-Trichloroethane	< 0.15	0.15		ppbV	1	4/1/2016 1:43:00 AM
1,1-Dichloroethane	< 0.15	0.15		ppbV	1	4/1/2016 1:43:00 AM
1,1-Dichloroethene	< 0.15	0.15		ppbV	1	4/1/2016 1:43:00 AM
Chloroethane	< 0.15	0.15		ppbV	1	4/1/2016 1:43:00 AM
Chloromethane	0.87	0.15		ppbV	1	4/1/2016 1:43:00 AM
cis-1,2-Dichloroethene	< 0.15	0.15		ppbV	1	4/1/2016 1:43:00 AM
Tetrachloroethylene	0.16	0.15		ppbV	1	4/1/2016 1:43:00 AM
trans-1,2-Dichloroethene	< 0.15	0.15		ppbV	1	4/1/2016 1:43:00 AM
Trichloroethene	0.17	0.040		ppbV	1	4/1/2016 1:43:00 AM
Vinyl chloride	< 0.040	0.040		ppbV	1	4/1/2016 1:43:00 AM
Surr: Bromofluorobenzene	108	70-130		%REC	1	4/1/2016 1:43:00 AM

Qualifiers:

**	Reporting Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *26-Apr-16*

CLIENT:	LaBella Associates, P.C.	**Client Sample ID:**	Outdoor-1645
Lab Order:	C1603075	**Tag Number:**	1178,174
Project:	FESL Emerson Landfill	**Collection Date:**	3/26/2016
Lab ID:	C1603075-005A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.25UG/M3 CT-TCE-VC		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	< 0.82	0.82		ug/m3	1	4/1/2016 1:43:00 AM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	4/1/2016 1:43:00 AM
1,1-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 1:43:00 AM
Chloroethane	< 0.40	0.40		ug/m3	1	4/1/2016 1:43:00 AM
Chloromethane	1.8	0.31		ug/m3	1	4/1/2016 1:43:00 AM
cis-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 1:43:00 AM
Tetrachloroethylene	1.1	1.0		ug/m3	1	4/1/2016 1:43:00 AM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 1:43:00 AM
Trichloroethene	0.91	0.21		ug/m3	1	4/1/2016 1:43:00 AM
Vinyl chloride	< 0.10	0.10		ug/m3	1	4/1/2016 1:43:00 AM

Qualifiers:

**	Reporting Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

GC/MS VOLATILES-WHOLE AIR

METHOD TO-15

QUALITY CONTROL SUMMARY

CENTEK LABORATORIES, LLC

Date: 26-Apr-16

QC SUMMARY REPORT
SURROGATE RECOVERIES

CLIENT: LaBella Associates, P.C.
Work Order: C1603075
Project: FESL Emerson Landfill
Test No: TO-15 **Matrix:** A

Sample ID	BR4FBZ
ALCS1UG-033116	115
ALCS1UG-040116	116
ALCS1UGD-033116	118
ALCS1UGD-040116	108
AMB1UG-033116	88.0
AMB1UG-040116	91.0
C1603075-001A	83.0
C1603075-002A	122
C1603075-003A	128
C1603075-004A	125
C1603075-004A MS	116
C1603075-004A MSD	107
C1603075-005A	108

Acronym		Surrogate	QC Limits
BR4FBZ	=	Bromofluorobenzene	70-130

* Surrogate recovery outside acceptance limits

GC/MS QA-QC Check Report

Tune File : C:\HPCHEM\1\DATA2\AN033104.D
Tune Time : 31 Mar 2016 12:19 pm

Daily Calibration File : C:\HPCHEM\1\DATA2\AN033104.D

			(BFB)	(IS1)	(IS2)	(IS3)
				21478	48888	36495
File	Sample	DL	Surrogate Recovery %	Internal Standard Responses		
AN033105.D	ALCS1UG-033116		115	20235	53595	32893
AN033106.D	AMB1UG-033116		88	20032	47930	44161
AN033121.D	C1603075-004A		125	18446	48996	28479
AN033122.D	C1603075-004A MS		116	22331	56616	32647
AN033123.D	C1603075-004A MSD		107	23633	65314	36439
AN033124.D	C1603075-002A		122	19820	53432	33425
AN033125.D	C1603075-005A		108	16834	44868	47627
AN033133.D	ALCS1UGD-033116		118	22710	52964	34225
AN033134.D	C1603075-001A		83	17132	53087	40047
AN033135.D	C1603075-003A		128	23254	62475	44101

t - fails 24hr time check * - fails criteria

Created: Tue Apr 26 15:33:02 2016 MSD #1/

GC/MS QA-QC Check Report

Tune File : C:\HPCHEM\1\DATA\AN040102.D
Tune Time : 1 Apr 2016 12:06 pm

Daily Calibration File : C:\HPCHEM\1\DATA\AN040102.D

			(BFB)	(IS1)	(IS2)	(IS3)
				20214	45908	32719
File	Sample	DL	Surrogate Recovery %	Internal Standard Responses		
AN040103.D	ALCS1UG-040116		116	20858	46019	31397
AN040104.D	AMB1UG-040116		91	18252	46023	41257
AN040105.D	C1603075-001A 2X		103	16216	51303	38793
AN040125.D	ALCS1UGD-040116		108	20437	45874	33404

t - fails 24hr time check * - fails criteria

Created: Tue Apr 26 15:34:25 2016 MSD #1/

CENTEK LABORATORIES, LLC

Date: *26-Apr-16*

ANALYTICAL QC SUMMARY REPORT

CLIENT: LaBella Associates, P.C.
Work Order: C1603075
Project: FESL Emerson Landfill

TestCode: 0.25CT-TCE-VC

Sample ID: ALCS1UG-033116	SampType: LCS	TestCode: 0.25CT-TCE-	Units: ppbV	Prep Date:	RunNo: 10817
Client ID: ZZZZZ	Batch ID: R10817	TestNo: TO-15		Analysis Date: 3/31/2016	SeqNo: 127096

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	1.250	0.15	1	0	125	70	130				
1,1-Dichloroethane	1.120	0.15	1	0	112	70	130				
1,1-Dichloroethene	1.120	0.15	1	0	112	70	130				
Chloroethane	1.220	0.15	1	0	122	70	130				
Chloromethane	1.230	0.15	1	0	123	70	130				
cis-1,2-Dichloroethene	1.060	0.15	1	0	106	70	130				
Tetrachloroethylene	0.9200	0.15	1	0	92.0	70	130				
trans-1,2-Dichloroethene	1.050	0.15	1	0	105	70	130				
Trichloroethene	1.110	0.040	1	0	111	70	130				
Vinyl chloride	1.090	0.040	1	0	109	70	130				

Sample ID: ALCS1UG-040116	SampType: LCS	TestCode: 0.25CT-TCE-	Units: ppbV	Prep Date:	RunNo: 10818
Client ID: ZZZZZ	Batch ID: R10818	TestNo: TO-15		Analysis Date: 4/1/2016	SeqNo: 127113

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	1.290	0.15	1	0	129	70	130				
1,1-Dichloroethane	1.040	0.15	1	0	104	70	130				
1,1-Dichloroethene	1.100	0.15	1	0	110	70	130				
Chloroethane	1.130	0.15	1	0	113	70	130				
Chloromethane	1.230	0.15	1	0	123	70	130				
cis-1,2-Dichloroethene	0.9800	0.15	1	0	98.0	70	130				
Tetrachloroethylene	0.8800	0.15	1	0	88.0	70	130				
trans-1,2-Dichloroethene	0.9900	0.15	1	0	99.0	70	130				
Trichloroethene	1.230	0.040	1	0	123	70	130				

Qualifiers:

.	Results reported are not blank corrected	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected at or below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike Recovery outside accepted recovery limits				

CLIENT: LaBella Associates, P.C.
Work Order: C1603075
Project: FESL Emerson Landfill

TestCode: 0.25CT-TCE-VC

Sample ID	ALCS1UG-040116	SampType:	LCS	TestCode:	0.25CT-TCE-	Units:	ppbV	Prep Date:		RunNo:	10818
Client ID:	ZZZZZ	Batch ID:	R10818	TestNo:	TO-15			Analysis Date:	4/1/2016	SeqNo:	127113

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	1.100	0.040	1	0	110	70	130				

Qualifiers:

.	Results reported are not blank corrected	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected at or below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike Recovery outside accepted recovery limits				

CENTEK LABORATORIES, LLC

Date: *26-Apr-16*

ANALYTICAL QC SUMMARY REPORT

CLIENT: LaBella Associates, P.C.
Work Order: C1603075
Project: FESL Emerson Landfill

TestCode: 0.25CT-TCE-VC

Sample ID **ALCS1UGD-033116** SampType: **LCSD** TestCode: **0.25CT-TCE-** Units: **ppbV** Prep Date: RunNo: **10817**
Client ID: **ZZZZZ** Batch ID: **R10817** TestNo: **TO-15** Analysis Date: **4/1/2016** SeqNo: **127097**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	1.280	0.15	1	0	128	70	130	1.25	2.37	30	
1,1-Dichloroethane	1.040	0.15	1	0	104	70	130	1.12	7.41	30	
1,1-Dichloroethene	1.120	0.15	1	0	112	70	130	1.12	0	30	
Chloroethane	1.250	0.15	1	0	125	70	130	1.22	2.43	30	
Chloromethane	1.210	0.15	1	0	121	70	130	1.23	1.64	30	
cis-1,2-Dichloroethene	1.010	0.15	1	0	101	70	130	1.06	4.83	30	
Tetrachloroethylene	0.9000	0.15	1	0	90.0	70	130	0.92	2.20	30	
trans-1,2-Dichloroethene	1.000	0.15	1	0	100	70	130	1.05	4.88	30	
Trichloroethene	1.150	0.040	1	0	115	70	130	1.11	3.54	30	
Vinyl chloride	1.050	0.040	1	0	105	70	130	1.09	3.74	30	

Sample ID **ALCS1UGD-040116** SampType: **LCSD** TestCode: **0.25CT-TCE-** Units: **ppbV** Prep Date: RunNo: **10818**
Client ID: **ZZZZZ** Batch ID: **R10818** TestNo: **TO-15** Analysis Date: **4/2/2016** SeqNo: **127114**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	1.280	0.15	1	0	128	70	130	1.29	0.778	30	
1,1-Dichloroethane	1.040	0.15	1	0	104	70	130	1.04	0	30	
1,1-Dichloroethene	1.100	0.15	1	0	110	70	130	1.1	0	30	
Chloroethane	1.240	0.15	1	0	124	70	130	1.13	9.28	30	
Chloromethane	1.230	0.15	1	0	123	70	130	1.23	0	30	
cis-1,2-Dichloroethene	0.9400	0.15	1	0	94.0	70	130	0.98	4.17	30	
Tetrachloroethylene	0.8300	0.15	1	0	83.0	70	130	0.88	5.85	30	
trans-1,2-Dichloroethene	0.9600	0.15	1	0	96.0	70	130	0.99	3.08	30	
Trichloroethene	1.210	0.040	1	0	121	70	130	1.23	1.64	30	

Qualifiers:
. Results reported are not blank corrected
J Analyte detected at or below quantitation limits
S Spike Recovery outside accepted recovery limits
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits

CLIENT: LaBella Associates, P.C.
Work Order: C1603075
Project: FESL Emerson Landfill

TestCode: 0.25CT-TCE-VC

Sample ID	ALCS1UGD-040116	SampType:	LCSD	TestCode:	0.25CT-TCE-	Units:	ppbV	Prep Date:		RunNo:	10818
Client ID:	ZZZZZ	Batch ID:	R10818	TestNo:	TO-15			Analysis Date:	4/2/2016	SeqNo:	127114

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	1.070	0.040	1	0	107	70	130	1.1	2.76	30	

Qualifiers:

.	Results reported are not blank corrected	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected at or below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike Recovery outside accepted recovery limits				

CENTEK LABORATORIES, LLC

Date: *26-Apr-16*

ANALYTICAL QC SUMMARY REPORT

CLIENT: LaBella Associates, P.C.
Work Order: C1603075
Project: FESL Emerson Landfill

TestCode: 0.25CT-TCE-VC

Sample ID **AMB1UG-033116** SampType: **MBLK** TestCode: **0.25CT-TCE-** Units: **ppbV** Prep Date: RunNo: **10817**
Client ID: **ZZZZZ** Batch ID: **R10817** TestNo: **TO-15** Analysis Date: **3/31/2016** SeqNo: **127095**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	< 0.15	0.15									
1,1-Dichloroethane	< 0.15	0.15									
1,1-Dichloroethene	< 0.15	0.15									
Chloroethane	< 0.15	0.15									
Chloromethane	< 0.15	0.15									
cis-1,2-Dichloroethene	< 0.15	0.15									
Tetrachloroethylene	< 0.15	0.15									
trans-1,2-Dichloroethene	< 0.15	0.15									
Trichloroethene	< 0.040	0.040									
Vinyl chloride	< 0.040	0.040									

Sample ID **AMB1UG-040116** SampType: **MBLK** TestCode: **0.25CT-TCE-** Units: **ppbV** Prep Date: RunNo: **10818**
Client ID: **ZZZZZ** Batch ID: **R10818** TestNo: **TO-15** Analysis Date: **4/1/2016** SeqNo: **127112**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	< 0.15	0.15									
1,1-Dichloroethane	< 0.15	0.15									
1,1-Dichloroethene	< 0.15	0.15									
Chloroethane	< 0.15	0.15									
Chloromethane	< 0.15	0.15									
cis-1,2-Dichloroethene	< 0.15	0.15									
Tetrachloroethylene	< 0.15	0.15									
trans-1,2-Dichloroethene	< 0.15	0.15									
Trichloroethene	< 0.040	0.040									

Qualifiers:
. Results reported are not blank corrected
J Analyte detected at or below quantitation limits
S Spike Recovery outside accepted recovery limits
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits

CLIENT: LaBella Associates, P.C.
Work Order: C1603075
Project: FESL Emerson Landfill

TestCode: 0.25CT-TCE-VC

Sample ID	AMB1UG-040116	SampType:	MBLK	TestCode:	0.25CT-TCE-	Units:	ppbV	Prep Date:		RunNo:	10818
Client ID:	ZZZZZ	Batch ID:	R10818	TestNo:	TO-15			Analysis Date:	4/1/2016	SeqNo:	127112

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	< 0.040	0.040									

Qualifiers:

.	Results reported are not blank corrected	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected at or below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike Recovery outside accepted recovery limits				

CENTEK LABORATORIES, LLC

Date: *26-Apr-16*

ANALYTICAL QC SUMMARY REPORT

CLIENT: LaBella Associates, P.C.
Work Order: C1603075
Project: FESL Emerson Landfill

TestCode: 0.25CT-TCE-VC

Sample ID **C1603075-004A MS** SampType: **MS** TestCode: **0.25CT-TCE-** Units: **ppbV** Prep Date: RunNo: **10817**
Client ID: **1645-IAQ-2** Batch ID: **R10817** TestNo: **TO-15** Analysis Date: **3/31/2016** SeqNo: **127108**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	1.140	0.15	1	0	114	70	130				
1,1-Dichloroethane	1.060	0.15	1	0	106	70	130				
1,1-Dichloroethene	1.110	0.15	1	0	111	70	130				
Chloroethane	1.140	0.15	1	0	114	70	130				
Chloromethane	1.760	0.15	1	0	176	70	130				S
cis-1,2-Dichloroethene	1.080	0.15	1	0	108	70	130				
Tetrachloroethylene	0.9300	0.15	1	0	93.0	70	130				
trans-1,2-Dichloroethene	1.110	0.15	1	0	111	70	130				
Trichloroethene	1.130	0.040	1	0	113	70	130				
Vinyl chloride	1.020	0.040	1	0	102	70	130				

Sample ID **C1603075-004A MS** SampType: **MSD** TestCode: **0.25CT-TCE-** Units: **ppbV** Prep Date: RunNo: **10817**
Client ID: **1645-IAQ-2** Batch ID: **R10817** TestNo: **TO-15** Analysis Date: **4/1/2016** SeqNo: **127109**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	1.020	0.15	1	0	102	70	130	1.14	11.1	30	
1,1-Dichloroethane	1.080	0.15	1	0	108	70	130	1.06	1.87	30	
1,1-Dichloroethene	1.150	0.15	1	0	115	70	130	1.11	3.54	30	
Chloroethane	1.130	0.15	1	0	113	70	130	1.14	0.881	30	
Chloromethane	1.810	0.15	1	0	181	70	130	1.76	2.80	30	S
cis-1,2-Dichloroethene	1.160	0.15	1	0	116	70	130	1.08	7.14	30	
Tetrachloroethylene	0.9700	0.15	1	0	97.0	70	130	0.93	4.21	30	
trans-1,2-Dichloroethene	1.100	0.15	1	0	110	70	130	1.11	0.905	30	
Trichloroethene	1.100	0.040	1	0	110	70	130	1.13	2.69	30	

Qualifiers:
. Results reported are not blank corrected
J Analyte detected at or below quantitation limits
S Spike Recovery outside accepted recovery limits
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits

CLIENT: LaBella Associates, P.C.
Work Order: C1603075
Project: FESL Emerson Landfill

TestCode: 0.25CT-TCE-VC

Sample ID	C1603075-004A MS	SampType:	MSD	TestCode:	0.25CT-TCE-	Units:	ppbV	Prep Date:		RunNo:	10817
Client ID:	1645-IAQ-2	Batch ID:	R10817	TestNo:	TO-15			Analysis Date:	4/1/2016	SeqNo:	127109

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	0.9900	0.040	1	0	99.0	70	130	1.02	2.99	30	

Qualifiers:

.	Results reported are not blank corrected	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected at or below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike Recovery outside accepted recovery limits				

Name	Amount	IDL#1	IDL#2	IDL#3	IDL#4	IDL#5	IDL#6	IDL#7	Average	StdDev	%Rec	IDL
Propylene	0.15	0.16	0.15	0.16	0.14	0.16	0.14	0.16	0.153	0.010	98.1	0.030
Freon 12	0.15	0.18	0.17	0.17	0.17	0.18	0.17	0.17	0.173	0.005	86.8	0.015
Chloromethane	0.15	0.19	0.18	0.16	0.18	0.18	0.2	0.17	0.180	0.013	83.3	0.041
Freon 114	0.15	0.18	0.17	0.17	0.17	0.18	0.17	0.18	0.174	0.005	86.1	0.017
Vinyl Chloride	0.15	0.17	0.16	0.16	0.15	0.16	0.15	0.15	0.157	0.008	95.5	0.024
Butane	0.15	0.18	0.16	0.17	0.18	0.18	0.19	0.19	0.179	0.011	84.0	0.034
1,3-butadiene	0.15	0.21	0.2	0.2	0.22	0.17	0.18	0.23	0.201	0.021	74.5	0.066
Bromomethane	0.15	0.18	0.2	0.21	0.18	0.22	0.16	0.21	0.194	0.021	77.2	0.068
Chloroethane	0.15	0.19	0.19	0.16	0.19	0.19	0.18	0.19	0.184	0.011	81.4	0.036
Ethanol	0.15	0.16	0.16	0.18	0.17	0.19	0.18	0.19	0.176	0.013	85.4	0.040
Acrolein	0.15	0.22	0.17	0.19	0.16	0.18	0.21	0.17	0.186	0.022	80.8	0.070
Vinyl Bromide	0.15	0.17	0.15	0.16	0.16	0.17	0.17	0.17	0.164	0.008	91.3	0.025
Freon 11	0.15	0.18	0.17	0.17	0.18	0.19	0.17	0.18	0.177	0.008	84.7	0.024
Acetone	0.15	0.2	0.17	0.18	0.15	0.15	0.18	0.14	0.167	0.021	89.7	0.067
Pentane	0.15	0.18	0.17	0.18	0.16	0.17	0.2	0.16	0.174	0.014	86.1	0.044
Isopropyl alcohol	0.15	0.22	0.2	0.19	0.2	0.19	0.21	0.19	0.200	0.012	75.0	0.036
1,1-dichloroethene	0.15	0.2	0.17	0.19	0.19	0.19	0.18	0.18	0.186	0.010	80.8	0.031
Freon 113	0.15	0.17	0.16	0.18	0.18	0.18	0.17	0.17	0.173	0.008	86.8	0.024
t-Butyl alcohol	0.15	0.21	0.2	0.2	0.21	0.2	0.2	0.18	0.200	0.010	75.0	0.031
Methylene chloride	0.15	0.2	0.18	0.19	0.18	0.2	0.19	0.17	0.187	0.011	80.2	0.035
Allyl chloride	0.15	0.18	0.17	0.16	0.18	0.18	0.2	0.18	0.179	0.012	84.0	0.038
Carbon disulfide	0.15	0.2	0.17	0.19	0.19	0.2	0.18	0.19	0.189	0.011	79.5	0.034
trans-1,2-dichloroethene	0.15	0.15	0.14	0.14	0.14	0.16	0.14	0.15	0.146	0.008	102.9	0.025
methyl tert-butyl ether	0.15	0.14	0.14	0.14	0.13	0.15	0.14	0.13	0.139	0.007	108.2	0.022
1,1-dichloroethane	0.15	0.17	0.15	0.16	0.15	0.17	0.16	0.16	0.160	0.008	93.8	0.026
Vinyl acetate	0.15	0.14	0.13	0.14	0.13	0.13	0.13	0.12	0.131	0.007	114.1	0.022
Methyl Ethyl Ketone	0.15	0.17	0.17	0.16	0.16	0.15	0.13	0.12	0.151	0.020	99.1	0.061
cis-1,2-dichloroethene	0.15	0.15	0.14	0.16	0.15	0.16	0.15	0.14	0.150	0.008	100.0	0.026
Hexane	0.15	0.12	0.14	0.13	0.13	0.13	0.12	0.12	0.127	0.008	118.0	0.024
Ethyl acetate	0.15	0.16	0.17	0.14	0.15	0.14	0.16	0.13	0.150	0.014	100.0	0.044
Chloroform	0.15	0.16	0.16	0.16	0.16	0.17	0.16	0.17	0.163	0.005	92.1	0.015
Tetrahydrofuran	0.15	0.15	0.13	0.15	0.15	0.15	0.15	0.14	0.146	0.008	102.9	0.025
1,2-dichloroethane	0.15	0.16	0.15	0.16	0.16	0.17	0.16	0.17	0.161	0.007	92.9	0.022
1,1,1-trichloroethane	0.15	0.17	0.16	0.17	0.17	0.16	0.17	0.17	0.167	0.005	89.7	0.015
Cyclohexane	0.15	0.14	0.14	0.14	0.15	0.15	0.14	0.14	0.143	0.005	105.0	0.015
Carbon tetrachloride	0.15	0.13	0.15	0.15	0.15	0.15	0.15	0.16	0.149	0.009	101.0	0.028
Benzene	0.15	0.15	0.16	0.16	0.15	0.16	0.16	0.16	0.157	0.005	95.5	0.015
Methyl methacrylate	0.15	0.15	0.15	0.14	0.14	0.14	0.15	0.11	0.140	0.014	107.1	0.044
1,4-dioxane	0.15	0.18	0.18	0.19	0.18	0.15	0.17	0.12	0.167	0.024	89.7	0.076

Centek Laboratories
IDL Study

1ug/M3 Detection Limit
January 2016

Method TO-15A
Units=ppb

Name	Amount	IDL#1	IDL#2	IDL#3	IDL#4	IDL#5	IDL#6	IDL#7	Average	StdDev	%Rec	IDL
2,2,4-trimethylpentane	0.15	0.15	0.15	0.15	0.16	0.14	0.16	0.15	0.151	0.007	99.1	0.022
Heptane	0.15	0.12	0.13	0.13	0.12	0.13	0.13	0.13	0.127	0.005	118.0	0.015
Trichloroethene	0.15	0.14	0.15	0.14	0.15	0.15	0.14	0.15	0.146	0.005	102.9	0.017
1,2-dichloropropane	0.15	0.16	0.17	0.17	0.16	0.17	0.16	0.16	0.164	0.005	91.3	0.017
Bromodichloromethane	0.15	0.16	0.16	0.16	0.15	0.16	0.17	0.16	0.160	0.006	93.8	0.018
cis-1,3-dichloropropene	0.15	0.13	0.13	0.14	0.14	0.13	0.13	0.13	0.133	0.005	112.9	0.015
trans-1,3-dichloropropene	0.15	0.16	0.13	0.13	0.14	0.14	0.14	0.16	0.143	0.013	105.0	0.039
1,1,2-trichloroethane	0.15	0.16	0.15	0.16	0.15	0.16	0.18	0.17	0.161	0.011	92.9	0.034
Toluene	0.15	0.14	0.14	0.14	0.13	0.16	0.14	0.15	0.143	0.010	105.0	0.030
Methyl Isobutyl Ketone	0.15	0.18	0.18	0.18	0.18	0.16	0.18	0.15	0.173	0.013	86.8	0.039
Dibromochloromethane	0.15	0.16	0.16	0.17	0.18	0.16	0.17	0.18	0.169	0.009	89.0	0.028
Methyl Butyl Ketone	0.15	0.17	0.16	0.18	0.17	0.16	0.17	0.14	0.164	0.013	91.3	0.040
1,2-dibromoethane	0.15	0.16	0.17	0.16	0.16	0.16	0.16	0.17	0.163	0.005	92.1	0.015
Tetrachloroethylene	0.15	0.16	0.17	0.16	0.16	0.16	0.17	0.17	0.164	0.005	91.3	0.017
Chlorobenzene	0.15	0.16	0.16	0.16	0.17	0.15	0.17	0.17	0.163	0.008	92.1	0.024
1,1,1,2-tetrachloroethane	0.15	0.17	0.17	0.17	0.18	0.16	0.18	0.17	0.171	0.007	87.5	0.022
Ethylbenzene	0.15	0.13	0.14	0.14	0.14	0.12	0.14	0.13	0.134	0.008	111.7	0.025
m&p-xylene	0.3	0.25	0.25	0.25	0.23	0.25	0.25	0.25	0.247	0.008	121.4	0.024
Nonane	0.15	0.11	0.11	0.11	0.11	0.1	0.1	0.11	0.107	0.005	140.0	0.015
Styrene	0.15	0.12	0.13	0.13	0.11	0.12	0.13	0.12	0.123	0.008	122.1	0.024
Bromoform	0.15	0.15	0.15	0.16	0.15	0.15	0.17	0.16	0.156	0.008	96.3	0.025
o-xylene	0.15	0.11	0.12	0.12	0.14	0.14	0.12	0.11	0.123	0.013	122.1	0.039
Cumene	0.15	0.12	0.13	0.13	0.12	0.13	0.13	0.13	0.127	0.005	118.0	0.015
Bromofluorobenzene	1	0.88	0.9	0.9	0.87	0.89	0.89	0.9	0.890	0.012	112.4	0.036
1,1,2,2-tetrachloroethane	0.15	0.16	0.16	0.17	0.16	0.17	0.17	0.16	0.164	0.005	91.3	0.017
Propylbenzene	0.15	0.13	0.12	0.13	0.13	0.11	0.13	0.11	0.123	0.010	122.1	0.030
2-Chlorotoluene	0.15	0.13	0.13	0.13	0.14	0.13	0.12	0.13	0.130	0.006	115.4	0.018
4-ethyltoluene	0.15	0.11	0.12	0.12	0.12	0.13	0.13	0.11	0.120	0.008	125.0	0.026
1,3,5-trimethylbenzene	0.15	0.12	0.13	0.14	0.12	0.13	0.13	0.13	0.129	0.007	116.7	0.022
1,2,4-trimethylbenzene	0.15	0.12	0.13	0.12	0.12	0.13	0.12	0.12	0.123	0.005	122.1	0.015
1,3-dichlorobenzene	0.15	0.14	0.14	0.14	0.13	0.14	0.13	0.14	0.137	0.005	109.4	0.015
benzyl chloride	0.15	0.13	0.16	0.13	0.15	0.13	0.15	0.16	0.144	0.014	104.0	0.044
1,4-dichlorobenzene	0.15	0.13	0.11	0.12	0.12	0.12	0.12	0.13	0.121	0.007	123.5	0.022
1,2,3-trimethylbenzene	0.15	0.12	0.11	0.12	0.12	0.12	0.11	0.11	0.116	0.005	129.6	0.017
1,2-dichlorobenzene	0.15	0.13	0.14	0.14	0.14	0.14	0.14	0.13	0.137	0.005	109.4	0.015
1,2,4-trichlorobenzene	0.15	0.1	0.11	0.1	0.11	0.11	0.12	0.1	0.107	0.008	140.0	0.024
Naphthalene	0.15	0.13	0.13	0.14	0.11	0.12	0.14	0.12	0.127	0.011	118.0	0.035
Hexachloro-1,3-butadiene	0.15	0.16	0.17	0.17	0.17	0.16	0.16	0.16	0.164	0.005	91.3	0.017

Name	Amount	IDL#1	IDL#2	IDL#3	IDL#4	IDL#5	IDL#6	IDL#7	Average	StdDev	%Rec	IDL
Vinyl Chloride	0.1	0.11	0.11	0.09	0.09	0.1	0.09	0.1	0.099	0.009	101.4	0.028
Carbon tetrachloride	0.1	0.1	0.11	0.08	0.09	0.09	0.09	0.09	0.093	0.010	107.7	0.030
Trichloroethene	0.1	0.1	0.1	0.07	0.08	0.08	0.08	0.08	0.084	0.011	118.6	0.036
Tetrachloroethylene	0.1	0.11	0.12	0.09	0.09	0.1	0.09	0.09	0.099	0.012	101.4	0.038
Naphthalene	0.1	0.09	0.08	0.07	0.06	0.06	0.07	0.06	0.070	0.012	142.9	0.036

GC/MS VOLATILES-WHOLE AIR

METHOD TO-15

SAMPLE DATA

Centek Laboratories, LLC

Date: *26-Apr-16*

CLIENT:	LaBella Associates, P.C.	**Client Sample ID:**	1645-SVI-1
Lab Order:	C1603075	**Tag Number:**	567,301
Project:	FESL Emerson Landfill	**Collection Date:**	3/26/2016
Lab ID:	C1603075-001A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS		FLD				Analyst:
Lab Vacuum In	-2			"Hg		3/29/2016
Lab Vacuum Out	-30			"Hg		3/29/2016
1UG/M3 BY METHOD TO15		TO-15				Analyst: **RJP**
1,1,1-Trichloroethane	< 0.15	0.15		ppbV	1	4/1/2016 8:10:00 AM
1,1-Dichloroethane	< 0.15	0.15		ppbV	1	4/1/2016 8:10:00 AM
1,1-Dichloroethene	< 0.15	0.15		ppbV	1	4/1/2016 8:10:00 AM
Chloroethane	< 0.15	0.15		ppbV	1	4/1/2016 8:10:00 AM
Chloromethane	< 0.15	0.15		ppbV	1	4/1/2016 8:10:00 AM
cis-1,2-Dichloroethene	0.66	0.15		ppbV	1	4/1/2016 8:10:00 AM
Tetrachloroethylene	< 0.15	0.15		ppbV	1	4/1/2016 8:10:00 AM
trans-1,2-Dichloroethene	< 0.15	0.15		ppbV	1	4/1/2016 8:10:00 AM
Trichloroethene	2.3	0.30		ppbV	2	4/1/2016 1:59:00 PM
Vinyl chloride	< 0.15	0.15		ppbV	1	4/1/2016 8:10:00 AM
Surr: Bromofluorobenzene	83.0	70-130		%REC	1	4/1/2016 8:10:00 AM

Qualifiers:

**	Reporting Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *26-Apr-16*

CLIENT:	LaBella Associates, P.C.	**Client Sample ID:**	1645-SVI-1
Lab Order:	C1603075	**Tag Number:**	567,301
Project:	FESL Emerson Landfill	**Collection Date:**	3/26/2016
Lab ID:	C1603075-001A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		TO-15				Analyst: RJP
1,1,1-Trichloroethane	< 0.82	0.82		ug/m3	1	4/1/2016 8:10:00 AM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	4/1/2016 8:10:00 AM
1,1-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 8:10:00 AM
Chloroethane	< 0.40	0.40		ug/m3	1	4/1/2016 8:10:00 AM
Chloromethane	< 0.31	0.31		ug/m3	1	4/1/2016 8:10:00 AM
cis-1,2-Dichloroethene	2.6	0.59		ug/m3	1	4/1/2016 8:10:00 AM
Tetrachloroethylene	< 1.0	1.0		ug/m3	1	4/1/2016 8:10:00 AM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 8:10:00 AM
Trichloroethene	13	1.6		ug/m3	2	4/1/2016 1:59:00 PM
Vinyl chloride	< 0.38	0.38		ug/m3	1	4/1/2016 8:10:00 AM

Qualifiers:

**	Reporting Limit	,	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA2\AN033134.D Vial: 13
Acq On : 1 Apr 2016 8:10 am Operator: RJP
Sample : C1603075-001A Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 01 11:43:21 2016 Quant Results File: A316_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 10:24:27 2016
Response via : Initial Calibration
DataAcq Meth : 1UG_RUN

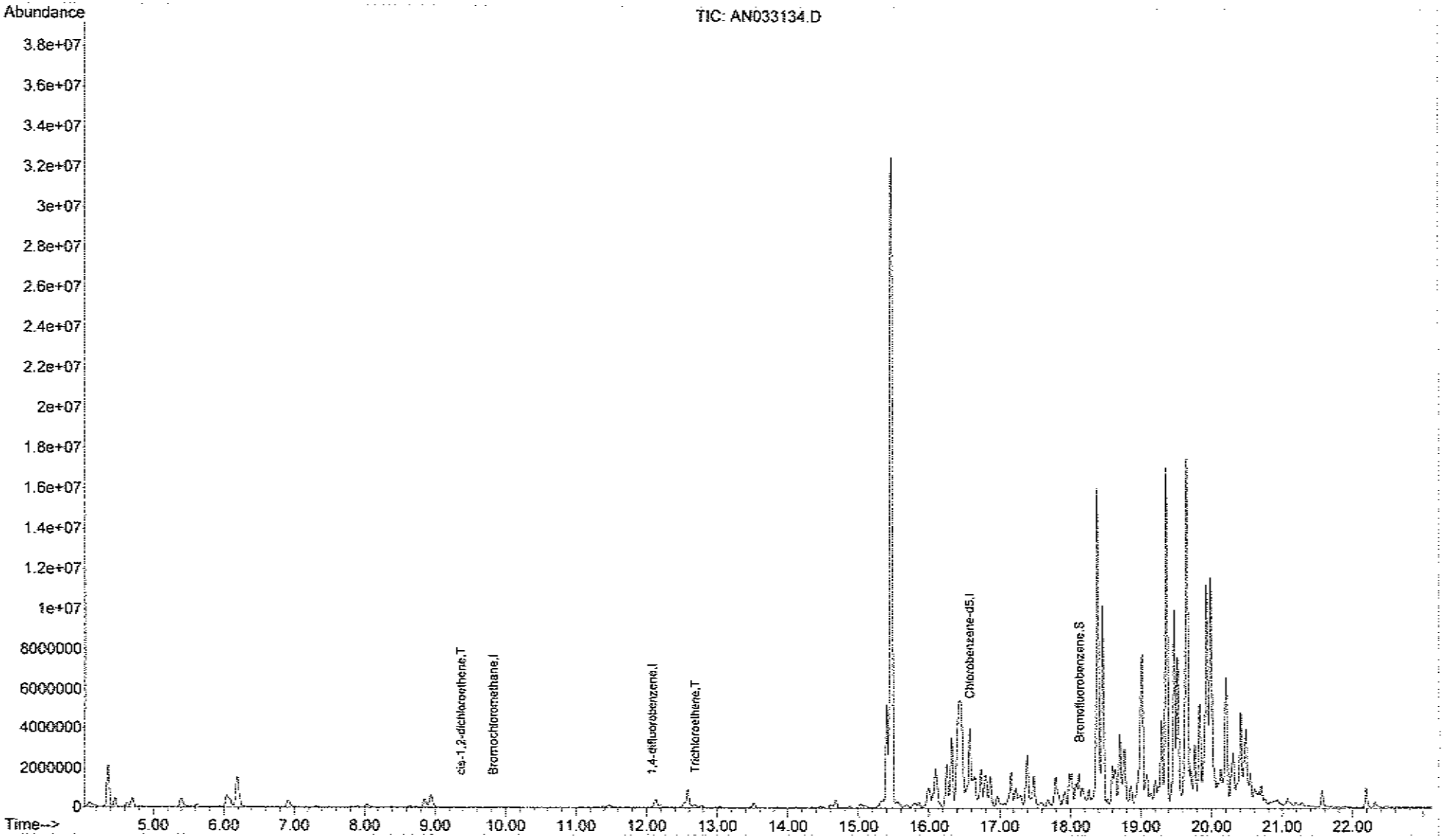
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	9.82	128	17132	1.00	ppb	0.00
35) 1,4-difluorobenzene	12.07	114	53087	1.00	ppb	0.01
50) Chlorobenzene-d5	16.57	117	40047	1.00	ppb	0.00
System Monitoring Compounds						
66) Bromofluorobenzene	18.14	95	21506m	0.83	ppb	0.00
Spiked Amount 1.000	Range 70 - 130		Recovery = 83.00%			
Target Compounds						Qvalue
29) cis-1,2-dichloroethene	9.36	61	14096	0.66	ppb	92
44) Trichloroethene	12.68	130	55787	2.47	ppb	97

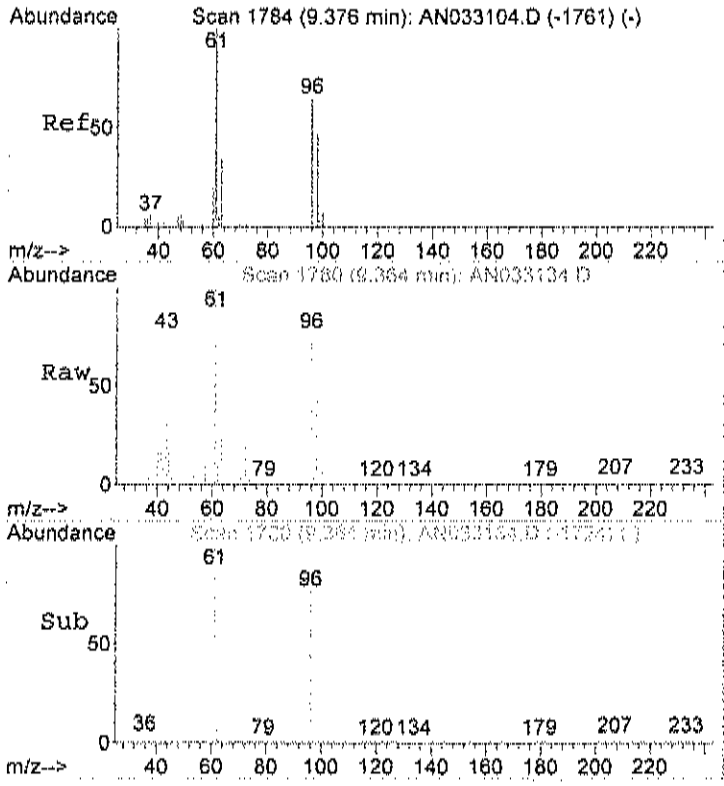
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA2\AN033134.D Vial: 13
Acq On : 1 Apr 2016 8:10 am Operator: RJP
Sample : C1603075-001A Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 1 11:57 2016 Quant Results File: A316_1UG.RES

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Tue Apr 26 15:30:23 2016
Response via : Initial Calibration

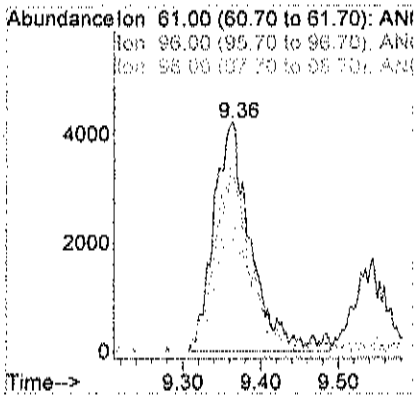


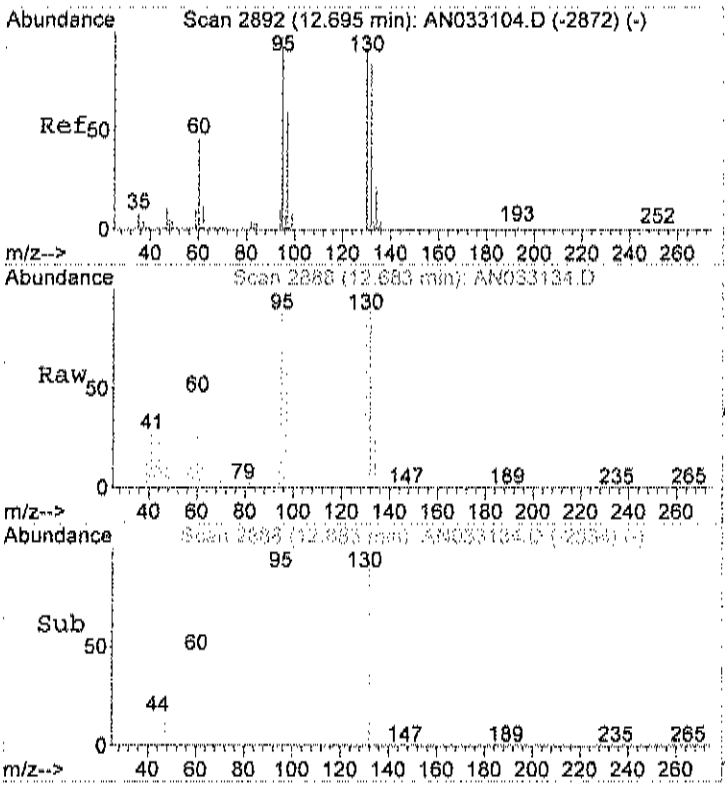


#29
cis-1,2-dichloroethene
Concen: 0.66 ppb
RT: 9.36 min Scan# 1780
Delta R.T. 0.02 min
Lab File: AN033134.D
Acq: 1 Apr 2016 8:10 am

Tgt Ion: 61 Resp: 14096

Ion	Ratio	Lower	Upper
61	100		
96	74.9	51.2	91.2
98	51.7	23.7	63.7

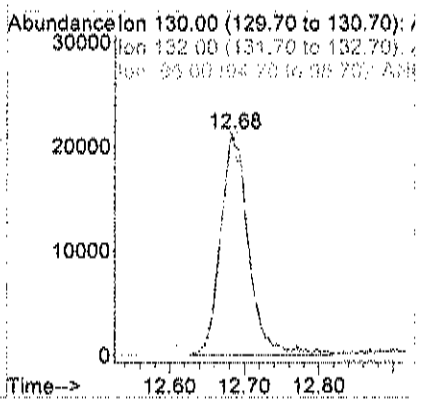




#44
Trichloroethene
Concen: 2.47 ppb
RT: 12.68 min Scan# 2888
Delta R.T. 0.01 min
Lab File: AN033134.D
Acq: 1 Apr 2016 8:10 am

Tgt Ion:130 Resp: 55787

Ion	Ratio	Lower	Upper
130	100		
132	97.4	76.1	116.1
95	109.2	85.0	125.0



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\AN040105.D Vial: 21
Acq On : 1 Apr 2016 1:59 pm Operator: RJP
Sample : C1603075-001A 2X Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 01 14:27:15 2016 Quant Results File: A316_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 10:24:27 2016
Response via : Initial Calibration
DataAcq Meth : 1UG_RUN

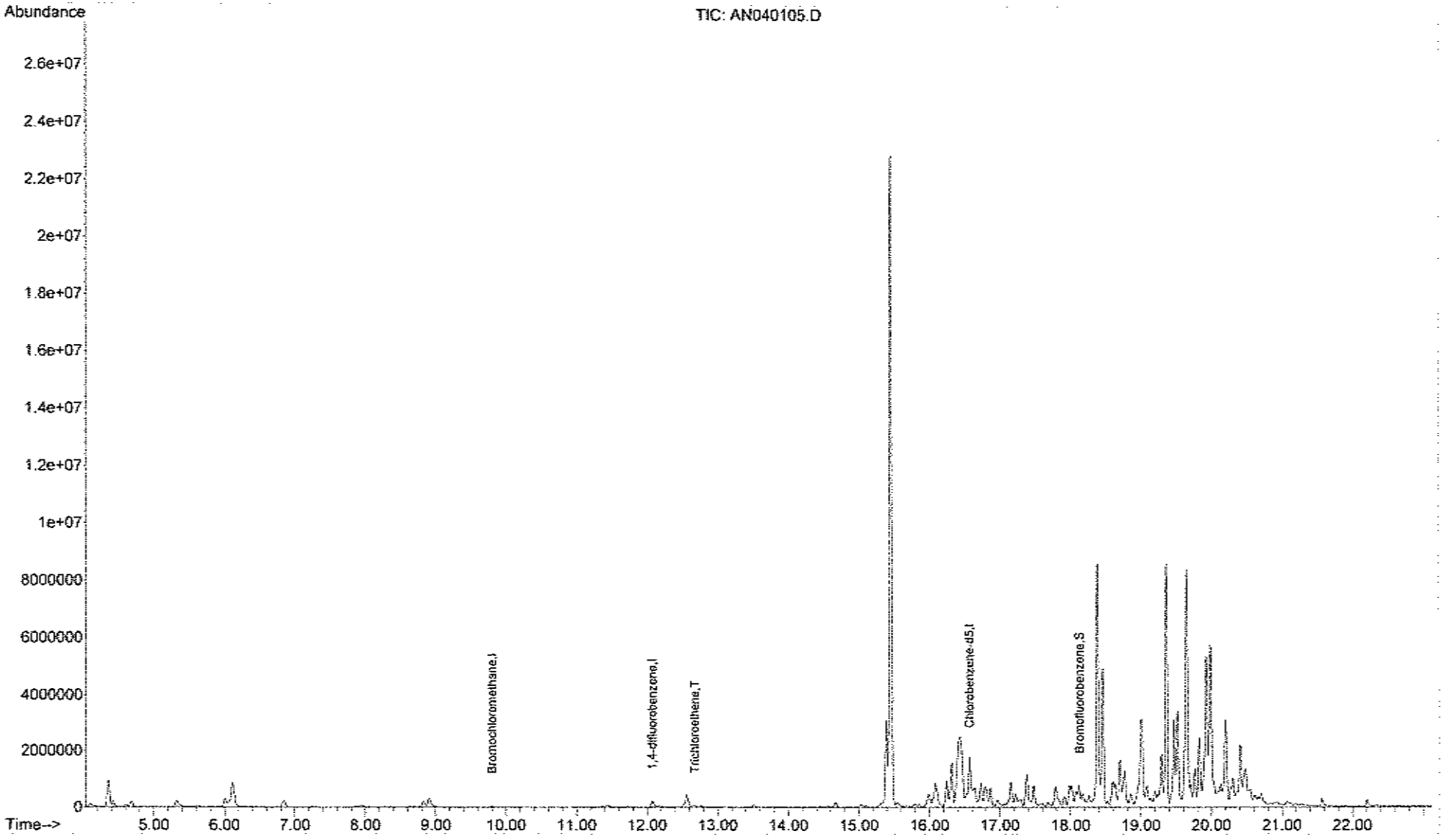
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	9.80	128	16216	1.00	ppb	0.00
35) 1,4-difluorobenzene	12.06	114	51303	1.00	ppb	0.00
50) Chlorobenzene-d5	16.56	117	38793	1.00	ppb	0.00
System Monitoring Compounds						
66) Bromofluorobenzene	18.13	95	25705m	1.03	ppb	0.00
Spiked Amount 1.000	Range 70 - 130		Recovery = 103.00%			
Target Compounds						Qvalue
44) Trichloroethene	12.68	130	25504	1.17	ppb	98

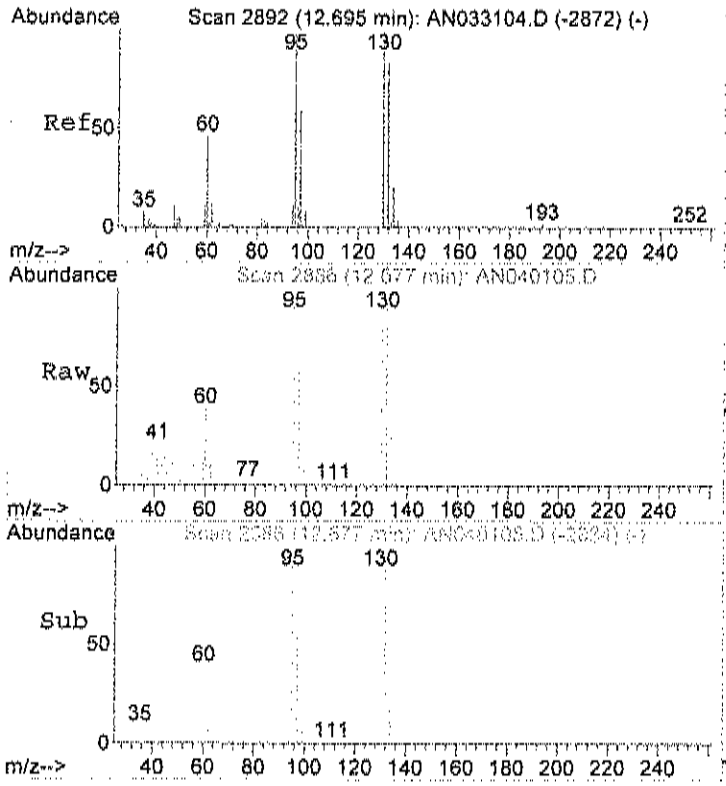
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\AN040105.D Vial: 21
Acq On : 1 Apr 2016 1:59 pm Operator: RJP
Sample : C1603075-001A 2X Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 2 12:30 2016 Quant Results File: A316_1UG.RES

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Tue Apr 26 15:30:23 2016
Response via : Initial Calibration

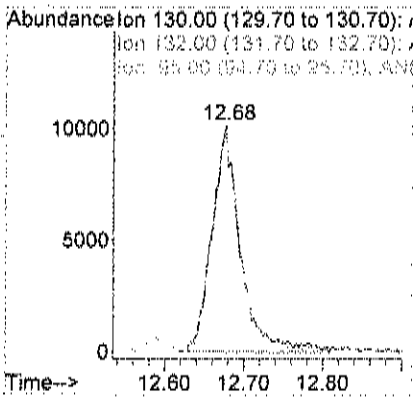




#44
Trichloroethene
Concen: 1.17 ppb
RT: 12.68 min Scan# 2886
Delta R.T. 0.01 min
Lab File: AN040105.D
Acq: 1 Apr 2016 1:59 pm

Tgt Ion:130 Resp: 25504

Ion	Ratio	Lower	Upper
130	100		
132	97.5	76.1	116.1
95	108.0	85.0	125.0



Centek Laboratories, LLC

Date: *26-Apr-16*

CLIENT:	LaBella Associates, P.C.	**Client Sample ID:**	1645-IAQ-1
Lab Order:	C1603075	**Tag Number:**	93,1165
Project:	FESL Emerson Landfill	**Collection Date:**	3/26/2016
Lab ID:	C1603075-002A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS		FLD				Analyst:
Lab Vacuum In	-2			"Hg		3/29/2016
Lab Vacuum Out	-30			"Hg		3/29/2016
1UG/M3 W/ 0.25UG/M3 CT-TCE-VC		TO-15				Analyst: RJP
1,1,1-Trichloroethane	< 0.15	0.15		ppbV	1	4/1/2016 1:04:00 AM
1,1-Dichloroethane	< 0.15	0.15		ppbV	1	4/1/2016 1:04:00 AM
1,1-Dichloroethene	< 0.15	0.15		ppbV	1	4/1/2016 1:04:00 AM
Chloroethane	< 0.15	0.15		ppbV	1	4/1/2016 1:04:00 AM
Chloromethane	< 0.15	0.15		ppbV	1	4/1/2016 1:04:00 AM
cis-1,2-Dichloroethene	< 0.15	0.15		ppbV	1	4/1/2016 1:04:00 AM
Tetrachloroethylene	< 0.15	0.15		ppbV	1	4/1/2016 1:04:00 AM
trans-1,2-Dichloroethene	< 0.15	0.15		ppbV	1	4/1/2016 1:04:00 AM
Trichloroethene	0.070	0.040		ppbV	1	4/1/2016 1:04:00 AM
Vinyl chloride	< 0.040	0.040		ppbV	1	4/1/2016 1:04:00 AM
Surr: Bromofluorobenzene	122	70-130		%REC	1	4/1/2016 1:04:00 AM

Qualifiers:

**	Reporting Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *26-Apr-16*

CLIENT:	LaBella Associates, P.C.	**Client Sample ID:**	1645-IAQ-1
Lab Order:	C1603075	**Tag Number:**	93,1165
Project:	FESL Emerson Landfill	**Collection Date:**	3/26/2016
Lab ID:	C1603075-002A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.25UG/M3 CT-TCE-VC		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	< 0.82	0.82		ug/m3	1	4/1/2016 1:04:00 AM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	4/1/2016 1:04:00 AM
1,1-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 1:04:00 AM
Chloroethane	< 0.40	0.40		ug/m3	1	4/1/2016 1:04:00 AM
Chloromethane	< 0.31	0.31		ug/m3	1	4/1/2016 1:04:00 AM
cis-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 1:04:00 AM
Tetrachloroethylene	< 1.0	1.0		ug/m3	1	4/1/2016 1:04:00 AM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 1:04:00 AM
Trichloroethene	0.38	0.21		ug/m3	1	4/1/2016 1:04:00 AM
Vinyl chloride	< 0.10	0.10		ug/m3	1	4/1/2016 1:04:00 AM

Qualifiers:

**	Reporting Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA2\AN033124.D Vial: 3
Acq On : 1 Apr 2016 1:04 am Operator: RJP
Sample : C1603075-002A Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 01 03:32:49 2016 Quant Results File: A316_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 10:24:27 2016
Response via : Initial Calibration
DataAcq Meth : 1UG_RUN

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	9.80	128	19820	1.00	ppb	-0.01
35) 1,4-difluorobenzene	12.05	114	53432	1.00	ppb	0.00
50) Chlorobenzene-d5	16.56	117	33425m	1.00	ppb	0.00
System Monitoring Compounds						
66) Bromofluorobenzene	18.14	95	26277m	1.22	ppb	0.00
Spiked Amount 1.000	Range 70 - 130		Recovery = 122.00%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

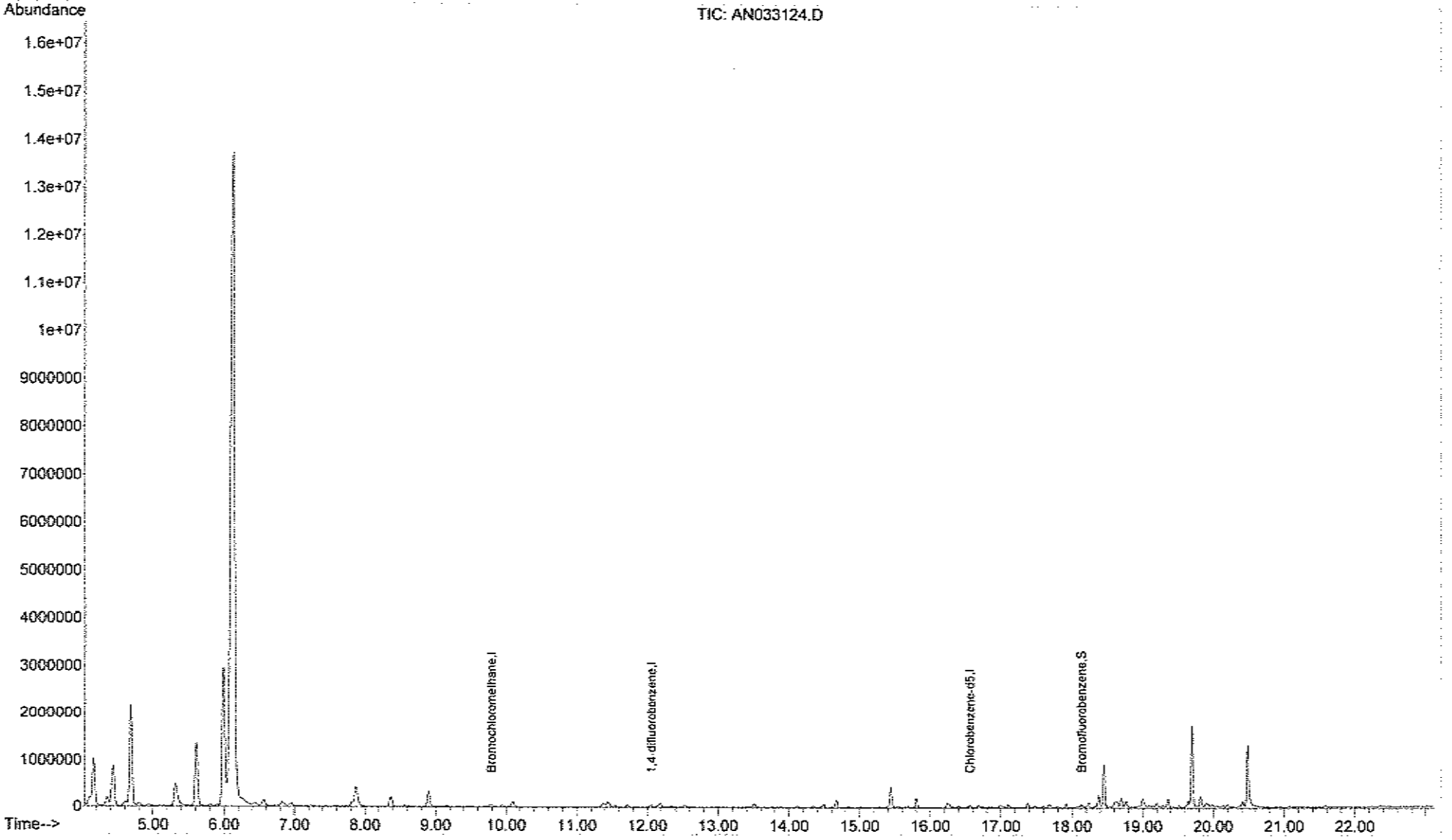
Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA2\AN033124.D
Acq On : 1 Apr 2016 1:04 am
Sample : C1603075-002A
Misc : A316_1UG
MS Integration Params: RTEINT.P
Quant Time: Apr 3 11:46 2016

Vial: 3
Operator: RJP
Inst : MSD #1
Multiplr: 1.00

Quant Results File: A316_1UG.RES

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Tue Apr 26 15:30:23 2016
Response via : Initial Calibration



Centek Laboratories, LLC

Date: *26-Apr-16*

CLIENT:	LaBella Associates, P.C.	**Client Sample ID:**	1645-SVI-2
Lab Order:	C1603075	**Tag Number:**	332,387
Project:	FESL Emerson Landfill	**Collection Date:**	3/26/2016
Lab ID:	C1603075-003A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS		FLD				Analyst:
Lab Vacuum In	-2			"Hg		3/29/2016
Lab Vacuum Out	-30			"Hg		3/29/2016
1UG/M3 BY METHOD TO15		TO-15				Analyst: RJP
1,1,1-Trichloroethane	< 0.15	0.15		ppbV	1	4/1/2016 8:49:00 AM
1,1-Dichloroethane	< 0.15	0.15		ppbV	1	4/1/2016 8:49:00 AM
1,1-Dichloroethene	< 0.15	0.15		ppbV	1	4/1/2016 8:49:00 AM
Chloroethane	< 0.15	0.15		ppbV	1	4/1/2016 8:49:00 AM
Chloromethane	< 0.15	0.15		ppbV	1	4/1/2016 8:49:00 AM
cis-1,2-Dichloroethene	< 0.15	0.15		ppbV	1	4/1/2016 8:49:00 AM
Tetrachloroethylene	< 0.15	0.15		ppbV	1	4/1/2016 8:49:00 AM
trans-1,2-Dichloroethene	< 0.15	0.15		ppbV	1	4/1/2016 8:49:00 AM
Trichloroethene	0.17	0.15		ppbV	1	4/1/2016 8:49:00 AM
Vinyl chloride	< 0.15	0.15		ppbV	1	4/1/2016 8:49:00 AM
Surr: Bromofluorobenzene	128	70-130		%REC	1	4/1/2016 8:49:00 AM

Qualifiers:

**	Reporting Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *26-Apr-16*

CLIENT:	LaBella Associates, P.C.	**Client Sample ID:**	1645-SVI-2
Lab Order:	C1603075	**Tag Number:**	332,387
Project:	FESL Emerson Landfill	**Collection Date:**	3/26/2016
Lab ID:	C1603075-003A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		TO-15				Analyst: RJP
1,1,1-Trichloroethane	< 0.82	0.82		ug/m3	1	4/1/2016 8:49:00 AM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	4/1/2016 8:49:00 AM
1,1-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 8:49:00 AM
Chloroethane	< 0.40	0.40		ug/m3	1	4/1/2016 8:49:00 AM
Chloromethane	< 0.31	0.31		ug/m3	1	4/1/2016 8:49:00 AM
cis-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 8:49:00 AM
Tetrachloroethylene	< 1.0	1.0		ug/m3	1	4/1/2016 8:49:00 AM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 8:49:00 AM
Trichloroethene	0.91	0.81		ug/m3	1	4/1/2016 8:49:00 AM
Vinyl chloride	< 0.38	0.38		ug/m3	1	4/1/2016 8:49:00 AM

Qualifiers:

**	Reporting Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA2\AN033135.D Vial: 14
Acq On : 1 Apr 2016 8:49 am Operator: RJP
Sample : C1603075-003A Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 01 11:43:22 2016 Quant Results File: A316_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 10:24:27 2016
Response via : Initial Calibration
DataAcq Meth : 1UG_RUN

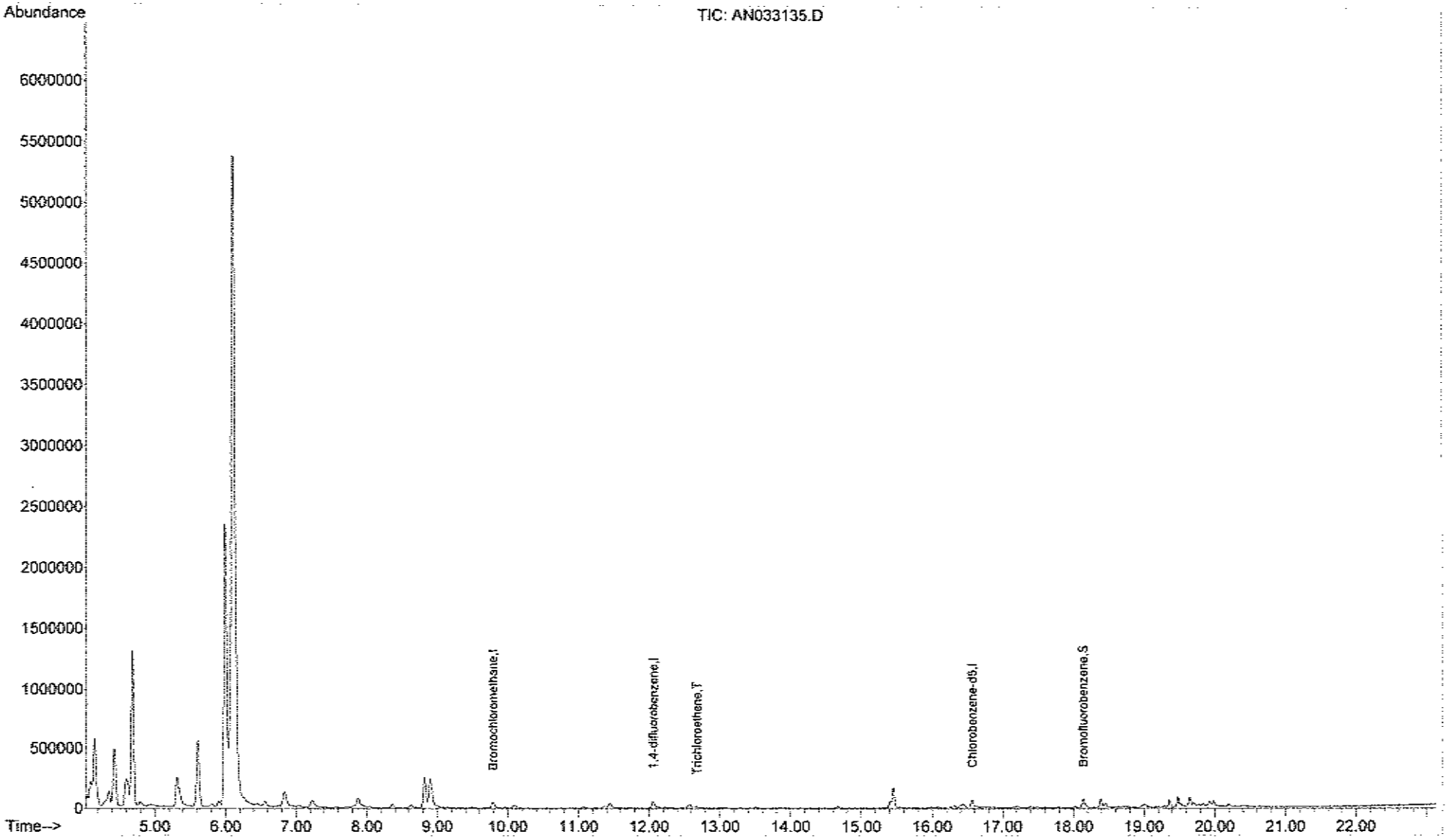
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	9.79	128	23254	1.00	ppb	-0.02
35) 1,4-difluorobenzene	12.06	114	62475	1.00	ppb	0.00
50) Chlorobenzene-d5	16.56	117	44101	1.00	ppb	0.00
System Monitoring Compounds						
66) Bromofluorobenzene	18.14	95	36292	1.28	ppb	0.00
Spiked Amount 1.000	Range 70 - 130		Recovery = 128.00%			
Target Compounds						Qvalue
44) Trichloroethene	12.68	130	4596	0.17	ppb	97

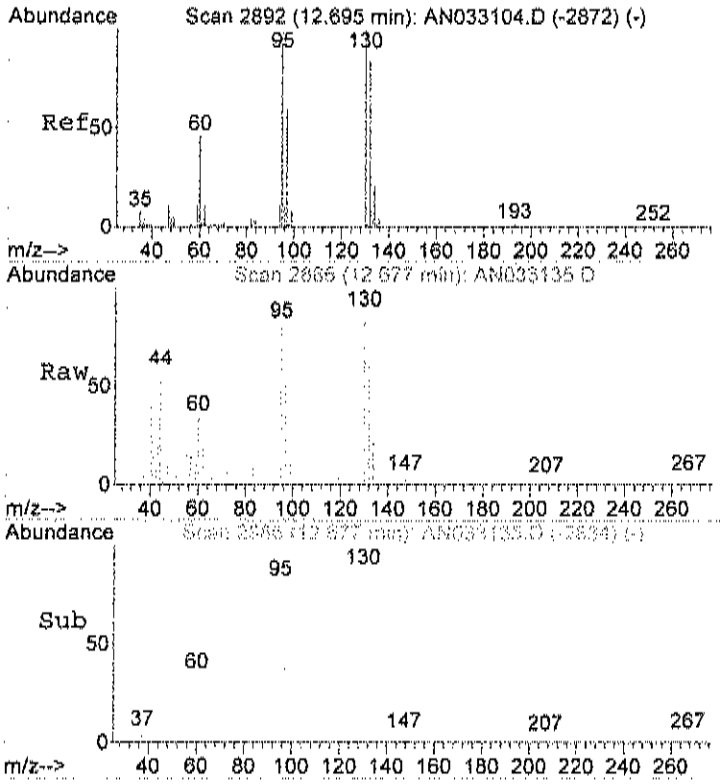
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA2\AN033135.D Vial: 14
Acq On : 1 Apr 2016 8:49 am Operator: RJP
Sample : C1603075-003A Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 1 11:58 2016 Quant Results File: A316_1UG.RES

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Tue Apr 26 15:30:23 2016
Response via : Initial Calibration

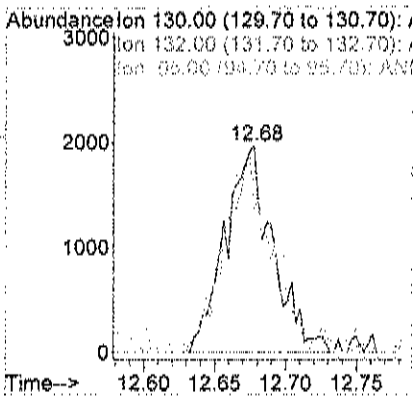




#44
Trichloroethene
Concen: 0.17 ppb
RT: 12.68 min Scan# 2886
Delta R.T. 0.01 min
Lab File: AN033135.D
Acq: 1 Apr 2016 8:49 am

Tgt Ion:130 Resp: 4596

Ion	Ratio	Lower	Upper
130	100		
132	89.6	76.1	116.1
95	104.9	85.0	125.0



Centek Laboratories, LLC

Date: *26-Apr-16*

CLIENT:	LaBella Associates, P.C.	**Client Sample ID:**	1645-IAQ-2
Lab Order:	C1603075	**Tag Number:**	483,438
Project:	FESL Emerson Landfill	**Collection Date:**	3/26/2016
Lab ID:	C1603075-004A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS		FLD				Analyst:
Lab Vacuum In	-2			"Hg		3/29/2016
Lab Vacuum Out	-30			"Hg		3/29/2016
1UG/M3 W/ 0.25UG/M3 CT-TCE-VC		TO-15				Analyst: RJP
1,1,1-Trichloroethane	< 0.15	0.15		ppbV	1	3/31/2016 11:01:00 PM
1,1-Dichloroethane	< 0.15	0.15		ppbV	1	3/31/2016 11:01:00 PM
1,1-Dichloroethene	< 0.15	0.15		ppbV	1	3/31/2016 11:01:00 PM
Chloroethane	< 0.15	0.15		ppbV	1	3/31/2016 11:01:00 PM
Chloromethane	< 0.15	0.15		ppbV	1	3/31/2016 11:01:00 PM
cis-1,2-Dichloroethene	< 0.15	0.15		ppbV	1	3/31/2016 11:01:00 PM
Tetrachloroethylene	< 0.15	0.15		ppbV	1	3/31/2016 11:01:00 PM
trans-1,2-Dichloroethene	< 0.15	0.15		ppbV	1	3/31/2016 11:01:00 PM
Trichloroethene	< 0.040	0.040		ppbV	1	3/31/2016 11:01:00 PM
Vinyl chloride	< 0.040	0.040		ppbV	1	3/31/2016 11:01:00 PM
Surr: Bromofluorobenzene	125	70-130		%REC	1	3/31/2016 11:01:00 PM

Qualifiers:

**	Reporting Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *26-Apr-16*

CLIENT:	LaBella Associates, P.C.	**Client Sample ID:**	1645-IAQ-2
Lab Order:	C1603075	**Tag Number:**	483,438
Project:	FESL Emerson Landfill	**Collection Date:**	3/26/2016
Lab ID:	C1603075-004A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.25UG/M3 CT-TCE-VC		TO-15				Analyst: RJP
1,1,1-Trichloroethane	< 0.82	0.82		ug/m3	1	3/31/2016 11:01:00 PM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	3/31/2016 11:01:00 PM
1,1-Dichloroethene	< 0.59	0.59		ug/m3	1	3/31/2016 11:01:00 PM
Chloroethane	< 0.40	0.40		ug/m3	1	3/31/2016 11:01:00 PM
Chloromethane	< 0.31	0.31		ug/m3	1	3/31/2016 11:01:00 PM
cis-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	3/31/2016 11:01:00 PM
Tetrachloroethylene	< 1.0	1.0		ug/m3	1	3/31/2016 11:01:00 PM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	3/31/2016 11:01:00 PM
Trichloroethene	< 0.21	0.21		ug/m3	1	3/31/2016 11:01:00 PM
Vinyl chloride	< 0.10	0.10		ug/m3	1	3/31/2016 11:01:00 PM

Qualifiers:

**	Reporting Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA2\AN033121.D Vial: 2
Acq On : 31 Mar 2016 11:01 pm Operator: RJP
Sample : C1603075-004A Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 01 03:32:46 2016 Quant Results File: A316_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 10:24:27 2016
Response via : Initial Calibration
DataAcq Meth : 1UG_RUN

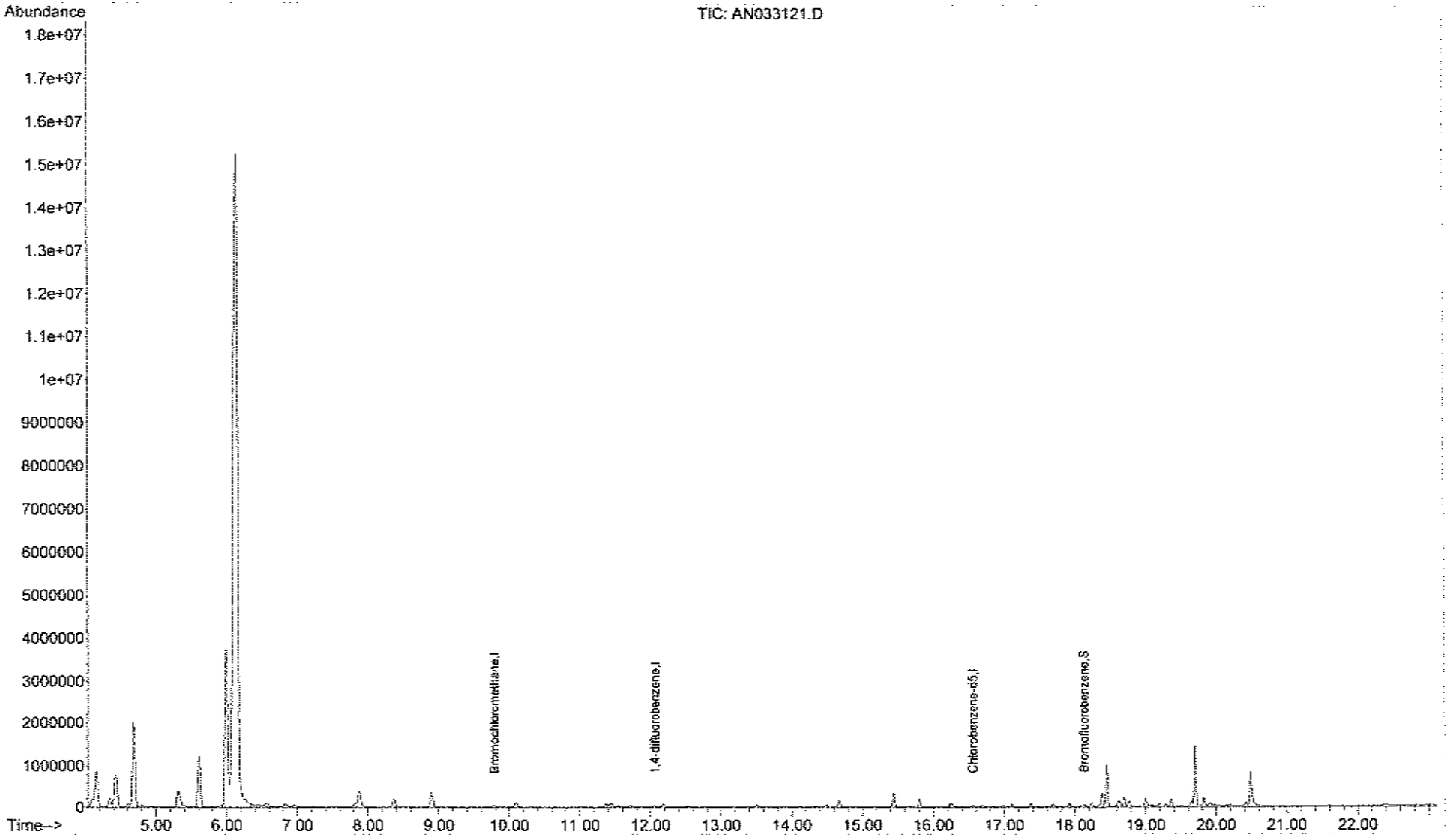
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	9.79	128	18446	1.00	ppb	-0.02
35) 1,4-difluorobenzene	12.06	114	48996	1.00	ppb	0.00
50) Chlorobenzene-d5	16.55	117	28479	1.00	ppb	0.00
System Monitoring Compounds						
66) Bromofluorobenzene	18.14	95	22817m	1.25	ppb	0.00
Spiked Amount 1.000	Range 70 - 130		Recovery = 125.00%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA2\AN033121.D Vial: 2
Acq On : 31 Mar 2016 11:01 pm Operator: RJP
Sample : C1603075-004A Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 1 11:32 2016 Quant Results File: A316_1UG.RES

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Tue Apr 26 15:30:23 2016
Response via : Initial Calibration



Centek Laboratories, LLC

Date: *26-Apr-16*

CLIENT:	LaBella Associates, P.C.	**Client Sample ID:**	Outdoor-1645
Lab Order:	C1603075	**Tag Number:**	1178,174
Project:	FESL Emerson Landfill	**Collection Date:**	3/26/2016
Lab ID:	C1603075-005A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
FIELD PARAMETERS		FLD				Analyst:
Lab Vacuum In	-3			"Hg		3/29/2016
Lab Vacuum Out	-30			"Hg		3/29/2016
1UG/M3 W/ 0.25UG/M3 CT-TCE-VC		TO-15				Analyst: RJP
1,1,1-Trichloroethane	< 0.15	0.15		ppbV	1	4/1/2016 1:43:00 AM
1,1-Dichloroethane	< 0.15	0.15		ppbV	1	4/1/2016 1:43:00 AM
1,1-Dichloroethene	< 0.15	0.15		ppbV	1	4/1/2016 1:43:00 AM
Chloroethane	< 0.15	0.15		ppbV	1	4/1/2016 1:43:00 AM
Chloromethane	0.87	0.15		ppbV	1	4/1/2016 1:43:00 AM
cis-1,2-Dichloroethene	< 0.15	0.15		ppbV	1	4/1/2016 1:43:00 AM
Tetrachloroethylene	0.16	0.15		ppbV	1	4/1/2016 1:43:00 AM
trans-1,2-Dichloroethene	< 0.15	0.15		ppbV	1	4/1/2016 1:43:00 AM
Trichloroethene	0.17	0.040		ppbV	1	4/1/2016 1:43:00 AM
Vinyl chloride	< 0.040	0.040		ppbV	1	4/1/2016 1:43:00 AM
Surr: Bromofluorobenzene	108	70-130		%REC	1	4/1/2016 1:43:00 AM

Qualifiers:

**	Reporting Limit	,	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *26-Apr-16*

CLIENT:	LaBella Associates, P.C.	**Client Sample ID:**	Outdoor-1645
Lab Order:	C1603075	**Tag Number:**	1178,174
Project:	FESL Emerson Landfill	**Collection Date:**	3/26/2016
Lab ID:	C1603075-005A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.25UG/M3 CT-TCE-VC		**TO-15**				Analyst: **RJP**
1,1,1-Trichloroethane	< 0.82	0.82		ug/m3	1	4/1/2016 1:43:00 AM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	4/1/2016 1:43:00 AM
1,1-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 1:43:00 AM
Chloroethane	< 0.40	0.40		ug/m3	1	4/1/2016 1:43:00 AM
Chloromethane	1.8	0.31		ug/m3	1	4/1/2016 1:43:00 AM
cis-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 1:43:00 AM
Tetrachloroethylene	1.1	1.0		ug/m3	1	4/1/2016 1:43:00 AM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 1:43:00 AM
Trichloroethene	0.91	0.21		ug/m3	1	4/1/2016 1:43:00 AM
Vinyl chloride	< 0.10	0.10		ug/m3	1	4/1/2016 1:43:00 AM

Qualifiers:

