

24 January 2018

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SUBJECT: Final Annual Report and Year 9 Review for the Ash Landfill Operable Unit at Seneca Army Depot Activity, Romulus, NY; EPA Site ID# NY0213820830 and NY Site ID# 8-50-006

Dear Mr. Vazquez/Ms. Sweet/Mr. Sergott:

Parsons Federal (Parsons) is pleased to submit the Final Annual Report and Year 9 Review for the ninth year of monitoring at the Ash Landfill Operable Unit at Seneca Army Depot Activity (SEDA) in Romulus, New York (EPA Site ID# NY0213820830 and NY Site ID# 8-50-006). This Annual Report and Year 9 Review provides a review of long-term groundwater monitoring for 2015 and provides recommendations for future long-term monitoring at the site. This document also provides an annual review of the effectiveness of the remedy implemented in 2006. This document recommends the continuation of monitoring on a semi-annual basis for the next year. Comments from the EPA dated November 2017 were addressed in the Final version.

Parsons appreciates the opportunity to provide you with the Annual Report for this work. Should you have any questions, please do not hesitate to call me at (617) 449-1565 to discuss them.

Sincerely,



Beth Badik
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Enclosures

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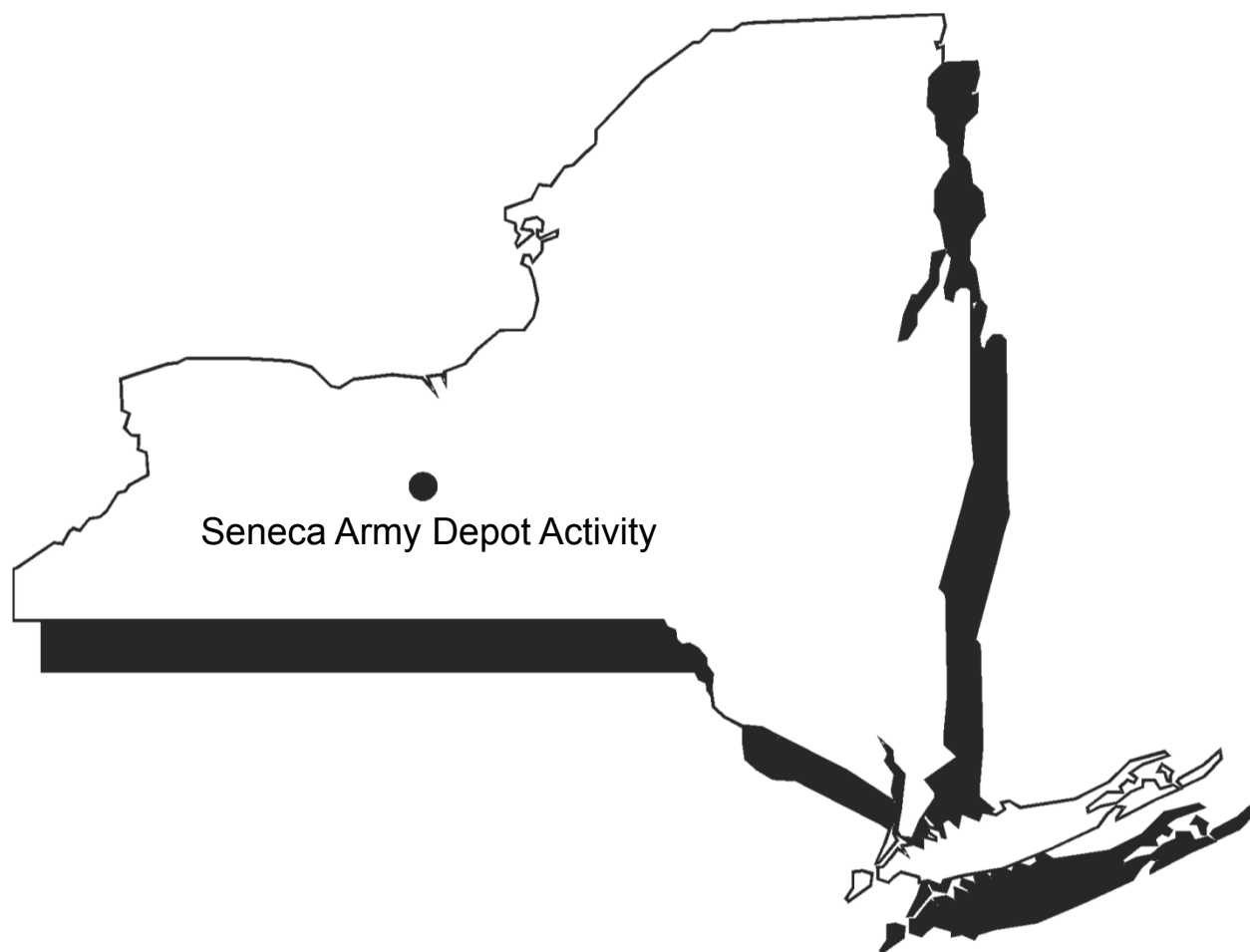


US Army, Engineering & Support Center
Huntsville, AL

01930



Seneca Army Depot Activity
Romulus, NY



Seneca Army Depot Activity

FINAL
ANNUAL REPORT AND YEAR 9 REVIEW
ASH LANDFILL OPERABLE UNIT
SENECA ARMY DEPOT ACTIVITY

Contract No. W912DY-08-D-0003
Task Order No. 0015
EPA Site ID# NY0213820830
NY Site ID# 8-50-006

PARSONS
JANUARY 2018

FINAL

ANNUAL REPORT AND YEAR 9 REVIEW

FOR THE

ASH LANDFILL OPERABLE UNIT
SENECA ARMY DEPOT ACTIVITY, ROMULUS, NEW YORK

Prepared for:

U.S. ARMY CORPS OF ENGINEERS, ENGINEERING AND SUPPORT CENTER
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Contract Number W912DY-08-D-0003
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TABLE OF CONTENTS

List of Tables	ii
List of Figures	iii
List of Appendices	iv
1.0 INTRODUCTION.....	5
1.1 Long-Term Groundwater Monitoring Objectives.....	7
2.0 SITE BACKGROUND	8
2.1 Site Description.....	8
2.2 Site Geology/Hydrogeology	9
2.3 Soil and Groundwater Impacts.....	9
2.3.1 Soil.....	10
2.3.2 Groundwater	10
2.4 Summary of the Remedial Action.....	10
2.4.1 Biowalls	10
2.4.2 Incinerator Cooling Water Pond	11
2.4.3 Ash Landfill and NCFL Vegetative Cover	11
2.4.4 Debris Pile Removal	11
2.5 Description of Technology Used in Biowalls.....	11
3.0 LONG-TERM MONITORING DATA ANALYSIS AND GROUNDWATER REMEDY EVALUATION.....	13
3.1 Sample Collection.....	13
3.2 Groundwater Elevations	15
3.3 Geochemical Data.....	15
3.4 Chemical Data Analysis and Groundwater Remedy Evaluation	18
3.5 Biowall Recharge Evaluation	22
3.6 Soil Remedy Evaluation	26
3.7 Land Use Controls (LUCs).....	26
3.8 Operating Properly and Successfully.....	27
4.0 LONG-TERM MONITORING CONCLUSIONS AND RECOMMENDATIONS	29
4.1 Conclusions.....	29
4.2 Recommendations.....	29
5.0 REFERENCES.....	31

LIST OF EXHIBITS

Exhibit 1.1	Annual Report List
Exhibit 3.1	LTM Sampling Dates
Exhibit 3.2	Biowall Geochemical Parameters
Exhibit 3.3	Biowall Analytical Data

LIST OF TABLES

Table 1	Groundwater Sample Collection
Table 2	Groundwater Elevations
Table 3	Groundwater Geochemical Data
Table 4	Chlorinated Organics in Groundwater
Table 5	Groundwater Trends

LIST OF FIGURES

Figure 1	Ash Landfill Location at SEDA
Figure 2	Ash Landfill Site Plan
Figure 3	Ash Landfill Historic Site Map
Figure 4	Location of Farmhouse
Figure 5	Reductive Dechlorination of Chlorinated Ethenes
Figure 6	Chlorinated Ethenes Concentrations in Groundwater
Figure 7	Groundwater Elevations
Figure 8	Groundwater Contours & Groundwater Flow Direction Dec. 2015
Figure 9A	Concentrations of VOCs Along the Biowalls - Quarter 1, 2007
Figure 9B	Concentrations of VOCs Along the Biowalls - Quarter 2, 2007
Figure 9C	Concentrations of VOCs Along the Biowalls - Quarter 3, 2007
Figure 9D	Concentrations of VOCs Along the Biowalls - Quarter 4, 2007
Figure 9E	Concentrations of VOCs Along the Biowalls - Round 5, 2008
Figure 9F	Concentrations of VOCs Along the Biowalls - Round 6, 2008
Figure 9G	Concentrations of VOCs Along the Biowalls - Round 7, 2009
Figure 9H	Concentrations of VOCs Along the Biowalls - Round 8, 2009
Figure 9I	Concentrations of VOCs Along the Biowalls - Round 9, 2010
Figure 9J	Concentrations of VOCs Along the Biowalls - Round 10, 2010
Figure 9K	Concentrations of VOCs Along the Biowalls - Round 11, 2011
Figure 9L	Concentrations of VOCs Along the Biowalls - Round 12, 2011
Figure 9M	Concentrations of VOCs Along the Biowalls - Round 13, 2012
Figure 9N	Concentrations of VOCs Along the Biowalls - Round 14, 2012
Figure 9O	Concentrations of VOCs Along the Biowalls - Round 15, 2013
Figure 9P	Concentrations of VOCs Along the Biowalls - Round 16, 2013
Figure 9Q	Concentrations of VOCs Along the Biowalls - Round 17, 2014
Figure 9R	Concentrations of VOCs Along the Biowalls - Round 18, 2014
Figure 9S	Concentrations of VOCs Along the Biowalls - Round 19, 2015
Figure 9T	Concentrations of VOCs Along the Biowalls - Round 20, 2015
Figure 10A	Concentrations of Chlorinated Organics Over Time at MWT-25
Figure 10B	Concentrations of Chlorinated Organics Over Time at MWT-26
Figure 10C	Concentrations of Chlorinated Organics Over Time at MWT-27
Figure 10D	Concentrations of Chlorinated Organics Over Time at MWT-28
Figure 10E	Concentrations of Chlorinated Organics Over Time at MWT-29
Figure 10F	Concentrations of Chlorinated Organics Over Time at MWT-22
Figure 10G	Concentrations of Chlorinated Organics Over Time at PT-22
Figure 10H	Concentrations of Chlorinated Organics Over Time at MWT-23
Figure 10I	Concentrations of Chlorinated Organics Over Time at MWT-24
Figure 10J	Concentrations of Chlorinated Organics Over Time at PT-24

Figure 11A	Historic Concentrations of Chlorinated Organics at PT-18A
Figure 11B	Historic Concentrations of Chlorinated Organics at PT-17
Figure 11C	Historic Concentrations of Chlorinated Organics at MWT-7
Figure 12	Decision Diagram

LIST OF APPENDICES

Appendix A	Field Forms for 19R2015 and 20R2015
Appendix B	Complete Groundwater Data
Appendix C	Regression Plots
Appendix D	Laboratory Reports
Appendix E	Data Validation Sheet
Appendix F	Response to Comments

1.0 INTRODUCTION

This Annual Report is for the Ash Landfill Operable Unit (OU), located at the Seneca Army Depot Activity (SEDA or the Depot) in Romulus, New York (**Figure 1**). This report provides a review of the ninth year of long-term groundwater monitoring (LTM) of the full-scale biowall system installed in 2006 and provides recommendations for future long-term monitoring at the site. This report is based on an annual review of the effectiveness of the remedy implemented in 2006 and includes the following:

- A comparison of the groundwater data to the LTM objectives (**Section 1.1**);
- An evaluation of the need to recharge (i.e., add substrate) the biowalls as outlined in the Remedial Design Report (RDR) (Parsons, 2006c) (**Section 3.5**); and
- An assessment of the remedy's compliance with the United States Environmental Protection Agency's (USEPA) "Guidance for Evaluation of Federal Agency Demonstrations (Section 12(h)(s))."

A remedial action (RA) was completed in October and November 2006 in accordance with the Record of Decision (ROD) for the Ash Landfill OU (Parsons, 2004), the Remedial Design Work Plan (Parsons, 2006b), and the RDR (Parsons, 2006c). The RA involved the following:

- Installation of three dual biowall systems, A1/A2, B1/B2, and C1/C2, to address volatile organic compounds (VOCs) in groundwater that exceed New York State Department of Environmental Conservation's (NYSDEC) Class GA groundwater standards;
- Construction and establishment of a 12-inch vegetative cover over the Ash Landfill and the Non-Combustible Fill Landfill (NCFL) to prevent ecological receptors from coming into direct contact with the underlying soils that are contaminated with metals and polycyclic aromatic hydrocarbons (PAHs);
- Excavation and disposal of Debris Piles A, B, and C; and
- Re-grading of the Incinerator Cooling Water Pond to promote positive drainage.

As part of the RA at the Ash Landfill OU, post-closure operations include LTM. Groundwater monitoring is required as part of the remedial design, which was formulated to comply with the ROD. The first four rounds of groundwater sampling were performed in the first year of LTM and were completed in January 2007, March 2007, June 2007, and November 2007.

The analytical and geochemical results were presented in four letter reports. The results of the Year 1 LTM were reported and evaluated in the "Annual Report and One-Year Review for the Ash Landfill Operable Unit, Seneca Army Depot Activity" (Parsons, 2008a). As part of the Year 1 report, the Army recommended that the frequency of LTM events at the Ash Landfill OU be reduced from quarterly to semi-annually; this recommendation was approved by the USEPA and NYSDEC.

Exhibit 1.1 presents the sampling dates and annual report titles since the initiation of LTM at the Ash Landfill OU. A separate semiannual letter report was generated for each sampling round except for Round

16. The results of the most recent sampling event, Round 19, which took place in December 2015 are provided within this Annual Report in Sections 3.3 and 3.4.

Exhibit 1.1 – Annual Report List

Round Number	Sample Date	Report Title
Quarter 1	January 2007	FINAL Annual Report and One-Year Review For The Ash Landfill Operable Unit Seneca Army Depot Activity – (Parsons, 2008a)
Quarter 2	March 2007	
Quarter 3	June 2007	
Quarter 4	November 2007	
Round 5	June 2008	FINAL Annual Report and Year Two Review For The Ash Landfill Operable Unit Seneca Army Depot Activity – (Parsons, 2009)
Round 6	December 2008	
Round 7	June 2009	FINAL Annual Report and Year Three Review For The Ash Landfill Operable Unit Seneca Army Depot Activity – (Parsons, 2010)
Round 8	December 2009	
Round 9	June 2010	FINAL Annual Report and Year 4 Review Ash Landfill Operable Unit Seneca Army Depot Activity – (Parsons, 2011)
Round 10	December 2010	
Round 11	July 2011	DRAFT Annual Report and Year 5 Review Ash Landfill Operable Unit Seneca Army Depot Activity – (Parsons, 2012)
Round 12	December 2011	
Round 13	June 2012	FINAL Annual Report and Year 6 Review Ash Landfill Operable Unit Seneca Army Depot Activity – (Parsons, 2014a)
Round 14	December 2012	
Round 15	July 2013	DRAFT Annual Report and Year 7 Review Ash Landfill Operable Unit Seneca Army Depot Activity – (Parsons, 2014b)
Round 16	December 2013	
Round 17	June 2014	DRAFT Annual Report and Year 8 Review Ash Landfill Operable Unit Seneca Army Depot Activity – (Parsons, 2015)
Round 18	December 2014	
Round 19	June 2015	DRAFT Annual Report and Year 9 Review Ash Landfill Operable Unit Seneca Army Depot Activity – (Parsons, 2016)
Round 20	December 2015	

This Annual Report reviews the results of the ninth year of the LTM program as part of the ongoing evaluation of the remedy and provides conclusions and recommendations about the effectiveness of the remedial action, including the groundwater remedy and the vegetative landfill covers.

1.1 Long-Term Groundwater Monitoring Objectives

Three types of long-term groundwater monitoring are being performed: 1) plume performance monitoring, 2) biowall process monitoring, and 3) off-site compliance monitoring. On-site performance monitoring is being conducted to measure groundwater contaminant concentrations and to evaluate the effectiveness of the biowall remedy for the Ash Landfill OU. The objectives of performance and compliance monitoring are as follows:

- Confirm that there are no exceedances of groundwater standards for contaminants of concern (COCs) at the off-site compliance monitoring well MW-56;
- Document the effectiveness of the biowalls to remediate and attenuate the chlorinated ethene plume; and
- Confirm that groundwater concentrations throughout the plume are decreasing to eventually meet NYSDEC Class GA groundwater standards.