**	Reporting Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA2\AN033125.D Vial: 4
Acq On : 1 Apr 2016 1:43 am Operator: RJP
Sample : C1603075-005A Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 01 03:32:50 2016 Quant Results File: A316_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 10:24:27 2016
Response via : Initial Calibration
DataAcq Meth : 1UG_RUN

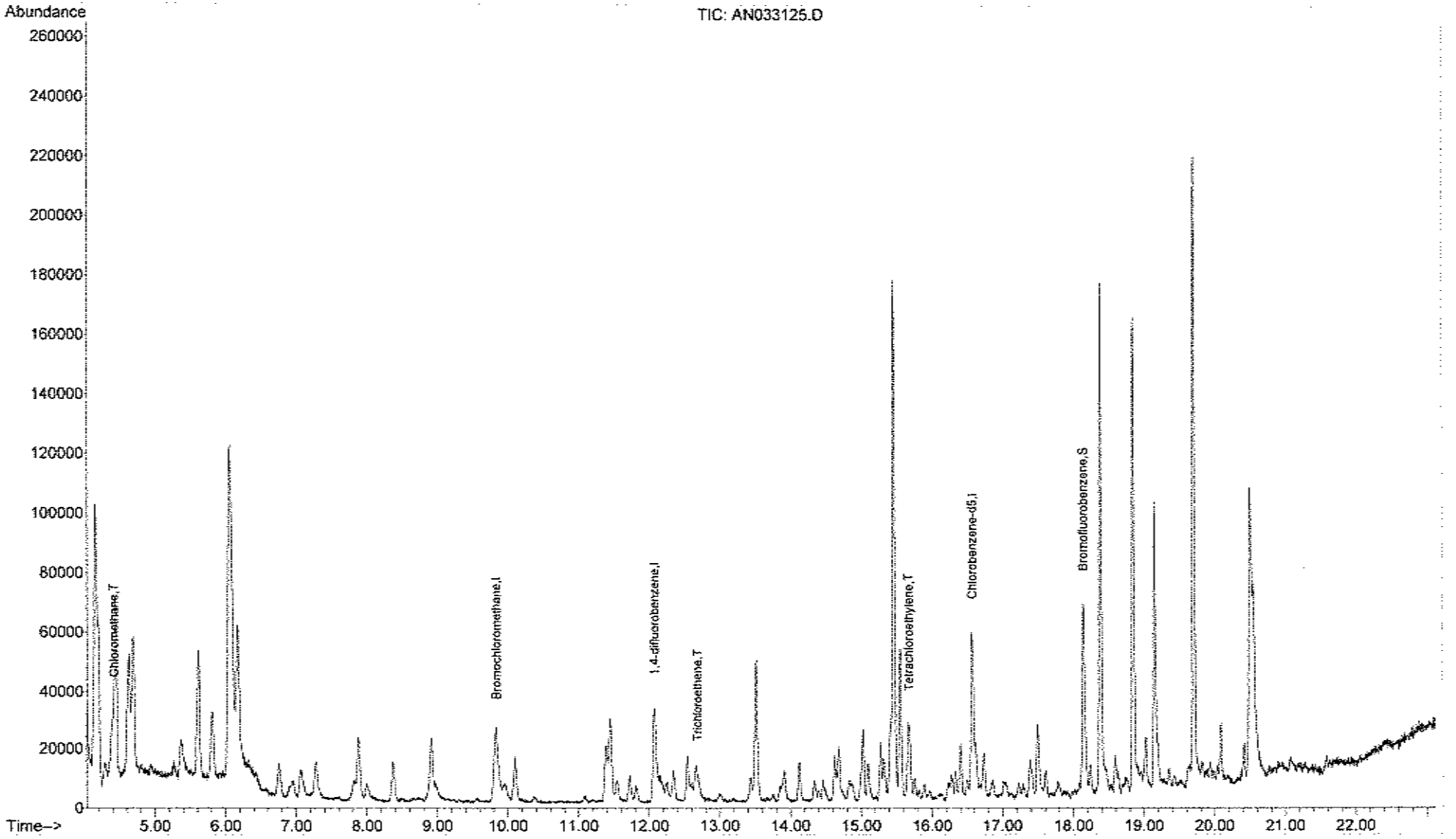
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	9.84	128	16834	1.00	ppb	0.03
35) 1,4-difluorobenzene	12.06	114	44868	1.00	ppb	0.00
50) Chlorobenzene-d5	16.57	117	47627	1.00	ppb	0.00
System Monitoring Compounds						
66) Bromofluorobenzene	18.14	95	33083	1.08	ppb	0.00
Spiked Amount 1.000	Range 70 - 130		Recovery = 108.00%			
Target Compounds						Qvalue
4) Chloromethane	4.40	50	16278	0.87	ppb	95
44) Trichloroethene	12.68	130	3145	0.17	ppb	97
56) Tetrachloroethylene	15.66	164	4931	0.16	ppb	94

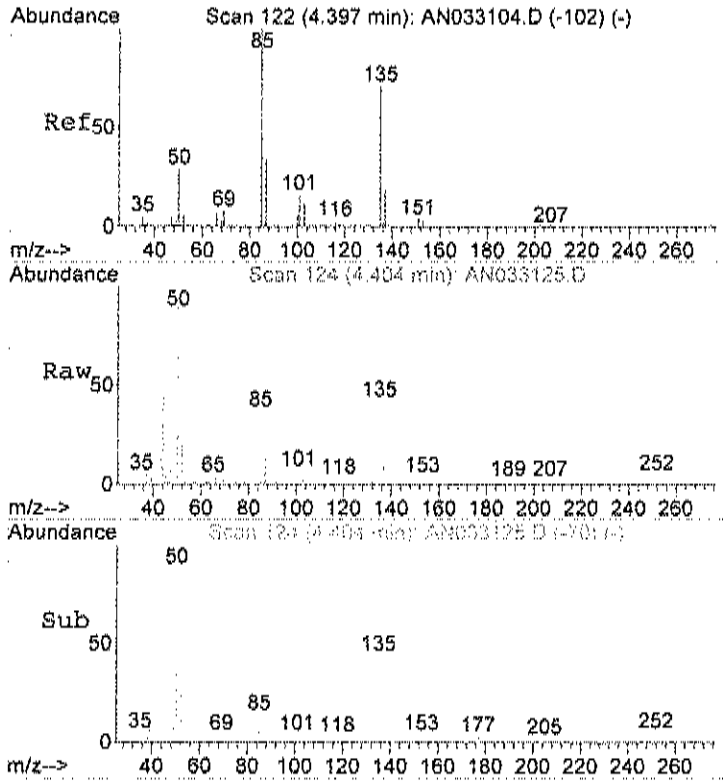
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA2\AN033125.D Vial: 4
Acq On : 1 Apr 2016 1:43 am Operator: RJP
Sample : C1603075-005A Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 1 11:39 2016 Quant Results File: A316_1UG.RES

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Tue Apr 26 15:30:23 2016
Response via : Initial Calibration

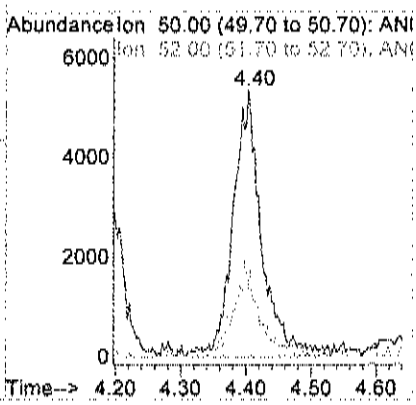


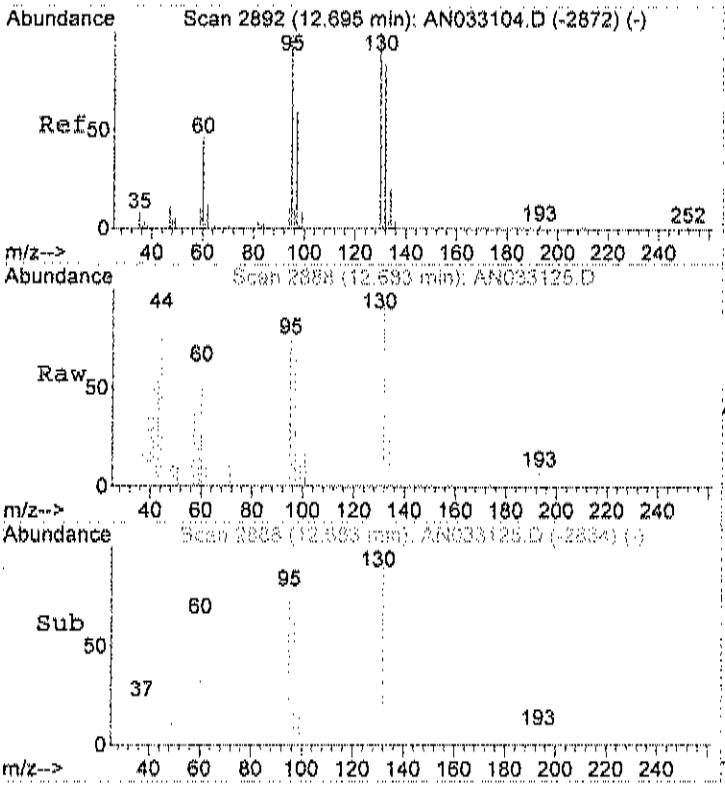


#4
Chloromethane
Concen: 0.87 ppb
RT: 4.40 min Scan# 124
Delta R.T. 0.01 min
Lab File: AN033125.D
Acq: 1 Apr 2016 1:43 am

Tgt Ion: 50 Resp: 16278

Ion	Ratio	Lower	Upper
50	100		
52	31.8	9.2	49.2

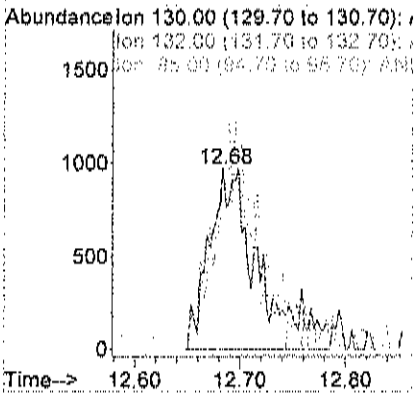


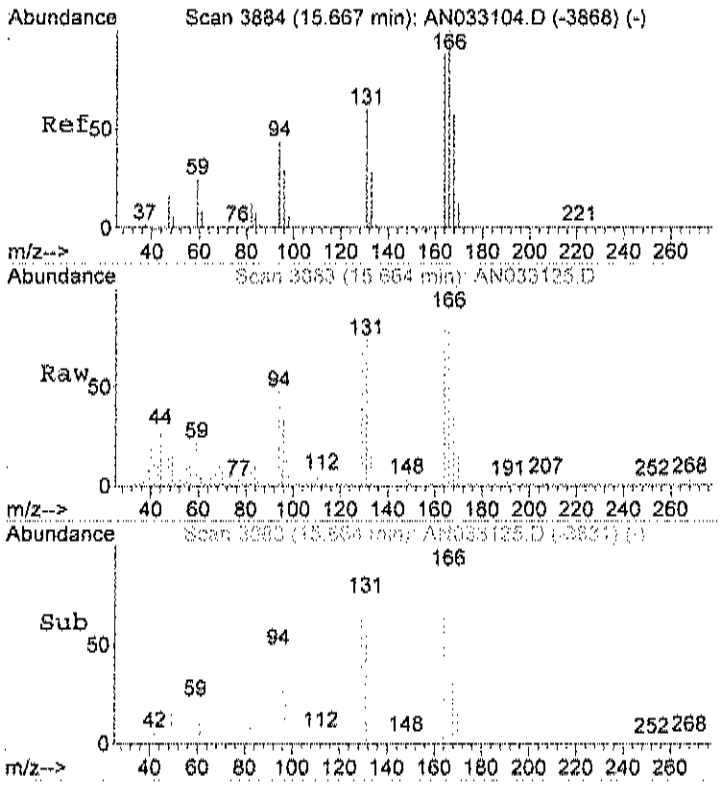


#44
Trichloroethene
Concen: 0.17 ppb
RT: 12.68 min Scan# 2888
Delta R.T. 0.01 min
Lab File: AN033125.D
Acq: 1 Apr 2016 1:43 am

Tgt Ion:130 Resp: 3145

Ion	Ratio	Lower	Upper
130	100		
132	96.6	76.1	116.1
95	110.2	85.0	125.0

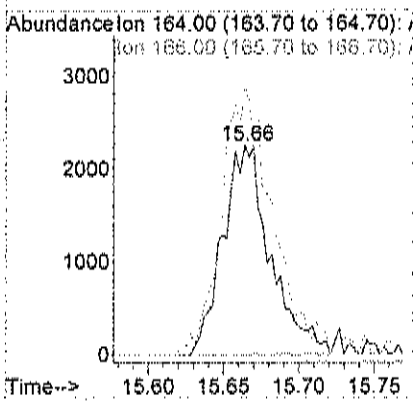




#56
Tetrachloroethylene
Concen: 0.16 ppb
RT: 15.66 min Scan# 3883
Delta R.T. 0.01 min
Lab File: AN033125.D
Acq: 1 Apr 2016 1:43 am

Tgt Ion:164 Resp: 4931

Ion	Ratio	Lower	Upper
164	100		
166	136.1	108.6	148.6



GC/MS VOLATILES-WHOLE AIR

METHOD TO-15

STANDARDS DATA

GC/MS VOLATILES-WHOLE AIR

METHOD TO-15

INITIAL CALIBRATION

Response Factor Report MSD #1

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 10:24:27 2016
Response via : Initial Calibration

Calibration Files
0.04 =AN031612.D 0.10 =AN031611.D 0.15 =AN031610.D
0.30 =AN031609.D 0.50 =AN031608.D 0.75 =AN031607.D

		Compound	0.04	0.10	0.15	0.30	0.50	0.75	Avg	%RSD
1)	I	Bromochloromethane	----------		ISTD	----------				
2)	T	Propylene			1.131	0.916	0.800	0.787	0.810	18.47
3)	T	Freon 12			5.132	4.678	4.218	4.223	4.271	10.16
4)	T	Chloromethane			1.503	1.264	1.102	1.101	1.118	16.44
5)	T	Freon 114			4.240	3.932	3.598	3.582	3.598	9.49
6)	T	Vinyl Chloride	1.719	1.251	1.297	1.175	1.025	1.010	1.125	22.21
7)	T	Butane			1.907	1.462	1.217	1.136	1.285	21.70
8)	T	1,3-butadiene			0.944	1.260	0.745	0.776	0.847	21.16
9)	T	Bromomethane			1.732	1.419	1.456	1.223	1.320	15.58
10)	T	Chloroethane			0.548	0.498	0.458	0.443	0.459	9.89
11)	T	Ethanol			0.466	0.454	0.339	0.316	0.341	22.51
12)	T	Acrolein			0.385	0.346	0.276	0.273	0.290	16.78
13)	T	Vinyl Bromide			1.654	1.410	1.249	1.246	1.298	12.66
14)	T	Freon 11			5.356	4.760	4.368	4.251	4.393	10.46
15)	T	Acetone			0.580	0.446	0.467	0.385	0.432	15.55
16)	T	Pentane			1.399	1.121	0.953	0.938	0.986	19.28
17)	T	Isopropyl alcoh			1.936	1.738	1.419	1.309	1.409	19.82
18)	T	1,1-dichloroeth			1.544	1.424	1.271	1.223	1.283	10.49
19)	T	Freon 113			3.697	3.334	3.051	3.060	3.094	9.58
20)	t	t-Butyl alcohol			2.795	2.640	2.350	2.175	2.248	14.34
21)	T	Methylene chlor			1.287	1.198	1.152	1.112	1.124	7.74
22)	T	Allyl chloride			1.371	1.068	0.996	0.948	0.998	16.47
23)	T	Carbon disulfid			4.365	3.573	3.215	3.276	3.316	14.26
24)	T	trans-1,2-dichl			1.785	1.581	1.489	1.479	1.522	8.00
25)	T	methyl tert-but			3.237	3.087	2.752	2.784	2.881	6.44
26)	T	1,1-dichloroeth			2.501	2.236	2.143	2.145	2.155	7.74
27)	T	Vinyl acetate			2.311	1.977	1.623	1.860	1.869	11.34
28)	T	Methyl Ethyl Ke			0.536	0.469	0.440	0.428	0.461	7.54
29)	T	cis-1,2-dichlor			1.213	1.318	1.253	1.234	1.250	3.55
30)	T	Hexane			1.377	1.268	1.247	1.266	1.308	3.87
31)	T	Ethyl acetate			2.162	1.967	1.682	1.682	1.784	10.28
32)	T	Chloroform			3.438	3.077	2.917	2.874	2.918	8.58
33)	T	Tetrahydrofuran			0.985	0.870	0.782	0.811	0.828	8.85
34)	T	1,2-dichloroeth			1.826	1.794	1.645	1.604	1.641	7.17
35)	I	1,4-difluorobenzene	----------		ISTD	----------				
36)	T	1,1,1-trichloro			1.073	1.013	0.947	0.901	0.939	7.43
37)	T	Cyclohexane			0.412	0.377	0.375	0.379	0.387	3.38
38)	T	Carbon tetrachl	1.514	1.229	1.098	1.027	0.964	0.926	1.048	18.29
39)	T	Benzene			0.968	0.850	0.818	0.806	0.832	6.91
40)	T	Methyl methacry			0.347	0.270	0.242	0.278	0.271	12.09
41)	T	1,4-dioxane			0.218	0.242	0.234	0.211	0.213	9.01
42)	T	2,2,4-trimethyl			1.598	1.466	1.390	1.406	1.453	4.74
43)	T	Heptane			0.333	0.316	0.312	0.326	0.338	5.49
44)	T	Trichloroethene	0.593	0.476	0.419	0.397	0.392	0.393	0.425	15.21
45)	T	1,2-dichloropro			0.331	0.323	0.307	0.291	0.300	6.07
46)	T	Bromodichlorome			0.858	0.765	0.731	0.702	0.734	7.46
47)	T	cis-1,3-dichlor			0.445	0.416	0.389	0.378	0.400	5.47
48)	T	trans-1,3-dichl			0.427	0.366	0.357	0.345	0.359	8.05
49)	T	1,1,2-trichloro			0.395	0.345	0.323	0.317	0.329	8.71
50)	I	Chlorobenzene-d5	----------		ISTD	----------				
51)	T	Toluene			0.656	0.657	0.623	0.664	0.679	5.43

(#) = Out of Range ### Number of calibration levels exceeded format ###

Response Factor Report MSD #1

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 10:24:27 2016
Response via : Initial Calibration

Calibration Files
0.04 =AN031612.D 0.10 =AN031611.D 0.15 =AN031610.D
0.30 =AN031609.D 0.50 =AN031608.D 0.75 =AN031607.D

		Compound	0.04	0.10	0.15	0.30	0.50	0.75	Avg	%RSD
52)	T	Methyl Isobutyl			1.257	1.227	1.174	1.227	1.201	5.80
53)	T	Dibromochlorome			0.954	0.844	0.859	0.850	0.857	4.94
54)	T	Methyl Butyl Ke			1.113	1.133	0.978	1.026	1.068	7.36
55)	T	1,2-dibromoetha			1.023	0.886	0.837	0.798	0.845	9.38
56)	T	Tetrachloroethy	0.981	0.712	0.625	0.622	0.586	0.599	0.648	19.03
57)	T	Chlorobenzene			0.989	0.894	0.875	0.855	0.891	4.61
58)	T	1,1,1,2-tetrach			0.688	0.700	0.664	0.649	0.666	3.94
59)	T	Ethylbenzene			1.179	1.069	1.076	1.097	1.165	6.41
60)	T	m&p-xylene			0.862	0.818	0.830	0.822	0.925	11.55
61)	T	Nonane			0.537	0.452	0.455	0.474	0.552	16.56
62)	T	Styrene			0.616	0.546	0.553	0.568	0.644	13.48
63)	T	Bromoform			0.471	0.450	0.440	0.442	0.463	4.51
64)	T	o-xylene			1.102	0.918	1.093	1.016	1.109	9.78
65)	T	Cumene			1.528	1.180	1.102	1.083	1.299	13.89
66)	S	Bromofluorobenz	0.602	0.608	0.592	0.601	0.592	0.614	0.643	9.58
67)	T	1,1,2,2-tetrach			1.606	1.289	1.081	1.068	1.140	18.58
68)	T	Propylbenzene			1.653	1.450	1.274	1.157	1.379	13.20
69)	T	2-Chlorotoluene			1.115	0.938	0.930	0.834	1.004	10.36
70)	T	4-ethyltoluene			1.437	1.277	1.046	1.000	1.183	12.64
71)	T	1,3,5-trimethyl			1.760	1.512	1.301	1.240	1.416	11.59
72)	T	1,2,4-trimethyl			1.647	1.374	1.172	1.119	1.224	15.92
73)	T	1,3-dichloroben			0.958	0.839	0.718	0.663	0.778	11.85
74)	T	benzyl chloride			1.256	1.055	1.074	1.101	1.110	8.22
75)	T	1,4-dichloroben			0.854	0.804	0.638	0.633	0.733	11.05
76)	T	1,2,3-trimethyl			1.944	1.737	1.429	1.376	1.510	14.35
77)	T	1,2-dichloroben			1.394	1.099	0.940	0.846	0.954	21.55
78)	T	1,2,4-trichloro			0.693	0.719	0.677	0.622	0.720	10.92
79)	T	Naphthalene			1.699	1.607	1.503	1.407	1.494	11.86
80)	T	Hexachloro-1,3-			1.959	1.831	1.660	1.766	1.754	7.91

(#) = Out of Range ### Number of calibration levels exceeded format ###

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\AN031603.D Vial: 2
Acq On : 16 Mar 2016 6:50 pm Operator: RJP
Sample : A1UG_2.0 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 17 08:19:00 2016 Quant Results File: A316_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 08:17:56 2016
Response via : Continuing Cal File: C:\HPCHEM\1\DATA\AN031606.D
DataAcq Meth : 1UG_RUN

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane	9.79	128	39696	1.00	ppb		-0.01
35) 1,4-difluorobenzene	12.05	114	119341	1.00	ppb		0.00
50) Chlorobenzene-d5	16.56	117	65204	1.00	ppb		0.00
System Monitoring Compounds							
66) Bromofluorobenzene	18.13	95	48331	1.15	ppb		0.00
Spiked Amount 1.000	Range 70 - 130		Recovery = 115.00%				
Target Compounds							Qvalue
2) Propylene	4.14	41	52720	1.77	ppb	#	100
3) Freon 12	4.19	85	300982	1.82	ppb		100
4) Chloromethane	4.39	50	75653	1.85	ppb		90
5) Freon 114	4.39	85	252561	1.79	ppb		99
6) Vinyl Chloride	4.58	62	71454	1.80	ppb		89
7) Butane	4.68	43	84007	1.71	ppb		95
8) 1,3-butadiene	4.69	39	60171	1.98	ppb		88
9) Bromomethane	5.03	94	88794	1.75	ppb		93
10) Chloroethane	5.20	64	31848	1.90	ppb	#	85
11) Ethanol	5.34	45	22162	1.89	ppb	#	66
12) Acrolein	5.93	56	19963m	1.92	ppb		
13) Vinyl Bromide	5.54	106	90315	1.77	ppb		96
14) Freon 11	5.80	101	311834	1.84	ppb		99
15) Acetone	6.02	58	31506	2.05	ppb	#	82
16) Pentane	6.06	42	64025	1.75	ppb		99
17) Isopropyl alcohol	6.13	45	95378	1.89	ppb	#	46
18) 1,1-dichloroethene	6.56	96	90887	1.81	ppb		89
19) Freon 113	6.75	101	218149	1.79	ppb		96
20) t-Butyl alcohol	6.87	59	153022	1.79	ppb	#	73
21) Methylene chloride	7.04	84	81781	1.83	ppb		92
22) Allyl chloride	7.00	41	75821	2.00	ppb		88
23) Carbon disulfide	7.19	76	229469	1.81	ppb		97
24) trans-1,2-dichloroethene	7.97	61	109677	1.86	ppb		90
25) methyl tert-butyl ether	8.01	73	217092	1.92	ppb		96
26) 1,1-dichloroethane	8.39	63	155890	1.83	ppb		99
27) Vinyl acetate	8.41	43	139082	1.80	ppb		99
28) Methyl Ethyl Ketone	8.92	72	35109	1.95	ppb	#	100
29) cis-1,2-dichloroethene	9.33	61	95640	1.86	ppb		93
30) Hexane	8.90	57	103745	1.97	ppb		96
31) Ethyl acetate	9.51	43	132681	1.93	ppb		96
32) Chloroform	9.94	83	209422	1.84	ppb		98
33) Tetrahydrofuran	10.15	42	59093	1.80	ppb		85
34) 1,2-dichloroethane	11.07	62	118759	1.86	ppb		87
36) 1,1,1-trichloroethane	10.75	97	211952	1.92	ppb		100
37) Cyclohexane	11.44	56	95560	2.08	ppb		90
38) Carbon tetrachloride	11.39	117	221613	1.95	ppb		97
39) Benzene	11.36	78	193181	1.98	ppb		98
40) Methyl methacrylate	12.91	41	62212	1.99	ppb	#	80
41) 1,4-dioxane	12.99	88	48143	1.87	ppb		97
42) 2,2,4-trimethylpentane	12.18	57	351781	2.00	ppb		98
43) Heptane	12.53	43	86114	2.04	ppb		88
44) Trichloroethene	12.67	130	95479	2.05	ppb		99
45) 1,2-dichloropropane	12.79	63	67226	1.91	ppb		98

(#) = qualifier out of range (m) = manual integration
AN031603.D A316_1UG.M Thu Apr 07 13:05:28 2016 MSD1 Page 1

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\AN031603.D Vial: 2
Acq On : 16 Mar 2016 6:50 pm Operator: RJP
Sample : A1UG_2.0 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 17 08:19:00 2016 Quant Results File: A316_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 08:17:56 2016
Response via : Continuing Cal File: C:\HPCHEM\1\DATA\AN031606.D
DataAcq Meth : 1UG_RUN

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
46)	Bromodichloromethane	13.11	83	168164	1.95	ppb	99
47)	cis-1,3-dichloropropene	13.89	75	96193	2.09	ppb	100
48)	trans-1,3-dichloropropene	14.62	75	81400	1.94	ppb	92
49)	1,1,2-trichloroethane	14.93	97	73046	1.93	ppb	98
51)	Toluene	14.67	92	95859	2.10	ppb	98
52)	Methyl Isobutyl Ketone	13.82	43	161205	1.95	ppb	98
53)	Dibromochloromethane	15.60	129	111719m	1.98	ppb	
54)	Methyl Butyl Ketone	15.11	43	145361	1.95	ppb	97
55)	1,2-dibromoethane	15.85	107	103573	1.91	ppb	97
56)	Tetrachloroethylene	15.66	164	77730	1.98	ppb	98
57)	Chlorobenzene	16.61	112	114609	2.01	ppb	89
58)	1,1,1,2-tetrachloroethane	16.71	131	83929	1.85	ppb	98
59)	Ethylbenzene	16.85	91	163580	2.13	ppb	98
60)	m&p-xylene	17.04	91	279419	4.64	ppb	97
61)	Nonane	17.38	43	90950	2.59	ppb	98
62)	Styrene	17.46	104	100790	2.36	ppb	89
63)	Bromoform	17.58	173	63866	2.18	ppb	97
64)	o-xylene	17.48	91	162873	2.39	ppb	95
65)	Cumene	18.01	105	197775	2.53	ppb	99
67)	1,1,2,2-tetrachloroethane	17.92	83	129149	1.85	ppb	99
68)	Propylbenzene	18.53	91	209599m	2.74	ppb	
69)	2-Chlorotoluene	18.58	91	145425m	2.28	ppb	
70)	4-ethyltoluene	18.70	105	165888m	2.44	ppb	
71)	1,3,5-trimethylbenzene	18.75	105	184877m	2.18	ppb	
72)	1,2,4-trimethylbenzene	19.19	105	147804	2.03	ppb	98
73)	1,3-dichlorobenzene	19.49	146	99804	2.01	ppb	98
74)	benzyl chloride	19.56	91	137885	2.04	ppb	97
75)	1,4-dichlorobenzene	19.61	146	97347	2.06	ppb	98
76)	1,2,3-trimethylbenzene	19.65	105	180121	1.88	ppb	98
77)	1,2-dichlorobenzene	19.93	146	104274	1.75	ppb	97
78)	1,2,4-trichlorobenzene	21.78	180	115972	2.52	ppb	96
79)	Naphthalene	21.98	128	221487m	2.55	ppb	
80)	Hexachloro-1,3-butadiene	22.06	225	218825	1.78	ppb	95

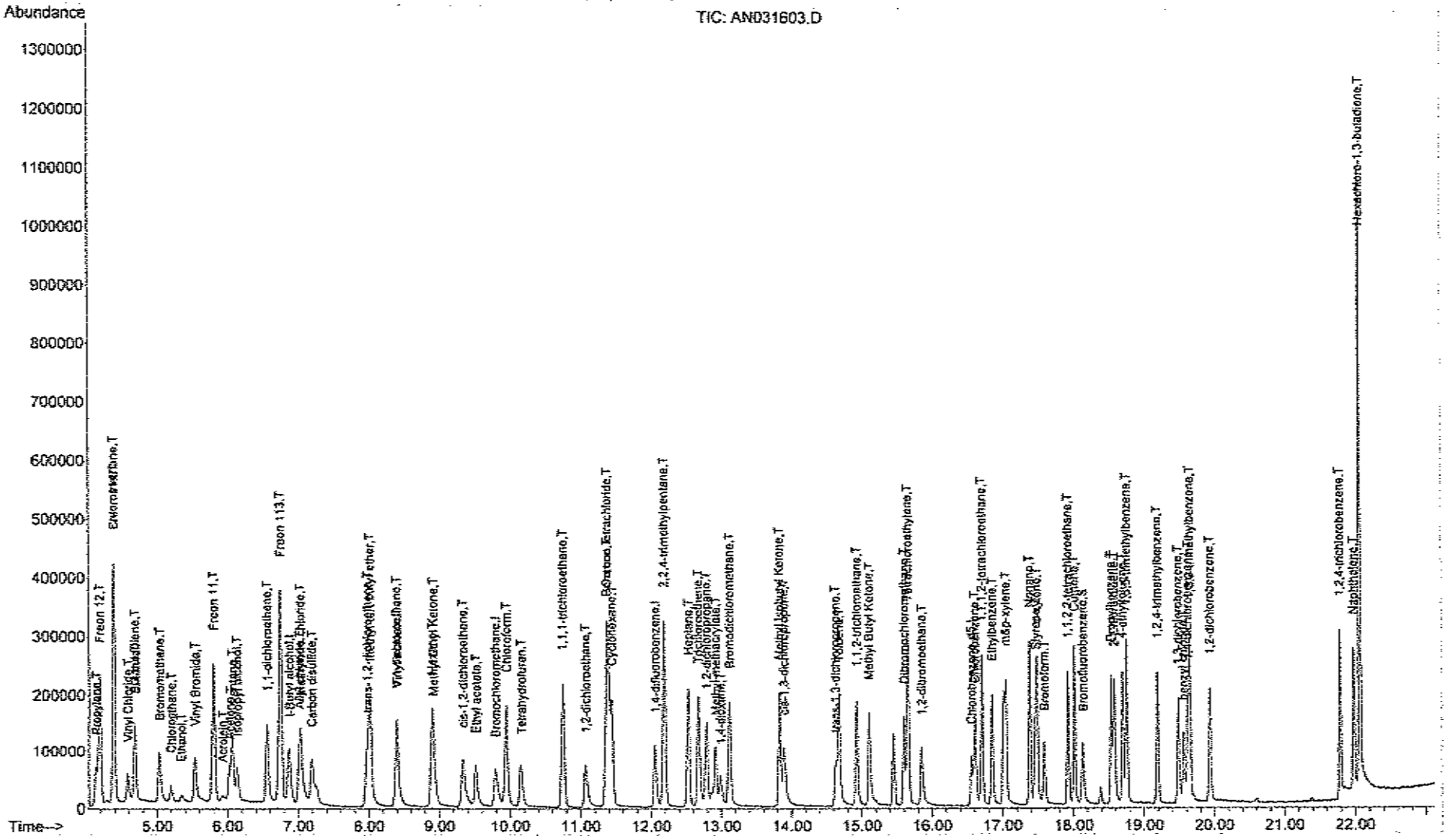
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\HPCHEM\1\DATA\AN031603.D
Acq On : 16 Mar 2016 6:50 pm
Sample : A1UG_2.0
Misc : A316_1UG
MS Integration Params: RTEINT.P
Quant Time: Mar 17 9:48 2016

Vial: 2
Operator: RJP
Inst : MSD #1
Multiplr: 1.00

Quant Results File: A316_1UG.RES

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 10:24:27 2016
Response via : Continuing Cal File: C:\HPCHEM\1\DATA\AN031606.D



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\AN031604.D Vial: 3
Acq On : 16 Mar 2016 7:30 pm Operator: RJP
Sample : A1UG_1.50 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 17 08:18:42 2016 Quant Results File: A316_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 08:17:56 2016
Response via : Continuing Cal File: C:\HPCHEM\1\DATA\AN031606.D
DataAcq Meth : 1UG_RUN

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane	9.80	128	37388	1.00	ppb		-0.01
35) 1,4-difluorobenzene	12.06	114	125097	1.00	ppb		0.00
50) Chlorobenzene-d5	16.56	117	71425	1.00	ppb		0.00
System Monitoring Compounds							
66) Bromofluorobenzene	18.13	95	48889	1.06	ppb		0.00
Spiked Amount 1.000	Range 70 - 130		Recovery = 106.00%				
Target Compounds							Qvalue
2) Propylene	4.13	41	41028	1.46	ppb	#	100
3) Freon 12	4.19	85	229102	1.47	ppb		99
4) Chloromethane	4.39	50	56920	1.48	ppb		93
5) Freon 114	4.39	85	192137	1.45	ppb		100
6) Vinyl Chloride	4.58	62	53313	1.42	ppb		92
7) Butane	4.68	43	62790	1.36	ppb		97
8) 1,3-butadiene	4.69	39	42193	1.48	ppb		82
9) Bromomethane	5.03	94	66997	1.40	ppb		93
10) Chloroethane	5.20	64	24605	1.56	ppb		88
11) Ethanol	5.35	45	15188	1.37	ppb	#	66
12) Acrolein	5.94	56	14959m	1.53	ppb		
13) Vinyl Bromide	5.54	106	68982	1.43	ppb		98
14) Freon 11	5.80	101	235962	1.48	ppb		99
15) Acetone	6.03	58	22358m	1.54	ppb		
16) Pentane	6.07	42	50174	1.45	ppb		88
17) Isopropyl alcohol	6.14	45	68376	1.44	ppb	#	46
18) 1,1-dichloroethene	6.56	96	68884	1.45	ppb	#	89
19) Freon 113	6.75	101	165966	1.44	ppb		97
20) t-Butyl alcohol	6.88	59	113330	1.41	ppb	#	75
21) Methylene chloride	7.04	84	58969m	1.40	ppb		
22) Allyl chloride	7.01	41	49125m	1.38	ppb		
23) Carbon disulfide	7.19	76	165861	1.39	ppb		99
24) trans-1,2-dichloroethene	7.97	61	85565	1.54	ppb		91
25) methyl tert-butyl ether	8.02	73	162235	1.52	ppb		95
26) 1,1-dichloroethane	8.39	63	120712	1.50	ppb		98
27) Vinyl acetate	8.41	43	105982	1.46	ppb		97
28) Methyl Ethyl Ketone	8.92	72	26847	1.58	ppb	#	100
29) cis-1,2-dichloroethene	9.34	61	72635	1.50	ppb		92
30) Hexane	8.90	57	77717	1.57	ppb		97
31) Ethyl acetate	9.52	43	98475	1.52	ppb	#	82
32) Chloroform	9.94	83	161422	1.50	ppb		99
33) Tetrahydrofuran	10.15	42	46658	1.51	ppb		91
34) 1,2-dichloroethane	11.08	62	92764	1.54	ppb		89
36) 1,1,1-trichloroethane	10.75	97	164249	1.42	ppb		98
37) Cyclohexane	11.44	56	70836	1.47	ppb		87
38) Carbon tetrachloride	11.38	117	171139	1.44	ppb		97
39) Benzene	11.37	78	149554	1.46	ppb		99
40) Methyl methacrylate	12.91	41	47301	1.45	ppb	#	83
41) 1,4-dioxane	12.99	88	34749	1.29	ppb		97
42) 2,2,4-trimethylpentane	12.18	57	259886	1.41	ppb		98
43) Heptane	12.53	43	66410	1.50	ppb		89
44) Trichloroethene	12.68	130	73890	1.51	ppb		98
45) 1,2-dichloropropane	12.79	63	53981	1.46	ppb		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\AN031604.D Vial: 3
Acq On : 16 Mar 2016 7:30 pm Operator: RJP
Sample : A1UG_1.50 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 17 08:18:42 2016 Quant Results File: A316_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 08:17:56 2016
Response via : Continuing Cal File: C:\HPCHEM\1\DATA\AN031606.D
DataAcq Meth : 1UG_RUN

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
46)	Bromodichloromethane	13.11	83	131443	1.45	ppb	98
47)	cis-1,3-dichloropropene	13.89	75	73577	1.52	ppb	98
48)	trans-1,3-dichloropropene	14.63	75	63904	1.46	ppb	93
49)	1,1,2-trichloroethane	14.93	97	60215	1.52	ppb	99
51)	Toluene	14.67	92	76620	1.53	ppb	96
52)	Methyl Isobutyl Ketone	13.83	43	112630	1.24	ppb	97
53)	Dibromochloromethane	15.60	129	89145m	1.44	ppb	
54)	Methyl Butyl Ketone	15.11	43	100523	1.23	ppb	96
55)	1,2-dibromoethane	15.85	107	84426	1.42	ppb	98
56)	Tetrachloroethylene	15.65	164	62278	1.45	ppb	98
57)	Chlorobenzene	16.61	112	93584	1.50	ppb	91
58)	1,1,1,2-tetrachloroethane	16.70	131	67746	1.37	ppb	98
59)	Ethylbenzene	16.85	91	131064	1.56	ppb	97
60)	m&p-xylene	17.04	91	219605	3.33	ppb	97
61)	Nonane	17.38	43	67119	1.74	ppb	99
62)	Styrene	17.46	104	75304	1.61	ppb	91
63)	Bromoform	17.59	173	49198	1.53	ppb	100
64)	o-xylene	17.48	91	129975	1.74	ppb	95
65)	Cumene	18.02	105	143847	1.68	ppb	99
67)	1,1,2,2-tetrachloroethane	17.92	83	102893	1.35	ppb	99
68)	Propylbenzene	18.54	91	146044m	1.74	ppb	
69)	2-Chlorotoluene	18.58	91	109401m	1.57	ppb	
70)	4-ethyltoluene	18.70	105	121465m	1.63	ppb	
71)	1,3,5-trimethylbenzene	18.75	105	142483m	1.53	ppb	
72)	1,2,4-trimethylbenzene	19.19	105	113063	1.42	ppb	95
73)	1,3-dichlorobenzene	19.48	146	75726	1.39	ppb	98
74)	benzyl chloride	19.56	91	105994	1.43	ppb	97
75)	1,4-dichlorobenzene	19.62	146	71922	1.39	ppb	99
76)	1,2,3-trimethylbenzene	19.65	105	141118	1.34	ppb	97
77)	1,2-dichlorobenzene	19.93	146	81574	1.25	ppb	98
78)	1,2,4-trichlorobenzene	21.79	180	77042	1.53	ppb	96
79)	Naphthalene	21.98	128	162805	1.71	ppb	98
80)	Hexachloro-1,3-butadiene	22.06	225	164815	1.22	ppb	95

(#) = qualifier out of range (m) = manual integration (+) = signals summed
AN031604.D A316_1UG.M Thu Apr 07 13:05:33 2016 MSD1 Page 2

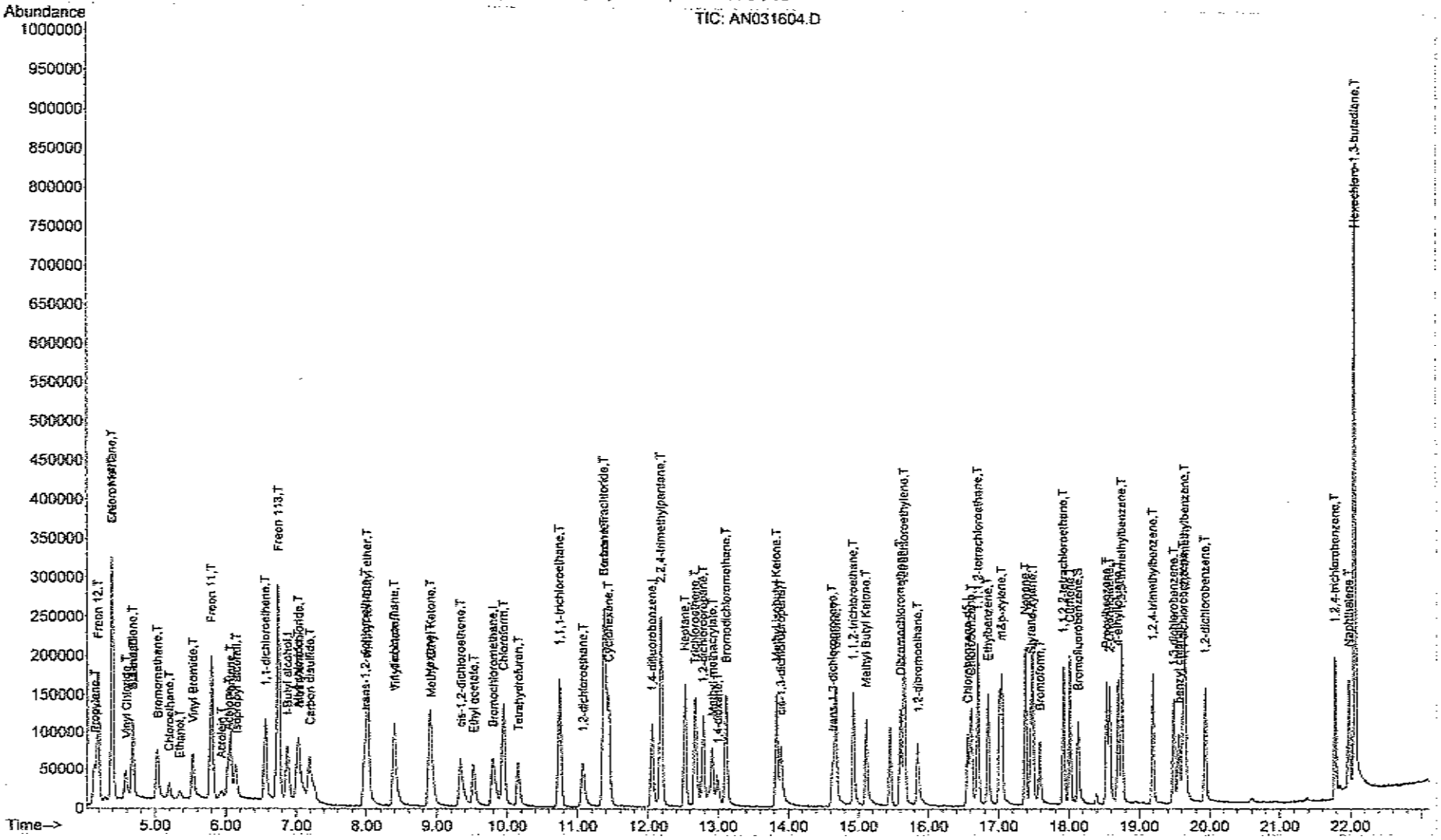
Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\AN031604.D
Acq On : 16 Mar 2016 7:30 pm
Sample : A1UG_1.50
Misc : A316_1UG
MS Integration Params: RTEINT.P
Quant Time: Mar 17 9:53 2016

Vial: 3
Operator: RJP
Inst : MSD #1
Multiplr: 1.00

Quant Results File: A316_1UG.RES

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 10:24:27 2016
Response via : Continuing Cal File: C:\HPCHEM\1\DATA\AN031606.D



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\AN031605.D Vial: 4
Acq On : 16 Mar 2016 8:10 pm Operator: RJP
Sample : A1UG_1.25 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 17 08:18:24 2016 Quant Results File: A316_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 08:17:56 2016
Response via : Continuing Cal File: C:\HPCHEM\1\DATA\AN031606.D
DataAcq Meth : 1UG_RUN

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane	9.80	128	38435	1.00	ppb		0.00
35) 1,4-difluorobenzene	12.06	114	118006	1.00	ppb		0.00
50) Chlorobenzene-d5	16.56	117	66689	1.00	ppb		0.00
System Monitoring Compounds							
66) Bromofluorobenzene	18.13	95	50183	1.17	ppb		0.00
Spiked Amount 1.000	Range 70 - 130		Recovery = 117.00%				
Target Compounds							Qvalue
2) Propylene	4.14	41	34125	1.18	ppb	#	100
3) Freon 12	4.19	85	188632	1.18	ppb		99
4) Chloromethane	4.39	50	46990	1.19	ppb		94
5) Freon 114	4.39	85	159182	1.17	ppb		99
6) Vinyl Chloride	4.58	62	44524	1.16	ppb		93
7) Butane	4.68	43	55448	1.16	ppb		94
8) 1,3-butadiene	4.69	39	36591	1.24	ppb		84
9) Bromomethane	5.04	94	55311	1.13	ppb		91
10) Chloroethane	5.20	64	20643	1.27	ppb	#	85
11) Ethanol	5.36	45	13696	1.20	ppb	#	74
12) Acrolein	5.94	56	12410m	1.24	ppb		
13) Vinyl Bromide	5.54	106	56822	1.15	ppb		95
14) Freon 11	5.80	101	194667	1.19	ppb		99
15) Acetone	6.03	58	18687m	1.25	ppb		
16) Pentane	6.07	42	41343m	1.16	ppb		
17) Isopropyl alcohol	6.15	45	57073	1.17	ppb	#	46
18) 1,1-dichloroethene	6.56	96	56328	1.16	ppb		89
19) Freon 113	6.75	101	137846	1.17	ppb		96
20) t-Butyl alcohol	6.88	59	93562	1.13	ppb		93
21) Methylene chloride	7.04	84	50280m	1.16	ppb		
22) Allyl chloride	7.01	41	41687m	1.14	ppb		
23) Carbon disulfide	7.20	76	148023	1.20	ppb		97
24) trans-1,2-dichloroethene	7.97	61	68887	1.21	ppb		94
25) methyl tert-butyl ether	8.03	73	131518	1.20	ppb		94
26) 1,1-dichloroethane	8.39	63	95089	1.15	ppb		97
27) Vinyl acetate	8.41	43	89018m	1.19	ppb		
28) Methyl Ethyl Ketone	8.94	72	21142	1.21	ppb	#	100
29) cis-1,2-dichloroethene	9.34	61	57658	1.16	ppb		90
30) Hexane	8.89	57	62689	1.23	ppb		97
31) Ethyl acetate	9.52	43	78814	1.18	ppb		95
32) Chloroform	9.94	83	128907	1.17	ppb		98
33) Tetrahydrofuran	10.15	42	37821	1.19	ppb		89
34) 1,2-dichloroethane	11.07	62	73032	1.18	ppb		89
36) 1,1,1-trichloroethane	10.75	97	131367	1.20	ppb		99
37) Cyclohexane	11.44	56	57547	1.27	ppb		90
38) Carbon tetrachloride	11.39	117	137163	1.22	ppb		99
39) Benzene	11.37	78	116970	1.21	ppb		99
40) Methyl methacrylate	12.92	41	37863	1.23	ppb	#	83
41) 1,4-dioxane	13.00	88	28574	1.12	ppb		100
42) 2,2,4-trimethylpentane	12.19	57	211404	1.21	ppb		98
43) Heptane	12.53	43	50947	1.22	ppb		92
44) Trichloroethene	12.67	130	57922	1.26	ppb		99
45) 1,2-dichloropropane	12.78	63	41974	1.20	ppb		100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\AN031605.D Vial: 4
Acq On : 16 Mar 2016 8:10 pm Operator: RJP
Sample : A1UG_1.25 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 17 08:18:24 2016 Quant Results File: A316_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 08:17:56 2016
Response via : Continuing Cal File: C:\HPCHEM\1\DATA\AN031606.D
DataAcq Meth : 1UG_RUN

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
46)	Bromodichloromethane	13.11	83	102348	1.20	ppb	99
47)	cis-1,3-dichloropropene	13.90	75	57578	1.26	ppb	99
48)	trans-1,3-dichloropropene	14.63	75	51108	1.23	ppb	92
49)	1,1,2-trichloroethane	14.93	97	46126	1.24	ppb	95
51)	Toluene	14.68	92	56126	1.20	ppb	96
52)	Methyl Isobutyl Ketone	13.83	43	97491m	1.15	ppb	
53)	Dibromochloromethane	15.60	129	67490m	1.17	ppb	
54)	Methyl Butyl Ketone	15.11	43	90049m	1.18	ppb	
55)	1,2-dibromoethane	15.85	107	66367	1.20	ppb	97
56)	Tetrachloroethylene	15.66	164	47939	1.19	ppb	100
57)	Chlorobenzene	16.61	112	73949	1.27	ppb	85
58)	1,1,1,2-tetrachloroethane	16.71	131	54587	1.18	ppb	95
59)	Ethylbenzene	16.85	91	103191	1.32	ppb	98
60)	m&p-xylene	17.04	91	173419	2.81	ppb	97
61)	Nonane	17.38	43	52439	1.46	ppb	98
62)	Styrene	17.46	104	61068	1.40	ppb	92
63)	Bromoform	17.58	173	41297	1.38	ppb	99
64)	o-xylene	17.48	91	99047m	1.42	ppb	
65)	Cumene	18.01	105	119471	1.49	ppb	98
67)	1,1,2,2-tetrachloroethane	17.92	83	87757	1.23	ppb	98
68)	Propylbenzene	18.54	91	112193m	1.43	ppb	
69)	2-Chlorotoluene	18.58	91	92322m	1.42	ppb	
70)	4-ethyltoluene	18.70	105	103814m	1.50	ppb	
71)	1,3,5-trimethylbenzene	18.75	105	120410m	1.39	ppb	
72)	1,2,4-trimethylbenzene	19.19	105	96928	1.30	ppb	96
73)	1,3-dichlorobenzene	19.49	146	67647	1.33	ppb	99
74)	benzyl chloride	19.56	91	93016	1.34	ppb	94
75)	1,4-dichlorobenzene	19.62	146	65798	1.36	ppb	95
76)	1,2,3-trimethylbenzene	19.65	105	117860	1.20	ppb	95
77)	1,2-dichlorobenzene	19.93	146	72700	1.20	ppb	96
78)	1,2,4-trichlorobenzene	21.78	180	62909	1.34	ppb	96
79)	Naphthalene	21.98	128	100472m	1.13	ppb	
80)	Hexachloro-1,3-butadiene	22.06	225	141195	1.12	ppb	95

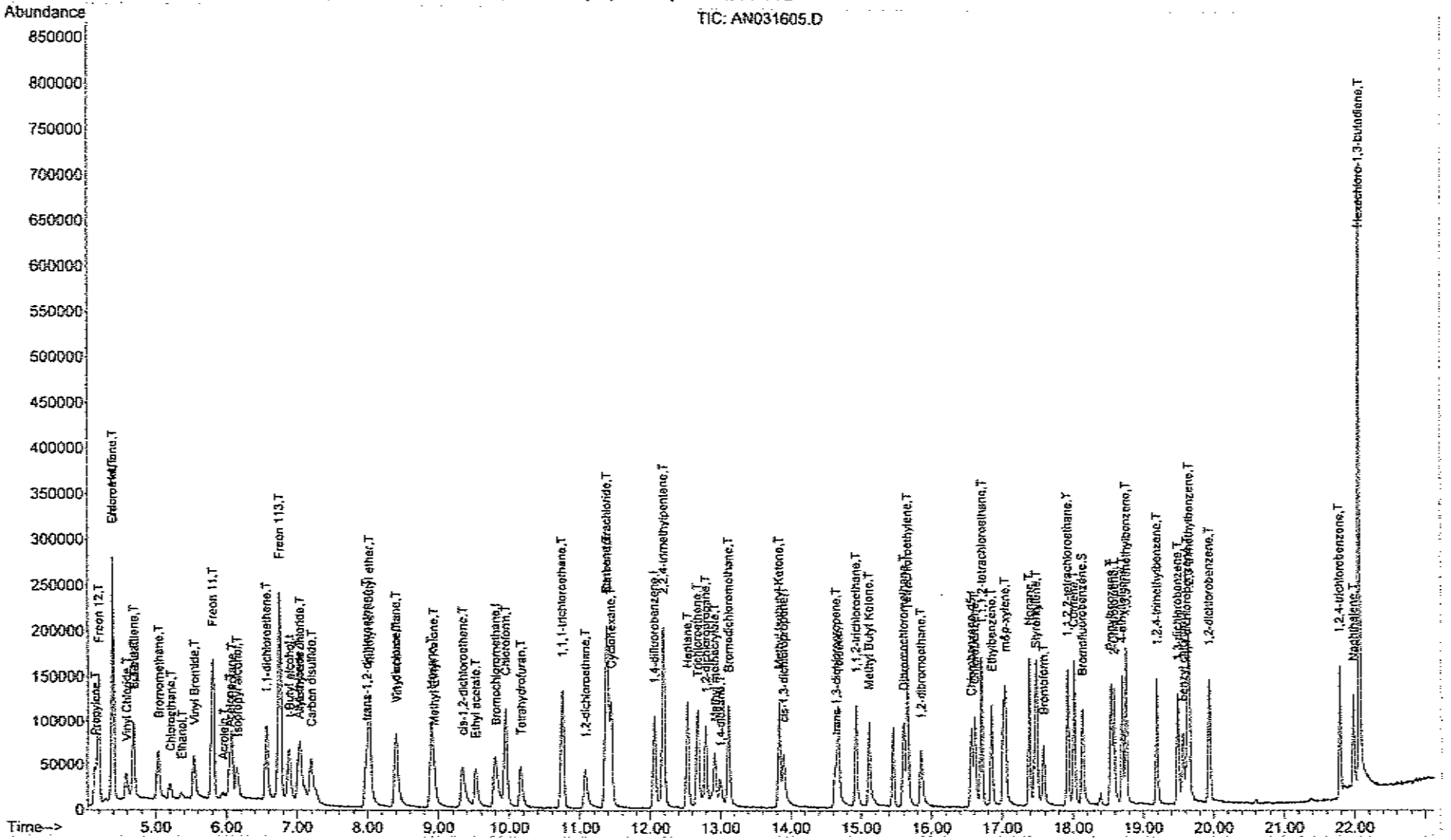
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\HPCHEM\1\DATA\AN031605.D
Acq On : 16 Mar 2016 8:10 pm
Sample : A1UG_1.25
Misc : A316_1UG
MS Integration Params: RTEINT.P
Quant Time: Mar 17 9:55 2016

Vial: 4
Operator: RJP
Inst : MSD #1
Multiplr: 1.00

Quant Results File: A316_1UG.RES

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 10:24:27 2016
Response via : Continuing Cal File: C:\HPCHEM\1\DATA\AN031606.D



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\AN031606.D Vial: 5
Acq On : 16 Mar 2016 8:49 pm Operator: RJP
Sample : A1UG_1.0 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 17 08:18:03 2016 Quant Results File: A316_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 08:17:56 2016
Response via : Continuing Cal File: C:\HPCHEM\1\DATA\AN031606.D
DataAcq Meth : 1UG_RUN

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane	9.81	128	36682	1.00	ppb		0.00
35) 1,4-difluorobenzene	12.06	114	112843	1.00	ppb		0.00
50) Chlorobenzene-d5	16.56	117	61333	1.00	ppb		0.00
System Monitoring Compounds							
66) Bromofluorobenzene	18.14	95	39738	1.01	ppb		0.00
Spiked Amount 1.000	Range 70 - 130		Recovery = 101.00%				
Target Compounds							Qvalue
2) Propylene	4.14	41	27277	0.99	ppb	#	100
3) Freon 12	4.19	85	151027	0.99	ppb		99
4) Chloromethane	4.39	50	37602	1.00	ppb		94
5) Freon 114	4.39	85	128823	0.99	ppb		100
6) Vinyl Chloride	4.58	62	36447	0.99	ppb		88
7) Butane	4.68	43	44989	0.99	ppb		96
8) 1,3-butadiene	4.69	39	28499	1.02	ppb		81
9) Bromomethane	5.03	94	46282	0.99	ppb		95
10) Chloroethane	5.21	64	16583	1.07	ppb		100
11) Ethanol	5.36	45	11746	1.08	ppb	#	74
12) Acrolein	5.95	56	9571m	1.00	ppb		
13) Vinyl Bromide	5.54	106	46664	0.99	ppb		96
14) Freon 11	5.80	101	154925	0.99	ppb		98
15) Acetone	6.04	58	14328m	1.01	ppb		
16) Pentane	6.07	42	33653	0.99	ppb		94
17) Isopropyl alcohol	6.15	45	46253	0.99	ppb	#	46
18) 1,1-dichloroethene	6.56	96	46032	0.99	ppb	#	88
19) Freon 113	6.74	101	111420	0.99	ppb		96
20) t-Butyl alcohol	6.88	59	78078	0.99	ppb	#	77
21) Methylene chloride	7.04	84	40970	0.99	ppb		97
22) Allyl chloride	7.02	41	33103m	0.95	ppb		
23) Carbon disulfide	7.20	76	116250	0.99	ppb		96
24) trans-1,2-dichloroethene	7.99	61	54958	1.01	ppb		94
25) methyl tert-butyl ether	8.03	73	103598	0.99	ppb		93
26) 1,1-dichloroethane	8.40	63	77856	0.99	ppb		99
27) Vinyl acetate	8.43	43	61972	0.87	ppb		96
28) Methyl Ethyl Ketone	8.94	72	16500	0.99	ppb	#	100
29) cis-1,2-dichloroethene	9.35	61	46977	0.99	ppb		92
30) Hexane	8.90	57	48164	0.99	ppb		94
31) Ethyl acetate	9.52	43	62899	0.99	ppb		94
32) Chloroform	9.94	83	104226	0.99	ppb		98
33) Tetrahydrofuran	10.15	42	29839	0.99	ppb		89
34) 1,2-dichloroethane	11.09	62	58404	0.99	ppb		89
36) 1,1,1-trichloroethane	10.75	97	104507	1.00	ppb		97
37) Cyclohexane	11.45	56	43452	1.00	ppb		89
38) Carbon tetrachloride	11.39	117	107492	1.00	ppb		98
39) Benzene	11.36	78	91969	1.00	ppb		98
40) Methyl methacrylate	12.91	41	29340	0.99	ppb	#	83
41) 1,4-dioxane	13.00	88	24261	1.00	ppb		100
42) 2,2,4-trimethylpentane	12.18	57	166364	1.00	ppb		99
43) Heptane	12.53	43	39883	1.00	ppb		93
44) Trichloroethene	12.67	130	44026	1.00	ppb		97
45) 1,2-dichloropropane	12.79	63	33334	1.00	ppb		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\AN031606.D Vial: 5
Acq On : 16 Mar 2016 8:49 pm Operator: RJP
Sample : A1UG_1.0 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 17 08:18:03 2016 Quant Results File: A316_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 08:17:56 2016
Response via : Continuing Cal File: C:\HPCHEM\1\DATA\AN031606.D
DataAcq Meth : 1UG_RUN

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
46)	Bromodichloromethane	13.12	83	81385	1.00	ppb	99
47)	cis-1,3-dichloropropene	13.90	75	43288	0.99	ppb	98
48)	trans-1,3-dichloropropene	14.63	75	39100	0.99	ppb	92
49)	1,1,2-trichloroethane	14.93	97	35639	1.00	ppb	97
51)	Toluene	14.68	92	43216	1.01	ppb	99
52)	Methyl Isobutyl Ketone	13.83	43	77557	1.00	ppb	97
53)	Dibromochloromethane	15.60	129	52061m	0.98	ppb	
54)	Methyl Butyl Ketone	15.11	43	70973	1.01	ppb	97
55)	1,2-dibromoethane	15.86	107	51366	1.01	ppb	95
56)	Tetrachloroethylene	15.66	164	37193	1.01	ppb	98
57)	Chlorobenzene	16.61	112	53911	1.01	ppb	89
58)	1,1,1,2-tetrachloroethane	16.70	131	42883	1.01	ppb	95
59)	Ethylbenzene	16.85	91	72637	1.01	ppb	98
60)	m&p-xylene	17.04	91	114219	2.02	ppb	94
61)	Nonane	17.38	43	33317	1.01	ppb	98
62)	Styrene	17.46	104	40542	1.01	ppb	90
63)	Bromoform	17.58	173	27823	1.01	ppb	99
64)	o-xylene	17.48	91	66836	1.04	ppb	91
65)	Cumene	18.02	105	74125	1.01	ppb	99
67)	1,1,2,2-tetrachloroethane	17.92	83	65967	1.01	ppb	99
68)	Propylbenzene	18.53	91	72561m	1.01	ppb	
69)	2-Chlorotoluene	18.58	91	59363m	0.99	ppb	
70)	4-ethyltoluene	18.70	105	64669m	1.01	ppb	
71)	1,3,5-trimethylbenzene	18.75	105	81111m	1.01	ppb	
72)	1,2,4-trimethylbenzene	19.19	105	68998	1.01	ppb	98
73)	1,3-dichlorobenzene	19.48	146	46992	1.01	ppb	99
74)	benzyl chloride	19.56	91	75652	1.19	ppb	97
75)	1,4-dichlorobenzene	19.61	146	44723	1.01	ppb	98
76)	1,2,3-trimethylbenzene	19.65	105	90793	1.01	ppb	96
77)	1,2-dichlorobenzene	19.93	146	56239	1.01	ppb	97
78)	1,2,4-trichlorobenzene	21.78	180	42066	0.97	ppb	95
79)	Naphthalene	21.98	128	80682	0.99	ppb	97
80)	Hexachloro-1,3-butadiene	22.06	225	116697	1.01	ppb	95

(#) = qualifier out of range (m) = manual integration (+) = signals summed
AN031606.D A316_1UG.M Thu Apr 07 13:05:41 2016 MSD1 Page 2

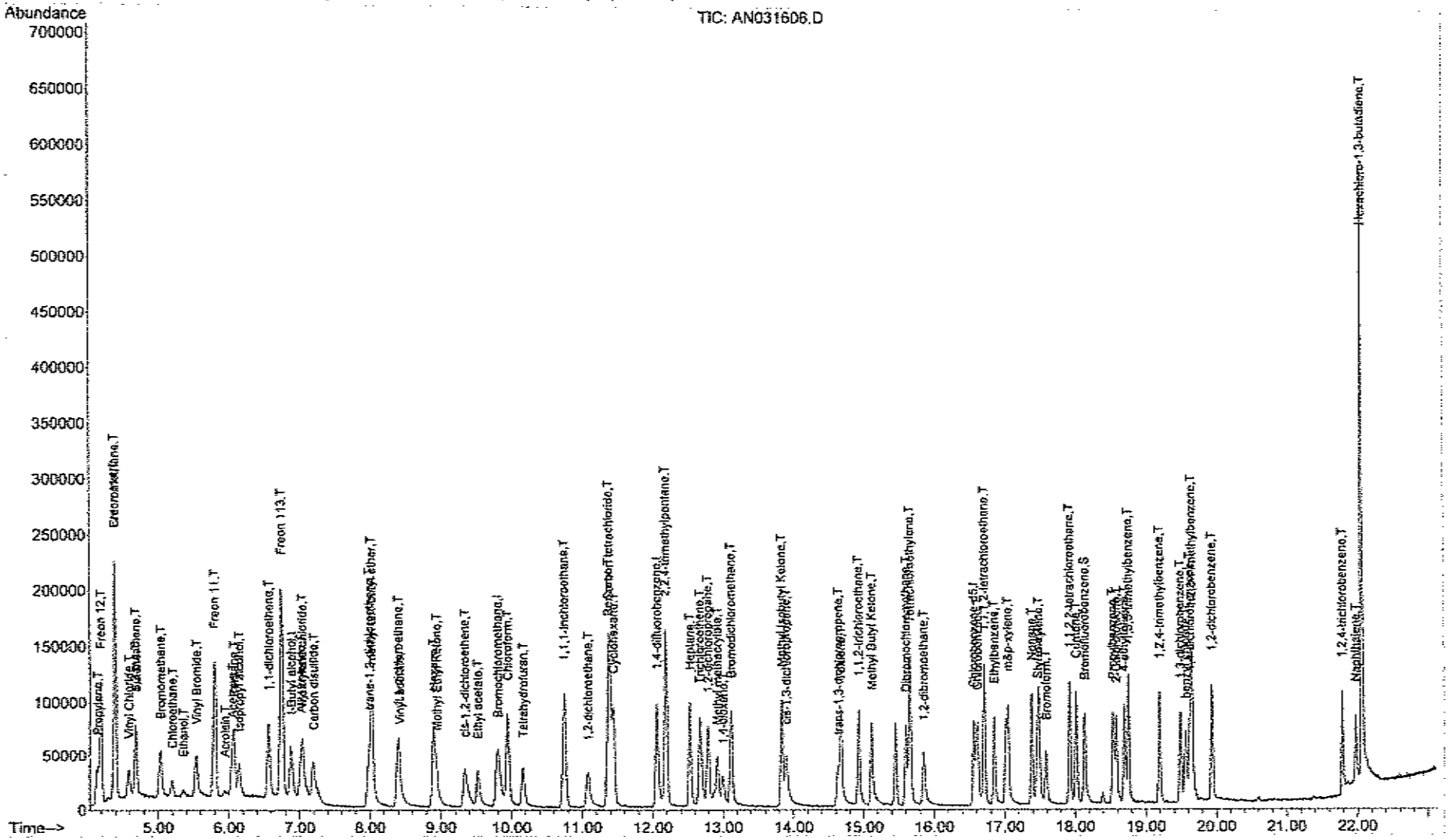
Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\AN031606.D
Acq On : 16 Mar 2016 8:49 pm
Sample : A1UG_1.0
Misc : A316_1UG
MS Integration Params: RTEINT.P
Quant Time: Mar 17 10:12 2016

Vial: 5
Operator: RJP
Inst : MSD #1
Multiplr: 1.00

Quant Results File: A316_1UG.RES

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 10:24:27 2016
Response via : Continuing Cal File: C:\HPCHEM\1\DATA\AN031606.D



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\AN031607.D Vial: 6
Acq On : 16 Mar 2016 9:27 pm Operator: RJP
Sample : A1UG_0.75 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 17 08:19:18 2016 Quant Results File: A316_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 08:17:56 2016
Response via : Continuing Cal File: C:\HPCHEM\1\DATA\AN031606.D
DataAcq Meth : 1UG_RUN

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane	9.81	128	36429	1.00	ppb		0.00
35) 1,4-difluorobenzene	12.06	114	115405	1.00	ppb		0.00
50) Chlorobenzene-d5	16.56	117	64493	1.00	ppb		0.00
System Monitoring Compounds							
66) Bromofluorobenzene	18.13	95	39593	0.95	ppb		0.00
Spiked Amount 1.000	Range 70 - 130		Recovery = 95.00%				
Target Compounds							Qvalue
2) Propylene	4.13	41	21494	0.78	ppb	#	100
3) Freon 12	4.19	85	115393	0.76	ppb		100
4) Chloromethane	4.39	50	30086	0.80	ppb		92
5) Freon 114	4.39	85	97880	0.76	ppb		98
6) Vinyl Chloride	4.58	62	27592	0.76	ppb		91
7) Butane	4.68	43	31050	0.69	ppb		96
8) 1,3-butadiene	4.69	39	21193	0.76	ppb		81
9) Bromomethane	5.04	94	33415	0.72	ppb		90
10) Chloroethane	5.21	64	12103	0.79	ppb		100
11) Ethanol	5.36	45	8634	0.80	ppb	#	72
12) Acrolein	5.97	56	7453m	0.78	ppb		
13) Vinyl Bromide	5.55	106	34036	0.73	ppb		96
14) Freon 11	5.81	101	116153	0.75	ppb		98
15) Acetone	6.05	58	10532m	0.75	ppb		
16) Pentane	6.07	42	25618	0.76	ppb		95
17) Isopropyl alcohol	6.16	45	35764	0.77	ppb	#	46
18) 1,1-dichloroethene	6.57	96	33426	0.72	ppb		89
19) Freon 113	6.74	101	83596	0.75	ppb		97
20) t-Butyl alcohol	6.90	59	59423	0.76	ppb	#	75
21) Methylene chloride	7.04	84	30390	0.74	ppb		89
22) Allyl chloride	7.02	41	25889	0.75	ppb		86
23) Carbon disulfide	7.20	76	89515	0.77	ppb		99
24) trans-1,2-dichloroethene	8.00	61	40410	0.75	ppb		91
25) methyl tert-butyl ether	8.03	73	76069	0.73	ppb		93
26) 1,1-dichloroethane	8.39	63	58606	0.75	ppb		100
27) Vinyl acetate	8.43	43	50830m	0.72	ppb		
28) Methyl Ethyl Ketone	8.95	72	11701	0.71	ppb	#	100
29) cis-1,2-dichloroethene	9.34	61	33727	0.72	ppb		91
30) Hexane	8.90	57	34580	0.72	ppb		97
31) Ethyl acetate	9.53	43	45964	0.73	ppb	#	81
32) Chloroform	9.95	83	78527	0.75	ppb		98
33) Tetrahydrofuran	10.17	42	22163	0.74	ppb		92
34) 1,2-dichloroethane	11.09	62	43826	0.75	ppb		90
36) 1,1,1-trichloroethane	10.75	97	77993	0.73	ppb		98
37) Cyclohexane	11.44	56	32831	0.74	ppb		90
38) Carbon tetrachloride	11.39	117	80127	0.73	ppb		97
39) Benzene	11.37	78	69790	0.74	ppb		98
40) Methyl methacrylate	12.92	41	24037m	0.80	ppb		
41) 1,4-dioxane	13.00	88	18280	0.74	ppb		99
42) 2,2,4-trimethylpentane	12.18	57	121655	0.71	ppb		99
43) Heptane	12.53	43	28219	0.69	ppb		91
44) Trichloroethene	12.68	130	34027	0.75	ppb		99
45) 1,2-dichloropropane	12.79	63	25201	0.74	ppb		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\AN031607.D Vial: 6
Acq On : 16 Mar 2016 9:27 pm Operator: RJP
Sample : A1UG_0.75 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 17 08:19:18 2016 Quant Results File: A316_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 08:17:56 2016
Response via : Continuing Cal File: C:\HPCHEM\1\DATA\AN031606.D
DataAcq Meth : 1UG_RUN

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
46)	Bromodichloromethane	13.12	83	60775	0.73	ppb	100
47)	cis-1,3-dichloropropene	13.90	75	32684	0.73	ppb	96
48)	trans-1,3-dichloropropene	14.63	75	29863	0.74	ppb	90
49)	1,1,2-trichloroethane	14.93	97	27436	0.75	ppb	96
51)	Toluene	14.68	92	32126	0.71	ppb	98
52)	Methyl Isobutyl Ketone	13.83	43	59370	0.73	ppb	99
53)	Dibromochloromethane	15.60	129	41112m	0.74	ppb	
54)	Methyl Butyl Ketone	15.11	43	49642	0.67	ppb	96
55)	1,2-dibromoethane	15.85	107	38588	0.72	ppb	96
56)	Tetrachloroethylene	15.65	164	28969	0.75	ppb	97
57)	Chlorobenzene	16.61	112	41332	0.73	ppb	90
58)	1,1,1,2-tetrachloroethane	16.71	131	31396	0.70	ppb	95
59)	Ethylbenzene	16.85	91	53041	0.70	ppb	99
60)	m&p-xylene	17.04	91	79500	1.33	ppb	92
61)	Nonane	17.38	43	22932	0.66	ppb	95
62)	Styrene	17.46	104	27462	0.65	ppb	91
63)	Bromoform	17.58	173	21394	0.74	ppb	99
64)	o-xylene	17.49	91	49158	0.73	ppb	95
65)	Cumene	18.02	105	52361	0.68	ppb	100
67)	1,1,2,2-tetrachloroethane	17.92	83	51665	0.75	ppb	98
68)	Propylbenzene	18.54	91	55960m	0.74	ppb	
69)	2-Chlorotoluene	18.58	91	40331m	0.64	ppb	
70)	4-ethyltoluene	18.70	105	48368m	0.72	ppb	
71)	1,3,5-trimethylbenzene	18.75	105	59988m	0.71	ppb	
72)	1,2,4-trimethylbenzene	19.19	105	54115	0.75	ppb	96
73)	1,3-dichlorobenzene	19.48	146	32066	0.65	ppb	97
74)	benzyl chloride	19.56	91	53237	0.80	ppb	96
75)	1,4-dichlorobenzene	19.62	146	30624	0.66	ppb	97
76)	1,2,3-trimethylbenzene	19.65	105	66564	0.70	ppb	96
77)	1,2-dichlorobenzene	19.93	146	40900	0.70	ppb	97
78)	1,2,4-trichlorobenzene	21.78	180	30081m	0.66	ppb	
79)	Naphthalene	21.98	128	68066m	0.79	ppb	
80)	Hexachloro-1,3-butadiene	22.06	225	85443	0.70	ppb	95

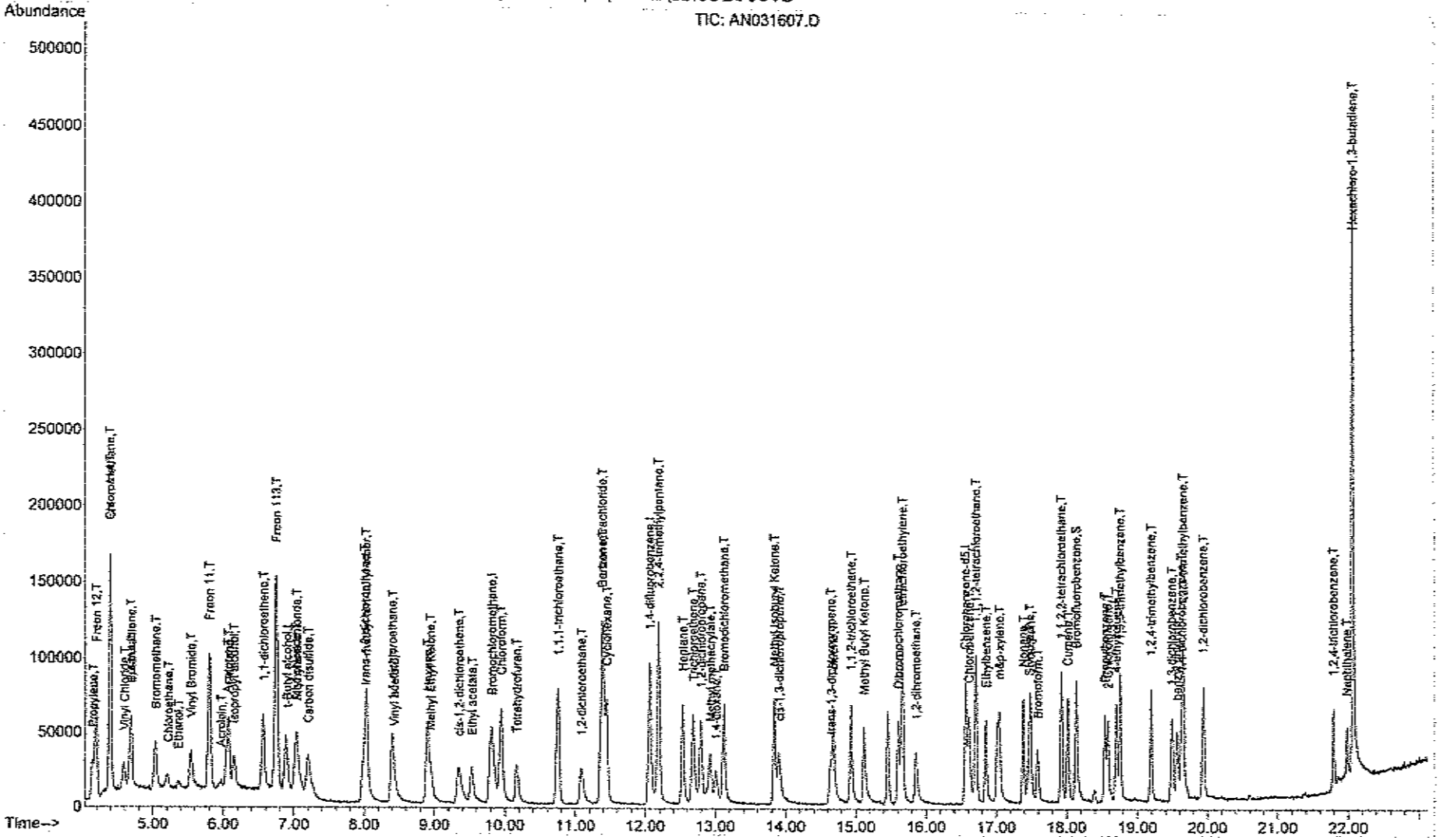
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\HPCHEM\1\DATA\AN031607.D
Acq On : 16 Mar 2016 9:27 pm
Sample : A1UG_0.75
Misc : A316_1UG
MS Integration Params: RTEINT.P
Quant Time: Mar 17 10:14 2016

Vial: 6
Operator: RJP
Inst : MSD #1
Multiplr: 1.00

Quant Results File: A316_1UG.RES

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 10:24:27 2016
Response via : Continuing Cal File: C:\HPCHEM\1\DATA\AN031606.D



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\AN031608.D Vial: 7
Acq On : 16 Mar 2016 10:05 pm Operator: RJP
Sample : A1UG_0.50 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 17 08:19:39 2016 Quant Results File: A316_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 08:17:56 2016
Response via : Continuing Cal File: C:\HPCHEM\1\DATA\AN031606.D
DataAcq Meth : 1UG_RUN

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane	9.82	128	36080	1.00	ppb		0.01
35) 1,4-difluorobenzene	12.06	114	113070	1.00	ppb		0.00
50) Chlorobenzene-d5	16.56	117	67747	1.00	ppb		0.00
System Monitoring Compounds							
66) Bromofluorobenzene	18.14	95	40075	0.92	ppb		0.00
Spiked Amount 1.000	Range 70 - 130		Recovery = 92.00%				
Target Compounds							Qvalue
2) Propylene	4.14	41	14424	0.53	ppb	#	100
3) Freon 12	4.19	85	76085	0.51	ppb		100
4) Chloromethane	4.39	50	19879	0.53	ppb		98
5) Freon 114	4.39	85	64906	0.51	ppb		98
6) Vinyl Chloride	4.59	62	18499	0.51	ppb		92
7) Butane	4.68	43	21962	0.49	ppb		94
8) 1,3-butadiene	4.69	39	13445	0.49	ppb		69
9) Bromomethane	5.04	94	26274	0.57	ppb		97
10) Chloroethane	5.20	64	8256	0.54	ppb	#	86
11) Ethanol	5.37	45	6117	0.57	ppb		98
12) Acrolein	5.97	56	4983m	0.53	ppb		
13) Vinyl Bromide	5.55	106	22539	0.49	ppb		93
14) Freon 11	5.81	101	78802	0.51	ppb		98
15) Acetone	6.06	58	8424	0.60	ppb	#	75
16) Pentane	6.08	42	17198	0.52	ppb		97
17) Isopropyl alcohol	6.16	45	25607	0.56	ppb	#	46
18) 1,1-dichloroethene	6.56	96	22928	0.50	ppb		89
19) Freon 113	6.75	101	55038	0.50	ppb		95
20) t-Butyl alcohol	6.90	59	42395	0.55	ppb	#	73
21) Methylene chloride	7.05	84	20786	0.51	ppb		96
22) Allyl chloride	7.02	41	17969m	0.52	ppb		
23) Carbon disulfide	7.21	76	57993	0.50	ppb		97
24) trans-1,2-dichloroethene	8.02	61	26856	0.50	ppb		89
25) methyl tert-butyl ether	8.03	73	49652	0.48	ppb		91
26) 1,1-dichloroethane	8.41	63	38652	0.50	ppb		100
27) Vinyl acetate	8.44	43	29273	0.42	ppb		94
28) Methyl Ethyl Ketone	8.96	72	7938	0.48	ppb	#	100
29) cis-1,2-dichloroethene	9.36	61	22605	0.48	ppb		95
30) Hexane	8.91	57	22491	0.47	ppb		97
31) Ethyl acetate	9.54	43	30351	0.48	ppb		86
32) Chloroform	9.95	83	52618	0.51	ppb		100
33) Tetrahydrofuran	10.18	42	14113	0.47	ppb		93
34) 1,2-dichloroethane	11.10	62	29673	0.51	ppb		89
36) 1,1,1-trichloroethane	10.75	97	53522	0.51	ppb		99
37) Cyclohexane	11.44	56	21201	0.49	ppb		90
38) Carbon tetrachloride	11.39	117	54492	0.51	ppb		98
39) Benzene	11.37	78	46262	0.50	ppb		100
40) Methyl methacrylate	12.92	41	13663	0.46	ppb	#	73
41) 1,4-dioxane	13.01	88	13214	0.54	ppb		98
42) 2,2,4-trimethylpentane	12.18	57	78609	0.47	ppb		98
43) Heptane	12.53	43	17641	0.44	ppb		89
44) Trichloroethene	12.67	130	22183	0.50	ppb		99
45) 1,2-dichloropropane	12.79	63	17338	0.52	ppb		96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\AN031608.D Vial: 7
Acq On : 16 Mar 2016 10:05 pm Operator: RJP
Sample : A1UG_0.50 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 17 08:19:39 2016 Quant Results File: A316_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 08:17:56 2016
Response via : Continuing Cal File: C:\HPCHEM\1\DATA\AN031606.D
DataAcq Meth : 1UG_RUN

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
46)	Bromodichloromethane	13.12	83	41322	0.51	ppb	98
47)	cis-1,3-dichloropropene	13.90	75	22010	0.50	ppb	96
48)	trans-1,3-dichloropropene	14.64	75	20160	0.51	ppb	93
49)	1,1,2-trichloroethane	14.94	97	18287	0.51	ppb	93
51)	Toluene	14.68	92	21106	0.45	ppb	97
52)	Methyl Isobutyl Ketone	13.84	43	39767	0.46	ppb	98
53)	Dibromochloromethane	15.60	129	29081m	0.50	ppb	
54)	Methyl Butyl Ketone	15.12	43	33116m	0.43	ppb	
55)	1,2-dibromoethane	15.85	107	28353	0.50	ppb	97
56)	Tetrachloroethylene	15.66	164	19835	0.49	ppb	99
57)	Chlorobenzene	16.61	112	29636	0.50	ppb	92
58)	1,1,1,2-tetrachloroethane	16.71	131	22498	0.48	ppb	92
59)	Ethylbenzene	16.85	91	36463	0.46	ppb	98
60)	m&p-xylene	17.05	91	56232	0.90	ppb	95
61)	Nonane	17.38	43	15420	0.42	ppb	94
62)	Styrene	17.47	104	18736	0.42	ppb	90
63)	Bromoform	17.59	173	14908	0.49	ppb	99
64)	o-xylene	17.49	91	37022	0.52	ppb	96
65)	Cumene	18.02	105	37321	0.46	ppb	99
67)	1,1,2,2-tetrachloroethane	17.92	83	36610	0.51	ppb	97
68)	Propylbenzene	18.53	91	43158m	0.54	ppb	
69)	2-Chlorotoluene	18.58	91	31517m	0.48	ppb	
70)	4-ethyltoluene	18.70	105	35420m	0.50	ppb	
71)	1,3,5-trimethylbenzene	18.75	105	44058m	0.50	ppb	
72)	1,2,4-trimethylbenzene	19.19	105	39698	0.52	ppb	96
73)	1,3-dichlorobenzene	19.49	146	24308	0.47	ppb	97
74)	benzyl chloride	19.56	91	36368	0.52	ppb	95
75)	1,4-dichlorobenzene	19.63	146	21600	0.44	ppb	92
76)	1,2,3-trimethylbenzene	19.65	105	48394	0.49	ppb	97
77)	1,2-dichlorobenzene	19.94	146	31844	0.52	ppb	95
78)	1,2,4-trichlorobenzene	21.78	180	22916m	0.48	ppb	
79)	Naphthalene	21.98	128	50904m	0.56	ppb	
80)	Hexachloro-1,3-butadiene	22.06	225	56244	0.44	ppb	96

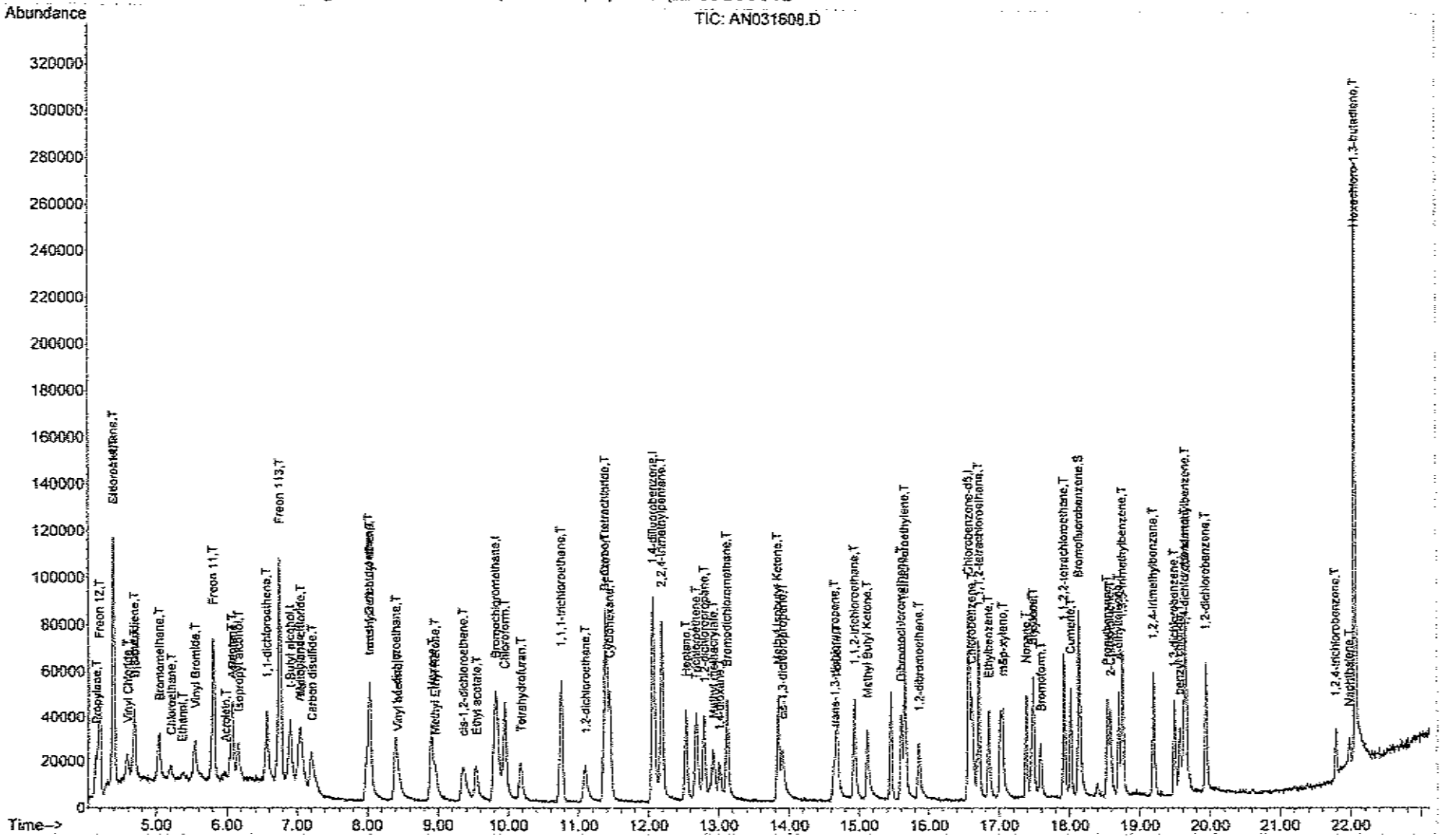
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\HPCHEM\1\DATA\AN031608.D
Acq On : 16 Mar 2016 10:05 pm
Sample : A1UG_0.50
Misc : A316_1UG
MS Integration Params: RTEINT.P
Quant Time: Mar 17 10:15 2016

Vial: 7
Operator: RJP
Inst : MSD #1
Multiplr: 1.00

Quant Results File: A316_1UG.RES

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 10:24:27 2016
Response via : Continuing Cal File: C:\HPCHEM\1\DATA\AN031606.D



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\AN031609.D Vial: 8
Acq On : 16 Mar 2016 10:42 pm Operator: RJP
Sample : A1UG_0.30 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 17 08:19:57 2016 Quant Results File: A316_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 08:17:56 2016
Response via : Continuing Cal File: C:\HPCHEM\1\DATA\AN031606.D
DataAcq Meth : 1UG_RUN

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane	9.83	128	34240	1.00	ppb		0.02
35) 1,4-difluorobenzene	12.07	114	107427	1.00	ppb		0.01
50) Chlorobenzene-d5	16.57	117	63070	1.00	ppb		0.00
System Monitoring Compounds							
66) Bromofluorobenzene	18.14	95	37922	0.93	ppb		0.00
Spiked Amount 1.000	Range 70 - 130		Recovery = 93.00%				
Target Compounds							Qvalue
2) Propylene	4.14	41	9410	0.37	ppb	#	100
3) Freon 12	4.19	85	48050	0.34	ppb		99
4) Chloromethane	4.40	50	12982	0.37	ppb		94
5) Freon 114	4.39	85	40390	0.33	ppb		98
6) Vinyl Chloride	4.59	62	12065	0.35	ppb		84
7) Butane	4.69	43	15019	0.35	ppb		90
8) 1,3-butadiene	4.69	39	12946	0.49	ppb		87
9) Bromomethane	5.04	94	14575	0.33	ppb		90
10) Chloroethane	5.21	64	5112	0.35	ppb		96
11) Ethanol	5.39	45	4660	0.46	ppb		96
12) Acrolein	5.98	56	3558m	0.40	ppb		
13) Vinyl Bromide	5.55	106	14483	0.33	ppb		94
14) Freon 11	5.80	101	48893	0.33	ppb		98
15) Acetone	6.05	58	4586m	0.35	ppb		
16) Pentane	6.08	42	11517	0.36	ppb		97
17) Isopropyl alcohol	6.16	45	17857	0.41	ppb	#	46
18) 1,1-dichloroethene	6.56	96	14624	0.34	ppb	#	86
19) Freon 113	6.76	101	34250	0.33	ppb		99
20) t-Butyl alcohol	6.91	59	27113	0.37	ppb	#	72
21) Methylene chloride	7.07	84	12304	0.32	ppb		86
22) Allyl chloride	7.03	41	10973m	0.34	ppb		
23) Carbon disulfide	7.21	76	36706	0.34	ppb		97
24) trans-1,2-dichloroethene	8.01	61	16238	0.32	ppb		89
25) methyl tert-butyl ether	8.03	73	31713	0.32	ppb		93
26) 1,1-dichloroethane	8.40	63	22970	0.31	ppb		94
27) Vinyl acetate	8.44	43	20303m	0.31	ppb		
28) Methyl Ethyl Ketone	8.97	72	4817	0.31	ppb	#	100
29) cis-1,2-dichloroethene	9.38	61	13539	0.31	ppb		91
30) Hexane	8.90	57	13020	0.29	ppb		96
31) Ethyl acetate	9.54	43	20202	0.34	ppb		89
32) Chloroform	9.95	83	31612	0.32	ppb		98
33) Tetrahydrofuran	10.18	42	8932	0.32	ppb		93
34) 1,2-dichloroethane	11.10	62	18425	0.33	ppb		87
36) 1,1,1-trichloroethane	10.75	97	32638	0.33	ppb		98
37) Cyclohexane	11.44	56	12156	0.29	ppb		89
38) Carbon tetrachloride	11.39	117	33109	0.32	ppb		98
39) Benzene	11.37	78	27379	0.31	ppb		96
40) Methyl methacrylate	12.93	41	8689	0.31	ppb	#	84
41) 1,4-dioxane	13.03	88	7797	0.34	ppb		95
42) 2,2,4-trimethylpentane	12.19	57	47254	0.30	ppb		99
43) Heptane	12.54	43	10173	0.27	ppb		92
44) Trichloroethene	12.69	130	12806	0.31	ppb		97
45) 1,2-dichloropropane	12.79	63	10394	0.33	ppb		95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\AN031609.D Vial: 8
Acq On : 16 Mar 2016 10:42 pm Operator: RJP
Sample : A1UG_0.30 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 17 08:19:57 2016 Quant Results File: A316_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 08:17:56 2016
Response via : Continuing Cal File: C:\HPCHEM\1\DATA\AN031606.D
DataAcq Meth : 1UG_RUN

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
46)	Bromodichloromethane	13.13	83	24639	0.32	ppb		100
47)	cis-1,3-dichloropropene	13.91	75	13399	0.32	ppb		98
48)	trans-1,3-dichloropropene	14.64	75	11780	0.31	ppb		93
49)	1,1,2-trichloroethane	14.93	97	11103	0.33	ppb		99
51)	Toluene	14.68	92	12431	0.28	ppb		95
52)	Methyl Isobutyl Ketone	13.84	43	23225	0.29	ppb		96
53)	Dibromochloromethane	15.61	129	15960m	0.29	ppb		
54)	Methyl Butyl Ketone	15.12	43	21434m	0.30	ppb		
55)	1,2-dibromoethane	15.86	107	16758	0.32	ppb		94
56)	Tetrachloroethylene	15.66	164	11766	0.31	ppb		100
57)	Chlorobenzene	16.61	112	16920	0.31	ppb		83
58)	1,1,1,2-tetrachloroethane	16.70	131	13253	0.30	ppb	#	85
59)	Ethylbenzene	16.86	91	20219	0.27	ppb		97
60)	m&p-xylene	17.02	91	30952	0.53	ppb		97
61)	Nonane	17.38	43	8544	0.25	ppb		99
62)	Styrene	17.47	104	10322	0.25	ppb		97
63)	Bromoform	17.58	173	8523	0.30	ppb		95
64)	o-xylene	17.49	91	17375	0.26	ppb		95
65)	Cumene	18.02	105	22320	0.29	ppb		96
67)	1,1,2,2-tetrachloroethane	17.92	83	24384	0.36	ppb		98
68)	Propylbenzene	18.54	91	27429m	0.37	ppb		
69)	2-Chlorotoluene	18.58	91	17751m	0.29	ppb		
70)	4-ethyltoluene	18.70	105	24157m	0.37	ppb		
71)	1,3,5-trimethylbenzene	18.76	105	28602m	0.35	ppb		
72)	1,2,4-trimethylbenzene	19.19	105	25992	0.37	ppb		94
73)	1,3-dichlorobenzene	19.49	146	15874	0.33	ppb		99
74)	benzyl chloride	19.56	91	19958	0.31	ppb		92
75)	1,4-dichlorobenzene	19.62	146	15212	0.33	ppb		96
76)	1,2,3-trimethylbenzene	19.65	105	32866	0.35	ppb		98
77)	1,2-dichlorobenzene	19.94	146	20801	0.36	ppb		96
78)	1,2,4-trichlorobenzene	21.79	180	13610m	0.31	ppb		
79)	Naphthalene	22.14	128	30401m	0.36	ppb		
80)	Hexachloro-1,3-butadiene	22.06	225	34640	0.29	ppb		93

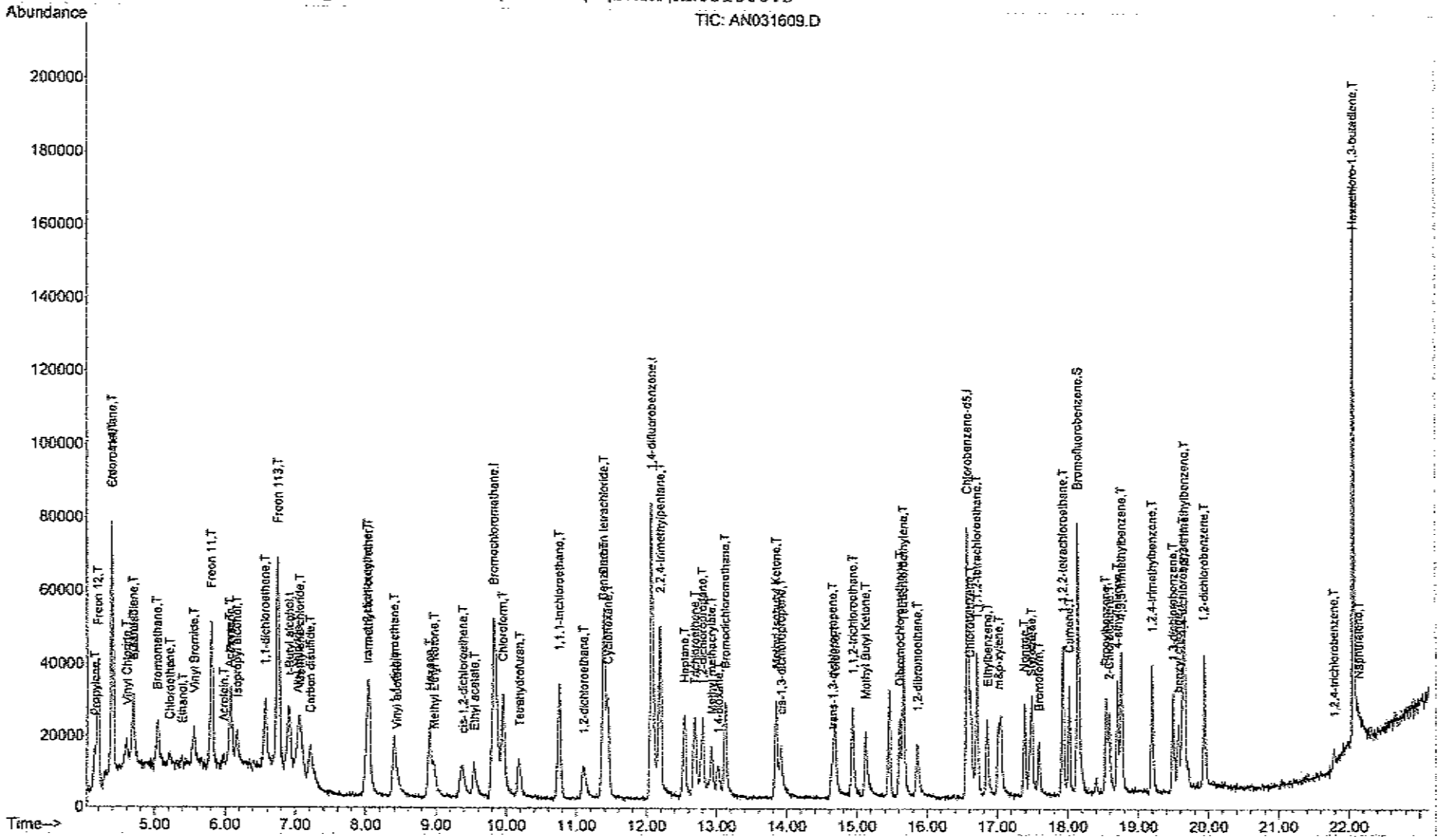
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\HPCHEM\1\DATA\AN031609.D
Acq On : 16 Mar 2016 10:42 pm
Sample : A1UG_0.30
Misc : A316_1UG
MS Integration Params: RTEINT.P
Quant Time: Mar 17 10:17 2016

Vial: 8
Operator: RJP
Inst : MSD #1
Multiplr: 1.00

Quant Results File: A316_1UG.RES

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 10:24:27 2016
Response via : Continuing Cal File: C:\HPCHEM\1\DATA\AN031606.D



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\AN031610.D Vial: 9
Acq On : 16 Mar 2016 11:18 pm Operator: RJP
Sample : A1UG_0.15 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 17 08:20:22 2016 Quant Results File: A316_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 08:17:56 2016
Response via : Continuing Cal File: C:\HPCHEM\1\DATA\AN031606.D
DataAcq Meth : 1UG_RUN

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane	9.83	128	33400	1.00	ppb		0.02
35) 1,4-difluorobenzene	12.07	114	103197	1.00	ppb		0.01
50) Chlorobenzene-d5	16.57	117	62434	1.00	ppb		0.00
System Monitoring Compounds							
66) Bromofluorobenzene	18.14	95	36945	0.92	ppb		0.00
Spiked Amount 1.000	Range 70 - 130		Recovery = 92.00%				
Target Compounds							Qvalue
2) Propylene	4.15	41	5667	0.23	ppb	#	100
3) Freon 12	4.19	85	25710	0.18	ppb		100
4) Chloromethane	4.40	50	7532	0.22	ppb		94
5) Freon 114	4.39	85	21243	0.18	ppb		98
6) Vinyl Chloride	4.59	62	6499	0.19	ppb		85
7) Butane	4.68	43	9555	0.23	ppb	#	84
8) 1,3-butadiene	4.70	39	4728m	0.19	ppb		
9) Bromomethane	5.04	94	8678	0.20	ppb		99
10) Chloroethane	5.22	64	2747	0.19	ppb	#	73
11) Ethanol	5.40	45	2336m	0.24	ppb		
12) Acrolein	5.97	56	1928m	0.22	ppb		
13) Vinyl Bromide	5.55	106	8288	0.19	ppb		97
14) Freon 11	5.81	101	26836	0.19	ppb		100
15) Acetone	6.06	58	2908m	0.22	ppb		
16) Pentane	6.08	42	7007	0.23	ppb	#	74
17) Isopropyl alcohol	6.18	45	9697m	0.23	ppb		
18) 1,1-dichloroethene	6.56	96	7737	0.18	ppb	#	87
19) Freon 113	6.75	101	18520	0.18	ppb		96
20) t-Butyl alcohol	6.91	59	14003	0.19	ppb	#	72
21) Methylene chloride	7.06	84	6447	0.17	ppb		84
22) Allyl chloride	7.06	41	6867m	0.22	ppb		
23) Carbon disulfide	7.21	76	21871	0.20	ppb		100
24) trans-1,2-dichloroethene	8.02	61	8942	0.18	ppb		92
25) methyl tert-butyl ether	8.04	73	16217	0.17	ppb		90
26) 1,1-dichloroethane	8.40	63	12529	0.17	ppb		97
27) Vinyl acetate	8.46	43	11579m	0.18	ppb		
28) Methyl Ethyl Ketone	8.98	72	2686	0.18	ppb	#	100
29) cis-1,2-dichloroethene	9.38	61	6078	0.14	ppb		76
30) Hexane	8.91	57	6897	0.16	ppb		97
31) Ethyl acetate	9.55	43	10831	0.19	ppb		92
32) Chloroform	9.95	83	17226	0.18	ppb		96
33) Tetrahydrofuran	10.20	42	4934	0.18	ppb		98
34) 1,2-dichloroethane	11.10	62	9147	0.17	ppb		87
36) 1,1,1-trichloroethane	10.75	97	16611	0.17	ppb		99
37) Cyclohexane	11.45	56	6376	0.16	ppb		88
38) Carbon tetrachloride	11.39	117	16991	0.17	ppb		97
39) Benzene	11.37	78	14982	0.18	ppb		98
40) Methyl methacrylate	12.94	41	5374	0.20	ppb		97
41) 1,4-dioxane	13.03	88	3369	0.15	ppb		91
42) 2,2,4-trimethylpentane	12.19	57	24737	0.16	ppb		98
43) Heptane	12.54	43	5155	0.14	ppb		94
44) Trichloroethene	12.70	130	6486	0.16	ppb		94
45) 1,2-dichloropropane	12.80	63	5119	0.17	ppb		95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\AN031610.D Vial: 9
Acq On : 16 Mar 2016 11:18 pm Operator: RJP
Sample : A1UG_0.15 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 17 08:20:22 2016 Quant Results File: A316_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 08:17:56 2016
Response via : Continuing Cal File: C:\HPCHEM\1\DATA\AN031606.D
DataAcq Meth : 1UG_RUN

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
46)	Bromodichloromethane	13.12	83	13275	0.18	ppb		97
47)	cis-1,3-dichloropropene	13.91	75	6893	0.17	ppb		96
48)	trans-1,3-dichloropropene	14.64	75	6609	0.18	ppb		94
49)	1,1,2-trichloroethane	14.94	97	6109	0.19	ppb		96
51)	Toluene	14.68	92	6141	0.14	ppb		89
52)	Methyl Isobutyl Ketone	13.85	43	11770	0.15	ppb		98
53)	Dibromochloromethane	15.60	129	8932m	0.17	ppb		
54)	Methyl Butyl Ketone	15.14	43	10426m	0.15	ppb		
55)	1,2-dibromoethane	15.86	107	9583	0.18	ppb		95
56)	Tetrachloroethylene	15.66	164	5857	0.16	ppb		94
57)	Chlorobenzene	16.61	112	9263	0.17	ppb		95
58)	1,1,1,2-tetrachloroethane	16.71	131	6442	0.15	ppb	#	68
59)	Ethylbenzene	16.85	91	11039	0.15	ppb		97
60)	m&p-xylene	17.04	91	16137	0.28	ppb		94
61)	Nonane	17.38	43	5031	0.15	ppb		88
62)	Styrene	17.46	104	5771	0.14	ppb		87
63)	Bromoform	17.58	173	4415	0.16	ppb		96
64)	o-xylene	17.48	91	10324	0.16	ppb		100
65)	Cumene	18.01	105	14312	0.19	ppb		98
67)	1,1,2,2-tetrachloroethane	17.92	83	15040	0.23	ppb		100
68)	Propylbenzene	18.54	91	15476m	0.21	ppb		
69)	2-Chlorotoluene	18.58	91	10441m	0.17	ppb		
70)	4-ethyltoluene	18.70	105	13458m	0.21	ppb		
71)	1,3,5-trimethylbenzene	18.75	105	16481m	0.20	ppb		
72)	1,2,4-trimethylbenzene	19.19	105	15427	0.22	ppb		97
73)	1,3-dichlorobenzene	19.49	146	8974	0.19	ppb		98
74)	benzyl chloride	19.56	91	11759	0.18	ppb		94
75)	1,4-dichlorobenzene	19.62	146	7999	0.18	ppb		92
76)	1,2,3-trimethylbenzene	19.65	105	18207m	0.20	ppb		
77)	1,2-dichlorobenzene	19.94	146	13054	0.23	ppb		92
78)	1,2,4-trichlorobenzene	22.06	180	6492m	0.15	ppb		
79)	Naphthalene	22.21	128	15909m	0.19	ppb		
80)	Hexachloro-1,3-butadiene	22.06	225	18343	0.16	ppb		95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

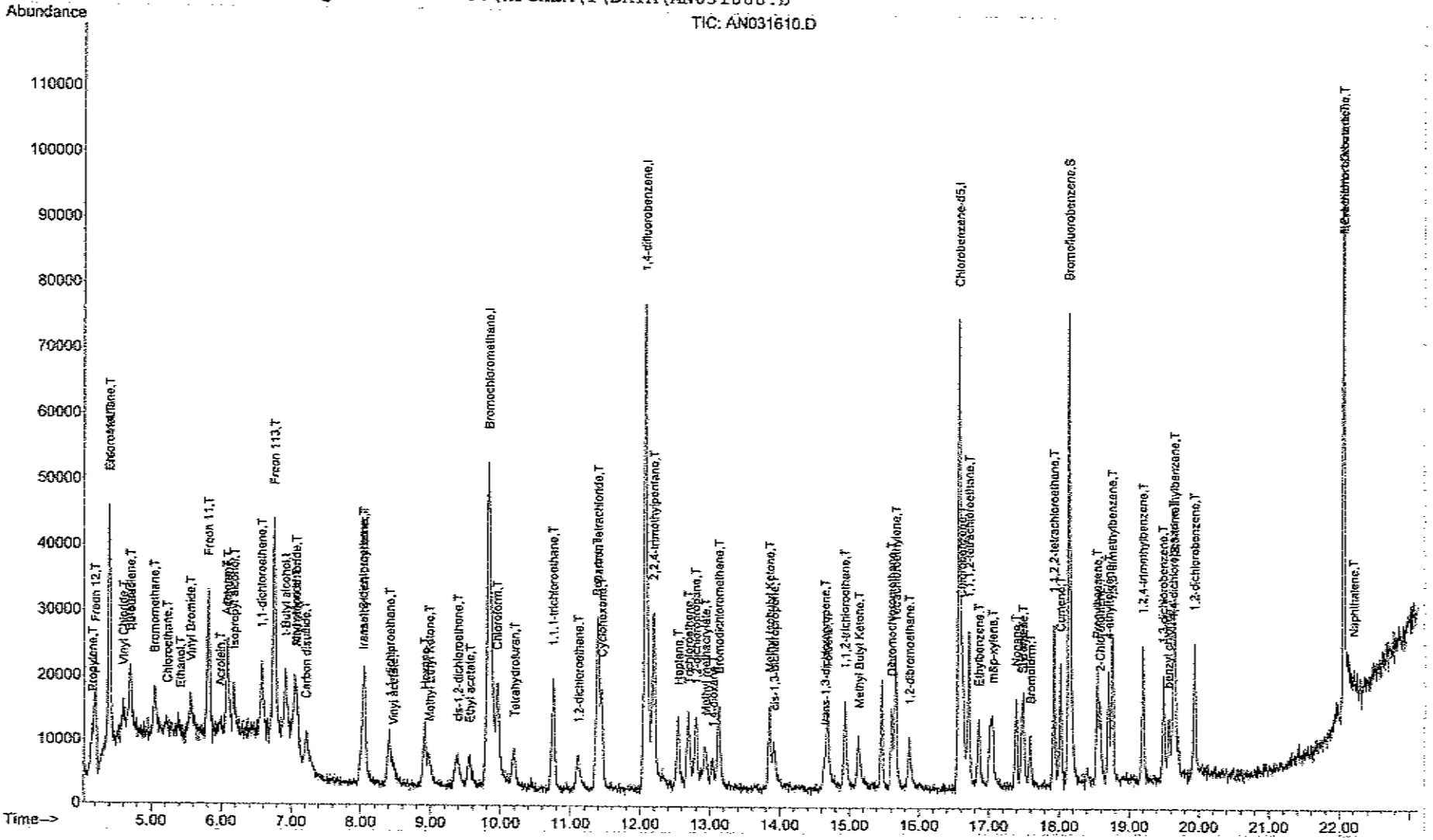
Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\AN031610.D
Acq On : 16 Mar 2016 11:18 pm
Sample : A1UG_0.15
Misc : A316_1UG
MS Integration Params: RTEINT.P
Quant Time: Mar 17 10:18 2016

Vial: 9
Operator: RJP
Inst : MSD #1
Multiplr: 1.00

Quant Results File: A316_1UG.RES

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 10:24:27 2016
Response via : Continuing Cal File: C:\HPCHEM\1\DATA\AN031606.D



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\AN031611.D Vial: 10
Acq On : 16 Mar 2016 11:55 pm Operator: RJP
Sample : A1UG_0.10 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 17 08:20:37 2016 Quant Results File: A316_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 08:17:56 2016
Response via : Continuing Cal File: C:\HPCHEM\1\DATA\AN031606.D
DataAcq Meth : 1UG_RUN

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	9.84	128	36456m	1.00	ppb	0.03
35) 1,4-difluorobenzene	12.08	114	101173	1.00	ppb	0.02
50) Chlorobenzene-d5	16.57	117	65714	1.00	ppb	0.00
System Monitoring Compounds						
66) Bromofluorobenzene	18.14	95	39949	0.95	ppb	0.00
Spiked Amount 1.000	Range 70 - 130		Recovery = 95.00%			
Target Compounds						Qvalue
6) Vinyl Chloride	4.59	62	4562	0.12	ppb	86
38) Carbon tetrachloride	11.38	117	12433	0.13	ppb	99
44) Trichloroethene	12.70	130	4819	0.12	ppb	97
56) Tetrachloroethylene	15.66	164	4679m	0.12	ppb	

(#) = qualifier out of range (m) = manual integration (+) = signals summed
AN031611.D A316_1UG.M Thu Apr 07 13:06:00 2016 MSD1 Page 1

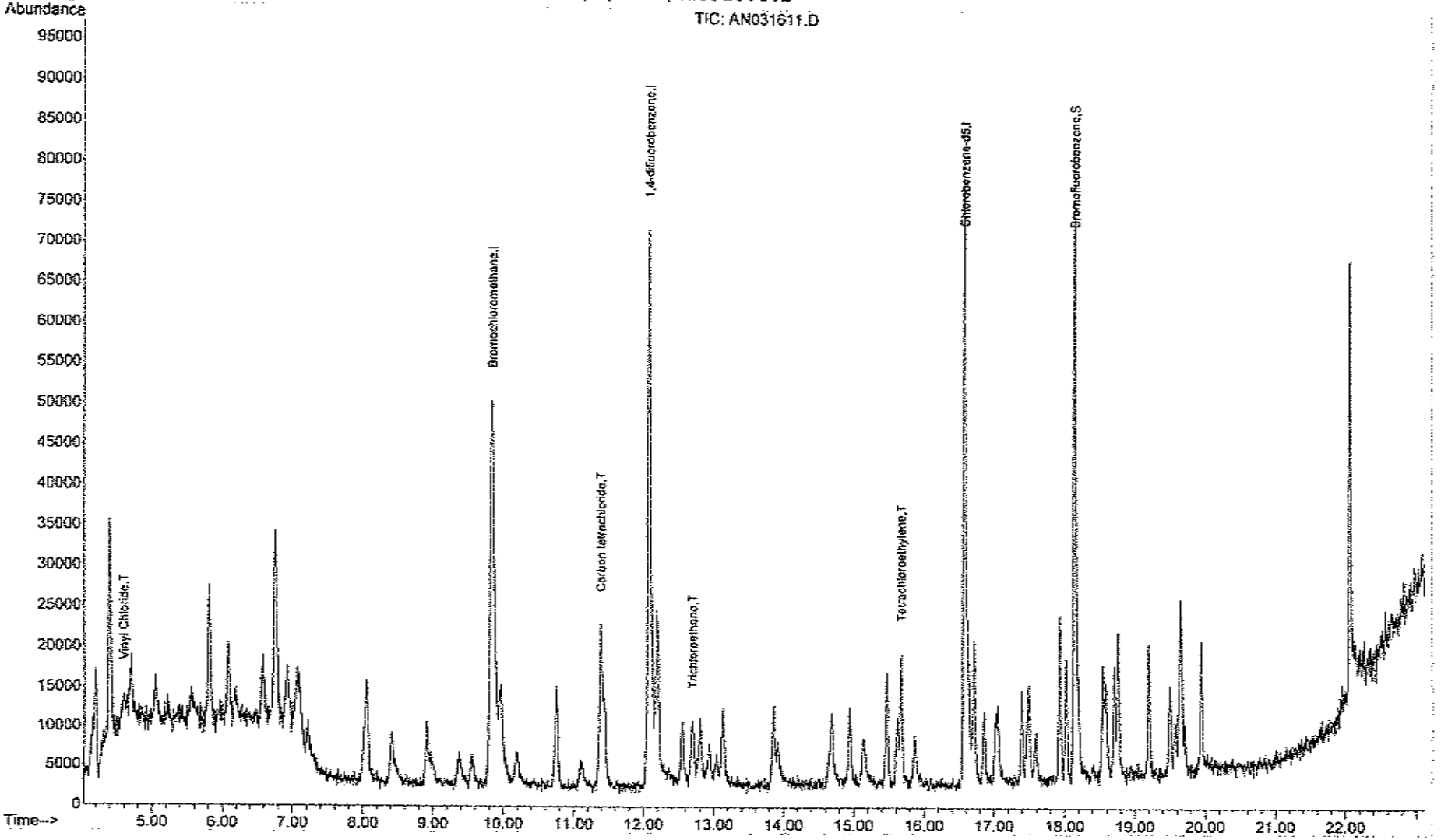
Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\AN031611.D
Acq On : 16 Mar 2016 11:55 pm
Sample : A1UG_0.10
Misc : A316_1UG
MS Integration Params: RTEINT.P
Quant Time: Mar 17 10:19 2016

Vial: 10
Operator: RJP
Inst : MSD #1
Multiplr: 1.00

Quant Results File: A316_1UG.RES

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 10:24:27 2016
Response via : Continuing Cal File: C:\HPCHEM\1\DATA\AN031606.D



AN031611.D A316_1UG.M Thu Apr 07 13:06:01 2016 MSD1

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\AN031612.D Vial: 11
Acq On : 17 Mar 2016 12:31 am Operator: RJP
Sample : A1UG_0.04 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 17 08:20:59 2016 Quant Results File: A316_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 08:17:56 2016
Response via : Continuing Cal File: C:\HPCHEM\1\DATA\AN031606.D
DataAcq Meth : 1UG_RUN

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	9.83	128	35586m	1.00	ppb	0.02
35) 1,4-difluorobenzene	12.07	114	102709	1.00	ppb	0.02
50) Chlorobenzene-d5	16.57	117	61413	1.00	ppb	0.00
System Monitoring Compounds						
66) Bromofluorobenzene	18.14	95	36946	0.94	ppb	0.00
Spiked Amount 1.000	Range 70 - 130		Recovery = 94.00%			
Target Compounds						Qvalue
6) Vinyl Chloride	4.59	62	2447	0.07	ppb	93
38) Carbon tetrachloride	11.38	117	6221	0.06	ppb	98
44) Trichloroethene	12.69	130	2436	0.06	ppb	96

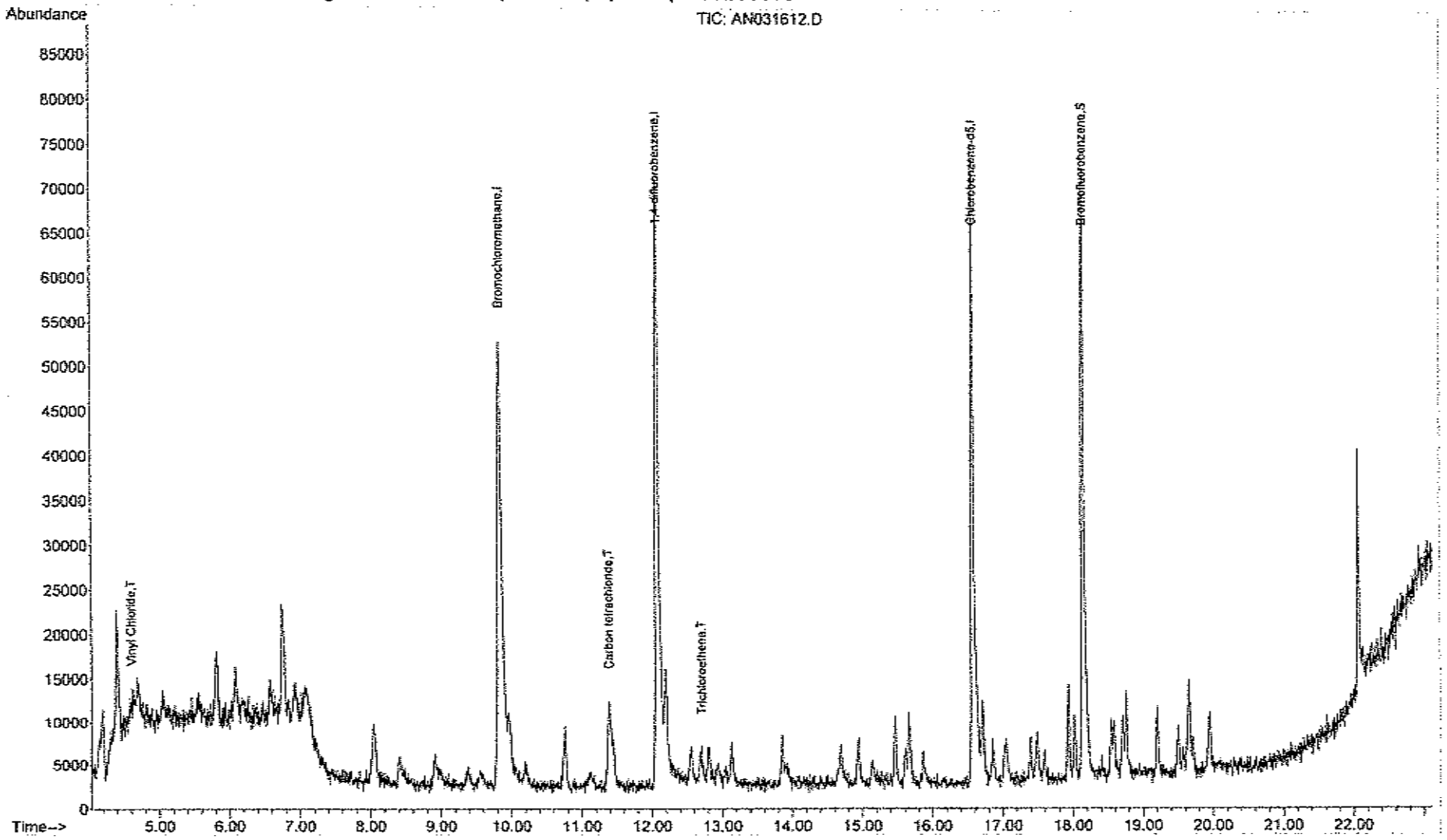
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\HPCHEM\1\DATA\AN031612.D
Acq On : 17 Mar 2016 12:31 am
Sample : A1UG_0.04
Misc : A316_1UG
MS Integration Params: RTEINT.P
Quant Time: Mar 17 10:21 2016

Vial: 11
Operator: RJP
Inst : MSD #1
Multiplr: 1.00

Quant Results File: A316_1UG.RES

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 10:24:27 2016
Response via : Continuing Cal File: C:\HPCHEM\1\DATA\AN031606.D



GC/MS VOLATILES-WHOLE AIR

METHOD TO-15

CALIBRATION VERIFICATION

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA2\AN033104.D Vial: 4
Acq On : 31 Mar 2016 12:19 pm Operator: RJP
Sample : A1UG_1.0 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Tue Apr 26 14:41:32 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Bromochloromethane	1.000	1.000	0.0	59	0.00
2	T	Propylene	0.810	0.846	-4.4	67	0.00
3	T	Freon 12	4.271	4.834	-13.2	69	0.00
4	T	Chloromethane	1.118	1.376	-23.1	79	0.00
5	T	Freon 114	3.598	4.353	-21.0	73	0.00
6	T	Vinyl Chloride	1.125	1.304	-15.9	77	0.00
7	T	Butane	1.285	1.598	-24.4	76	0.00
8	T	1,3-butadiene	0.847	1.012	-19.5	76	0.00
9	T	Bromomethane	1.320	1.512	-14.5	70	0.00
10	T	Chloroethane	0.459	0.517	-12.6	67	0.00
11	T	Ethanol	0.341	0.320	6.2	58	0.00
12	T	Acrolein	0.290	0.341	-17.6	77	0.00
13	T	Vinyl Bromide	1.298	1.349	-3.9	62	0.00
14	T	Freon 11	4.393	4.944	-12.5	69	0.00
15	T	Acetone	0.432	0.490	-13.4	73	0.00
16	T	Pentane	0.986	0.811	17.7	52	0.00
17	T	Isopropyl alcohol	1.409	1.401	0.6	65	0.00
18	T	1,1-dichloroethene	1.283	1.320	-2.9	62	0.00
19	T	Freon 113	3.094	3.490	-12.8	67	0.00
20	t	t-Butyl alcohol	2.248	2.530	-12.5	70	0.00
21	T	Methylene chloride	1.124	1.049	6.7	55	0.00
22	T	Allyl chloride	0.998	1.190	-19.2	77	0.00
23	T	Carbon disulfide	3.316	3.226	2.7	60	0.00
24	T	trans-1,2-dichloroethene	1.522	1.486	2.4	58	0.00
25	T	methyl tert-butyl ether	2.881	2.890	-0.3	60	0.00
26	T	1,1-dichloroethane	2.155	2.173	-0.8	60	0.00
27	T	Vinyl acetate	1.869	1.540	17.6	53	0.00
28	T	Methyl Ethyl Ketone	0.461	0.408	11.5	53	0.00
29	T	cis-1,2-dichloroethene	1.250	0.936	25.1	43#	0.00
30	T	Hexane	1.308	1.129	13.7	50	0.00
31	T	Ethyl acetate	1.784	1.395	21.8	48#	0.00
32	T	Chloroform	2.918	2.785	4.6	57	0.00
33	T	Tetrahydrofuran	0.828	0.735	11.2	53	0.00
34	T	1,2-dichloroethane	1.641	1.281	21.9	47#	0.00
35	I	1,4-difluorobenzene	1.000	1.000	0.0	43#	0.00
36	T	1,1,1-trichloroethane	0.939	1.159	-23.4	54	0.00
37	T	Cyclohexane	0.387	0.496	-28.2	56	0.00
38	T	Carbon tetrachloride	1.048	1.256	-19.8	57	0.00
39	T	Benzene	0.832	1.005	-20.8	53	0.00
40	T	Methyl methacrylate	0.271	0.298	-10.0	50#	0.00
41	T	1,4-dioxane	0.213	0.252	-18.3	51	0.00
42	T	2,2,4-trimethylpentane	1.453	1.749	-20.4	51	0.00
43	T	Heptane	0.338	0.361	-6.8	44#	0.00
44	T	Trichloroethene	0.425	0.452	-6.4	50	0.00
45	T	1,2-dichloropropane	0.300	0.369	-23.0	54	0.00
46	T	Bromodichloromethane	0.734	0.852	-16.1	51	0.00
47	T	cis-1,3-dichloropropene	0.400	0.494	-23.5	56	0.00
48	T	trans-1,3-dichloropropene	0.359	0.458	-27.6	57	0.00
49	T	1,1,2-trichloroethane	0.329	0.355	-7.9	49#	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA2\AN033104.D Vial: 4
Acq On : 31 Mar 2016 12:19 pm Operator: RJP
Sample : A1UG_1.0 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Tue Apr 26 14:41:32 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
51	T	Toluene	0.679	0.529	22.1	45#	0.00
52	T	Methyl Isobutyl Ketone	1.201	1.101	8.3	52	0.00
53	T	Dibromochloromethane	0.857	0.866	-1.1	61	0.00
54	T	Methyl Butyl Ketone	1.068	0.893	16.4	46#	0.00
55	T	1,2-dibromoethane	0.845	0.958	-13.4	68	0.00
56	T	Tetrachloroethylene	0.648	0.561	13.4	55	0.00
57	T	Chlorobenzene	0.891	0.947	-6.3	64	0.00
58	T	1,1,1,2-tetrachloroethane	0.666	0.767	-15.2	65	0.00
59	T	Ethylbenzene	1.165	1.208	-3.7	61	0.00
60	T	m&p-xylene	0.925	0.902	2.5	58	0.00
61	T	Nonane	0.552	0.600	-8.7	66	0.00
62	T	Styrene	0.644	0.732	-13.7	66	0.00
63	T	Bromoform	0.463	1.053	-127.4#	138	0.00
64	T	o-xylene	1.109	1.288	-16.1	70	0.00
65	T	Cumene	1.299	1.511	-16.3	74	0.00
66	S	Bromofluorobenzene	0.643	0.775	-20.5	71	0.00
67	T	1,1,2,2-tetrachloroethane	1.140	1.326	-16.3	73	0.00
68	T	Propylbenzene	1.379	1.519	-10.2	76	0.00
69	T	2-Chlorotoluene	1.004	1.144	-13.9	70	0.00
70	T	4-ethyltoluene	1.183	1.374	-16.1	78	0.00
71	T	1,3,5-trimethylbenzene	1.416	1.790	-26.4	81	0.00
72	T	1,2,4-trimethylbenzene	1.224	1.518	-24.0	80	0.00
73	T	1,3-dichlorobenzene	0.778	0.989	-27.1	77	0.00
74	T	benzyl chloride	1.110	1.294	-16.6	62	0.00
75	T	1,4-dichlorobenzene	0.733	0.868	-18.4	71	0.00
76	T	1,2,3-trimethylbenzene	1.510	1.910	-26.5	77	0.00
77	T	1,2-dichlorobenzene	0.954	1.182	-23.9	77	0.00
78	T	1,2,4-trichlorobenzene	0.720	0.662	8.1	57	0.00
79	T	Naphthalene	1.494	1.537	-2.9	70	0.00
80	T	Hexachloro-1,3-butadiene	1.754	1.723	1.8	54	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA2\AN033104.D Vial: 4
Acq On : 31 Mar 2016 12:19 pm Operator: RJP
Sample : A1UG_1.0 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 31 12:43:55 2016 Quant Results File: A316_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 10:24:27 2016
Response via : Initial Calibration
DataAcq Meth : 1UG_RUN

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane	9.83	128	21478m	1.00	ppb		0.02
35) 1,4-difluorobenzene	12.08	114	48888	1.00	ppb		0.02
50) Chlorobenzene-d5	16.57	117	36495	1.00	ppb		0.01
System Monitoring Compounds							
66) Bromofluorobenzene	18.14	95	28268	1.20	ppb		0.00
Spiked Amount 1.000	Range 70 - 130		Recovery = 120.00%				
Target Compounds							Qvalue
2) Propylene	4.14	41	18168	1.04	ppb	#	100
3) Freon 12	4.20	85	103821	1.13	ppb		100
4) Chloromethane	4.40	50	29556m	1.23	ppb		
5) Freon 114	4.40	85	93501	1.21	ppb		91
6) Vinyl Chloride	4.60	62	28017	1.16	ppb		87
7) Butane	4.69	43	34332	1.24	ppb		96
8) 1,3-butadiene	4.70	39	21729m	1.19	ppb		
9) Bromomethane	5.05	94	32471	1.15	ppb		99
10) Chloroethane	5.22	64	11107	1.13	ppb		97
11) Ethanol	5.53	45	6863m	0.94	ppb		
12) Acrolein	6.10	56	7332m	1.18	ppb		
13) Vinyl Bromide	5.57	106	28965	1.04	ppb		96
14) Freon 11	5.82	101	106189	1.13	ppb		98
15) Acetone	6.16	58	10527m	1.14	ppb		
16) Pentane	6.10	42	17420	0.82	ppb		86
17) Isopropyl alcohol	6.30	45	30088m	0.99	ppb		
18) 1,1-dichloroethene	6.59	96	28353	1.03	ppb		90
19) Freon 113	6.76	101	74948	1.13	ppb		94
20) t-Butyl alcohol	7.06	59	54341m	1.13	ppb		
21) Methylene chloride	7.07	84	22522	0.93	ppb		89
22) Allyl chloride	7.06	41	25558m	1.19	ppb		
23) Carbon disulfide	7.23	76	69279	0.97	ppb		98
24) trans-1,2-dichloroethene	8.03	61	31915m	0.98	ppb		
25) methyl tert-butyl ether	8.11	73	62077	1.00	ppb		95
26) 1,1-dichloroethane	8.42	63	46664	1.01	ppb		99
27) Vinyl acetate	8.52	43	33086m	0.82	ppb		
28) Methyl Ethyl Ketone	9.04	72	8766m	0.89	ppb		
29) cis-1,2-dichloroethene	9.38	61	20111	0.75	ppb		96
30) Hexane	8.93	57	24255	0.86	ppb		92
31) Ethyl acetate	9.60	43	29969	0.78	ppb		99
32) Chloroform	9.97	83	59806	0.95	ppb		99
33) Tetrahydrofuran	10.26	42	15794	0.89	ppb		89
34) 1,2-dichloroethane	11.13	62	27519	0.78	ppb		90
36) 1,1,1-trichloroethane	10.77	97	56681m	1.23	ppb		
37) Cyclohexane	11.45	56	24249	1.28	ppb	#	85
38) Carbon tetrachloride	11.40	117	61417m	1.20	ppb		
39) Benzene	11.38	78	49155	1.21	ppb		97
40) Methyl methacrylate	12.95	41	14556	1.10	ppb	#	76
41) 1,4-dioxane	13.08	88	12319	1.19	ppb		99
42) 2,2,4-trimethylpentane	12.20	57	85481m	1.20	ppb		
43) Heptane	12.55	43	17670	1.07	ppb		95
44) Trichloroethene	12.70	130	22115	1.06	ppb		97
45) 1,2-dichloropropane	12.81	63	18046	1.23	ppb		100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA2\AN033104.D Vial: 4
Acq On : 31 Mar 2016 12:19 pm Operator: RJP
Sample : A1UG_1.0 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 31 12:43:55 2016 Quant Results File: A316_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 10:24:27 2016
Response via : Initial Calibration
DataAcq Meth : 1UG_RUN

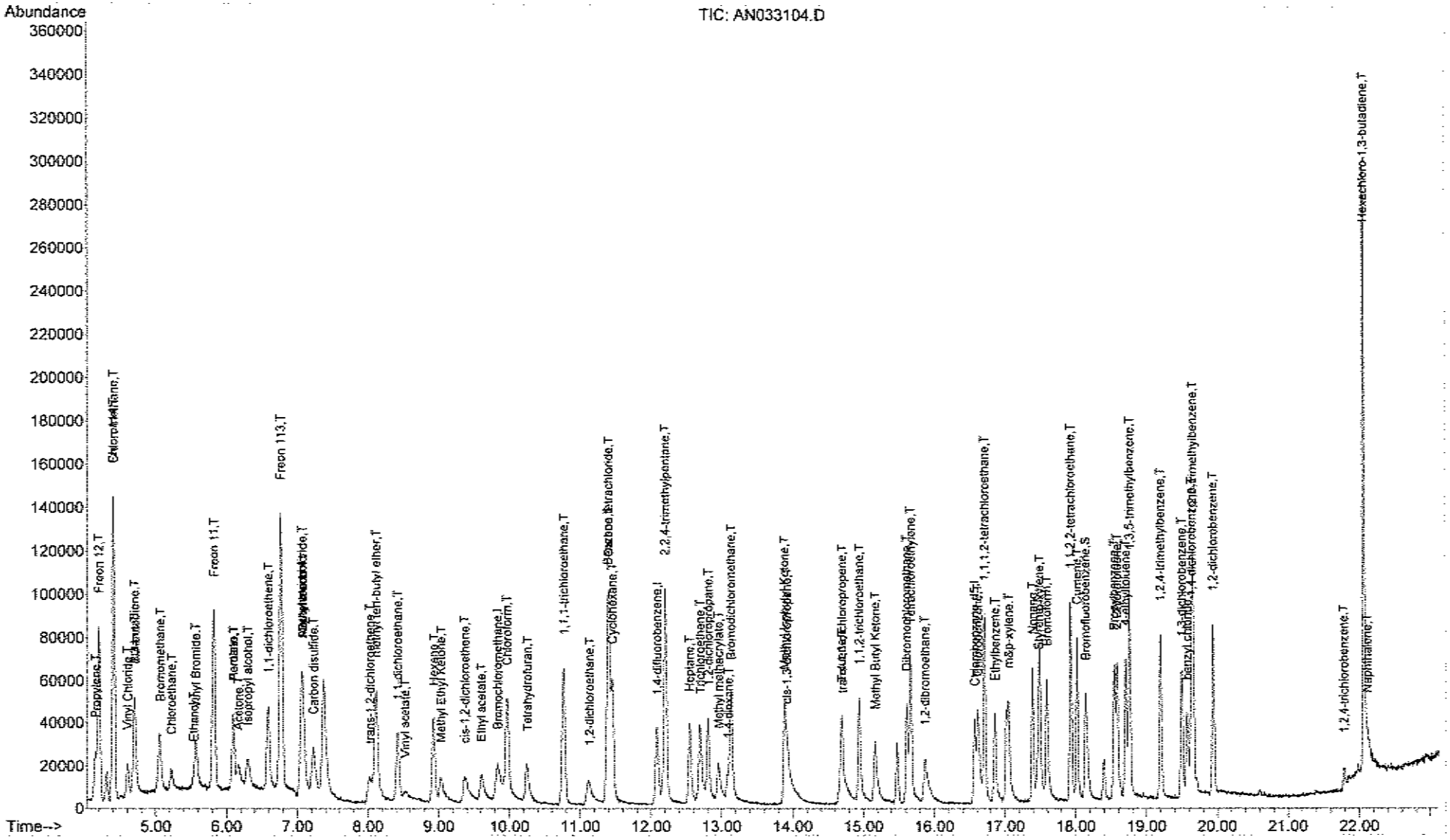
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
46)	Bromodichloromethane	13.13	83	41651m	1.16	ppb	
47)	cis-1,3-dichloropropene	13.92	75	24149	1.24	ppb	97
48)	trans-1,3-dichloropropene	14.71	75	22400m	1.28	ppb	
49)	1,1,2-trichloroethane	14.94	97	17373m	1.08	ppb	
51)	Toluene	14.69	92	19295	0.78	ppb	99
52)	Methyl Isobutyl Ketone	13.88	43	40189	0.92	ppb	97
53)	Dibromochloromethane	15.61	129	31600m	1.01	ppb	
54)	Methyl Butyl Ketone	15.17	43	32594	0.84	ppb	91
55)	1,2-dibromoethane	15.87	107	34960	1.13	ppb	96
56)	Tetrachloroethylene	15.67	164	20482	0.87	ppb	97
57)	Chlorobenzene	16.62	112	34556	1.06	ppb	90
58)	1,1,1,2-tetrachloroethane	16.72	131	27987	1.15	ppb	95
59)	Ethylbenzene	16.86	91	44081	1.04	ppb	100
60)	m&p-xylene	17.05	91	65852	1.95	ppb	96
61)	Nonane	17.39	43	21909	1.09	ppb	94
62)	Styrene	17.47	104	26727	1.14	ppb	89
63)	Bromoform	17.59	173	38427	2.28	ppb	99
64)	o-xylene	17.49	91	46990	1.16	ppb	96
65)	Cumene	18.02	105	55145	1.16	ppb	98
67)	1,1,2,2-tetrachloroethane	17.93	83	48409m	1.16	ppb	
68)	Propylbenzene	18.54	91	55449m	1.10	ppb	
69)	2-Chlorotoluene	18.58	91	41764m	1.14	ppb	
70)	4-ethyltoluene	18.70	105	50153m	1.16	ppb	
71)	1,3,5-trimethylbenzene	18.76	105	65318m	1.26	ppb	
72)	1,2,4-trimethylbenzene	19.19	105	55409	1.24	ppb	93
73)	1,3-dichlorobenzene	19.49	146	36108	1.27	ppb	98
74)	benzyl chloride	19.57	91	47227	1.17	ppb	99
75)	1,4-dichlorobenzene	19.62	146	31681	1.18	ppb	96
76)	1,2,3-trimethylbenzene	19.65	105	69701	1.26	ppb	96
77)	1,2-dichlorobenzene	19.94	146	43140	1.24	ppb	97
78)	1,2,4-trichlorobenzene	21.78	180	24145m	0.92	ppb	
79)	Naphthalene	22.12	128	56077m	1.03	ppb	
80)	Hexachloro-1,3-butadiene	22.06	225	62867	0.98	ppb	95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA2\AN033104.D Vial: 4
Acq On : 31 Mar 2016 12:19 pm Operator: RJP
Sample : A1UG_1.0 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 31 12:46 2016 Quant Results File: A316_1UG.RES

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Tue Apr 26 14:41:32 2016
Response via : Initial Calibration



AN033104.D A316_1UG.M Tue Apr 26 14:47:17 2016 MSD1 Page 3

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\AN040102.D
Acq On : 1 Apr 2016 12:06 pm
Sample : A1UG_1.0
Misc : A316_1UG
MS Integration Params: RTEINT.P

Vial: 18
Operator: RJP
Inst : MSD #1
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Tue Apr 26 14:41:32 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Bromochloromethane	1.000	1.000	0.0	55	0.00
2	T	Propylene	0.810	0.860	-6.2	64	0.01
3	T	Freon 12	4.271	5.108	-19.6	68	0.00
4	T	Chloromethane	1.118	1.325	-18.5	71	0.00
5	T	Freon 114	3.598	4.429	-23.1	69	0.00
6	T	Vinyl Chloride	1.125	1.238	-10.0	69	0.00
7	T	Butane	1.285	1.396	-8.6	63	0.00
8	T	1,3-butadiene	0.847	1.054	-24.4	75	0.00
9	T	Bromomethane	1.320	1.586	-20.2	69	0.00
10	T	Chloroethane	0.459	0.543	-18.3	66	0.00
11	T	Ethanol	0.341	0.349	-2.3	60	-0.13
12	T	Acrolein	0.290	0.363	-25.2	77	-0.12
13	T	Vinyl Bromide	1.298	1.449	-11.6	63	0.00
14	T	Freon 11	4.393	5.147	-17.2	67	0.00
15	T	Acetone	0.432	0.484	-12.0	68	-0.09
16	T	Pentane	0.986	0.987	-0.1	59	-0.01
17	T	Isopropyl alcohol	1.409	1.659	-17.7	72	-0.11
18	T	1,1-dichloroethene	1.283	1.351	-5.3	59	-0.01
19	T	Freon 113	3.094	3.971	-28.3	72	0.00
20	T	t-Butyl alcohol	2.248	2.923	-30.0#	76	-0.14
21	T	Methylene chloride	1.124	1.260	-12.1	62	-0.01
22	T	Allyl chloride	0.998	0.900	9.8	55	-0.03
23	T	Carbon disulfide	3.316	3.579	-7.9	62	0.00
24	T	trans-1,2-dichloroethene	1.522	1.525	-0.2	56	0.00
25	T	methyl tert-butyl ether	2.881	3.223	-11.9	63	-0.07
26	T	1,1-dichloroethane	2.155	2.255	-4.6	59	-0.01
27	T	Vinyl acetate	1.869	1.565	16.3	51	-0.07
28	T	Methyl Ethyl Ketone	0.461	0.490	-6.3	60	-0.07
29	T	cis-1,2-dichloroethene	1.250	1.259	-0.7	54	0.00
30	T	Hexane	1.308	1.196	8.6	50	-0.02
31	T	Ethyl acetate	1.784	1.908	-7.0	61	-0.05
32	T	Chloroform	2.918	2.995	-2.6	58	-0.02
33	T	Tetrahydrofuran	0.828	0.855	-3.3	58	-0.07
34	T	1,2-dichloroethane	1.641	1.586	3.4	55	-0.03
35	I	1,4-difluorobenzene	1.000	1.000	0.0	41#	-0.02
36	T	1,1,1-trichloroethane	0.939	1.190	-26.7	52	0.00
37	T	Cyclohexane	0.387	0.481	-24.3	51	0.00
38	T	Carbon tetrachloride	1.048	1.339	-27.8	57	0.00
39	T	Benzene	0.832	1.008	-21.2	50	0.00
40	T	Methyl methacrylate	0.271	0.361	-33.2#	56	-0.01
41	T	1,4-dioxane	0.213	0.274	-28.6	52	-0.06
42	T	2,2,4-trimethylpentane	1.453	1.814	-24.8	50	0.00
43	T	Heptane	0.338	0.359	-6.2	41#	-0.01
44	T	Trichloroethene	0.425	0.509	-19.8	53	-0.01
45	T	1,2-dichloropropane	0.300	0.356	-18.7	49#	-0.02
46	T	Bromodichloromethane	0.734	0.874	-19.1	49#	-0.01
47	T	cis-1,3-dichloropropene	0.400	0.494	-23.5	52	-0.01
48	T	trans-1,3-dichloropropene	0.359	0.474	-32.0#	56	-0.07
49	T	1,1,2-trichloroethane	0.329	0.373	-13.4	48#	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\AN040102.D Vial: 18
Acq On : 1 Apr 2016 12:06 pm Operator: RJP
Sample : A1UG_1.0 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Tue Apr 26 14:41:32 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
51	T	Toluene	0.679	0.557	18.0	42#	0.00
52	T	Methyl Isobutyl Ketone	1.201	1.409	-17.3	59	-0.04
53	T	Dibromochloromethane	0.857	0.927	-8.2	58	0.00
54	T	Methyl Butyl Ketone	1.068	1.207	-13.0	56	-0.04
55	T	1,2-dibromoethane	0.845	0.973	-15.1	62	-0.01
56	T	Tetrachloroethylene	0.648	0.571	11.9	50	0.00
57	T	Chlorobenzene	0.891	0.974	-9.3	59	0.00
58	T	1,1,1,2-tetrachloroethane	0.666	0.781	-17.3	60	0.00
59	T	Ethylbenzene	1.165	1.154	0.9	52	0.00
60	T	m&p-xylene	0.925	0.859	7.1	49#	0.00
61	T	Nonane	0.552	0.573	-3.8	56	0.00
62	T	Styrene	0.644	0.694	-7.8	56	0.00
63	T	Bromoform	0.463	0.980	-111.7#	115	0.00
64	T	o-xylene	1.109	1.256	-13.3	62	0.00
65	T	Cumene	1.299	1.506	-15.9	66	0.00
66	S	Bromofluorobenzene	0.643	0.691	-7.5	57	0.00
67	T	1,1,2,2-tetrachloroethane	1.140	1.420	-24.6	70	0.00
68	T	Propylbenzene	1.379	1.604	-16.3	72	0.00
69	T	2-Chlorotoluene	1.004	1.104	-10.0	61	0.00
70	T	4-ethyltoluene	1.183	1.394	-17.8	71	0.00
71	T	1,3,5-trimethylbenzene	1.416	1.788	-26.3	72	0.00
72	T	1,2,4-trimethylbenzene	1.224	1.474	-20.4	70	0.00
73	T	1,3-dichlorobenzene	0.778	0.938	-20.6	65	0.00
74	T	benzyl chloride	1.110	1.073	3.3	46#	0.00
75	T	1,4-dichlorobenzene	0.733	0.918	-25.2	67	0.00
76	T	1,2,3-trimethylbenzene	1.510	1.939	-28.4	70	0.00
77	T	1,2-dichlorobenzene	0.954	1.228	-28.7	71	0.00
78	T	1,2,4-trichlorobenzene	0.720	0.627	12.9	49#	0.00
79	T	Naphthalene	1.494	1.654	-10.7	67	0.00
80	T	Hexachloro-1,3-butadiene	1.754	2.142	-22.1	60	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\AN040102.D Vial: 18
Acq On : 1 Apr 2016 12:06 pm Operator: RJP
Sample : A1UG_1.0 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 01 12:45:47 2016 Quant Results File: A316_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 10:24:27 2016
Response via : Initial Calibration
DataAcq Meth : 1UG_RUN

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane	9.82	128	20214m	1.00	ppb		0.02
35) 1,4-difluorobenzene	12.06	114	45908	1.00	ppb		0.00
50) Chlorobenzene-d5	16.57	117	32719m	1.00	ppb		0.00
System Monitoring Compounds							
66) Bromofluorobenzene	18.14	95	22624	1.07	ppb		0.00
Spiked Amount 1.000	Range 70 - 130		Recovery = 107.00%				
Target Compounds							Qvalue
2) Propylene	4.15	41	17376	1.06	ppb	#	100
3) Freon 12	4.20	85	103246	1.20	ppb		99
4) Chloromethane	4.40	50	26785m	1.19	ppb		
5) Freon 114	4.40	85	89518	1.23	ppb		100
6) Vinyl Chloride	4.60	62	25030	1.10	ppb		89
7) Butane	4.69	43	28227	1.09	ppb		96
8) 1,3-butadiene	4.70	39	21303	1.24	ppb		90
9) Bromomethane	5.04	94	32059	1.20	ppb		96
10) Chloroethane	5.22	64	10984	1.19	ppb		99
11) Ethanol	5.39	45	7055	1.02	ppb	#	80
12) Acrolein	5.98	56	7347	1.25	ppb	#	5
13) Vinyl Bromide	5.56	106	29294	1.12	ppb		97
14) Freon 11	5.81	101	104032	1.17	ppb		98
15) Acetone	6.07	58	9780	1.12	ppb	#	77
16) Pentane	6.08	42	19954	1.00	ppb		97
17) Isopropyl alcohol	6.19	45	33525	1.18	ppb	#	46
18) 1,1-dichloroethene	6.57	96	27316	1.05	ppb		98
19) Freon 113	6.76	101	80263	1.28	ppb		93
20) t-Butyl alcohol	6.92	59	59090	1.30	ppb	#	73
21) Methylene chloride	7.06	84	25478	1.12	ppb		91
22) Allyl chloride	7.03	41	18186	0.90	ppb		80
23) Carbon disulfide	7.22	76	72346	1.08	ppb		98
24) trans-1,2-dichloroethene	8.03	61	30818	1.00	ppb		93
25) methyl tert-butyl ether	8.04	73	65147	1.12	ppb		90
26) 1,1-dichloroethane	8.41	63	45588	1.05	ppb		99
27) Vinyl acetate	8.45	43	31630	0.84	ppb		99
28) Methyl Ethyl Ketone	8.96	72	9904	1.06	ppb	#	100
29) cis-1,2-dichloroethene	9.37	61	25440	1.01	ppb		93
30) Hexane	8.91	57	24173	0.91	ppb		97
31) Ethyl acetate	9.55	43	38569	1.07	ppb		96
32) Chloroform	9.95	83	60541	1.03	ppb		99
33) Tetrahydrofuran	10.18	42	17273	1.03	ppb		89
34) 1,2-dichloroethane	11.10	62	32062	0.97	ppb		88
36) 1,1,1-trichloroethane	10.76	97	54630m	1.27	ppb		
37) Cyclohexane	11.45	56	22079m	1.24	ppb		
38) Carbon tetrachloride	11.39	117	61482m	1.28	ppb		
39) Benzene	11.38	78	46254	1.21	ppb		98
40) Methyl methacrylate	12.93	41	16559	1.33	ppb	#	82
41) 1,4-dioxane	13.02	88	12565m	1.29	ppb		
42) 2,2,4-trimethylpentane	12.20	57	83264m	1.25	ppb		
43) Heptane	12.54	43	16478	1.06	ppb		94
44) Trichloroethene	12.68	130	23365	1.20	ppb		99
45) 1,2-dichloropropane	12.79	63	16364	1.19	ppb		97

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\AN040102.D Vial: 18
Acq On : 1 Apr 2016 12:06 pm Operator: RJP
Sample : A1UG_1.0 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 01 12:45:47 2016 Quant Results File: A316_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 10:24:27 2016
Response via : Initial Calibration
DataAcq Meth : 1UG_RUN

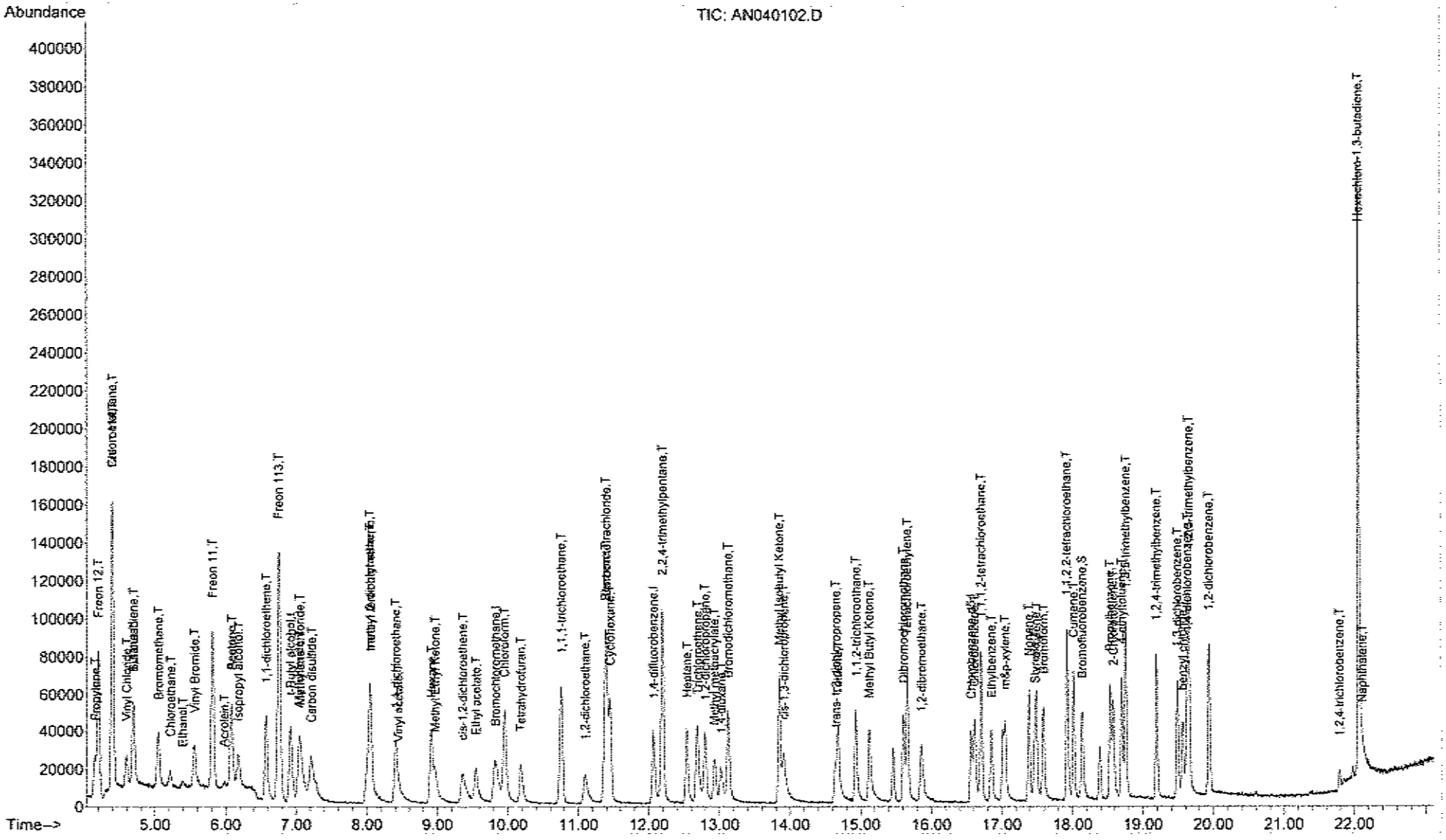
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
46) Bromodichloromethane	13.12	83	40101m	1.19	ppb	
47) cis-1,3-dichloropropene	13.91	75	22657m	1.23	ppb	
48) trans-1,3-dichloropropene	14.64	75	21777m	1.32	ppb	
49) 1,1,2-trichloroethane	14.94	97	17117m	1.13	ppb	
51) Toluene	14.68	92	18210	0.82	ppb	91
52) Methyl Isobutyl Ketone	13.85	43	46116m	1.17	ppb	
53) Dibromochloromethane	15.60	129	30338m	1.08	ppb	
54) Methyl Butyl Ketone	15.12	43	39487	1.13	ppb	93
55) 1,2-dibromoethane	15.86	107	31830m	1.15	ppb	
56) Tetrachloroethylene	15.66	164	18677	0.88	ppb	96
57) Chlorobenzene	16.62	112	31861	1.09	ppb	87
58) 1,1,1,2-tetrachloroethane	16.71	131	25554	1.17	ppb	96
59) Ethylbenzene	16.85	91	37742	0.99	ppb	100
60) m&p-xylene	17.04	91	56187	1.86	ppb	96
61) Nonane	17.38	43	18742	1.04	ppb	94
62) Styrene	17.46	104	22713	1.08	ppb	89
63) Bromoform	17.59	173	32049	2.12	ppb	100
64) o-xylene	17.49	91	41105	1.13	ppb	100
65) Cumene	18.02	105	49282	1.16	ppb	99
67) 1,1,2,2-tetrachloroethane	17.92	83	46449m	1.24	ppb	
68) Propylbenzene	18.54	91	52486m	1.16	ppb	
69) 2-Chlorotoluene	18.58	91	36127m	1.10	ppb	
70) 4-ethyltoluene	18.70	105	45616m	1.18	ppb	
71) 1,3,5-trimethylbenzene	18.76	105	58514m	1.26	ppb	
72) 1,2,4-trimethylbenzene	19.19	105	48219m	1.20	ppb	
73) 1,3-dichlorobenzene	19.49	146	30703m	1.21	ppb	
74) benzyl chloride	19.56	91	35105m	0.97	ppb	
75) 1,4-dichlorobenzene	19.62	146	30034	1.25	ppb	98
76) 1,2,3-trimethylbenzene	19.65	105	63436m	1.28	ppb	
77) 1,2-dichlorobenzene	19.94	146	40179m	1.29	ppb	
78) 1,2,4-trichlorobenzene	21.79	180	20515m	0.87	ppb	
79) Naphthalene	22.12	128	54113m	1.11	ppb	
80) Hexachloro-1,3-butadiene	22.06	225	70093	1.22	ppb	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\AN040102.D Vial: 18
Acq On : 1 Apr 2016 12:06 pm Operator: RJP
Sample : A1UG_1.0 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 1 12:48 2016 Quant Results File: A316_1UG.RES

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Tue Apr 26 14:41:32 2016
Response via : Initial Calibration



Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\AN040203.D
Acq On : 2 Apr 2016 12:08 pm
Sample : A1UG_1.0
Misc : A316_1UG
MS Integration Params: RTEINT.P