Biowall process monitoring is being conducted at two locations to determine if, and when, any biowall maintenance activities should be performed. The first location is within Biowalls B1/B2 (MWT-27 and MWT-28) in the segment that runs along the pilot-scale biowalls that were installed in July 2005 (**Figure 2**). The second location is within Biowall C2 (MWT-23), the furthest downgradient biowall. The objectives of biowall process monitoring for operations and maintenance (O&M) activities are as follows:

- Monitor the long-term performance and sustainability of the biowalls;
- Monitor substrate depletion and geochemical conditions under which the effectiveness of the biowalls may decline; and
- Determine if, and when, the biowalls need maintenance (i.e., need to be recharged with additional organic substrate).

2.0 SITE BACKGROUND

2.1 Site Description

SEDA is a 10,587-acre former military facility located in Seneca County near Romulus, New York, that was owned by the United States Government and operated by the Department of the Army from 1941 until 2000. In 2000, the Army assumed a caretaker role at the SEDA, and since this time more than 8,500 acres of the property were transferred to other parties. SEDA is located between Seneca Lake and Cayuga Lake and is bordered by New York State Highway 96 to the east, New York State Highway 96A to the west, and sparsely populated farmland to the north and south.

The location of the Ash Landfill OU, also referred to as the Ash Landfill, is composed of five historic solid waste management units (SWMUs). The five SWMUs that comprise the Ash Landfill OU are the Incinerator Cooling Water Pond (SEAD-3), the Ash Landfill (SEAD-6), the NCFL (SEAD-8), the former Debris Piles (SEAD-14), and the former Abandoned Solid Waste Incinerator Building (SEAD-15) (**Figure 3**).

Prior to the Army's purchase of land for construction of the SEDA, the area of the Ash Landfill OU was used for farming. From 1941 (the date SEDA was constructed) to 1974, uncontaminated trash was burned in a series of burn pits located near the former abandoned incinerator building (Building 2207). According to the U.S. Army Environmental Hygiene Agency (USAEHA) Interim Final Report, Groundwater Contamination Survey No. 38-26-0868-88 (July 1987), the ash from the refuse burning pits was buried in the Ash Landfill (SEAD-6) from date of inception until the late 1950s or early 1960s.

The incinerator was built in 1974. Between 1974 and 1979, materials intended for disposal were transported to the incinerator. Each week the Depot generated approximately 18 tons of refuse, the majority of which was incinerated. The source for the refuse was domestic waste from Depot activities and family housing. Large items that could not be burned were disposed at the NCFL (SEAD-8). The NCFL encompasses approximately three acres located southeast of the former incinerator building, immediately south of a SEDA railroad line. The NCFL was used as a disposal site for non-combustible materials, including construction debris, from 1969 until 1977.

Ash and other residue from the former incinerator were temporarily disposed in an unlined cooling pond immediately north of the incinerator building. The cooling pond consisted of an unlined depression approximately 50 feet in diameter and approximately 6 to 8 feet deep. When the pond filled, the fly ash and residues were removed, transported, and buried in the adjacent ash landfill east of the cooling pond. The refuse was dumped in piles and occasionally spread and compacted. No daily or final cover was applied during operation. According to an undated aerial photograph of the incinerator during operation, the active area of the Ash Landfill extended at least 500 feet north of the incinerator building, near a bend in a dirt road. A fire destroyed the incinerator on May 8, 1979, and the landfill was subsequently closed. Post-closure, the landfill was apparently covered with native soil of various thicknesses, but was not closed with an engineered cover or cap. Other areas at the site were used as a grease pit and for burning debris.

2.2 Site Geology/Hydrogeology

The site is underlain by a broad north-to-south trending series of rock terraces covered by a mantle of glacial till. As part of the Appalachian Plateau, the region is underlain by a tectonically undisturbed sequence of Paleozoic rocks consisting of shale, sandstone, conglomerate, limestone and dolostone. At the Ash Landfill site, these rocks (the Ludlowville Formation) are characterized by gray, calcareous shale and mudstone and thin limestone with numerous zones of abundant invertebrate fossils. Locally, the shale is soft, gray, and fissile. The shale, which has a thin weathered zone at the top, is overlain by 2 to 3 feet of Pleistocene-age¹ till deposits. The till matrix varies locally, but generally consists of unsorted silt, clay, sand, and gravel (Brett et al., 1995).

The thickness of the till at the Ash Landfill OU generally ranges from 4 to 15 feet. At the location of the biowalls, the thickness of the till and weathered shale is approximately 10 to 15 feet. Groundwater is present in both the shallow till/weathered shale layer and in the deeper competent shale layer. In both water-bearing units, the predominant direction of groundwater flow is to the west, toward Seneca Lake. Based on the historical data, the wells at the Ash Landfill site exhibit rhythmic and seasonal fluctuations in the water table and the saturated thickness. Historic data at the Ash Landfill OU indicate that the saturated interval is thin (generally between 1 and 3 feet thick) in the month of September and is thickest (generally between 6 and 8.5 feet thick) between December and March (Parsons Engineering Science Inc., 1994).

The average linear velocity of the groundwater in the till/weathered shale layer was calculated during the Remedial Investigation (RI) in 1994 using the following parameters: 1) average hydraulic conductivity of 4.5×10^{-4} centimeters per second (cm/sec) (1.28 feet per day [ft/day]), 2) estimated effective porosity of 15% to 20%, and 3) groundwater gradient of 1.95×10^{-2} feet per foot (ft/ft) (Parsons Engineering Science, Inc., 1994). The average linear velocity was calculated as 0.166 ft/day or 60.7 feet per year (ft/yr) at 15% effective porosity and 0.125 ft/day or 45.5 ft/yr at 20% effective porosity. The actual velocity of on-site groundwater may be locally influenced by zones of higher-than-average permeability; these zones are possibly associated with variations in the porosity of the till/weathered shale.

2.3 Soil and Groundwater Impacts

The nature and extent of the COCs at the Ash Landfill OU were evaluated through a comprehensive RI program. It was determined that surface water and sediment were not media of concern and did not require remediation. A groundwater contaminant plume that emanated from the northern end of the Ash Landfill was delineated during the RI. The primary COCs in groundwater at the Ash Landfill are VOCs; the primary COCs in soil at the Ash Landfill are chlorinated and aromatic compounds, semivolatile organic compounds (SVOCs), polycyclic aromatic hydrocarbons (PAHs), and, to a lesser degree, metals. Release of the COCs is believed to have occurred during the former activities at the Ash Landfill OU (described in Section 2.1).

¹ The Pleistocene Age occurred 11,700 to 2.6 million years before present.

2.3.1 Soil

VOCs, specifically trichloroethene (TCE), were detected in the soil in the “Bend in the Road” area near well MW-44A and the northwest corner of the Ash Landfill (**Figure 2**). Located northwest of the Ash Landfill, this area is believed to be the source of the groundwater plume. Between 1994 and 1995, the Army conducted a Non-Time Critical Removal Action (NTCRA), also known as an Interim Removal Measure (IRM), to address VOC and PAH contamination in soil near the “Bend in the Road.” The excavation limits of the NTCRA are shown on **Figure 3**. The NTCRA successfully reduced the risk associated with potential exposure to contaminated soil, and prevented continued leaching of VOCs to groundwater. Since the NTCRA, concentrations of VOCs in groundwater near the original source area have decreased by two orders of magnitude. Further remediation for VOCs in the soil at the “Bend in the Road” was not required.

The other COCs detected in the soil were PAHs and metals. PAHs were detected at concentrations above NYSDEC’s Technical and Administrative Guidance Memorandum (TAGM #4046) values in the NCFL and the Debris Piles present around the former Ash Landfill. In general, the highest PAH concentrations were detected in the NCFL and small Debris Pile surface soils. The metals that were detected at elevated concentrations above the TAGM values in soils were copper, lead, mercury, and zinc. These elevated concentrations were found in the Ash Landfill, the NCFL, and the Debris Piles, with the highest concentrations of metals detected at the surface of the Debris Piles. These piles were small, localized, surface features that were visibly discernible and did not extend into the subsurface. The former debris piles were excavated and disposed offsite during the RA in 2006.

2.3.2 Groundwater

The primary potential impact to human health and the environment is a groundwater contaminant plume containing dissolved chlorinated solvents, primarily TCE, isomers of dichloroethene (DCE), and vinyl chloride (VC). The plume originates in the “Bend in the Road” area near the northwestern edge of the Ash Landfill and is approximately 1,100 feet long by 625 feet wide. The nearest exposure points for groundwater are three farmhouse wells located approximately 1,250 feet from the leading edge of the plume near the farmhouse. The location of the farmhouse relative to the plume at the Ash Landfill is shown on **Figure 4**. Two of the farmhouse wells draw water from the till/weathered shale aquifer and the remaining well draws water from the bedrock aquifer. As discussed in Section 4.4 of the RI (Parsons, 1994), plume profiles were constructed for geologic cross sections at the Ash Landfill; based on these profiles it was determined that the plume is vertically restricted to the upper till/weathered shale aquifer and is not present in the deeper competent shale aquifer. As noted in Section 2.3.1, the source area of the plume was removed by the NTCRA.

2.4 Summary of the Remedial Action

2.4.1 Biowalls

Three biowall pairs were installed to address groundwater contamination on-site and were documented in the Construction Completion Report (Parsons, 2007). The biowalls were constructed by excavating a linear trench to competent bedrock then backfilling the trench to the ground surface with a mixture of mulch and sand.

Biowalls A1/A2, B1/B2, and C1/C2 were constructed perpendicular to the chlorinated solvent plume at the locations prescribed in the RDR (**Figure 2**). The entire length of Biowalls A1/A2 and the northern portion of B1/B2 were combined into a single double-width trench (minimum of 6 feet in width) due to unstable soil conditions that caused trench widening. Approximately 2,840 linear feet (lf) of biowalls were constructed in the areas downgradient of the Ash Landfill at depths ranging from 7 feet below ground surface (bgs) to 18.5 feet bgs.

A 12-inch soil cover was placed over the entire length of the biowalls to impede surface water from preferentially flowing into the biowall trenches. Trench spoils were used as the cover material and were compacted with a backhoe. A site visit in December 2015 confirmed that the mulch backfill in the trenches has settled to a level approximately equal to the surrounding ground surface.

2.4.2 Incinerator Cooling Water Pond

As specified in the RDR, the Incinerator Cooling Water Pond (ICWP) was re-graded to meet the surrounding grade to prevent the accumulation of water in this inactive pond. Prior to re-grading, the vegetation on the berms surrounding the ICWP was removed with an excavator. The soil berm was then regraded with a dozer to match the surrounding grade. The ICWP was seeded with a standard meadow mix to promote vegetation and to prevent erosion.

2.4.3 Ash Landfill and NCFL Vegetative Cover

A soil cover comprised of mulch, biowall trench spoils that met the site cleanup criteria, and off-site topsoil was placed over the 2.2 acres of the Ash Landfill. The Ash Landfill was covered with 4,380 cubic yards (cy) of fill to achieve a minimum cover thickness of 12 inches. Biowall trench spoils that met the site cleanup criteria and off-site topsoil were placed over the 3.4 acre NCFL. The NCFL was covered with 6,015 cy of fill to achieve a minimum cover thickness of 12 inches. The purpose of the covers is to prevent terrestrial wildlife from directly contacting or incidentally ingesting metal-impacted soils.

2.4.4 Debris Pile Removal

During the RA, approximately 200 cy of debris was removed from Debris Piles B and C. Approximately 1,000 cy of debris was removed from within and beyond the staked limits of Debris Pile A (**Figure 3**). The total volume of debris removed was approximately 1,200 cy (1,548 tons).

2.5 Description of Technology Used in Biowalls

Reductive dechlorination is the most important process for natural biodegradation of highly chlorinated solvents (USEPA, 1998) (**Figure 5**). Complete dechlorination of TCE and other chlorinated solvents is the goal of anaerobic biodegradation via mulch biowall technology.

Biodegradation causes measurable changes in groundwater geochemistry that can be used to evaluate the effectiveness of substrate addition in stimulating biodegradation. For anaerobic reductive dechlorination to be an effective process, generally groundwater must be sulfate-reducing or methanogenic. Thus, groundwater in which anaerobic reductive dechlorination is occurring should have the following geochemical signature:

- Depleted concentrations of dissolved oxygen (DO), nitrate, and sulfate;

- Elevated concentrations of manganese, ferrous iron, methane, carbon dioxide, chloride, and alkalinity; and
- Reduced oxidation reduction potential (ORP).

Treatment of chlorinated ethenes in groundwater using a biowall relies on the flow of groundwater under a natural hydraulic gradient through the biowall to promote contact with slowly-soluble organic matter. As the groundwater flows through the organic matter in the biowall, an anaerobic treatment zone is established in the biowall. The treatment zone may also be established downgradient of the biowall as soluble organic matter migrates with groundwater and stimulates microbial processes.

Solid-phase organic substrates used to stimulate anaerobic biodegradation of chlorinated ethenes include plant mulch and compost. To enhance microbial activity, the mulch may be composted prior to emplacement to more readily degraded material, or mulch may be mixed with an outside source of compost. Mulch is primarily composed of cellulose and lignin, and contains “green” plant material that provides nitrogen and nutrients for microbial growth. These substrates are mixed with coarse sand and placed in a trench or excavation in a permeable reactive biowall configuration. Biodegradable vegetable oil may be added to the mulch mixture to increase the availability of soluble organic carbon.

Degradation of the organic substrate by microbial processes in the subsurface provides a number of breakdown products, including metabolic acids (e.g., butyric and acetic acids). The breakdown products and acids produced by degradation of mulch in a saturated subsurface environment provide secondary fermentable substrates for the generation of molecular hydrogen, which is the primary electron donor utilized in anaerobic reductive dechlorination of chlorinated ethenes. Thus, a mulch biowall has the potential to stimulate reductive dechlorination of chlorinated ethenes for many years. If necessary, mulch biowalls can be periodically recharged with liquid substrates (e.g., emulsified vegetable oils) to extend the life of the biowall. Vegetable oil is a substrate that is readily available to microorganisms as a carbon source that helps establish and continually develop the microbial population. Used in combination with mulch, vegetable oil has the potential to enhance and extend the duration of organic carbon release.

3.0 LONG-TERM MONITORING DATA ANALYSIS AND GROUNDWATER REMEDY EVALUATION

3.1 Sample Collection

Exhibit 3.1 below presents the sample collection dates for the nine years of LTM. The first year of sampling was quarterly, and at that time, the sampling rounds were identified as xQyyyy, where “x” is the round number, and “yyyy” is the 4 digit year. After the first year, the sample frequency was modified to semiannual. An “R” was used to replace the “Q” to denote the round. The round number has been used sequentially since the first quarterly round.

Exhibit 3.1 – LTM Sampling Dates

LTM Year	Round Name	Sampling Dates
Year 1	1Q2007	January 3, 2007 – January 4, 2007
	2Q2007	March 15, 2007 – March 17, 2007
	3Q2007	June 5, 2007 – June 7, 2007
	4Q2007	November 13, 2007 – November 15, 2007
Year 2	5R2008	June 24, 2008 – June 26, 2008
	6R2008	December 11, 2008 – December 15, 2008
Year 3	7R2009	June 1, 2009 – June 4, 2009
	8R2009	December 14, 2009 – December 18, 2009
Year 4	9R2010	June 28, 2010 – July 2, 2010
	10R2010	December 14, 2010 – December 19, 2010
Year 5	11R2011	July 18, 2011 – July 22, 2011
	12R2011	December 12, 2011 – December 15, 2011
Year 6	13R2012	June 18, 2012 – June 22, 2012
	14R2012	December 10, 2012 – December 14, 2012
Year 7	15R2013	July 8, 2013 – July 11, 2013
	16R2013	December 9, 2013 – December 14, 2013
Year 8	17R2014	June 17, 2014 – June 22, 2014
	18R2014	December 15, 2014 – December 19, 2014
Year 9	19R2015	June 2, 2015 – June 6, 2015
	20R2015	December 15, 2015 – December 19, 2015

Fourteen monitoring wells were sampled and classified into three groups (listed in **Table 1**): eleven on-site plume performance monitoring wells, one off-site compliance monitoring well, and five biowall process monitoring wells. The off-site performance monitoring well, MW-56, is monitored on a semi-annual basis, and was monitored in January 2007, June 2007, June 2008, December 2008, June 2009, December 2009,

June 2010, December 2010, October 2011, December 2011, June 2012, December 2012, July 2013, December 2013, June 2014, December 2014, June 2015, and December 2015. The well locations are shown on **Figure 6**.