Vial: 3
Operator: RJP
Inst : MSD #1
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Tue Apr 26 14:41:32 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Bromochloromethane	1.000	1.000	0.0	64	-0.02
2	T	Propylene	0.810	0.985	-21.6	84	0.00
3	T	Freon 12	4.271	5.043	-18.1	78	0.00
4	T	Chloromethane	1.118	1.345	-20.3	83	0.00
5	T	Freon 114	3.598	4.247	-18.0	77	0.00
6	T	Vinyl Chloride	1.125	1.234	-9.7	79	0.00
7	T	Butane	1.285	1.409	-9.6	73	-0.01
8	T	1,3-butadiene	0.847	0.933	-10.2	76	0.00
9	T	Bromomethane	1.320	1.496	-13.3	75	0.00
10	T	Chloroethane	0.459	0.514	-12.0	72	-0.01
11	T	Ethanol	0.341	0.374	-9.7	74	-0.15
12	T	Acrolein	0.290	0.328	-13.1	80	-0.15
13	T	Vinyl Bromide	1.298	1.457	-12.2	73	-0.02
14	T	Freon 11	4.393	4.716	-7.4	71	-0.01
15	T	Acetone	0.432	0.490	-13.4	80	-0.10
16	T	Pentane	0.986	1.026	-4.1	71	-0.02
17	T	Isopropyl alcohol	1.409	1.424	-1.1	72	-0.14
18	T	1,1-dichloroethene	1.283	1.515	-18.1	77	-0.02
19	T	Freon 113	3.094	3.880	-25.4	81	-0.01
20	t	t-Butyl alcohol	2.248	2.364	-5.2	71	-0.16
21	T	Methylene chloride	1.124	1.335	-18.8	76	-0.02
22	T	Allyl chloride	0.998	1.164	-16.6	82	-0.04
23	T	Carbon disulfide	3.316	3.791	-14.3	76	-0.01
24	T	trans-1,2-dichloroethene	1.522	1.709	-12.3	73	-0.03
25	T	methyl tert-butyl ether	2.881	3.446	-19.6	78	-0.08
26	T	1,1-dichloroethane	2.155	2.421	-12.3	73	-0.02
27	T	Vinyl acetate	1.869	2.086	-11.6	79	-0.08
28	T	Methyl Ethyl Ketone	0.461	0.554	-20.2	78	-0.09
29	T	cis-1,2-dichloroethene	1.250	1.436	-14.9	71	-0.03
30	T	Hexane	1.308	1.479	-13.1	72	-0.01
31	T	Ethyl acetate	1.784	2.117	-18.7	79	-0.07
32	T	Chloroform	2.918	2.981	-2.2	67	-0.02
33	T	Tetrahydrofuran	0.828	1.007	-21.6	79	-0.09
34	T	1,2-dichloroethane	1.641	1.643	-0.1	66	-0.04
35	I	1,4-difluorobenzene	1.000	1.000	0.0	54	-0.02
36	T	1,1,1-trichloroethane	0.939	1.138	-21.2	66	-0.02
37	T	Cyclohexane	0.387	0.487	-25.8	68	-0.01
38	T	Carbon tetrachloride	1.048	1.187	-13.3	67	0.00
39	T	Benzene	0.832	0.997	-19.8	66	0.00
40	T	Methyl methacrylate	0.271	0.307	-13.3	63	-0.03
41	T	1,4-dioxane	0.213	0.234	-9.9	58	-0.07
42	T	2,2,4-trimethylpentane	1.453	2.014	-38.6#	73	-0.01
43	T	Heptane	0.338	0.399	-18.0	60	-0.02
44	T	Trichloroethene	0.425	0.504	-18.6	69	-0.01
45	T	1,2-dichloropropane	0.300	0.367	-22.3	67	-0.02
46	T	Bromodichloromethane	0.734	0.877	-19.5	65	-0.01
47	T	cis-1,3-dichloropropene	0.400	0.506	-26.5	71	-0.02
48	T	trans-1,3-dichloropropene	0.359	0.421	-17.3	65	-0.07
49	T	1,1,2-trichloroethane	0.329	0.379	-15.2	64	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\AN040203.D Vial: 3
Acq On : 2 Apr 2016 12:08 pm Operator: RJP
Sample : A1UG_1.0 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Tue Apr 26 14:41:32 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
51	T	Toluene	0.679	0.582	14.3	63	0.00
52	T	Methyl Isobutyl Ketone	1.201	0.907	24.5	54	-0.04
53	T	Dibromochloromethane	0.857	0.954	-11.3	85	0.00
54	T	Methyl Butyl Ketone	1.068	0.764	28.5	50	-0.05
55	T	1,2-dibromoethane	0.845	1.005	-18.9	91	-0.02
56	T	Tetrachloroethylene	0.648	0.517	20.2	65	0.00
57	T	Chlorobenzene	0.891	1.037	-16.4	90	0.00
58	T	1,1,1,2-tetrachloroethane	0.666	0.752	-12.9	82	-0.01
59	T	Ethylbenzene	1.165	1.295	-11.2	83	0.00
60	T	m&p-xylene	0.925	0.999	-8.0	81	-0.01
61	T	Nonane	0.552	0.667	-20.8	93	0.00
62	T	Styrene	0.644	0.778	-20.8	89	0.00
63	T	Bromoform	0.463	0.896	-93.5#	150#	0.00
64	T	o-xylene	1.109	1.288	-16.1	90	0.00
65	T	Cumene	1.299	1.563	-20.3	98	0.00
66	S	Bromofluorobenzene	0.643	0.711	-10.6	83	0.00
67	T	1,1,2,2-tetrachloroethane	1.140	1.377	-20.8	97	0.00
68	T	Propylbenzene	1.379	1.719	-24.7	110	0.00
69	T	2-Chlorotoluene	1.004	1.253	-24.8	98	0.00
70	T	4-ethyltoluene	1.183	1.500	-26.8	108	0.00
71	T	1,3,5-trimethylbenzene	1.416	1.777	-25.5	102	0.00
72	T	1,2,4-trimethylbenzene	1.224	1.376	-12.4	93	0.00
73	T	1,3-dichlorobenzene	0.778	0.961	-23.5	95	0.00
74	T	benzyl chloride	1.110	1.170	-5.4	72	0.00
75	T	1,4-dichlorobenzene	0.733	0.867	-18.3	90	0.00
76	T	1,2,3-trimethylbenzene	1.510	1.781	-17.9	91	0.00
77	T	1,2-dichlorobenzene	0.954	1.145	-20.0	95	0.00
78	T	1,2,4-trichlorobenzene	0.720	0.532	26.1	59	0.00
79	T	Naphthalene	1.494	1.148	23.2	66	0.00
80	T	Hexachloro-1,3-butadiene	1.754	1.408	19.7	56	0.00

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\AN040203.D Vial: 3
Acq On : 2 Apr 2016 12:08 pm Operator: RJP
Sample : A1UG_1.0 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 03 06:13:09 2016 Quant Results File: A316_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 10:24:27 2016
Response via : Initial Calibration
DataAcq Meth : 1UG_RUN

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane	9.81	128	23340m	1.00	ppb		0.00
35) 1,4-difluorobenzene	12.06	114	60425	1.00	ppb		0.00
50) Chlorobenzene-d5	16.56	117	46554	1.00	ppb		0.00
System Monitoring Compounds							
66) Bromofluorobenzene	18.13	95	33085	1.10	ppb		0.00
Spiked Amount 1.000	Range 70 - 130		Recovery = 110.00%				
Target Compounds							Qvalue
2) Propylene	4.15	41	23001	1.22	ppb	#	100
3) Freon 12	4.19	85	117694	1.18	ppb		100
4) Chloromethane	4.39	50	31394	1.20	ppb		91
5) Freon 114	4.39	85	99129	1.18	ppb		98
6) Vinyl Chloride	4.59	62	28806	1.10	ppb		91
7) Butane	4.68	43	32878	1.10	ppb		93
8) 1,3-butadiene	4.69	39	21775	1.10	ppb		79
9) Bromomethane	5.04	94	34909	1.13	ppb		93
10) Chloroethane	5.21	64	11994	1.12	ppb		90
11) Ethanol	5.37	45	8735	1.10	ppb	#	72
12) Acrolein	5.95	56	7667m	1.13	ppb		
13) Vinyl Bromide	5.54	106	34003	1.12	ppb		97
14) Freon 11	5.80	101	110074	1.07	ppb		99
15) Acetone	6.06	58	11425	1.13	ppb	#	72
16) Pentane	6.07	42	23948	1.04	ppb		91
17) Isopropyl alcohol	6.16	45	33227	1.01	ppb	#	46
18) 1,1-dichloroethene	6.57	96	35358	1.18	ppb		100
19) Freon 113	6.75	101	90548	1.25	ppb		92
20) t-Butyl alcohol	6.90	59	55178	1.05	ppb	#	77
21) Methylene chloride	7.05	84	31160	1.19	ppb		91
22) Allyl chloride	7.02	41	27173	1.17	ppb		86
23) Carbon disulfide	7.21	76	88486	1.14	ppb		98
24) trans-1,2-dichloroethene	8.00	61	39889	1.12	ppb		91
25) methyl tert-butyl ether	8.03	73	80441	1.20	ppb		92
26) 1,1-dichloroethane	8.40	63	56508	1.12	ppb		98
27) Vinyl acetate	8.44	43	48681	1.12	ppb		98
28) Methyl Ethyl Ketone	8.95	72	12927	1.20	ppb	#	100
29) cis-1,2-dichloroethene	9.35	61	33508	1.15	ppb		92
30) Hexane	8.91	57	34528	1.13	ppb		95
31) Ethyl acetate	9.53	43	49400	1.19	ppb		96
32) Chloroform	9.95	83	69579	1.02	ppb		99
33) Tetrahydrofuran	10.16	42	23510	1.22	ppb		92
34) 1,2-dichloroethane	11.08	62	38354	1.00	ppb		88
36) 1,1,1-trichloroethane	10.75	97	68741	1.21	ppb		98
37) Cyclohexane	11.44	56	29399m	1.26	ppb		
38) Carbon tetrachloride	11.39	117	71711	1.13	ppb		97
39) Benzene	11.37	78	60241	1.20	ppb		99
40) Methyl methacrylate	12.92	41	18539m	1.13	ppb		
41) 1,4-dioxane	13.01	88	14154	1.10	ppb		100
42) 2,2,4-trimethylpentane	12.19	57	121680m	1.39	ppb		
43) Heptane	12.53	43	24121	1.18	ppb		92
44) Trichloroethene	12.68	130	30434	1.19	ppb		98
45) 1,2-dichloropropane	12.79	63	22191	1.22	ppb		97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\AN040203.D Vial: 3
Acq On : 2 Apr 2016 12:08 pm Operator: RJP
Sample : A1UG_1.0 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 03 06:13:09 2016 Quant Results File: A316_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 10:24:27 2016
Response via : Initial Calibration
DataAcq Meth : 1UG_RUN

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
46)	Bromodichloromethane	13.12	83	52994	1.19	ppb	100
47)	cis-1,3-dichloropropene	13.90	75	30596m	1.27	ppb	
48)	trans-1,3-dichloropropene	14.64	75	25414m	1.17	ppb	
49)	1,1,2-trichloroethane	14.93	97	22894m	1.15	ppb	
51)	Toluene	14.68	92	27083	0.86	ppb	96
52)	Methyl Isobutyl Ketone	13.84	43	42214	0.76	ppb	98
53)	Dibromochloromethane	15.60	129	44419m	1.11	ppb	
54)	Methyl Butyl Ketone	15.12	43	35579	0.72	ppb	96
55)	1,2-dibromoethane	15.85	107	46773	1.19	ppb	96
56)	Tetrachloroethylene	15.66	164	24068	0.80	ppb	100
57)	Chlorobenzene	16.61	112	48270	1.16	ppb	91
58)	1,1,1,2-tetrachloroethane	16.70	131	34997	1.13	ppb	96
59)	Ethylbenzene	16.85	91	60302	1.11	ppb	98
60)	m&p-xylene	17.04	91	93017	2.16	ppb	93
61)	Nonane	17.38	43	31062	1.21	ppb	97
62)	Styrene	17.46	104	36214	1.21	ppb	89
63)	Bromoform	17.59	173	41735	1.94	ppb	99
64)	o-xylene	17.49	91	59958	1.16	ppb	89
65)	Cumene	18.01	105	72750	1.20	ppb	98
67)	1,1,2,2-tetrachloroethane	17.92	83	64100	1.21	ppb	97
68)	Propylbenzene	18.54	91	80019m	1.25	ppb	
69)	2-Chlorotoluene	18.58	91	58353m	1.25	ppb	
70)	4-ethyltoluene	18.70	105	69819m	1.27	ppb	
71)	1,3,5-trimethylbenzene	18.75	105	82710m	1.25	ppb	
72)	1,2,4-trimethylbenzene	19.19	105	64048	1.12	ppb	92
73)	1,3-dichlorobenzene	19.49	146	44739	1.23	ppb	98
74)	benzyl chloride	19.56	91	54469	1.05	ppb	100
75)	1,4-dichlorobenzene	19.62	146	40353	1.18	ppb	95
76)	1,2,3-trimethylbenzene	19.65	105	82929	1.18	ppb	97
77)	1,2-dichlorobenzene	19.94	146	53322	1.20	ppb	94
78)	1,2,4-trichlorobenzene	21.79	180	24786m	0.74	ppb	
79)	Naphthalene	22.11	128	53453m	0.77	ppb	
80)	Hexachloro-1,3-butadiene	22.07	225	65564	0.80	ppb	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

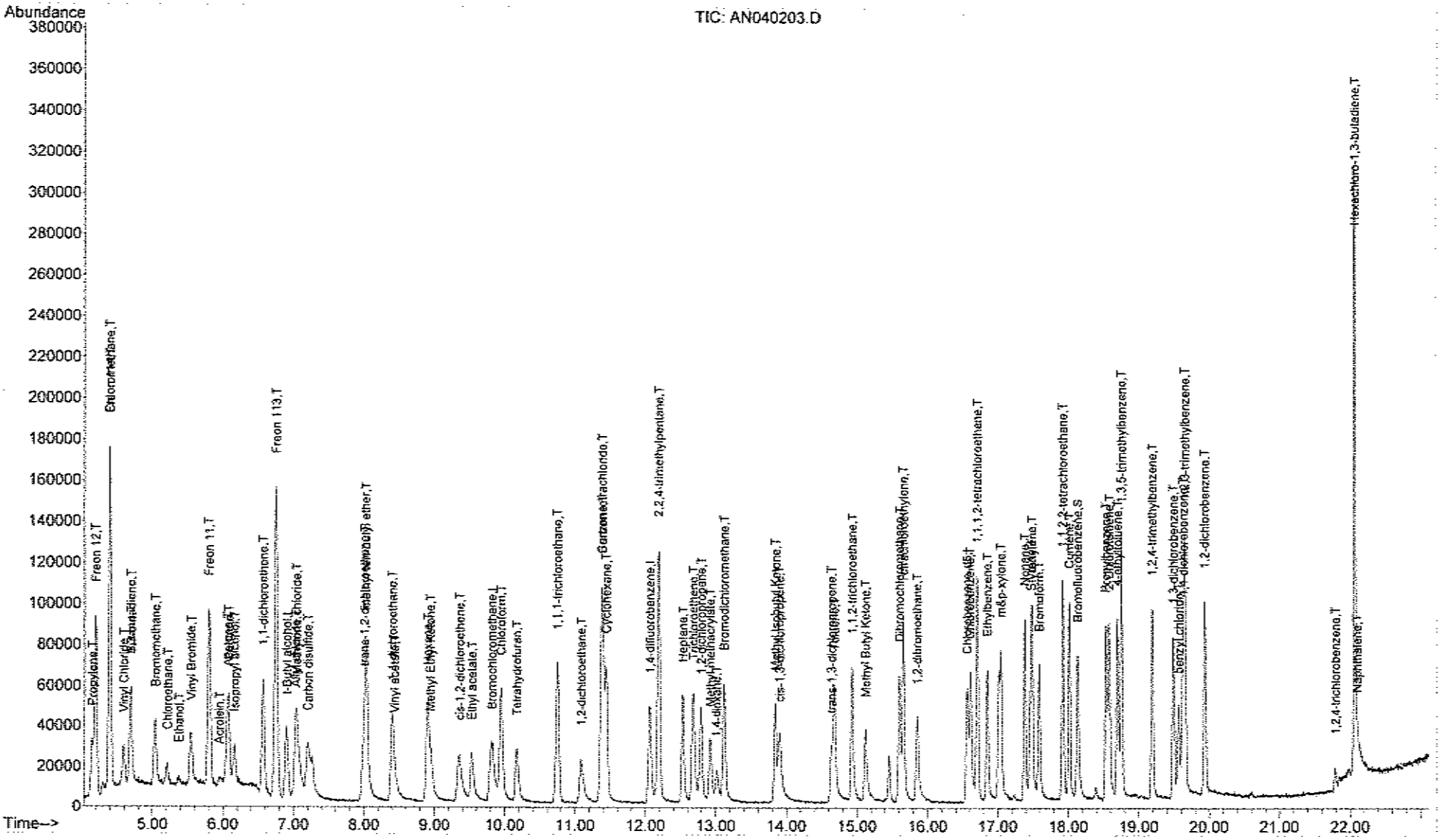
Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\AN040203.D
Acq On : 2 Apr 2016 12:08 pm
Sample : A1UG_1.0
Misc : A316_1UG
MS Integration Params: RTEINT.P
Quant Time: Apr 3 6:15 2016

Vial: 3
Operator: RJP
Inst : MSD #1
Multiplr: 1.00

Quant Results File: A316_1UG.RES

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Tue Apr 26 14:41:32 2016
Response via : Initial Calibration



GC/MS VOLATILES-WHOLE AIR

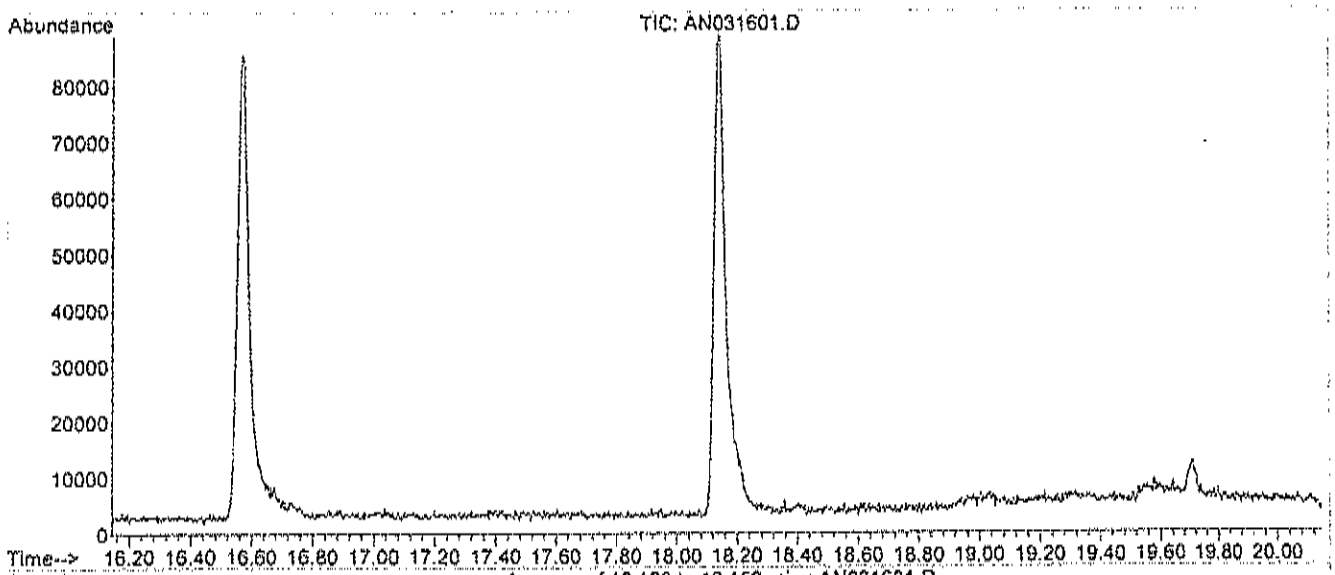
METHOD TO-15

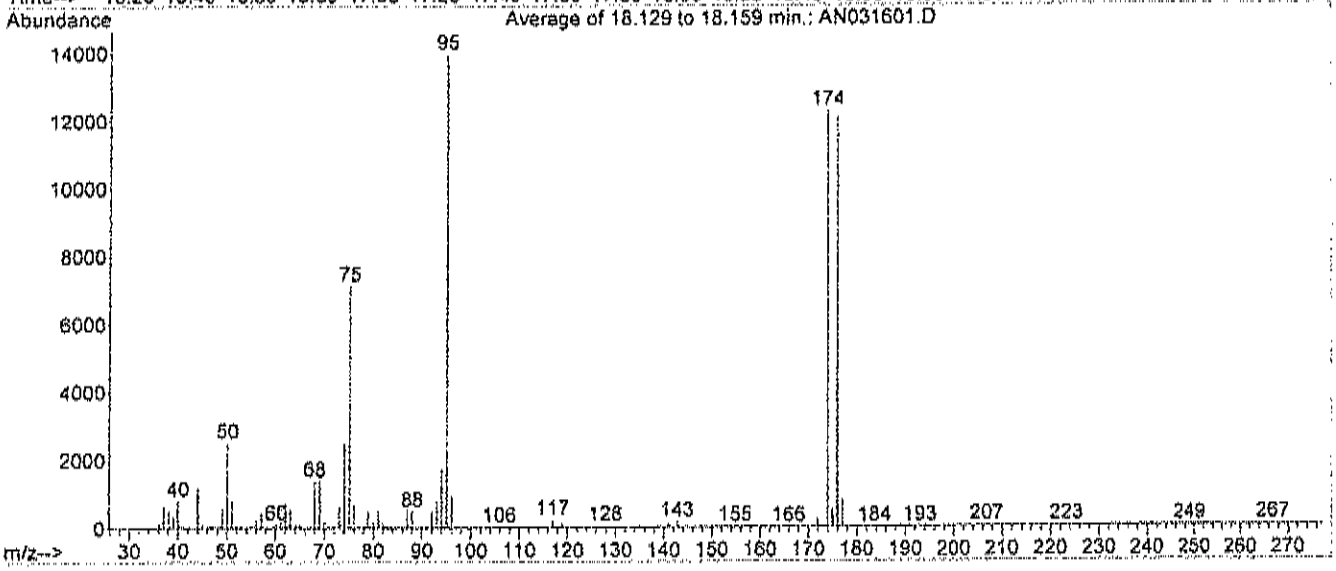
RAW DATA

BFB

Data File : C:\HPCHEM\1\DATA\AN031601.D
Acq On : 16 Mar 2016 5:26 pm
Sample : BFB1UG
Misc : A316_1UG
MS Integration Params: RTEINT.P
Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration

Vial: 1
Operator: RJP
Inst : MSD #1
Multiplr: 1.00





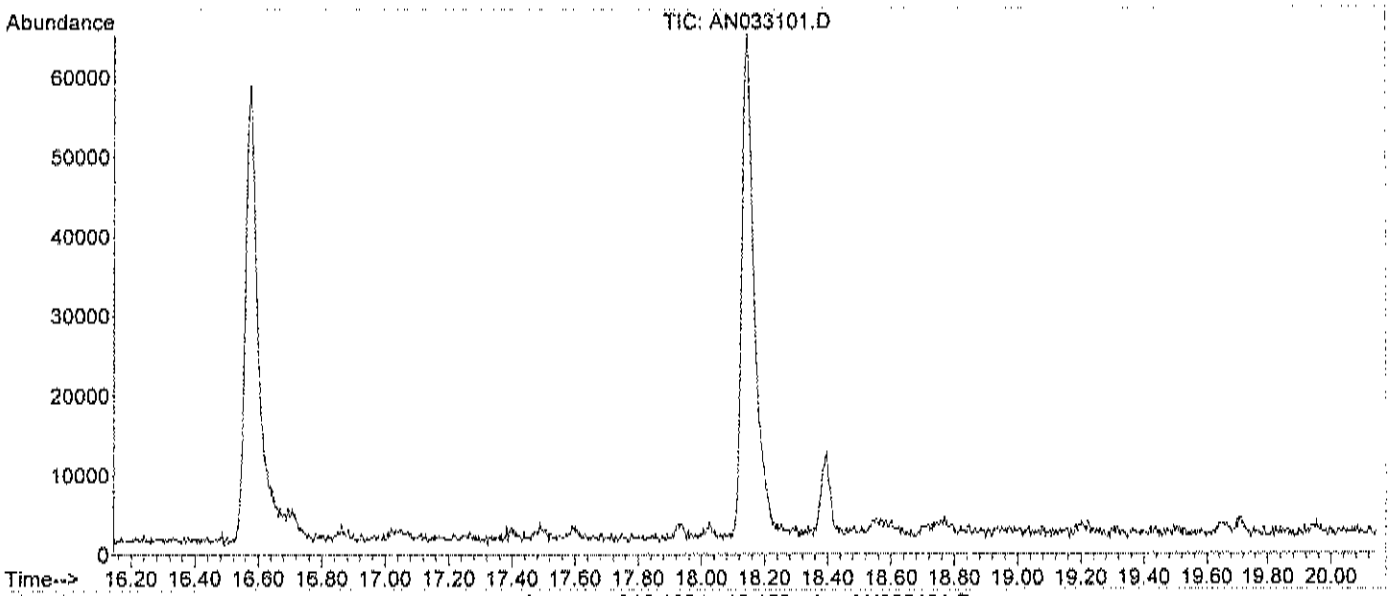
Spectrum Information: Average of 18.129 to 18.159 min.

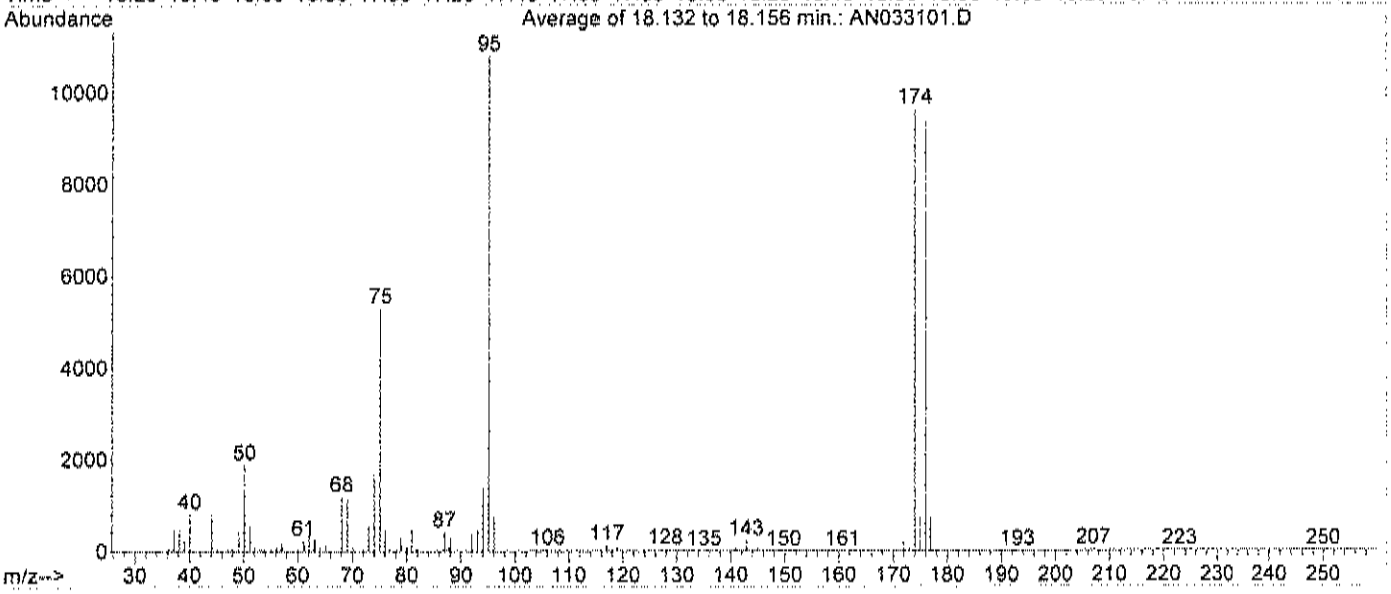
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	18.0	2513	PASS
75	95	30	66	51.1	7135	PASS
95	95	100	100	100.0	13975	PASS
96	95	5	9	6.7	936	PASS
173	174	0.00	2	0.6	79	PASS
174	95	50	120	87.9	12278	PASS
175	174	4	9	4.1	498	PASS
176	174	95	101	98.5	12090	PASS
177	176	5	9	6.9	829	PASS

AN031601.D A316_1UG.M Thu Apr 07 13:04:45 2016 MSD1

BFB

Data File : C:\HPCHEM\1\DATA2\AN033101.D Vial: 1
Acq On : 31 Mar 2016 9:33 am Operator: RJP
Sample : BFB1UG Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration



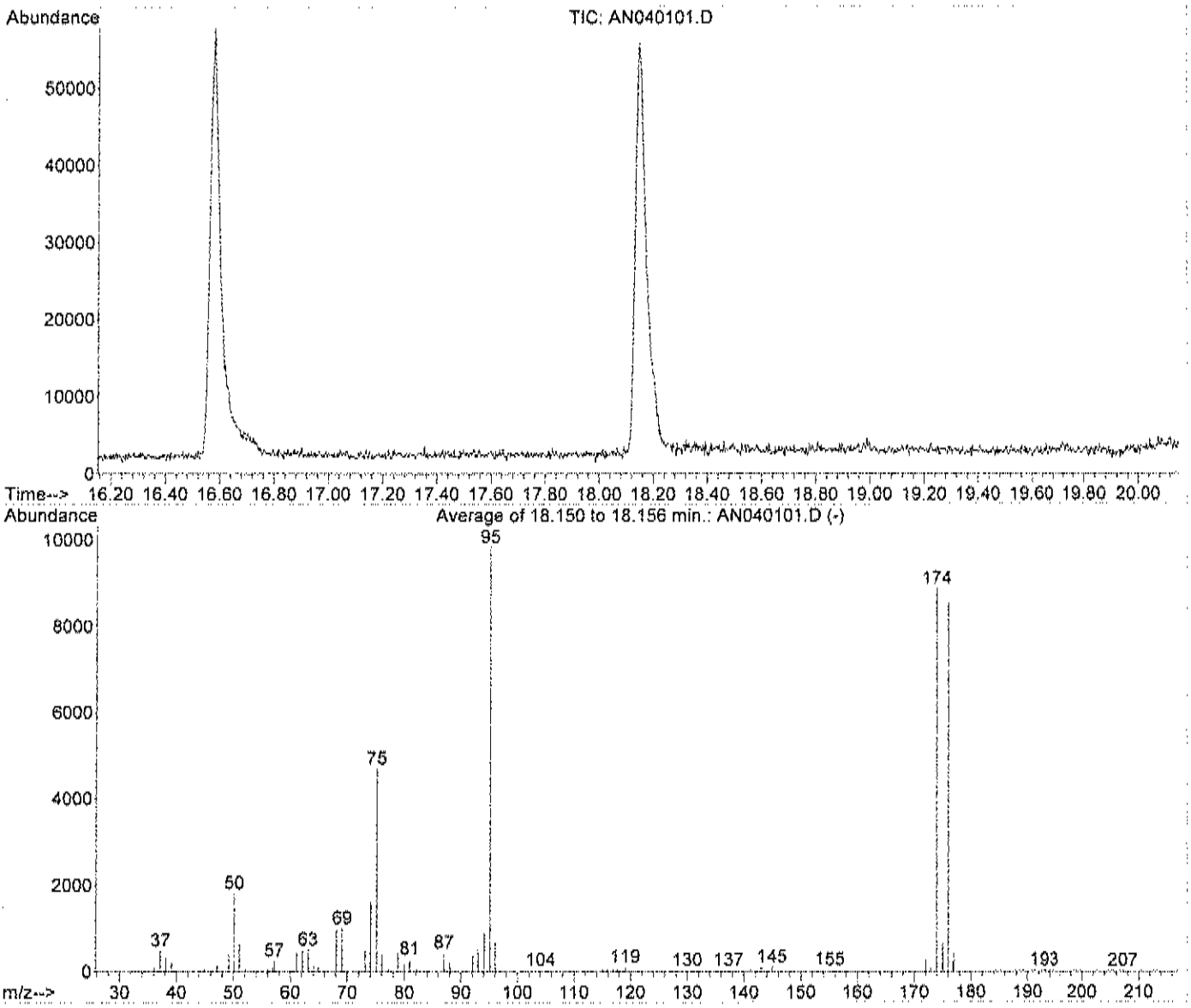


Spectrum Information: Average of 18.132 to 18.156 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	17.5	1890	PASS
75	95	30	66	49.0	5299	PASS
95	95	100	100	100.0	10811	PASS
96	95	5	9	7.0	757	PASS
173	174	0.00	2	0.7	65	PASS
174	95	50	120	89.2	9645	PASS
175	174	4	9	7.8	750	PASS
176	174	95	101	97.0	9355	PASS
177	176	5	9	7.5	704	PASS

AN033101.D A316_1UG.M Tue Apr 26 14:47:04 2016 MSD1

Data File : C:\HPCHEM\1\DATA\AN040101.D Vial: 16
Acq On : 1 Apr 2016 10:05 am Operator: RJP
Sample : BFB1UG Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration



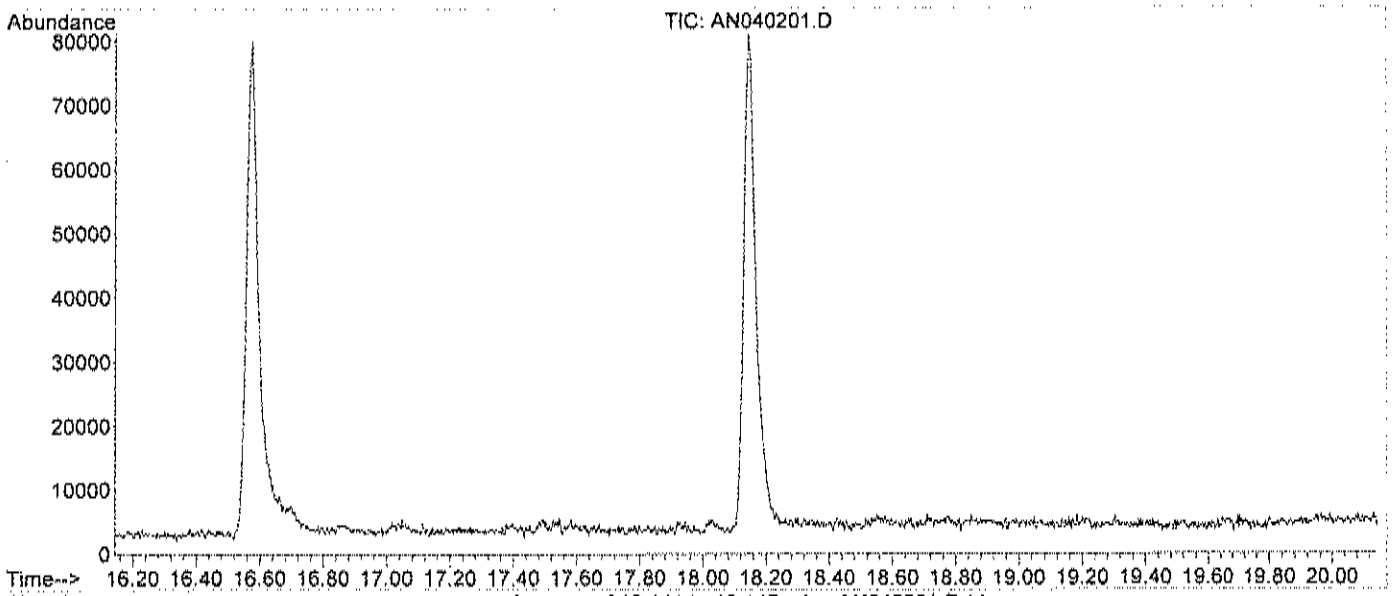
Spectrum Information: Average of 18.150 to 18.156 min.

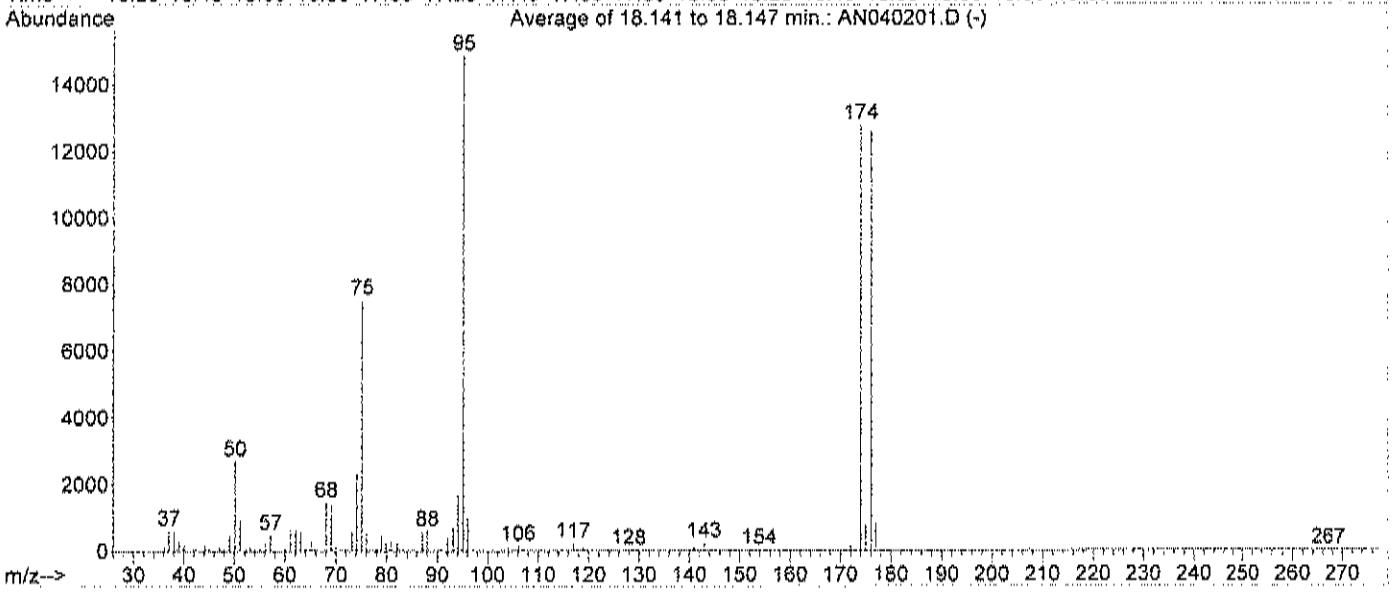
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	18.6	1827	PASS
75	95	30	66	47.8	4708	PASS
95	95	100	100	100.0	9841	PASS
96	95	5	9	7.0	692	PASS
173	174	0.00	2	0.8	70	PASS
174	95	50	120	90.2	8875	PASS
175	174	4	9	7.4	658	PASS
176	174	95	101	96.4	8557	PASS
177	176	5	9	5.2	443	PASS

AN040101.D A316_1UG.M Tue Apr 26 14:48:24 2016 MSD1

Data File : C:\HPCHEM\1\DATA\AN040201.D
Acq On : 2 Apr 2016 10:48 am
Sample : BFB1UG
Misc : A316_1UG
MS Integration Params: RTEINT.P
Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration

Vial: 1
Operator: RJP
Inst : MSD #1
Multiplr: 1.00





Spectrum Information: Average of 18.141 to 18.147 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	18.2	2718	PASS
75	95	30	66	50.7	7557	PASS
95	95	100	100	100.0	14902	PASS
96	95	5	9	6.7	1000	PASS
173	174	0.00	2	0.2	31	PASS
174	95	50	120	85.9	12799	PASS
175	174	4	9	6.0	772	PASS
176	174	95	101	98.7	12634	PASS
177	176	5	9	6.7	841	PASS

AN040201.D A316_1UG.M Tue Apr 26 14:59:39 2016 MSD1

GC/MS VOLATILES-WHOLE AIR

METHOD TO-15

RAW QC DATA

CENTEK LABORATORIES, LLC

Date: *26-Apr-16*

ANALYTICAL QC SUMMARY REPORT

CLIENT: LaBella Associates, P.C.
Work Order: C1603074
Project: 575 Colfax FESL SVI

TestCode: 0.25CT-TCE-VC

Sample ID AMB1UG-033116	SampType: MBLK	TestCode: 0.25CT-TCE-	Units: ppbV	Prep Date:	RunNo: 10817
Client ID: ZZZZZ	Batch ID: R10817	TestNo: TO-15		Analysis Date: 3/31/2016	SeqNo: 127095

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	< 0.15	0.15									
1,1-Dichloroethane	< 0.15	0.15									
1,1-Dichloroethene	< 0.15	0.15									
Chloroethane	< 0.15	0.15									
Chloromethane	< 0.15	0.15									
cis-1,2-Dichloroethene	< 0.15	0.15									
Tetrachloroethylene	< 0.15	0.15									
trans-1,2-Dichloroethene	< 0.15	0.15									
Trichloroethene	< 0.040	0.040									
Vinyl chloride	< 0.040	0.040									

Sample ID AMB1UG-040116	SampType: MBLK	TestCode: 0.25CT-TCE-	Units: ppbV	Prep Date:	RunNo: 10818
Client ID: ZZZZZ	Batch ID: R10818	TestNo: TO-15		Analysis Date: 4/1/2016	SeqNo: 127112

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	< 0.15	0.15									
1,1-Dichloroethane	< 0.15	0.15									
1,1-Dichloroethene	< 0.15	0.15									
Chloroethane	< 0.15	0.15									
Chloromethane	< 0.15	0.15									
cis-1,2-Dichloroethene	< 0.15	0.15									
Tetrachloroethylene	< 0.15	0.15									
trans-1,2-Dichloroethene	< 0.15	0.15									
Trichloroethene	< 0.040	0.040									

Qualifiers:

.	Results reported are not blank corrected	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected at or below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike Recovery outside accepted recovery limits				

CLIENT: LaBella Associates, P.C.
Work Order: C1603074
Project: 575 Colfax FESL SVI

TestCode: 0.25CT-TCE-VC

Sample ID	AMB1UG-040116	SampType:	MBLK	TestCode:	0.25CT-TCE-	Units:	ppbV	Prep Date:		RunNo:	10818
Client ID:	ZZZZZ	Batch ID:	R10818	TestNo:	TO-15			Analysis Date:	4/1/2016	SeqNo:	127112

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	< 0.040	0.040									

Qualifiers:

-	Results reported are not blank corrected	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected at or below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike Recovery outside accepted recovery limits				

CLIENT: LaBella Associates, P.C.
Work Order: C1603074
Project: 575 Colfax FESL SVI

TestCode: 1ugM3_TO15

Sample ID **AMB1UG-040216** SampType: **MBLK** TestCode: **1ugM3_TO15** Units: **ppbV** Prep Date: RunNo: **10819**
Client ID: **ZZZZZ** Batch ID: **R10819** TestNo: **TO-15** Analysis Date: **4/2/2016** SeqNo: **127124**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	< 0.15	0.15									
1,1-Dichloroethane	< 0.15	0.15									
1,1-Dichloroethene	< 0.15	0.15									
Chloroethane	< 0.15	0.15									
Chloromethane	< 0.15	0.15									
cis-1,2-Dichloroethene	< 0.15	0.15									
Tetrachloroethylene	< 0.15	0.15									
trans-1,2-Dichloroethene	< 0.15	0.15									
Trichloroethene	< 0.15	0.15									
Vinyl chloride	< 0.15	0.15									

Qualifiers:

.	Results reported are not blank corrected	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected at or below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike Recovery outside accepted recovery limits				

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA2\AN033106.D Vial: 6
Acq On : 31 Mar 2016 1:33 pm Operator: RJP
Sample : AMB1UG-033116 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 01 03:34:38 2016 Quant Results File: A316_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 10:24:27 2016
Response via : Initial Calibration
DataAcq Meth : 1UG_RUN

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	9.86	128	20032m	1.00	ppb	0.05
35) 1,4-difluorobenzene	12.09	114	47930	1.00	ppb	0.04
50) Chlorobenzene-d5	16.57	117	44161	1.00	ppb	0.02
System Monitoring Compounds						
66) Bromofluorobenzene	18.15	95	25131	0.88	ppb	0.02
Spiked Amount 1.000	Range 70 - 130		Recovery = 88.00%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

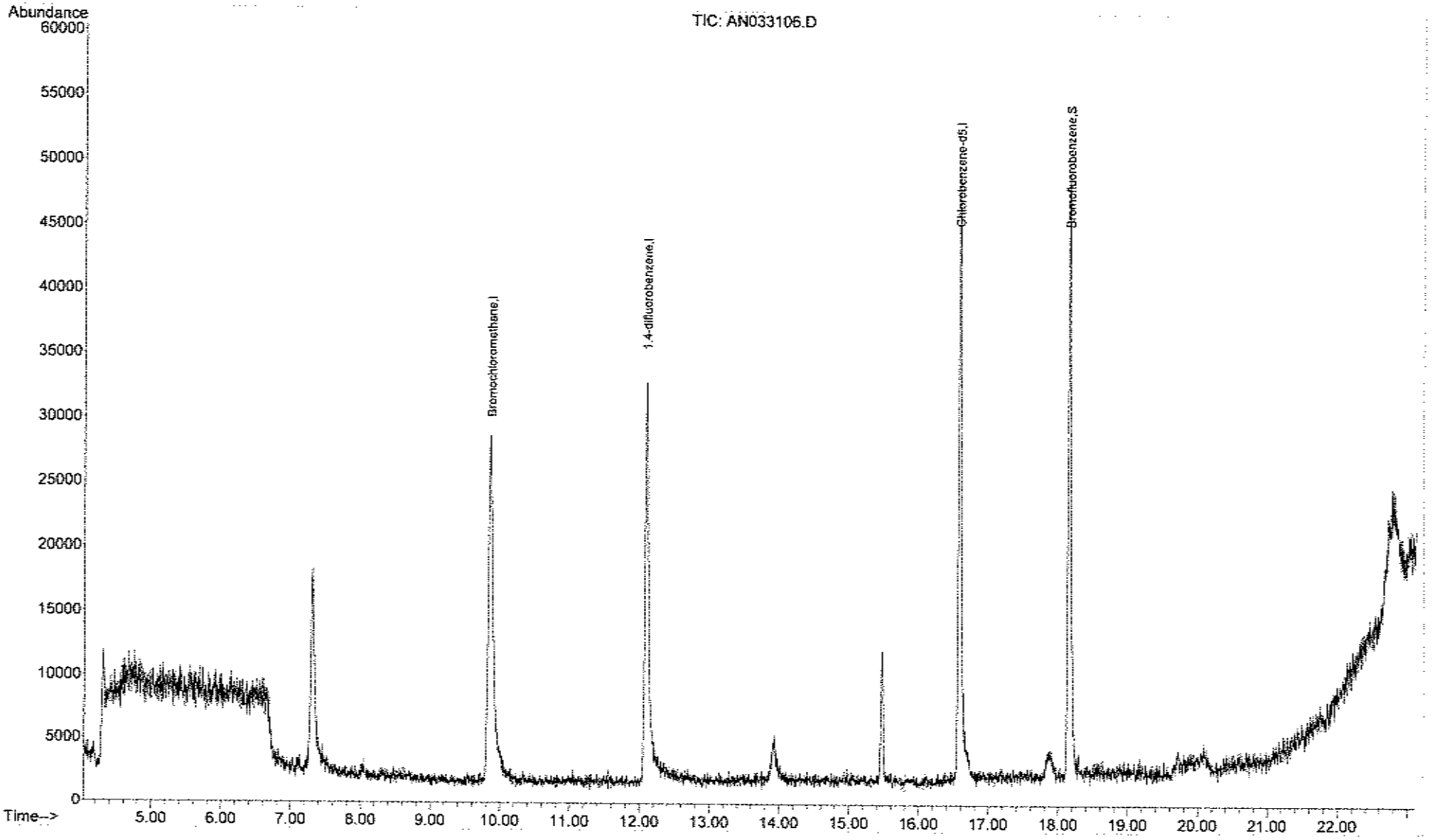
Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA2\AN033106.D
Acq On : 31 Mar 2016 1:33 pm
Sample : AMB1UG-033116
Misc : A316_1UG
MS Integration Params: RTEINT.P
Quant Time: Apr 1 8:08 2016

Vial: 6
Operator: RJP
Inst : MSD #1
Multiplr: 1.00

Quant Results File: A316_1UG.RES

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Tue Apr 26 14:41:32 2016
Response via : Initial Calibration



AN033106.D A316_1UG.M Tue Apr 26 15:14:58 2016 MSD1

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\AN040104.D Vial: 20
Acq On : 1 Apr 2016 1:21 pm Operator: RJP
Sample : AMB1UG-040116 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 02 12:01:20 2016 Quant Results File: A316_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 10:24:27 2016
Response via : Initial Calibration
DataAcq Meth : 1UG_RUN

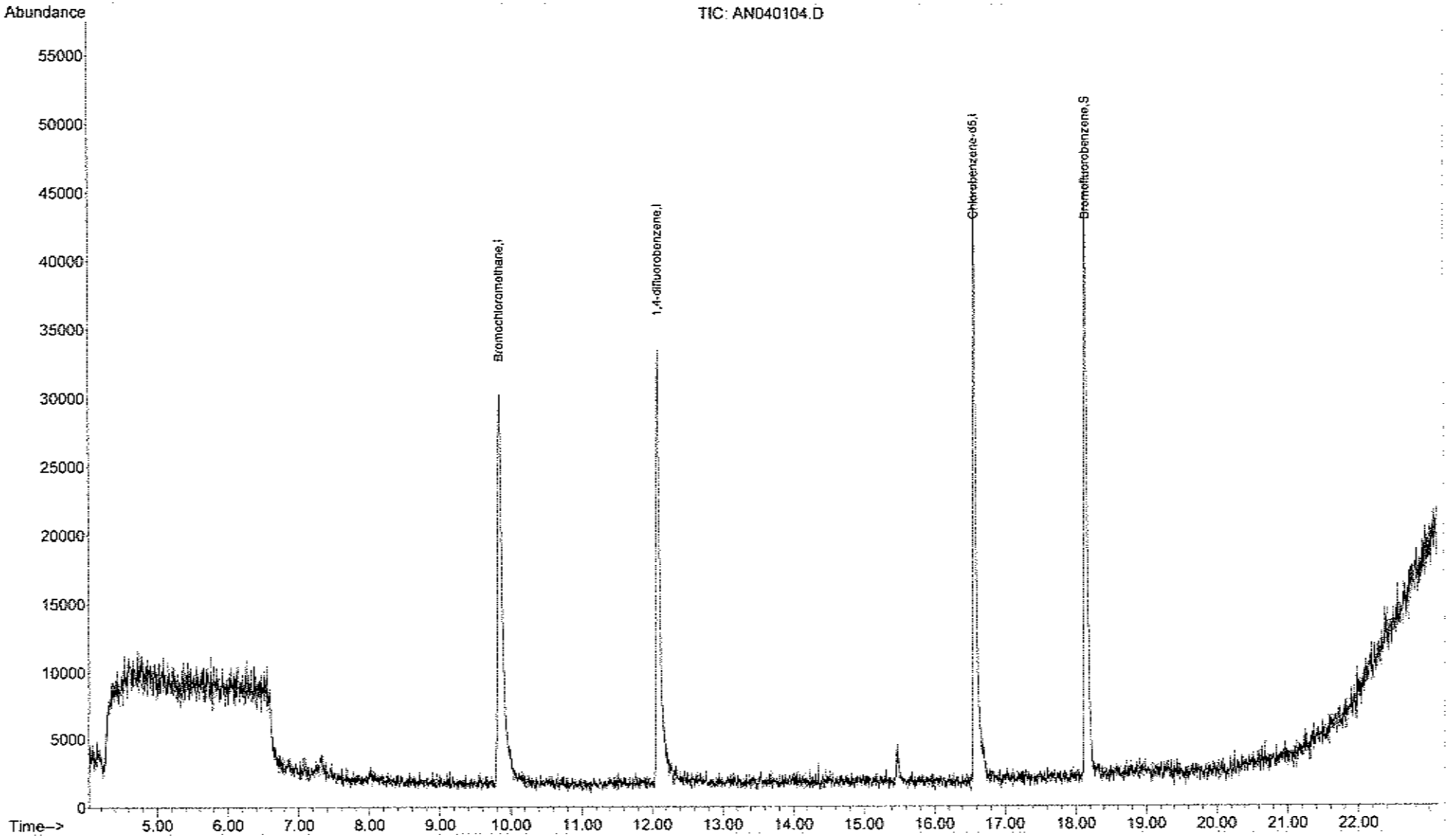
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	9.86	128	18252	1.00	ppb	0.05
35) 1,4-difluorobenzene	12.09	114	46023	1.00	ppb	0.03
50) Chlorobenzene-d5	16.57	117	41257	1.00	ppb	0.01
System Monitoring Compounds						
66) Bromofluorobenzene	18.14	95	24184	0.91	ppb	0.00
Spiked Amount 1.000	Range 70 - 130		Recovery = 91.00%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed
AN040104.D A316_1UG.M Tue Apr 26 14:44:46 2016 MSD1 Page 1

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\AN040104.D Vial: 20
Acq On : 1 Apr 2016 1:21 pm Operator: RJP
Sample : AMB1UG-040116 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 2 12:01 2016 Quant Results File: A316_1UG.RES

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Tue Apr 26 14:41:32 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\AN040205.D Vial: 2
Acq On : 2 Apr 2016 1:34 pm Operator: RJP
Sample : AMB1UG-040216 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 02 14:36:31 2016 Quant Results File: A316_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 10:24:27 2016
Response via : Initial Calibration
DataAcq Meth : 1UG_RUN

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	9.85	128	17717	1.00	ppb	0.04
35) 1,4-difluorobenzene	12.08	114	49878	1.00	ppb	0.03
50) Chlorobenzene-d5	16.58	117	41390	1.00	ppb	0.02
System Monitoring Compounds						
66) Bromofluorobenzene	18.14	95	24022	0.90	ppb	0.00
Spiked Amount 1.000	Range 70 - 130		Recovery = 90.00%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

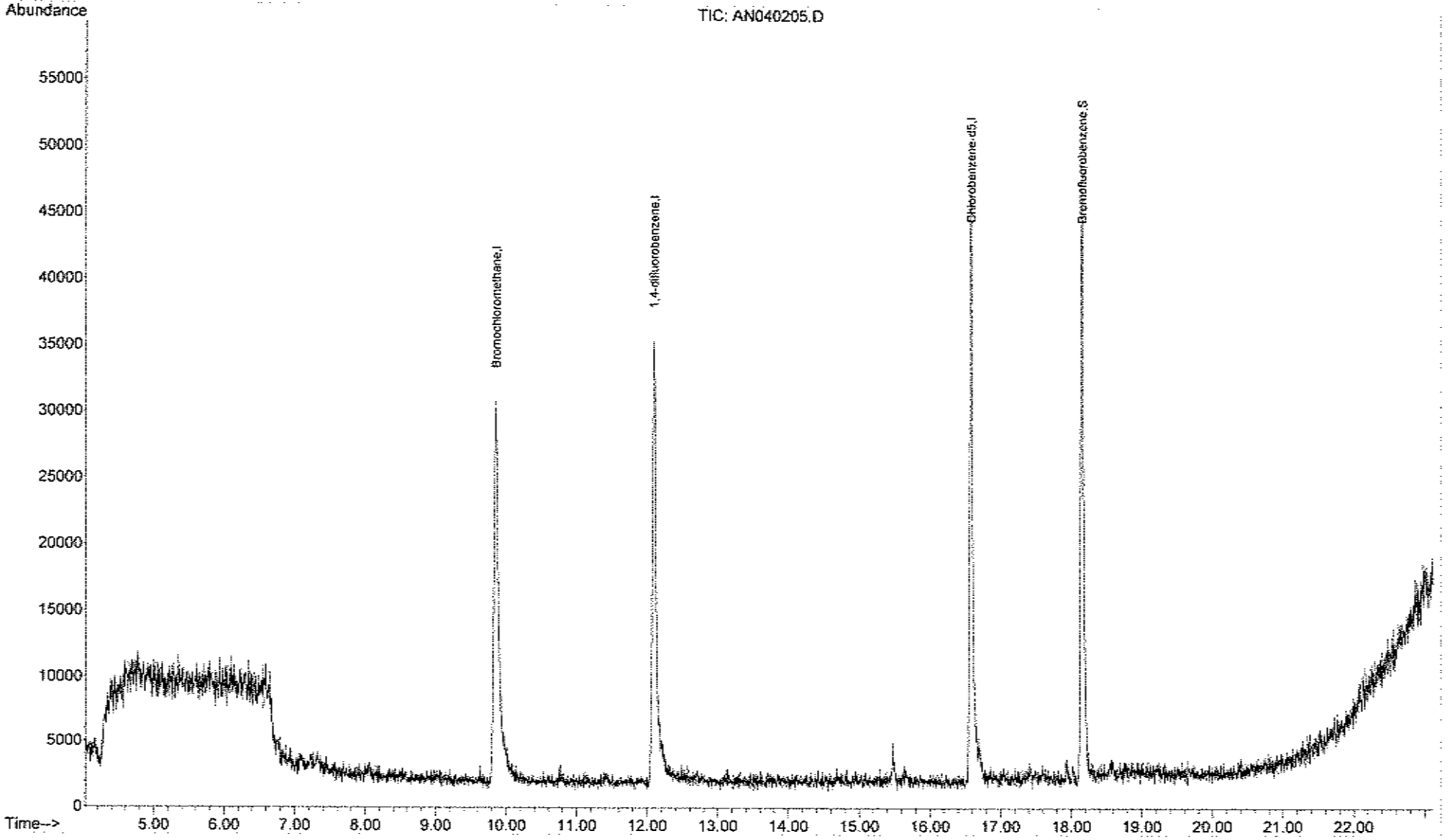
Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\AN040205.D
Acq On : 2 Apr 2016 1:34 pm
Sample : AMB1UG-040216
Misc : A316_1UG
MS Integration Params: RTEINT.P
Quant Time: Apr 3 11:39 2016

Vial: 2
Operator: RJP
Inst : MSD #1
Multiplr: 1.00

Quant Results File: A316_1UG.RES

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Tue Apr 26 14:41:32 2016
Response via : Initial Calibration



CENTEK LABORATORIES, LLC

Date: *26-Apr-16*

ANALYTICAL QC SUMMARY REPORT

CLIENT: LaBella Associates, P.C.
Work Order: C1603074
Project: 575 Colfax FESL SVI

TestCode: 0.25CT-TCE-VC

Sample ID ALCS1UG-033116	SampType: LCS	TestCode: 0.25CT-TCE-	Units: ppbV	Prep Date:	RunNo: 10817
Client ID: ZZZZZ	Batch ID: R10817	TestNo: TO-15		Analysis Date: 3/31/2016	SeqNo: 127096

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	1.250	0.15	1	0	125	70	130				
1,1-Dichloroethane	1.120	0.15	1	0	112	70	130				
1,1-Dichloroethene	1.120	0.15	1	0	112	70	130				
Chloroethane	1.220	0.15	1	0	122	70	130				
Chloromethane	1.230	0.15	1	0	123	70	130				
cis-1,2-Dichloroethene	1.060	0.15	1	0	106	70	130				
Tetrachloroethylene	0.9200	0.15	1	0	92.0	70	130				
trans-1,2-Dichloroethene	1.050	0.15	1	0	105	70	130				
Trichloroethene	1.110	0.040	1	0	111	70	130				
Vinyl chloride	1.090	0.040	1	0	109	70	130				

Sample ID ALCS1UG-040116	SampType: LCS	TestCode: 0.25CT-TCE-	Units: ppbV	Prep Date:	RunNo: 10818
Client ID: ZZZZZ	Batch ID: R10818	TestNo: TO-15		Analysis Date: 4/1/2016	SeqNo: 127113

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	1.290	0.15	1	0	129	70	130				
1,1-Dichloroethane	1.040	0.15	1	0	104	70	130				
1,1-Dichloroethene	1.100	0.15	1	0	110	70	130				
Chloroethane	1.130	0.15	1	0	113	70	130				
Chloromethane	1.230	0.15	1	0	123	70	130				
cis-1,2-Dichloroethene	0.9800	0.15	1	0	98.0	70	130				
Tetrachloroethylene	0.8800	0.15	1	0	88.0	70	130				
trans-1,2-Dichloroethene	0.9900	0.15	1	0	99.0	70	130				
Trichloroethene	1.230	0.040	1	0	123	70	130				

Qualifiers:
. Results reported are not blank corrected
J Analyte detected at or below quantitation limits
S Spike Recovery outside accepted recovery limits
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits

CLIENT: LaBella Associates, P.C.
Work Order: C1603074
Project: 575 Colfax FESL SVI

TestCode: 0.25CT-TCE-VC

Sample ID	ALCS1UG-040116	SampType:	LCS	TestCode:	0.25CT-TCE-	Units:	ppbV	Prep Date:		RunNo:	10818
Client ID:	ZZZZZ	Batch ID:	R10818	TestNo:	TO-15			Analysis Date:	4/1/2016	SeqNo:	127113

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	1.100	0.040	1	0	110	70	130				

Qualifiers:

.	Results reported are not blank corrected	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected at or below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike Recovery outside accepted recovery limits				

CLIENT: LaBella Associates, P.C.
Work Order: C1603074
Project: 575 Colfax FESL SVI

TestCode: 1ugM3_TO15

Sample ID **ALCS1UG-040216** SampType: **LCS** TestCode: **1ugM3_TO15** Units: **ppbV** Prep Date: RunNo: **10819**
Client ID: **ZZZZZ** Batch ID: **R10819** TestNo: **TO-15** Analysis Date: **4/2/2016** SeqNo: **127125**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	1.290	0.15	1	0	129	70	130				
1,1-Dichloroethane	1.170	0.15	1	0	117	70	130				
1,1-Dichloroethene	1.200	0.15	1	0	120	70	130				
Chloroethane	1.230	0.15	1	0	123	70	130				
Chloromethane	1.290	0.15	1	0	129	70	130				
cis-1,2-Dichloroethene	1.170	0.15	1	0	117	70	130				
Tetrachloroethylene	0.7800	0.15	1	0	78.0	70	130				
trans-1,2-Dichloroethene	1.180	0.15	1	0	118	70	130				
Trichloroethene	1.260	0.15	1	0	126	70	130				
Vinyl chloride	1.140	0.15	1	0	114	70	130				

Qualifiers:

- `-` Results reported are not blank corrected
- J Analyte detected at or below quantitation limits
- S Spike Recovery outside accepted recovery limits
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- H Holding times for preparation or analysis exceeded
- R RPD outside accepted recovery limits

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA2\AN033105.D Vial: 5
Acq On : 31 Mar 2016 12:57 pm Operator: RJP
Sample : ALCS1UG-033116 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 31 13:40:26 2016 Quant Results File: A316_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 10:24:27 2016
Response via : Initial Calibration
DataAcq Meth : 1UG_RUN

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane	9.81	128	20235	1.00	ppb		0.00
35) 1,4-difluorobenzene	12.06	114	53595	1.00	ppb		0.00
50) Chlorobenzene-d5	16.57	117	32893	1.00	ppb		0.00
System Monitoring Compounds							
66) Bromofluorobenzene	18.14	95	24330	1.15	ppb		0.00
Spiked Amount 1.000	Range 70 - 130		Recovery = 115.00%				
Target Compounds							Qvalue
2) Propylene	4.15	41	18444	1.12	ppb	#	100
3) Freon 12	4.19	85	108188	1.25	ppb		99
4) Chloromethane	4.39	50	27930	1.23	ppb		94
5) Freon 114	4.39	85	86158	1.18	ppb		92
6) Vinyl Chloride	4.59	62	24728	1.09	ppb		91
7) Butane	4.69	43	31576	1.21	ppb		96
8) 1,3-butadiene	4.70	39	19523m	1.14	ppb		
9) Bromomethane	5.04	94	31796	1.19	ppb		91
10) Chloroethane	5.21	64	11361	1.22	ppb		91
11) Ethanol	5.37	45	7949	1.15	ppb	#	68
12) Acrolein	5.96	56	7163	1.22	ppb	#	5
13) Vinyl Bromide	5.55	106	30203	1.15	ppb		95
14) Freon 11	5.80	101	113728	1.28	ppb		99
15) Acetone	6.06	58	9844	1.13	ppb	#	77
16) Pentane	6.08	42	21719	1.09	ppb		87
17) Isopropyl alcohol	6.17	45	24341	0.85	ppb	#	46
18) 1,1-dichloroethene	6.57	96	29016	1.12	ppb	#	88
19) Freon 113	6.75	101	76210	1.22	ppb		96
20) t-Butyl alcohol	6.91	59	26676m	0.59	ppb		
21) Methylene chloride	7.05	84	28772	1.26	ppb		91
22) Allyl chloride	7.03	41	20621	1.02	ppb		78
23) Carbon disulfide	7.21	76	73250	1.09	ppb	#	72
24) trans-1,2-dichloroethene	8.01	61	32178	1.05	ppb		90
25) methyl tert-butyl ether	8.03	73	58777	1.01	ppb		90
26) 1,1-dichloroethane	8.40	63	48777	1.12	ppb		99
27) Vinyl acetate	8.43	43	31192	0.82	ppb		95
28) Methyl Ethyl Ketone	8.95	72	8975	0.96	ppb	#	100
29) cis-1,2-dichloroethene	9.36	61	26728	1.06	ppb		91
30) Hexane	8.91	57	25178	0.95	ppb		97
31) Ethyl acetate	9.54	43	36816	1.02	ppb		92
32) Chloroform	9.95	83	62657	1.06	ppb		97
33) Tetrahydrofuran	10.18	42	15345	0.92	ppb		95
34) 1,2-dichloroethane	11.10	62	34571	1.04	ppb		88
36) 1,1,1-trichloroethane	10.75	97	62789	1.25	ppb		99
37) Cyclohexane	11.44	56	24625	1.19	ppb		87
38) Carbon tetrachloride	11.39	117	71594	1.27	ppb		99
39) Benzene	11.37	78	51637	1.16	ppb		94
40) Methyl methacrylate	12.92	41	13562	0.93	ppb	#	80
41) 1,4-dioxane	13.03	88	4419m	0.39	ppb		
42) 2,2,4-trimethylpentane	12.19	57	99045	1.27	ppb		96
43) Heptane	12.53	43	18239	1.01	ppb		89
44) Trichloroethene	12.68	130	25165	1.11	ppb		98
45) 1,2-dichloropropane	12.79	63	19076	1.19	ppb		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA2\AN033105.D Vial: 5
Acq On : 31 Mar 2016 12:57 pm Operator: RJP
Sample : ALCS1UG-033116 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 31 13:40:26 2016 Quant Results File: A316_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 10:24:27 2016
Response via : Initial Calibration
DataAcq Meth : 1UG_RUN

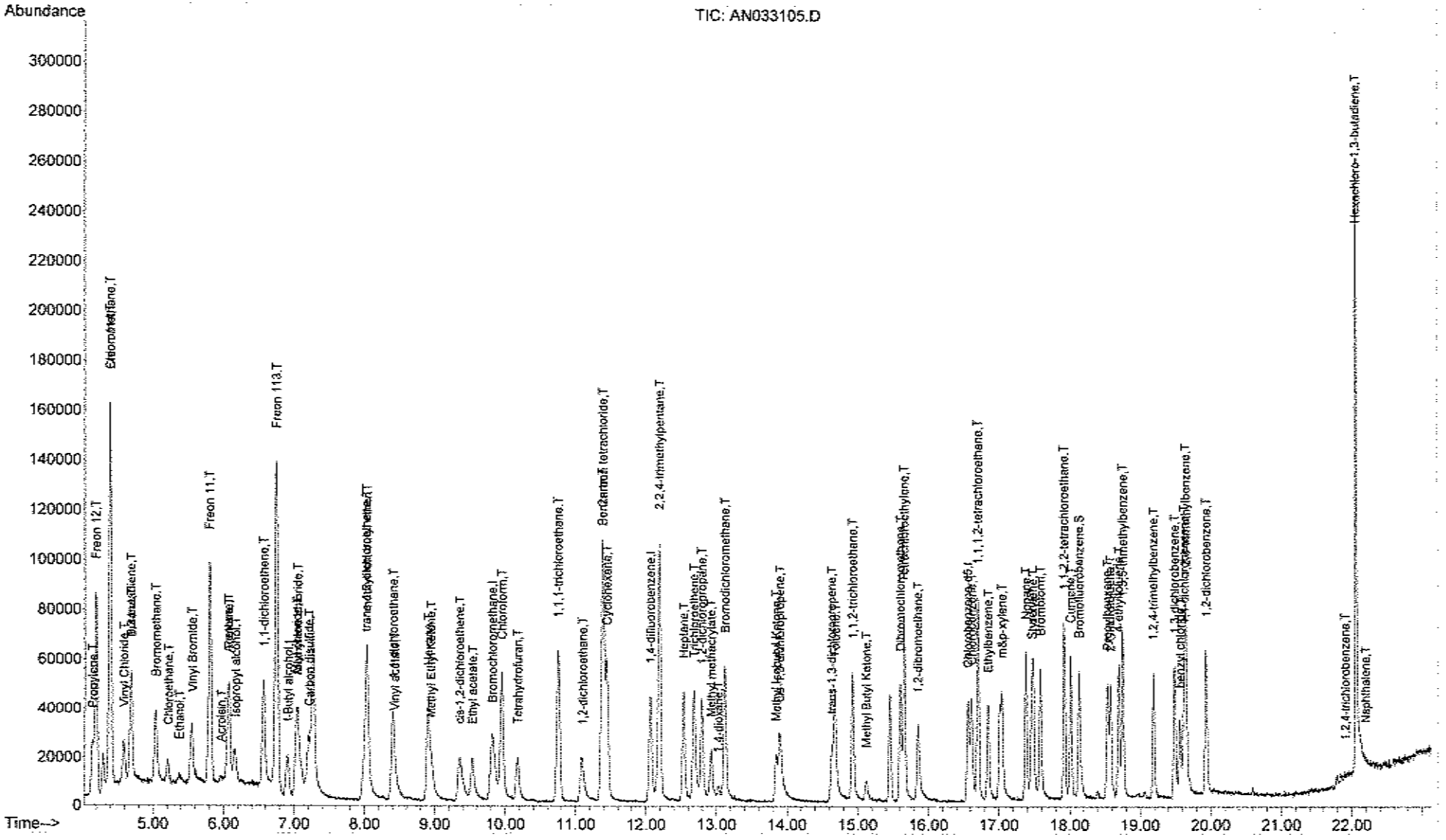
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
46)	Bromodichloromethane	13.12	83	49145m	1.25	ppb	
47)	cis-1,3-dichloropropene	13.91	75	25793	1.20	ppb	98
48)	trans-1,3-dichloropropene	14.63	75	22819m	1.19	ppb	
49)	1,1,2-trichloroethane	14.93	97	21714	1.23	ppb	98
51)	Toluene	14.68	92	21405	0.96	ppb	98
52)	Methyl Isobutyl Ketone	13.85	43	14776m	0.37	ppb	
53)	Dibromochloromethane	15.60	129	35353m	1.25	ppb	
54)	Methyl Butyl Ketone	15.12	43	10560m	0.30	ppb	
55)	1,2-dibromoethane	15.86	107	33793	1.22	ppb	96
56)	Tetrachloroethylene	15.65	164	19690	0.92	ppb	96
57)	Chlorobenzene	16.61	112	31204	1.06	ppb	83
58)	1,1,1,2-tetrachloroethane	16.70	131	25628	1.17	ppb	97
59)	Ethylbenzene	16.85	91	37066	0.97	ppb	100
60)	m&p-xylene	17.05	91	57446	1.89	ppb	95
61)	Nonane	17.38	43	17948	0.99	ppb	98
62)	Styrene	17.46	104	22860	1.08	ppb	91
63)	Bromoform	17.59	173	33915	2.23	ppb	99
64)	o-xylene	17.49	91	43063	1.18	ppb	97
65)	Cumene	18.02	105	41100	0.96	ppb	96
67)	1,1,2,2-tetrachloroethane	17.92	83	41344	1.10	ppb	99
68)	Propylbenzene	18.54	91	44805m	0.99	ppb	
69)	2-Chlorotoluene	18.58	91	32571m	0.99	ppb	
70)	4-ethyltoluene	18.70	105	39533m	1.02	ppb	
71)	1,3,5-trimethylbenzene	18.76	105	47412m	1.02	ppb	
72)	1,2,4-trimethylbenzene	19.19	105	35331	0.88	ppb	93
73)	1,3-dichlorobenzene	19.49	146	30675	1.20	ppb	97
74)	benzyl chloride	19.57	91	36429	1.00	ppb	97
75)	1,4-dichlorobenzene	19.62	146	28854	1.20	ppb	98
76)	1,2,3-trimethylbenzene	19.65	105	42402	0.85	ppb	90
77)	1,2-dichlorobenzene	19.93	146	33057	1.05	ppb	96
78)	1,2,4-trichlorobenzene	21.91	180	18692m	0.79	ppb	
79)	Naphthalene	22.21	128	27592m	0.56	ppb	
80)	Hexachloro-1,3-butadiene	22.07	225	53161	0.92	ppb	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA2\AN033105.D Vial: 5
Acq On : 31 Mar 2016 12:57 pm Operator: RJP
Sample : ALCS1UG-033116 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 31 13:41 2016 Quant Results File: A316_1UG.RES

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Tue Apr 26 14:41:32 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\AN040103.D Vial: 19
Acq On : 1 Apr 2016 12:45 pm Operator: RJP
Sample : ALCS1UG-040116 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 02 12:01:11 2016 Quant Results File: A316_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 10:24:27 2016
Response via : Initial Calibration
DataAcq Meth : 1UG_RUN

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane	9.82	128	20858m	1.00	ppb		0.01
35) 1,4-difluorobenzene	12.07	114	46019	1.00	ppb		0.00
50) Chlorobenzene-d5	16.56	117	31397	1.00	ppb		0.00
System Monitoring Compounds							
66) Bromofluorobenzene	18.14	95	23410	1.16	ppb		0.00
Spiked Amount 1.000	Range 70 - 130		Recovery = 116.00%				
Target Compounds							Qvalue
2) Propylene	4.15	41	19322	1.14	ppb	#	100
3) Freon 12	4.20	85	108917	1.22	ppb		99
4) Chloromethane	4.39	50	28723	1.23	ppb		92
5) Freon 114	4.40	85	87334	1.16	ppb		92
6) Vinyl Chloride	4.59	62	25792	1.10	ppb		91
7) Butane	4.68	43	32939	1.23	ppb		95
8) 1,3-butadiene	4.70	39	21826	1.24	ppb		89
9) Bromomethane	5.04	94	33154	1.20	ppb		90
10) Chloroethane	5.21	64	10827	1.13	ppb		91
11) Ethanol	5.37	45	6602	0.93	ppb		81
12) Acrolein	5.97	56	7177	1.19	ppb	#	5
13) Vinyl Bromide	5.55	106	31182	1.15	ppb		95
14) Freon 11	5.81	101	113643	1.24	ppb		99
15) Acetone	6.06	58	10118	1.12	ppb	#	80
16) Pentane	6.08	42	21700	1.05	ppb		94
17) Isopropyl alcohol	6.16	45	29319	1.00	ppb	#	46
18) 1,1-dichloroethene	6.57	96	29553	1.10	ppb		97
19) Freon 113	6.76	101	80807	1.25	ppb		92
20) t-Butyl alcohol	6.90	59	47591	1.01	ppb	#	72
21) Methylene chloride	7.06	84	26448	1.13	ppb		88
22) Allyl chloride	7.03	41	19899	0.96	ppb		80
23) Carbon disulfide	7.21	76	71647	1.04	ppb		100
24) trans-1,2-dichloroethene	8.01	61	31529	0.99	ppb		96
25) methyl tert-butyl ether	8.03	73	63757	1.06	ppb		90
26) 1,1-dichloroethane	8.40	63	46969	1.04	ppb		99
27) Vinyl acetate	8.44	43	30196	0.77	ppb		99
28) Methyl Ethyl Ketone	8.95	72	9005	0.94	ppb	#	100
29) cis-1,2-dichloroethene	9.36	61	25551	0.98	ppb		89
30) Hexane	8.91	57	24189	0.89	ppb		98
31) Ethyl acetate	9.54	43	39008	1.05	ppb	#	83
32) Chloroform	9.95	83	61015	1.00	ppb		98
33) Tetrahydrofuran	10.18	42	16951	0.98	ppb		94
34) 1,2-dichloroethane	11.10	62	32327	0.94	ppb		90
36) 1,1,1-trichloroethane	10.76	97	55660m	1.29	ppb		
37) Cyclohexane	11.44	56	22700	1.27	ppb	#	81
38) Carbon tetrachloride	11.40	117	63936m	1.33	ppb		
39) Benzene	11.37	78	46168	1.21	ppb		97
40) Methyl methacrylate	12.93	41	17394	1.40	ppb		92
41) 1,4-dioxane	13.02	88	11297	1.16	ppb		98
42) 2,2,4-trimethylpentane	12.19	57	95466m	1.43	ppb		
43) Heptane	12.54	43	16115	1.04	ppb		92
44) Trichloroethene	12.69	130	24104	1.23	ppb		98
45) 1,2-dichloropropane	12.80	63	16131	1.17	ppb		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\AN040103.D Vial: 19
Acq On : 1 Apr 2016 12:45 pm Operator: RJP
Sample : ALCS1UG-040116 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 02 12:01:11 2016 Quant Results File: A316_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 10:24:27 2016
Response via : Initial Calibration
DataAcq Meth : 1UG_RUN

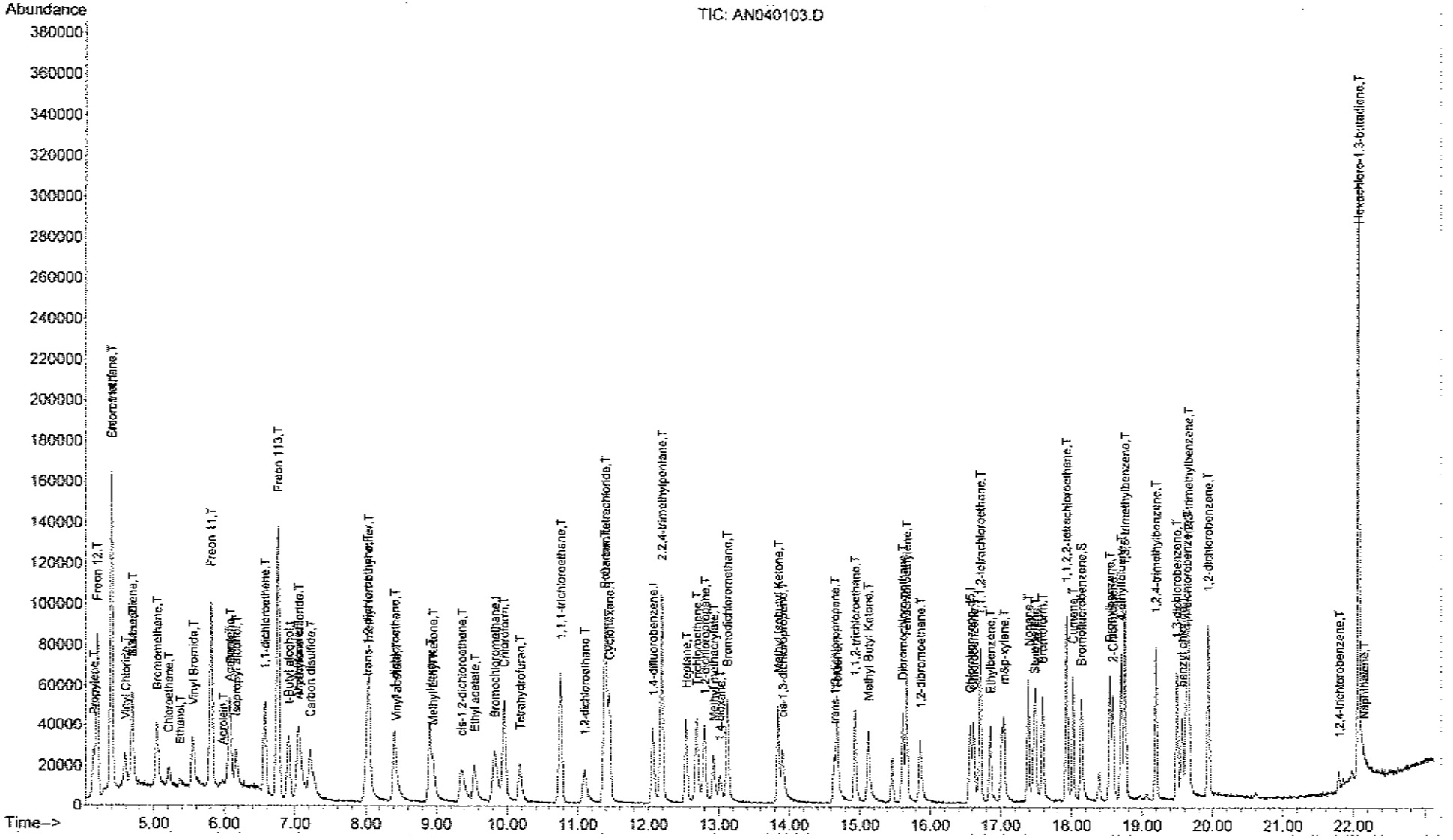
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
46)	Bromodichloromethane	13.12	83	41457m	1.23	ppb	
47)	cis-1,3-dichloropropene	13.91	75	22251m	1.21	ppb	
48)	trans-1,3-dichloropropene	14.64	75	20489m	1.24	ppb	
49)	1,1,2-trichloroethane	14.94	97	18169m	1.20	ppb	
51)	Toluene	14.68	92	18586	0.87	ppb	96
52)	Methyl Isobutyl Ketone	13.84	43	39772	1.05	ppb	95
53)	Dibromochloromethane	15.61	129	30463m	1.13	ppb	
54)	Methyl Butyl Ketone	15.12	43	34646	1.03	ppb	94
55)	1,2-dibromoethane	15.86	107	30844m	1.16	ppb	
56)	Tetrachloroethylene	15.66	164	17940	0.88	ppb	99
57)	Chlorobenzene	16.61	112	31424m	1.12	ppb	
58)	1,1,1,2-tetrachloroethane	16.71	131	24183	1.16	ppb	97
59)	Ethylbenzene	16.85	91	36263	0.99	ppb	98
60)	m&p-xylene	17.05	91	53811	1.85	ppb	93
61)	Nonane	17.38	43	18316	1.06	ppb	97
62)	Styrene	17.46	104	22721	1.12	ppb	90
63)	Bromoform	17.58	173	33285	2.29	ppb	99
64)	o-xylene	17.48	91	42165	1.21	ppb	98
65)	Cumene	18.02	105	44417	1.09	ppb	96
67)	1,1,2,2-tetrachloroethane	17.92	83	48140m	1.34	ppb	
68)	Propylbenzene	18.54	91	56112m	1.30	ppb	
69)	2-Chlorotoluene	18.58	91	31555m	1.00	ppb	
70)	4-ethyltoluene	18.70	105	45720m	1.23	ppb	
71)	1,3,5-trimethylbenzene	18.76	105	58743m	1.32	ppb	
72)	1,2,4-trimethylbenzene	19.19	105	48419m	1.26	ppb	
73)	1,3-dichlorobenzene	19.49	146	34715m	1.42	ppb	
74)	benzyl chloride	19.56	91	40041m	1.15	ppb	
75)	1,4-dichlorobenzene	19.62	146	30402m	1.32	ppb	
76)	1,2,3-trimethylbenzene	19.65	105	67485	1.42	ppb	94
77)	1,2-dichlorobenzene	19.93	146	45704	1.53	ppb	97
78)	1,2,4-trichlorobenzene	21.80	180	20891m	0.92	ppb	
79)	Naphthalene	22.15	128	44379m	0.95	ppb	
80)	Hexachloro-1,3-butadiene	22.07	225	64975	1.18	ppb	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\AN040103.D Vial: 19
Acq On : 1 Apr 2016 12:45 pm Operator: RJP
Sample : ALCS1UG-040116 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 2 12:04 2016 Quant Results File: A316_1UG.RES

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Tue Apr 26 14:41:32 2016
Response via : Initial Calibration



AN040103.D A316_1UG.M Tue Apr 26 14:44:44 2016 MSD1 Page 3

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\AN040204.D Vial: 1
Acq On : 2 Apr 2016 12:58 pm Operator: RJP
Sample : ALCS1UG-040216 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 02 14:36:13 2016 Quant Results File: A316_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 10:24:27 2016
Response via : Initial Calibration
DataAcq Meth : 1UG_RUN

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane	9.81	128	21348m	1.00	ppb		0.00
35) 1,4-difluorobenzene	12.06	114	52201	1.00	ppb		0.00
50) Chlorobenzene-d5	16.56	117	44220	1.00	ppb		0.00
System Monitoring Compounds							
66) Bromofluorobenzene	18.13	95	32006	1.12	ppb		0.00
Spiked Amount 1.000	Range 70 - 130		Recovery = 112.00%				
Target Compounds							Qvalue
2) Propylene	4.14	41	21383	1.24	ppb	#	100
3) Freon 12	4.19	85	112715	1.24	ppb		99
4) Chloromethane	4.39	50	30667	1.29	ppb		94
5) Freon 114	4.39	85	96961	1.26	ppb		98
6) Vinyl Chloride	4.58	62	27465	1.14	ppb		89
7) Butane	4.68	43	31094	1.13	ppb		96
8) 1,3-butadiene	4.69	39	22506	1.25	ppb		84
9) Bromomethane	5.03	94	34108	1.21	ppb		95
10) Chloroethane	5.21	64	12081	1.23	ppb		97
11) Ethanol	5.37	45	8936	1.23	ppb	#	74
12) Acrolein	5.95	56	7589m	1.23	ppb		
13) Vinyl Bromide	5.54	106	32945	1.19	ppb		94
14) Freon 11	5.80	101	108604	1.16	ppb		98
15) Acetone	6.05	58	10100m	1.10	ppb		
16) Pentane	6.07	42	24382	1.16	ppb		93
17) Isopropyl alcohol	6.15	45	32873	1.09	ppb	#	46
18) 1,1-dichloroethene	6.56	96	32833	1.20	ppb		94
19) Freon 113	6.75	101	85460m	1.29	ppb		
20) t-Butyl alcohol	6.89	59	52338	1.09	ppb	#	75
21) Methylene chloride	7.05	84	29910	1.25	ppb		88
22) Allyl chloride	7.02	41	25381	1.19	ppb		84
23) Carbon disulfide	7.21	76	83066	1.17	ppb		98
24) trans-1,2-dichloroethene	7.99	61	38349	1.18	ppb		91
25) methyl tert-butyl ether	8.03	73	74015	1.20	ppb		90
26) 1,1-dichloroethane	8.40	63	53984	1.17	ppb		99
27) Vinyl acetate	8.43	43	46737	1.17	ppb		98
28) Methyl Ethyl Ketone	8.94	72	11871	1.21	ppb	#	100
29) cis-1,2-dichloroethene	9.35	61	31216	1.17	ppb		92
30) Hexane	8.89	57	31529	1.13	ppb		97
31) Ethyl acetate	9.53	43	46407	1.22	ppb		91
32) Chloroform	9.95	83	67143	1.08	ppb		100
33) Tetrahydrofuran	10.17	42	21607	1.22	ppb		93
34) 1,2-dichloroethane	11.09	62	36475	1.04	ppb		90
36) 1,1,1-trichloroethane	10.75	97	63335m	1.29	ppb		
37) Cyclohexane	11.44	56	27045m	1.34	ppb		
38) Carbon tetrachloride	11.39	117	67542	1.23	ppb		97
39) Benzene	11.37	78	55204	1.27	ppb		97
40) Methyl methacrylate	12.91	41	16940m	1.20	ppb		
41) 1,4-dioxane	13.02	88	13230	1.19	ppb		98
42) 2,2,4-trimethylpentane	12.18	57	114159m	1.50	ppb		
43) Heptane	12.53	43	22298	1.27	ppb		94
44) Trichloroethene	12.68	130	27991	1.26	ppb		98
45) 1,2-dichloropropane	12.79	63	18752m	1.20	ppb		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\AN040204.D Vial: 1
Acq On : 2 Apr 2016 12:58 pm Operator: RJP
Sample : ALCS1UG-040216 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 02 14:36:13 2016 Quant Results File: A316_1UG.RES

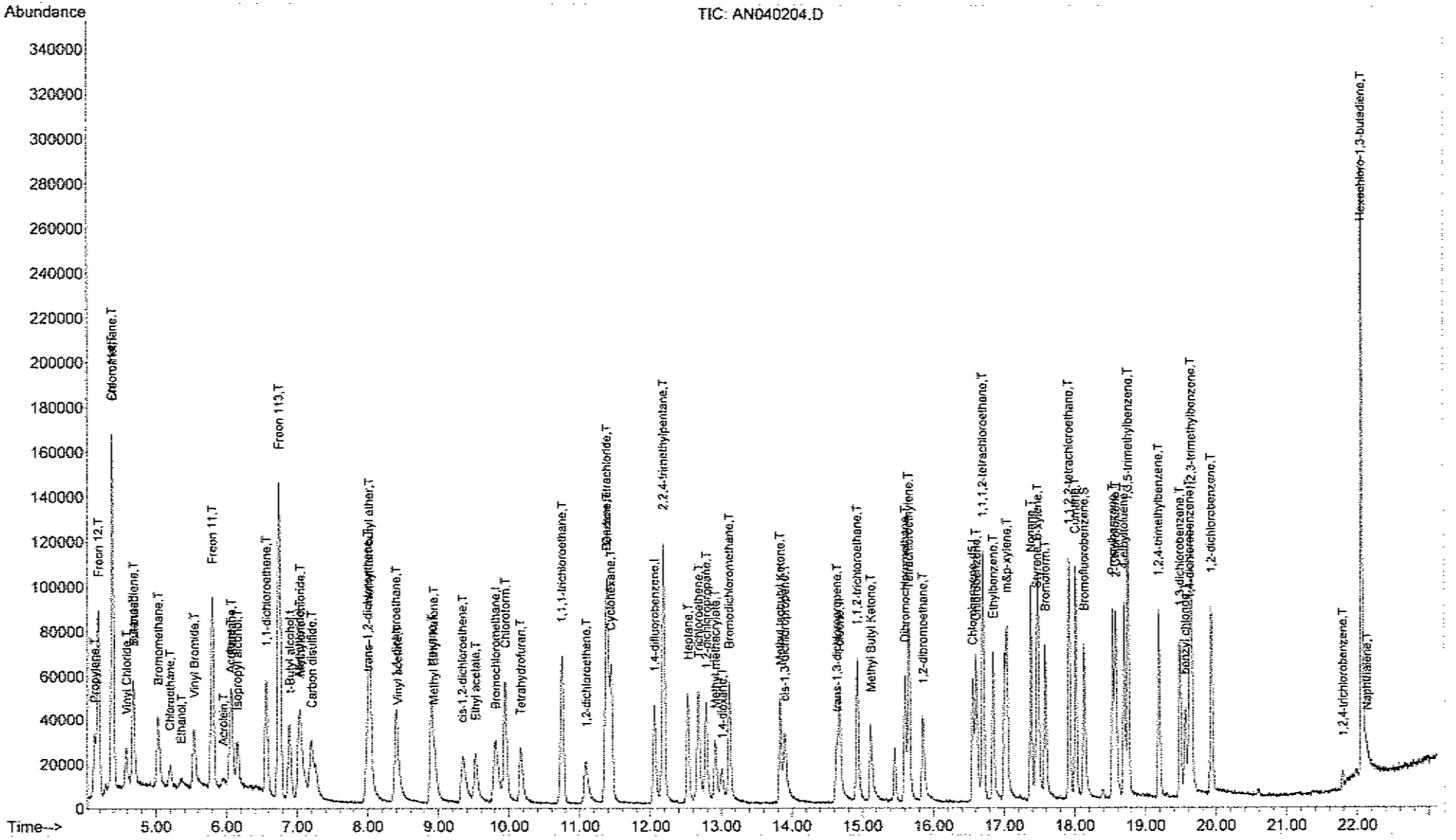
Quant Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 10:24:27 2016
Response via : Initial Calibration
DataAcq Meth : 1UG_RUN

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
46)	Bromodichloromethane	13.11	83	44063m	1.15	ppb	
47)	cis-1,3-dichloropropene	13.90	75	25728m	1.23	ppb	
48)	trans-1,3-dichloropropene	14.63	75	24149m	1.29	ppb	
49)	1,1,2-trichloroethane	14.93	97	20773m	1.21	ppb	
51)	Toluene	14.68	92	23774	0.79	ppb	93
52)	Methyl Isobutyl Ketone	13.83	43	39350	0.74	ppb	98
53)	Dibromochloromethane	15.60	129	38789m	1.02	ppb	
54)	Methyl Butyl Ketone	15.12	43	35587	0.75	ppb	91
55)	1,2-dibromoethane	15.85	107	43150	1.15	ppb	98
56)	Tetrachloroethylene	15.66	164	22377	0.78	ppb	97
57)	Chlorobenzene	16.61	112	46561	1.18	ppb	92
58)	1,1,1,2-tetrachloroethane	16.70	131	34745	1.18	ppb	95
59)	Ethylbenzene	16.85	91	61162	1.19	ppb	98
60)	m&p-xylene	17.04	91	98093	2.40	ppb	95
61)	Nonane	17.38	43	28351m	1.16	ppb	
62)	Styrene	17.46	104	36491	1.28	ppb	91
63)	Bromoform	17.58	173	42375	2.07	ppb	99
64)	o-xylene	17.48	91	60218m	1.23	ppb	
65)	Cumene	18.02	105	73127	1.27	ppb	98
67)	1,1,2,2-tetrachloroethane	17.92	83	63040	1.25	ppb	99
68)	Propylbenzene	18.54	91	79403m	1.30	ppb	
69)	2-Chlorotoluene	18.58	91	61383m	1.38	ppb	
70)	4-ethyltoluene	18.70	105	58219m	1.11	ppb	
71)	1,3,5-trimethylbenzene	18.75	105	72962m	1.17	ppb	
72)	1,2,4-trimethylbenzene	19.19	105	57079	1.05	ppb	89
73)	1,3-dichlorobenzene	19.49	146	40130	1.17	ppb	97
74)	benzyl chloride	19.56	91	47079	0.96	ppb	97
75)	1,4-dichlorobenzene	19.62	146	35806	1.10	ppb	95
76)	1,2,3-trimethylbenzene	19.65	105	74548	1.12	ppb	97
77)	1,2-dichlorobenzene	19.93	146	44061	1.04	ppb	95
78)	1,2,4-trichlorobenzene	21.79	180	22866m	0.72	ppb	
79)	Naphthalene	22.13	128	49350m	0.75	ppb	
80)	Hexachloro-1,3-butadiene	22.07	225	58446	0.75	ppb	95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\HPCHEM\1\DATA\AN040204.D Vial: 1
Acq On : 2 Apr 2016 12:58 pm Operator: RJP
Sample : ALCS1UG-040216 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 3 11:39 2016 Quant Results File: A316_1UG.RES

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Tue Apr 26 14:41:32 2016
Response via : Initial Calibration



CENTEK LABORATORIES, LLC

Date: *26-Apr-16*

ANALYTICAL QC SUMMARY REPORT

CLIENT: LaBella Associates, P.C.
Work Order: C1603074
Project: 575 Colfax FESL SVI

TestCode: 0.25CT-TCE-VC

Sample ID **ALCS1UGD-033116** SampType: **LCSD** TestCode: **0.25CT-TCE-** Units: **ppbV** Prep Date: RunNo: **10817**
Client ID: **ZZZZZ** Batch ID: **R10817** TestNo: **TO-15** Analysis Date: **4/1/2016** SeqNo: **127097**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	1.280	0.15	1	0	128	70	130	1.25	2.37	30	
1,1-Dichloroethane	1.040	0.15	1	0	104	70	130	1.12	7.41	30	
1,1-Dichloroethene	1.120	0.15	1	0	112	70	130	1.12	0	30	
Chloroethane	1.250	0.15	1	0	125	70	130	1.22	2.43	30	
Chloromethane	1.210	0.15	1	0	121	70	130	1.23	1.64	30	
cis-1,2-Dichloroethene	1.010	0.15	1	0	101	70	130	1.06	4.83	30	
Tetrachloroethylene	0.9000	0.15	1	0	90.0	70	130	0.92	2.20	30	
trans-1,2-Dichloroethene	1.000	0.15	1	0	100	70	130	1.05	4.88	30	
Trichloroethene	1.150	0.040	1	0	115	70	130	1.11	3.54	30	
Vinyl chloride	1.050	0.040	1	0	105	70	130	1.09	3.74	30	

Sample ID **ALCS1UGD-040116** SampType: **LCSD** TestCode: **0.25CT-TCE-** Units: **ppbV** Prep Date: RunNo: **10818**
Client ID: **ZZZZZ** Batch ID: **R10818** TestNo: **TO-15** Analysis Date: **4/2/2016** SeqNo: **127114**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	1.280	0.15	1	0	128	70	130	1.29	0.778	30	
1,1-Dichloroethane	1.040	0.15	1	0	104	70	130	1.04	0	30	
1,1-Dichloroethene	1.100	0.15	1	0	110	70	130	1.1	0	30	
Chloroethane	1.240	0.15	1	0	124	70	130	1.13	9.28	30	
Chloromethane	1.230	0.15	1	0	123	70	130	1.23	0	30	
cis-1,2-Dichloroethene	0.9400	0.15	1	0	94.0	70	130	0.98	4.17	30	
Tetrachloroethylene	0.8300	0.15	1	0	83.0	70	130	0.88	5.85	30	
trans-1,2-Dichloroethene	0.9600	0.15	1	0	96.0	70	130	0.99	3.08	30	
Trichloroethene	1.210	0.040	1	0	121	70	130	1.23	1.64	30	

Qualifiers:
. Results reported are not blank corrected
J Analyte detected at or below quantitation limits
S Spike Recovery outside accepted recovery limits
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits

CLIENT: LaBella Associates, P.C.
Work Order: C1603074
Project: 575 Colfax FESL SVI

TestCode: 0.25CT-TCE-VC

Sample ID	ALCS1UGD-040116	SampType:	LCSD	TestCode:	0.25CT-TCE-	Units:	ppbV	Prep Date:		RunNo:	10818
Client ID:	ZZZZZ	Batch ID:	R10818	TestNo:	TO-15			Analysis Date:	4/2/2016	SeqNo:	127114

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	1.070	0.040	1	0	107	70	130	1.1	2.76	30	

Qualifiers:

.	Results reported are not blank corrected	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected at or below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike Recovery outside accepted recovery limits				

CLIENT: LaBella Associates, P.C.
Work Order: C1603074
Project: 575 Colfax FESL SVI

TestCode: 1ugM3_TO15

Sample ID: ALCS1UGD-040216	SampType: LCSD	TestCode: 1ugM3_TO15	Units: ppbV	Prep Date:	RunNo: 10819
Client ID: ZZZZZ	Batch ID: R10819	TestNo: TO-15		Analysis Date: 4/3/2016	SeqNo: 127130

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	1.300	0.15	1	0	130	70	130	1.29	0.772	30	
1,1-Dichloroethane	1.170	0.15	1	0	117	70	130	1.17	0	30	
1,1-Dichloroethene	1.110	0.15	1	0	111	70	130	1.2	7.79	30	
Chloroethane	1.090	0.15	1	0	109	70	130	1.23	12.1	30	
Chloromethane	1.190	0.15	1	0	119	70	130	1.29	8.06	30	
cis-1,2-Dichloroethene	1.110	0.15	1	0	111	70	130	1.17	5.26	30	
Tetrachloroethylene	0.8900	0.15	1	0	89.0	70	130	0.78	13.2	30	
trans-1,2-Dichloroethene	1.150	0.15	1	0	115	70	130	1.18	2.58	30	
Trichloroethene	1.220	0.15	1	0	122	70	130	1.26	3.23	30	
Vinyl chloride	1.220	0.15	1	0	122	70	130	1.14	6.78	30	

Qualifiers:

.	Results reported are not blank corrected	E	Value above quantitation range
J	Analyte detected at or below quantitation limits	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		
H	Holding times for preparation or analysis exceeded		
R	RPD outside accepted recovery limits		

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA2\AN033133.D Vial: 12
Acq On : 1 Apr 2016 6:53 am Operator: RJP
Sample : ALCS1UGD-033116 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 01 07:41:06 2016 Quant Results File: A316_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 10:24:27 2016
Response via : Initial Calibration
DataAcq Meth : 1UG_RUN

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane	9.83	128	22710m	1.00	ppb		0.02
35) 1,4-difluorobenzene	12.07	114	52964	1.00	ppb		0.00
50) Chlorobenzene-d5	16.56	117	34225	1.00	ppb		0.00
System Monitoring Compounds							
66) Bromofluorobenzene	18.14	95	25901	1.18	ppb		0.00
Spiked Amount 1.000	Range 70 - 130		Recovery = 118.00%				
Target Compounds							Qvalue
2) Propylene	4.15	41	22423	1.22	ppb	#	100
3) Freon 12	4.20	85	119838	1.24	ppb		100
4) Chloromethane	4.40	50	30837	1.21	ppb		96
5) Freon 114	4.39	85	94564	1.16	ppb		94
6) Vinyl Chloride	4.59	62	26715	1.05	ppb		88
7) Butane	4.69	43	33781	1.16	ppb		98
8) 1,3-butadiene	4.69	39	22465	1.17	ppb		94
9) Bromomethane	5.04	94	36360	1.21	ppb		96
10) Chloroethane	5.21	64	12983	1.25	ppb		94
11) Ethanol	5.37	45	10054	1.30	ppb	#	80
12) Acrolein	5.97	56	7538	1.15	ppb	#	5
13) Vinyl Bromide	5.55	106	32655	1.11	ppb		94
14) Freon 11	5.81	101	115634	1.16	ppb		98
15) Acetone	6.05	58	10361	1.06	ppb	#	86
16) Pentane	6.08	42	21785	0.97	ppb		98
17) Isopropyl alcohol	6.16	45	29904	0.93	ppb	#	46
18) 1,1-dichloroethene	6.57	96	32675	1.12	ppb		91
19) Freon 113	6.75	101	87252	1.24	ppb		94
20) t-Butyl alcohol	6.90	59	54115	1.06	ppb	#	74
21) Methylene chloride	7.05	84	28453	1.11	ppb		89
22) Allyl chloride	7.03	41	21912	0.97	ppb		78
23) Carbon disulfide	7.21	76	77697	1.03	ppb		96
24) trans-1,2-dichloroethene	8.03	61	34621	1.00	ppb		89
25) methyl tert-butyl ether	8.03	73	70378	1.08	ppb		92
26) 1,1-dichloroethane	8.40	63	50964	1.04	ppb		100
27) Vinyl acetate	8.44	43	34292	0.81	ppb		95
28) Methyl Ethyl Ketone	8.96	72	10709	1.02	ppb	#	100
29) cis-1,2-dichloroethene	9.35	61	28746	1.01	ppb		89
30) Hexane	8.91	57	27596	0.93	ppb		97
31) Ethyl acetate	9.53	43	42553	1.05	ppb		93
32) Chloroform	9.95	83	64410	0.97	ppb		98
33) Tetrahydrofuran	10.17	42	18009	0.96	ppb		91
34) 1,2-dichloroethane	11.10	62	35642	0.96	ppb		89
36) 1,1,1-trichloroethane	10.75	97	63644	1.28	ppb		98
37) Cyclohexane	11.45	56	26237	1.28	ppb	#	87
38) Carbon tetrachloride	11.39	117	71132	1.28	ppb		97
39) Benzene	11.37	78	51827	1.18	ppb		97
40) Methyl methacrylate	12.93	41	16708	1.17	ppb	#	82
41) 1,4-dioxane	13.01	88	13693m	1.22	ppb		
42) 2,2,4-trimethylpentane	12.19	57	105470m	1.37	ppb		
43) Heptane	12.54	43	17595	0.98	ppb		89
44) Trichloroethene	12.69	130	25767	1.15	ppb		98
45) 1,2-dichloropropane	12.79	63	18020	1.13	ppb		100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA2\AN033133.D Vial: 12
Acq On : 1 Apr 2016 6:53 am Operator: RJP
Sample : ALCS1UGD-033116 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 01 07:41:06 2016 Quant Results File: A316_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 10:24:27 2016
Response via : Initial Calibration
DataAcq Meth : 1UG_RUN

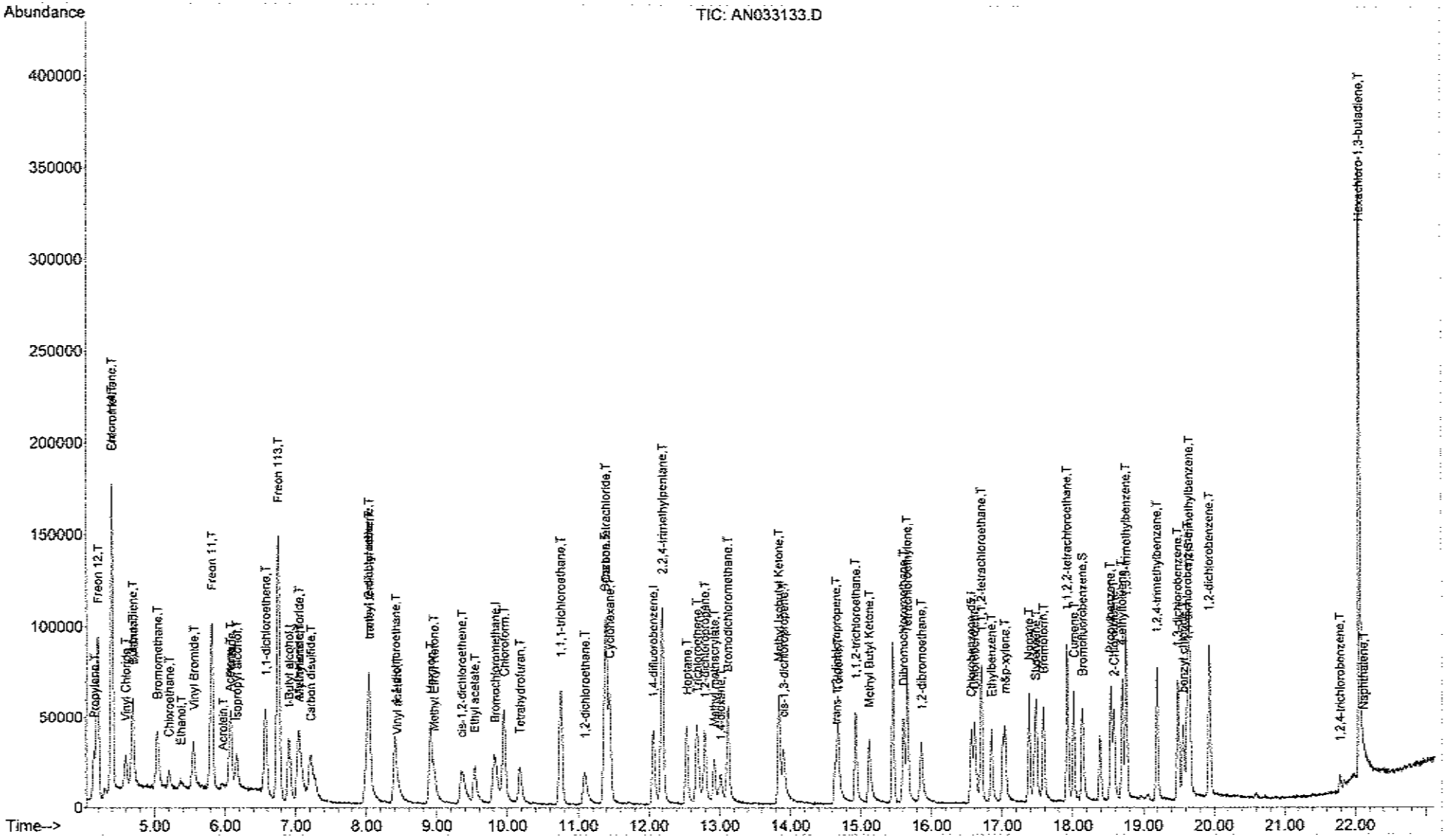
	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
46)	Bromodichloromethane	13.12	83	49599	1.28 ppb	98
47)	cis-1,3-dichloropropene	13.90	75	25744m	1.22 ppb	
48)	trans-1,3-dichloropropene	14.65	75	22881m	1.20 ppb	
49)	1,1,2-trichloroethane	14.93	97	21315	1.22 ppb	99
51)	Toluene	14.68	92	21010	0.90 ppb	95
52)	Methyl Isobutyl Ketone	13.84	43	52442	1.28 ppb	98
53)	Dibromochloromethane	15.60	129	35795m	1.22 ppb	
54)	Methyl Butyl Ketone	15.12	43	34843	0.95 ppb	95
55)	1,2-dibromoethane	15.86	107	33858m	1.17 ppb	
56)	Tetrachloroethylene	15.66	164	20024	0.90 ppb	96
57)	Chlorobenzene	16.61	112	32547	1.07 ppb	87
58)	1,1,1,2-tetrachloroethane	16.71	131	24656	1.08 ppb	97
59)	Ethylbenzene	16.85	91	36622	0.92 ppb	99
60)	m&p-xylene	17.04	91	53360	1.69 ppb	91
61)	Nonane	17.38	43	19169	1.02 ppb	96
62)	Styrene	17.46	104	22328	1.01 ppb	91
63)	Bromoform	17.59	173	32571	2.06 ppb	98
64)	o-xylene	17.48	91	38663	1.02 ppb	100
65)	Cumene	18.02	105	43545	0.98 ppb	97
67)	1,1,2,2-tetrachloroethane	17.92	83	48358	1.24 ppb	100
68)	Propylbenzene	18.54	91	55777m	1.18 ppb	
69)	2-Chlorotoluene	18.58	91	35032m	1.02 ppb	
70)	4-ethyltoluene	18.70	105	50112m	1.24 ppb	
71)	1,3,5-trimethylbenzene	18.75	105	60516m	1.25 ppb	
72)	1,2,4-trimethylbenzene	19.19	105	51996	1.24 ppb	97
73)	1,3-dichlorobenzene	19.49	146	33657m	1.26 ppb	
74)	benzyl chloride	19.56	91	48542	1.28 ppb	98
75)	1,4-dichlorobenzene	19.62	146	32126m	1.28 ppb	
76)	1,2,3-trimethylbenzene	19.65	105	65042	1.26 ppb	92
77)	1,2-dichlorobenzene	19.93	146	41624m	1.28 ppb	
78)	1,2,4-trichlorobenzene	21.79	180	25407m	1.03 ppb	
79)	Naphthalene	22.13	128	59093m	1.16 ppb	
80)	Hexachloro-1,3-butadiene	22.06	225	73201	1.22 ppb	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA2\AN033133.D Vial: 12
Acq On : 1 Apr 2016 6:53 am Operator: RJP
Sample : ALCS1UGD-033116 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 1 8:10 2016 Quant Results File: A316_1UG.RES

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Tue Apr 26 14:41:32 2016
Response via : Initial Calibration



AN033133.D A316_1UG.M Tue Apr 26 15:15:02 2016 MSD1 Page 3

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\AN040125.D Vial: 3
Acq On : 2 Apr 2016 3:21 am Operator: RJP
Sample : ALCS1UGD-040116 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 02 07:59:55 2016 Quant Results File: A316_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 10:24:27 2016
Response via : Initial Calibration
DataAcq Meth : 1UG_RUN

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane	9.81	128	20437m	1.00	ppb		0.00
35) 1,4-difluorobenzene	12.07	114	45874	1.00	ppb		0.00
50) Chlorobenzene-d5	16.56	117	33404	1.00	ppb		0.00
System Monitoring Compounds							
66) Bromofluorobenzene	18.14	95	23229	1.08	ppb		0.00
Spiked Amount 1.000	Range 70 - 130		Recovery = 108.00%				
Target Compounds							Qvalue
2) Propylene	4.15	41	17794	1.07	ppb	#	100
3) Freon 12	4.20	85	106757	1.22	ppb		99
4) Chloromethane	4.39	50	28161	1.23	ppb		94
5) Freon 114	4.39	85	84475	1.15	ppb		93
6) Vinyl Chloride	4.59	62	24511	1.07	ppb		88
7) Butane	4.68	43	30299	1.15	ppb		94
8) 1,3-butadiene	4.69	39	20711	1.20	ppb		87
9) Bromomethane	5.04	94	30593	1.13	ppb		87
10) Chloroethane	5.21	64	11593	1.24	ppb		88
11) Ethanol	5.37	45	7438	1.07	ppb	#	70
12) Acrolein	5.96	56	6489	1.10	ppb	#	5
13) Vinyl Bromide	5.54	106	30312	1.14	ppb		98
14) Freon 11	5.81	101	108818	1.21	ppb		98
15) Acetone	6.06	58	9989	1.13	ppb	#	67
16) Pentane	6.07	42	21958	1.09	ppb		82
17) Isopropyl alcohol	6.16	45	31569	1.10	ppb	#	46
18) 1,1-dichloroethene	6.57	96	28746	1.10	ppb		89
19) Freon 113	6.75	101	75197	1.19	ppb		94
20) t-Butyl alcohol	6.90	59	45185	0.98	ppb	#	73
21) Methylene chloride	7.06	84	25448	1.11	ppb		89
22) Allyl chloride	7.03	41	19430	0.95	ppb		83
23) Carbon disulfide	7.21	76	68931	1.02	ppb		98
24) trans-1,2-dichloroethene	7.99	61	29781	0.96	ppb		89
25) methyl tert-butyl ether	8.03	73	58091	0.99	ppb		89
26) 1,1-dichloroethane	8.40	63	45819	1.04	ppb		98
27) Vinyl acetate	8.44	43	28686	0.75	ppb		98
28) Methyl Ethyl Ketone	8.94	72	8460	0.90	ppb	#	100
29) cis-1,2-dichloroethene	9.35	61	24101	0.94	ppb		89
30) Hexane	8.90	57	22935	0.86	ppb		97
31) Ethyl acetate	9.54	43	37330	1.02	ppb		96
32) Chloroform	9.95	83	58628	0.98	ppb		98
33) Tetrahydrofuran	10.17	42	14842	0.88	ppb		92
34) 1,2-dichloroethane	11.09	62	32732	0.98	ppb		89
36) 1,1,1-trichloroethane	10.75	97	55200m	1.28	ppb		
37) Cyclohexane	11.45	56	22616	1.27	ppb	#	84
38) Carbon tetrachloride	11.40	117	60536m	1.26	ppb		
39) Benzene	11.37	78	46455	1.22	ppb		97
40) Methyl methacrylate	12.93	41	15859	1.28	ppb	#	85
41) 1,4-dioxane	13.01	88	11429	1.17	ppb		100
42) 2,2,4-trimethylpentane	12.19	57	95059	1.43	ppb		97
43) Heptane	12.53	43	16705	1.08	ppb		95
44) Trichloroethene	12.68	130	23579	1.21	ppb		97
45) 1,2-dichloropropane	12.79	63	16910	1.23	ppb		94

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\AN040125.D Vial: 3
Acq On : 2 Apr 2016 3:21 am Operator: RJP
Sample : ALCS1UGD-040116 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 02 07:59:55 2016 Quant Results File: A316_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 10:24:27 2016
Response via : Initial Calibration
DataAcq Meth : 1UG_RUN

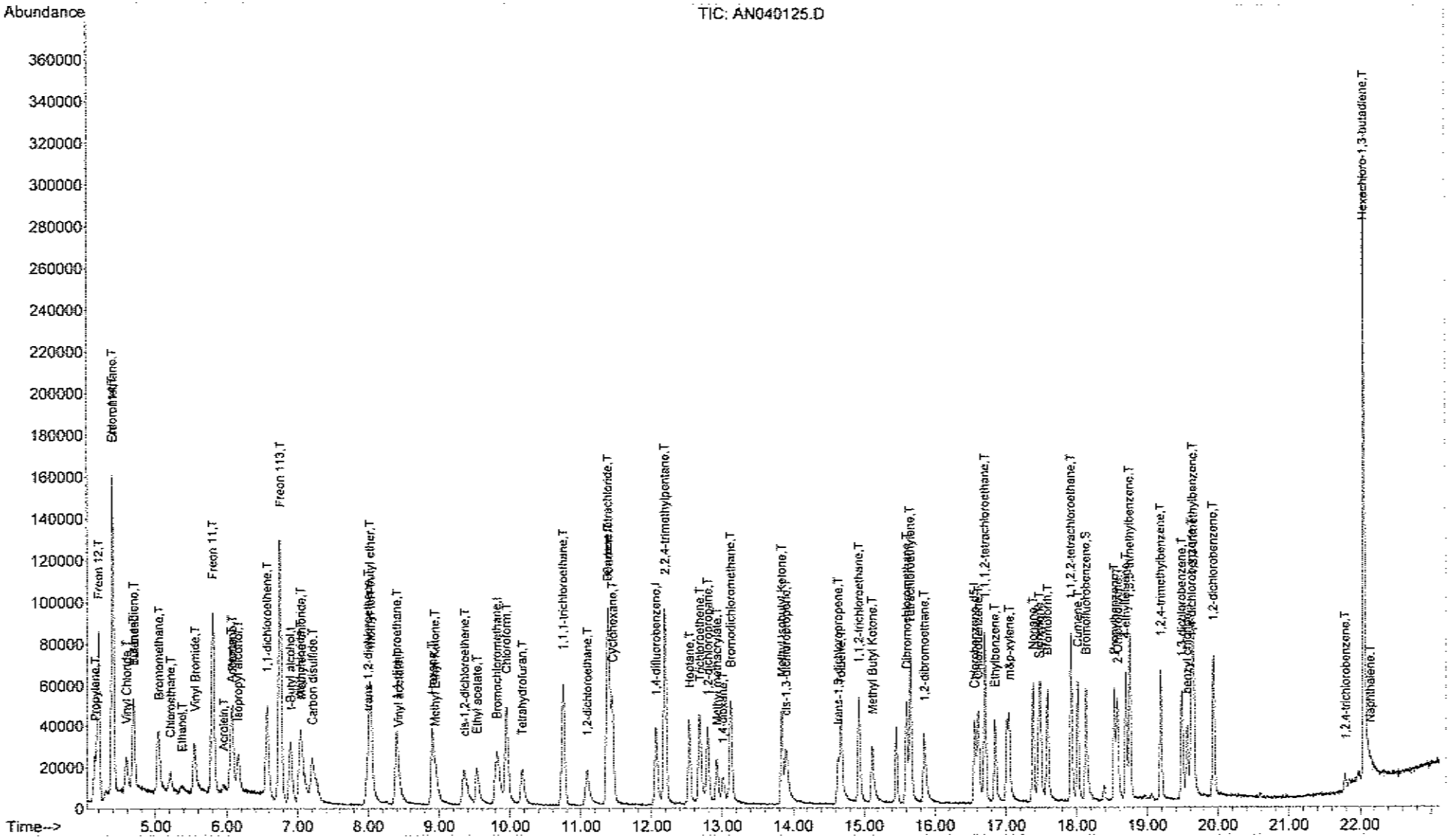
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
46)	Bromodichloromethane	13.12	83	42093m	1.25	ppb	
47)	cis-1,3-dichloropropene	13.90	75	23342m	1.27	ppb	
48)	trans-1,3-dichloropropene	14.63	75	26114	1.59	ppb	91
49)	1,1,2-trichloroethane	14.93	97	17907m	1.19	ppb	
51)	Toluene	14.68	92	19046	0.84	ppb	97
52)	Methyl Isobutyl Ketone	13.84	43	40410	1.01	ppb	95
53)	Dibromochloromethane	15.60	129	34742m	1.21	ppb	
54)	Methyl Butyl Ketone	15.12	43	27202	0.76	ppb	91
55)	1,2-dibromoethane	15.85	107	35295	1.25	ppb	95
56)	Tetrachloroethylene	15.66	164	17901	0.83	ppb	97
57)	Chlorobenzene	16.61	112	32123	1.08	ppb	89
58)	1,1,1,2-tetrachloroethane	16.71	131	25427	1.14	ppb	95
59)	Ethylbenzene	16.85	91	36776	0.94	ppb	96
60)	m&p-xylene	17.04	91	58058	1.88	ppb	94
61)	Nonane	17.38	43	17884	0.97	ppb	96
62)	Styrene	17.46	104	23463	1.09	ppb	91
63)	Bromoform	17.59	173	33067	2.14	ppb	99
64)	o-xylene	17.49	91	41443	1.12	ppb	98
65)	Cumene	18.02	105	42342	0.98	ppb	99
67)	1,1,2,2-tetrachloroethane	17.93	83	46433	1.22	ppb	99
68)	Propylbenzene	18.54	91	50147m	1.09	ppb	
69)	2-Chlorotoluene	18.58	91	30598m	0.91	ppb	
70)	4-ethyltoluene	18.70	105	43131m	1.09	ppb	
71)	1,3,5-trimethylbenzene	18.76	105	53436m	1.13	ppb	
72)	1,2,4-trimethylbenzene	19.19	105	43324	1.06	ppb	96
73)	1,3-dichlorobenzene	19.48	146	32101m	1.23	ppb	
74)	benzyl chloride	19.56	91	40921	1.10	ppb	98
75)	1,4-dichlorobenzene	19.62	146	28290	1.16	ppb	94
76)	1,2,3-trimethylbenzene	19.65	105	54000	1.07	ppb	91
77)	1,2-dichlorobenzene	19.93	146	36031	1.13	ppb	96
78)	1,2,4-trichlorobenzene	21.79	180	20383m	0.85	ppb	
79)	Naphthalene	22.15	128	46143m	0.92	ppb	
80)	Hexachloro-1,3-butadiene	22.06	225	63646	1.09	ppb	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\AN040125.D Vial: 3
Acq On : 2 Apr 2016 3:21 am Operator: RJP
Sample : ALCS1UGD-040116 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 2 12:07 2016 Quant Results File: A316_1UG.RES

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Tue Apr 26 14:41:32 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\AN040224.D Vial: 21
Acq On : 3 Apr 2016 1:13 am Operator: RJP
Sample : ALCS1UGD-040216 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 03 06:12:44 2016 Quant Results File: A316_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 10:24:27 2016
Response via : Initial Calibration
DataAcq Meth : 1UG_RUN

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane	9.83	128	16685m	1.00	ppb		0.03
35) 1,4-difluorobenzene	12.07	114	39568m	1.00	ppb		0.00
50) Chlorobenzene-d5	16.57	117	28434m	1.00	ppb		0.00
System Monitoring Compounds							
66) Bromofluorobenzene	18.13	95	19428	1.06	ppb		0.00
Spiked Amount 1.000	Range 70 - 130		Recovery = 106.00%				
Target Compounds							Qvalue
2) Propylene	4.15	41	16606	1.23	ppb	#	100
3) Freon 12	4.20	85	90322	1.27	ppb		100
4) Chloromethane	4.40	50	22283m	1.19	ppb		
5) Freon 114	4.39	85	71787m	1.20	ppb		
6) Vinyl Chloride	4.58	62	22812	1.22	ppb		92
7) Butane	4.69	43	25482m	1.19	ppb		
8) 1,3-butadiene	4.69	39	15952	1.13	ppb		64
9) Bromomethane	5.04	94	27027m	1.23	ppb		
10) Chloroethane	5.22	64	8362m	1.09	ppb		
11) Ethanol	5.38	45	7013	1.23	ppb	#	78
12) Acrolein	5.96	56	5600m	1.16	ppb		
13) Vinyl Bromide	5.55	106	23708m	1.09	ppb		
14) Freon 11	5.81	101	96272m	1.31	ppb		
15) Acetone	6.06	58	7670m	1.06	ppb		
16) Pentane	6.08	42	19957	1.21	ppb		89
17) Isopropyl alcohol	6.16	45	22887	0.97	ppb	#	46
18) 1,1-dichloroethene	6.58	96	23753	1.11	ppb		93
19) Freon 113	6.75	101	66199m	1.28	ppb		
20) t-Butyl alcohol	6.90	59	23840	0.64	ppb	#	69
21) Methylene chloride	7.05	84	23481	1.25	ppb	#	86
22) Allyl chloride	7.03	41	18688	1.12	ppb		91
23) Carbon disulfide	7.21	76	63706	1.15	ppb		97
24) trans-1,2-dichloroethene	8.01	61	29171	1.15	ppb		96
25) methyl tert-butyl ether	8.03	73	49301	1.03	ppb		84
26) 1,1-dichloroethane	8.40	63	42150	1.17	ppb		99
27) Vinyl acetate	8.43	43	30164	0.97	ppb		98
28) Methyl Ethyl Ketone	8.95	72	7134	0.93	ppb	#	100
29) cis-1,2-dichloroethene	9.36	61	23080	1.11	ppb		96
30) Hexane	8.90	57	21665	0.99	ppb		94
31) Ethyl acetate	9.54	43	29271	0.98	ppb	#	83
32) Chloroform	9.96	83	53371	1.10	ppb		98
33) Tetrahydrofuran	10.18	42	14438	1.04	ppb		99
34) 1,2-dichloroethane	11.09	62	30054	1.10	ppb		88
36) 1,1,1-trichloroethane	10.75	97	48306m	1.30	ppb		
37) Cyclohexane	11.44	56	19148m	1.25	ppb		
38) Carbon tetrachloride	11.39	117	51845m	1.25	ppb		
39) Benzene	11.37	78	36958m	1.12	ppb		
40) Methyl methacrylate	12.92	41	11930	1.11	ppb	#	85
41) 1,4-dioxane	13.02	88	4854m	0.58	ppb		
42) 2,2,4-trimethylpentane	12.19	57	79575m	1.38	ppb		
43) Heptane	12.54	43	16023	1.20	ppb		97
44) Trichloroethene	12.68	130	20428	1.22	ppb		99
45) 1,2-dichloropropane	12.79	63	13855m	1.17	ppb		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\AN040224.D Vial: 21
Acq On : 3 Apr 2016 1:13 am Operator: RJP
Sample : ALCS1UGD-040216 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 03 06:12:44 2016 Quant Results File: A316_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 10:24:27 2016
Response via : Initial Calibration
DataAcq Meth : 1UG_RUN

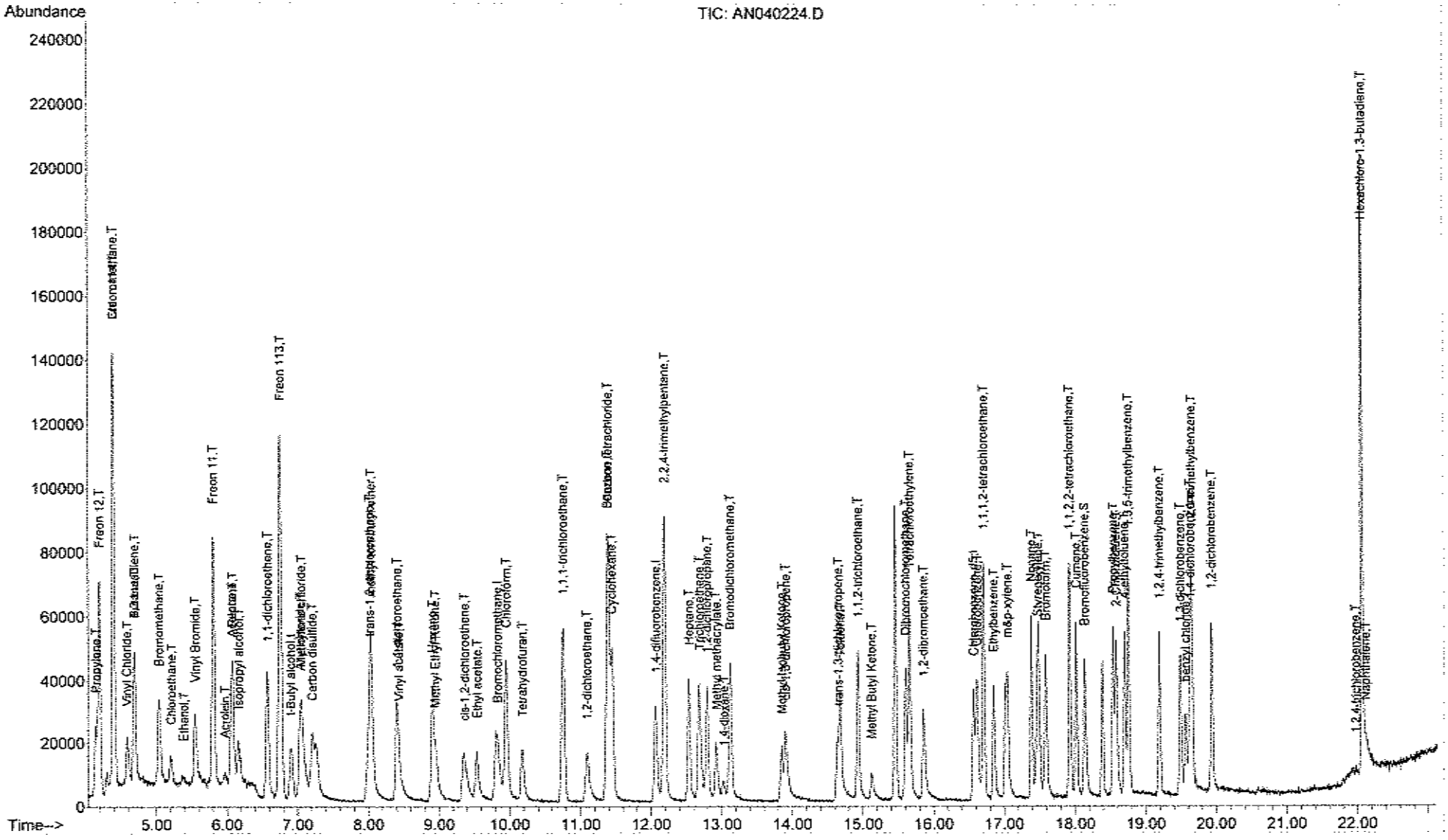
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
46)	Bromodichloromethane	13.12	83	40630	1.40	ppb	99
47)	cis-1,3-dichloropropene	13.91	75	17575m	1.11	ppb	
48)	trans-1,3-dichloropropene	14.64	75	17502m	1.23	ppb	
49)	1,1,2-trichloroethane	14.93	97	15918m	1.22	ppb	
51)	Toluene	14.68	92	15999	0.83	ppb	93
52)	Methyl Isobutyl Ketone	13.85	43	16015m	0.47	ppb	
53)	Dibromochloromethane	15.60	129	29038m	1.19	ppb	
54)	Methyl Butyl Ketone	15.12	43	11884m	0.39	ppb	
55)	1,2-dibromoethane	15.86	107	30992	1.29	ppb	95
56)	Tetrachloroethylene	15.66	164	16328	0.89	ppb	99
57)	Chlorobenzene	16.61	112	28766	1.13	ppb	90
58)	1,1,1,2-tetrachloroethane	16.71	131	23282	1.23	ppb	96
59)	Ethylbenzene	16.85	91	32846	0.99	ppb	98
60)	m&p-xylene	17.04	91	50659	1.93	ppb	94
61)	Nonane	17.38	43	17387	1.11	ppb	96
62)	Styrene	17.46	104	19788	1.08	ppb	94
63)	Bromoform	17.59	173	27444	2.09	ppb	96
64)	o-xylene	17.49	91	36160	1.15	ppb	97
65)	Cumene	18.02	105	38606	1.05	ppb	98
67)	1,1,2,2-tetrachloroethane	17.93	83	42851	1.32	ppb	97
68)	Propylbenzene	18.54	91	42675m	1.09	ppb	
69)	2-Chlorotoluene	18.58	91	28750m	1.01	ppb	
70)	4-ethyltoluene	18.70	105	36356m	1.08	ppb	
71)	1,3,5-trimethylbenzene	18.75	105	47475m	1.18	ppb	
72)	1,2,4-trimethylbenzene	19.19	105	33263	0.96	ppb	91
73)	1,3-dichlorobenzene	19.49	146	24776	1.12	ppb	98
74)	benzyl chloride	19.56	91	24061	0.76	ppb	91
75)	1,4-dichlorobenzene	19.62	146	22059	1.06	ppb	97
76)	1,2,3-trimethylbenzene	19.65	105	45073	1.05	ppb	95
77)	1,2-dichlorobenzene	19.93	146	26784	0.99	ppb	97
78)	1,2,4-trichlorobenzene	21.97	180	13922m	0.68	ppb	
79)	Naphthalene	22.12	128	22973m	0.54	ppb	
80)	Hexachloro-1,3-butadiene	22.06	225	38512	0.77	ppb	94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\AN040224.D Vial: 21
Acq On : 3 Apr 2016 1:13 am Operator: RJP
Sample : ALCS1UGD-040216 Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 3 11:42 2016 Quant Results File: A316_1UG.RES

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Tue Apr 26 14:41:32 2016
Response via : Initial Calibration



CENTEK LABORATORIES, LLC

Date: *26-Apr-16*

ANALYTICAL QC SUMMARY REPORT

CLIENT: LaBella Associates, P.C.
Work Order: C1603075
Project: FESL Emerson Landfill

TestCode: 0.25CT-TCE-VC

Sample ID **C1603075-004A MS** SampType: **MS** TestCode: **0.25CT-TCE-** Units: **ppbV** Prep Date: RunNo: **10817**
Client ID: **1645-IAQ-2** Batch ID: **R10817** TestNo: **TO-15** Analysis Date: **3/31/2016** SeqNo: **127108**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	1.140	0.15	1	0	114	70	130				
1,1-Dichloroethane	1.060	0.15	1	0	106	70	130				
1,1-Dichloroethene	1.110	0.15	1	0	111	70	130				
Chloroethane	1.140	0.15	1	0	114	70	130				
Chloromethane	1.760	0.15	1	0	176	70	130				S
cis-1,2-Dichloroethene	1.080	0.15	1	0	108	70	130				
Tetrachloroethylene	0.9300	0.15	1	0	93.0	70	130				
trans-1,2-Dichloroethene	1.110	0.15	1	0	111	70	130				
Trichloroethene	1.130	0.040	1	0	113	70	130				
Vinyl chloride	1.020	0.040	1	0	102	70	130				

Sample ID **C1603075-004A MS** SampType: **MSD** TestCode: **0.25CT-TCE-** Units: **ppbV** Prep Date: RunNo: **10817**
Client ID: **1645-IAQ-2** Batch ID: **R10817** TestNo: **TO-15** Analysis Date: **4/1/2016** SeqNo: **127109**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	1.020	0.15	1	0	102	70	130	1.14	11.1	30	
1,1-Dichloroethane	1.080	0.15	1	0	108	70	130	1.06	1.87	30	
1,1-Dichloroethene	1.150	0.15	1	0	115	70	130	1.11	3.54	30	
Chloroethane	1.130	0.15	1	0	113	70	130	1.14	0.881	30	
Chloromethane	1.810	0.15	1	0	181	70	130	1.76	2.80	30	S
cis-1,2-Dichloroethene	1.160	0.15	1	0	116	70	130	1.08	7.14	30	
Tetrachloroethylene	0.9700	0.15	1	0	97.0	70	130	0.93	4.21	30	
trans-1,2-Dichloroethene	1.100	0.15	1	0	110	70	130	1.11	0.905	30	
Trichloroethene	1.100	0.040	1	0	110	70	130	1.13	2.69	30	

Qualifiers:
- . Results reported are not blank corrected
- J Analyte detected at or below quantitation limits
- S Spike Recovery outside accepted recovery limits
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- H Holding times for preparation or analysis exceeded
- R RPD outside accepted recovery limits

CLIENT: LaBella Associates, P.C.
Work Order: C1603075
Project: FESL Emerson Landfill

TestCode: 0.25CT-TCE-VC

Sample ID	C1603075-004A MS	SampType:	MSD	TestCode:	0.25CT-TCE-	Units:	ppbV	Prep Date:		RunNo:	10817
Client ID:	1645-IAQ-2	Batch ID:	R10817	TestNo:	TO-15			Analysis Date:	4/1/2016	SeqNo:	127109

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	0.9900	0.040	1	0	99.0	70	130	1.02	2.99	30	

Qualifiers:

.	Results reported are not blank corrected	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected at or below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike Recovery outside accepted recovery limits				

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA2\AN033122.D Vial: 2
Acq On : 31 Mar 2016 11:43 pm Operator: RJP
Sample : C1603075-004A MS Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 01 03:32:47 2016 Quant Results File: A316_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 10:24:27 2016
Response via : Initial Calibration
DataAcq Meth : 1UG_RUN

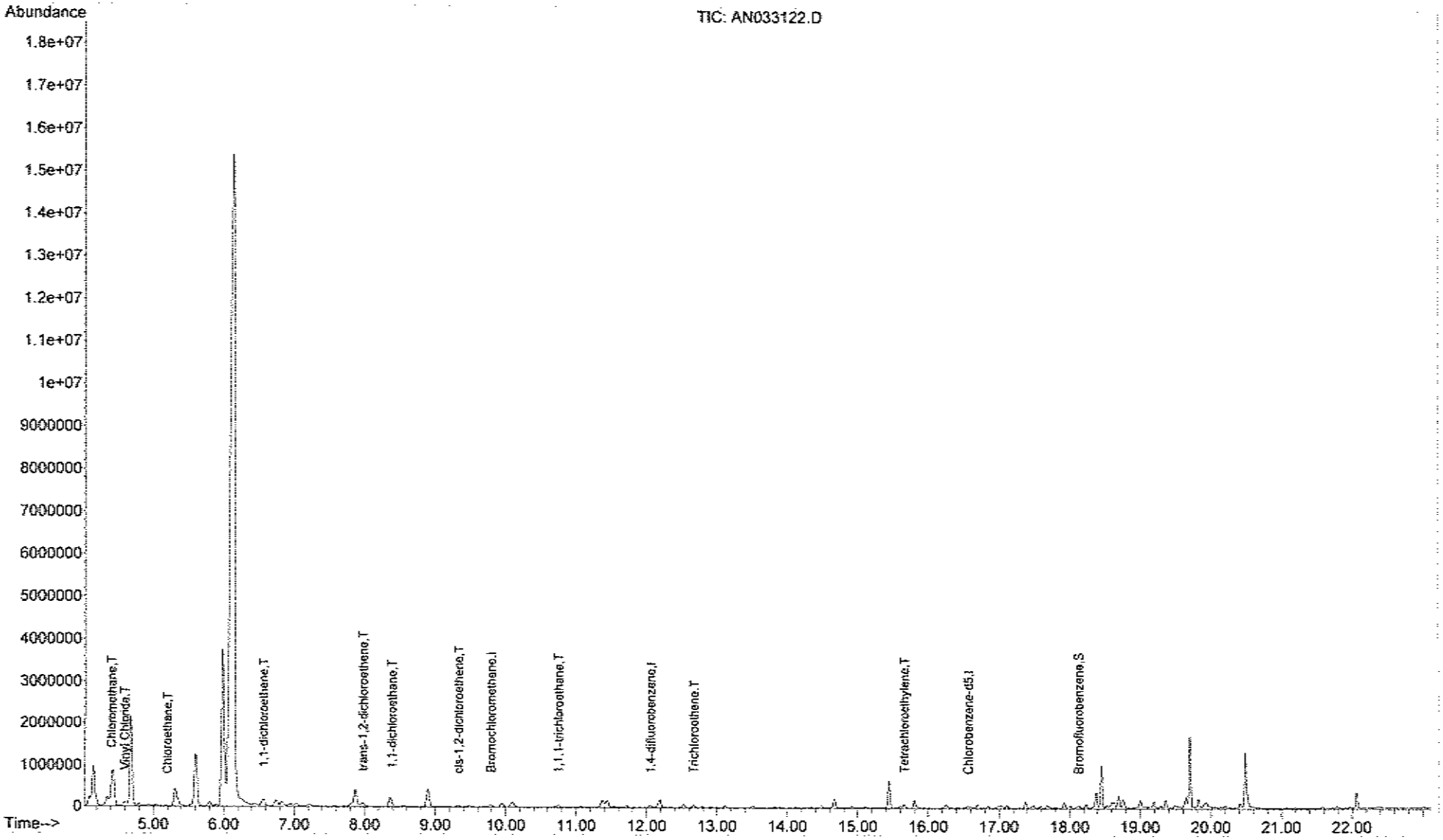
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	9.79	128	22331	1.00	ppb	-0.02
35) 1,4-difluorobenzene	12.05	114	56616	1.00	ppb	0.00
50) Chlorobenzene-d5	16.56	117	32647	1.00	ppb	0.00
System Monitoring Compounds						
66) Bromofluorobenzene	18.13	95	24262	1.16	ppb	0.00
Spiked Amount 1.000	Range 70 - 130		Recovery = 116.00%			
Target Compounds						Qvalue
4) Chloromethane	4.40	50	44038m	1.76	ppb	
6) Vinyl Chloride	4.59	62	25633	1.02	ppb	90
10) Chloroethane	5.20	64	11714	1.14	ppb	91
18) 1,1-dichloroethene	6.56	96	31895	1.11	ppb	99
24) trans-1,2-dichloroethene	7.97	61	37799m	1.11	ppb	
26) 1,1-dichloroethane	8.39	63	50858	1.06	ppb	92
29) cis-1,2-dichloroethene	9.33	61	30153	1.08	ppb	93
36) 1,1,1-trichloroethane	10.75	97	60856	1.14	ppb	97
44) Trichloroethene	12.67	130	27257	1.13	ppb	99
56) Tetrachloroethylene	15.66	164	19771	0.93	ppb	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA2\AN033122.D Vial: 2
Acq On : 31 Mar 2016 11:43 pm Operator: RJP
Sample : C1603075-004A MS Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 1 11:35 2016 Quant Results File: A316_1UG.RES

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Tue Apr 26 15:30:23 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA2\AN033123.D Vial: 2
Acq On : 1 Apr 2016 12:25 am Operator: RJP
Sample : C1603075-004A MSD Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 01 03:32:48 2016 Quant Results File: A316_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Mar 17 10:24:27 2016
Response via : Initial Calibration
DataAcq Meth : 1UG_RUN

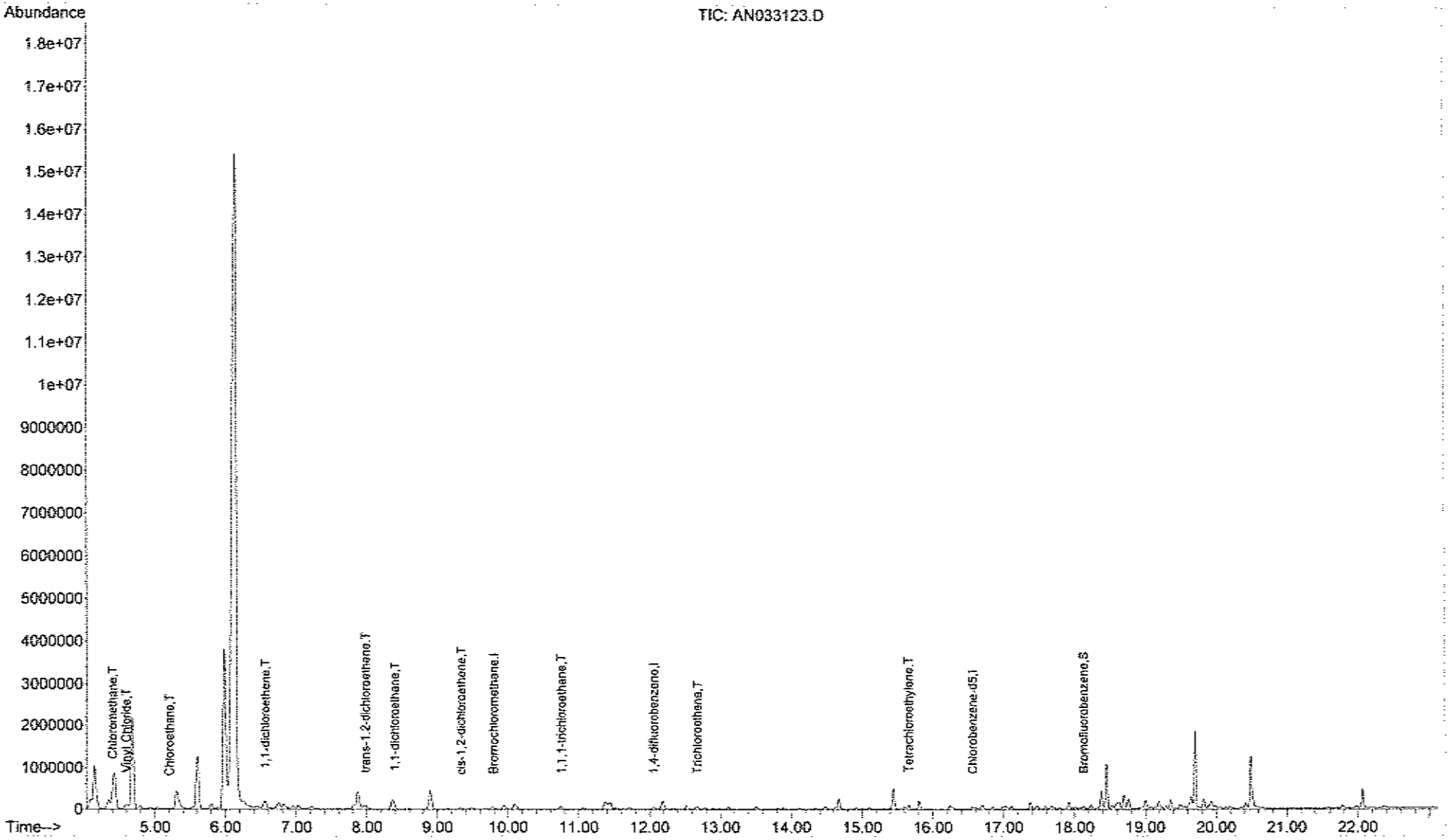
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	9.79	128	23633	1.00	ppb	-0.02
35) 1,4-difluorobenzene	12.05	114	65314	1.00	ppb	0.00
50) Chlorobenzene-d5	16.56	117	36439	1.00	ppb	0.00
System Monitoring Compounds						
66) Bromofluorobenzene	18.13	95	25010	1.07	ppb	0.00
Spiked Amount 1.000	Range 70 - 130		Recovery = 107.00%			
Target Compounds						Qvalue
4) Chloromethane	4.39	50	47784m	1.81	ppb	
6) Vinyl Chloride	4.58	62	26335	0.99	ppb	89
10) Chloroethane	5.21	64	12288	1.13	ppb	98
18) 1,1-dichloroethene	6.56	96	34729	1.15	ppb	96
24) trans-1,2-dichloroethene	7.97	61	39623m	1.10	ppb	
26) 1,1-dichloroethane	8.40	63	54995	1.08	ppb	95
29) cis-1,2-dichloroethene	9.33	61	34393	1.16	ppb	92
36) 1,1,1-trichloroethane	10.75	97	62719	1.02	ppb	100
44) Trichloroethene	12.67	130	30549	1.10	ppb	98
56) Tetrachloroethylene	15.66	164	22931	0.97	ppb	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA2\AN033123.D Vial: 2
Acq On : 1 Apr 2016 12:25 am Operator: RJP
Sample : C1603075-004A MSD Inst : MSD #1
Misc : A316_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 1 11:37 2016 Quant Results File: A316_1UG.RES

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Tue Apr 26 15:30:23 2016
Response via : Initial Calibration



GC/MS VOLATILES-WHOLE AIR

METHOD TO-15

INJECTION LOG

Injection Log

Directory: C:\HPCHEM\1\DATA2

Instrument # 1
Internal Standard Stock # A1335
Standard Stock # 1336
LCS Stock # 1337

ne	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
)6	29	An033037.d	1.	C1603071-003A 40X	A316_1UG	31 Mar 2016 07:37
)7	30	An033038.d	1.	C1603071-004A 10X	A316_1UG	31 Mar 2016 08:14
)8	31	An033039.d	1.	C1603062-002A 540X	A316_1UG	31 Mar 2016 08:50
)9		An033040.d	1.	No MS or GC data present		
10	1	An033101.d	1.	BFB1UG	A316_1UG	31 Mar 2016 09:33
11	2	An033102.d	1.	A1UG	A316_1UG	31 Mar 2016 10:56
12	3	An033103.d	1.	A1UG	A316_1UG	31 Mar 2016 11:38
13	4	An033104.d	1.	A1UG_1.0	A316_1UG	31 Mar 2016 12:19
14	5	An033105.d	1.	ALCS1UG-033116	A316_1UG	31 Mar 2016 12:57
15	6	An033106.d	1.	AMB1UG-033116	A316_1UG	31 Mar 2016 13:33
16	7	An033107.d	1.	WAC033116A	A316_1UG	31 Mar 2016 14:15
17	8	An033108.d	1.	WAC033116B	A316_1UG	31 Mar 2016 14:52
18	9	An033109.d	1.	WAC033116C	A316_1UG	31 Mar 2016 15:30
19	10	An033110.d	1.	WAC033116D	A316_1UG	31 Mar 2016 16:07
20	11	An033111.d	1.	WAC033116E	A316_1UG	31 Mar 2016 16:44
21	12	An033112.d	1.	WAC033116F	A316_1UG	31 Mar 2016 17:27
22	1	An033113.d	1.	C1603064-002A 270X	A316_1UG	31 Mar 2016 18:04
23	2	An033114.d	1.	C1603064	A316_1UG -004A 81X	31 Mar 2016 18:43
24	3	An033115.d	1.	C1603064-004A 810X	A316_1UG	31 Mar 2016 19:19
25	4	An033116.d	1.	C1603064-007A 540X	A316_1UG	31 Mar 2016 19:55
26	5	An033117.d	1.	C1603064-009A 270X	A316_1UG	31 Mar 2016 20:32
27	6	An033118.d	1.	C1603064-003A 270X	A316_1UG	31 Mar 2016 21:08
28	7	An033119.d	1.	C1603064-006A 540X	A316_1UG	31 Mar 2016 21:45
29	8	An033120.d	1.	C1603064-008A 270X	A316_1UG	31 Mar 2016 22:22
30	2	An033121.d	1.	C1603075-004A	A316_1UG	31 Mar 2016 23:01
31	2	An033122.d	1.	C1603075-004A MS	A316_1UG	31 Mar 2016 23:43
32	2	An033123.d	1.	C1603075-004A MSD	A316_1UG	1 Apr 2016 00:25
33	3	An033124.d	1.	C1603075-002A	A316_1UG	1 Apr 2016 01:04
34	4	An033125.d	1.	C1603075-005A	A316_1UG	1 Apr 2016 01:43
35	5	An033126.d	1.	C1603074-001A	A316_1UG	1 Apr 2016 02:22
36	6	An033127.d	1.	C1603074-003A	A316_1UG	1 Apr 2016 03:00
37	7	An033128.d	1.	C1603074-005A	A316_1UG	1 Apr 2016 03:39
38	8	An033129.d	1.	C1603076-001A	A316_1UG	1 Apr 2016 04:18
39	9	An033130.d	1.	C1603076-004A	A316_1UG	1 Apr 2016 04:57
40	10	An033131.d	1.	C1603076-006A	A316_1UG	1 Apr 2016 05:36
41	11	An033132.d	1.	C1603076-008A	A316_1UG	1 Apr 2016 06:15
42	12	An033133.d	1.	ALCS1UGD-033116	A316_1UG	1 Apr 2016 06:53
43	13	An033134.d	1.	C1603075-001A	A316_1UG	1 Apr 2016 08:10
44	14	An033135.d	1.	C1603075-003A	A316_1UG	1 Apr 2016 08:49
45	15	An033136.d	1.	C1604001-001A	A316_1UG	1 Apr 2016 09:28
46		An033137.d	1.	No MS or GC data present		

Method Ref: EPA TO-1 dated 1999

Injection Log

Directory: C:\HPChem\1\DATA

Instrument # 1
Internal Standard Stock # A134935
Standard Stock # 134836
LCS Stock # 134931
Method Ref: EPA TO-15 / Jan. 1999

ine	Vial	FileName	Multiplier	SampleName	Misc-Info	Injected
	16	An040101.d	1.	BFB1UG	A316_1UG	1 Apr 2016 10:05
	18	An040102.d	1.	A1UG_1.0	A316_1UG	1 Apr 2016 12:06
	19	An040103.d	1.	ALCS1UG-040116	A316_1UG	1 Apr 2016 12:45
	20	An040104.d	1.	AMB1UG-040116	A316_1UG	1 Apr 2016 13:21
	21	An040105.d	1.	C1603075-001A 2X	A316_1UG	1 Apr 2016 13:59
	22	An040106.d	1.	C1603074-002A	A316_1UG	1 Apr 2016 14:58
	23	An040107.d	1.	C1603074-004A	A316_1UG	1 Apr 2016 15:39
	24	An040108.d	1.	C1603076-003A	A316_1UG	1 Apr 2016 16:18
	25	An040109.d	1.	C1603076-005A	A316_1UG	1 Apr 2016 16:57
0	26	An040110.d	1.	C1603076-002A	A316_1UG	1 Apr 2016 17:36
1	27	An040111.d	1.	C1603076-007A	A316_1UG	1 Apr 2016 18:15
2	28	An040112.d	1.	C1603076-009A	A316_1UG	1 Apr 2016 18:54
3	49	An040113.d	1.	C1603089-001A	A316_1UG	1 Apr 2016 19:33
4	21	An040114.d	1.	C1603089-002A	A316_1UG	1 Apr 2016 20:12
5	22	An040115.d	1.	C1603089-003A	A316_1UG	1 Apr 2016 20:51
6	23	An040116.d	1.	C1603089-004A	A316_1UG	1 Apr 2016 21:30
7	24	An040117.d	1.	C1603089-005A	A316_1UG	1 Apr 2016 22:09
8	25	An040118.d	1.	C1603089-006A	A316_1UG	1 Apr 2016 22:48
9	26	An040119.d	1.	C1603089-007A	A316_1UG	1 Apr 2016 23:27
0	27	An040120.d	1.	C1603089-008A	A316_1UG	2 Apr 2016 00:06
1	28	An040121.d	1.	C1603089-009A	A316_1UG	2 Apr 2016 00:45
2	29	An040122.d	1.	C1603089-010A	A316_1UG	2 Apr 2016 01:24
3	1	An040123.d	1.	C1603089-011A	A316_1UG	2 Apr 2016 02:03
4	2	An040124.d	1.	C1603089-012A	A316_1UG	2 Apr 2016 02:42
5	3	An040125.d	1.	ALCS1UGD-040116	A316_1UG	2 Apr 2016 03:21
6	4	An040126.d	1.	C1603079-001A	A316_1UG	2 Apr 2016 04:00
7	5	An040127.d	1.	C1603079-002A	A316_1UG	2 Apr 2016 04:39
8	6	An040128.d	1.	C1603079-003A	A316_1UG	2 Apr 2016 05:18
9	7	An040129.d	1.	C1603079-004A	A316_1UG	2 Apr 2016 05:57
0	8	An040130.d	1.	C1603079-005A	A316_1UG	2 Apr 2016 06:36
1	9	An040131.d	1.	C1603079-006A	A316_1UG	2 Apr 2016 07:15
2	10	An040132.d	1.	C1603078-001A	A316_1UG	2 Apr 2016 07:54
3	11	An040133.d	1.	C1603078-002A	A316_1UG	2 Apr 2016 08:33
4	12	An040134.d	1.	C1603078-003A	A316_1UG	2 Apr 2016 09:12
5	13	An040135.d	1.	C1603078-003A DUP	A316_1UG	2 Apr 2016 09:50
6		An040136.d	1.	No MS or GC data present		
7	1	An040201.d	1.	BFB1UG	A316_1UG	2 Apr 2016 10:48
8	2	An040202.d	1.	A1UG	A316_1UG	2 Apr 2016 11:29
9	3	An040203.d	1.	A1UG_1.0	A316_1UG	2 Apr 2016 12:08
0	1	An040204.d	1.	ALCS1UG-040216	A316_1UG	2 Apr 2016 12:58
1	2	An040205.d	1.	AMB1UG-040216	A316_1UG	2 Apr 2016 13:34
2	3	An040206.d	1.	C1603078-004A	A316_1UG	2 Apr 2016 14:13
3	4	An040207.d	1.	C1603074-002A 10X	A316_1UG	2 Apr 2016 14:50
4	5	An040208.d	1.	C1603074-004A 90X	A316_1UG	2 Apr 2016 15:27
5	6	An040209.d	1.	C1603076-009A 5X	A316_1UG	2 Apr 2016 16:03
6	7	An040210.d	1.	C1603079-001A 10X	A316_1UG	2 Apr 2016 16:40
7	8	An040211.d	1.	C1603079-002A 10X	A316_1UG	2 Apr 2016 17:17
8	9	An040212.d	1.	C1603079-003A 10X	A316_1UG	2 Apr 2016 17:53
9	10	An040213.d	1.	C1603079-004A 10X	A316_1UG	2 Apr 2016 18:30
0	11	An040214.d	1.	C1603079-005A 10X	A316_1UG	2 Apr 2016 19:06
1	12	An040215.d	1.	C1603079-006A 10X	A316_1UG	2 Apr 2016 19:43
2	13	An040216.d	1.	C1603078-001A 10X	A316_1UG	2 Apr 2016 20:19
3	14	An040217.d	1.	C1603078-001A 40X	A316_1UG	2 Apr 2016 20:56
4	15	An040218.d	1.	C1603078-002A 10X	A316_1UG	2 Apr 2016 21:32
5	16	An040219.d	1.	C1603078	A316_1UG -002A 40X	2 Apr 2016 22:08

Injection Log

Directory: C:\HPChem\1\DATA

Instrument # 1
Internal Standard Stock # A/342.35
Standard Stock # 134936
LCS Info# 134937
Method Ref: EPA TO-15 / Jan. 1999

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
56	17	An040220.d	1.	C1603078-003A 10X	A316_1UG	2 Apr 2016 22:45
57	18	An040221.d	1.	C1603078-003A 40X	A316_1UG	2 Apr 2016 23:21
58	19	An040222.d	1.	C1603078-004A 10X	A316_1UG	2 Apr 2016 23:58
59	20	An040223.d	1.	C1603078-004A 40X	A316_1UG	3 Apr 2016 00:34
60	21	An040224.d	1.	ALCS1UGD-040216	A316_1UG	3 Apr 2016 01:13
61	22	An040225.d	1.	C1603092-001A	A316_1UG	3 Apr 2016 01:52
62	23	An040226.d	1.	C1603092-002A	A316_1UG	3 Apr 2016 02:31
63	24	An040227.d	1.	C1603092-003A	A316_1UG	3 Apr 2016 03:10
64	25	An040228.d	1.	C1603092-004A	A316_1UG	3 Apr 2016 03:49
65	26	An040229.d	1.	C1603092-005A	A316_1UG	3 Apr 2016 04:28
66	27	An040230.d	1.	C1603092-006A	A316_1UG	3 Apr 2016 05:07
67	28	An040231.d	1.	C1603092-007A	A316_1UG	3 Apr 2016 05:46
68	29	An040232.d	1.	C1603092-008A	A316_1UG	3 Apr 2016 06:25
69	30	An040233.d	1.	C1603092-009A	A316_1UG	3 Apr 2016 07:03
70	31	An040234.d	1.	C1603092-010A	A316_1UG	3 Apr 2016 07:42
71	32	An040235.d	1.	C1603092-012A	A316_1UG	3 Apr 2016 08:21
72	33	An040236.d	1.	C1603092-015A	A316_1UG	3 Apr 2016 09:00
73		An040237.d	1.	No MS or GC data present		
74	1	An040301.d	1.	BFB1UG	A316_1UG	3 Apr 2016 09:42
75	2	An040302.d	1.	A1UG_1.0	A316_1UG	3 Apr 2016 11:40
76	3	An040303.d	1.	ALCS1UG-040316	A316_1UG	3 Apr 2016 12:29
77	4	An040304.d	1.	AMB1UG-040316	A316_1UG	3 Apr 2016 13:47
78	1	An040305.d	1.	WAC040316A	A316_1UG	3 Apr 2016 14:24
79	2	An040306.d	1.	WAC040316B	A316_1UG	3 Apr 2016 15:01
80	3	An040307.d	1.	WAC040316C	A316_1UG	3 Apr 2016 15:38
81	4	An040308.d	1.	WAC040316D	A316_1UG	3 Apr 2016 16:15
82	5	An040309.d	1.	WAC040316E	A316_1UG	3 Apr 2016 16:52
83	6	An040310.d	1.	C1603078-002A 90X	A316_1UG	3 Apr 2016 17:28
84	7	An040311.d	1.	C1603092-013A	A316_1UG	3 Apr 2016 18:07
85	8	An040312.d	1.	C1603092-013A MS	A316_1UG	3 Apr 2016 18:49
86	9	An040313.d	1.	C1603092-013A MSD	A316_1UG	3 Apr 2016 19:32
87	10	An040314.d	1.	C1603092-016A	A316_1UG	3 Apr 2016 20:11
88	11	An040315.d	1.	C1603092-017A	A316_1UG	3 Apr 2016 20:50
89	12	An040316.d	1.	C1603092-018A	A316_1UG	3 Apr 2016 21:29
90	13	An040317.d	1.	C1603092-019A	A316_1UG	3 Apr 2016 22:09
91	14	An040318.d	1.	C1603092-012A 10X	A316_1UG	3 Apr 2016 22:45
92	15	An040319.d	1.	C1603091-005A	A316_1UG	3 Apr 2016 23:24
93	16	An040320.d	1.	C1603091-005A MS	A316_1UG	4 Apr 2016 00:06
94	17	An040321.d	1.	C1603091-005A MSD	A316_1UG	4 Apr 2016 00:49
95	18	An040322.d	1.	C1603091-001A	A316_1UG	4 Apr 2016 01:28
96	19	An040323.d	1.	C1603091-002A	A316_1UG	4 Apr 2016 02:08
97	20	An040324.d	1.	C1603091-003A	A316_1UG	4 Apr 2016 02:47
98	21	An040325.d	1.	C1603091-004A	A316_1UG	4 Apr 2016 03:26
99	22	An040326.d	1.	C1603091-006A	A316_1UG	4 Apr 2016 04:06
100	23	An040327.d	1.	C1603091-007A	A316_1UG	4 Apr 2016 04:45
101		An040328.d	1.	No MS or GC data present		
102	28	An040401.d	1.	BFB1UG	A316_1UG	4 Apr 2016 09:00
103	29	An040402.d	1.	A1UG_1.0	A316_1UG	4 Apr 2016 09:37
104	30	An040403.d	1.	ALCS1UG-040416	A316_1UG	4 Apr 2016 10:16
105	31	An040404.d	1.	AMB1UG-040416	A316_1UG	4 Apr 2016 10:52
106	32	An040405.d	1.	C1603092-017A 40X	A316_1UG	4 Apr 2016 11:46
107	33	An040406.d	1.	C1603076-003A RE	A316_1UG	4 Apr 2016 12:25
108	34	An040407.d	1.	C1603076-005A RE	A316_1UG	4 Apr 2016 14:00
109	35	An040408.d	1.	C1603076-002A RE	A316_1UG	4 Apr 2016 14:39
110	36	An040409.d	1.	C1603076-007A RE	A316_1UG	4 Apr 2016 15:18