Three of the plume performance wells are also biowall process monitoring wells (MWT-23, MWT-27, and MWT-28). The five biowalls process monitoring wells are either within or immediately upgradient or downgradient of the biowalls and are used to assess if, and when, the biowalls may require additional substrate. The Annual Report – Year 1 recommended that groundwater samples collected from monitoring wells PT-17 and MWT-7 be analyzed for additional geochemical parameters that are included for the process monitoring wells to better monitor the progress of the treatment zone.

Samples were submitted to Test America Laboratories, Inc. in Buffalo, New York for Rounds 1 through 8 and to Test America Laboratories, Inc. in Savannah, Georgia for Rounds 9 through 20 to be analyzed for VOCs by USEPA SW846 Method 8260B. The TestAmerica Buffalo, NY and Savannah, GA laboratories are certified by the Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP) and the NELAC National Environmental Laboratory Accreditation Program (NELAP) for the above analyses/analytical methods for both potable and non-potable water. As indicated in **Table 1**, samples from the wells in the biowall process monitoring group (MWT-23, MWT-26, MWT-27, MWT-28, and MWT-29) and from two wells from the on-site plume performance group (PT-17 and MWT-7) were also submitted to Test America for analysis of the following:

- Sulfate by USEPA Method 300.1
- Total organic carbon (TOC) by USEPA SW846 Method 9060A

Samples from these wells were also submitted to Pace Analytical located in Pittsburgh, Pennsylvania for analysis for methane, ethane, and ethene (MEE) by Method RSK 175.

During field sampling, the following geochemical parameters were recorded for the duration of low-flow sampling for each groundwater sample:

- pH, ORP, and conductivity were measured with a Horiba U-52 multi-parameter instrument;
- DO and temperature were measured with a YSI 85 meter; and
- Turbidity was measured with a Lamotte 2020, or similar, turbidity meter.

In addition, a HACH® DR/850 Colorimeter was used in the field to measure manganese and ferrous iron at PT-17, MWT-7, MWT-23, MWT-26, MWT-27, MWT-28, and MWT-29. Manganese and ferrous iron were measured by USEPA Method 8034 and USEPA Method 8146, respectively. A summary of the samples collected is presented in **Table 1**.

Groundwater samples were collected using low flow sampling techniques during each of the 2015 sampling rounds. Bladder pumps were used to purge the wells and collect the samples during these rounds. Sampling procedures, sample handling and custody, holding times, and collection of field parameters were conducted in accordance with the “Final Sampling and Analysis Plan for Seneca Army Depot Activity (SAP)” (Parsons, 2006a). Field forms for Rounds 19 and 20 are included in **Appendix A** on a CD.

Groundwater data from Rounds 19 and 20 were validated per the measurement performance criteria outlined in the Final Sampling and Analysis Plan (Parsons, 2006a) and utilizing the EPA Region 2 Standard Operating Procedures (SOPs) revised in March 2013. Validation did not find any data quality concerns and no data was rejected. Data validation sheets are provided in Appendix E.

3.2 Groundwater Elevations

Historic groundwater elevations and groundwater elevations from the nine years of LTM rounds are presented in **Figure 7** and **Table 2**. The groundwater elevations observed during Round 19 and Round 20 were comparable. The groundwater elevations at all monitoring wells were within historically observed ranges. Groundwater contours and groundwater flow direction based on Round 20 measurements taken on December 15, 2015 are provided in **Figure 8**.

3.3 Geochemical Data

Biodegradation causes measurable changes in groundwater geochemistry that can be used to evaluate the effectiveness of substrate addition in stimulating biodegradation. Groundwater conditions that are sulfate-reducing or methanogenic improve the overall effectiveness of anaerobic reductive dechlorination. As mentioned in Section 3.1, geochemical parameters measured in the field that also serve as water quality indicators (i.e., pH, ORP, DO, conductivity, and temperature) were recorded for all wells in the LTM program. Analysis for the additional geochemical parameters of TOC, sulfate, and MEE, and field tests for ferrous iron and manganese were completed at PT-17, MWT-7, MWT-23, MWT-26, MWT-27, MWT-28, and MWT-29. These monitoring wells are part of the Biowall Process Monitoring Group, and additional geochemical analysis is collected at these wells to evaluate the condition of the groundwater to promote reductive dechlorination immediately upgradient, inside, and downgradient of the biowalls. According to USEPA (1998) guidance on natural attenuation of chlorinated solvents, conditions are conducive for anaerobic reductive dechlorination to occur if the following geochemical signatures are identified:

- Depleted concentrations of DO and sulfate;
- Elevated concentrations of methane;
- Reduced ORP;
- Elevated concentrations of soluble organic substrate as defined by TOC in groundwater; and
- An increase in the concentrations of ferrous iron and manganese relative to background conditions.

Geochemical parameter results are shown in **Table 3**, organized with the most upgradient well listed first and the most downgradient well listed last. A comparison of the geochemical parameters for wells MWT-26 (upgradient of Biowall B1) to MWT-28 (in Biowall B2) for Year 9, summarized below, demonstrates the change in geochemistry across the B1/B2 Biowalls.

Dissolved Oxygen

DO is the most favored electron acceptor (i.e., yields the most energy) used by microbes during biodegradation of organic carbon, and its presence can inhibit the anaerobic degradation of chlorinated ethenes. In the wells sampled within Biowalls B1/B2 and Biowall C2, DO levels are depleted (less than 1.0

milligrams per liter [mg/L]) in both Year 9 events (**Table 3**). DO is depleted due to the biological activity encouraged by the biowall substrate. The depletion of DO enhances the potential for anaerobic degradation of chlorinated ethenes in groundwater.

Sulfate

Sulfate is used as an electron acceptor during sulfate reduction, competing with anaerobic reductive dechlorination for available substrate/electron donor. Sulfate levels lower than 20 mg/L are desired to prevent inhibition of reductive dechlorination of chlorinated ethenes (USEPA, 1998). In Year 9, concentrations were less than 20 mg/L in Biowall B1 (MWT-27), Biowall B2 (MWT-28) and Biowall C2 (MWT-23) for both Round 19 and Round 20. These conditions indicate that sulfate continues to be depleted and that sulfate should not inhibit anaerobic dechlorination within the biowalls. As expected after observing high sulfate levels during Year 8 at Biowalls B1 and C2, the sulfate levels in Year 9 have returned to levels similar to the historical values (**Table 3**) within the desired range to support reductive dechlorination.

Methane

The presence of methane in groundwater is indicative of strongly reducing methanogenic conditions. An increase in the concentrations of methane indicates that reducing conditions are optimal for anaerobic reductive dechlorination to occur. Methane was detected in the well upgradient of Biowall B1/B2 (MWT-26) at a concentration of 83 micrograms per liter ($\mu\text{g/L}$) in Round 19 and at a concentration of 140 $\mu\text{g/L}$ in Round 20. Compared to these concentrations, at the process wells located within biowalls B1, B2, and C2, methane concentrations were orders of magnitude greater and ranged from 13,000 $\mu\text{g/L}$ to 16,000 $\mu\text{g/L}$ (**Table 3**). These data demonstrate that there is an increase in the level of methanogenic activity within the biowalls and in downgradient areas, compared to upgradient locations.

Oxidation-Reduction Potential

ORP indicates the level of electron activity in groundwater and the tendency of groundwater to accept or transfer electrons. Low ORP, considered to be less than -100 millivolts (mV), is conducive for anaerobic reductive dechlorination to occur; however, reductive pathways are still possible at ORP levels up to 50 mV (USEPA, 1998). During Rounds 19 and 20, ORP values upgradient of Biowall B1/B2 were positive values and thus higher than negative ORP values within the biowall wells. The ORP value upgradient of the biowalls at MWT-26 ranged from 59 mV to 143 mV in 2015, whereas the ORP levels within Biowalls B1/B2 ranged from -85 mV to -18 mV (**Table 3**). A similar trend occurs upgradient and within Biowall C2 (**Table 3**).

The ORP values are outside the benchmark value in some sampling events; however, there is strong evidence of methanogenesis occurring within the biowalls, indicating continued supportive conditions for reductive dechlorination to occur. Methanogenesis is a fermentation reaction, and does not influence ORP. If concentrations of sulfate and reducible iron are depleted within the biowalls, it is conceivable that the ORP measurements will increase, even though conditions remain reducing which is evident by methanogenesis acting as the predominate reaction. ORP values remain lower than the upgradient values indicating a change in conditions within the biowalls compared to the upgradient conditions. Since the ORP levels are still within the range where reduction is possible, it remains that the environment in the biowalls

is still conducive to anaerobic reductive dechlorination. The ORP data alone may be inconclusive when compared to the benchmark and will result in relying on the other lines of evidence (e.g., other geochemical parameters and chemistry) in the analysis of the effective operation of the biowall system.

Total Organic Carbon

The presence of organic substrate is necessary to stimulate and sustain anaerobic degradation processes. In biowalls, organic carbon acts as an energy source for anaerobic bacteria and drives reductive dechlorination. Concentrations of TOC greater than 20 mg/L are sufficient to maintain sulfate reducing and methanogenic conditions (USEPA, 1998). TOC concentrations in Biowall B1 were greater than the TOC concentrations upgradient of the biowalls and are equivalent or better than the benchmark value (**Table 3**). The TOC concentration observed in Round 20 in Biowall B2 is below, though close to, the benchmark value. In Biowall C2, the TOC concentration has decreased below the threshold value of 20 mg/L, but remained equivalent to the concentration at upgradient wells MWT-26 and MWT-29.

A decrease in the concentration of TOC occurs as readily degraded organics (i.e., vegetable oil and cellulose) in the mulch mixture are consumed; however, TOC concentrations on-site remain sufficiently high enough to serve as an energy source for anaerobic bacteria in the biowalls. As discussed below, the change in TOC concentrations has little impact on the efficiency at which chlorinated organics are degraded within the biowalls and does not indicate that the biowalls need to be recharged at this time. Since the TOC concentrations are lower, a conclusion on the continuing effectiveness of the biowalls will be made relying on the other lines of evidence (e.g., other geochemical parameters and chemistry) in the analysis of the effective operation of the biowall system.

Ferrous Iron and Manganese

As described in USEPA (1998), Iron III (ferric iron) is an electron acceptor used by iron-reducing bacteria under anaerobic conditions; Iron II (ferrous iron) is the product. Iron III is relatively insoluble in groundwater relative to Iron II. Therefore, an increase in concentrations of Iron II in groundwater is a clear indication that anaerobic iron reduction is occurring. Similarly, USEPA (1998) states that manganese (IV) is an electron acceptor used by manganese-reducing bacteria under anaerobic environments; soluble manganese (II) is the product. Under anaerobic conditions like those at the Ash Landfill, the presence of manganese and ferrous iron in the biowalls at concentrations above those found at upgradient locations, or locations unaffected by the biowalls, demonstrates that manganese and iron reduction are occurring at the site. For example, Year 9 ferrous iron and soluble manganese concentrations continue to be higher within biowall wells MWT-27 and MWT-28 compared to the upgradient well MWT-26 (**Table 3**).

During the Round 19 and 20 sampling events, ferrous iron and manganese concentrations were collected from an upgradient well, MW-40, to delineate background concentrations. The average ferrous iron and manganese concentrations collected from these two events were 0.07 mg/L and 0.95 mg/L, respectively. The background values are lower than the ferrous iron and manganese values measured in the biowalls thus supporting the conclusion that conditions within the biowalls are anaerobic and conducive to the degradation of chlorinated ethenes.

Summary

Monitoring data for wells within the biowalls during the ninth year of LTM indicate the following:

- DO remains below 1.0 mg/L at Biowalls B1/B2 and Biowall C2, indicating favorable conditions for reductive dechlorination in the biowalls;
- Concentrations of TOC remain elevated (3.4 mg/L to 37 mg/L) in the biowalls, and greater than or equivalent to the upgradient well, indicating that a measure of an energy source that promotes anaerobic bacteria growth in the biowalls is sufficiently high enough;
- ORP values ranged from -85 mV to -18 mV, indicating that conditions continue to be suitable for reductive dechlorination;
- Sulfate concentrations are an order of magnitude lower within the biowalls than in upgradient wells, indicating that sulfate is not inhibiting anaerobic dechlorination within the biowalls;
- Methane concentrations ranged from 13,000 µg/L to 16,000 µg/L, indicating strongly reducing methanogenic conditions; and
- Ferrous iron and manganese concentrations are elevated (0.74 mg/L to >3.3 mg/L and 4.9 mg/L to >47.5 mg/L, respectively) in the biowalls in comparison to upgradient and background wells (0.00 mg/L to 0.13 mg/L and 0.0 mg/L to 1.7 mg/L, respectively), indicating anaerobic reduction in occurring within the biowalls.

The bulleted observations indicate that the environment within the biowalls is conducive to the degradation of chlorinated ethenes.

By using a lines-of-evidence approach to evaluate geochemical parameters together with the analytical data, it can be determined if conditions in the biowalls are sufficient to support anaerobic degradation processes. The geochemical parameters outlined above suggest that the substrate in the biowalls has not been depleted and biodegradation continues to occur within the biowalls. Additionally, the appropriate levels of DO, organic carbon, ORP, sulfate, and methane continue to be maintained to sustain an anaerobic environment. These conditions have persisted within the biowalls since their installation providing an effective means to support anaerobic degradation of chlorinated ethenes.

3.4 Chemical Data Analysis and Groundwater Remedy Evaluation

Table 4 summarizes the concentrations of chlorinated ethenes detected in groundwater during each round of LTM. **Table 4** is organized with the most upgradient well listed first and the most downgradient well listed last. A complete presentation of the groundwater data is provided in **Appendix B. Figure 6** shows the concentrations of TCE, cis-DCE and VC for each round of LTM. The discussion below focuses on data collected during Year 9 (Rounds 19 and 20) of the LTM program, and addresses how the remedial action objectives are being achieved.

Achievement of first performance monitoring objective:

- *Confirm that there are no exceedances of groundwater standards for contaminants of concern (COC) at the off-site trigger monitoring well MW-56.*

Concentrations of chlorinated ethenes at off-site well MW-56 remain low or non-detect (ND) with concentrations of TCE, cis-DCE, and VC below regulatory standards. The past year of LTM confirmed that there were no exceedances of COC groundwater standards at MW-56 (**Table 4**). VC and TCE were not detected in either of the last two rounds at MW-56. Low concentrations of cis-DCE were detected (1.1 and 1.4 µg/L) at MW-56, but were well below its Class GA groundwater standard (5 µg/L).

Achievement of second performance monitoring objective:

- *Document the effectiveness of the biowalls to remediate and attenuate the chlorinated ethene plume.*

TCE remains above the Class GA groundwater standard (5 µg/L) at PT-18A (upgradient of biowalls) (**Figure 6**). Since LTM began in 2007, TCE concentrations at PT-18A have fluctuated and ranged from below the detection limit to 3,800 µg/L (**Table 4**). Concentrations of TCE at well MWT-25 (upgradient of Biowall A1/A2) have decreased from 50 µg/L in the first quarter to below the Class GA groundwater standard at a concentration of 2.6 µg/L in Round 20.

Concentrations of TCE and cis-DCE within the biowalls at MWT-27 (in Biowall B1), MWT-28 (in Biowall B2), and MWT-23 (in Biowall C2) remain below Class GA standards, which is an expected performance measure (**Figure 6**). TCE was reported below Class GA standards in the biowalls in all rounds and cis-DCE has been below Class GA standards in every round since Quarter 2. In Round 19, concentrations of VC within the biowall wells (MWT-27, MWT-28, and MWT-23) were below the Class GA standards. However, during Round 20, a VC concentration of 3.4 µg/L was observed within the C2 biowall at well MWT-23, which is above the Class GA standard (2 µg/L). Values for VC at MWT-23 were below the Class GA standard during the prior three sampling events. Continued sampling will further confirm the trend for VC at MWT-23 in subsequent monitoring events.

The absence of TCE and presence of low levels of cis-DCE, VC, and at times ethene, is evidence that the reductive dechlorination path is progressing towards complete mineralization. The reduction in concentrations of TCE and cis-DCE measured within the biowall wells versus upgradient concentrations suggests that dehalogenation of chlorinated ethenes is active. Therefore, the biowalls are operating as expected.

Evidence of ethene (a final product of reductive dechlorination) production within the biowalls suggests that multiple anaerobic degradation processes may be occurring (**Table 3**). For example, ethene is not produced by anaerobic oxidation of cis-DCE or VC or by abiotic transformation of chlorinated ethenes by reduced iron sulfides. The concentrations of ethene may be low within the biowalls since ethene can be further reduced under highly anaerobic conditions or can off-gas with carbon dioxide or methane since it is volatile.

The overall trend in the concentrations of TCE, cis-DCE, and VC at well MWT-26 (between Biowalls A1/A2 and Biowalls B1/B2) is decreasing over time (**Appendix C-2**). Since the ninth round, TCE concentrations in well MWT-26 have been below its Class GA standard with a limited range in concentration between 0.83 µg/L and 4.2 µg/L (**Table 4**). During the same time period, cis-DCE has ranged in concentration between 1.1 µg/L and 12 µg/L with an average concentration (6.0 µg/L) approximately

equal to its Class GA standard. Similarly, VC has a limited range in concentration of between 0.47 J $\mu\text{g/L}$ and 7.6 $\mu\text{g/L}$ with an average concentration (1.9 $\mu\text{g/L}$), below its Class GA standard. The area downgradient of MWT-26 is bounded by Biowalls B1/B2 in which the concentrations of TCE, cis-DCE, and VC are non-detect or below their respective Class GA standards. The Army will continue to monitor well MWT-26 to see if a trend in decreasing concentrations persists.

Cis-DCE and VC concentrations at MWT-24 (downgradient of Biowall C2) show an overall decline over time (**Appendix C-9**). Cis-DCE concentrations have declined by an order of magnitude since Quarter 1, and VC concentrations have declined from a maximum in Quarter 2 to below, or approximately equal to, the Class GA standard in the last two rounds (**Figure 6**). TCE concentrations have been at or below the Class GA groundwater standard (5 $\mu\text{g/L}$) at MWT-24 in all rounds, with the exceptions of 6.0 $\mu\text{g/L}$ in Round 6 and 5.6 $\mu\text{g/L}$ in Round 11, which were likely due to precipitation fluctuations (i.e., the effects of desorption during a period with frequent precipitation and subsequent high water levels).

Within the biowalls, the concentrations of TCE, cis-DCE, and VC in groundwater are reduced to concentrations near or below detection limits. Downgradient of the C1/C2 biowall, the concentrations of TCE and its daughter compounds rebounds with distance. **Figures 9A** through **9R** depict these trends for Rounds 1 through 20. These increases may be due to residual TCE in the unsaturated zone, in the form of an absorbed or vapor phase, that is desorbing or diffusing out of low permeability soils when elevated groundwater levels are introduced into soils that are typically unsaturated. These localized conditions and the effect of desorption on the groundwater concentrations observed during periods of high groundwater level may drive the actual time required to reach compliance. The fluctuations in COC concentrations are not an indicator of weakened biowall effectiveness. The results discussed above indicate that the biowalls are effectively treating the passing groundwater and creating a measurable improvement in downgradient water quality.

Anaerobic degradation of TCE may also occur in areas of the aquifer formation that are downgradient of the biowalls. The zone of influence for reductive dechlorination processes downgradient of the biowalls is likely supported through the presence of soluble organic carbon entrained within groundwater transiting through the biowalls. In these downgradient areas, the concentrations of cis-DCE and VC are higher than they are within the biowalls. This suggests that sequential biotic reductive dechlorination of chlorinated organics is the primary degradation process in the downgradient reaction zones, with the presence of low concentrations of TCE being due to desorption from the aquifer matrix or from back diffusion of contaminated groundwater from low permeability soils. Elevated concentrations of ethene, such as 27 $\mu\text{g/L}$ and 7.4 $\mu\text{g/L}$ observed at MWT-29 in Rounds 19 and 20 respectively, as compared to the upgradient concentrations of 0.13 J $\mu\text{g/L}$ and 0.27 $\mu\text{g/L}$ at MWT-26, also indicates that downgradient biotic reductive dechlorination is occurring (**Table 3**).

Achievement of third performance monitoring objective:

- *Confirm that groundwater concentrations throughout the plume are decreasing to eventually meet GA standards.*

Concentrations of TCE, cis-DCE, and VC have decreased over the twenty sampling events at the wells within and downgradient of the biowalls. Although the third monitoring objective has not been met at all wells, concentrations of TCE, cis-DCE, and VC have decreased over the twenty sampling events at the wells within the biowalls and with a few exceptions, the wells downgradient of the biowalls have experienced similar decreases in concentrations of TCE, cis-DCE, and VC. A future biowall refresh event would have positive effects in reducing any elevated COCs further.

Time plots for monitoring wells MWT-25, MWT-26, MWT-27, MWT-28, MWT-29, MWT-22, PT-22, MWT-23, MWT-24, and PT-24 are presented in **Figures 10A** through **10J**, respectively, and as regression plots in Appendix C. Monitoring wells PT-17 and MWT-7 are presented in Figures 11B and 11C, respectively, and in Appendix C. Time and regression plots for wells MWT-25, MWT-26, MWT-29, MWT-24 and PT-24 exhibit an overall decreasing trend for the three primary COCs and confirm that groundwater concentrations are decreasing along the axis of the plume.

The fluctuating concentrations and increasing trend of TCE at well PT-22 suggests that this well may be outside the effective zone of reductive dechlorination from biowall B1/B2 (Appendix C, Figure C-7). Increases in COC concentration are observed at MWT-22 (cis-DCE and VC), PT-17 (cis-DCE and VC), and MWT-7 (cis-DCE) (**Figures 10F/C-6, 11B/C-12, 11C/C-13**). Although an increase in COC concentration does not meet the third objective, the increase in concentration of daughter compounds related to the breakdown of TCE are expected. The concentrations at these wells will be continued to be monitored.

An exponential regression, which models first-order decay typical in biological processes, was calculated for each monitoring well. The regression serves as a means of estimating the time required for the concentrations of chlorinated organics to meet their respective GA groundwater standards under the assumption that the historical trend of the data will continue throughout the predicted lifetime of the source. The software SourceDK was used as a screening model for estimating the groundwater remediation timeframe and the uncertainties associated with the estimated timeframe (SourceDK, 2011). Using the Tier 1 Extrapolation tool, which compares records of concentration versus time, the log concentration versus time is plotted and then extrapolated to estimate how long it will take to achieve a cleanup goal. The cleanup goals selected are the NYS Class GA groundwater standards (5 µg/L for TCE and cis-DCE and 2 µg/L for VC). The software also provides the 95% confidence level in the estimation of the time to achieve the cleanup goal.

Table 5 summarizes the predicted remedial timeframes and their 95% upper and lower confidence limits. Remediation time estimates were calculated by solving the regression equations for when each COC would achieve its respective Class GA standard. If the regression curve displayed an increasing trend, the determination of an expected remedial timeframe could not be calculated. Due to the poor fit of the increasing trends of cis-DCE and VC at wells PT-17 and MWT-22, an estimated remedial timeframe could not be calculated at these wells. With the exception of the wells with increasing concentration trends, all wells are expected to reach Class GA groundwater standards for 1) TCE by 2045; 2) cis-DCE by 2079; and 3) VC by 2032 (the MWT-22 VC trendline was excluded due to extremely poor fit). Due to variations in data, some of the regression curves show stronger correlations (as indicated by the R^2 values shown on the **Appendix C** figures) than others. The COCs for which MWT-22, PT-22, PT-17 and MWT-7 are not

expected to comply with Class GA groundwater standards by 2074 tend to exhibit very poor correlation (e.g., $R^2 < 0.1$). Additional data at these well locations will need to be collected to establish COC trends.

Time plots of the concentration of TCE, cis-DCE, and VC for wells PT-18A, PT-17, and MWT-7 are provided in **Figures 11A, 11B, and 11C**, respectively; these plots include historic data prior to the installation of the biowalls. TCE, cis-DCE, and VC concentrations exhibit an overall decreasing trend at well PT-18A (**Figure 11A**). Since PT-18A is located in the Ash Landfill source area upgradient of all biowalls, decreasing trends at this location reflect natural attenuation processes. TCE concentrations at well PT-17 downgradient of the biowalls are stable since biowall installation (**Figure 11B**). There are increasing trends for cis-DCE and VC at PT-17 and MWT-7, while TCE shows a decreasing trend at each of the two wells (**Figures 11B and 11C**).

PT-17 and MWT-7 are located 150 ft and 310 ft from Biowalls C1/C2, respectively. As such, it is possible that treatment zones have not been established this far downgradient of the biowalls. Nevertheless, an increasing trend for cis-DCE paired with a decreasing trend for TCE may indicate that reductive dechlorination is occurring at these locations. To date, concentrations at these wells are within historic levels and the Army will continue to evaluate any impacts of the biowalls on this portion of the plume.

Other Compounds

Several other chlorinated compounds were detected during Year 9, including the other daughter products of TCE in the reductive dechlorination process (**Figure 5**). Results for these VOCs are presented in **Table 4**. Exceedances of trans-1,2-Dichloroethene (trans-DCE) and 1,2-Dichloroethane were observed in both Rounds 19 and 20. Future rounds of groundwater sampling will continue to monitor these analytes. Chloroform was detected during Round 19. Chloroform was detected once in well PT-18A at a concentration (1.1 µg/L) below its respective Class GA standard (7 µg/L). During Round 20, chloroform was detected in one well with a concentration below its respective Class GA standard and acetone was detected (26 µg/L) in well MWT-27. None of these detected compounds are historical COCs, and their detections are not believed to be associated with historic site operations. The results of all chlorinated and non-chlorinated organics detected in the groundwater at the Ash Landfill OU are presented in **Appendix B**.

3.5 Biowall Recharge Evaluation

The RDR calls for a recharge evaluation at the end of each year of monitoring. The evaluations completed at the end of Years 1 through 8 concluded that recharge was not required and that a recharge evaluation would be performed again at the end of Year 9.

Recharge Evaluation Process

A recharge evaluation, defined on **Figure 12** (also shown on Figure 7-3 of the RDR) and described below, is the determination of the need to recharge a biowall segment. The evaluation consists of the following:

- Determining the need to recharge a biowall segment requires a review of chemical concentrations and geochemical parameters by an experienced professional. A specific, absolute set of conditions or parameter values are not appropriate to determine the need to recharge. Rather, a lines-of-

evidence approach will be used to correlate a decrease in the efficiency of the system to degrade chloroethenes with geochemical evidence that indicates the cause is due to substrate depletion. No single criteria should be used to determine the efficacy of the biowall, thus influencing the decision of whether recharge is required.

- The following parameters will be evaluated annually using at least two consecutive rounds of sampling data in order to determine if recharge of the biowalls is necessary:
 - COC concentrations in the biowalls (e.g., MWT-27, MWT-28, and MWT-23). Detected COC concentrations that have increased above Class GA standards in consecutive rounds indicate that recharge may need to be considered. Concentrations within the biowalls, not at downgradient locations, will be used to make this evaluation so that the effectiveness of the wall itself is being measured without the interference of effects such as desorption and mixing.
 - Geochemical parameters, specifically ORP, TOC, and DO, in the biowalls (e.g., at MWT-27, MWT-28, and MWT-23). Benchmark values will be used initially to evaluate anaerobic conditions in the groundwater. The benchmarks are:
 - ORP < -100 mV
 - TOC > 20 mg/L
 - DO < 1.0 mg/L

Parameters described in the bullets above are guidelines and will be considered in evaluating if, and when, a depletion of bioavailable organic substrate results in a rebound in geochemical redox conditions under which effective anaerobic degradation of chlorinated ethenes does not occur.

Recharge Evaluation for Year 9

The recharge evaluation for Year 9 indicates that recharging the biowalls is not necessary at this time.

Section 3.3 presents the geochemical data for Year 9. The values of geochemical parameters measured in Year 9 support the interpretation that reductive dechlorination is occurring in Biowalls A1/A2, B1/B2, and C1/C2. **Exhibit 3.2** below shows that the geochemical parameters for the wells within the biowalls meet or are close to the benchmark values and that groundwater conditions remain highly reducing.

Exhibit 3.2 – Biowall Geochemical Parameters

Sample Round	MWT-27 (Biowall B1)			MWT-28 (Biowall B2)			MWT-23 (Biowall C2)		
	ORP (mV)	TOC (mg/L)	DO (mg/L)	ORP (mV)	TOC (mg/L)	DO (mg/L)	ORP (mV)	TOC (mg/L)	DO (mg/L)
1Q2007	-158	2,058	0.25	-150	1,775	0.16	-122	260	0.26
2Q2007	-145	1,350	0.08	-113	171	0.09	-109	210	0.35
3Q2007	-141	755	0	-131	309	0	-87	303	0
4Q2007	-161	167	0.06	-151	92	0.08	-144	151	0.12
5R2008	-133	89	0.18	-91	49	0.15	-129	29	0.15
6R2008	-126	54	0.13	-95	28	0.10	-104	20	0.2
7R2009	-128	82	0.06	-135	28	0.18	-117	16	0.07
8R2009	-102	50	0.15	-148	26	0.29	-90	18	0.63
9R2010	-121	61	0.05	-104	21	0.06	-115	11	0.04
10R2010	-111	32	0.05	-100	12	0.07	-103	5.9	0.29
11R2011	-106	42	0.01	-135	17	0.28	-136	1.5	0.85
12R2011	-71	35	0.08	-126	12	0.02	-104	6.3	0.08
13R2012	-82	28	0.03	-76	18	0.06	-71	4.8	0.08
14R2012	-120	35	0.03	-73	25	0.07	-91	11	0.11
15R2013	-33	41	0.04	-41	25	0.04	-102	4.1	0.18
16R2013	-66	37	0.22	-49	24	0.21	-16	5.5	0.24
17R2014	-77	39	0.52	-87	19	0.71	-56	4.7	0.18
18R2014	-105	38	0.08	-88	18	0.02	-77	5.6	0.07
19R2015	-85	37	0.14	-74	24	0.12	-80	3.4	0.24
20R2015	-77	28	0.29	-18	19	0.41	-85	4.8	0.08

Notes:

1. Benchmark Values: ORP < -100 mV; TOC > 20 mg/L; DO < 1.0 mg/L

Section 3.4 presents the analytical data for Year 9. As shown in **Exhibit 3.3** below, concentrations of TCE and cis-DCE in the biowalls remain below their respective Class GA Standards and have not exceeded their screening criteria since the second round of sampling (e.g., 11 µg/L, cis-DCE in MWT-23). VC is typically non-detect in Biowall B1 and B2; however, it did exceed the Class GA Standard in Biowall C2 during Round 20. A trend in the exceedances is not evident and the results are interspersed with non-detects or detections below the GA Standard. The ability of the biowalls to sustain a high degree of reductive dechlorination is well established.

Exhibit 3.3 – Biowall Analytical Data

Sample Round	MWT-27 (Biowall B1)			MWT-28 (Biowall B2)			MWT-23 (Biowall C2)		
	TCE (µg/L)	Cis-DCE (µg/L)	VC (µg/L)	TCE (µg/L)	Cis-DCE (µg/L)	VC (µg/L)	TCE (µg/L)	Cis-DCE (µg/L)	VC (µg/L)
1Q2007	ND	ND	ND	ND	ND	ND	ND	60	23
2Q2007	ND	ND	ND	ND	ND	ND	ND	11	4.8
3Q2007	ND	ND	ND	ND	ND	ND	ND	3.1	ND
4Q2007	ND	ND	ND	ND	ND	ND	ND	3.6 J	3.65
5R2008	ND	ND	ND	ND	ND	ND	ND	ND	ND
6R2008	ND	ND	ND	ND	ND	ND	0.4	2.4	2.8
7R2009	ND	ND	ND	ND	ND	ND	ND	0.42 J	ND
8R2009	ND	ND	3.1 J	ND	ND	ND	ND	0.47 J	ND
9R2010	ND	0.18 J	ND	ND	ND	ND	ND	0.41 J	ND
10R2010	0.51 J	1.1	2.1	ND	0.51 J	0.64 J	0.29 J	4.6	5.3
11R2011	ND	0.21 J	ND	ND	ND	ND	ND	0.57 J	0.33 J
12R2011	ND	1.4	3.0	ND	0.28 J	0.56 J	0.18 J	2.0	1.8
13R2012	ND	0.42 J	0.61 J	ND	ND	ND	ND	0.55 J	0.33 J
14R2012	ND	ND	ND	ND	ND	0.31 J	ND	1.9	1.65
15R2013	ND	ND	ND	ND	ND	ND	ND	3.3	2.9
16R2013	ND	0.48 J	0.84 J	ND	0.37 J	ND	ND	2.6	2.5
17R2014	ND	0.83 J	1.0	ND	ND	ND	ND	0.45 J	0.37 J
18R2014	ND	0.70 J	1.2	ND	0.19 J	ND	0.19 J	2.7	ND
19R2015	ND	0.67 J	ND	ND	ND	ND	ND	1.0	ND
20R2015	ND	0.87 J	ND	ND	ND	ND	ND	3.8	3.4

Notes:

1. ND = Not detected at the reporting limit
2. J = Estimated Value
3. NYSDEC Class GA Groundwater Standards: TCE = 5 µg/L; cis-DCE = 5 µg/L; VC = 2 µg/L

TCE, and its daughter product cis-DCE, are either not detected or below the GA Standard in the biowalls. VC, which requires anaerobic conditions to fully degrade, has decreased within the biowalls, varying in concentrations between ND and above the GA Standard.