GC/MS VOLATILES-WHOLE AIR

METHOD TO-15

STANDARDS LOG

Centek Laboratories, LLC

GC/MS Calibration Standards Logbook

Std #	Date Prep	Date Exp	Description	Stock #	Stock Conc	Initial Vol (psig)	Finial Vol (psia)	Final Conc (ppb)	Prep by	Chkd by
A-1201	1/15/16	1/22/16	TO15 APH	A1188	1ppm	1.5	30	50	MP	
A-1202	↓	↓	TO15 LL APH	A1201	50ppb	0.9	45	1	↓	
A-1203	1/15/16	1/15/17	TO15 MIX	↓	1ppm	LINDE TO15 MIX		1ppm	MP	
A-1204	1/18/16	1/18/17	LCS TO15	"	A0534 STD IS NOW LCS			1ppm	L.L.	
A-1205	1/18/16	1/25/16	TO15 IS	A1174	1ppm	1.5	30	50ppb	MP	
A-1206			LCS	A1204						
A-1207			STD	A1203						
A-1208			TO15 FORM	A0974	11.5ppm	0.20	45			
A-1209			SILOX	~~MP1504~~ A0088	A0088/500ppb	3.0	30			
A-1210			SULF	A0276	1ppm	1.5				
A-1211			H2S	A0265	10ppm			500ppb		
A-1212			TO15 4PCH	9519	1ppm	1.5	30	50ppb		
A-1213			4PCHS	A1212	50ppb	3.0		5ppb		
A-1214			TO15 LL IS	A1205		0.9	45	1ppb		
A-1215			STD	A1207						
A-1216			LCS	A1206						
A-1217	1/25/16	2/1/16	TO15 IS	A1174	1ppm	1.5	30	50ppb	WD	
A-1218			~~STD~~	A1203						
A-1219			LCS	A1204						
A-1220			4PCH	9519						
A-1221			4PCHS	A1220	50ppb	3.0	30	5		

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Centek Laboratories, LLC

GC/MS Calibration Standards Logbook

Std #	Date Prep	Date Exp	Description	Stock #	Stock Conc	Initial Vol (psig)	Finial Vol (psia)	Final Conc (ppb)	Prep by	Chkd by
A-1285	2/24/16	3/7/16	TO15 H_2S	A0269	10 ppm	1.5	30	500	WD	
A-1286	↓	↓	TO15 14G IS	A1277	50 ppb	0.9	45	1	↓	
A-1287			↓ STD	A1278	↓	↓	↓	↓	↓	
A-1288	↓	↓	↓ LCS	A1279	↓	↓	↓	↓	↓	
A-1289	3/1/16	3/1/17	TO15 IS	FF-4969	LINDE		2100 psig	1 ppm	WD	
A-1290	3/7/16	3/14/16	TO15 IS	A1289	1 ppm	1.5	30	50	WD	
A-1291	↓	↓	↓ STD	A1203	↓	↓	↓	↓	↓	
A-1292			LCS	A1204						
A-1293			4PCH	9519	↓	↓	↓	↓		
A-1294			4PCHS	A1293	50 ppb	3.0	30	5		
A-1295			FORM	A0974	11.5 ppm	0.20	45	50		
A-1296			SILOX	A1088 / A1089	500 ppb	3.0	30	50		
A-1297			SULF	A0270	1 ppm	1.5	30	50		
A-1298			↓ H_2S	A0269	10 ppm	1.5	30	500		
A-1299			TO15 14G IS	A1290	50 ppb	0.9	45	1		
A-1300			↓ STD	A1291	↓	↓	↓	↓	↓	
A-1301	↓	↓	↓ LCS	A1292	↓	↓	↓	↓		
A-1302	3/14/16	3/21/16	TO15 IS	A1289	1 ppm	1.5	30	50	WD	
A-1303			↓ STD	A1203	↓	↓	↓	↓	↓	
A-1304			LCS	A1204						
A-1305	↓	↓	↓ 4PCH	9519	↓	↓	↓	↓		

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Std #	Date Prep	Date Exp	Description	Stock #	Stock Conc	Initial Vol (psig)	Finial Vol (psia)	Final Conc (ppb)	Prep by	Chkd by
A-1306	3/14/16	3/21/16	TO15 4PCH5	A1305	50 ppb	3.0	30	5	WD	
A-1307			Form	A0974	11.5 ppm	0.20	45	50		
A-1308			SiWx	A1088 / A1089	500 ppb	3.0	30	50		
A-1309			SOLF	A0270	1 ppm	1.5	30	50		
A-1310			H2S	A0269	10 ppm	1.5	30	500		
A-1311			TO15 1&4 IS	A1302	50 ppb	0.9	45	1		
A-1312			STD	A1303						
A-1313			LCS	A1304						
A-1314	3/21/16	3/28/16	TO15 IS	A1289	1 ppm	1.5	30	50	WD	
A-1315			STD	A1203						
A-1316			LCS	A1204						
A-1317			4PCH	9519						
A-1318			4PCH5	A1317	50 ppb	3.0	30	5		
A-1319			Form	A0974	11.5 ppm	0.20	45	50		
A-1320			SiWx	A1088 / A1089	500 ppb	3.0	30	50		
A-1321			SOLF	A0270	1 ppm	1.5	30	50		
A-1322			H2S	A0269	10 ppm	1.5	30	500		
A-1323			TO15 1&4 IS	A1314	50 ppb	0.9	45	1		
A-1324			STD	A1315						
A-1325			LCS	A1316						
A-1326	3/28/16	4/4/16	TO15 IS	A1289	1 ppm	1.5	30	50	WD	

Std #	Date Prep	Date Exp	Description	Stock #	Stock Conc	Initial Vol (psig)	Finial Vol (psia)	Final Conc (ppb)	Prep by	Chkd by
A-1327	3/28/16	4/4/16	TO15 STD	A1203	1 ppm	1.5	30	50	SA	
A-1328			LCS	A1204						
A-1329			4PCH	9519						
A-1330			4PCHS	A1329	50 ppb	3.0	30	5		
A-1331			FORM	A0974	11.5 ppm	0.20	45	50		
A-1332			SILX	A1088 / A1089	500 ppb	3.0	30	50		
A-1333			SULF	A0270	1 ppm	1.5	30	50		
A-1334			H_2S	A0269 / A0271	10 ppm	1.5	30	500		
A-1335			TO15 14G IS	A1326	50 ppb	0.9	45	1		
A-1336			STD	A1327						
A-1337			LCS	A1328						
A-1338	4/4/16	4/11/16	TO15 IS	A1289	1 ppm	1.5	30	50	SA	
A-1339			STD	A1203						
A-1340			LCS	A1204						
A-1341			4PCH	9519						
A-1342			4PCHS	A1341	50 ppb	3.0	30	5		
A-1343			FORM	A0974	11.5 ppm	0.20	45	50		
A-1344			SILX	A1088 / A1089	500 ppb	3.0	30	50		
A-1345			SULF	A0270	1 ppm	1.5	30	50		
A-1346			H_2S	A0269	10 ppm	1.5	30	500		
A-1347			TO15 14G IS	A1338	50 ppb	0.9	45	1		

FORM 153

Page # 64

GC/MS VOLATILES-WHOLE AIR

METHOD TO-15

CANISTER CLEANING LOG

Centek Laboratories, LLC

Instrument: Entech 3100

QC Canister Cleaning Logbook

Canister Number	QC Can Number	Number of Cycles	Date	QC Batch Number	Detection Limits	Leak Test 24hr (psig str/stp)	
137	192	30	2-19-16	WAC022916 A	ND 1ug/m3+0.25	+30	+30
83	↓	↓	↓	↓	↓	+	+
1179						+	+
567						+	+
192				↓		+	+
229	205			WAC022916 B		+	+
89	↓			↓		+	+
93						+	+
275						+	+
205	↓			↓		+	+
188	223			WAC022916 C		+	+
286	↓			↓		+	+
553						+	+
1177						+	+
223	↓			↓		+	+
141	128			WAC022916 D		+	+
242	↓			↓		+	+
319						+	+
158						+	+
128	↓			↓		+	+
248	130			WAC022916 E		+	+
460	↓			↓		+	+
94						+	+
239						+	+
130	↓	↓	↓	↓	↓	+	+

Cleaned by: RGP

Centek Laboratories, LLC

Instrument: Entech 3100

Canister Number	QC Can Number	Number of Cycles	Date	QC Batch Number	Detection Limits	Leak Test 24hr (psig str/stp)	
542	106	30	2.19.16	WAC021916F	1ug/m3+0.25	+ 30	+ 30
245						+	+
226						+	+
322						+	+
106				WAC021916G		+	+
98	363					+	+
100						+	+
367						+	+
571						+	+
363				WAC021916H		+	+
332	326					+	+
274						+	+
168						+	+
327						+	+
326				WAC021916I		+	+
231	541					+	+
101						+	+
1190						+	+
157						+	+
541						+	+
						+	+
						+	+
						+	+
						+	+
						+	+

Cleaned by: RJP

Form C151

Page # 139

Instrument: Entech 3100

Canister Number	QC Can Number	Number of Cycles	Date	QC Batch Number	Detection Limits	Leak Test 24hr (psig str/stp)	
1179	139	20	3/8/16	WAC030816A	1/q +0.25	+ 30	+ 30
465						+	+
141						+	+
567						+	+
139						+	+
223	366			B		+	+
419						+	+
128						+	+
192						+	+
366						+	+
1183	1193			C		+	+
188						+	+
136						+	+
286						+	+
1193						+	+
205	138			D		+	+
315						+	+
370						+	+
1182						+	+
138						+	+
142	229			E		+	+
1177						+	+
93						+	+
131						+	+
229						+	+

Cleaned by: RJP Form C151 Page # 149

Centek Laboratories, LLC

QC Canister Cleaning Logbook

Instrument: Entech 3100

Canister Number	QC Can Number	Number of Cycles	Date	QC Batch Number	Detection Limits	Leak Test 24hr (psig str/stp)	
1178	89	20	3/8/16	WAC030816F	1µg+0.25	+ 30	+ 30
332						+	+
564						+	+
1195						+	+
89						+	+
484 (1.4)	212			G		+	+
1200						+	+
218						+	+
1204						+	+
212						+	+
214	1201			H		+	+
1198						+	+
1196						+	+
487						+	+
1201						+	+
						+	+
						+	+
						+	+
						+	+
						+	+
						+	+
						+	+
						+	+
						+	+
						+	+

Cleaned by: RSP

Form C151

Page # 150

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA2\2016FEB\AN021910.D Vial: 5
Acq On : 19 Feb 2016 2:58 pm Operator: RJP
Sample : WAC021916E Inst : MSD #1
Misc : A204_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 22 07:55:01 2016 Quant Results File: A204_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A204_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Feb 11 11:13:02 2016
Response via : Initial Calibration
DataAcq Meth : 1UG_RUN

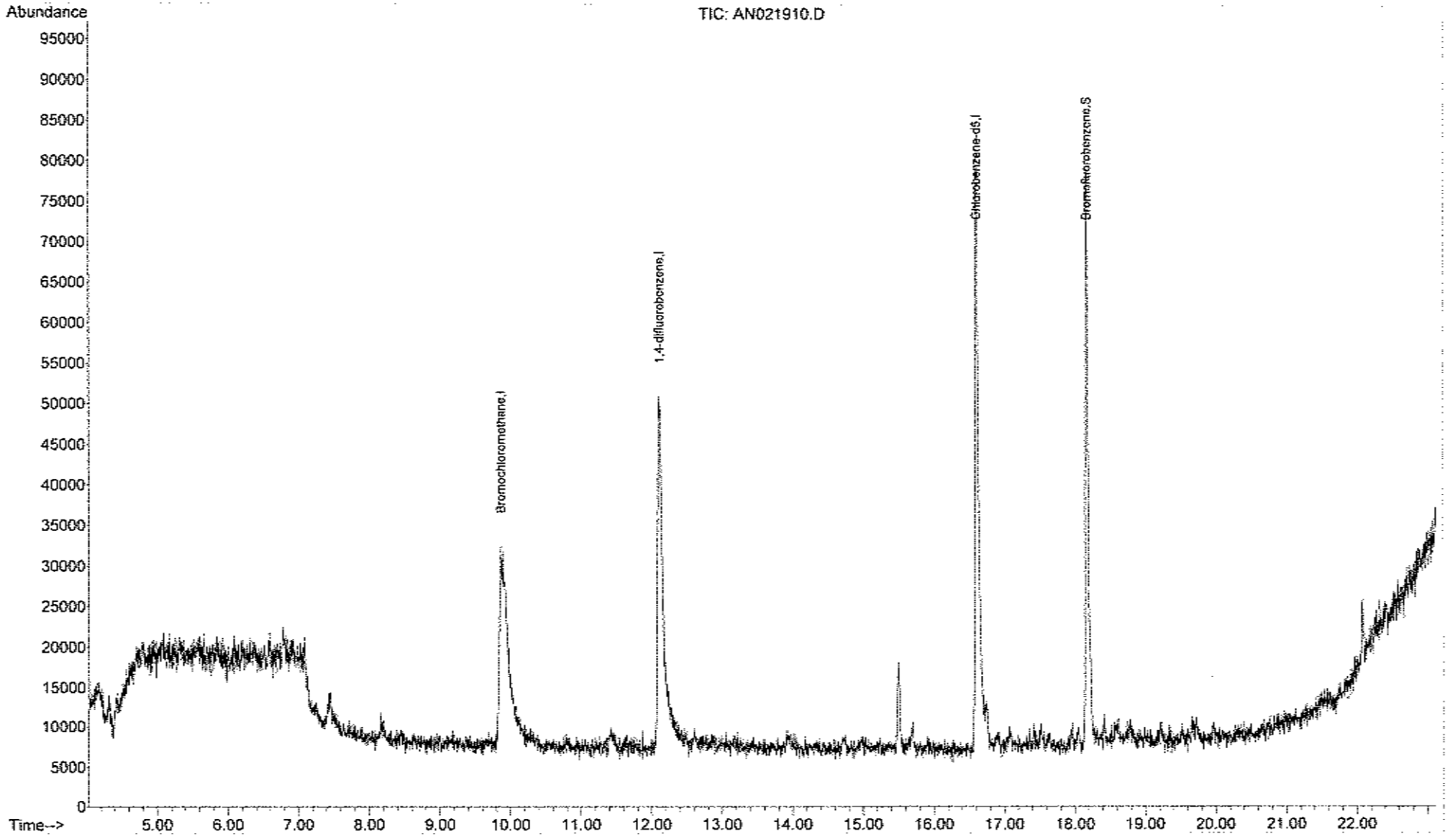
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	9.87	128	32071m	1.00	ppb	0.00
35) 1,4-difluorobenzene	12.12	114	87046	1.00	ppb	0.03
50) Chlorobenzene-d5	16.60	117	81502	1.00	ppb	0.02
System Monitoring Compounds						
66) Bromofluorobenzene	18.17	95	39860m	0.72	ppb	0.00
Spiked Amount 1.000	Range 70 - 130		Recovery = 72.00%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed
AN021910.D A316_1UG.M Wed Apr 27 09:43:41 2016 MSD1 Page 1

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA2\2016FEB\AN021910.D Vial: 5
Acq On : 19 Feb 2016 2:58 pm Operator: RJP
Sample : WAC021916E Inst : MSD #1
Misc : A204_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 22 9:02 2016 Quant Results File: A204_1UG.RES

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Apr 07 13:07:26 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA2\2016FEB\AN021911.D Vial: 6
Acq On : 19 Feb 2016 3:36 pm Operator: RJP
Sample : WAC021916F Inst : MSD #1
Misc : A204_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 22 07:55:02 2016 Quant Results File: A204_1UG.RES

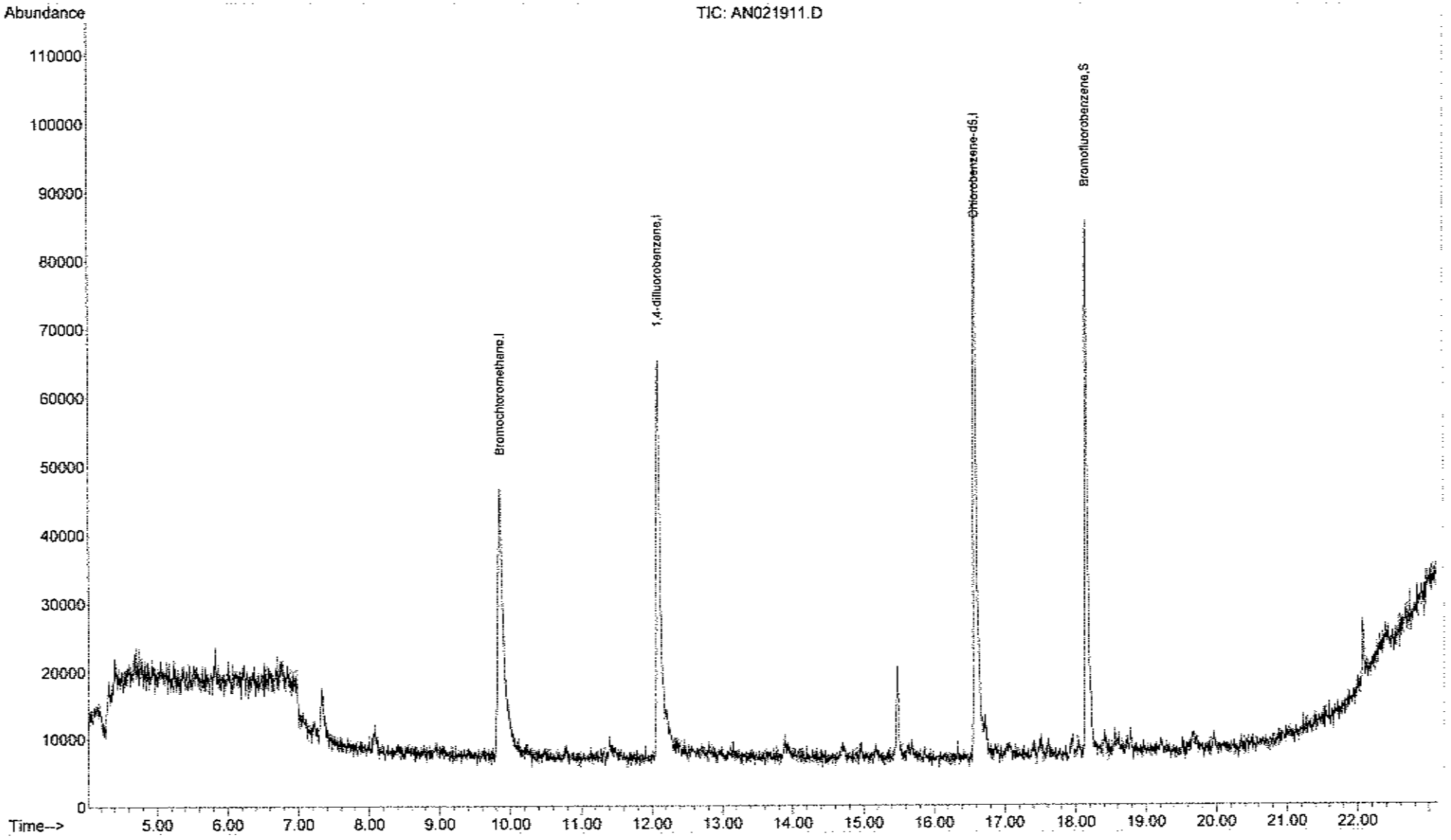
Quant Method : C:\HPCHEM\1\METHODS\A204_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Feb 11 11:13:02 2016
Response via : Initial Calibration
DataAcq Meth : 1UG_RUN

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	9.87	128	30090	1.00	ppb	0.01
35) 1,4-difluorobenzene	12.10	114	93261	1.00	ppb	0.01
50) Chlorobenzene-d5	16.59	117	83480	1.00	ppb	0.00
System Monitoring Compounds						
66) Bromofluorobenzene	18.16	95	40440m	0.71	ppb	0.00
Spiked Amount 1.000	Range 70 - 130		Recovery = 71.00%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\HPCHEM\1\DATA2\2016FEB\AN021911.D Vial: 6
Acq On : 19 Feb 2016 3:36 pm Operator: RJP
Sample : WAC021916F Inst : MSD #1
Misc : A204_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 22 9:02 2016 Quant Results File: A204_1UG.RES

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Apr 07 13:07:26 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA2\2016FEB\AN021912.D Vial: 1
Acq On : 19 Feb 2016 5:28 pm Operator: RJP
Sample : WAC021916G Inst : MSD #1
Misc : A204_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 22 07:55:03 2016 Quant Results File: A204_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A204_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Feb 11 11:13:02 2016
Response via : Initial Calibration
DataAcq Meth : 1UG_RUN

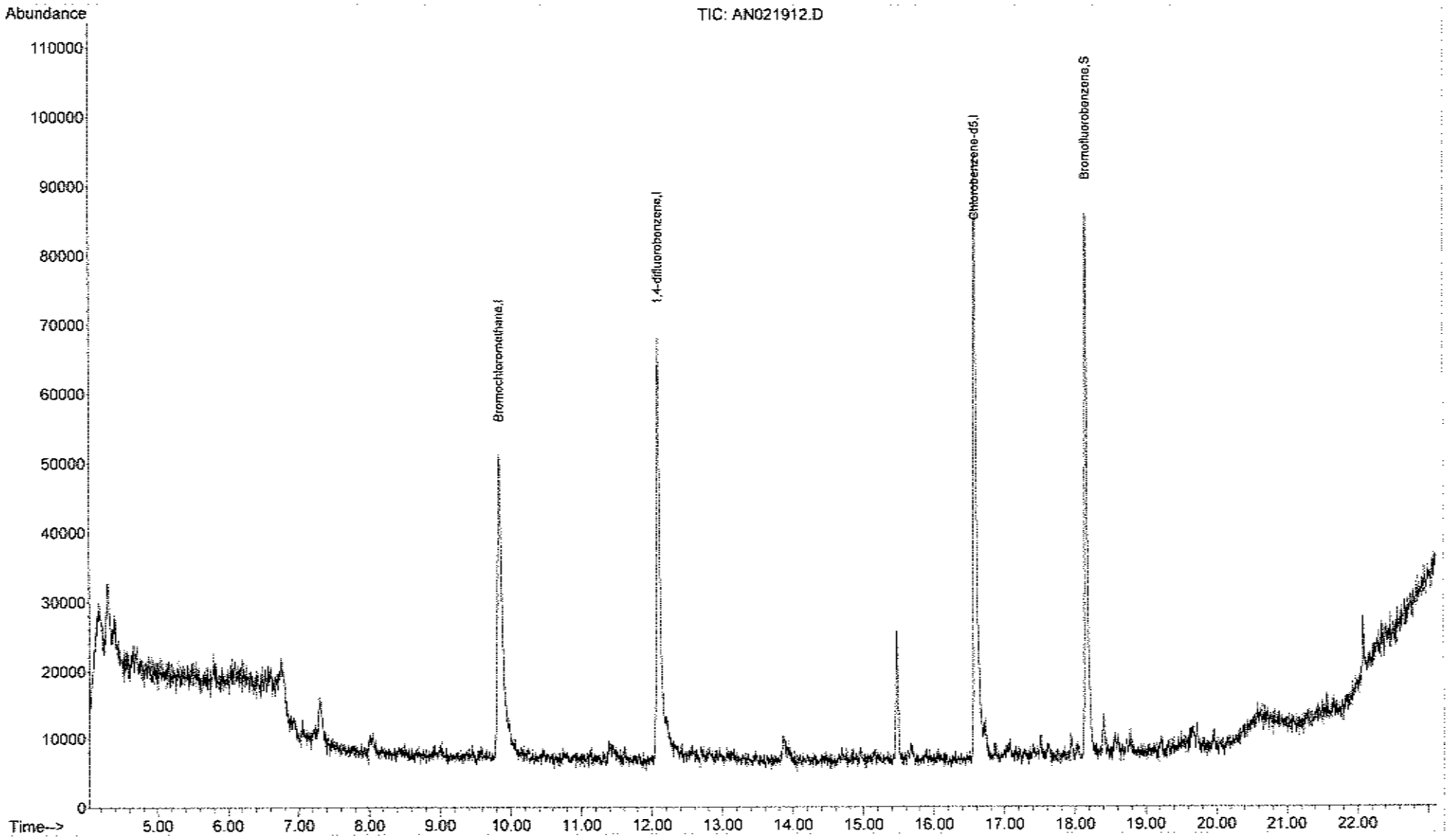
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	9.84	128	30565	1.00	ppb	-0.02
35) 1,4-difluorobenzene	12.09	114	86165	1.00	ppb	0.00
50) Chlorobenzene-d5	16.59	117	81355	1.00	ppb	0.00
System Monitoring Compounds						
66) Bromofluorobenzene	18.16	95	38855m	0.70	ppb	0.00
Spiked Amount 1.000	Range 70 - 130		Recovery = 70.00%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA2\2016FEB\AN021912.D Vial: 1
Acq On : 19 Feb 2016 5:28 pm Operator: RJP
Sample : WAC021916G Inst : MSD #1
Misc : A204_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 22 9:02 2016 Quant Results File: A204_1UG.RES

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Apr 07 13:07:26 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA2\2016FEB\AN021913.D Vial: 2
Acq On : 19 Feb 2016 6:05 pm Operator: RJP
Sample : WAC021916H Inst : MSD #1
Misc : A204_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 22 07:55:04 2016 Quant Results File: A204_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A204_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Feb 11 11:13:02 2016
Response via : Initial Calibration
DataAcq Meth : 1UG_RUN

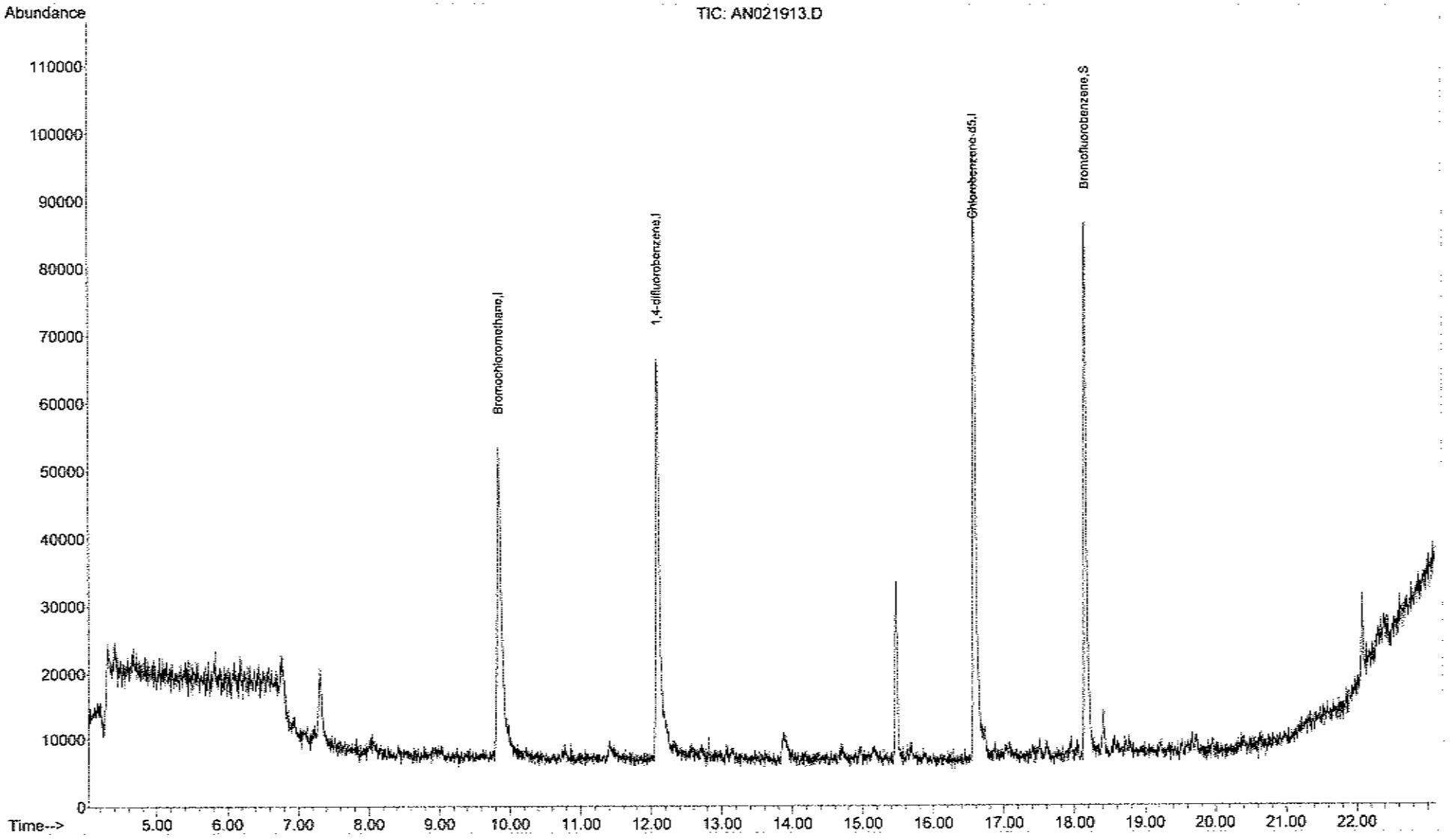
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	9.85	128	30719	1.00	ppb	0.00
35) 1,4-difluorobenzene	12.09	114	88980	1.00	ppb	0.00
50) Chlorobenzene-d5	16.58	117	82754	1.00	ppb	0.00
System Monitoring Compounds						
66) Bromofluorobenzene	18.16	95	42155m	0.75	ppb	0.00
Spiked Amount 1.000	Range 70 - 130		Recovery = 75.00%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA2\2016FEB\AN021913.D Vial: 2
Acq On : 19 Feb 2016 6:05 pm Operator: RJP
Sample : WAC021916H Inst : MSD #1
Misc : A204_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 22 9:02 2016 Quant Results File: A204_1UG.RES

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Apr 07 13:07:26 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA2\2016FEB\AN021914.D Vial: 3
Acq On : 19 Feb 2016 6:43 pm Operator: RJP
Sample : WAC021916I Inst : MSD #1
Misc : A204_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 22 07:55:05 2016 Quant Results File: A204_1UG.RES

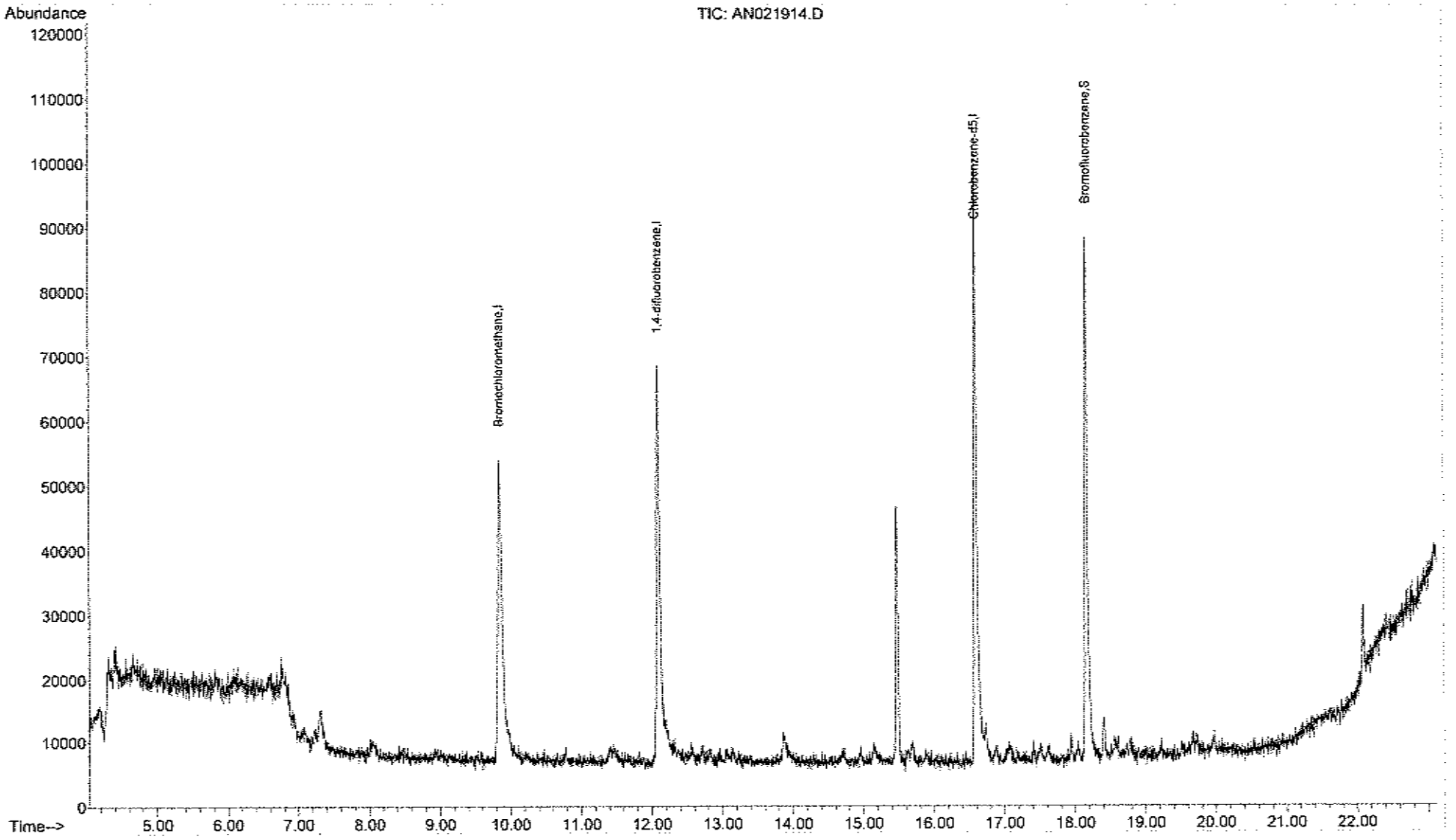
Quant Method : C:\HPCHEM\1\METHODS\A204_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Feb 11 11:13:02 2016
Response via : Initial Calibration
DataAcq Meth : 1UG_RUN

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	9.85	128	30896	1.00	ppb	-0.01
35) 1,4-difluorobenzene	12.09	114	90545	1.00	ppb	0.00
50) Chlorobenzene-d5	16.58	117	83125	1.00	ppb	0.00
System Monitoring Compounds						
66) Bromofluorobenzene	18.16	95	41130m	0.73	ppb	0.00
Spiked Amount 1.000	Range 70 - 130		Recovery = 73.00%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\HPCHEM\1\DATA2\2016FEB\AN021914.D Vial: 3
Acq On : 19 Feb 2016 6:43 pm Operator: RJP
Sample : WAC021916I Inst : MSD #1
Misc : A204_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 22 9:03 2016 Quant Results File: A204_1UG.RES

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Apr 07 13:07:26 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA2\2016FEB\AN021915.D Vial: 4
Acq On : 19 Feb 2016 7:20 pm Operator: RJP
Sample : WAC021916J Inst : MSD #1
Misc : A204_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 22 07:55:06 2016 Quant Results File: A204_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A204_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Feb 11 11:13:02 2016
Response via : Initial Calibration
DataAcq Meth : 1UG_RUN

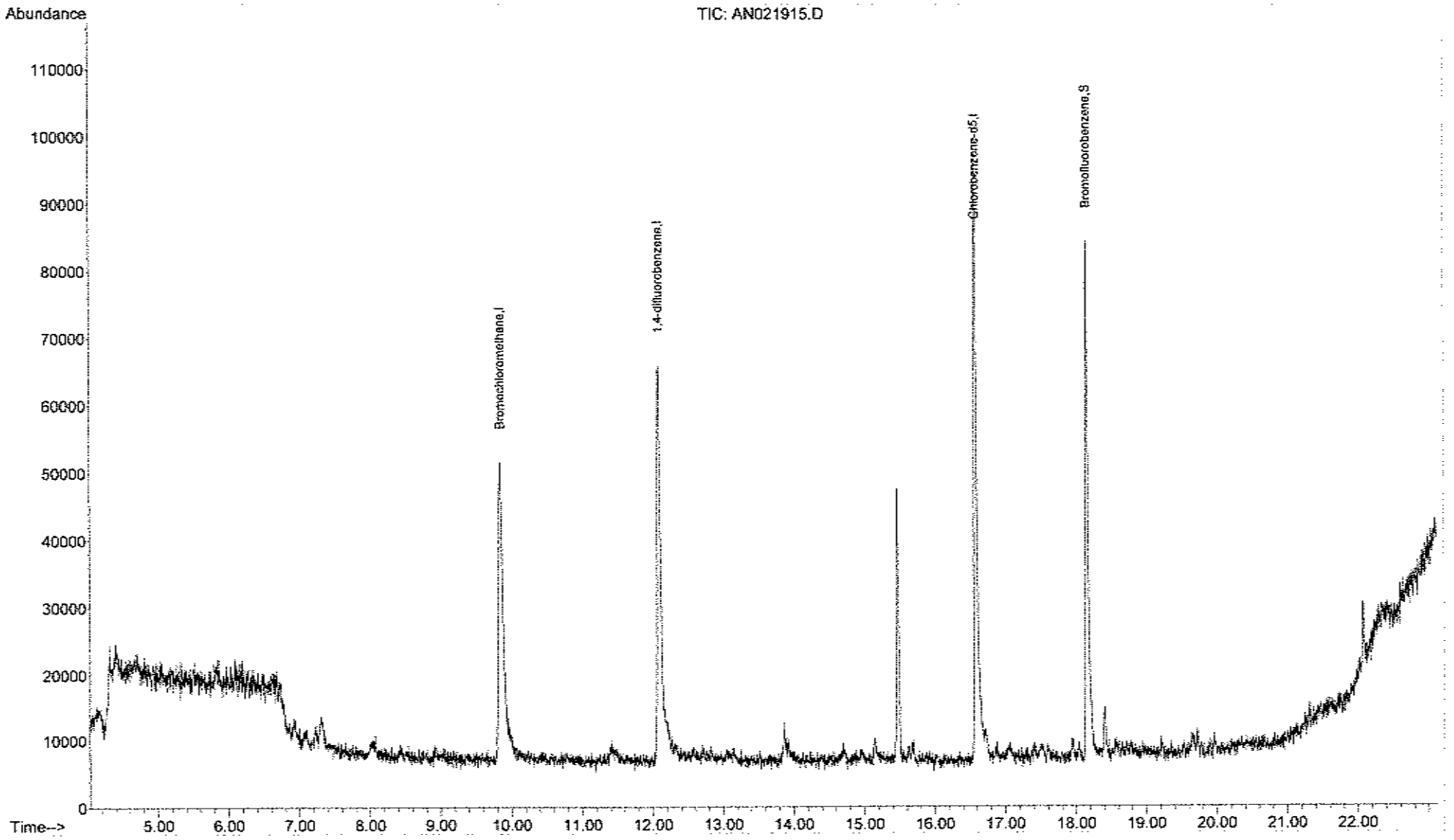
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	9.85	128	29544	1.00	ppb	0.00
35) 1,4-difluorobenzene	12.09	114	84494	1.00	ppb	0.00
50) Chlorobenzene-d5	16.58	117	79265	1.00	ppb	0.00
System Monitoring Compounds						
66) Bromofluorobenzene	18.16	95	39870m	0.74	ppb	0.00
Spiked Amount 1.000	Range 70 - 130		Recovery = 74.00%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA2\2016FEB\AN021915.D Vial: 4
Acq On : 19 Feb 2016 7:20 pm Operator: RJP
Sample : WAC021916J Inst : MSD #1
Misc : A204_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 22 9:03 2016 Quant Results File: A204_1UG.RES

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Apr 07 13:07:26 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA2\2016FEB\AN021916.D Vial: 5
Acq On : 19 Feb 2016 7:57 pm Operator: RJP
Sample : WAC021916K Inst : MSD #1
Misc : A204_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 22 07:55:07 2016 Quant Results File: A204_1UG.RES

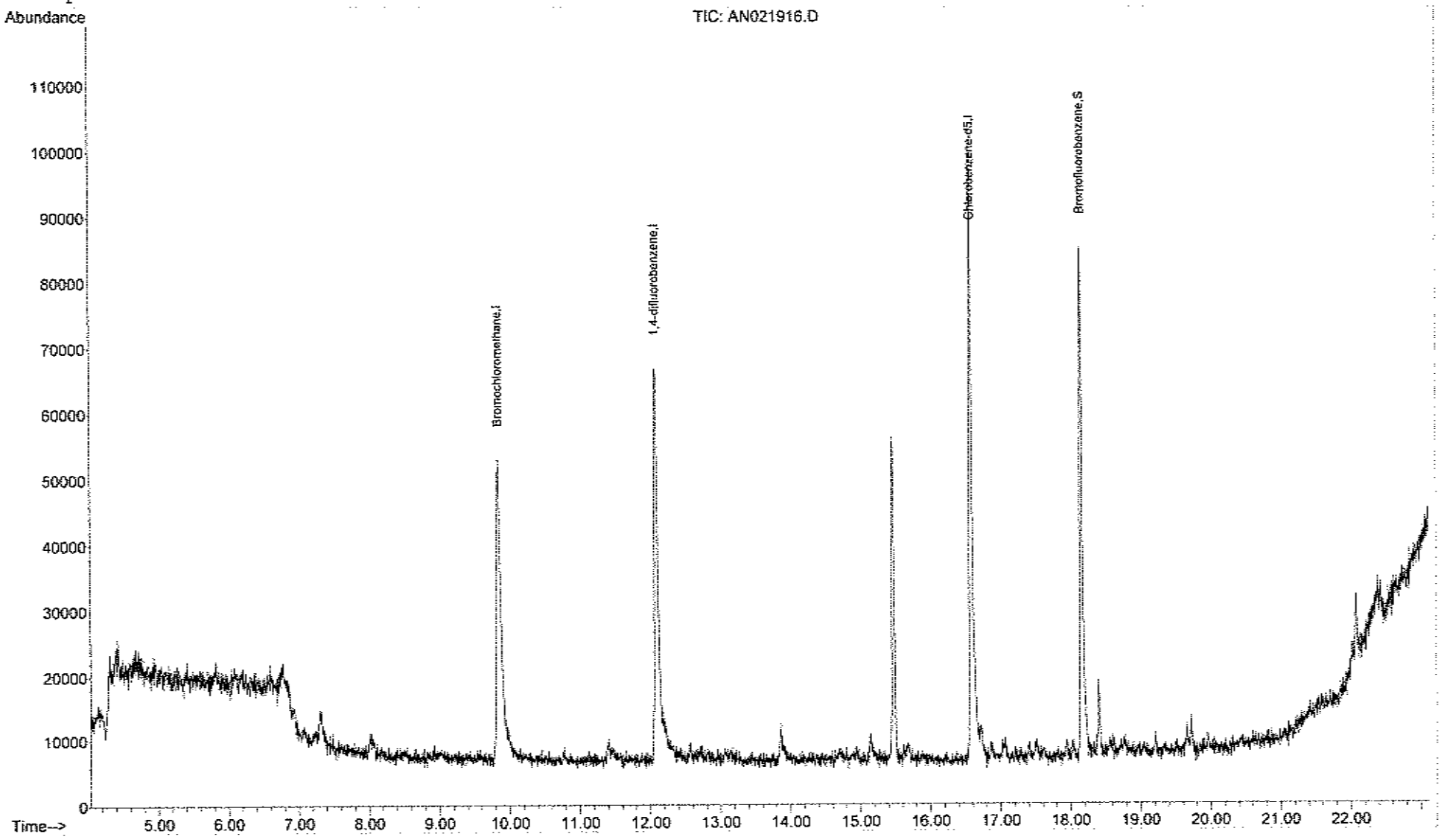
Quant Method : C:\HPCHEM\1\METHODS\A204_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Feb 11 11:13:02 2016
Response via : Initial Calibration
DataAcq Meth : 1UG_RUN

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	9.84	128	29343	1.00	ppb	-0.02
35) 1,4-difluorobenzene	12.10	114	88390	1.00	ppb	0.00
50) Chlorobenzene-d5	16.59	117	80484	1.00	ppb	0.00
System Monitoring Compounds						
66) Bromofluorobenzene	18.15	95	40271m	0.73	ppb	0.00
Spiked Amount 1.000	Range 70 - 130		Recovery = 73.00%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\HPCHEM\1\DATA2\2016FEB\AN021916.D Vial: 5
Acq On : 19 Feb 2016 7:57 pm Operator: RJP
Sample : WAC021916K Inst : MSD #1
Misc : A204_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 22 9:03 2016 Quant Results File: A204_1UG.RES

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Apr 07 13:07:26 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA2\AN030805.D Vial: 5
Acq On : 8 Mar 2016 2:56 pm Operator: RJP
Sample : WAC030816A Inst : MSD #1
Misc : A307_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 09 10:51:24 2016 Quant Results File: A307_1UG.RES

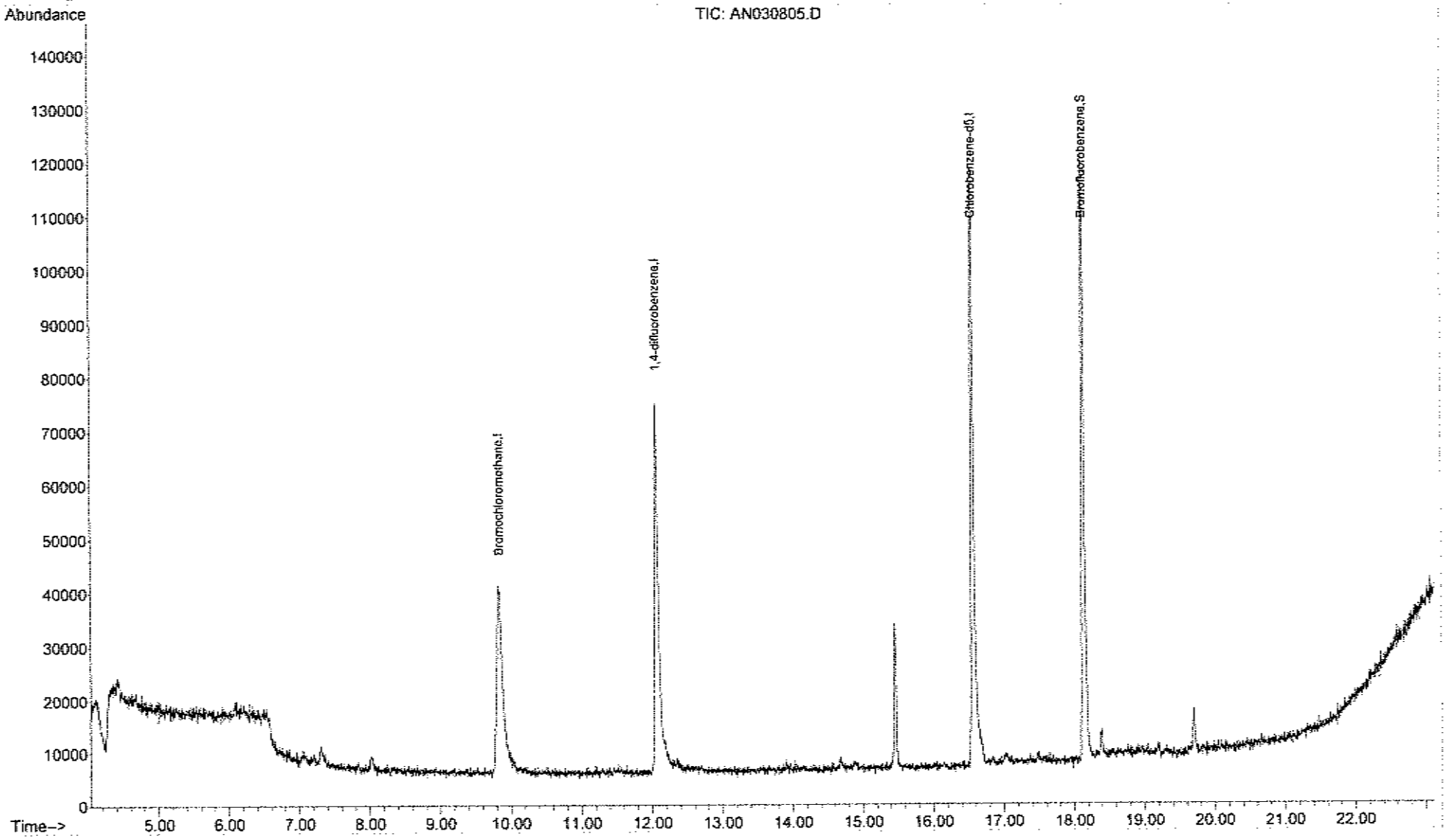
Quant Method : C:\HPCHEM\1\METHODS\A307_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Tue Mar 08 11:08:59 2016
Response via : Initial Calibration
DataAcq Meth : 1UG_RUN

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	9.83	128	25136	1.00	ppb	0.06
35) 1,4-difluorobenzene	12.07	114	116173	1.00	ppb	0.03
50) Chlorobenzene-d5	16.56	117	102380	1.00	ppb	0.02
System Monitoring Compounds						
66) Bromofluorobenzene	18.13	95	63120	0.83	ppb	0.02
Spiked Amount 1.000	Range 70 - 130		Recovery = 83.00%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\HPCHEM\1\DATA2\AN030805.D Vial: 5
Acq On : 8 Mar 2016 2:56 pm Operator: RJP
Sample : WAC030816A Inst : MSD #1
Misc : A307_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 14 10:17 2016 Quant Results File: A307_1UG.RES

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Apr 07 13:07:26 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA2\AN030806.D Vial: 6
Acq On : 8 Mar 2016 3:33 pm Operator: RJP
Sample : WAC030816B Inst : MSD #1
Misc : A307_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 09 10:51:30 2016 Quant Results File: A307_1UG.RES

Quant Method : C:\HPCHEM\1\METHODS\A307_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Tue Mar 08 11:08:59 2016
Response via : Initial Calibration
DataAcq Meth : 1UG_RUN

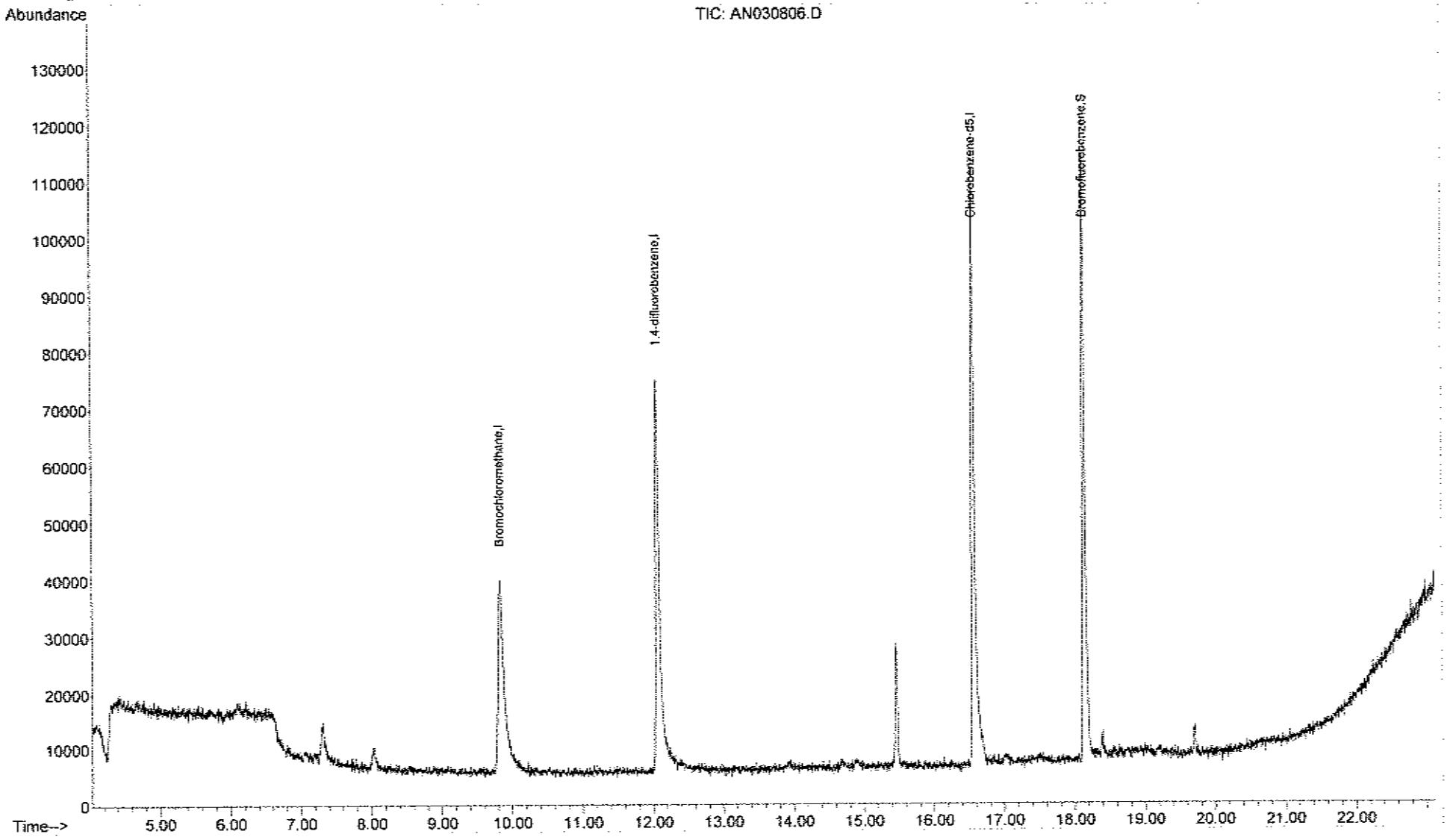
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	9.83	128	30593m	1.00	ppb	0.05
35) 1,4-difluorobenzene	12.06	114	115546	1.00	ppb	0.02
50) Chlorobenzene-d5	16.56	117	98368	1.00	ppb	0.02
System Monitoring Compounds						
66) Bromofluorobenzene	18.13	95	60091	0.82	ppb	0.02
Spiked Amount 1.000	Range 70 - 130		Recovery = 82.00%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA2\AN030806.D Vial: 6
Acq On : 8 Mar 2016 3:33 pm Operator: RJP
Sample : WAC030816B Inst : MSD #1
Misc : A307_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 14 10:17 2016 Quant Results File: A307_1UG.RES

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Apr 07 13:07:26 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA2\AN030807.D Vial: 7
Acq On : 8 Mar 2016 4:10 pm Operator: RJP
Sample : WAC030816C Inst : MSD #1
Misc : A307_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 09 10:51:37 2016 Quant Results File: A307_1UG.RES

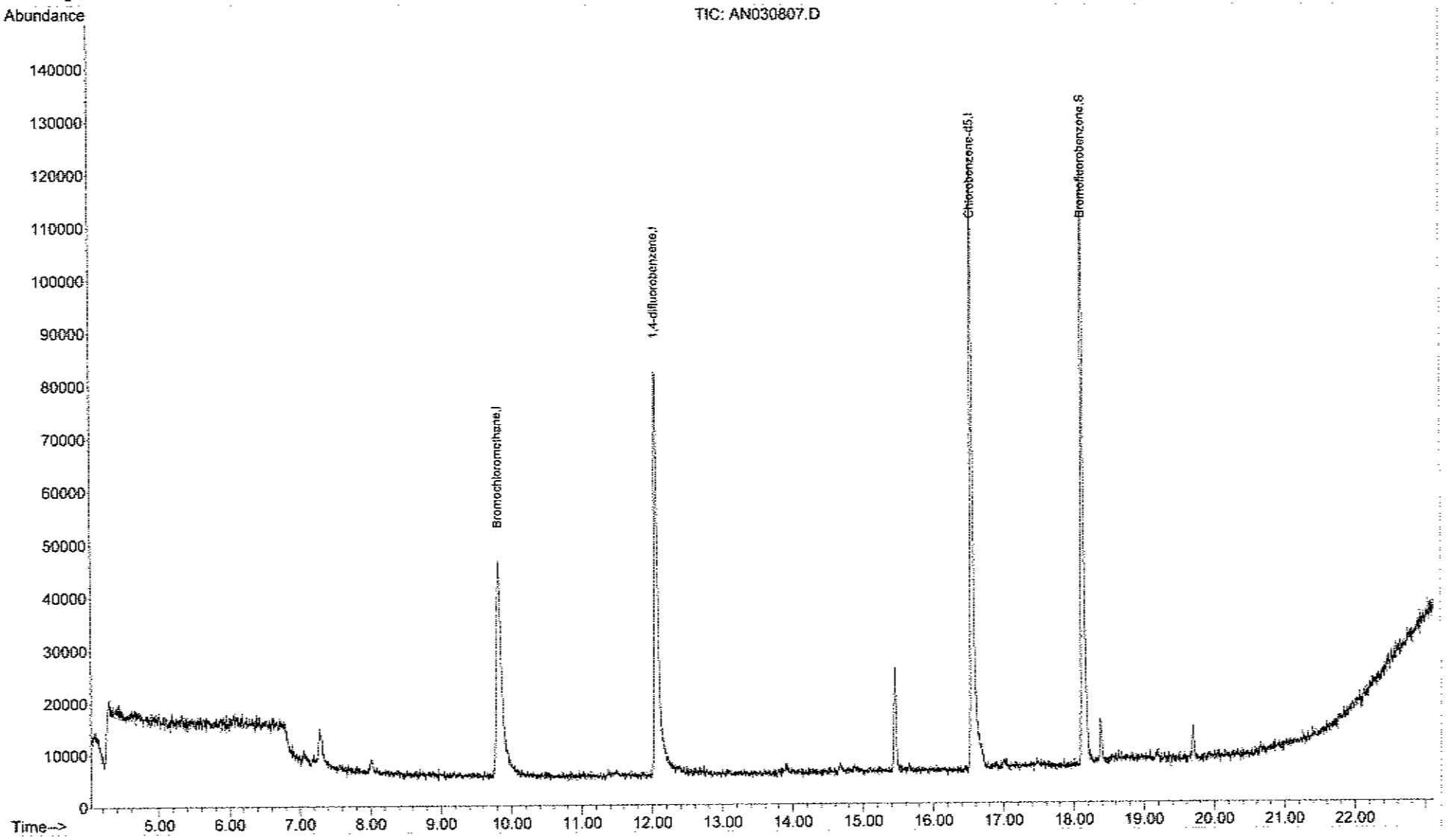
Quant Method : C:\HPCHEM\1\METHODS\A307_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Tue Mar 08 11:08:59 2016
Response via : Initial Calibration
DataAcq Meth : 1UG_RUN

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	9.82	128	31202m	1.00	ppb	0.04
35) 1,4-difluorobenzene	12.06	114	118323	1.00	ppb	0.02
50) Chlorobenzene-d5	16.56	117	102460	1.00	ppb	0.02
System Monitoring Compounds						
66) Bromofluorobenzene	18.13	95	63649	0.83	ppb	0.01
Spiked Amount 1.000	Range 70 - 130		Recovery = 83.00%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\HPCHEM\1\DATA2\AN030807.D Vial: 7
Acq On : 8 Mar 2016 4:10 pm Operator: RJP
Sample : WAC030816C Inst : MSD #1
Misc : A307_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 14 10:18 2016 Quant Results File: A307_1UG.RES

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Apr 07 13:07:26 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA2\AN030808.D Vial: 8
Acq On : 8 Mar 2016 4:48 pm Operator: RJP
Sample : WAC030816D Inst : MSD #1
Misc : A307_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 09 10:51:47 2016 Quant Results File: A307_1UG.RES

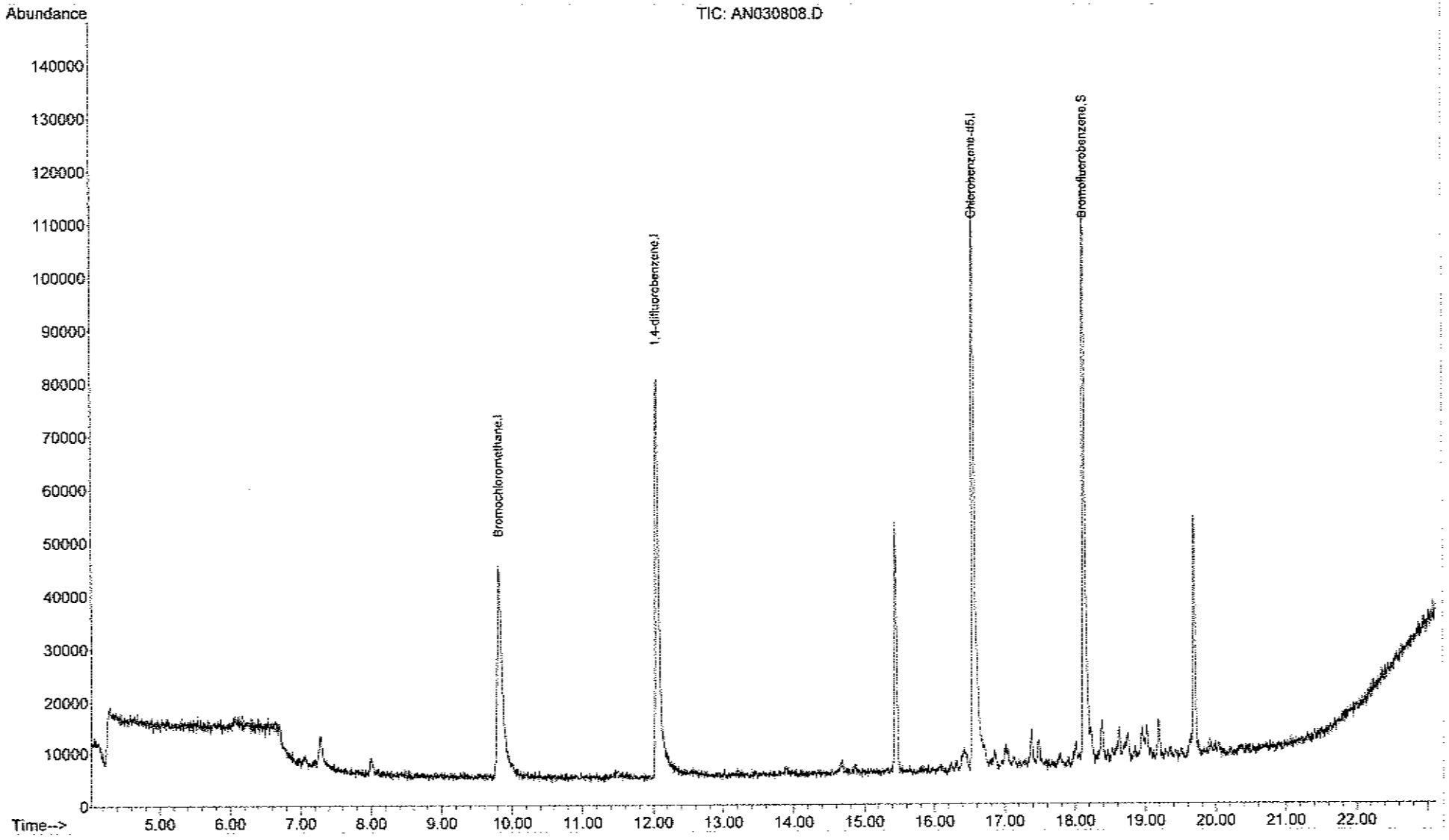
Quant Method : C:\HPCHEM\1\METHODS\A307_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Tue Mar 08 11:08:59 2016
Response via : Initial Calibration
DataAcq Meth : 1UG_RUN

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	9.83	128	30436m	1.00	ppb	0.05
35) 1,4-difluorobenzene	12.06	114	114980	1.00	ppb	0.02
50) Chlorobenzene-d5	16.56	117	98955	1.00	ppb	0.02
System Monitoring Compounds						
66) Bromofluorobenzene	18.13	95	61350	0.83	ppb	0.01
Spiked Amount 1.000	Range 70 - 130		Recovery = 83.00%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\HPCHEM\1\DATA2\AN030808.D Vial: 8
Acq On : 8 Mar 2016 4:48 pm Operator: RJP
Sample : WAC030816D Inst : MSD #1
Misc : A307_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 14 10:18 2016 Quant Results File: A307_1UG.RES

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Apr 07 13:07:26 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA2\AN030809.D Vial: 9
Acq On : 8 Mar 2016 5:25 pm Operator: RJP
Sample : WAC030816E Inst : MSD #1
Misc : A307_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 09 10:51:55 2016 Quant Results File: A307_1UG.RES

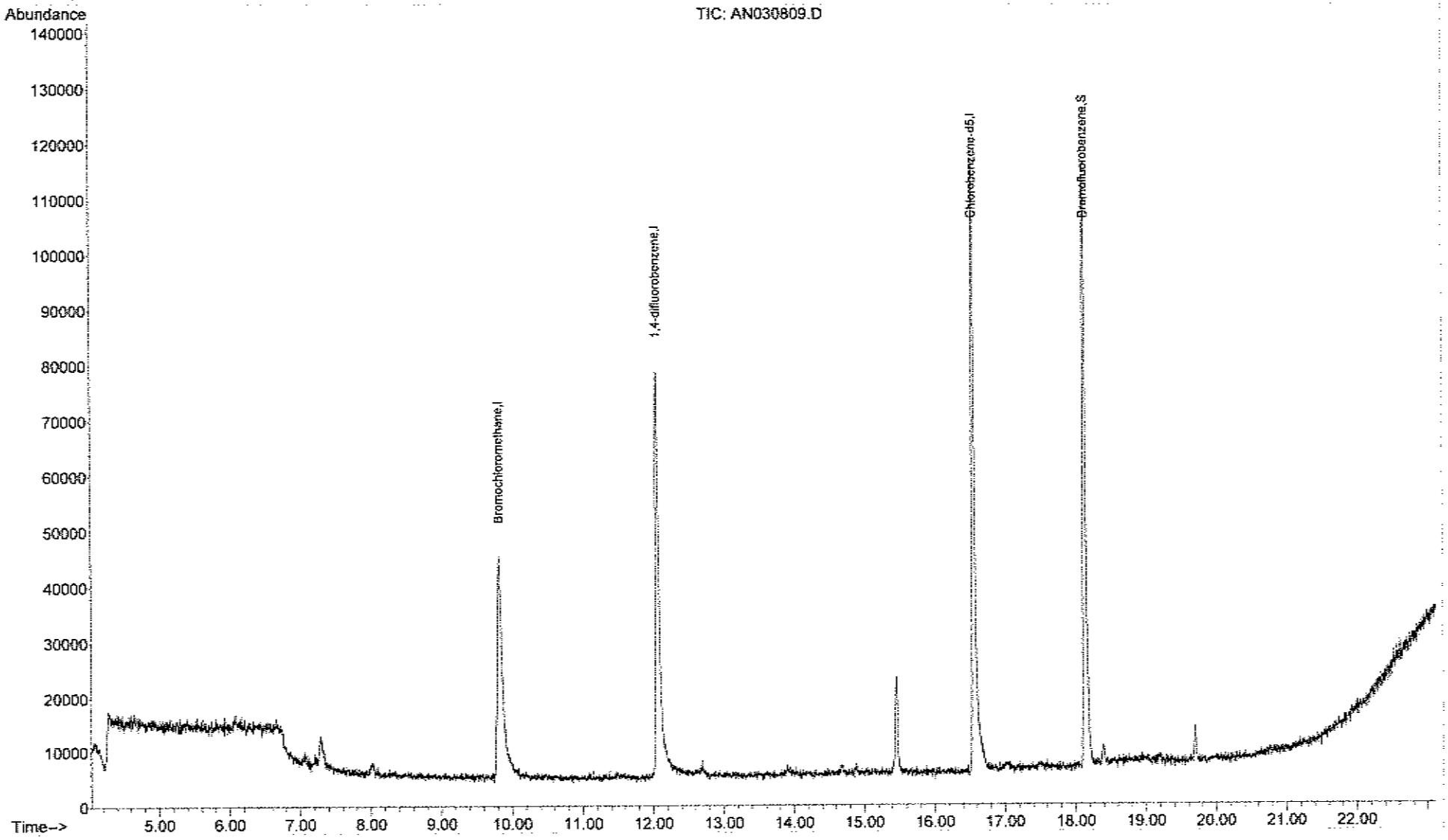
Quant Method : C:\HPCHEM\1\METHODS\A307_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Tue Mar 08 11:08:59 2016
Response via : Initial Calibration
DataAcq Meth : 1UG_RUN

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	9.82	128	29860m	1.00	ppb	0.05
35) 1,4-difluorobenzene	12.07	114	113615	1.00	ppb	0.03
50) Chlorobenzene-d5	16.56	117	100480	1.00	ppb	0.02
System Monitoring Compounds						
66) Bromofluorobenzene	18.13	95	60863	0.81	ppb	0.02
Spiked Amount 1.000	Range 70 - 130		Recovery = 81.00%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\HPCHEM\1\DATA2\AN030809.D Vial: 9
Acq On : 8 Mar 2016 5:25 pm Operator: RJP
Sample : WAC030816E Inst : MSD #1
Misc : A307_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 14 10:18 2016 Quant Results File: A307_1UG.RES

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Apr 07 13:07:26 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA2\AN030810.D Vial: 10
Acq On : 8 Mar 2016 6:03 pm Operator: RJP
Sample : WAC030816F Inst : MSD #1
Misc : A307_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 09 10:52:04 2016 Quant Results File: A307_1UG.RES

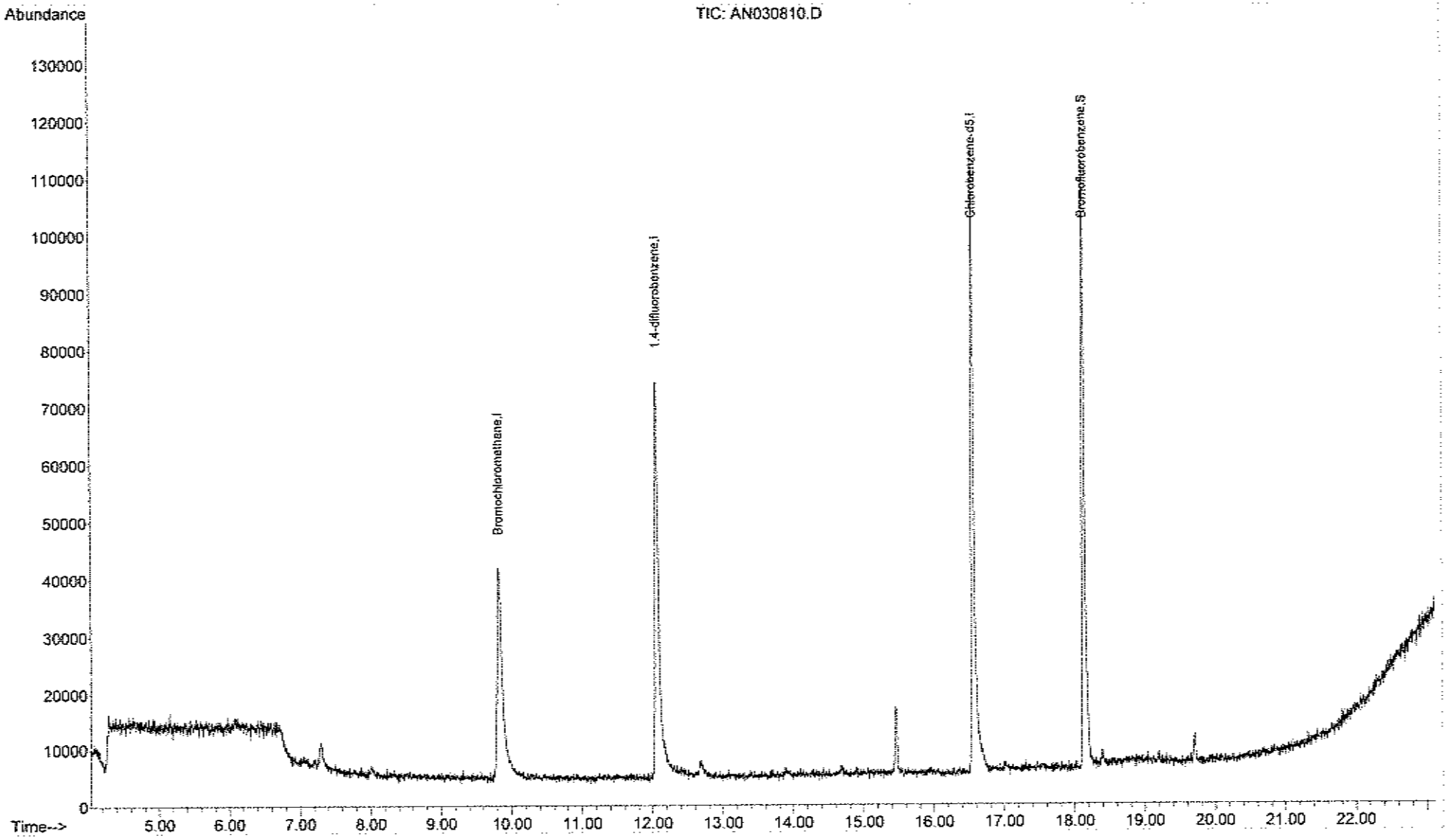
Quant Method : C:\HPCHEM\1\METHODS\A307_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Tue Mar 08 11:08:59 2016
Response via : Initial Calibration
DataAcq Meth : 1UG_RUN

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	9.83	128	24540	1.00	ppb	0.05
35) 1,4-difluorobenzene	12.07	114	110396	1.00	ppb	0.03
50) Chlorobenzene-d5	16.56	117	94956	1.00	ppb	0.02
System Monitoring Compounds						
66) Bromofluorobenzene	18.13	95	58532	0.83	ppb	0.01
Spiked Amount 1.000	Range 70 - 130		Recovery = 83.00%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\HPCHEM\1\DATA2\AN030810.D Vial: 10
Acq On : 8 Mar 2016 6:03 pm Operator: RJP
Sample : WAC030816F Inst : MSD #1
Misc : A307_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 14 10:18 2016 Quant Results File: A307_1UG.RES

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Apr 07 13:07:26 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA2\AN030811.D Vial: 11
Acq On : 8 Mar 2016 6:40 pm Operator: RJP
Sample : WAC030816G Inst : MSD #1
Misc : A307_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 09 10:52:16 2016 Quant Results File: A307_1UG.RES

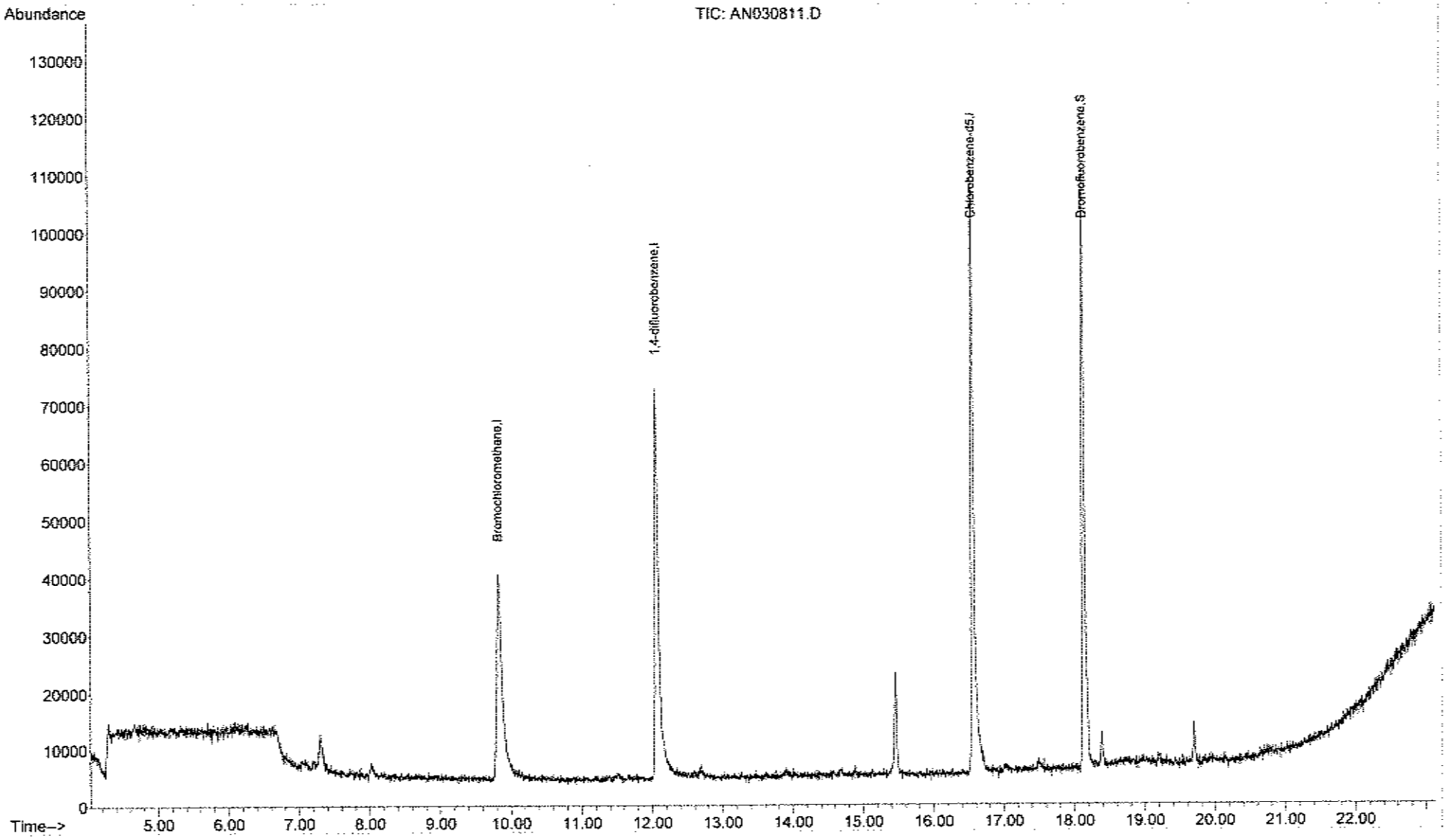
Quant Method : C:\HPCHEM\1\METHODS\A307_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Tue Mar 08 11:08:59 2016
Response via : Initial Calibration
DataAcq Meth : 1UG_RUN

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	9.82	128	23554	1.00	ppb	0.05
35) 1,4-difluorobenzene	12.07	114	106376	1.00	ppb	0.03
50) Chlorobenzene-d5	16.56	117	94041	1.00	ppb	0.02
System Monitoring Compounds						
66) Bromofluorobenzene	18.13	95	57324	0.82	ppb	0.02
Spiked Amount 1.000	Range 70 - 130		Recovery = 82.00%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\HPCHEM\1\DATA2\AN030811.D Vial: 11
Acq On : 8 Mar 2016 6:40 pm Operator: RJP
Sample : WAC030816G Inst : MSD #1
Misc : A307_1UG MultiplIr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 14 10:18 2016 Quant Results File: A307_1UG.RES

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Apr 07 13:07:26 2016
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA2\AN030812.D Vial: 12
Acq On : 8 Mar 2016 7:18 pm Operator: RJP
Sample : WAC030816H Inst : MSD #1
Misc : A307_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 09 10:52:25 2016 Quant Results File: A307_1UG.RES

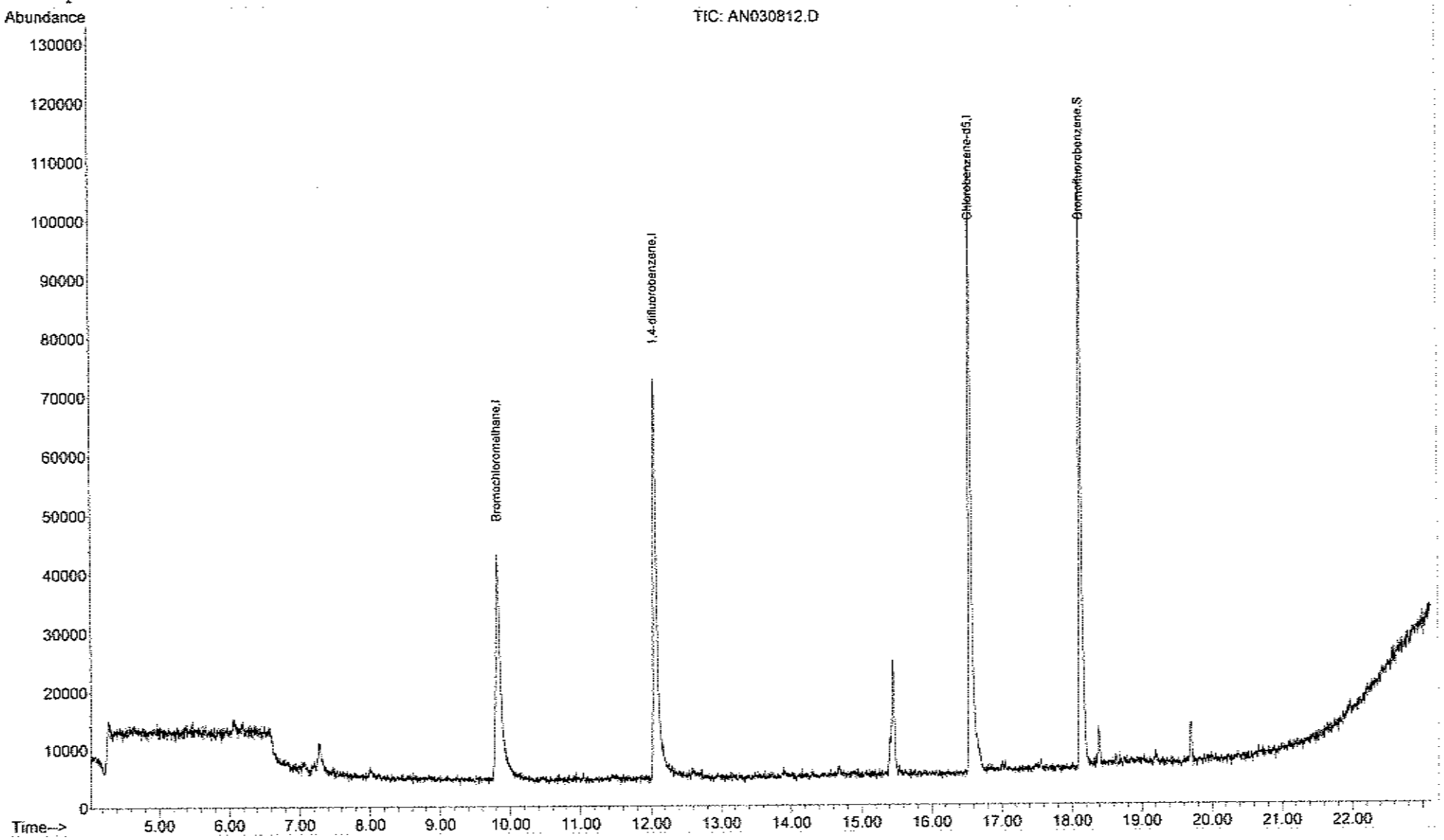
Quant Method : C:\HPCHEM\1\METHODS\A307_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Tue Mar 08 11:08:59 2016
Response via : Initial Calibration
DataAcq Meth : 1UG_RUN

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	9.82	128	23978	1.00	ppb	0.05
35) 1,4-difluorobenzene	12.06	114	103270	1.00	ppb	0.02
50) Chlorobenzene-d5	16.56	117	93006	1.00	ppb	0.02
System Monitoring Compounds						
66) Bromofluorobenzene	18.14	95	55535	0.80	ppb	0.02
Spiked Amount 1.000	Range 70 - 130		Recovery = 80.00%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : C:\HPCHEM\1\DATA2\AN030812.D Vial: 12
Acq On : 8 Mar 2016 7:18 pm Operator: RJP
Sample : WAC030816H Inst : MSD #1
Misc : A307_1UG Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 14 10:19 2016 Quant Results File: A307_1UG.RES

Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration
Last Update : Thu Apr 07 13:07:26 2016
Response via : Initial Calibration



LaBella Associates, D.P.C.
300 State Street

Rochester, New York 14614

Appendix 2

Data Usability Summary Report

DATA USABILITY SUMMARY REPORT

for

LaBella Associates, P.C.