Overall, the multiple lines-of-evidence approach that evaluates geochemical parameters together with the chemical analytical data indicates that conditions in the biowalls are sufficiently anaerobic to support reductive chlorination of chlorinated ethenes. Substrate in the biowalls has not been fully depleted and biodegradation continues to occur. At this time, Although TOC levels are below the benchmark value at MWT-23 and slightly below at MWT-28, they remain high enough to support reductive chlorination. Low DO concentrations and negative ORPs indicate reducing conditions are being maintained with the current levels of TOC. Reductions in sulfate and the production of methane further indicate that highly anaerobic conditions are being sustained. There is no singular value that can be specified for any one parameter, in this case TOC, where crossing that value would indicate the need to recharge. Both an increasing trend in VOC concentrations and consistent negative trends in multiple geochemical parameters would need to be observed to consider that recharge is required.

However, some geochemical parameters were below benchmark values in the last couple of monitoring rounds. Additionally, some low variations in VOC concentrations were measured. Though recharge is not needed immediately based on the evaluation above, given the changes in the lines of evidence, a recharge event is being planned for 2017, and the specific plan will be detailed in a work plan to be provided to the EPA and NYSEC for review.

3.6 Soil Remedy Evaluation

Part of the remedial action was installing a 12-inch vegetative cover over the Ash Landfill and the NCFL. The covers were inspected and field observations from Year 9 note that the landfills are vegetated with grass and clover. At the NCFL, visual observations noted the presence of deer trails; however, there were no signs of erosion into the cover. Soil has not been exposed to the environment and corrective action is not required in any of the inspection areas. The Army will continue to monitor the integrity of the covers and ensure that the vegetative covers have not been breached and that the underlying soil is not exposed.

3.7 Land Use Controls (LUCs)

The remedy for the Ash Landfill OU requires the implementation and maintenance of land use controls (LUCs). The LUC requirements are detailed in the “Land Use Control Remedial Design for SEAD-27, 66, and 64A, *Addendum 3*” (2008b). The selected LUCs for the Ash Landfill OU are as follows:

- Prevent access to or use of the groundwater until cleanup levels are met;
- Maintain the integrity of any current or future remedial or monitoring system, such as monitoring wells and permeable reactive barriers;
- Prohibit excavation of the soil or construction of inhabitable structures (temporary or permanent) above the area of the existing groundwater plume; and
- Maintain the vegetative soil layer over the ash fill areas and the NCFL to limit ecological contact.

As part of the LTM program, the Army inspected the site to determine that the LUCs are being maintained. While performing the groundwater sampling, it was confirmed that no prohibited facilities have been constructed and no access to or use of groundwater was evident other than that needed for monitoring. As discussed in **Section 3.6**, the vegetative covers are limiting ecological contact with the underlying soil.

During Rounds 19 and 20, groundwater monitoring wells were inspected by field personnel. The integrity of all wells at the Ash Landfill is intact and each well is viable for groundwater elevation readings and groundwater sampling, where appropriate. Monitoring wells not required as part of the LTM were decommissioned between September 2010 and January 2011 (Parsons, 2013).

3.8 Operating Properly and Successfully

The implemented design has met the requirements for “operating properly and successfully” (OPS) as outlined in Section 12(h)(s) of the USEPA “Guidance for Evaluation of Federal Agency Demonstrations” (USEPA, 1996). Parsons submitted a letter on behalf of the Army to USEPA, dated June 6, 2008, declaring that the Army had determined that the remedy met the OPS requirements. The Army submitted a letter under separate cover on February 26, 2009 further certifying that the “information, data and analysis provided in Parsons’ June 6, 2008 letter was true and accurate.” On March 11, 2009, the USEPA transmitted a letter to the Army approving the Army’s OPS demonstration. The data for Year 9 of the LTM program are consistent with the data for Years 1 through 8 and demonstrate that the remedy is OPS, as described below.

The remedial action is operating “properly.”

The USEPA guidance describes that “a remedial action is operating ‘properly’ if it is operating as designed.” The Construction Completion Report (CCR) (Parsons, 2007) details that the vegetative covers were installed as designed, meeting or exceeding the 12-inch of soil cover requirement. **Section 3.6** describes that the covers are intact and effectively prevent ecological contact with the underlying soil; therefore, the vegetative covers are operating properly.

The CCR also details the construction of the biowalls. Deviation from the intended design resulted in wider-than-intended biowalls that required the emplacement of additional mulch; since this is an enhancement of the design, it is fair to say that the biowalls were constructed as designed. The geochemical data presented and discussed in **Section 3.3** indicate that conditions that are favorable to anaerobic reductive dechlorination have been established within and near the biowalls, which was the expectation of the design of the biowall system.

The remedial action is operating “successfully.”

A remedial action may receive the USEPA’s designation of “operating successfully” (1) if “a system will achieve the cleanup levels or performance goals delineated in the decision document” and (2) if “the remedy is protective of human health and the environment.” The data presented in **Section 3.4** demonstrate that concentrations of VOCs are decreasing and will eventually meet the Class GA groundwater standards. The time plots presented in **Figures 10A** through **10J** show a decreasing trend for the COCs at the Ash Landfill OU; **Table 5** summarizes the trends in concentrations of COCs over time, demonstrating that the concentrations in groundwater will eventually meet the groundwater standards.

Recent inspection of the vegetative covers at the Ash Landfill and the NCFL continue to indicate that the covers are preventing ecological receptors from contacting the underlying soil; therefore, there is no risk to the environment. The LUCs have been maintained and no one is accessing the groundwater; therefore, there is no risk to human health. Based on a review of the site data, an inspection of the condition of the vegetative

covers, and a confirmation that the LUCs are being maintained, the Army believes that the remedial action is operating successfully.

Based on an assessment of the design and construction of the remedial action, and an evaluation of the geochemical and analytical data from the nine years of groundwater monitoring, the Army believes that the remedial action at the Ash Landfill meets the requirements to be designated as “operating properly and successfully.”

4.0 LONG-TERM MONITORING CONCLUSIONS AND RECOMMENDATIONS

4.1 Conclusions

Based on the results of the long-term monitoring at the Ash Landfill since the installation of the full-scale biowalls, the Army has made the following conclusions:

- TCE within the biowalls remains below or close to detection limits;
- TCE, cis-DCE, and VC are present in the groundwater at the site at concentrations above respective Class GA groundwater standards;
- Chemical results indicate that the concentrations of chlorinated ethenes are decreasing as they pass through the biowall systems;
- Geochemical parameters indicate that groundwater redox conditions are conducive for reductive dechlorination to occur within the biowalls;
- Concentrations of chlorinated ethenes at off-site well MW-56 are below Class GA groundwater standards;
- Continued monitoring is required to determine trends in concentrations of COCs at MWT-22, PT-22, PT-17, and MWT-7;
- Recharge of the biowalls is not immediately necessary at this time;
- The remedial action continues to meet the requirements of the USEPA's "operating properly and successfully" designation; and
- The Army will continue to monitor the performance of the biowall system, including semi-annual periodic evaluations of the potential need to recharge the biowalls.

4.2 Recommendations

Based on the first nine years of long-term monitoring at the Ash Landfill OU, the Army recommends continuing the semi-annual frequency of monitoring based on the process shown in **Figure 12** (which is also Figure 7-3 of the RDR). The recommendations for LTM during year nine of monitoring are as follows:

- Biowall process monitoring wells (MWT-26, MWT-27, MWT-28, MWT-29, and MWT-23) will be monitored on a semi-annual basis. Each year a recharge evaluation will be completed. If the recharge evaluation recommends that a recharge is warranted, all existing wells in the LTM program will continue to be monitored. MWT-29 and MWT-24 will continue to be monitored as part of the plume performance monitoring wells to supplement data that will be used to determine whether additional biowall recharge is required. The recharge evaluation(s) conducted each year after the first biowall recharge would review the chemical and geochemical data at MWT-29 and MWT-24 and determine if the contaminant increase is a result of poor biowall performance or due to other issues such as seasonal variations in groundwater levels, unusual precipitation events, or desorption and back diffusion;

- Performance monitoring wells (PT-17, PT-18A, PT-22, PT-24, MWT-7, MWT-22, MWT-24, and MWT-25) will continue to be monitored on a semi-annual basis in a manner consistent with the Year 3 LTM program. In the nine years of LTM events at the Ash Landfill OU, the concentrations of COCs in the wells downgradient of the source area (near PT-18A) have decreased;
- The off-site performance monitoring well (MW-56) will continue to be monitored on a semi-annual basis;
- The vegetative covers at the Ash Landfill and the NCFL will be inspected annually to ensure that they remain intact and protective of ecological receptors;
- The frequency of monitoring and the need to recharge the biowalls will be reviewed in the annual report submitted after the completion of the tenth year of LTM, based on the process outlined in **Figure 12**; and
- The Army will begin planning for a recharge event in to take place in 2017.

5.0 REFERENCES

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TABLES

Table 1	Groundwater Sample Collection
Table 2	Groundwater Elevations
Table 3	Groundwater Geochemical Data
Table 4	Chlorinated Organics in Groundwater
Table 5	Groundwater Trends

Table 1
Groundwater Sample Collection
Ash Landfill Annual Report, Year 9
Seneca Army Depot Activity

Monitoring Wells	Monitoring Well Group			Laboratory Analysis				Field Test	
	On-Site Plume Performance Monitoring	Biowall Process Monitoring	Off-Site Performance Monitoring	VOC 8260B	TOC 9060A	MEE RSK-175	Sulfate EPA 300.1	Ferrous Iron (mg/L)	Manganese (mg/L)
PT-18A	X			X					
MWT-25	X			X					
MWT-26		X		X	X	X	X	X	X
MWT-27		X		X	X	X	X	X	X
MWT-28	X	X		X	X	X	X	X	X
MWT-29	X	X		X	X	X	X	X	X
MWT-22	X			X					
PT-22	X			X					
MWT-23	X	X		X	X	X	X	X	X
MWT-24	X			X					
PT-17	X			X	X	X	X	X	X
MWT-7	X			X	X	X	X	X	X
PT-24	X			X					
MW-56			X	X					

Notes:

1. All samples were analyzed for field parameters including pH, ORP, dissolved oxygen, conductivity, temperature and turbidity.
2. All samples were collected in Round 19 between June 3, 2015 and June 6, 2015 and in Round 20 between December 16, 2015 and December 19, 2015.

Table 2
Groundwater Elevation Data
Ash Landfill Annual Report, Year 9
Seneca Army Depot Activity

Monitoring Well	Top of Riser Elevation (ft)	Well Depth (rel. TOC) (ft)	LTM R19 - June 2015				LTM R20 - December 2015				Historical Data		
			Date Measured	Saturated Thickness (ft)	Depth to Groundwater (ft)	Water Level Elevation (ft)	Date Measured	Saturated Thickness (ft)	Depth to Groundwater (ft)	Water Level Elevation (ft)	Groundwater Elevation (ft)		
											Maximum	Minimum	Range
PT-18A	659.05	12.85	6/2/2015	4.75	8.10	650.95	12/15/2015	3.51	9.34	649.71	653.25	649.65	3.60
MWT-25	654.51	13.25	6/2/2015	6.41	6.84	647.67	12/15/2015	6.68	6.57	647.94	650.65	645.93	4.72
MWT-26	652.19	13.22	6/2/2015	6.71	6.51	645.68	12/15/2015	7.13	6.09	646.10	648.92	644.58	4.34
MWT-27	652.99	12.90	6/2/2015	5.58	7.32	645.67	12/15/2015	6.16	6.74	646.25	648.60	644.27	4.33
MWT-28	652.69	12.85	6/2/2015	5.42	7.43	645.26	12/15/2015	5.52	7.33	645.36	648.31	644.20	4.11
MWT-29	651.82	13.10	6/2/2015	5.21	7.89	643.93	12/15/2015	5.62	7.48	644.34	647.83	643.18	4.65
MWT-22	650.66	14.90	6/2/2015	7.57	7.33	643.33	12/15/2015	7.91	6.99	643.67	648.13	642.29	5.84
PT-22	648.61	11.81	6/2/2015	3.60	8.21	640.40	12/15/2015	4.28	7.53	641.08	644.30	637.47	6.83
MWT-23	646.77	13.70	6/2/2015	5.39	8.31	638.46	12/15/2015	5.37	8.33	638.44	640.61	636.40	4.21
MWT-24	641.56	13.00	6/2/2015	5.94	7.06	634.50	12/15/2015	5.70	7.30	634.26	635.84	632.11	3.73
PT-17	640.14	11.65	6/2/2015	8.17	3.48	636.66	12/15/2015	8.29	3.36	636.78	637.50	632.74	4.76
MWT-7	638.34	13.64	6/2/2015	8.32	5.32	633.02	12/15/2015	7.97	5.67	632.67	633.58	626.58	7.00
PT-24	636.40	11.88	6/2/2015	6.94	4.94	631.46	12/15/2015	6.85	5.03	631.37	632.76	627.80	4.96
MW-56	630.51	6.88	6/2/2015	3.43	3.45	627.06	12/15/2015	3.34	3.54	626.97	627.58	624.39	3.19

Table 4
Chlorinated Organics in Groundwater
Ash Landfill Annual Report Long-Term Monitoring Years 1-9
Seneca Army Depot Activity

Sample Identification	Round	Sample Date	PCE	TCE	1,1-DCE	cis-DCE	trans-DCE	VC	1,1-DCA	1,2-DCA	
			(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
Class GA Standard (ug/L)			5	5	5	5	5	2	5	0.6	
PT-18A	Upgradient of walls	1	3-Jan-07	1 U	2000	0.64 J	220	1.6	2.4	1 U	1 U
		2	17-Mar-07	1 U	1000	0.73 J	170	1.4	2.9	1 U	1 U
		3	5-Jun-07	1 U	1100	1.4	430	3.3	3.3	1 U	1 U
		4	15-Nov-07	1 U	2700	2.1	720	3.4	8.2	1 U	1 U
		5	24-Jun-08	1 U	220	1 U	200	0.9 J	1.4	1 U	1 U
		6	12-Dec-08	0.36 U	1400	1.3	510	2.4	4.6	0.75 U	0.21 U
		7	4-Jun-09	0.36 U	810 J	0.8 J	260	1.8	2.6	0.75 U	0.21 U
		8	17-Dec-09	1.5 U	2100	1.5 U	630	3.5 J	7.1	2 J	0.86 U
		9	1-Jul-10	0.15 U	120	0.11 U	28	0.2 U	0.18 U	0.25 U	0.1 U
		10	19-Dec-10	0.15 U	6.3	0.11 U	0.54 J	0.2 U	0.18 U	0.25 U	0.1 U
		11	22-Jul-11	1 U	0.13 U	1.5	15	0.2 U	120	62	0.1 U
		12	15-Dec-11	0.15 U	7.3	0.11 U	0.53 J	0.2 U	0.18 U	0.25 U	0.1 U
		13	21-Jun-12	13 J	3800	2.6	820	4.7	10	0.25 U	0.1 UJ
		14	12-Dec-12	0.15 U	8	0.11 U	0.8 J	0.2 U	0.18 U	0.25 U	0.1 U
		15	11-Jul-13	0.15 U	47	0.11 U	8.1	0.2 U	0.18 U	0.25 U	0.1 U
		16	13-Dec-13	0.15 U	9.4	0.11 U	1.4	0.2 U	0.18 U	0.25 U	0.1 U
		17	21-Jun-14	0.15 U	1200	0.77 J	240	1.2	2.2	0.25 U	0.1 U
		18	19-Dec-14	27	1800	2.2 U	420	5 J	3.6 U	5 U	2 U
		19	6-Jun-15	0.74 U	180 J	0.36 U	28	0.37 U	0.5 U	0.38 U	0.5 U
		20	18-Dec-15	0.74 U	160	0.36 U	31	0.37 U	0.5 U	0.38 U	0.5 U
MWT-25	Upgradient of Biowall A	1	3-Jan-07	1 U	50	1 U	41	0.56 J	1.6	1 U	1 U
		2	17-Mar-07	1 U	55	1 U	84	1.2	9.6	1 U	1 U
		3	6-Jun-07	1 U	28	1 U	36	0.5 J	2.1	1 U	1 U
		4	15-Nov-07	1 U	26	1 U	17	1 U	0.64 J	1 U	1 U
		5	24-Jun-08	1 U	19	1 U	17	1 U	1 U	1 U	1 U
		6	15-Dec-08	0.36 U	3.2	0.29 U	0.63 J	0.13 U	0.24 U	0.75 U	0.21 U
		7	3-Jun-09	0.36 U	12	0.29 U	10	0.13 U	0.24 U	0.75 U	0.21 U
		8	17-Dec-09	0.36 U	4.2	0.38 U	3.3	0.42 U	0.24 U	0.29 U	0.21 U
		9	30-Jun-10	0.15 U	7.7	0.11 U	13	0.49 J	0.18 U	0.25 U	0.1 U
		10	19-Dec-10	0.15 U	1.9	0.11 U	0.97 J	0.2 U	0.18 U	0.25 U	0.1 U
		11	20-Jul-11	0.15 U	4.4	0.11 U	14	0.45 J	0.72 J	0.25 U	0.1 U
		12	15-Dec-11	0.15 U	1.6	0.11 U	0.30 J	0.20 U	0.18 U	0.25 U	0.1 U
		13	21-Jun-12	0.15 U	6.1	0.11 U	6.80	0.20 U	0.18 U	0.25 U	0.1 UJ
		14	12-Dec-12	0.15 U	1.3	0.11 U	0.39 J	0.20 U	0.18 U	0.25 U	0.1 U
		15	11-Jul-13	0.15 U	8.3	0.11 U	5.8	0.2 U	0.18 U	0.25 U	0.1 U
		16	13-Dec-13	0.15 U	4.6	0.11 U	3.3	0.2 U	0.47 J	0.25 U	0.1 U
		17	21-Jun-14	0.15 U	24	0.11 U	21	0.42 J	2.6	0.25 U	0.1 U
		18	19-Dec-14	0.15 U	2.5	0.11 U	1.7	0.2 U	0.18 U	0.25 U	0.1 U
		19	4-Jun-15	0.74 U	7.9 J	0.36 U	4.9	0.37 U	0.5 U	0.38 U	0.5 U
		20	18-Dec-15	0.74 U	2.6	0.36 U	1.7	0.37 U	0.5 U	0.38 U	0.5 U
MWT-26	Upgradient of Biowalls B1/B2	1	3-Jan-07	1 U	10	1 U	19	0.6 J	2	1 U	1 U
		2	17-Mar-07	1 U	11	1 U	17	1	6.1	1 U	1 U
		3	5-Jun-07	1 U	3.2	1 U	11	0.7 J	4.4	1 U	1 U
		4	15-Nov-07	1 U	2.8	1 U	2.8	1 U	1 U	1 U	1 U
		5	24-Jun-08	1 U	1.7	1 U	3.3	1 U	1 U	1 U	1 U
		6	15-Dec-08	0.36 U	1.9	0.29 U	1	0.13 U	0.24 U	0.75 U	0.21 U
		7	3-Jun-09	0.36 U	3.6	0.29 U	6	0.13 U	3.5	0.75 U	0.21 U
		8	17-Dec-09	0.36 U	5.8	0.38 U	8.1	0.42 U	4.2	0.29 U	0.21 U
		9	29-Jun-10	0.15 U	1.7	0.11 U	5.5	0.37 J	0.18 U	0.25 U	0.1 U
		10	19-Dec-10	0.15 U	4.2	0.11 U	12	0.67 J	7.6	0.25 U	0.1 U
		11	20-Jul-11	0.15 U	1.6	0.11 U	9.8	0.81 J	4.4	0.25 U	0.1 U
		12	15-Dec-11	0.15 U	1.2	0.11 U	1.1	0.2 U	0.47 J	0.25 U	0.1 U
		13	20-Jun-12	0.15 U	1.6	0.11 U	4.4	0.24 J	1.1	0.25 U	0.1 UJ
		14	14-Dec-12	0.15 U	2.1	0.11 U	3.1	0.2 U	0.56 J	0.25 U	0.1 U
		15	11-Jul-13	0.15 U	2.1	0.11 U	5.8	0.2 U	1.6	0.25 U	0.1 U
		16	14-Dec-13	0.15 U	1.3	0.11 U	2.8	0.2 U	1	0.25 U	0.1 U
		17	19-Jun-14	0.15 U	0.83 J	0.11 U	4.5	0.4 J	1.1	0.25 U	0.1 U
		18	17-Dec-14	0.15 U	2.1	0.11 U	9.7	0.2 U	3.3	0.25 U	0.1 U
		19	4-Jun-15	0.74 U	1.3 J	0.36 U	5.4	0.49 J	0.86 J	0.38 U	0.5 U
		20	16-Dec-15	0.74 U	1.6	0.36 U	8.4	0.37 U	0.50 U	0.38 U	0.5 U

Table 4
Chlorinated Organics in Groundwater
Ash Landfill Annual Report Long-Term Monitoring Years 1-9
Seneca Army Depot Activity

Sample Identification	Round	Sample Date	PCE	TCE	1,1-DCE	cis-DCE	trans-DCE	VC	1,1-DCA	1,2-DCA	
			(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
		Class GA Standard (ug/L)	5	5	5	5	5	2	5	0.6	
MWT-27	In Biowall B1	1	3-Jan-07	20 U	20 UJ	20 UJ	49 J	20 UJ	20 UJ	20 UJ	20 UJ
		2	16-Mar-07	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
		3	5-Jun-07	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
		4	15-Nov-07	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
		5	24-Jun-08	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U
		6	15-Dec-08	3.6 U	1.8 U	2.9 U	1.6 U	1.3 U	2.4 U	7.5 U	2.1 U
		7	3-Jun-09	3.6 U	1.8 U	2.9 U	1.6 U	1.3 U	2.4 U	7.5 U	2.1 U
		8	16-Dec-09	1.8 U	2.3 U	1.9 U	1.9 U	2.1 U	3.1 J	1.5 U	1.1 U
		9	29-Jun-10	0.15 U	0.13 U	0.11 U	0.18 J	0.2 U	0.18 U	0.25 U	0.1 U
		10	20-Dec-10	0.15 U	0.51 J	0.11 U	1.1	0.2 U	2.1	0.25 U	0.1 U
		11	20-Jul-11	0.15 U	0.13 U	0.11 U	0.21 J	0.28 J	0.18 U	0.25 U	0.1 U
		12	14-Dec-11	0.15 UJ	0.13 U	0.11 U	1.4	0.2 U	3.0	0.25 U	0.1 U
		13	20-Jun-12	0.15 U	0.13 U	0.11 U	0.42 J	0.2 U	0.61 J	0.25 U	0.1 UJ
		14	13-Dec-12	0.15 U	0.13 U	0.11 U	0.15 U	0.2 U	0.18 U	0.25 U	0.1 U
		15	11-Jul-13	0.15 U	0.13 U	0.11 U	0.15 U	0.2 U	0.18 U	0.25 U	0.1 U
		16	12-Dec-13	0.15 U	0.13 U	0.11 U	0.48 J	0.2 U	0.84 J	0.25 U	0.1 U
		17	19-Jun-14	0.15 U	0.13 U	0.11 U	0.83 J	0.27 J	1	0.25 U	0.1 U
		18	17-Dec-14	0.15 U	0.13 U	0.11 U	0.70 J	0.2 U	1.2	0.25 U	0.1 U
		19	3-Jun-15	0.74 U	0.48 UJ	0.36 U	0.67 J	0.37 U	0.5 U	0.38 U	0.5 U
		20	16-Dec-15	0.74 U	0.48 U	0.36 U	0.87 J	0.37 U	0.5 U	0.38 U	0.5 U
MWT-28	In Biowall B2	1	3-Jan-07	20 U	20 UJ	20 UJ	20 UJ	20 UJ	20 UJ	20 UJ	20 UJ
		2	16-Mar-07	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
		3	5-Jun-07	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
		4	15-Nov-07	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
		5	25-Jun-08	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U
		6	15-Dec-08	3.6 U	1.8 U	2.9 U	1.6 U	1.3 U	2.4 U	7.5 U	2.1 U
		7	3-Jun-09	0.36 U	0.18 U	0.29 U	0.16 U	0.13 U	0.24 U	0.75 U	0.21 U
		8	18-Dec-09	1.8 U	2.3 U	1.9 U	1.9 U	2.1 U	1.2 U	1.5 U	1.1 U
		9	29-Jun-10	0.15 U	0.13 U	0.11 U	0.15 U	0.2 U	0.18 U	0.25 U	0.1 U
		10	18-Dec-10	0.15 U	0.13 U	0.11 U	0.51 J	0.2 U	0.64 J	0.25 U	0.1 U
		11	19-Jul-11	0.15 U	0.13 U	0.11 U	0.15 U	0.2 U	0.18 U	0.25 U	0.1 U
		12	14-Dec-11	0.15 UJ	0.13 U	0.11 U	0.28 J	0.2 U	0.56 J	0.25 U	0.1 U
		13	20-Jun-12	0.15 U	0.13 U	0.11 U	0.15 U	0.2 U	0.18 U	0.25 U	0.1 UJ
		14	14-Dec-12	0.15 U	0.13 U	0.11 U	0.15 U	0.2 U	0.31 J	0.25 U	0.1 U
		15	11-Jul-13	0.15 U	0.13 U	0.11 U	0.15 U	0.2 U	0.18 U	0.25 U	0.1 U
		16	14-Dec-13	0.15 U	0.13 U	0.11 U	0.37 J	0.2 U	0.18 U	0.25 U	0.1 U
		17	19-Jun-14	0.15 U	0.13 U	0.11 U	0.15 U	0.2 U	0.18 U	0.25 U	0.1 U
		18	17-Dec-14	0.15 U	0.13 U	0.11 U	0.19 J	0.2 U	0.18 U	0.25 U	0.1 U
		19	3-Jun-15	0.74 U	0.48 UJ	0.36 U	0.41 U	0.37 U	0.5 U	0.38 U	0.5 U
		20	17-Dec-15	0.74 U	0.48 U	0.36 U	0.41 U	0.37 U	0.5 U	0.38 U	0.5 U
MWT-29	Downgradient of Biowall B2	1	3-Jan-07	2 U	22	2 U	280	6.5	140	2 U	2 U
		2	16-Mar-07	4 U	19	4.5 U	220	7.75	165	4.5 U	5 U
		3	5-Jun-07	2 U	7.6	2 U	100	2.1	81	2 U	2 U
		4	14-Nov-07	1 U	4.4	1 U	96	0.83 J	74	1 U	1 U
		5	25-Jun-08	1 U	3.3	1 U	84	0.65 J	74	1 U	1 U
		6	15-Dec-08	0.36 U	6.6	0.29 U	91	0.6 J	80	0.75 U	0.21 U
		7	3-Jun-09	0.36 U	4.5	0.29 U	61	0.67 J	43	0.75 U	0.21 U
		8	16-Dec-09	0.36 U	3.5	0.38 U	37	0.65 J	29	0.29 U	0.21 U
		9	30-Jun-10	0.15 U	1.3	0.26 J	78	1.1	69	0.25 U	0.1 U
		10	19-Dec-10	0.15 U	2.1	0.4 J	38	0.77 J	27	0.25 U	0.1 U
		11	20-Jul-11	0.15 U	0.79 J	0.11 U	33	1.6	43	0.25 U	0.1 U
		12	14-Dec-11	0.15 UJ	2.4	0.11 U	8.5	0.26 J	5.9	0.25 U	0.1 U
		13	20-Jun-12	0.15 U	0.69 J	0.11 U	36	0.59 J	49	0.25 U	0.1 UJ
		14	14-Dec-12	0.15 U	3.3	0.11 U	25	0.44 J	11	0.25 U	0.1 U
		15	10-Jul-13	0.15 U	3.7	0.11 U	80	1.1	32	0.25 U	0.1 U
		16	12-Dec-13	0.15 U	2.1	0.11 U	28	0.42 J	20	0.25 U	0.1 U
		17	19-Jun-14	0.15 U	0.71 J	0.13 J	49	1.1	130	0.25 U	0.1 U
		18	17-Dec-14	0.15 U	2.3	0.11 U	18	0.2 U	7.5	0.25 U	0.1 U
		19	3-Jun-15	0.74 U	1.1 J	0.36 U	94	1.3	86	0.38 U	0.5 U
		20	17-Dec-15	0.74 U	2	0.36 U	35	0.43 J	45	0.38 U	0.5 U

Table 4
Chlorinated Organics in Groundwater
Ash Landfill Annual Report Long-Term Monitoring Years 1-9
Seneca Army Depot Activity

Sample Identification	Round	Sample Date	PCE	TCE	1,1-DCE	cis-DCE	trans-DCE	VC	1,1-DCA	1,2-DCA
			(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
Class GA Standard (ug/L)			5	5	5	5	5	2	5	0.6
MWT-22 Downgradient of Biowall B2	1	3-Jan-07	2 U	5.2	2 U	130	2.7	98	2 U	2 U
	2	17-Mar-07	4 U	3.8 J	4 U	90	4 U	64	4 U	4 U
	3	6-Jun-07	1 U	6.5	1 U	120	3.2	81	1 U	1 U
	4	14-Nov-07	1 U	2.6	1 U	99	0.85 J	180	1 U	1 U
	5	25-Jun-08	5 U	3 J	5 U	68	5 U	42	5 U	5 U
	6	15-Dec-08	1.8 U	5.9	1.4 U	160	0.65 U	140	3.8 U	1 U
	7	3-Jun-09	0.36 U	2.2	0.29 U	66	0.77 J	89	0.75 U	0.21 U
	8	16-Dec-09	1.8 U	2.3 U	1.9 U	57	2.1 U	52	1.5 U	1.1 U
	9	1-Jul-10	0.15 U	0.6 J	0.12 J	41	1.3	57	0.25 U	0.1 U
	10	17-Dec-10	0.15 U	1.8	0.66 J	130	2.8	98	0.25 U	0.25 J
	11	20-Jul-11	0.15 U	0.32 J	0.11 U	23	2.0	59	0.25 U	0.1 U
	12	14-Dec-11	0.15 UJ	2.3	0.38 J	140	3.9	83	0.25 U	0.29 J
	13	21-Jun-12	0.15 U	0.48 J	0.11 U	57	5.0	90	0.25 U	0.1 UJ
	14	12-Dec-12	0.15 U	0.73 J	0.11 U	86	3.8	100	0.25 U	0.22 J
	15	10-Jul-13	0.15 U	2	0.27 J	150	6.2	84	0.25 U	0.28 J
	16	12-Dec-13	0.15 U	0.88 J	0.14 J	100	7.1	120	0.25 U	0.25 J
	17	21-Jun-14	0.15 U	0.19 J	0.11 U	19	2.8	65	0.25 U	0.11 J
	18	18-Dec-14	0.15 U	0.21 J	0.11 U	32	3.6	84	0.25 U	0.1 U
	19	5-Jun-15	0.74 U	0.48 UJ	0.36 U	32	4.0	81	0.38 U	0.5 U
	20	18-Dec-15	0.74 U	0.63 J	0.36 U	78	6.0	91	0.38 U	0.5 U
PT-22 Between Biowalls B and C	1	3-Jan-07	1 U	11	1 U	57	0.86 J	22	1 U	3.3
	2	15-Mar-07	1 U	16	1 U	41	0.51 J	13	1 U	2.4
	3	5-Jun-07	1 U	8.5	1 U	61	0.72 J	32	1 U	5.6
	4	14-Nov-07	1 U	9.7	1 U	30	0.67 J	11	1 U	5
	5	26-Jun-08	1 U	4.1	1 U	26	0.57 J	13	1 U	3.9
	6	15-Dec-08	0.36 U	35	0.29 U	52	0.41 J	1.3	0.75 U	2.8
	7	2-Jun-09	0.36 U	6.9	0.29 U	41	0.81 J	11	0.75 U	4
	8	16-Dec-09	0.36 U	8.7	0.38 U	29	0.42 U	9.5	0.29 U	3
	9	30-Jun-10	0.15 U	4.6	0.11 U	43	0.75 J	11	0.25 U	3.2
	10	17-Dec-10	0.15 U	29	0.11 U	42	0.48 J	2.1	0.25 U	1.9
	11	22-Jul-11	0.15 U	31	0.11 U	42	0.2 U	0.18 U	0.25 U	0.1 U
	12	14-Dec-11	0.15 UJ	34	0.11 U	32	0.37 J	0.68 J	0.25 U	1.9
	13	21-Jun-12	0.15 U	7.9	0.11 U	31	0.84 J	4	0.25 U	2.1
	14	13-Dec-12	0.15 U	28	0.11 U	26	0.2 U	0.46 J	0.25 U	1.6
	15	9-Jul-13	0.15 U	38	0.11 U	49	0.45 J	1.6	0.25 U	2.3
	16	12-Dec-13	0.15 U	29	0.11 U	37	0.28 J	0.68 J	0.25 U	2
	17	21-Jun-14	0.15 U	23	0.11 U	52	1.3	2.9	0.25 U	3.1
	18	18-Dec-14	0.15 U	23	0.11 U	23	0.2 U	0.18 U	0.25 U	1.2
	19	6-Jun-15	0.74 U	34 J	0.36 U	33	0.37 U	0.5 U	0.38 U	2.3
	20	18-Dec-15	0.74 U	31	0.36 U	36	0.37 U	0.5 U	0.38 U	2.3
MWT-23 In Biowall C2	1	3-Jan-07	4 U	4 U	4 U	60	4 U	23	4 U	2.3 J
	2	16-Mar-07	4 U	4 U	4 U	11	4 U	4.8	4 U	4 U
	3	6-Jun-07	2 U	2 U	2 U	3.1	2 U	2 U	2 U	1.6 J
	4	16-Nov-07	7 U	7 U	2.6 U	3.6 J	7 U	3.7 J	7 U	7 U
	5	25-Jun-08	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.6 J
	6	12-Dec-08	0.36 U	0.41 J	0.29 U	2.4	0.13 U	2.8	0.75 U	0.6 J
	7	2-Jun-09	0.36 U	0.18 U	0.29 U	0.42 U	0.13 U	0.24 U	0.75 U	0.64 J
	8	15-Dec-09	0.36 U	0.46 U	0.38 U	0.47 J	0.42 U	0.24 U	0.29 U	0.21 U
	9	29-Jun-10	0.15 U	0.13 U	0.11 U	0.41 J	0.2 U	0.18 U	0.25 U	0.66 J
	10	19-Dec-10	0.15 U	0.29 J	0.11 U	4.6	0.49 J	5.3	0.52 J	1.6
	11	19-Jul-11	0.15 U	0.13 U	0.11 U	0.57 J	0.22 J	0.33 J	0.25 U	1
	12	14-Dec-11	0.15 UJ	0.16 J	0.11 U	2.0	0.35 J	1.8	0.33 J	1.3
	13	20-Jun-12	0.15 U	0.13 U	0.11 U	0.55 J	0.42 J	0.33 J	0.25 U	0.65 J
	14	13-Dec-12	0.15 U	0.13 U	0.11 U	1.9	0.29 J	1.65	0.25 U	0.72 J
	15	10-Jul-13	0.15 U	0.13 U	0.11 U	3.3	1.4	2.9	0.5 J	1.2
	16	14-Dec-13	0.15 U	0.13 U	0.11 U	2.6	0.52 J	2.5	0.25 U	0.81 J
	17	20-Jun-14	0.14 J	0.13 U	0.11 U	0.45 J	0.47 J	0.37 J	0.43 J	0.66 J
	18	18-Dec-14	0.15 U	0.19 J	0.11 U	2.7	0.39 J	0.18 U	0.43 J	0.1 J
	19	4-Jun-15	0.74 U	0.48 UJ	0.36 U	1.0	1.2	0.5 U	0.38 U	0.9 J
	20	16-Dec-15	0.74 U	0.48 U	0.36 U	3.8	0.29 J	3.4	0.38 U	0.5 U