300 State Street

Rochester, NY 14614

FORMER EMERSON LANDFILL
Project 210173
SDG: C1603075
Sampled 3/26/2016

TO-15 AIR SAMPLES

1645-SVI-1	(C1603075-01)
1645-IAQ-1	(C1603075-02)
1645-SVI-2	(C1603075-03)
1645-IAQ-2	(C1603075-04)
OUTDOOR-1645	(C1603075-05)

DATA ASSESSMENT

One data package containing analytical results for five TO-15 samples was received from LaBella Associates, P.C. on 3Apr16. The ASP deliverables package included formal reports, raw data, the necessary QC, and supporting information. The samples, taken from the Former Emerson Landfill Site, were identified by Chain of Custody documents and traceable through the work of Centek Laboratories, LLC, the laboratory contracted for analysis. The analyses were performed using US EPA Method TO-15 and addressed measurements of ten volatile organic compounds. Laboratory data was evaluated according to the quality assurance / quality control requirements of the New York State Department of Environmental Conservation's Analytical Services Protocol (ASP), September 1989, Rev. 07/2005. When the required protocol was not followed, the current EPA Region II Functional Guidelines (SOP HW-31, Rev. #4, October 2006, Volatile Organic Analysis of Ambient Air in Canisters by Method TO-15) was used as a technical reference.

The trichloroethene concentration found in 1645-IAQ-1 has been qualified as an estimation due to a high surrogate standard recovery.

The reported concentration of trichloroethene in 1645-IAQ-1 was not supported by the raw data. Trichloroethene should be interpreted as undetected in this sample.

CORRECTNESS AND USABILITY

Reported data should be considered technically defensible and completely usable in its present form. Reported concentrations that are felt to provide a usable estimation of the conditions at the time of sampling have been flagged "J". Estimated data should be used with caution. A detailed discussion of the review process follows.

Two facts should be considered by all data users. No compound concentration, even if it has passed all QC testing, can be guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error. Secondly. DATAVAL, Inc. guarantees the quality of this data assessment. However, DATAVAL, Inc. does not warrant any interpretation or utilization of this data by a third party.

Reviewer's signature: James B. Baldwin Date: 10 May 16

James B. Baldwin
DATAVAL, Inc.

SAMPLE HISTORY

Analyte concentrations can deteriorate with time due to chemical instability, bacterial degradation or volatility. Samples that are not properly preserved or are not analyzed within established holding times may no longer be considered representative. Holding times are calculated from the date of sampling. TO-15 samples must be analyzed within 14 days of collection.

This sample delivery group contained five TO-15 samples that were collected in 1-liter SUMMA canisters. Sampling was completed on 26Mar16. The canisters were shipped back to the laboratory, via FedEx, on 28Mar16 and were received on 29Mar16. Although the sample canisters were received intact and properly labeled, custody seals were not present on the packaging.

Canister vacuum readings were recorded in the laboratory prior to shipment, in the field prior to and following sampling, and in the laboratory at the time of receipt.

SAMPLE	PRIOR TO SHIPMENT ("Hg)	PRIOR TO SAMPLING ("Hg)	POST SAMPLING ("Hg)	LAB RECEIPT ("Hg)
575-OUTDOOR	-30	-30	-2	-2
575-SVI-1	-30	-30	-1	-2
575-IAQ-1	-30	-30	-2	-2
575-SVI-2	-30	-28	-1.5	-2
575-IAQ-2	-30	-30	-2.75	-3

The final vacuum readings recorded for this group of samples were slightly outside of the ASP limits of -5±1"Hg. These slight deviations do not necessitate data qualifications because vacuum was maintained in each of the canisters and sample volumes were sufficient to complete the necessary analyses.

The analysis of this group of samples was completed between 31Mar16 and 01Apr16, satisfying the ASP holding time limitation.

CANISTER CERTIFICATION

The canisters used for this project were pressure tested at 30 psig for 24 hours. Each canister demonstrated a change ≤0.5 psig over this period.

The canisters were cleaned in four batches. A blank analysis of a clean canister from each batch was free of targeted analyte contamination above the reporting limit.

BLANKS

Blanks are analyzed to evaluate various sources of sample contamination. Trip Blanks monitor sampling activities, sample transport, and storage. Method blanks are analyzed to verify instrument integrity. Samples are considered compromised by conditions causing contamination in any blank.

Two method blanks were analyzed with this group of samples. Each

of these blanks demonstrated acceptable chromatography and was free of targeted analyte contamination.

MS TUNING

Mass spectrometer tuning and performance criteria are established to ensure sufficient mass resolution and sensitivity to accurately detect and identify targeted analytes. Verification is accomplished using a certified standard.

BFB ion abundance criteria was reported from standards run before the initial instrument calibration and prior to the analysis of program samples. Each of these checks satisfied the ASP acceptance criteria.

CALIBRATION

Requirements for instrument calibration are established to ensure that laboratory equipment is capable of producing accurate, quantitative data. Initial calibrations demonstrate a range through which measurements may be made. Continuing calibration standards verify instrument stability.

The initial instrument calibration was performed on 04Feb16. Standards of 0.04, 0.15, 0.30, 0.50, 0.75, 1.0, 1.25, 1.50 and 2.0 ppbV were included. Each targeted analyte produced the required levels of instrument response and demonstrated an acceptable degree of linearity during this calibration.

Continuing calibration check standards were analyzed on 31Mar16, 01Apr16 and 02Apr16, prior to the 24-hour periods of instrument operation that included samples from this program. When compared to the initial calibration, an acceptable level of instrument stability was demonstrated by each targeted analyte.

SURROGATES

Each sample, blank and standard is spiked with surrogate compounds prior to analysis. The structures of surrogates are similar to analytes of interest, but they are not normally found in environmental samples. Surrogate recoveries are monitored to evaluate overall laboratory performance and the efficiency of laboratory technique.

Although surrogate summary sheets were properly prepared, an incorrect acceptance criteria was applied. When compared to the ASP requirements, elevated recoveries were reported for the BFB additions to 1645-IAQ-1 (122%), 1645-SVI-2 (128%), and 1645-IAQ-2 (125%). The trichloroethene concentrations found in 1645-IAQ-1 and 1645-SVI-2 have been qualified as estimations based on these indications of positive bias. The remaining associated results were negative.

INTERNAL STANDARDS

Internal standards are added to each sample, blank and standard just prior to injection. Analyte concentrations are calculated relative to the response of a specific internal standard.

Internal standard performance criteria ensure that GC/MS sensitiv-

ity and response are stable during the analysis of each sample. The area of internal standard peaks may not vary by more than 40%. When compared to the preceding calibration check, retention times may not vary by more than 10 seconds.

The laboratory recorded the response of each internal standard addition to this group of samples and the response obtained from the preceding CCV standards. Although the control limits based on the response of the CCV were not reported, they were calculated by this reviewer. When compared to these limits, acceptable performance was reported for each internal standard addition to this group of samples.

MATRIX SPIKES / MATRIX SPIKE DUPLICATES / MATRIX SPIKED BLANKS

Matrix spiking refers to the addition of known analyte concentrations to a sample, prior to analysis. Analyte recoveries provide an indication of laboratory accuracy. The analysis of a duplicate spiked aliquot provides a measurement of precision.

1645-IAQ-2 was selected for matrix spiking. Each targeted analyte was added to two portions of this sample. The recoveries reported for these additions included high results for chloromethane (176%,181%). These indications of positive bias, however, warrant no concern. Chloromethane was not detected in this group of smaples. The remaining analytes demonstrated acceptable levels of measurement precision and accuracy.

Two pairs of spiked blanks (LCS/LCSD) were also analyzed with this group of samples. Both of these spiked blank pairs demonstrated acceptable levels of measurement precision and accuracy.

DUPLICATES

Two aliquots of the same sample are processed separately through all aspects of sample preparation and analysis. Results produced by the analysis of this pair of samples are compared as a measurement of precision. Poor precision may be indicative of sample non-homogeneity, method defects, or poor laboratory technique.

Although a field split duplicate sample was not included in this delivery group, the previously reported spiked blanks demonstrated an acceptable level of measurement precision.

REPORTED ANALYTES

Formal reports were provided for each sample. The data package also included total ion chromatograms and raw instrument printouts. Reference mass spectra were provided to confirm the identification of each analyte that was detected in this group of samples.

Although trichloroethene was reported as present in 1645-IAQ-1, the result was not supported by the raw data. Trichloroethene should be interpreted as undetected in this sample.

SUMMARY OF QUALIFIED DATA

FORMER EMERSON LANDFIL

SAMPLED MARCH 2016

		SURROGATES TCE	CORRECT TCE
1645-SVI-1	(C1603075-01)		
1645-IAQ-1	(C1603075-02)		0.21U
1645-SVI-2	(C1603075-03)	0.91J	
1645-IAQ-2	(C1603075-04)		
OUTDOOR-1645	(C1603075-05)		

Centek Laboratories, LLC

Date: *26-Apr-16*

CLIENT:	LaBella Associates, P.C.	**Client Sample ID:**	1645-SV1-1
Lab Order:	C1603075	**Tag Number:**	567,301
Project:	FESL Emerson Landfill	**Collection Date:**	3/26/2016
Lab ID:	C1603075-001A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		TO-15				Analyst: RJP
1,1,1-Trichloroethane	< 0.82	0.82		ug/m3	1	4/1/2016 8:10:00 AM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	4/1/2016 8:10:00 AM
1,1-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 8:10:00 AM
Chloroethane	< 0.40	0.40		ug/m3	1	4/1/2016 8:10:00 AM
Chloromethane	< 0.31	0.31		ug/m3	1	4/1/2016 8:10:00 AM
cis-1,2-Dichloroethene	2.6	0.59		ug/m3	1	4/1/2016 8:10:00 AM
Tetrachloroethylene	< 1.0	1.0		ug/m3	1	4/1/2016 8:10:00 AM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 8:10:00 AM
Trichloroethene	13	1.6		ug/m3	2	4/1/2016 1:59:00 PM
Vinyl chloride	< 0.38	0.38		ug/m3	1	4/1/2016 8:10:00 AM

Qualifiers:

**	Reporting Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *26-Apr-16*

CLIENT:	LaBella Associates, P.C.	**Client Sample ID:**	1645-1AQ-1
Lab Order:	C1603075	**Tag Number:**	93,1165
Project:	FESL Emerson Landfill	**Collection Date:**	3/26/2016
Lab ID:	C1603075-002A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.25UG/M3 CT-TCE-VC		**TO-15**				Analyst: RJP
1,1,1-Trichloroethane	< 0.82	0.82		ug/m3	1	4/1/2016 1:04:00 AM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	4/1/2016 1:04:00 AM
1,1-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 1:04:00 AM
Chloroethane	< 0.40	0.40		ug/m3	1	4/1/2016 1:04:00 AM
Chloromethane	< 0.31	0.31		ug/m3	1	4/1/2016 1:04:00 AM
cis-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 1:04:00 AM
Tetrachloroethylene	< 1.0	1.0		ug/m3	1	4/1/2016 1:04:00 AM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 1:04:00 AM
Trichloroethene	0.21 ~~0.38~~	0.21	U	ug/m3	1	4/1/2016 1:04:00 AM
Vinyl chloride	< 0.10	0.10		ug/m3	1	4/1/2016 1:04:00 AM

Qualifiers:

**	Reporting Limit
B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
JN	Non-routine analyte. Quantitation estimated.
S	Spike Recovery outside accepted recovery limits
.	Results reported are not blank corrected
E	Value above quantitation range
J	Analyte detected at or below quantitation limits
ND	Not Detected at the Reporting Limit

Centek Laboratories, LLC

Date: *26-Apr-16*

CLIENT:	LaBella Associates, P.C.	**Client Sample ID:**	1645-SVI-2
Lab Order:	C1603075	**Tag Number:**	332,387
Project:	FESL Emerson Landfill	**Collection Date:**	3/26/2016
Lab ID:	C1603075-003A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 BY METHOD TO15		TO-15				Analyst: RJP
1,1,1-Trichloroethane	< 0.82	0.82		ug/m3	1	4/1/2016 8:49:00 AM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	4/1/2016 8:49:00 AM
1,1-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 8:49:00 AM
Chloroethane	< 0.40	0.40		ug/m3	1	4/1/2016 8:49:00 AM
Chloromethane	< 0.31	0.31		ug/m3	1	4/1/2016 8:49:00 AM
cis-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 8:49:00 AM
Tetrachloroethylene	< 1.0	1.0		ug/m3	1	4/1/2016 8:49:00 AM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 8:49:00 AM
Trichloroethene	0.91	0.81	J	ug/m3	1	4/1/2016 8:49:00 AM
Vinyl chloride	< 0.38	0.38		ug/m3	1	4/1/2016 8:49:00 AM

Qualifiers:

*	Reporting Limit	-	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: *26-Apr-16*

CLIENT:	LaBella Associates, P.C.	**Client Sample ID:**	1645-IAQ-2
Lab Order:	C1603075	**Tag Number:**	483,438
Project:	FESL Emerson Landfill	**Collection Date:**	3/26/2016
Lab ID:	C1603075-004A	**Matrix:**	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.25UG/M3 CT-TCE-VC		TO-15				Analyst: RJP
1,1,1-Trichloroethane	< 0.82	0.82		ug/m3	1	3/31/2016 11:01:00 PM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	3/31/2016 11:01:00 PM
1,1-Dichloroethene	< 0.59	0.59		ug/m3	1	3/31/2016 11:01:00 PM
Chloroethane	< 0.40	0.40		ug/m3	1	3/31/2016 11:01:00 PM
Chloromethane	< 0.31	0.31		ug/m3	1	3/31/2016 11:01:00 PM
cis-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	3/31/2016 11:01:00 PM
Tetrachloroethylene	< 1.0	1.0		ug/m3	1	3/31/2016 11:01:00 PM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	3/31/2016 11:01:00 PM
Trichloroethene	< 0.21	0.21		ug/m3	1	3/31/2016 11:01:00 PM
Vinyl chloride	< 0.10	0.10		ug/m3	1	3/31/2016 11:01:00 PM

Qualifiers:

*	Reporting Limit		Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Centek Laboratories, LLC

Date: 26-Apr-16

CLIENT:	LaBella Associates, P.C.	Client Sample ID:	Outdoor-1645
Lab Order:	C1603075	Tag Number:	1178,174
Project:	FESL Emerson Landfill	Collection Date:	3/26/2016
Lab ID:	C1603075-005A	Matrix:	AIR

Analyses	Result	**Limit	Qual	Units	DF	Date Analyzed
1UG/M3 W/ 0.25UG/M3 CT-TCE-VC		TO-15				Analyst: RJP
1,1,1-Trichloroethane	< 0.82	0.82		ug/m3	1	4/1/2016 1:43:00 AM
1,1-Dichloroethane	< 0.61	0.61		ug/m3	1	4/1/2016 1:43:00 AM
1,1-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 1:43:00 AM
Chloroethane	< 0.40	0.40		ug/m3	1	4/1/2016 1:43:00 AM
Chloromethane	1.8	0.31		ug/m3	1	4/1/2016 1:43:00 AM
cis-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 1:43:00 AM
Tetrachloroethylene	1.1	1.0		ug/m3	1	4/1/2016 1:43:00 AM
trans-1,2-Dichloroethene	< 0.59	0.59		ug/m3	1	4/1/2016 1:43:00 AM
Trichloroethene	0.91	0.21		ug/m3	1	4/1/2016 1:43:00 AM
Vinyl chloride	< 0.10	0.10		ug/m3	1	4/1/2016 1:43:00 AM

Qualifiers:

**	Reporting Limit	.	Results reported are not blank corrected
B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected at or below quantitation limits
JN	Non-routine analyte. Quantitation estimated.	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Date: 26-Apr-16

CENTEK LABORATORIES, LLC

QC SUMMARY REPORT
SURROGATE RECOVERIES

CLIENT: LaBella Associates, P.C.
Work Order: C1603075
Project: FESL Emerson Landfill
Test No: TO-15 Matrix: A

Sample ID	BR4FBZ
ALCS1UG-033116	115
ALCS1UG-040116	116
ALCS1UGD-033116	118
ALCS1UGD-040116	108
AMB1UG-033116	88.0
AMB1UG-040116	91.0
C1603075-001A	83.0
C1603075-002A	122
C1603075-003A	128
C1603075-004A	125
C1603075-004A MS	116
C1603075-004A MSD	107
C1603075-005A	108

Acronym	Surrogate	QC Limits
BR4FBZ	= Bromofluorobenzene	70-130

* Surrogate recovery outside acceptance limits

GC/MS QA-QC Check Report

Tune File : C:\HPCHEM\1\DATA2\AN033104.D
Tune Time : 31 Mar 2016 12:19 pm

Daily Calibration File : C:\HPCHEM\1\DATA2\AN033104.D

			(BFB)	(IS1)	(IS2)	(IS3)
				21478	48888	36495
File	Sample	DL	Surrogate Recovery %	Internal Standard Responses		
AN033105.D	ALCS1UG-033116		115	20235	53595	32893
AN033106.D	AMB1UG-033116		88	20032	47930	44161
AN033121.D	C1603075-004A		125	18446	48996	28479
AN033122.D	C1603075-004A MS		116	22331	56616	32647
AN033123.D	C1603075-004A MSD		107	23633	65314	36439
AN033124.D	C1603075-002A		122	19820	53432	33425
AN033125.D	C1603075-005A		108	16834	44868	47627
AN033133.D	ALCS1UGD-033116		118	22710	52964	34225
AN033134.D	C1603075-001A		83	17132	53087	40047
AN033135.D	C1603075-003A		120	23254	62475	44101

t - fails 24hr time check * - fails criteria

Created: Tue Apr 26 15:33:02 2016 MSD #1/

GC/MS QA-QC Check Report

Tune File : C:\HPCHEM\1\DATA\AN040102.D
Tune Time : 1 Apr 2016 12:06 pm

Daily Calibration File : C:\HPCHEM\1\DATA\AN040102.D

			(BFB)	(IS1)	(IS2)	(IS3)
				20214	45908	32719
File	Sample	DL	Surrogate Recovery %	Internal Standard Responses		
AN040103.D	ALCS1UG-040116		116	20858	46019	31397
AN040104.D	AMB1UG-040116		91	18252	46023	41257
AN040105.D	C1603075-001A	2X	103	16216	51303	38793
AN040125.D	ALCS1UGD-040116		108	20437	45874	33404

t - fails 24hr time check * - fails criteria

Created: Tue Apr 26 15:34:25 2016 MSD #1/

CENTEK LABORATORIES, LLC

Date: 26-Apr-16

ANALYTICAL QC SUMMARY REPORT

CLIENT: LaBella Associates, P.C.
Work Order: C1603075
Project: FESL Emerson Landfill

TestCode: 0.25CT-TCE-VC

Sample ID AMB1UG-033116	SampType: MBLK	TestCode: 0.25CT-TCE-	Units: ppbV	Prep Date:	RunNo: 10817
Client ID: ZZZZZ	Batch ID: R10817	TestNo: TO-15		Analysis Date: 3/31/2016	SeqNo: 127095

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	< 0.15	0.15									
1,1-Dichloroethane	< 0.15	0.15									
1,1-Dichloroethene	< 0.15	0.15									
Chloroethane	< 0.15	0.15									
Chloromethane	< 0.15	0.15									
cis-1,2-Dichloroethene	< 0.15	0.15									
Tetrachloroethylene	< 0.15	0.15									
trans-1,2-Dichloroethene	< 0.15	0.15									
Trichloroethene	< 0.040	0.040									
Vinyl chloride	< 0.040	0.040									

Sample ID AMB1UG-040116	SampType: MBLK	TestCode: 0.25CT-TCE-	Units: ppbV	Prep Date:	RunNo: 10818
Client ID: ZZZZZ	Batch ID: R10818	TestNo: TO-15		Analysis Date: 4/1/2016	SeqNo: 127112

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	< 0.15	0.15									
1,1-Dichloroethane	< 0.15	0.15									
1,1-Dichloroethene	< 0.15	0.15									
Chloroethane	< 0.15	0.15									
Chloromethane	< 0.15	0.15									
cis-1,2-Dichloroethene	< 0.15	0.15									
Tetrachloroethylene	< 0.15	0.15									
trans-1,2-Dichloroethene	< 0.15	0.15									
Trichloroethene	< 0.040	0.040									

Qualifiers:

- . Results reported are not blank corrected
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected at or below quantitation limits
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

CLIENT: LaBella Associates, P.C.
Work Order: C1603075
Project: FESL Emerson Landfill

TestCode: 0.25CT-TCE-VC

Sample ID	AMB1UG-040116	SampType:	MBLK	TestCode:	0.25CT-TCE-	Units:	ppbV	Prep Date:		RunNo:	10818		
Client ID:	ZZZZZ	Batch ID:	R10818	TestNo:	TO-15			Analysis Date:	4/1/2016	SeqNo:	127112		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride		< 0.040		0.040									

Qualifiers:
- . Results reported are not blank corrected
- J Analyte detected at or below quantitation limits
- S Spike Recovery outside accepted recovery limits
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- H Holding times for preparation or analysis exceeded
- R RPD outside accepted recovery limits

CENTEK LABORATORIES, LLC

Date: 26-Apr-16

ANALYTICAL QC SUMMARY REPORT

CLIENT: LaBella Associates, P.C.
Work Order: C1603075
Project: FESL Emerson Landfill

TestCode: 0.25CT-TCE-VC

Sample ID ALCS1UG-033116	SampType: LCS	TestCode: 0.25CT-TCE-	Units: ppbV	Prep Date:	RunNo: 10817
Client ID: ZZZZZ	Batch ID: R10817	TestNo: TO-15		Analysis Date: 3/31/2016	SeqNo: 127096

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	1.250	0.15	1	0	125	70	130				
1,1-Dichloroethane	1.120	0.15	1	0	112	70	130				
1,1-Dichloroethene	1.120	0.15	1	0	112	70	130				
Chloroethane	1.220	0.15	1	0	122	70	130				
Chloromethane	1.230	0.15	1	0	123	70	130				
cis-1,2-Dichloroethene	1.060	0.15	1	0	106	70	130				
Tetrachloroethylene	0.9200	0.15	1	0	92.0	70	130				
trans-1,2-Dichloroethene	1.050	0.15	1	0	105	70	130				
Trichloroethene	1.110	0.040	1	0	111	70	130				
Vinyl chloride	1.090	0.040	1	0	109	70	130				

Sample ID ALCS1UG-040116	SampType: LCS	TestCode: 0.25CT-TCE-	Units: ppbV	Prep Date:	RunNo: 10818
Client ID: ZZZZZ	Batch ID: R10818	TestNo: TO-15		Analysis Date: 4/1/2016	SeqNo: 127113

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	1.290	0.15	1	0	129	70	130				
1,1-Dichloroethane	1.040	0.15	1	0	104	70	130				
1,1-Dichloroethene	1.100	0.15	1	0	110	70	130				
Chloroethane	1.130	0.15	1	0	113	70	130				
Chloromethane	1.230	0.15	1	0	123	70	130				
cis-1,2-Dichloroethene	0.9800	0.15	1	0	98.0	70	130				
Tetrachloroethylene	0.8800	0.15	1	0	88.0	70	130				
trans-1,2-Dichloroethene	0.9900	0.15	1	0	99.0	70	130				
Trichloroethene	1.230	0.040	1	0	123	70	130				

Qualifiers:

- . Results reported are not blank corrected
- J Analyte detected at or below quantitation limits
- S Spike Recovery outside accepted recovery limits
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- H Holding times for preparation or analysis exceeded
- R RPD outside accepted recovery limits

CLIENT: LaBella Associates, P.C.
Work Order: C1603075
Project: FESL Emerson Landfill

TestCode: 0.25CT-TCE-VC

Sample ID	ALCS1UG-040116	SampType:	LCS	TestCode:	0.25CT-TCE-	Units:	ppbV	Prep Date:		RunNo:	10818		
Client ID:	ZZZZZ	Batch ID:	R10818	TestNo:	TO-15			Analysis Date:	4/1/2016	SeqNo:	127113		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Vinyl chloride		1.100	0.040	1	0	110	70	130					

Qualifiers:

- `.` Results reported are not blank corrected
- `J` Analyte detected at or below quantitation limits
- `S` Spike Recovery outside accepted recovery limits
- `E` Value above quantitation range
- `ND` Not Detected at the Reporting Limit
- `H` Holding times for preparation or analysis exceeded
- `R` RPD outside accepted recovery limits

CENTEK LABORATORIES, LLC

Date: 26-Apr-16

ANALYTICAL QC SUMMARY REPORT

CLIENT: LaBella Associates, P.C.
Work Order: C1603075
Project: FESL Emerson Landfill

TestCode: 0.25CT-TCE-VC

Sample ID ALCS1UGD-033116	SampType: LCSD	TestCode: 0.25CT-TCE-	Units: ppbV	Prep Date:	RunNo: 10817
Client ID: ZZZZZ	Batch ID: R10817	TestNo: TO-15		Analysis Date: 4/1/2016	SeqNo: 127097

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	1.280	0.15	1	0	128	70	130	1.25	2.37	30	
1,1-Dichloroethane	1.040	0.15	1	0	104	70	130	1.12	7.41	30	
1,1-Dichloroethene	1.120	0.15	1	0	112	70	130	1.12	0	30	
Chloroethane	1.250	0.15	1	0	125	70	130	1.22	2.43	30	
Chloromethane	1.210	0.15	1	0	121	70	130	1.23	1.64	30	
cis-1,2-Dichloroethene	1.010	0.15	1	0	101	70	130	1.06	4.83	30	
Tetrachloroethylene	0.9000	0.15	1	0	90.0	70	130	0.92	2.20	30	
trans-1,2-Dichloroethene	1.000	0.15	1	0	100	70	130	1.05	4.88	30	
Trichloroethene	1.150	0.040	1	0	115	70	130	1.11	3.54	30	
Vinyl chloride	1.050	0.040	1	0	105	70	130	1.09	3.74	30	

Sample ID ALCS1UGD-040116	SampType: LCSD	TestCode: 0.25CT-TCE-	Units: ppbV	Prep Date:	RunNo: 10818
Client ID: ZZZZZ	Batch ID: R10818	TestNo: TO-15		Analysis Date: 4/2/2016	SeqNo: 127114

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	1.280	0.15	1	0	128	70	130	1.29	0.778	30	
1,1-Dichloroethane	1.040	0.15	1	0	104	70	130	1.04	0	30	
1,1-Dichloroethene	1.100	0.15	1	0	110	70	130	1.1	0	30	
Chloroethane	1.240	0.15	1	0	124	70	130	1.13	9.28	30	
Chloromethane	1.230	0.15	1	0	123	70	130	1.23	0	30	
cis-1,2-Dichloroethene	0.9400	0.15	1	0	94.0	70	130	0.98	4.17	30	
Tetrachloroethylene	0.8300	0.15	1	0	83.0	70	130	0.88	5.85	30	
trans-1,2-Dichloroethene	0.9600	0.15	1	0	96.0	70	130	0.99	3.08	30	
Trichloroethene	1.210	0.040	1	0	121	70	130	1.23	1.64	30	

Qualifiers:

- . Results reported are not blank corrected
- J Analyte detected at or below quantitation limits
- S Spike Recovery outside accepted recovery limits
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- H Holding times for preparation or analysis exceeded
- R RPD outside accepted recovery limits

CLIENT: LaBella Associates, P.C.
Work Order: C1603075
Project: FESL Emerson Landfill

TestCode: 0.25CT-TCE-VC

Sample ID	ALCS1UGD-040116	SampType:	LCSD	TestCode:	0.25CT-TCE-	Units:	ppbV	Prep Date:		RunNo:	10818		
Client ID:	ZZZZZ	Batch ID:	R10818	TestNo:	TO-15			Analysis Date:	4/2/2016	SeqNo:	127114		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride		1.070		0.040	1	0	107	70	130	1.1	2.76	30	

Qualifiers:
- . Results reported are not blank corrected
- J Analyte detected at or below quantitation limits
- S Spike Recovery outside accepted recovery limits
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- H Holding times for preparation or analysis exceeded
- R RPD outside accepted recovery limits

CENTEK LABORATORIES, LLC

Date: 26-Apr-16

ANALYTICAL QC SUMMARY REPORT

CLIENT: LaBella Associates, P.C.
Work Order: C1603075
Project: FESL Emerson Landfill

TestCode: 0.25CT-TCE-VC

Sample ID C1603075-004A MS	SampType: MS	TestCode: 0.25CT-TCE-	Units: ppbV	Prep Date:	RunNo: 10817
Client ID: 1645-IAQ-2	Batch ID: R10817	TestNo: TO-15		Analysis Date: 3/31/2016	SeqNo: 127108

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	1.140	0.15	1	0	114	70	130				
1,1-Dichloroethane	1.060	0.15	1	0	106	70	130				
1,1-Dichloroethene	1.110	0.15	1	0	111	70	130				
Chloroethane	1.140	0.15	1	0	114	70	130				
Chloromethane	1.760	0.15	1	0	176	70	130				S
cis-1,2-Dichloroethene	1.080	0.15	1	0	108	70	130				
Tetrachloroethylene	0.9300	0.15	1	0	93.0	70	130				
trans-1,2-Dichloroethene	1.110	0.15	1	0	111	70	130				
Trichloroethene	1.130	0.040	1	0	113	70	130				
Vinyl chloride	1.020	0.040	1	0	102	70	130				

Sample ID C1603075-004A MS	SampType: MSD	TestCode: 0.25CT-TCE-	Units: ppbV	Prep Date:	RunNo: 10817
Client ID: 1645-IAQ-2	Batch ID: R10817	TestNo: TO-15		Analysis Date: 4/1/2016	SeqNo: 127109

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	1.020	0.15	1	0	102	70	130	1.14	11.1	30	
1,1-Dichloroethane	1.080	0.15	1	0	108	70	130	1.06	1.87	30	
1,1-Dichloroethene	1.150	0.15	1	0	115	70	130	1.11	3.54	30	
Chloroethane	1.130	0.15	1	0	113	70	130	1.14	0.881	30	
Chloromethane	1.810	0.15	1	0	181	70	130	1.76	2.80	30	S
cis-1,2-Dichloroethene	1.160	0.15	1	0	116	70	130	1.08	7.14	30	
Tetrachloroethylene	0.9700	0.15	1	0	97.0	70	130	0.93	4.21	30	
trans-1,2-Dichloroethene	1.100	0.15	1	0	110	70	130	1.11	0.905	30	
Trichloroethene	1.100	0.040	1	0	110	70	130	1.13	2.69	30	

Qualifiers:
- . Results reported are not blank corrected
- J Analyte detected at or below quantitation limits
- S Spike Recovery outside accepted recovery limits
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- H Holding times for preparation or analysis exceeded
- R RPD outside accepted recovery limits

CLIENT: LaBella Associates, P.C.
Work Order: C1603075
Project: FESL Emerson Landfill

TestCode: 0.25CT-TCE-VC

Sample ID	C1603075-004A MS	SampType:	MSD	TestCode:	0.25CT-TCE-	Units:	ppbV	Prep Date:		RunNo:	10817
Client ID:	1645-IAQ-2	Batch ID:	R10817	TestNo:	TO-15			Analysis Date:	4/1/2016	SeqNo.	127109

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	0.9900	0.040	1	0	99.0	70	130	1.02	2.99	30	

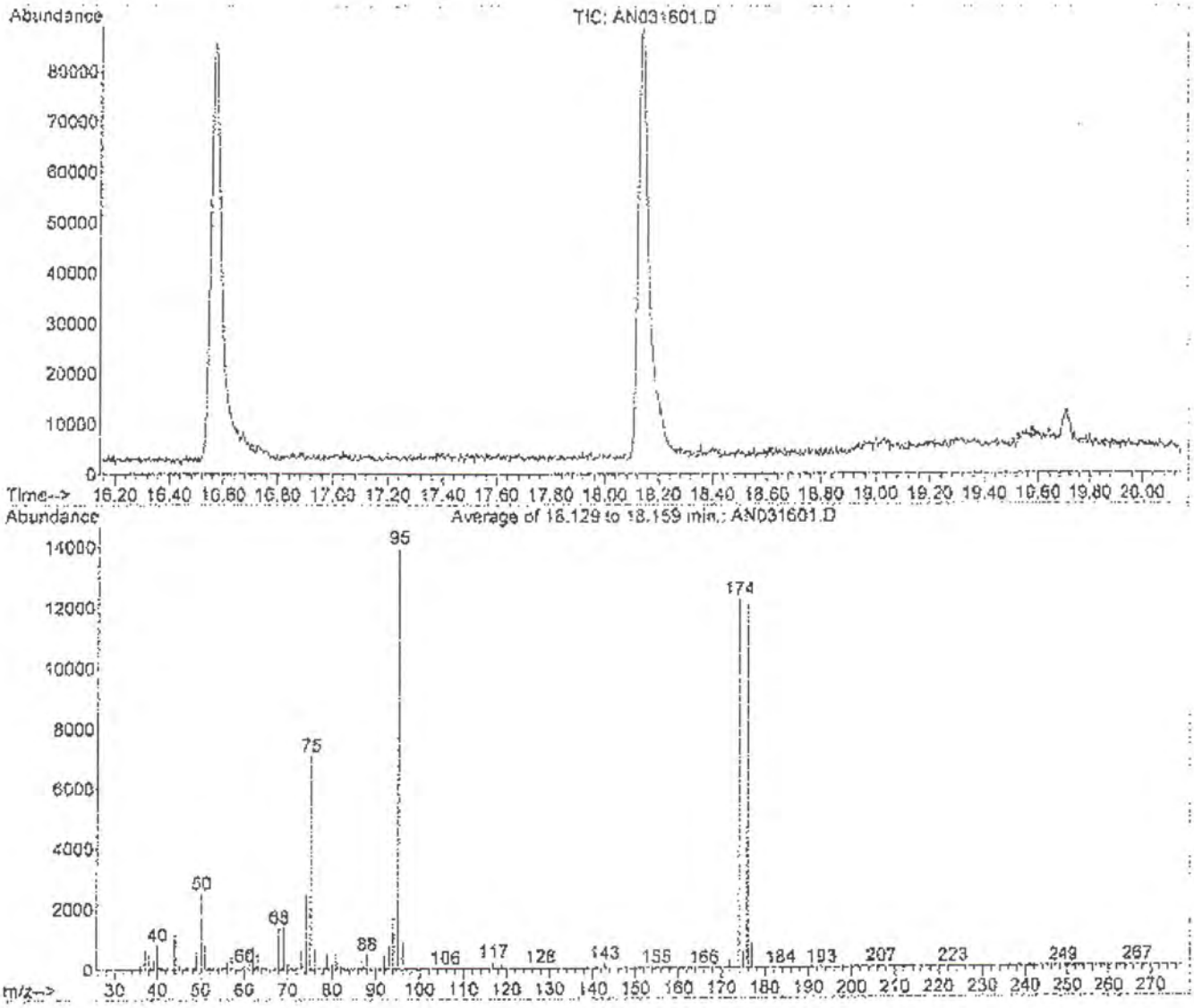
Qualifiers:

- . Results reported are not blank corrected
- J Analyte detected at or below quantitation limits
- S Spike Recovery outside accepted recovery limits
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- H Holding times for preparation or analysis exceeded
- R RPD outside accepted recovery limits

BFB

Data File : C:\HPCHEM\1\DATA\AN031601.D
Acq On : 16 Mar 2016 5:26 pm
Sample : BFB1UG
Misc : A316_1UG
MS Integration Params: RTEINT.P
Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Titie : TO-15 VOA Standards for 5 point calibration

Vial: 1
Operator: RJP
Inst : MSD #1
Multiplr: 1.00



Spectrum Information: Average of 18.129 to 18.159 min.

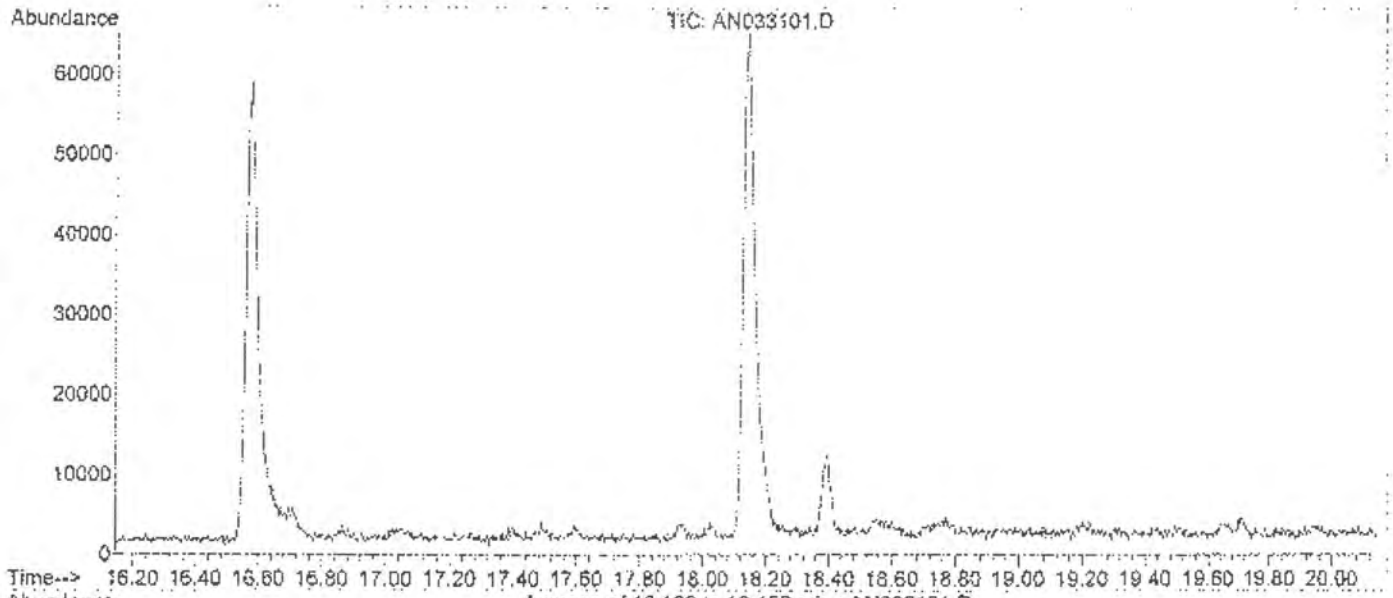
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	18.0	2513	PASS
75	95	30	66	51.1	7135	PASS
95	95	100	100	100.0	13975	PASS
96	95	5	9	6.7	936	PASS
173	174	0.00	2	0.6	79	PASS
174	95	50	120	87.9	12278	PASS
175	174	4	9	4.1	498	PASS
176	174	95	101	98.5	12090	PASS
177	176	5	9	6.9	829	PASS

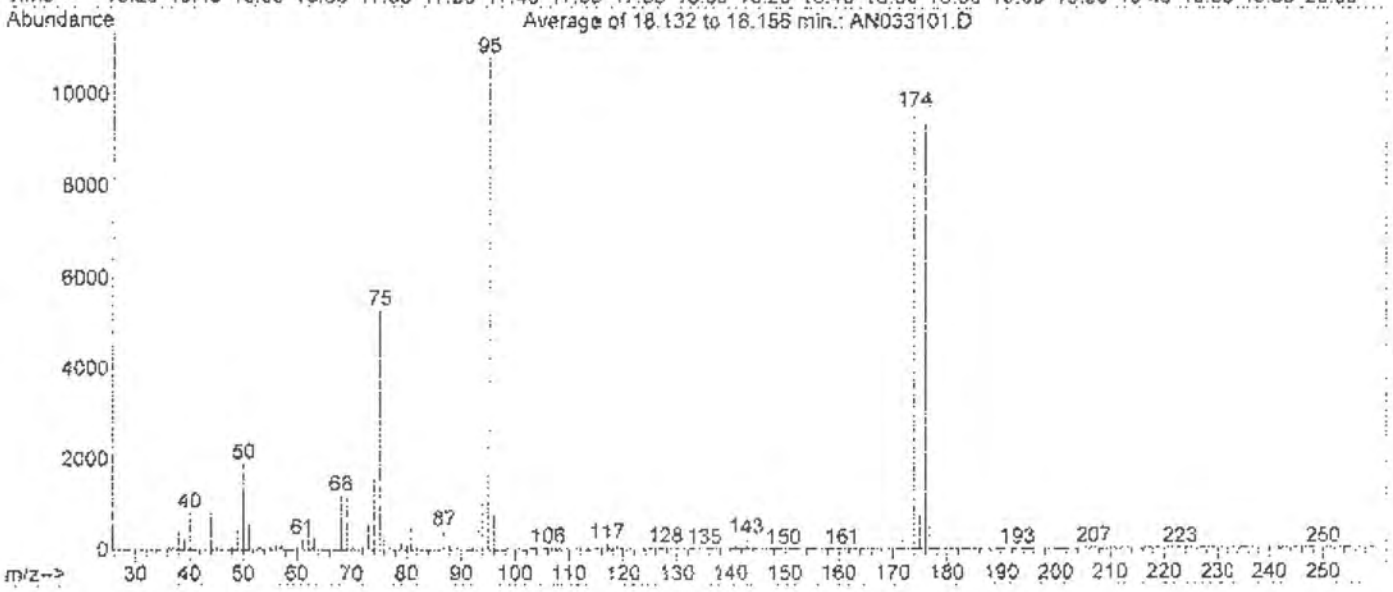
AN031601.D A316_1UG.M Thu Apr 07 13:04:45 2016 MSD1

BFB

Data File : C:\HPCHEM\1\DATA2\AN033101.D
Acq On : 31 Mar 2016 9:33 am
Sample : BFB1UG
Misc : A316_1UG
MS Integration Params: RTEINT.P
Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration

Vial: 1
Operator: RJP
Inst : MSD #1
Multiplr: 1.00





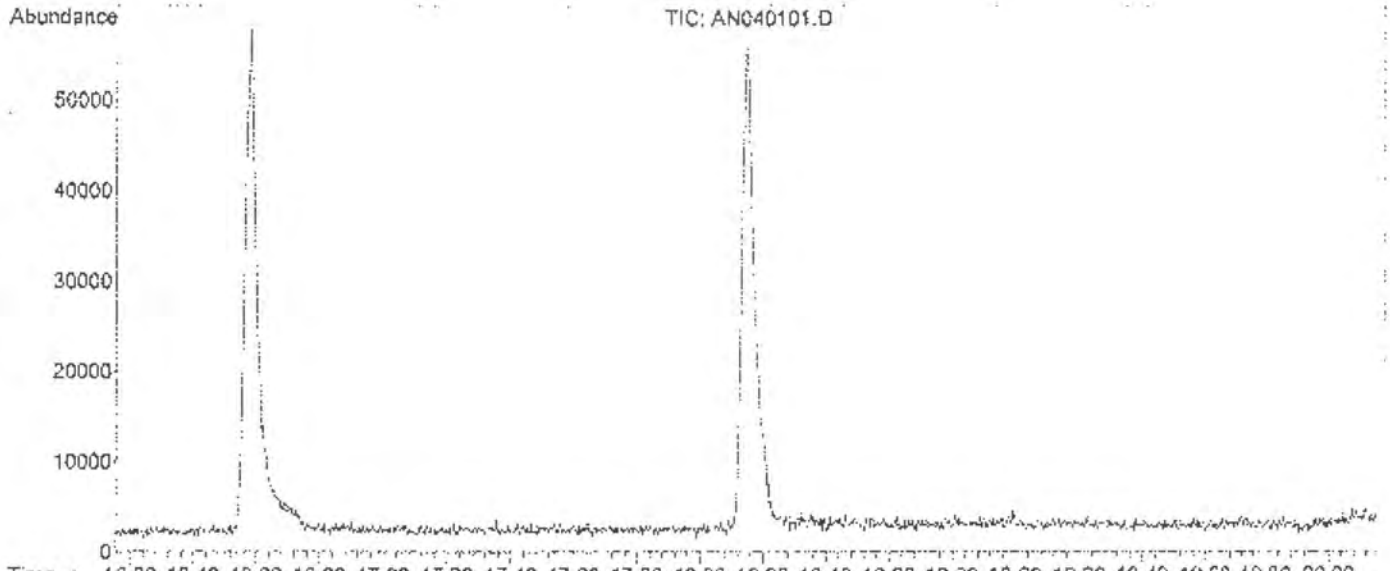
Spectrum Information: Average of 18.132 to 18.156 min.

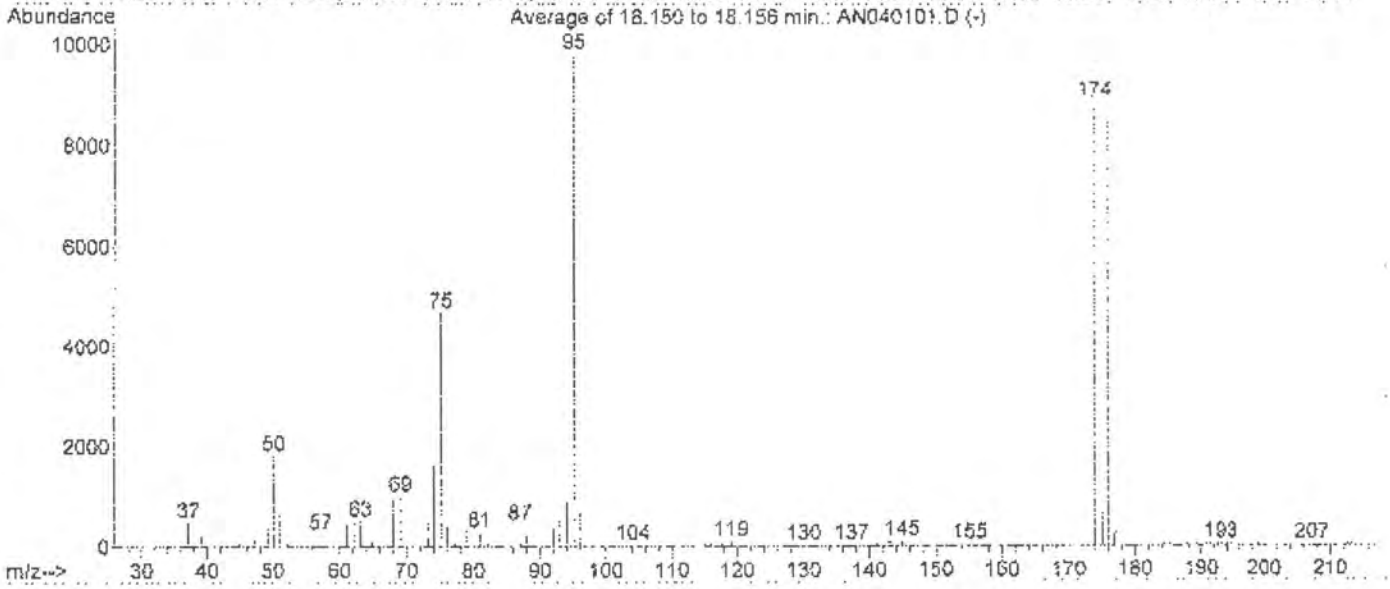
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	17.5	1890	PASS
75	95	30	66	49.0	5299	PASS
95	95	100	100	100.0	10811	PASS
96	95	5	9	7.0	757	PASS
173	174	0.00	2	0.7	66	PASS
174	95	50	120	89.2	9645	PASS
175	174	4	9	7.8	750	PASS
176	174	95	101	97.0	9355	PASS
177	176	5	9	7.6	704	PASS

AN033101.D A316_1UG.M Tue Apr 26 14:47:04 2016 MSD1

Data File : C:\HPCHEM\1\DATA\AN040101.D
Acq On : 1 Apr 2016 10:05 am
Sample : BFB1UG
Misc : A316_1UG
MS Integration Params: RTEINT.P
Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration

Vial: 16
Operator: RJP
Inst : MSD #1
Multiplr: 1.00





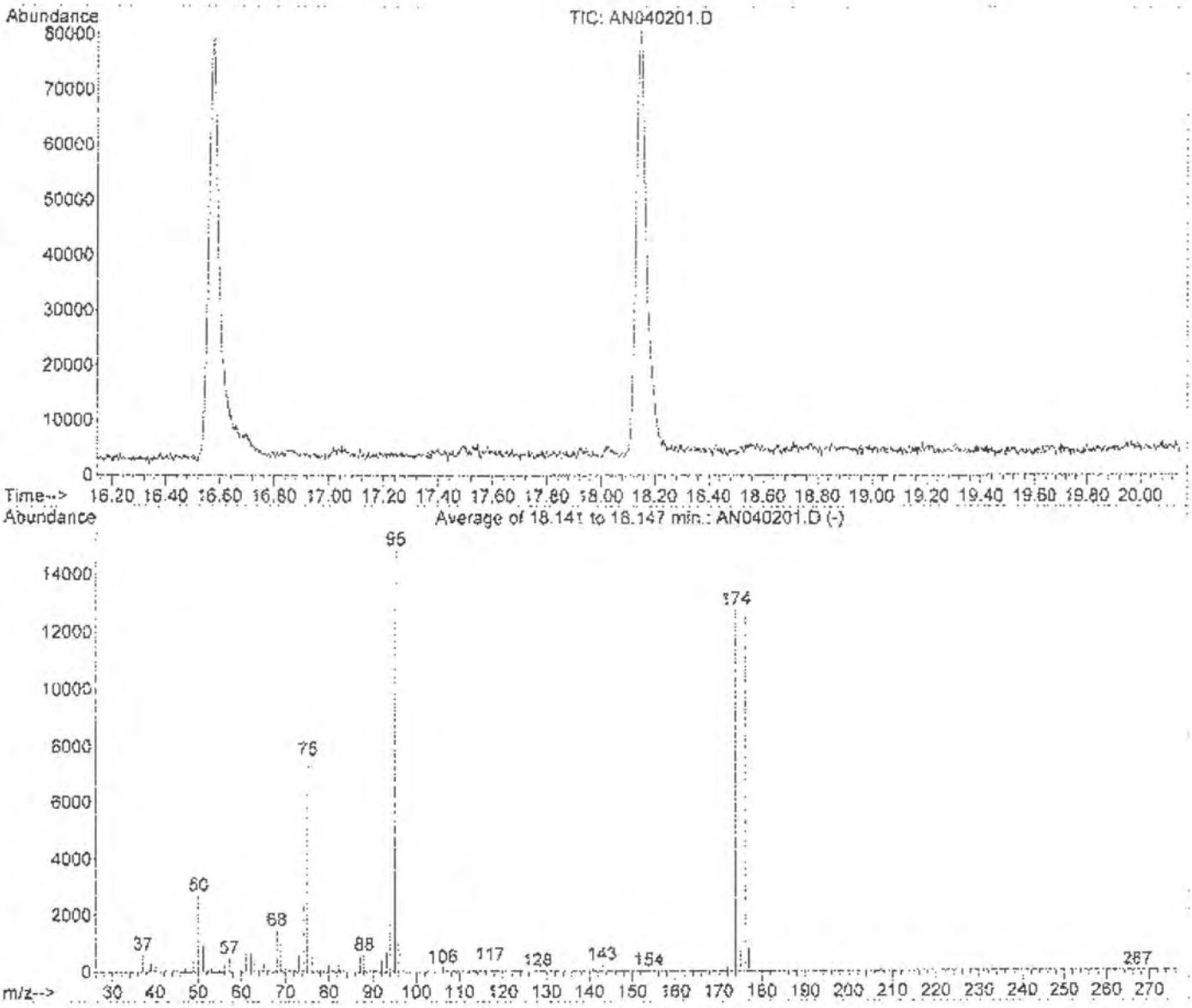
Spectrum Information: Average of 18.150 to 18.156 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	18.6	1827	PASS
75	95	30	66	47.8	4708	PASS
95	95	100	100	100.0	9841	PASS
96	95	5	9	7.0	692	PASS
173	174	0.00	2	0.8	70	PASS
174	95	50	120	90.2	8875	PASS
175	174	4	9	7.4	658	PASS
176	174	95	101	96.4	8557	PASS
177	176	5	9	5.2	443	PASS

BFB

Data File : C:\HPCHEM\1\DATA\AN040201.D
Acq On : 2 Apr 2016 10:48 am
Sample : BFB1UG
Misc : A316_1UG
MS Integration Params: RTEINT.P
Method : C:\HPCHEM\1\METHODS\A316_1UG.M (RTE Integrator)
Title : TO-15 VOA Standards for 5 point calibration

Vial: 1
Operator: RJP
Inst : MSD #1
Multiplr: 1.00



Spectrum Information: Average of 18.141 to 18.147 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	18.2	2718	PASS
75	95	30	66	50.7	7557	PASS
95	95	100	100	100.0	14902	PASS
96	95	5	9	6.7	1000	PASS
173	174	0.00	2	0.2	31	PASS
174	95	50	120	85.9	12799	PASS
175	174	4	9	6.0	772	PASS
176	174	95	101	98.7	12634	PASS
177	176	5	9	6.7	841	PASS

AN040201.D A316_1UG.M Tue Apr 26 14:59:39 2016 MSD1

LaBella Associates, D.P.C.
300 State Street

Rochester, New York 14614

Appendix 3

Field Logs

LABELLA Associates, D.P.C.

Soil Gas Testing Log

Former Emerson Street Landfill
1645-1685 Emerson Street

Project Name: Former Emerson Street Landfill- 1645-1685 Emerson
Project No: 210173
Sampled By: AA and KM
Date: 26-Mar-16
Weather: ~40 degress clear skies
Wind Speed/Direction: from SW ~5 mph

ID: 1645-SVI-1	
Sub-Slab Pressure: -0.029 "wc	
Canister: 567	
Regulator: 301	
Helium Tracer in shroud: 40%	
Helium Tracer at point: 2%	
Sub-Slab	
Time	Vacuum Reading ("Hg)
Start 904	30+
1011	27
1210	16
1323	8.5
1358	5.0
1420	3
End 1436	2

ID: 1645-SVI-2	
Sub-Slab Pressure: -0.025 "wc	
Canister: 332	
Regulator: 387	
Helium Tracer in shroud: 15%	
Helium Tracer at point: 0%	
Sub-Slab	
Time	Vacuum Reading ("Hg)
Start 858	30
1013	25
1212	15
1321	8.5
1400	5
1418	2.5
End 1441	2

ID: Outdoor-1645	
Sub-Slab Pressure: NA	
Canister: 1178	
Regulator: 174	
Helium Tracer in shroud: NA	
Helium Tracer at point: NA	
Outdoor Air	
Time	Vacuum Reading ("Hg)
Start 908	30+
1015	26
1213	15
1325	9
1404	5
1427	3.5
End 1448	2.75

Notes/Activities:

LABELLA Associates, D.P.C.

Soil Gas Testing Log

Former Emerson Street Landfill
1645-1685 Emerson Street

Project Name:	Former Emerson Street Landfill- 1645-1685 Emerson
Project No:	210173
Sampled By:	AA and KM
Date:	26-Mar-16
Weather:	~40 degress clear skies
Wind Speed/Direction:	from SW ~5 mph

ID: 1645-IAQ-1	
Sub-Slab Pressure: NA "wc	
Canister: 93	
Regulator: 1165	
Helium Tracer in shroud: NA	
Helium Tracer at point: NA	
Indoor Air	
Time	Vacuum Reading ("Hg)
Start 906	30
1011	24
1210	12
1323	5
End 1355	1

ID: 1645-IAQ-2	
Sub-Slab Pressure: NA "wc	
Canister: 483	
Regulator: 438	
Helium Tracer in shroud: NA	
Helium Tracer at point: NA	
Indoor Air	
Time	Vacuum Reading ("Hg)
Start 854	28
1013	22
1211	12
1320	6
1400	2
End 1415	1.5

Notes/Activities:

LaBella Associates, D.P.C.
300 State Street

Rochester, New York 14614

Appendix 4

Preliminary Building Assessment and Site Reconnaissance

Site: 1645-1685 Emerson Street
Site Recon Date: November 22, 2010
Consultant: LaBella Associates, P.C.

Summary of Available Historic Records:

- The original structure was built in 1998 (70,000 sq. ft.).
- The property was vacant land prior to construction of the current building. The current building has been utilized for manufacturing, specifically injection molding of plastic, since construction.
- A passive vent system was installed beneath the entire building during construction. The proposed system consists of three perforated PVC pipes that run the length of the building (north-south). The proposed system included intakes on one side of the pipe on the exterior of the building approximately 1-ft. above grade and the other side of the pipe included riser piping on the interior of the building which discharge to above the roofline. [Note: Refer to Site Recon discussion on actual system installation.]

Current Site Use:

- Currently owned by Val-Tech Holdings and utilized for plastic injection molding.
- Val-Tech uses VOCs in the form of thinners, thickeners and misc. equipment repair. In addition, a laboratory (QA/QC) area utilizes alcohols.
- A total of approximately 100 employees occupy the building regularly. Specifically, there are 30 office workers (approximately from 8 am – 5 pm weekdays) and approximately 70 manufacturing workers occupy the building 7 days a week over 3 shifts (~30 on shift 1, ~20 on shift 2 and ~20 on shift 3).
- Approximately 40,000 sq. ft. is manufacturing space, 23,000 sq. ft. is warehouse space; 7,000 sq. ft. is maintenance and 7,000 sq. ft. is office space. It should be noted that with the exception of the office space, the other sections of the building are generally open throughout; however, there is one clean room in the manufacturing area that is under positive pressure.
- There are seven (7) overhead doors in the warehouse areas and an additional one in the garage area. These doors are generally closed in the winter time except when loading finished product or receiving raw goods. These doors are generally open in the summertime.

Site Recon Observations:

- The passive vent system was observed in the field to consist of apparent riser pipes on both end of the horizontal laterals identified on proposed construction plans. Based on the field observations it is anticipated that instead of installing intakes at ground level passive vents were installed at each of the six vertical risers and these extend to above the roofline. Only five of the passive vent pipes were observed with the 6th believed to be behind an interior drywall within the women's locker room. The southeast riser pipe was observed to be broken during the initial site reconnaissance, but a subsequent visit observed the pipe repaired.
- The foundation system for the building is caisson and grade beam construction.
- Floor slab condition was in poor condition with significant cracking observed throughout the facility. [Note: Refer to 'Floor Crack Evaluation' section for more details.]
- The owner reported that the building is positively pressurized; however, there is no documentation on this.

Floor Crack Evaluation (refer also to LaBella's March 16, 2011 letter for more details)

- Based on the significant cracking observed during the Site Recon work, four (4) cores of the concrete were removed to evaluate the vertical extent of cracking. Pictures of these cores are attached. As shown, each of the four floor crack locations exhibited cracks that penetrated the entire floor slab.
- Petrographic analyses were completed on two of the four cores to further evaluate the cause of the cracks. The petrographics testing indicated that the cracks were likely due to shrinkage of the concrete during the curing process. This would indicated that the cracks are not likely to deteriorate; however, operations with vibrations may exacerbate the cracking.

List of Observed Floor Penetrations (Potential SVI Locations):

- Electrical conduit (1-3") (i.e., Locations 44, 45, 55, 62, 68, 69, 73, 76, 78, 79).
- Floor drains (3-4") (i.e., Locations 9, 11, 16, 30, 59, 70, 71, 72, 81, 83, 85, 87, 91, 92, 95, 99)
- Trench drains (i.e., Locations 31, 36, 40, 65, 67, 104).
- Sewer Cleanouts and Vents (i.e., Locations 35, 41, 53, 57, 60, 94, 97, 98)
- There was significant floor cracking (< 1/8" to ½") observed (i.e., Locations 25, 27, 29, 37, 39, 47, 50, 54, 56, 61). It should be noted that these readings are a representative sampling of the floor cracks. Due to the number of cracks, not all cracks were sampled.
- Expansion Joint (~½") (i.e., Location 52)
- Main water service (6") (i.e., Location 75)
- I-Beam penetrations (i.e., Locations 26, 33, 48, 63). It should be noted that not all I-Beam penetrations were sampled but rather a representative number were sampled.
- Apparent former mounting brackets for equipment (~½") (i.e., Locations 101 & 102)
- Passive Sub-Slab Vent System Pipes (i.e., Locations 34, 42, 74)

Initial Site Recon Meter Readings (Total Readings Collected – 124):

- Total Background Readings Collected = 26
    - Background of VOCs due to operations ranged from 290 ppb to 950 ppb [Note: Trench Drain and floor drain readings are not included in these readings; however, these ranged from 328 ppb (on a shower floor drain) to 13,500 ppb (in the southern portion of the western trench drain).]
    - Background of Methane due to operations were 0%

- Total Floor Penetration Readings Collected = 61
    - VOCs readings above background

Location	Description	Background (ppb)	Reading (ppb)
17	Electric Outlet	420	460
25	Floor Crack*	950	1100-1300
27	Floor Crack*	950	1150
29	Floor Crack*	550-650	750

* Reading may be associated with operations in area (maintenance room where oils and other VOCs utilized).

    - No methane readings above background

Evaluation of Passive Vent System: Total Readings Collected – 10 (5 Background and 5 Passive Vent Readings)

- Subsequent to the initial site visit, the property owner installed access ports into each of the 5 accessible passive vent systems. LaBella collected additional readings of these. These are identified as locations 128, 130, 132, 134, and 136 on the Instrument Reading Sheet.
- The readings collected from these locations ranged between 269 ppb and 825 ppb with background ranges of 625 ppb and 959 ppb. In general, the readings were below background with the exception of the south-middle passive vent pipe which indicated a reading of 825 ppb compared to a background of 625 ppb. However, the readings did not appear to continue to decrease and therefore could be indicative of VOC readings beneath the floor slab.

Submit by Email | Print Form

FORMER EMERSON STREET LANDFILL
SOIL VAPOR INTRUSION
PRELIMINARY BUILDING ASSESSMENT AND SITE RECONAISSANCE

Parcel Information:

Address: 1645 - 1655 Emerson Street

Owner: Val-Tech Holdings

Number of Buildings: 1

Building this Sheet Represents *(fill out one for each building)*: N/A

Interviewer Information:

Name: Dan Noll Date/Time Prepared: 11/22/2010 0800

Consultant Firm: LaBella Associates, P.C. Phone No.: 585-295-6611

Owner/Interviewee Information:

Last Name: Gubrelet First Name: Jerry

Address: 1667 Emerson Street

Company: Val-Tech Holdings

Office Phone: 585-647-2300

Tenant Information (if any):

Tenant Contact Person: N/A

Address:

Company:

Office Phone:

SECTION I - Building Construction Information

A. Site plans available? *(e.g., foundation construction, utility locations/chases, etc.)*: No
If yes, can copies be obtained? _____

B. Does owner have knowledge that ash or solid waste was removed at time of building construction: No

If yes, are any documents available? _____

C. Building Construction

	Construction Type	Finish Type	Sealed	Square Feet
Basement	No	N/A	N/A	N/A
Crawl Space	No	N/A	N/A	N/A
First Floor	Caisson & Grade Beam	Epoxy - Clean Rm	Epoxy - Clean Rm	N/A
Foundation Walls	None	N/A	N/A	N/A
2nd Floor	N/A	N/A	N/A	N/A

D. Any additions to building: No
If yes, list dates and locations: _____

If yes, note variations in construction: None

E. Utility/Floor Penetrations

	Location(s)	Size/Description
Electric	North End	See Summary
Gas	North End	See Summary
Water	North End	See Summary
Sewer/Wastewater	North End	See Summary
Sumps	None	See Summary
Floor/Trench Drains	2 Run Length of Building	See Summary
Dry Well	None	See Summary
Oil/Water Separators	None	See Summary
Cracks in Floor	Yes - see Summary	See Summary
Expansion Joints	Yes - One southern half of Bldg.	See Summary
Floating Slab	No	See Summary
Monitoring Points	None	See Summary
Scales	Yes, but all above ground	See Summary
Utility Vaults	Yes, power utility vault	See Summary
Elevators	No	See Summary
Other		

F. Does facility have an on Site septic system? No

If yes, where and size: _____

G. Does facility provide pretreatment of wastewater prior to discharge to sanitary sewer? No

If yes, What type of pretreatment is conducted: _____

H. Is there a vapor barrier associated with the foundation system? No

If yes, indicate type/material, location, thickness, etc.: _____

_____

I. Is there a radon/sub slab soil vapor mitigation system on any portion of the building? Yes

If yes, describe system and date installed: 1998

If yes, Is the system active or passive? Passive

If yes, Is system currently operational? Yes

J. Standing water or wet areas in lower levels? No

If yes, list location and describe: _____

If yes how frequent:

K. Is the building insulated? Yes

If yes, location(s) and type? Unknown

L. Are there any settlement issues with the building? No

If yes, describe: No settlment (heaving), but significant cracking

_____

M. Are there any cracks in floor slabs (1st floor or basement)? Yes

If yes, location(s), width, etc.? Throughout Bldg.

N. Are there any elevators in the building? No

If yes, describe construction and condition of pit (poured concrete, cinder block, etc.)

_____

Comments:

_____

_____

_____

_____

SECTION II – Heating, Ventilation and Air Conditioning Information

A. Type of heating system(s) used in this building: Forced Hot Air - Rest Electric baseboard - Office
For each heat system/unit, provide the following:

Unit Type	Unit Location	Areas Heated	Unit Size	Pressurization (neg. vs. positive)	Air Communication with other areas (duct work, doors, etc.)
York	Pad Mounted	5 units for Mfg.	each 40 Ton	Positive	Separate
York	Pad Mounted	2 units for Ofc	21 Ton Total	Positive	Separate

B. Type of fuel used: Natural Gas

If more than one list locations: _____

C. Domestic hot water tank fueled by: In utility room - elect (2)

D. Air conditioning: Central Air

Comments:

Owner reported building under positive pressure based on HVAC set up; however, no documentation on this (e.g., air balancing report).

SECTION III – Indoor Air Quality Influence Factors

A. Is there a garage, service area or manufacturing area in building? Yes

If yes, list all that apply: Only used as storage

1. Does the garage, service or manufacturing areas have separate heating unit/system? No
2. Are petroleum-powered machines or vehicles used or stored within the garage, service area or manufacturing area of building? *(e.g., forklifts, vehicle fleet, lawnmower, etc.)* Yes

If yes, specify:

3 Propane Fork Trucks, also have one Electric Scissor Lift

B. Are there any current or former USTs, ASTs or Fueling Facilities on the property? No

If yes, specify location: _____

C. Are there any current or former hydraulic lifts at the property? No

If yes, locations and note if underground or above ground:

D. Are there any current or former petroleum or chemical spills at the Site? No

If yes, specify location, quantity, material and date:

E. Are there any current or former groundwater monitoring wells at the Site? No

If yes, specify location and accessibility:

F. Has the building ever had a fire? No

If yes, When: _____

G. Is there a maintenance area? Yes

If yes, Where: East side of building

H. Are there any parts cleaners used at the site? Yes

If yes, list location(s) and solvent types:
Detergent Based in Tool Room

I. Are there any drum and/or chemical storage areas? Yes

If yes, list location(s) and materials:
Hydraulic/lube & waste oil stored in Utility Room

J. Are cleaning products used routinely? Yes

If yes, When & Where: Mold cleaner, floor cleaner

K. Has painting/staining been done in the last 6 months? No

If yes, When & Where:

L. Is there new carpet, drapes or other textiles within installed within the last year? No

If yes, Where & When:

M. Are there air fresheners in office spaces or bathrooms? Yes

If yes, Where & Type:

N. Are there exhaust fans (e.g., break rooms, bathrooms, or other locations)? Yes

If yes, where vented and how often do they run:

O. Has there been a pesticide application on the grounds? No

If yes, When & Type: But have contract

P. Is smoking allowed on the property? No

If yes, is it allowed within buildings and where? No

Q. Are there odors in the building? Yes

If yes, please describe: But only related to operations

R. Are solvents used within the building? Yes
(e.g., chemical manufacturing or laboratory, auto mechanic or auto body shop, painting, fuel oil delivery, boiler mechanic, pesticide application, etc.)

If yes, what types of solvents are used: Use alcohol in Clean Room, use Acetone

S. Is groundwater extracted for any purpose (e.g. cooling water, geothermal, etc.)? No

If yes, how many extraction wells, what depths and what is the rate of extraction: _____

T. Are there any air handling units in the building? Yes

If yes, locations, sizes, intakes & exhaust: _____

U. Are there any doors (overhead/bay or others) that are routinely open? Yes

If yes, note locations, sizes, and approximate times open: Open as needed. Southern door open in summer 10-15 times per day.

V. Do any of the building occupants regularly use a dry cleaning service? Yes, week

Based on Information obtained list all potential soil gas entry points and there sizes (e.g., cracks in floor, void space, piping, utility ports, sumps, elevator pits, lifts, drains, etc.).

[*Note: See page 12 & 13 for additional information to be collected on each potential soil gas entry point (i.e., photographs, PID and landfill gas measurements, etc.*]

Comments:

Section IV – Occupancy/General Use

Location Use	Occupied (list hours/shifts)	Number of Employees (Full/Part-time)	Approx. Sq. Ft.	Level (basement, 1st Floor, 2nd Floor, etc.)	Brief Summary of Business/ Operations in Area (include additional sheets as necessary)
Office	Full Time M-F	30	~7,000	1st Flr	General Office
Manufacturing/ Production	Full Time - 3 Shifts	70	~70,000	1st Flr	Injection molding
Warehouse/ Storage	n/a	n/a	23,000	1st Flr	Storage of molded parts
Garage	n/a	n/a	n/a	1st Flr	Used for Storage
Maintenance	n/a	n/a	7,000	1st Flr	Maintenance of equipment
Conference/ Break Rooms	n/a	n/a	n/a	1st Flr	n/a

Comments:

For Manufacturing Area - About 30 people on 1st shift, 20 people on 2nd shift and 20 people on 3rd shift.

1645-1655 Emerson Street

Instrument Readings:

Mark each location on site sketch where reading was collected and provide a photograph. At a minimum, readings must be collected from all potential soil gas entry points within buildings (e.g., utility vaults, sumps, floor drains, oil/water separators, floor cracks, etc.) and any subsurface features on the exterior (e.g., catch basins, manholes, utility vaults, etc.). In addition, at least one breathing zone location will be measured for each discrete area within buildings.

Location	VOCs	CH4	CO2	O2	CO	H2S	Description & Comments
Units	ppb	%	%	%	ppm	ppm	
1	290	0.0	0.1	20.9	0	0	Background Conference Room
2	280	0.0	0.1	20.9	0	0	Electrical Outlet (Bckgrd = #1)
3	255	0.0	0.1	20.9	0	0	Electrical Outlet (Bckgrd = #1)
4	260	0.0	0.1	20.9	0	0	Electrical Outlet (Bckgrd = #1)
5	225	0.0	0.0	20.9	0	0	Steel Pipe Penetration Through Wall in Closet (Bckgrd = #1)
6	305	0.0	0.0	20.9	0	0	Background Storage Office
7	305	0.0	0.0	20.9	0	0	Printer Room Background
8	335	0.0	0.0	20.9	0	0	Background
9	700	0.0	0.0	20.9	0	0	Floor Drain Near Toilet (Bckgrd = #8)
10	455	0.0	0.0	20.9	0	0	Background
11	455	0.0	0.0	20.9	0	0	Floor Drain - Women's Bathroom (Bckgrd = #10)
12	1050	0.0	0.0	20.9	0	0	Bathroom Air Freshner
13	585	0.0	0.0	20.9	0	0	Background
14	425	0.0	0.0	20.9	0	0	Pipe Penetration - Under Sink (Bckgrd = #13)
15	460	0.0	0.0	20.9	0	0	Background - Exhaust Fan
16	328	0.0	0.0	20.9	0	0	Shower Drain (Bckgrd = #15)
17	460	0.0	0.0	20.9	0	0	Electrical Outlet (Bckgrd = #18)
18	420	0.0	0.0	20.9	0	0	Background
19	418	0.0	0.0	20.9	0	0	Sink in Bathroom Penetration (Bckgrd = #20)
20	430	0.0	0.0	20.9	0	0	Background

Instrument Readings (Continued):

Mark each location on site sketch where reading was collected and provide a photograph. At a minimum, readings must be collected from all potential soil gas entry points within buildings (e.g., utility vaults, sumps, floor drains, oil/water separators, floor cracks, etc.) and any subsurface features on the exterior (e.g., catch basins, manholes, utility vaults, etc.). In addition, at least one breathing zone location will be measured for each discrete area within buildings.