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Sample Identification	Round	Sample Date	PCE	TCE	1,1-DCE	cis-DCE	trans-DCE	VC	1,1-DCA	1,2-DCA
			(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
Class GA Standard (ug/L)			5	5	5	5	5	2	5	0.6
Upgradient ↑ MWT-24 Downgradient of Biowalls C1/C2	1	3-Jan-07	1 U	0.94 J	1 U	210	2.1	19	0.81 J	1 U
	2	15-Mar-07	1 U	1 U	1 U	68	0.88 J	45	0.83 J	1 U
	3	5-Jun-07	2 U	2 U	2 U	19	2 U	22	1.1 J	2 U
	4	13-Nov-07	1 U	1.6	1 U	6.7	1 U	3.8	1 U	1 U
	5	26-Jun-08	5 U	5 U	5 U	31	5 U	5 U	5 U	5 U
	6	12-Dec-08	0.36 U	6	0.29 U	52	0.13 U	3.6	0.75 U	0.21 U
	7	2-Jun-09	0.36 U	4.8	0.29 U	38	0.13 U	7.3	0.75 U	0.21 U
	8	15-Dec-09	0.36 U	4.7	0.7 J	32	0.42 U	4	0.29 U	0.21 U
	9	1-Jul-10	0.15 U	5	0.11 U	31	0.41 J	7.5	0.79 J	0.1 U
	10	17-Dec-10	0.15 U	3.3	0.11 U	23	1	4.3	0.58 J	0.1 U
	11	21-Jul-11	0.15 U	5.6	0.11 U	39	1.6	17	0.25 U	3.3
	12	13-Dec-11	0.15 U	3.1	0.11 U	16	0.39 J	2.3	0.44 J	0.1 U
	13	19-Jun-12	0.15 U	2.7	0.11 U	28	1.5	5.3	0.8 J	0.1 UJ
	14	12-Dec-12	0.15 U	4.1	0.11 U	25	0.2 U	0.31 J	0.57 J	0.1 U
	15	9-Jul-13	0.15 U	3.7	0.11 U	24	1.2	2.1	0.7 J	0.1 U
	16	11-Dec-13	0.15 U	1.9	0.11 U	21	1.5	2.4	0.67 J	0.1 U
	17	21-Jun-14	0.15 U	1.5	0.11 U	21	1.6	3.6	0.25 U	0.1 U
	18	18-Dec-14	0.15 U	1.9	0.11 U	11	0.2 U	0.18 U	0.38 J	0.1 U
	19	5-Jun-15	0.74 U	4.0 J	0.36 U	16	0.74 J	1.1	0.58 J	0.5 U
	20	18-Dec-15	0.74 U	3.0	0.36 U	18	1.1	2.4	0.62 J	0.5 U
PT-17 Downgradient of biowalls	1	2-Jan-07	1 U	6	1 U	62	1 U	21	1 U	1 U
	2	15-Mar-07	2 U	11	2 U	26	2 U	21	2 U	2 U
	3	5-Jun-07	1 U	3.4	1 U	43	0.77 J	9.9	1 U	1 U
	4	13-Nov-07	1 U	15	1 U	27	0.54 J	22	1 U	1 U
	5	26-Jun-08	1 U	8.5	1 U	21	1 U	23	1 U	1 U
	6	11-Dec-08	0.36 U	9.2	0.29 U	24	0.46 J	10	0.75 U	0.21 U
	7	2-Jun-09	0.36 U	8	0.29 U	56	1.1	55	0.75 U	0.21 U
	8	15-Dec-09	0.36 U	7.8	0.38 U	65	1.8	20	0.29 U	0.21 U
	9	1-Jul-10	0.15 U	3	0.24 J	81	3.2	53	0.25 U	0.1 U
	10	18-Dec-10	0.15 U	8.1	0.42 J	39	2.2	16	0.25 U	0.1 U
	11	21-Jul-11	1 U	4.5	0.11 U	94	7.0	56	0.25 UJ	0.1 U
	12	13-Dec-11	0.15 U	11	0.11 U	25	1.8	12	0.25 U	0.1 U
	13	19-Jun-12	0.15 U	6.9	0.37 J	170	18.0	66	0.25 U	0.1 UJ
	14	13-Dec-12	0.15 U	12	0.18 J	68	8.3	21	0.25 U	0.1 U
	15	10-Jul-13	0.15 U	14	0.11 U	38	5.2	7.9	0.25 U	0.1 U
	16	13-Dec-13	0.15 U	8.4	0.16 J	64	11	17	0.25 U	0.1 U
	17	20-Jun-14	0.15 U	3.4	0.32 J	130	18	55	0.25 U	0.1 U
	18	16-Dec-14	0.15 U	7.4	0.31 J	120	22	38	0.25 U	0.1 U
	19	5-Jun-15	0.74 U	9.0 J	0.36 U	57	13	15	0.38 U	0.5 U
	20	17-Dec-15	0.74 U	13	0.36 U	27	4.4	0.5 U	0.38 U	0.5 U
MWT-7 Immediately upgradient of ZVI wall	1	4-Jan-07	1 U	490	1 U	35	1 U	0.51 J	1 U	1 U
	2	15-Mar-07	1 U	440	1 U	42	1 U	9.7	1 U	1 U
	3	5-Jun-07	1 U	410	1 U	61	1 U	18	1 U	1 U
	4	13-Nov-07	1 U	510	1 U	90	1 U	24	1 U	1 U
	5	25-Jun-08	1 U	440	1 U	90	1 U	12	1 U	1 U
	6	15-Dec-08	0.36 U	410	0.29 U	79	0.13 U	13	0.75 U	0.21 U
	7	2-Jun-09	0.36 U	330	0.29 U	68	0.13 U	9.3	0.75 U	0.21 U
	8	15-Dec-09	0.36 U	350	0.38 U	140	0.55 J	21	0.48 J	0.21 U
	9	1-Jul-10	0.15 U	330	0.78 J	170	0.91 J	15	0.25 U	0.1 U
	10	18-Dec-10	0.15 U	310	0.98 J	120	0.75 J	15	0.25 U	0.1 U
	11	22-Jul-11	0.15 U	0.52 J	0.11 U	12	0.34 J	2.6	0.94 J	0.1 U
	12	13-Dec-11	0.15 U	2.3	0.11 U	56	0.24 J	4.3	1.2	0.1 U
	13	19-Jun-12	0.15 U	280	0.59 J	140	0.64 J	11	0.25 U	0.1 UJ
	14	13-Dec-12	0.15 U	280	0.5 J	100	0.33 J	5.9	0.25 U	0.1 U
	15	10-Jul-13	0.15 U	300	0.5 J	110	0.46 J	2.6	0.25 U	0.1 U
	16	13-Dec-13	0.3 U	370	0.22 U	140	0.4 U	9.6	0.5 U	0.2 U
	17	20-Jun-14	0.15 U	190	0.69 J	110	0.73 J	9.6	0.25 U	0.1 U
	18	16-Dec-14	0.75 U	260	1.8 J	150	1.8 J	16	1.3 U	0.5 U
	19	5-Jun-15	0.74 U	200 J	0.63 J	100	0.57 J	6.1	0.38 U	0.5 U
	20	17-Dec-15	0.74 U	170	0.36 U	150	0.9 J	11	0.38 U	0.5 U

Downgradient
↓

Table 4
Chlorinated Organics in Groundwater
Ash Landfill Annual Report Long-Term Monitoring Years 1-9
Seneca Army Depot Activity

Sample Identification	Round	Sample Date	PCE	TCE	1,1-DCE	cis-DCE	trans-DCE	VC	1,1-DCA	1,2-DCA
			(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
		Class GA Standard (ug/L)	5	5	5	5	5	2	5	0.6
PT-24 Downgradient of ZVI wall	1	2-Jan-07	1 U	4	1 U	54	0.86 J	0.6 J	0.68 J	1 U
	2	15-Mar-07	1 U	2.8	1 U	38	0.81 J	1 U	1 U	1 U
	3	5-Jun-07	1 U	3.1	1 U	60	1.6	2.6	0.75 J	1 U
	4	13-Nov-07	1 U	3.8	1 U	39	1 U	1 U	0.56 J	1 U
	5	26-Jun-08	1 U	2.4	1 U	48	1.1	1.9	0.69 J	1 U
	6	12-Dec-08	0.36 U	2.2	0.29 U	34	0.36 J	0.26 J	0.75 U	0.21 U
	7	2-Jun-09	0.36 U	1.7	0.29 U	32	0.83 J	2	0.75 U	0.21 U
	8	15-Dec-09	0.36 U	1.7	0.38 U	28	0.61 J	1.6	0.29 U	0.21 U
	9	30-Jun-10	0.15 U	0.39 J	0.11 U	33	1.1	3.8	0.54 J	0.1 U
	10	17-Dec-10	0.15 U	0.53 J	0.11 U	30	1.4	7.7	0.54 J	0.1 U
	11	21-Jul-11	0.15 U	0.38 J	0.11 U	37	1.4	7.9	0.78 J	0.1 U
	12	13-Dec-11	0.15 U	0.82 J	0.11 U	21	0.63 J	2.9	0.48 J	0.1 U
	13	19-Jun-12	0.15 U	0.87 J	0.11 U	30	0.84 J	2.8	0.57 J	0.1 UJ
	14	12-Dec-12	0.15 U	1.1	0.11 U	18	0.38 J	0.18 U	0.32 J	0.1 U
	15	9-Jul-13	0.15 U	1.6	0.11 U	24	0.8 J	0.83 J	0.51 J	0.1 U
	16	11-Dec-13	0.15 U	1.3	0.11 U	23	0.86 J	1.8	0.52 J	0.1 U
	17	20-Jun-14	0.15 U	1.3	0.11 U	23	1	1.7	0.25 U	0.1 U
	18	19-Dec-14	0.15 U	0.85	0.11 U	13	0.53 J	0.18 U	0.29 J	0.1 U
	19	6-Jun-15	0.74 U	0.48 J	0.36 U	18	1.2	2.1	0.41 J	0.5 U
	20	18-Dec-15	0.74 U	0.74 J	0.36 U	18	0.75 J	1.2	0.38 U	0.5 U
MW-56 Off-site well	1	4-Jan-07	1 U	1 U	1 U	1.2	1 U	1 U	1 U	1 U
	3	6-Jun-07	1 U	1 U	1 U	1.7	1 U	1 U	1 U	1 U
	5	26-Jun-08	1 U	1 U	1 U	1.3	1 U	1 U	1 U	1 U
	6	11-Dec-08	0.36 U	0.33 J	0.29 U	0.4 J	0.13 U	0.24 U	0.75 U	0.21 U
	7	4-Jun-09	0.36 U	0.18 U	0.29 U	1	0.13 U	0.24 U	0.75 U	0.21 U
	8	18-Dec-09	0.36 U	0.46 U	0.38 U	0.56 J	0.42 U	0.24 U	0.29 U	0.21 U
	9	1-Jul-10	0.15 U	0.13 U	0.11 U	0.61 J	0.2 U	0.18 U	0.25 U	0.1 U
	10	19-Dec-10	0.15 U	0.13 U	0.11 U	0.86 J	0.2 U	0.18 U	0.25 U	0.1 U
	11	4-Oct-11	0.15 U	0.13 U	0.11 U	2.3	0.2 U	0.18 U	0.25 U	0.1 U
	12	12-Dec-11	0.15 U	0.13 U	0.11 U	0.95 J	0.2 U	0.18 U	0.25 U	0.1 U
	13	18-Jun-12	0.15 U	0.13 U	0.11 U	2.2	0.2 U	0.18 U	0.25 U	0.1 UJ
	14	14-Dec-12	0.15 U	0.13 U	0.11 U	0.85 J	0.2 U	0.18 U	0.25 U	0.1 U
	15	9-Jul-13	0.15 U	0.13 U	0.11 U	2.2	0.2 U	0.18 U	0.25 U	0.1 U
	16	11-Dec-13	0.15 U	0.13 U	0.11 U	1.7	0.2 U	0.18 U	0.25 U	0.1 U
17	22-Jun-14	0.15 U	0.13 U	0.11 U	0.98 J	0.2 U	0.18 U	0.25 U	0.1 U	
18	19-Dec-14	0.15 U	0.13 U	0.11 U	0.89 J	0.2 U	0.18 U	0.25 U	0.1 U	
19	6-Jun-15	0.74 U	0.48 UJ	0.36 U	1.1	0.37 U	0.5 U	0.38 U	0.5 U	
20	19-Dec-15	0.74 U	0.48 U	0.36 U	1.4	0.37 U	0.5 U	0.38 U	0.5 U	

Notes:

- Sample duplicate pairs were collected at MWT-28 in Jan-07, June-09, June-10, June-12, Dec-13, and June-15; MWT-29 in Mar-07 and Jun-08; MWT-27 in Jun-07, Dec-08, Dec-09, July-11, July-13, Dec-14; and MWT-23 in Nov-07, Dec-10, Dec-11, Dec-12, June-14, Dec-15. If an analyte was detected in the sample, but not detected in the duplicate (or vice versa), the non-detect value was taken at half the detection limit averaged with the detect value.
 - Wells in bold are the biowall process monitoring wells.
 - Grey shading indicates that the concentration was detected above its Class GA groundwater standard. The Class GA Groundwater standard for TCE and cis-DCE is 5 ug/L; for VC the Class GA standard is 2 ug/L.
- U = compound was not detected; detection limit shown.
J = the reported value is an estimated concentration.
UJ = the compound was not detected; the associated reporting limit is approximate.