Location	VOCs	CH4	CO2	O2	CO	H2S	Description & Comments
Units	ppb	%	%	%	ppm	ppm	
21	385	0.0	0.0	20.9	0	0	Background - Office Space
22	435	0.0	0.0	20.9	0	0	Background - QC Room
23	254	0.0	0.0	20.9	0	0	Cable Outlet (Bckgrd = #22)
24	950	0.0	0.0	20.9	0	0	Background - Tool Room
25	1100 -1300	0.0	0.0	20.9	0	0	Floor Crack (Bckgrd = #24)
26	700	0.0	0.0	20.9	0	0	I-Beam (Bckgrd = #24)
27	1150	0.0	0.0	20.9	0	0	Floor Crack (Bckgrd = #24)
28	550 - 650	0.0	0.0	20.9	0	0	Background - Manufacture Area
29	750	0.0	0.0	20.9	0	0	Floor Crack (Bckgrd = #28)
30	970	0.0	0.0	20.9	0	0	Floor Drain (Bckgrd = #28)
31	570	0.0	0.0	20.9	0	0	Trench Floor Drain (Bckgrd = #32)
32	700 - 750	0.0	0.0	20.9	0	0	Background
33	640	0.0	0.0	20.9	0	0	I-Beam at Corner (Bckgrd = #32)
34	655	0.0	0.0	20.9	0	0	Vent Pipe Base (Bckgrd = #32)
35	555	0.0	0.0	20.9	0	0	Floor Penetration - Sewer Cleanout (Bckgrd = #32)
36	13,500	0.0	0.0	20.9	0	0	Trench Floor Drain (Bckgrd = #32)
37	570	0.0	0.0	20.9	0	0	Pipe Penetration - Electric (Bckgrd = #28)
38	550	0.0	0.0	20.9	0	0	Floor Crack - Pre Vacuum (Bckgrd = #28)
39	600	0.0	0.0	20.9	0	0	Crack - Dust (Bckgrd = #28)
40	1800	0.0	0.0	20.9	0	0	Trench Floor Drain (Bckgrd = #28)

Instrument Readings (Continued):

Mark each location on site sketch where reading was collected and provide a photograph. At a minimum, readings must be collected from all potential soil gas entry points within buildings (e.g., utility vaults, sumps, floor drains, oil/water separators, floor cracks, etc.) and any subsurface features on the exterior (e.g., catch basins, manholes, utility vaults, etc.). In addition, at least one breathing zone location will be measured for each discrete area within buildings.

Location	VOCs	CH4	CO2	O2	CO	H2S	Description & Comments
Units	ppb	%	%	%	ppm	ppm	
41	550	0.0	0.0	20.9	0	0	Vertical Black Pipe (Bckgrd = #28)
42	500	0.0	0.0	20.9	0	0	PVC Pipe Vent System (Bckgrd = #28)
43	550	0.0	0.0	20.9	0	0	Loading Deck Background Area
44	550	0.0	0.0	20.9	0	0	Electrical Pipes from Floor (Bckgrd = #43)
45	550	0.0	0.0	20.9	0	0	Inside Electrical Pipe (Bckgrd = #43)
46	550	0.0	0.0	20.9	0	0	Pipe from Bottom of Wall Electric (Bckgrd = #43)
47	470	0.0	0.0	20.9	0	0	Crack in Floor (Bckgrd = #43)
48	550	0.0	0.0	20.9	0	0	I-Beam on Caisson (Bckgrd = #43)
49	524	0.0	0.0	20.9	0	0	Steel Plate (Bckgrd = #28)
50	537	0.0	0.0	20.9	0	0	Floor Caulk (Bckgrd = #28)
51	550	0.0	0.0	20.9	0	0	Steel Plate (Bckgrd = #28)
52	550	0.0	0.0	20.9	0	0	Expansion Joint (Bckgrd = #28)
53	550	0.0	0.0	20.9	0	0	Drain or Cleanout (Bckgrd = #43)
54	550	0.0	0.0	20.9	0	0	Floor Crack (Bckgrd = #43)
55	550	0.0	0.0	20.9	0	0	Electrical Pipe from Floor (Bckgrd = #43)
56	550	0.0	0.0	20.9	0	0	Floor Crack (Bckgrd = #43)
57	550	0.0	0.0	20.9	0	0	Clean Out (Bckgrd = #43)
58	770	0.0	0.0	20.9	0	0	Background - Maintenance Area
59	1200	0.0	0.0	20.9	0	0	Floor Drain (Bckgrd = #58)
60	770	0.0	0.0	20.9	0	0	Black Vertical Vent Pipe (Bckgrd = #58)

Instrument Readings (Continued):

Mark each location on site sketch where reading was collected and provide a photograph. At a minimum, readings must be collected from all potential soil gas entry points within buildings (e.g., utility vaults, sumps, floor drains, oil/water separators, floor cracks, etc.) and any subsurface features on the exterior (e.g., catch basins, manholes, utility vaults, etc.). In addition, at least one breathing zone location will be measured for each discrete area within buildings.

Location	VOCs	CH4	CO2	O2	CO	H2S	Description & Comments
Units	ppb	%	%	%	ppm	ppm	
61	740	0.0	0.0	20.9	0	0	Floor Crack - Loading Deck (Bckgrd = #58)
62	740	0.0	0.0	20.9	0	0	Electrical Conduit through Floor (Bckgrd = #58)
63	740	0.0	0.0	20.9	0	0	I-Beam (Bckgrd = #58)
64	580	0.0	0.0	20.9	0	0	Background - Garage Area
65	660	0.0	0.0	20.9	0	0	Trench - Floor (Bckgrd = #58)
66	670	0.0	0.0	20.9	0	0	Background - Utility Room
67	600	0.0	0.0	20.9	0	0	Trench - Floor (Bckgrd = #66)
68	600	0.0	0.0	20.9	0	0	Electric Pipe (Bckgrd = #66)
69	600	0.0	0.0	20.9	0	0	Electric Pipe (Bckgrd = #66)
70	1081	0.0	0.0	20.9	0	0	Floor Drain East (Bckgrd = #66)
71	750	0.0	0.0	20.9	0	0	Floor Drain Center (Bckgrd = #66)
72	675	0.0	0.0	20.9	0	0	Floor Drain West (Bckgrd = #66)
73	630	0.0	0.0	20.9	0	0	Conduit Pipe (Bckgrd = #66)
74	629	0.0	0.0	20.9	0	0	Vent Pipe Plastic PVC 4" (Bckgrd = #66)
75	608	0.0	0.0	20.9	0	0	Watermain (Bckgrd = #66)
76	667	0.0	0.0	20.9	0	0	Electrical Pipe (Bckgrd = #66)
77	420	0.0	0.0	20.9	0	0	Background
78	420	0.0	0.0	20.9	0	0	Plastic Pipes - Top (Bckgrd = #77)
79	420	0.0	0.0	20.9	0	0	Plastic Pipes - Base (Bckgrd = #77)
80	445	0.0	0.0	20.9	0	0	Background - Men's Bathroom

Instrument Readings (Continued):

Mark each location on site sketch where reading was collected and provide a photograph. At a minimum, readings must be collected from all potential soil gas entry points within buildings (e.g., utility vaults, sumps, floor drains, oil/water separators, floor cracks, etc.) and any subsurface features on the exterior (e.g., catch basins, manholes, utility vaults, etc.). In addition, at least one breathing zone location will be measured for each discrete area within buildings.

Location	VOCs	CH4	CO2	O2	CO	H2S	Description & Comments
Units	ppb	%	%	%	ppm	ppm	
81	610	0.0	0.0	20.9	0	0	Floor Drain (Bckgrd = #80)
82	410	0.0	0.0	20.9	0	0	Background - Locker Room
83	517	0.0	0.0	20.9	0	0	Floor Drain - Locker Room (Bckgrd = #82)
84	500	0.0	0.0	20.9	0	0	Background - Women's Locker Room
85	630	0.0	0.0	20.9	0	0	Floor Drain - Women's Locker Room (Bckgrd = #84)
86	505	0.0	0.0	20.9	0	0	Background - Women's Bathroom
87	583	0.0	0.0	20.9	0	0	Floor Drain - Women's Bathroom (Bckgrd = #86)
88	420	0.0	0.0	20.9	0	0	Background Lab
89	350 - 400	0.0	0.0	20.9	0	0	Lunchroom Background
90	400	0.0	0.0	20.9	0	0	Lunchroom Sink (Bckgrd = #89)
91	409	0.0	0.0	20.9	0	0	Lunchroom Floor Drain South (Bckgrd = #89)
92	409	0.0	0.0	20.9	0	0	Lunchroom Floor Drain North (Bckgrd = #89)
93	520	0.0	0.0	20.9	0	0	Manufacturing Area - Background
94	541	0.0	0.0	20.9	0	0	Cleanout (Bckgrd = #93)
95	670	0.0	0.0	20.9	0	0	Janitor Closet Floor Drain (Bckgrd = #96)
96	370	0.0	0.0	20.9	0	0	Background - Janitor Closet
97	294	0.0	0.0	20.9	0	0	Pipe Penetration (Bckgrd = #96)
98	377	0.0	0.0	20.9	0	0	Sewer Vent (Bckgrd = #96)
99	348	0.0	0.0	20.9	0	0	Drain (Bckgrd = #96)
100	470	0.0	0.0	20.9	0	0	Background - Clean Room

Instrument Readings (Continued):

Mark each location on site sketch where reading was collected and provide a photograph. At a minimum, readings must be collected from all potential soil gas entry points within buildings (e.g., utility vaults, sumps, floor drains, oil/water separators, floor cracks, etc.) and any subsurface features on the exterior (e.g., catch basins, manholes, utility vaults, etc.). In addition, at least one breathing zone location will be measured for each discrete area within buildings.

Location	VOCs	CH4	CO2	O2	CO	H2S	Description & Comments
Units	ppb	%	%	%	ppm	ppm	
101	514	0.0	0.0	21.0	0	0	Former Mounting Bolt Penetration in Floor (Bckgrd = #100)
102	567	0.0	0.0	20.9	0	0	Former Mounting Bolt Penetration in Floor (Bckgrd = #100)
103	693	0.0	0.0	20.9	0	0	Background in Syringe Molding Area of Clean Room
104	830	0.0	0.0	21.1	0	0	Trench Drain Passing Through Clean Room (Bckgrd = #103)
105	130	0.0	0.0	20.9	0	0	Outside Air (Background)
106	120	0.0	0.0	20.9	0	0	Roof Drain
107	108	0.0	0.0	20.9	0	0	Sewer Clean Out
108	88	0.0	0.0	20.9	0	0	Catch Basin
109	87	0.0	0.0	20.9	0	0	Sewer Clean Out
110	93	0.0	0.0	20.9	0	0	Ground Hog Hole
111	97	0.0	0.0	20.9	0	0	Ground Hog Hole
112	84	0.0	0.1	20.9	0	0	Storm Sewer Catch Basin
113	74	0.0	0.1	20.9	0	0	Catch Basin
114	78	0.0	0.0	20.9	0	0	Storm Sewer Manhole
115	65	0.0	0.0	20.9	0	0	Storm Sewer Manhole
116	63	0.0	0.0	20.9	0	0	Catch Basin
117	62	0.0	0.0	20.9	0	0	Catch Basin
118	64	0.0	0.0	20.9	0	0	Gas Service
119	63	0.0	0.0	20.9	0	0	Manhole
120	63	0.0	0.0	20.9	0	0	Catch Basin

Instrument Readings (Continued):

Mark each location on site sketch where reading was collected and provide a photograph. At a minimum, readings must be collected from all potential soil gas entry points within buildings (e.g., utility vaults, sumps, floor drains, oil/water separators, floor cracks, etc.) and any subsurface features on the exterior (e.g., catch basins, manholes, utility vaults, etc.). In addition, at least one breathing zone location will be measured for each discrete area within buildings.

Location	VOCs	CH4	CO2	O2	CO	H2S	Description & Comments
Units	ppb	%	%	%	ppm	ppm	
121	58	0.0	0.0	20.9	0	0	Catch Basin
122	57	0.0	0.0	20.9	0	0	Manhole
123	60	0.0	0.0	20.9	0	0	Catch Basin
124	58	0.0	0.0	20.9	0	0	Manhole
125	Readings Collected on 11/24/2010 After Owner Provided Sampling Ports in Passive Vent Pipes						
126							
127	872	0.0	0.0	21.0	0	0	Background for Passive Vent Pipe - North Wall Middle
128	535	4.1	0.0	16.6	0	0	Passive Vent Pipe - North Wall Middle
129	959	0.0	0.0	21.0	0	0	Background for Passive Vent Pipe - North Wall East
130	269	1.4	0.0	19.8	0	0	Passive Vent Pipe - North Wall East
131	802	0.0	0.1	20.6	9	0	Background for Passive Vent Pipe - South Wall West
132	504	0.0	2.6	18.0	0	0	Passive Vent Pipe - South Wall West
133	625	0.0	0.0	20.8	9	0	Background for Passive Vent Pipe - South Wall Middle
134	825	0.0	6.1	14.1	0	0	Passive Vent Pipe - South Wall Middle
135	756	0.0	0.0	20.8	6	0	Background for Passive Vent Pipe - South Wall East
136	567	4.4	0.0	16.0	0	0	Passive Vent Pipe - South Wall East
137							
138							
139							
140							

1645-1655 Emerson Street

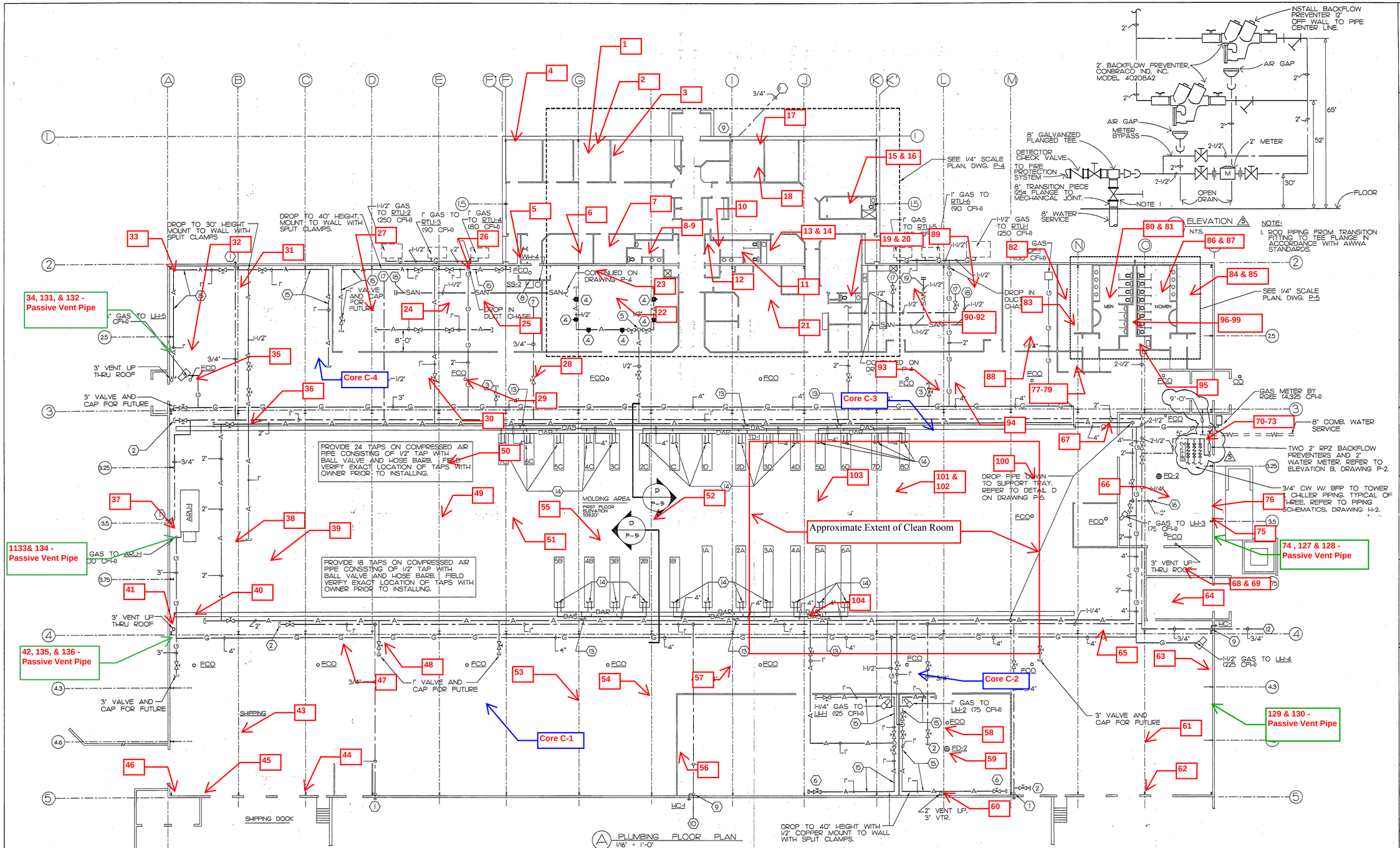
Instrument Readings (Continued):

Mark each location on site sketch where reading was collected and provide a photograph. At a minimum, readings must be collected from all potential soil gas entry points within buildings (e.g., utility vaults, sumps, floor drains, oil/water separators, floor cracks, etc.) and any subsurface features on the exterior (e.g., catch basins, manholes, utility vaults, etc.). In addition, at least one breathing zone location will be measured for each discrete area within buildings.

Location	VOCs	CH4	CO2	O2	CO	H2S	Description & Comments
Units	ppb	%	%	%	ppm	ppm	
141							
142							
143	310	0.0	0.0	20.9	6	0	Background at Core C-1
144	438	0.0	0.0	20.1	6	0	Core C-1
145	240	0.0	0.0	20.9	0	0	Background at Core C-2
146	452	0.0	0.0	20.7	0	0	Core C-2
147	185	0.0	0.0	20.8	5	0	Background at Core C-3
148	320	0.0	0.0	19.9	4	0	Core C-3
149	225	0.0	0.0	20.8	3	0	Background at Core C-4
150	308	0.0	0.0	18.6	2	0	Core C-4
151							
152							
153							
154							
155							
156							
157							
158							
159							
160							

Readings Collected on 12/31/2010 After Cores Removed

* Background Reading



GENERAL NOTES:

(A) ALL BRANCH AIR LINES OFF MAIN LINE TO EXIT UP.

(B) ALL AIR PIPE DROPS TO FLOOR LEVEL TO HAVE DRAIN LEG WITH 1/2" BALL VALVE.

(C) FIRST CHOICE ON BALL VAVES TO BE APOLLO.

(D) REFER TO DETAIL ON DRAWING P-5 FOR PIPE SUPPORT SYSTEM.

(E) CONNECT GAS PIPING TO EACH PIECE OF EQUIPMENT WITH SHUT OFF VALVE, UNION AND SEDIMENT TRAP.

PLUMBING NOTES:

(1) 3/4" CW DOWN TO WALL HYDRANT HC-1

(2) 3/4" CW CAPPED FOR FUTURE

(3) 2" VALVE AND CAP FOR FUTURE

(4) TEE WITH 1/4" NPT PLUG

(5) DROP TO 10'-6" HEIGHT AND HANG OVER SUSPENDED CEILING.

(6) 1" VALVE AND CAP FOR FUTURE

(7) 3/4" CW TO WATER HEATER WH-4 & SERVICE SINK SS-2

(8) 2" VENT UP, 3" VTR

(9) 3/4" CW DOWN TO BELOW GRADE, WALL HYDRANT HC-1 AT + 24"

(10) 3/4" CW BELOW GRADE, APPROXIMATELY 135 FEET EAST TO POST HYDRANT HC-2, SEE DWG. C-1 FOR LOCATION

(11) 3/4" CW BELOW GRADE, APPROXIMATELY 130 FEET S.W. TO POST HYDRANT HC-2, SEE DWG. C-1 FOR LOCATION

(12) 3/4" CW BELOW GRADE, APPROXIMATELY 70 FEET NORTH TO POST HYDRANT HC-2, SEE DWG. C-1 FOR LOCATION

(13) CONNECT 4" TO DESICCANT DRYER. DRYER TO BE PROVIDED BY OWNER.

(14) RUN 2" AIR PIPING TO MACHINE. FINAL CONNECTION TO BE BY OWNER, TYPICAL OF 26.

(15) PROVIDE 1"x 1"x 1/2" TEE EVERY 8'-0" WITH 1/2" COPPER TO 1/4" NPT REDUCER AND 1/4" NPT PLUG.

(16) REFER TO COMPRESSED AIR PIPING SCHEMATIC FOR CONTINUATION, DETAIL E/P-5.

(17) 1/2" CW TO HUMIDIFIER (25 GPH)

(18) CONNECT TO 1/4" HUMIDIFIER DRAIN

(19) CONNECT TO 1/2" HUMIDIFIER DRAIN

MONROE COUNTY HEALTH DEPARTMENT
Rochester, N.Y. December 11 1998
Plans for Two (2) 2-Bedroom Nursing Simple
Dwellings at JADA Precision Plastics Inc.
A timely request pursuant to Sections of the STATE SANITARY CODE subject to the provisions of the permit issued this day.
COUNTY DIRECTOR OF HEALTH
By Public Health Engineer

ASBUILT

A NEW FACILITY FOR JADA PRECISION PLASTICS CO., INC.
1667 Emerson Street Rochester, NY 14606

diagostino
general contractors inc.
57 O'Connor Road
Fairport, NY 14450-1527
Ph. (716) 377-7590
Fax. (716) 377-7592

Carmine Torchia, P.E.
16 Thoroughbred Trail
Penfield, NY 14526
Ph. (716) 787-0827
FAX (716) 787-0273
TORCHIA STRUCTURAL ENGINEERING & DESIGN

Ann Van Hogue Design
88 East Main St.
LeRoy, NY 14482
716 768 8447
Ann Van Hogue
Registered Architect

LABELLA
Engineering, Architecture and Surveying
LaBella Associates, P.C.
300 STATE STREET
ROCHESTER, NY. 14614
(716) 454-6110

STATE OF NEW YORK
STEPHEN EDWARD MABEE
068517
LICENSED PROFESSIONAL ENGINEER

DRAWING TITLE: PLUMBING FLOOR PLAN

REVISIONS:
1. GENERAL REVISIONS 09/10/97
2. GENERAL REVISIONS 02/19/98
3. GENERAL REVISIONS 03/20/98
4. GENERAL REVISIONS 05/07/98
5. BFP ASBUILT REVISIONS 12/10/98

JOB NO.: 97229
SCALE: AS SHOWN
DRAWN BY: DW/TM
DATE: 8/18/97
DRAWING #
P-2

FUTURE ROAD A

ROAD

STREET

McCRACKANVILLE STREET

EMERSON STREET

M.H. #5
TOP 536.00
INV. 532.00

M.H. #6
TOP 536.00
S.INV. 529.48
E.INV. 529.46

M.H. #7
TOP 536.00
INV 524.90

M.H. #4 WITH RESTRICTED OUTLET
TOP 535.00
W&E. INV. 526.20

M.H. #1
TOP 536.80
INV. 531.80

M.H. #2
TOP 535.60
S. INV. 530.60
N. INV. 530.80

M.H. #3
TOP 535.50
S. INV. 529.40
W. INV. 529.40

D.I. #1
TOP 535.00
INV. 532.00

D.I. #2
TOP 534.30
INV. 531.28

D.I. #3
TOP 535.00
INV. 531.30

D.I. #4
TOP 535.00
INV. 529.72

D.I. #5
TOP 535.25
INV. 530.75

D.I. #6
TOP 535.00
INV. 529.40
INV 529.24

D.I. #7
TOP 536.50
INV. 531.54

124 123 122 121 120 119 118 117 116 115 114 113 112 111 110 109 108 107 106 105

6'-12" CORR. P.E. @ 2.40%
380'-24" CORR. P.E. @ 0.70%
INV. 530.98
INV. 530.36
7'-8" CORR. P.E. @ 6.0%
6'-8" CORR. P.E. @ 6.0%
6'-12" CORR. P.E. @ 2.40%
124'-12" CORR. P.E. @ 2.40%
6'-6" CORR. P.E. @ 5.00%
56'-6" CORR. P.E. @ 5.00%
INV. 536.10
INV. 533.00
CO INV. 536.40
120'-8" CORR. P.E. @ 2.00%
6'-8" CORR. P.E. @ 2.00%
INV. 534.00
NOTE: KEEP MIN. 5'-0" AWAY FROM BLDG. (TYP)
32'-8" CORR. P.E. @ 2.00%
112'-8" CORR. P.E. @ 2.00%
INV. 536.4
6'-8" CORR. P.E. @ 6.0%
20'-8" CORR. P.E. @ 6.0%
105'-24" CORR. P.E. @ 0.70%
INV. 528.54
18" FF CMP
6" PVC SCH 35 SAN. LAT. @ MIN. 2.0%
65'-D"
CMP. @ 9.00% MAX
INV OF 72" CMP 514.76
NOTE: UTILITY CROSSING PROVIDE MIN. 12" VERTICAL SEPERATION
NOTE: OPEN CUT ROAD AND REPAIR EXIST. PAVEMENT TO MATCH AFTER WORK IS COMPLETE
PROPOSED 8" COMB. DUCTILE IRON WATER SERVICE. SEE SHEET P-2
CURB BOX
6x12 TSV
10' EASEMENT
75'-8" CORR. P.E. @ 6.0%
40'-8" CORR. P.E. @ 6.0%
240'-24" CORR. P.E. @ 0.50%
INV. 528.54
INV. 529.30
75'-12" CORR. P.E. @ 0.50%
6'-12" CORR. P.E. @ 0.50%
240'-24" CORR. P.E. @ 0.50%
INV. 531.80
INV. 530.96
INV. 530.85
98'-12" CORR. P.E. @ 3.00%
6'-12" CORR. P.E. @ 3.00%
6'-12" CORR. P.E. @ 1.5%
15'-12" CORR. P.E. @ 1.5%
75'-12" CORR. P.E. @ 1.50%
6'-12" CORR. P.E. @ 1.5%
INV. 530.07
7'-8" CORR. P.E. @ 6.0%
NOTE: ALL NEW MH.'S 5'-0" Ø
DRIVE
TRANS PAD
TELE PAD

LEGEND

- PROPOSED D.I., M.H. & STORM SEWER
- W — PROPOSED WATER SERVICE
- S — S — PROPOSED SANITARY LATERAL
- CLEAN OUT
- SAN — EXISTING M.H. & SANITARY SEWER
- ST — EXISTING D.I., M.H. & STORM SEWER
- W — EXISTING HYDRANT AND WATERMAIN
- G — EXISTING GAS MAIN
- E — EXISTING ELECTRIC LINE
- DETAIL NUMBER

Torchia Structural Engineering
Carmine Torchia, P.E.
18 Throughbred Trail
Penfield, NY 14526
Phone: 716-787-2827 Fax: 716-787-2273

Project
A NEW FACILITY FOR
JADA PRECISION PLASTICS CO. INC.
1667 EMERSON STREET
ROCHESTER, NEW YORK 14606

Drawing Title
UTILITY PLAN

STATE OF NEW YORK
CARMINE TORCHIA
No. 070309
LICENSED PROFESSIONAL ENGINEER

DATE REV. 4-14-98
1-28-98
SCALE 1 IN = 30 FT.
DRAWN CT & MD
JOB 95-12-01
SHEET C-3
OF 6 SHEETS

Location #17 – Electrical outlet

Location #25 – Floor crack

Location #27 – Floor crack

Location #29 – Floor crack

General interior view

Engineering
Architecture
Environmental
Planning

LABELLA
Associates, P.C.

300 State Street, Suite 201, Rochester, NY 14614

Phone 585.454.6110
Fax 585.454.3066
www.labellapc.com

March 16, 2011

Mr. Joseph Biandolillo
City of Rochester DES
30 Church Street
Rochester, New York 14604

Re: Val-Tech Holdings, Inc. at
1645-1685 Emerson Street, Rochester, NY 14606
LaBella Project No. 210173.04

Dear Mr. Biandolillo:

The concrete floor slab of the building located at 1645-1685 Emerson Street exhibits a significant number of large cracks. We visited the site on November 24, 2010 to observe the width, extent, and pattern of cracking to determine the source and potential for cracks to increase in number and/or size and to cause settlement or other movement of the slab.

The building was constructed in 1998 and has been used as an industrial facility ever since. The concrete slab is a one-way structural (reinforced) slab supported by a grid of concrete grade beams and drilled shafts ("caissons"). The drilled shafts are founded on rock.

LaBella Associates, P.C. contracted with Quality Inspection Services, Inc. of Rochester, NY to obtain four 4 inch nominal diameter cores through the slab at specific cracks in each quadrant of the building. The cores were obtained on December 31, 2010. Two of the cores were then sent to CTL Engineering, Inc. for petrographic laboratory testing. Findings from coring and testing of the slab are listed below.

Findings

- The cracks range from hairline to ½" wide and typically travel in a random pattern
- The top of a few of the cracks were filled with an epoxy resin
- Very few control joints were observed in the slab
- The cracks in the four cores extend the full depth of the slab
- The aperture of the cracks is large at the top surface of the slab and typically narrow as they travel toward the bottom of the slab
- Petrographic tests reveal that the overall quality of the concrete is fair due to placement with high water content. The water to cementitious material ratio is estimated to have been 0.50 to 0.56 at the time of placement. A maximum water/cement ratio of 0.45 is generally specified for interior slabs.
- The maximum size of coarse aggregate is ½ inch. This is considered small aggregate for the type of placement.
- Cracking in the cores propagated around the coarse aggregate which is consistent with drying shrinkage.
- The cement paste is soft and porous with carbonation up to 4 5/8" deep from the top surface of the core / slab.

Conclusions

Based on our observations of the slab and cracks in place, slab cores, and the petrographic analysis test results, the cracks appear to be caused by drying shrinkage due to high water content in the concrete mix used for slab placement. This type of crack typically occurs shortly after placement (after initial hardening of the concrete)

and "grows" quickly as water evaporates from the slab. The cracks are considered non-moving cracks since they are not related to expansion and contraction of the concrete due to thermal changes in the building.

The existing cracks will not increase in number or size due to drying shrinkage. However, it is possible for new cracks to form due to other mechanisms, such as, overloading or overstressing of the slab, deterioration of reinforcement which could reduce the capacity of the slab, excessive vibration from slab mounted equipment, etc.

Since the slab is a reinforced structural slab versus a slab-on-grade, it is unlikely that differential settlement or shearing/thrusting of the slab will occur. However, it was noted in the petrographic analysis report that carbonation of the concrete extends 4 5/8" into the slab from the top surface. Carbonation is one of the main reasons for corrosion of reinforcement in concrete. Carbonation affects the alkalinity of the concrete reducing the passivating layer around the reinforcement which protects it from oxygen and water. Localized areas of the slab could experience horizontal or vertical movement if a group of reinforcing bars corroded through at a crack. This would most likely only happen if a crack were subject to standing water for an extended period of time. Based on the current operations in the building, the potential for this movement is low.

Epoxy injection of the existing cracks is possible and is recommended as the best method to fill the cracks to the greatest depth. Injection material must be of a proper viscosity to fill the crack but not leak through since the cracks extend full depth of the slab. Filling the cracks will also reduce the potential for continued carbonation at the cracks. However, due to the number of cracks and the fact that many of the cracks extend under existing equipment and storage racks used for the building owner's manufacturing operation, we believe this option is not feasible. We recommend implementing other measures that would have less impact on building operations.

While other measures are being explored, we recommend installing a vibration monitor near equipment with the highest impact on the slab to confirm whether the intensity of the vibrations is in a range that could cause future cracking or not.

Please contact me directly at 585-295-6617 or smatzat@labellapc.com with questions or comments

Sincerely,

LABELLA ASSOCIATES, P.C.

Susan L. Matzat, P.E.

Susan L. Matzat, PE, SECB, LEED AP
Sr. Structural Engineer

SLM/lk

Attachment: Copy of Petrographic Report of Concrete Slab Cores

cc: Daniel Noll, P.E.; LaBella Associates, PC

Site: 1645-1685 Emerson Street
Site Recon Date: November 22, 2010
Consultant: LaBella Associates, P.C.

Summary of Available Historic Records:

- The original structure was built in 1998 (70,000 sq. ft.).
- The property was vacant land prior to construction of the current building. The current building has been utilized for manufacturing, specifically injection molding of plastic, since construction.
- A passive vent system was installed beneath the entire building during construction. The proposed system consists of three perforated PVC pipes that run the length of the building (north-south). The proposed system included intakes on one side of the pipe on the exterior of the building approximately 1-ft. above grade and the other side of the pipe included riser piping on the interior of the building which discharge to above the roofline. [Note: Refer to Site Recon discussion on actual system installation.]

Current Site Use:

- Currently owned by Val-Tech Holdings and utilized for plastic injection molding.
- Val-Tech uses VOCs in the form of thinners, thickeners and misc. equipment repair. In addition, a laboratory (QA/QC) area utilizes alcohols.
- A total of approximately 100 employees occupy the building regularly. Specifically, there are 30 office workers (approximately from 8 am – 5 pm weekdays) and approximately 70 manufacturing workers occupy the building 7 days a week over 3 shifts (~30 on shift 1, ~20 on shift 2 and ~20 on shift 3).
- Approximately 40,000 sq. ft. is manufacturing space, 23,000 sq. ft. is warehouse space; 7,000 sq. ft. is maintenance and 7,000 sq. ft. is office space. It should be noted that with the exception of the office space, the other sections of the building are generally open throughout; however, there is one clean room in the manufacturing area that is under positive pressure.
- There are seven (7) overhead doors in the warehouse areas and an additional one in the garage area. These doors are generally closed in the winter time except when loading finished product or receiving raw goods. These doors are generally open in the summertime.

Site Recon Observations:

- The passive vent system was observed in the field to consist of apparent riser pipes on both end of the horizontal laterals identified on proposed construction plans. Based on the field observations it is anticipated that instead of installing intakes at ground level passive vents were installed at each of the six vertical risers and these extend to above the roofline. Only five of the passive vent pipes were observed with the 6th believed to be behind an interior drywall within the women's locker room. The southeast riser pipe was observed to be broken during the initial site reconnaissance, but a subsequent visit observed the pipe repaired.
- The foundation system for the building is caisson and grade beam construction.
- Floor slab condition was in poor condition with significant cracking observed throughout the facility. [Note: Refer to 'Floor Crack Evaluation' section for more details.]
- The owner reported that the building is positively pressurized; however, there is no documentation on this.

Floor Crack Evaluation (refer also to LaBella's March 16, 2011 letter for more details)

- Based on the significant cracking observed during the Site Recon work, four (4) cores of the concrete were removed to evaluate the vertical extent of cracking. Pictures of these cores are attached. As shown, each of the four floor crack locations exhibited cracks that penetrated the entire floor slab.
- Petrographic analyses were completed on two of the four cores to further evaluate the cause of the cracks. The petrographics testing indicated that the cracks were likely due to shrinkage of the concrete during the curing process. This would indicated that the cracks are not likely to deteriorate; however, operations with vibrations may exacerbate the cracking.

List of Observed Floor Penetrations (Potential SVI Locations):

- Electrical conduit (1-3") (i.e., Locations 44, 45, 55, 62, 68, 69, 73, 76, 78, 79).
- Floor drains (3-4") (i.e., Locations 9, 11, 16, 30, 59, 70, 71, 72, 81, 83, 85, 87, 91, 92, 95, 99)
- Trench drains (i.e., Locations 31, 36, 40, 65, 67, 104).
- Sewer Cleanouts and Vents (i.e., Locations 35, 41, 53, 57, 60, 94, 97, 98)
- There was significant floor cracking (< 1/8" to ½") observed (i.e., Locations 25, 27, 29, 37, 39, 47, 50, 54, 56, 61). It should be noted that these readings are a representative sampling of the floor cracks. Due to the number of cracks, not all cracks were sampled.
- Expansion Joint (~½") (i.e., Location 52)
- Main water service (6") (i.e., Location 75)
- I-Beam penetrations (i.e., Locations 26, 33, 48, 63). It should be noted that not all I-Beam penetrations were sampled but rather a representative number were sampled.
- Apparent former mounting brackets for equipment (~½") (i.e., Locations 101 & 102)
- Passive Sub-Slab Vent System Pipes (i.e., Locations 34, 42, 74)

Initial Site Recon Meter Readings (Total Readings Collected – 124):

- Total Background Readings Collected = 26
    - Background of VOCs due to operations ranged from 290 ppb to 950 ppb [Note: Trench Drain and floor drain readings are not included in these readings; however, these ranged from 328 ppb (on a shower floor drain) to 13,500 ppb (in the southern portion of the western trench drain).]
    - Background of Methane due to operations were 0%

- Total Floor Penetration Readings Collected = 61
    - VOCs readings above background

Location	Description	Background (ppb)	Reading (ppb)
17	Electric Outlet	420	460
25	Floor Crack*	950	1100-1300
27	Floor Crack*	950	1150
29	Floor Crack*	550-650	750

* Reading may be associated with operations in area (maintenance room where oils and other VOCs utilized).

    - No methane readings above background

Evaluation of Passive Vent System: Total Readings Collected – 10 (5 Background and 5 Passive Vent Readings)

- Subsequent to the initial site visit, the property owner installed access ports into each of the 5 accessible passive vent systems. LaBella collected additional readings of these. These are identified as locations 128, 130, 132, 134, and 136 on the Instrument Reading Sheet.
- The readings collected from these locations ranged between 269 ppb and 825 ppb with background ranges of 625 ppb and 959 ppb. In general, the readings were below background with the exception of the south-middle passive vent pipe which indicated a reading of 825 ppb compared to a background of 625 ppb. However, the readings did not appear to continue to decrease and therefore could be indicative of VOC readings beneath the floor slab.

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FORMER EMERSON STREET LANDFILL
SOIL VAPOR INTRUSION
PRELIMINARY BUILDING ASSESSMENT AND SITE RECONAISSANCE

Parcel Information:

Address: 1645 - 1655 Emerson Street

Owner: Val-Tech Holdings

Number of Buildings: 1

Building this Sheet Represents *(fill out one for each building)*: N/A

Interviewer Information:

Name: Dan Noll Date/Time Prepared: 11/22/2010 0800

Consultant Firm: LaBella Associates, P.C. Phone No.: 585-295-6611

Owner/Interviewee Information:

Last Name: Gubrelet First Name: Jerry

Address: 1667 Emerson Street

Company: Val-Tech Holdings

Office Phone: 585-647-2300

Tenant Information (if any):

Tenant Contact Person: N/A

Address:

Company:

Office Phone:

SECTION I - Building Construction Information

A. Site plans available? *(e.g., foundation construction, utility locations/chases, etc.)*: No
If yes, can copies be obtained? _____

B. Does owner have knowledge that ash or solid waste was removed at time of building construction: No

If yes, are any documents available? _____

C. Building Construction

	Construction Type	Finish Type	Sealed	Square Feet
Basement	No	N/A	N/A	N/A
Crawl Space	No	N/A	N/A	N/A
First Floor	Caisson & Grade Beam	Epoxy - Clean Rm	Epoxy - Clean Rm	N/A
Foundation Walls	None	N/A	N/A	N/A
2nd Floor	N/A	N/A	N/A	N/A

D. Any additions to building: No
If yes, list dates and locations: _____

If yes, note variations in construction: None

E. Utility/Floor Penetrations

	Location(s)	Size/Description
Electric	North End	See Summary
Gas	North End	See Summary
Water	North End	See Summary
Sewer/Wastewater	North End	See Summary
Sumps	None	See Summary
Floor/Trench Drains	2 Run Length of Building	See Summary
Dry Well	None	See Summary
Oil/Water Separators	None	See Summary
Cracks in Floor	Yes - see Summary	See Summary
Expansion Joints	Yes - One southern half of Bldg.	See Summary
Floating Slab	No	See Summary
Monitoring Points	None	See Summary
Scales	Yes, but all above ground	See Summary
Utility Vaults	Yes, power utility vault	See Summary
Elevators	No	See Summary
Other		

F. Does facility have an on Site septic system? No

If yes, where and size: _____

G. Does facility provide pretreatment of wastewater prior to discharge to sanitary sewer? No

If yes, What type of pretreatment is conducted: _____

H. Is there a vapor barrier associated with the foundation system? No

If yes, indicate type/material, location, thickness, etc.: _____

_____

I. Is there a radon/sub slab soil vapor mitigation system on any portion of the building? Yes

If yes, describe system and date installed: 1998

If yes, Is the system active or passive? Passive

If yes, Is system currently operational? Yes

J. Standing water or wet areas in lower levels? No

If yes, list location and describe: _____

If yes how frequent:

K. Is the building insulated? Yes

If yes, location(s) and type? Unknown

L. Are there any settlement issues with the building? No

If yes, describe: No settlment (heaving), but significant cracking

_____

M. Are there any cracks in floor slabs (1st floor or basement)? Yes

If yes, location(s), width, etc.? Throughout Bldg.

N. Are there any elevators in the building? No

If yes, describe construction and condition of pit (poured concrete, cinder block, etc.)

_____

Comments:

_____

_____

_____

_____

SECTION II – Heating, Ventilation and Air Conditioning Information

A. Type of heating system(s) used in this building: Forced Hot Air - Rest Electric baseboard - Office
For each heat system/unit, provide the following:

Unit Type	Unit Location	Areas Heated	Unit Size	Pressurization (neg. vs. positive)	Air Communication with other areas (duct work, doors, etc.)
York	Pad Mounted	5 units for Mfg.	each 40 Ton	Positive	Separate
York	Pad Mounted	2 units for Ofc	21 Ton Total	Positive	Separate

B. Type of fuel used: Natural Gas

If more than one list locations: _____

C. Domestic hot water tank fueled by: In utility room - elect (2)

D. Air conditioning: Central Air

Comments:

Owner reported building under positive pressure based on HVAC set up; however, no documentation on this (e.g., air balancing report).

SECTION III – Indoor Air Quality Influence Factors

A. Is there a garage, service area or manufacturing area in building? Yes

If yes, list all that apply: Only used as storage

1. Does the garage, service or manufacturing areas have separate heating unit/system? No
2. Are petroleum-powered machines or vehicles used or stored within the garage, service area or manufacturing area of building? *(e.g., forklifts, vehicle fleet, lawnmower, etc.)* Yes

If yes, specify:

3 Propane Fork Trucks, also have one Electric Scissor Lift

B. Are there any current or former USTs, ASTs or Fueling Facilities on the property? No

If yes, specify location: _____

C. Are there any current or former hydraulic lifts at the property? No

If yes, locations and note if underground or above ground:

D. Are there any current or former petroleum or chemical spills at the Site? No

If yes, specify location, quantity, material and date:

E. Are there any current or former groundwater monitoring wells at the Site? No

If yes, specify location and accessibility:

F. Has the building ever had a fire? No

If yes, When: _____

G. Is there a maintenance area? Yes

If yes, Where: East side of building

H. Are there any parts cleaners used at the site? Yes

If yes, list location(s) and solvent types:
Detergent Based in Tool Room

I. Are there any drum and/or chemical storage areas? Yes

If yes, list location(s) and materials:
Hydraulic/lube & waste oil stored in Utility Room

J. Are cleaning products used routinely? Yes

If yes, When & Where: Mold cleaner, floor cleaner

K. Has painting/staining been done in the last 6 months? No

If yes, When & Where:

L. Is there new carpet, drapes or other textiles within installed within the last year? No

If yes, Where & When:

M. Are there air fresheners in office spaces or bathrooms? Yes

If yes, Where & Type:

N. Are there exhaust fans (e.g., break rooms, bathrooms, or other locations)? Yes

If yes, where vented and how often do they run:

O. Has there been a pesticide application on the grounds? No

If yes, When & Type: But have contract

P. Is smoking allowed on the property? No

If yes, is it allowed within buildings and where? No

Q. Are there odors in the building? Yes

If yes, please describe: But only related to operations

R. Are solvents used within the building? Yes
(e.g., chemical manufacturing or laboratory, auto mechanic or auto body shop, painting, fuel oil delivery, boiler mechanic, pesticide application, etc.)

If yes, what types of solvents are used: Use alcohol in Clean Room, use Acetone

S. Is groundwater extracted for any purpose (e.g. cooling water, geothermal, etc.)? No

If yes, how many extraction wells, what depths and what is the rate of extraction: _____

T. Are there any air handling units in the building? Yes

If yes, locations, sizes, intakes & exhaust: _____

U. Are there any doors (overhead/bay or others) that are routinely open? Yes

If yes, note locations, sizes, and approximate times open: Open as needed. Southern door open in summer 10-15 times per day.

V. Do any of the building occupants regularly use a dry cleaning service? Yes, week

Based on Information obtained list all potential soil gas entry points and there sizes (e.g., cracks in floor, void space, piping, utility ports, sumps, elevator pits, lifts, drains, etc.).

[*Note: See page 12 & 13 for additional information to be collected on each potential soil gas entry point (i.e., photographs, PID and landfill gas measurements, etc.*]

Comments:

Section IV – Occupancy/General Use

Location Use	Occupied (list hours/shifts)	Number of Employees (Full/Part-time)	Approx. Sq. Ft.	Level (basement, 1st Floor, 2nd Floor, etc.)	Brief Summary of Business/ Operations in Area (include additional sheets as necessary)
Office	Full Time M-F	30	~7,000	1st Flr	General Office
Manufacturing/ Production	Full Time - 3 Shifts	70	~70,000	1st Flr	Injection molding
Warehouse/ Storage	n/a	n/a	23,000	1st Flr	Storage of molded parts
Garage	n/a	n/a	n/a	1st Flr	Used for Storage
Maintenance	n/a	n/a	7,000	1st Flr	Maintenance of equipment
Conference/ Break Rooms	n/a	n/a	n/a	1st Flr	n/a

Comments:

For Manufacturing Area - About 30 people on 1st shift, 20 people on 2nd shift and 20 people on 3rd shift.

1645-1655 Emerson Street

Instrument Readings:

Mark each location on site sketch where reading was collected and provide a photograph. At a minimum, readings must be collected from all potential soil gas entry points within buildings (e.g., utility vaults, sumps, floor drains, oil/water separators, floor cracks, etc.) and any subsurface features on the exterior (e.g., catch basins, manholes, utility vaults, etc.). In addition, at least one breathing zone location will be measured for each discrete area within buildings.

Location	VOCs	CH4	CO2	O2	CO	H2S	Description & Comments
Units	ppb	%	%	%	ppm	ppm	
1	290	0.0	0.1	20.9	0	0	Background Conference Room
2	280	0.0	0.1	20.9	0	0	Electrical Outlet (Bckgrd = #1)
3	255	0.0	0.1	20.9	0	0	Electrical Outlet (Bckgrd = #1)
4	260	0.0	0.1	20.9	0	0	Electrical Outlet (Bckgrd = #1)
5	225	0.0	0.0	20.9	0	0	Steel Pipe Penetration Through Wall in Closet (Bckgrd = #1)
6	305	0.0	0.0	20.9	0	0	Background Storage Office
7	305	0.0	0.0	20.9	0	0	Printer Room Background
8	335	0.0	0.0	20.9	0	0	Background
9	700	0.0	0.0	20.9	0	0	Floor Drain Near Toilet (Bckgrd = #8)
10	455	0.0	0.0	20.9	0	0	Background
11	455	0.0	0.0	20.9	0	0	Floor Drain - Women's Bathroom (Bckgrd = #10)
12	1050	0.0	0.0	20.9	0	0	Bathroom Air Freshner
13	585	0.0	0.0	20.9	0	0	Background
14	425	0.0	0.0	20.9	0	0	Pipe Penetration - Under Sink (Bckgrd = #13)
15	460	0.0	0.0	20.9	0	0	Background - Exhaust Fan
16	328	0.0	0.0	20.9	0	0	Shower Drain (Bckgrd = #15)
17	460	0.0	0.0	20.9	0	0	Electrical Outlet (Bckgrd = #18)
18	420	0.0	0.0	20.9	0	0	Background
19	418	0.0	0.0	20.9	0	0	Sink in Bathroom Penetration (Bckgrd = #20)
20	430	0.0	0.0	20.9	0	0	Background

Instrument Readings (Continued):

Mark each location on site sketch where reading was collected and provide a photograph. At a minimum, readings must be collected from all potential soil gas entry points within buildings (e.g., utility vaults, sumps, floor drains, oil/water separators, floor cracks, etc.) and any subsurface features on the exterior (e.g., catch basins, manholes, utility vaults, etc.). In addition, at least one breathing zone location will be measured for each discrete area within buildings.

Location	VOCs	CH4	CO2	O2	CO	H2S	Description & Comments
Units	ppb	%	%	%	ppm	ppm	
21	385	0.0	0.0	20.9	0	0	Background - Office Space
22	435	0.0	0.0	20.9	0	0	Background - QC Room
23	254	0.0	0.0	20.9	0	0	Cable Outlet (Bckgrd = #22)
24	950	0.0	0.0	20.9	0	0	Background - Tool Room
25	1100 -1300	0.0	0.0	20.9	0	0	Floor Crack (Bckgrd = #24)
26	700	0.0	0.0	20.9	0	0	I-Beam (Bckgrd = #24)
27	1150	0.0	0.0	20.9	0	0	Floor Crack (Bckgrd = #24)
28	550 - 650	0.0	0.0	20.9	0	0	Background - Manufacture Area
29	750	0.0	0.0	20.9	0	0	Floor Crack (Bckgrd = #28)
30	970	0.0	0.0	20.9	0	0	Floor Drain (Bckgrd = #28)
31	570	0.0	0.0	20.9	0	0	Trench Floor Drain (Bckgrd = #32)
32	700 - 750	0.0	0.0	20.9	0	0	Background
33	640	0.0	0.0	20.9	0	0	I-Beam at Corner (Bckgrd = #32)
34	655	0.0	0.0	20.9	0	0	Vent Pipe Base (Bckgrd = #32)
35	555	0.0	0.0	20.9	0	0	Floor Penetration - Sewer Cleanout (Bckgrd = #32)
36	13,500	0.0	0.0	20.9	0	0	Trench Floor Drain (Bckgrd = #32)
37	570	0.0	0.0	20.9	0	0	Pipe Penetration - Electric (Bckgrd = #28)
38	550	0.0	0.0	20.9	0	0	Floor Crack - Pre Vacuum (Bckgrd = #28)
39	600	0.0	0.0	20.9	0	0	Crack - Dust (Bckgrd = #28)
40	1800	0.0	0.0	20.9	0	0	Trench Floor Drain (Bckgrd = #28)

Instrument Readings (Continued):

Mark each location on site sketch where reading was collected and provide a photograph. At a minimum, readings must be collected from all potential soil gas entry points within buildings (e.g., utility vaults, sumps, floor drains, oil/water separators, floor cracks, etc.) and any subsurface features on the exterior (e.g., catch basins, manholes, utility vaults, etc.). In addition, at least one breathing zone location will be measured for each discrete area within buildings.

Location	VOCs	CH4	CO2	O2	CO	H2S	Description & Comments
Units	ppb	%	%	%	ppm	ppm	
41	550	0.0	0.0	20.9	0	0	Vertical Black Pipe (Bckgrd = #28)
42	500	0.0	0.0	20.9	0	0	PVC Pipe Vent System (Bckgrd = #28)
43	550	0.0	0.0	20.9	0	0	Loading Deck Background Area
44	550	0.0	0.0	20.9	0	0	Electrical Pipes from Floor (Bckgrd = #43)
45	550	0.0	0.0	20.9	0	0	Inside Electrical Pipe (Bckgrd = #43)
46	550	0.0	0.0	20.9	0	0	Pipe from Bottom of Wall Electric (Bckgrd = #43)
47	470	0.0	0.0	20.9	0	0	Crack in Floor (Bckgrd = #43)
48	550	0.0	0.0	20.9	0	0	I-Beam on Caisson (Bckgrd = #43)
49	524	0.0	0.0	20.9	0	0	Steel Plate (Bckgrd = #28)
50	537	0.0	0.0	20.9	0	0	Floor Caulk (Bckgrd = #28)
51	550	0.0	0.0	20.9	0	0	Steel Plate (Bckgrd = #28)
52	550	0.0	0.0	20.9	0	0	Expansion Joint (Bckgrd = #28)
53	550	0.0	0.0	20.9	0	0	Drain or Cleanout (Bckgrd = #43)
54	550	0.0	0.0	20.9	0	0	Floor Crack (Bckgrd = #43)
55	550	0.0	0.0	20.9	0	0	Electrical Pipe from Floor (Bckgrd = #43)
56	550	0.0	0.0	20.9	0	0	Floor Crack (Bckgrd = #43)
57	550	0.0	0.0	20.9	0	0	Clean Out (Bckgrd = #43)
58	770	0.0	0.0	20.9	0	0	Background - Maintenance Area
59	1200	0.0	0.0	20.9	0	0	Floor Drain (Bckgrd = #58)
60	770	0.0	0.0	20.9	0	0	Black Vertical Vent Pipe (Bckgrd = #58)

Instrument Readings (Continued):

Mark each location on site sketch where reading was collected and provide a photograph. At a minimum, readings must be collected from all potential soil gas entry points within buildings (e.g., utility vaults, sumps, floor drains, oil/water separators, floor cracks, etc.) and any subsurface features on the exterior (e.g., catch basins, manholes, utility vaults, etc.). In addition, at least one breathing zone location will be measured for each discrete area within buildings.

Location	VOCs	CH4	CO2	O2	CO	H2S	Description & Comments
Units	ppb	%	%	%	ppm	ppm	
61	740	0.0	0.0	20.9	0	0	Floor Crack - Loading Deck (Bckgrd = #58)
62	740	0.0	0.0	20.9	0	0	Electrical Conduit through Floor (Bckgrd = #58)
63	740	0.0	0.0	20.9	0	0	I-Beam (Bckgrd = #58)
64	580	0.0	0.0	20.9	0	0	Background - Garage Area
65	660	0.0	0.0	20.9	0	0	Trench - Floor (Bckgrd = #58)
66	670	0.0	0.0	20.9	0	0	Background - Utility Room
67	600	0.0	0.0	20.9	0	0	Trench - Floor (Bckgrd = #66)
68	600	0.0	0.0	20.9	0	0	Electric Pipe (Bckgrd = #66)
69	600	0.0	0.0	20.9	0	0	Electric Pipe (Bckgrd = #66)
70	1081	0.0	0.0	20.9	0	0	Floor Drain East (Bckgrd = #66)
71	750	0.0	0.0	20.9	0	0	Floor Drain Center (Bckgrd = #66)
72	675	0.0	0.0	20.9	0	0	Floor Drain West (Bckgrd = #66)
73	630	0.0	0.0	20.9	0	0	Conduit Pipe (Bckgrd = #66)
74	629	0.0	0.0	20.9	0	0	Vent Pipe Plastic PVC 4" (Bckgrd = #66)
75	608	0.0	0.0	20.9	0	0	Watermain (Bckgrd = #66)
76	667	0.0	0.0	20.9	0	0	Electrical Pipe (Bckgrd = #66)
77	420	0.0	0.0	20.9	0	0	Background
78	420	0.0	0.0	20.9	0	0	Plastic Pipes - Top (Bckgrd = #77)
79	420	0.0	0.0	20.9	0	0	Plastic Pipes - Base (Bckgrd = #77)
80	445	0.0	0.0	20.9	0	0	Background - Men's Bathroom

Instrument Readings (Continued):

Mark each location on site sketch where reading was collected and provide a photograph. At a minimum, readings must be collected from all potential soil gas entry points within buildings (e.g., utility vaults, sumps, floor drains, oil/water separators, floor cracks, etc.) and any subsurface features on the exterior (e.g., catch basins, manholes, utility vaults, etc.). In addition, at least one breathing zone location will be measured for each discrete area within buildings.

Location	VOCs	CH4	CO2	O2	CO	H2S	Description & Comments
Units	ppb	%	%	%	ppm	ppm	
81	610	0.0	0.0	20.9	0	0	Floor Drain (Bckgrd = #80)
82	410	0.0	0.0	20.9	0	0	Background - Locker Room
83	517	0.0	0.0	20.9	0	0	Floor Drain - Locker Room (Bckgrd = #82)
84	500	0.0	0.0	20.9	0	0	Background - Women's Locker Room
85	630	0.0	0.0	20.9	0	0	Floor Drain - Women's Locker Room (Bckgrd = #84)
86	505	0.0	0.0	20.9	0	0	Background - Women's Bathroom
87	583	0.0	0.0	20.9	0	0	Floor Drain - Women's Bathroom (Bckgrd = #86)
88	420	0.0	0.0	20.9	0	0	Background Lab
89	350 - 400	0.0	0.0	20.9	0	0	Lunchroom Background
90	400	0.0	0.0	20.9	0	0	Lunchroom Sink (Bckgrd = #89)
91	409	0.0	0.0	20.9	0	0	Lunchroom Floor Drain South (Bckgrd = #89)
92	409	0.0	0.0	20.9	0	0	Lunchroom Floor Drain North (Bckgrd = #89)
93	520	0.0	0.0	20.9	0	0	Manufacturing Area - Background
94	541	0.0	0.0	20.9	0	0	Cleanout (Bckgrd = #93)
95	670	0.0	0.0	20.9	0	0	Janitor Closet Floor Drain (Bckgrd = #96)
96	370	0.0	0.0	20.9	0	0	Background - Janitor Closet
97	294	0.0	0.0	20.9	0	0	Pipe Penetration (Bckgrd = #96)
98	377	0.0	0.0	20.9	0	0	Sewer Vent (Bckgrd = #96)
99	348	0.0	0.0	20.9	0	0	Drain (Bckgrd = #96)
100	470	0.0	0.0	20.9	0	0	Background - Clean Room

Instrument Readings (Continued):

Mark each location on site sketch where reading was collected and provide a photograph. At a minimum, readings must be collected from all potential soil gas entry points within buildings (e.g., utility vaults, sumps, floor drains, oil/water separators, floor cracks, etc.) and any subsurface features on the exterior (e.g., catch basins, manholes, utility vaults, etc.). In addition, at least one breathing zone location will be measured for each discrete area within buildings.

Location	VOCs	CH4	CO2	O2	CO	H2S	Description & Comments
Units	ppb	%	%	%	ppm	ppm	
101	514	0.0	0.0	21.0	0	0	Former Mounting Bolt Penetration in Floor (Bckgrd = #100)
102	567	0.0	0.0	20.9	0	0	Former Mounting Bolt Penetration in Floor (Bckgrd = #100)
103	693	0.0	0.0	20.9	0	0	Background in Syringe Molding Area of Clean Room
104	830	0.0	0.0	21.1	0	0	Trench Drain Passing Through Clean Room (Bckgrd = #103)
105	130	0.0	0.0	20.9	0	0	Outside Air (Background)
106	120	0.0	0.0	20.9	0	0	Roof Drain
107	108	0.0	0.0	20.9	0	0	Sewer Clean Out
108	88	0.0	0.0	20.9	0	0	Catch Basin
109	87	0.0	0.0	20.9	0	0	Sewer Clean Out
110	93	0.0	0.0	20.9	0	0	Ground Hog Hole
111	97	0.0	0.0	20.9	0	0	Ground Hog Hole
112	84	0.0	0.1	20.9	0	0	Storm Sewer Catch Basin
113	74	0.0	0.1	20.9	0	0	Catch Basin
114	78	0.0	0.0	20.9	0	0	Storm Sewer Manhole
115	65	0.0	0.0	20.9	0	0	Storm Sewer Manhole
116	63	0.0	0.0	20.9	0	0	Catch Basin
117	62	0.0	0.0	20.9	0	0	Catch Basin
118	64	0.0	0.0	20.9	0	0	Gas Service
119	63	0.0	0.0	20.9	0	0	Manhole
120	63	0.0	0.0	20.9	0	0	Catch Basin

Instrument Readings (Continued):

Mark each location on site sketch where reading was collected and provide a photograph. At a minimum, readings must be collected from all potential soil gas entry points within buildings (e.g., utility vaults, sumps, floor drains, oil/water separators, floor cracks, etc.) and any subsurface features on the exterior (e.g., catch basins, manholes, utility vaults, etc.). In addition, at least one breathing zone location will be measured for each discrete area within buildings.

Location	VOCs	CH4	CO2	O2	CO	H2S	Description & Comments
Units	ppb	%	%	%	ppm	ppm	
121	58	0.0	0.0	20.9	0	0	Catch Basin
122	57	0.0	0.0	20.9	0	0	Manhole
123	60	0.0	0.0	20.9	0	0	Catch Basin
124	58	0.0	0.0	20.9	0	0	Manhole
125	Readings Collected on 11/24/2010 After Owner Provided Sampling Ports in Passive Vent Pipes						
126							
127	872	0.0	0.0	21.0	0	0	Background for Passive Vent Pipe - North Wall Middle
128	535	4.1	0.0	16.6	0	0	Passive Vent Pipe - North Wall Middle
129	959	0.0	0.0	21.0	0	0	Background for Passive Vent Pipe - North Wall East
130	269	1.4	0.0	19.8	0	0	Passive Vent Pipe - North Wall East
131	802	0.0	0.1	20.6	9	0	Background for Passive Vent Pipe - South Wall West
132	504	0.0	2.6	18.0	0	0	Passive Vent Pipe - South Wall West
133	625	0.0	0.0	20.8	9	0	Background for Passive Vent Pipe - South Wall Middle
134	825	0.0	6.1	14.1	0	0	Passive Vent Pipe - South Wall Middle
135	756	0.0	0.0	20.8	6	0	Background for Passive Vent Pipe - South Wall East
136	567	4.4	0.0	16.0	0	0	Passive Vent Pipe - South Wall East
137							
138							
139							
140							

1645-1655 Emerson Street

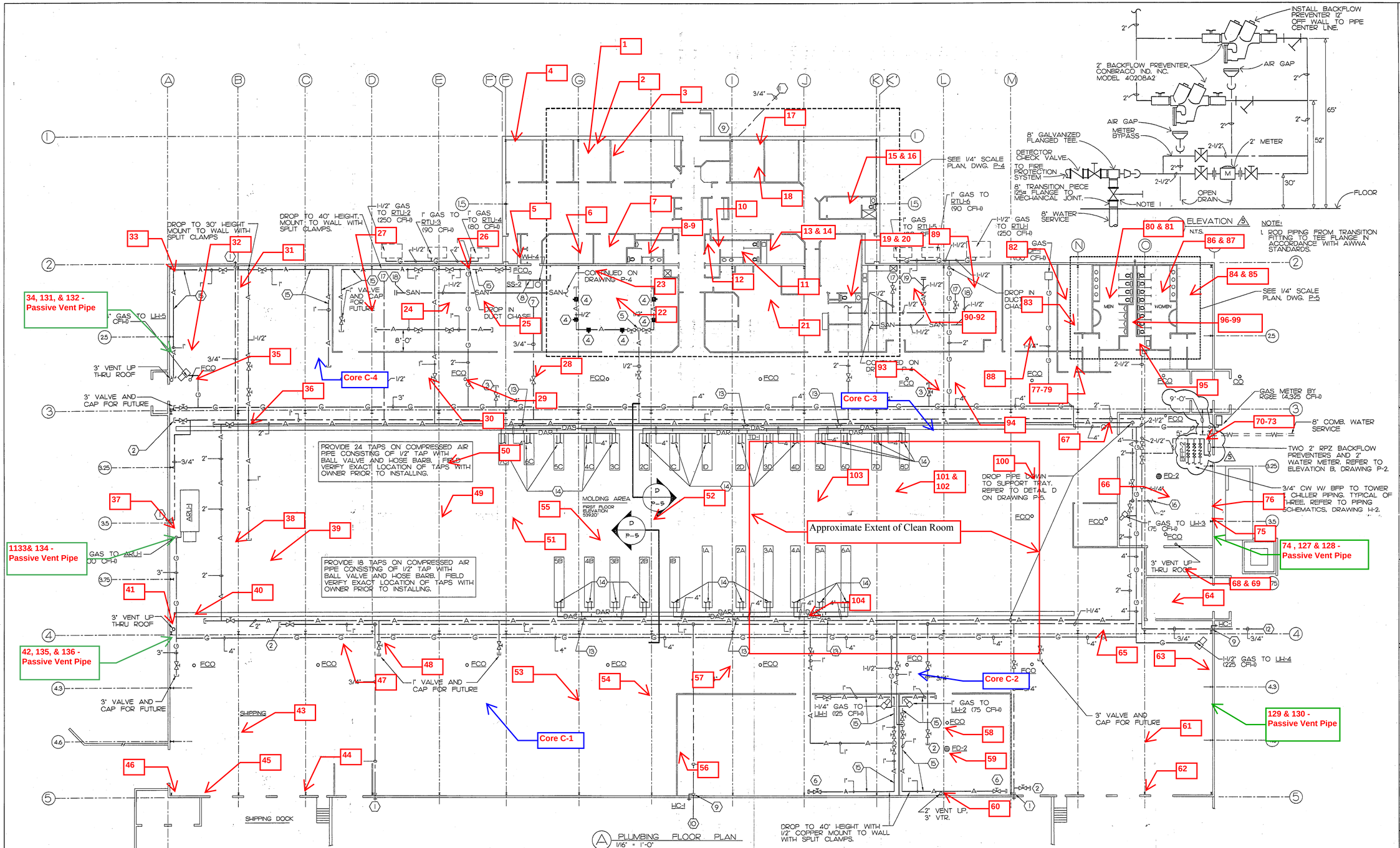
Instrument Readings (Continued):

Mark each location on site sketch where reading was collected and provide a photograph. At a minimum, readings must be collected from all potential soil gas entry points within buildings (e.g., utility vaults, sumps, floor drains, oil/water separators, floor cracks, etc.) and any subsurface features on the exterior (e.g., catch basins, manholes, utility vaults, etc.). In addition, at least one breathing zone location will be measured for each discrete area within buildings.

Location	VOCs	CH4	CO2	O2	CO	H2S	Description & Comments
Units	ppb	%	%	%	ppm	ppm	
141							
142							
143	310	0.0	0.0	20.9	6	0	Background at Core C-1
144	438	0.0	0.0	20.1	6	0	Core C-1
145	240	0.0	0.0	20.9	0	0	Background at Core C-2
146	452	0.0	0.0	20.7	0	0	Core C-2
147	185	0.0	0.0	20.8	5	0	Background at Core C-3
148	320	0.0	0.0	19.9	4	0	Core C-3
149	225	0.0	0.0	20.8	3	0	Background at Core C-4
150	308	0.0	0.0	18.6	2	0	Core C-4
151							
152							
153							
154							
155							
156							
157							
158							
159							
160							

Readings Collected on 12/31/2010 After Cores Removed

* Background Reading



GENERAL NOTES:

(A) ALL BRANCH AIR LINES OFF MAIN LINE TO EXIT UP.

(B) ALL AIR PIPE DROPS TO FLOOR LEVEL TO HAVE DRAIN LEG WITH 1/2" BALL VALVE.

(C) FIRST CHOICE ON BALL VAVES TO BE APOLLO.

(D) REFER TO DETAIL ON DRAWING P-5 FOR PIPE SUPPORT SYSTEM.

(E) CONNECT GAS PIPING TO EACH PIECE OF EQUIPMENT WITH SHUT OFF VALVE, UNION AND SEDIMENT TRAP.

PLUMBING NOTES:

(1) 3/4" CW DOWN TO WALL HYDRANT HC-1

(2) 3/4" CW CAPPED FOR FUTURE

(3) 2" VALVE AND CAP FOR FUTURE

(4) TEE WITH 1/4" NPT PLUG

(5) DROP TO 10'-6" HEIGHT AND HANG OVER SUSPENDED CEILING.

(6) 1" VALVE AND CAP FOR FUTURE

(7) 3/4" CW TO WATER HEATER WH-4 & SERVICE SINK SS-2

(8) 2" VENT UP, 3" VTR

(9) 3/4" CW DOWN TO BELOW GRADE, WALL HYDRANT HC-1 AT + 24"

(10) 3/4" CW BELOW GRADE, APPROXIMATELY 135 FEET EAST TO POST HYDRANT HC-2, SEE DWG. C-1 FOR LOCATION

(11) 3/4" CW BELOW GRADE, APPROXIMATELY 130 FEET S.W. TO POST HYDRANT HC-2, SEE DWG. C-1 FOR LOCATION

(12) 3/4" CW BELOW GRADE, APPROXIMATELY 70 FEET NORTH TO POST HYDRANT HC-2, SEE DWG. C-1 FOR LOCATION

(13) CONNECT 4" TO DESICCANT DRYER. DRYER TO BE PROVIDED BY OWNER.

(14) RUN 2" AIR PIPING TO MACHINE. FINAL CONNECTION TO BE BY OWNER, TYPICAL OF 26.

(15) PROVIDE 1"x 1"x 1/2" TEE EVERY 8'-0" WITH 1/2" COPPER TO 1/4" NPT REDUCER AND 1/4" NPT PLUG.

(16) REFER TO COMPRESSED AIR PIPING SCHEMATIC FOR CONTINUATION, DETAIL E/P-5.

(17) 1/2" CW TO HUMIDIFIER (25 GPH)

(18) CONNECT TO 1/4" HUMIDIFIER DRAIN

(19) CONNECT TO 1/2" HUMIDIFIER DRAIN

MONROE COUNTY HEALTH DEPARTMENT
Rochester, N.Y. December 11 1998
Plans for Two (2) 2-Bedroom Nursing Simple
Dwellings at JADA Precision Plastics Inc.
A timely request pursuant to Sections of the STATE SANITARY CODE subject to the provisions of the permit issued this day.
COUNTY DIRECTOR OF HEALTH
By Public Health Engineer

ASBUILT

A NEW FACILITY FOR JADA PRECISION PLASTICS CO., INC.
1667 Emerson Street Rochester, NY 14606

diagostino
general contractors inc.
57 O'Connor Road
Fairport, NY 14450-1527
Ph. (716) 377-7590
Fax. (716) 377-7592

Carmine Torchia, P.E.
16 Thoroughbred Trail
Penfield, NY 14526
Ph. (716) 787-0827
FAX (716) 787-0273
TORCHIA STRUCTURAL ENGINEERING & DESIGN

Ann Van Hogue Design
88 East Main St.
LeRoy, NY 14482
716 768 8447
Ann Van Hogue
Registered Architect

LABELLA
Engineering, Architecture and Surveying
LaBella Associates, P.C.
300 STATE STREET
ROCHESTER, NY. 14614
(716) 454-6110

STATE OF NEW YORK
STEPHEN EDWARD MABEE
068517
LICENSED PROFESSIONAL ENGINEER

DRAWING TITLE: PLUMBING FLOOR PLAN

REVISIONS:
1. GENERAL REVISIONS 09/10/97
2. GENERAL REVISIONS 02/19/98
3. GENERAL REVISIONS 03/20/98
4. GENERAL REVISIONS 05/07/98
5. BFP ASBUILT REVISIONS 12/10/98

JOB NO.: 97229
SCALE: AS SHOWN
DRAWN BY: DW/TM
DATE: 8/18/97
DRAWING #
P-2

FUTURE ROAD A

ROAD

STREET

McCRACKANVILLE STREET

EMERSON STREET

M.H. #5
TOP 536.00
INV. 532.00

M.H. #6
TOP 536.00
S.INV. 529.48
E.INV. 529.46

M.H. #7
TOP 536.00
INV 524.90

M.H. #4 WITH RESTRICTED OUTLET
TOP 535.00
W&E. INV. 526.20

M.H. #1
TOP 536.80
INV. 531.80

M.H. #2
TOP 535.60
S. INV. 530.60
N. INV. 530.80

M.H. #3
TOP 535.50
S. INV. 529.40
W. INV. 529.40

D.I. #1
TOP 535.00
INV. 532.00

D.I. #2
TOP 534.30
INV. 531.28

D.I. #3
TOP 535.00
INV. 531.30

D.I. #4
TOP 535.00
INV. 529.72

D.I. #5
TOP 535.25
INV. 530.75

D.I. #6
TOP 535.00
INV. 529.40
INV 529.24

D.I. #7
TOP 536.50
INV. 531.54

124 123 122 121 120 119 118 117 116 115 114 113 112 111 110 109 108 107 106 105

6'-12" CORR. P.E. @ 2.40%
380'-24" CORR. P.E. @ 0.70%
INV. 530.98
INV. 530.36
7'-8" CORR. P.E. @ 6.0%
6'-8" CORR. P.E. @ 6.0%
6'-12" CORR. P.E. @ 2.40%
124'-12" CORR. P.E. @ 2.40%
6'-6" CORR. P.E. @ 5.00%
56'-6" CORR. P.E. @ 5.00%
INV. 536.10
INV. 533.00
CO INV. 536.40
120'-8" CORR. P.E. @ 2.00%
6'-8" CORR. P.E. @ 2.00%
INV. 534.00
NOTE: KEEP MIN. 5'-0" AWAY FROM BLDG. (TYP)
32'-8" CORR. P.E. @ 2.00%
112'-8" CORR. P.E. @ 2.00%
INV. 536.4
6'-8" CORR. P.E. @ 6.0%
20'-8" CORR. P.E. @ 6.0%
105'-24" CORR. P.E. @ 0.70%
INV. 528.54
18" FF CMP
6" PVC SCH 35 SAN. LAT. @ MIN. 2.0%
65'-D"
CMP. @ 9.00% MAX
INV OF 72" CMP 514.76
NOTE: UTILITY CROSSING PROVIDE MIN. 12" VERTICAL SEPERATION
NOTE: OPEN CUT ROAD AND REPAIR EXIST. PAVEMENT TO MATCH AFTER WORK IS COMPLETE
PROPOSED 8" COMB. DUCTILE IRON WATER SERVICE. SEE SHEET P-2
CURB BOX
6x12 TSV
10' EASEMENT
75'-8" CORR. P.E. @ 6.0%
40'-8" CORR. P.E. @ 6.0%
240'-24" CORR. P.E. @ 0.50%
INV. 528.54
INV. 529.30
75'-12" CORR. P.E. @ 0.50%
6'-12" CORR. P.E. @ 0.50%
240'-24" CORR. P.E. @ 0.50%
INV. 531.80
INV. 530.96
INV. 530.85
98'-12" CORR. P.E. @ 3.00%
6'-12" CORR. P.E. @ 3.00%
6'-12" CORR. P.E. @ 1.5%
15'-12" CORR. P.E. @ 1.5%
75'-12" CORR. P.E. @ 1.50%
6'-12" CORR. P.E. @ 1.5%
INV. 530.07
7'-8" CORR. P.E. @ 6.0%
NOTE: ALL NEW MH.'S 5'-0" Ø
DRIVE
TRANS PAD
TELE PAD

LEGEND

- PROPOSED D.I., M.H. & STORM SEWER
- W — PROPOSED WATER SERVICE
- S — S — PROPOSED SANITARY LATERAL
- CLEAN OUT
- SAN — EXISTING M.H. & SANITARY SEWER
- ST — EXISTING D.I., M.H. & STORM SEWER
- W — EXISTING HYDRANT AND WATERMAIN
- G — EXISTING GAS MAIN
- E — EXISTING ELECTRIC LINE
- DETAIL NUMBER

Torchia Structural Engineering
Carmine Torchia, P.E.
18 Throughbred Trail
Penfield, NY 14526
Phone: 716-787-2827 Fax: 716-787-2273

Project
A NEW FACILITY FOR
JADA PRECISION PLASTICS CO. INC.
1667 EMERSON STREET
ROCHESTER, NEW YORK 14606

Drawing Title
UTILITY PLAN

STATE OF NEW YORK
CARMINE TORCHIA
No. 070309
LICENSED PROFESSIONAL ENGINEER

DATE REV. 4-14-98
1-28-98
SCALE 1 IN = 30 FT.
DRAWN CT & MD
JOB 95-12-01
SHEET C-3
OF 6 SHEETS

Location #17 – Electrical outlet

Location #25 – Floor crack

Location #27 – Floor crack

Location #29 – Floor crack

General interior view

Engineering
Architecture
Environmental
Planning

LABELLA
Associates, P.C.

300 State Street, Suite 201, Rochester, NY 14614

Phone 585.454.6110
Fax 585.454.3066
www.labellapc.com

March 16, 2011

Mr. Joseph Biandolillo
City of Rochester DES
30 Church Street
Rochester, New York 14604

Re: Val-Tech Holdings, Inc. at
1645-1685 Emerson Street, Rochester, NY 14606
LaBella Project No. 210173.04

Dear Mr. Biandolillo:

The concrete floor slab of the building located at 1645-1685 Emerson Street exhibits a significant number of large cracks. We visited the site on November 24, 2010 to observe the width, extent, and pattern of cracking to determine the source and potential for cracks to increase in number and/or size and to cause settlement or other movement of the slab.

The building was constructed in 1998 and has been used as an industrial facility ever since. The concrete slab is a one-way structural (reinforced) slab supported by a grid of concrete grade beams and drilled shafts ("caissons"). The drilled shafts are founded on rock.

LaBella Associates, P.C. contracted with Quality Inspection Services, Inc. of Rochester, NY to obtain four 4 inch nominal diameter cores through the slab at specific cracks in each quadrant of the building. The cores were obtained on December 31, 2010. Two of the cores were then sent to CTL Engineering, Inc. for petrographic laboratory testing. Findings from coring and testing of the slab are listed below.

Findings

- The cracks range from hairline to ½" wide and typically travel in a random pattern
- The top of a few of the cracks were filled with an epoxy resin
- Very few control joints were observed in the slab
- The cracks in the four cores extend the full depth of the slab
- The aperture of the cracks is large at the top surface of the slab and typically narrow as they travel toward the bottom of the slab
- Petrographic tests reveal that the overall quality of the concrete is fair due to placement with high water content. The water to cementitious material ratio is estimated to have been 0.50 to 0.56 at the time of placement. A maximum water/cement ratio of 0.45 is generally specified for interior slabs.
- The maximum size of coarse aggregate is ½ inch. This is considered small aggregate for the type of placement.
- Cracking in the cores propagated around the coarse aggregate which is consistent with drying shrinkage.
- The cement paste is soft and porous with carbonation up to 4 5/8" deep from the top surface of the core / slab.

Conclusions

Based on our observations of the slab and cracks in place, slab cores, and the petrographic analysis test results, the cracks appear to be caused by drying shrinkage due to high water content in the concrete mix used for slab placement. This type of crack typically occurs shortly after placement (after initial hardening of the concrete)

and "grows" quickly as water evaporates from the slab. The cracks are considered non-moving cracks since they are not related to expansion and contraction of the concrete due to thermal changes in the building.

The existing cracks will not increase in number or size due to drying shrinkage. However, it is possible for new cracks to form due to other mechanisms, such as, overloading or overstressing of the slab, deterioration of reinforcement which could reduce the capacity of the slab, excessive vibration from slab mounted equipment, etc.

Since the slab is a reinforced structural slab versus a slab-on-grade, it is unlikely that differential settlement or shearing/thrusting of the slab will occur. However, it was noted in the petrographic analysis report that carbonation of the concrete extends 4 5/8" into the slab from the top surface. Carbonation is one of the main reasons for corrosion of reinforcement in concrete. Carbonation affects the alkalinity of the concrete reducing the passivating layer around the reinforcement which protects it from oxygen and water. Localized areas of the slab could experience horizontal or vertical movement if a group of reinforcing bars corroded through at a crack. This would most likely only happen if a crack were subject to standing water for an extended period of time. Based on the current operations in the building, the potential for this movement is low.

Epoxy injection of the existing cracks is possible and is recommended as the best method to fill the cracks to the greatest depth. Injection material must be of a proper viscosity to fill the crack but not leak through since the cracks extend full depth of the slab. Filling the cracks will also reduce the potential for continued carbonation at the cracks. However, due to the number of cracks and the fact that many of the cracks extend under existing equipment and storage racks used for the building owner's manufacturing operation, we believe this option is not feasible. We recommend implementing other measures that would have less impact on building operations.

While other measures are being explored, we recommend installing a vibration monitor near equipment with the highest impact on the slab to confirm whether the intensity of the vibrations is in a range that could cause future cracking or not.

Please contact me directly at 585-295-6617 or smatzat@labellapc.com with questions or comments

Sincerely,

LABELLA ASSOCIATES, P.C.

Susan L. Matzat, P.E.

Susan L. Matzat, PE, SECB, LEED AP
Sr. Structural Engineer

SLM/lk

Attachment: Copy of Petrographic Report of Concrete Slab Cores

cc: Daniel Noll, P.E.; LaBella Associates, PC