**Table 5
Groundwater Trends
Ash Landfill Annual Report, Year 9
Seneca Army Depot Activity**

	Well ID	TCE Cleanup Objective: 5 ug/L		cis-DCE Cleanup Objective: 5 ug/L		VC Cleanup Objective: 2 ug/L	
		Predicted Date		Predicted Date		Predicted Date	
		95% Confidence		95% Confidence		95% Confidence	
		Lower Limit	Upper Limit	Lower Limit	Upper Limit	Lower Limit	Upper Limit
<i>Upgradient</i>	PT-18A	2023		2019		Achieved** R9 (June 2010)	
		2010	Decreasing	2008	Decreasing		
	MWT-25	Achieved** R14 (Dec 2012)		Achieved** R12 (Dec 2011)		Achieved* Q4 (Nov 2007)	
	MWT-26	Achieved* Q3 (June 2007)		2013		Achieved* R12 (Dec 2011)	
				2007	Decreasing		
<i>Biowall B1</i>	MWT-27	Achieved Q1 (Jan 2007)		Achieved Q1 (Jan 2007)		Achieved* R13 (June 2012)	
<i>Biowall B2</i>	MWT-28	Achieved Q1 (Jan 2007)		Achieved Q1 (Jan 2007)		Achieved Q1 (Jan 2007)	
	MWT-29	Achieved R7 (June 2009)		2025		2032	
				2015	2067	2017	Decreasing
	MWT-22	Achieved R7 (June 2009)		2039		N/A	
				2020	Decreasing	-	-
	PT-22	N/A		2079		Achieved** R11 (July 2011)	
		-	-	2032	Decreasing		
<i>Biowall C2</i>	MWT-23	Achieved Q1 (Jan 2007)		Achieved Q3 (June 2007)		Achieved** Q3 (June 2007)	
	MWT-24	Achieved R7* (June 2009)		2025		2013	
				2014	Decreasing	2009	2026
	PT-17	2014		N/A		N/A	
		2006	2033	-	-	-	-
	MWT-7	2045		N/A		N/A	
		2017	Decreasing	-	-	-	-
	PT-24	Achieved Q1 (Jan 2007)		2025		Achieved R14* (Dec 2012)	
				2020	2034		
<i>Downgradient</i>	MW-56	Achieved Q1 (Jan 2007)		Achieved Q1 (Jan 2007)		Achieved Q1 (Jan 2007)	

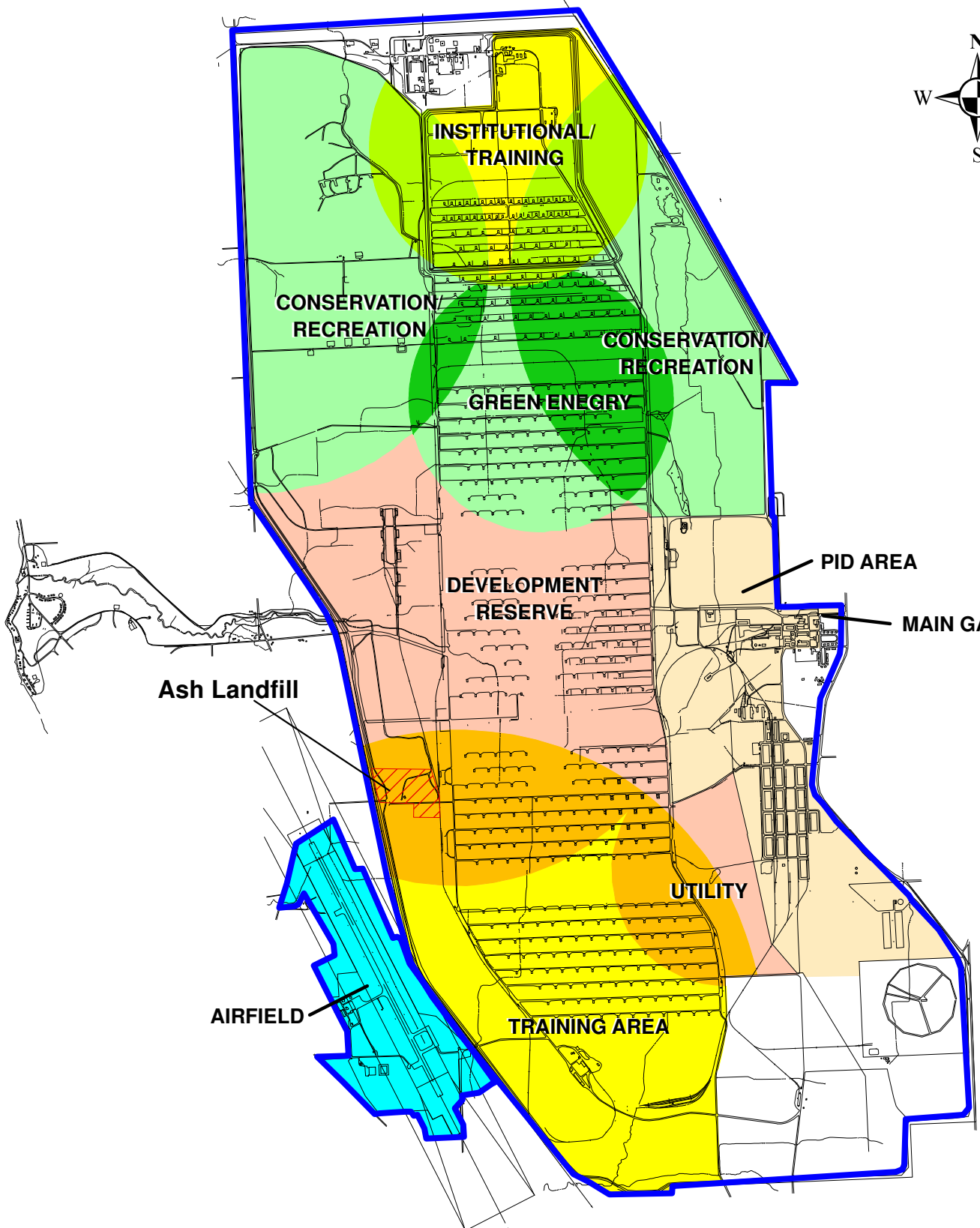
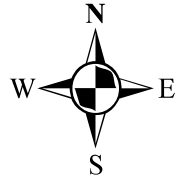
Notes:

1. The estimated remediation timeframes are calculated from an empirical data trend extrapolation model. The model predicts remediation timeframe by determining the trend in measured concentration vs. time data from wells within the plume and then extrapolates this trend to determine how long it will take to reach the selected cleanup objective. The dates are estimates that indicate that the groundwater concentrations will eventually reach NYS GA Standards and are not intended to represent a definitive timeframe in which the NYS GA Standards will be achieved. The table will be updated annually to reflect the influence of new data.
2. Achieved: The NYS GA Standard was achieved in the noted Round (R) or Quarter (Q) and concentrations are consistently below the GA Standard.
3. Achieved*: The concentrations are consistently below the NYS GA Standard since the noted Round (R) or Quarter (Q) with the exception of one limited exceedance sometime after the noted time.
4. Achieved**: The concentrations are consistently below the NYS GA Standard since the noted Round (R) or Quarter (Q) with the exception of limited seasonal exceedances sometime after the noted time.
5. N/A: An estimated timeframe could not be calculated because the concentration trend is increasing or no trend exists.
6. Decreasing indicates that the overall trend is decreasing with time or the result of a bad fit (R² value). An upper confidence limit could not be calculated because the decay rate calculated for the upper limit is negative (increasing concentration).

FIGURES

Figure 1	Ash Landfill Location at SEDA
Figure 2	Ash Landfill Site Plan
Figure 3	Ash Landfill Historic Site Map
Figure 4	Location of Farmhouse Wells
Figure 5	Reductive Dechlorination of Chlorinated Ethenes
Figure 6	Chlorinated Ethenes Concentrations in Groundwater
Figure 7	Groundwater Elevations
Figure 8	Groundwater Contours & Groundwater Flow Direction Dec. 2015
Figure 9A	Concentrations of VOCs Along the Biowalls - Quarter 1, 2007
Figure 9B	Concentrations of VOCs Along the Biowalls - Quarter 2, 2007
Figure 9C	Concentrations of VOCs Along the Biowalls - Quarter 3, 2007
Figure 9D	Concentrations of VOCs Along the Biowalls - Quarter 4, 2007
Figure 9E	Concentrations of VOCs Along the Biowalls - Round 5, 2008
Figure 9F	Concentrations of VOCs Along the Biowalls - Round 6, 2008
Figure 9G	Concentrations of VOCs Along the Biowalls - Round 7, 2009
Figure 9H	Concentrations of VOCs Along the Biowalls - Round 8, 2009
Figure 9I	Concentrations of VOCs Along the Biowalls - Round 9, 2010
Figure 9J	Concentrations of VOCs Along the Biowalls - Round 10, 2010
Figure 9K	Concentrations of VOCs Along the Biowalls - Round 11, 2011
Figure 9L	Concentrations of VOCs Along the Biowalls - Round 12, 2011
Figure 9M	Concentrations of VOCs Along the Biowalls - Round 13, 2012
Figure 9N	Concentrations of VOCs Along the Biowalls - Round 14, 2012
Figure 9O	Concentrations of VOCs Along the Biowalls - Round 15, 2013
Figure 9P	Concentrations of VOCs Along the Biowalls - Round 16, 2013
Figure 9Q	Concentrations of VOCs Along the Biowalls - Round 17, 2014
Figure 9R	Concentrations of VOCs Along the Biowalls - Round 18, 2014
Figure 9S	Concentrations of VOCs Along the Biowalls - Round 19, 2015
Figure 9T	Concentrations of VOCs Along the Biowalls - Round 20, 2015
Figure 10A	Concentrations of Chlorinated Organics Over Time at MWT-25
Figure 10B	Concentrations of Chlorinated Organics Over Time at MWT-26
Figure 10C	Concentrations of Chlorinated Organics Over Time at MWT-27
Figure 10D	Concentrations of Chlorinated Organics Over Time at MWT-28
Figure 10E	Concentrations of Chlorinated Organics Over Time at MWT-29
Figure 10F	Concentrations of Chlorinated Organics Over Time at MWT-22
Figure 10G	Concentrations of Chlorinated Organics Over Time at PT-22
Figure 10H	Concentrations of Chlorinated Organics Over Time at MWT-23
Figure 10I	Concentrations of Chlorinated Organics Over Time at MWT-24
Figure 10J	Concentrations of Chlorinated Organics Over Time at PT-24

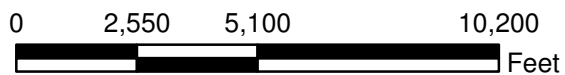
- Figure 11A Historic Concentrations of Chlorinated Organics at PT-18A
- Figure 11B Historic Concentrations of Chlorinated Organics at PT-17
- Figure 11C Historic Concentrations of Chlorinated Organics at MWT-7
- Figure 12 Decision Diagram



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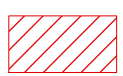
SENECA ARMY DEPOT ACTIVITY
ASH LANDFILL ANNUAL REPORT

FIGURE 1
ASH LANDFILL LOCATION AT SEDA

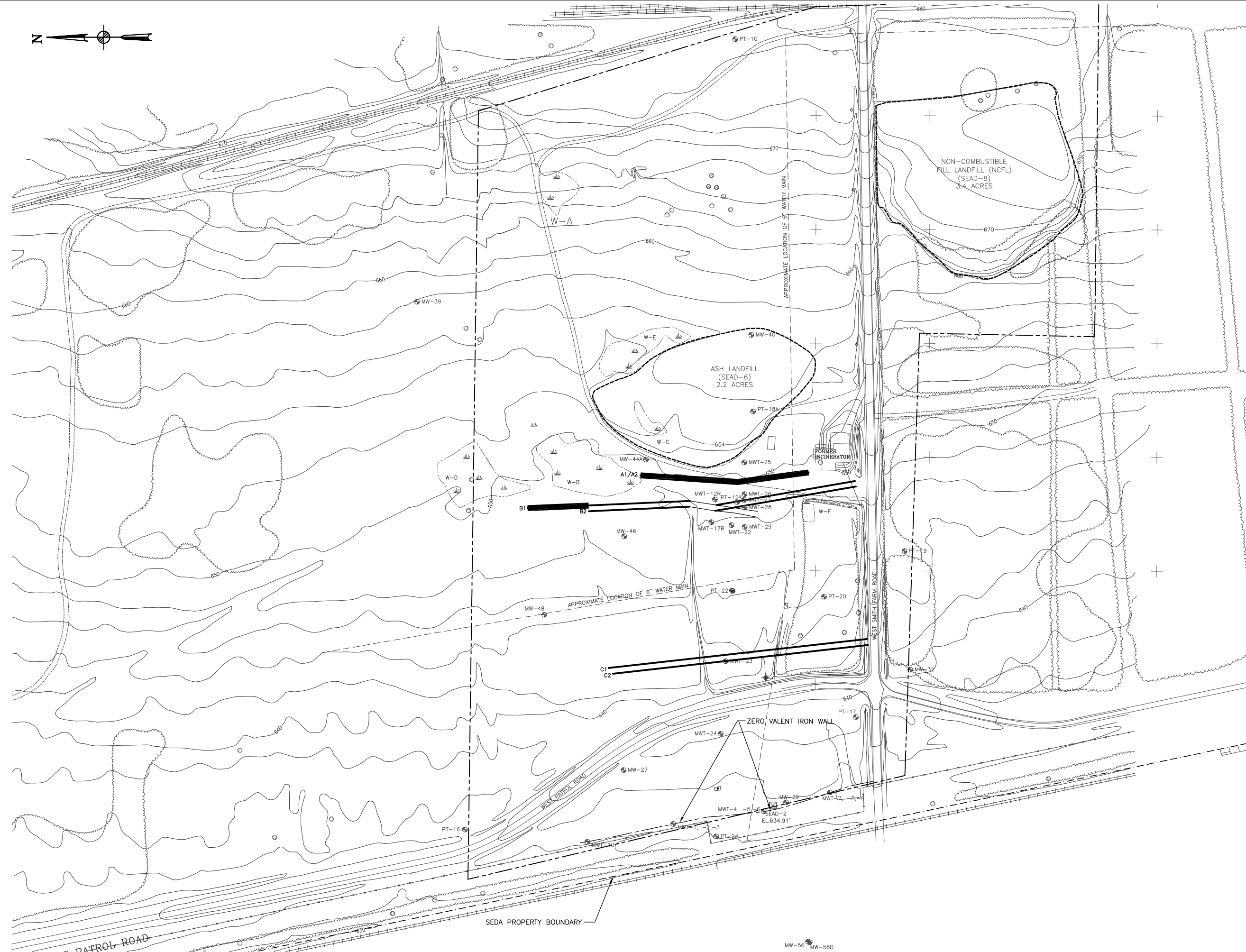
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




















Seneca Army Depot Boundary

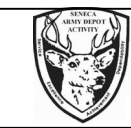
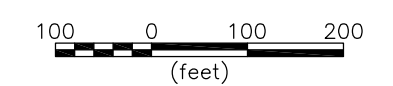


Ash Landfill (SEADs 3, 6, 8, 14 & 15)
Operational Unit Boundary



LEGEND:

-  PAVED ROAD
-  DIRT ROAD
-  GROUND CONTOUR AND ELEVATION
-  TREE
-  WETLAND & DESIGNATION
-  BRUSH
-  CHAIN LINK FENCE
-  UTILITY POLE
-  APPROXIMATE LOCATION OF FIRE HYDRANT
-  FUEL OR UNDERGROUND STORAGE TANK
-  SURVEY MONUMENT
-  MONITORING WELL AND DESIGNATION
-  RAILROAD TRACKS
-  WATER MAIN
-  POST CONSTRUCTION AS BUILT GROUND ELEVATION CONTOUR
-  PILOT STUDY BIOWALL (2005)
-  SINGLE BIOWALL (2006)
-  DOUBLE-WIDE BIOWALL (2006)
-  ZERO VALENT IRON WALL (1998)
-  LIMITS OF LANDFILL
-  SEDA PROPERTY BOUNDARY
-  OU BOUNDARY



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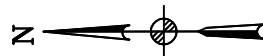


CLIENT/PROJECT TITLE
SENECA ARMY DEPOT
 ASH LANDFILL
 ASH LANDFILL ANNUAL REPORT

DEPT. ENVIRONMENTAL ENGINEERING Dwg. No.

FIGURE 2
 ASH LANDFILL
 SITE PLAN

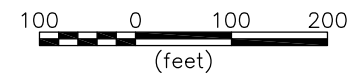
SCALE DATE MARCH 2016 REV



LEGEND:

- PAVED ROAD
- DIRT ROAD
- GROUND CONTOUR AND ELEVATION
- TREE
- WETLAND & DESIGNATION
- BRUSH
- CHAIN LINK FENCE
- UTILITY POLE
- APPROXIMATE LOCATION OF FIRE HYDRANT
- FUEL OR UNDERGROUND STORAGE TANK
- SURVEY MONUMENT
- MONITORING WELL AND DESIGNATION
- RAILROAD TRACKS
- WATER MAIN
- APPROXIMATE EXTENT OF IRM SOIL TREATMENT AND EXCAVATION
- APPROXIMATE AREA REQUIRING LAND USE CONTROLS
- SEDA PROPERTY BOUNDARY
- OU BOUNDARY

NOTE:
FIGURE SHOWS PRE-CONSTRUCTION CONDITIONS



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**SENECA ARMY DEPOT
ASH LANDFILL
ASH LANDFILL ANNUAL REPORT**

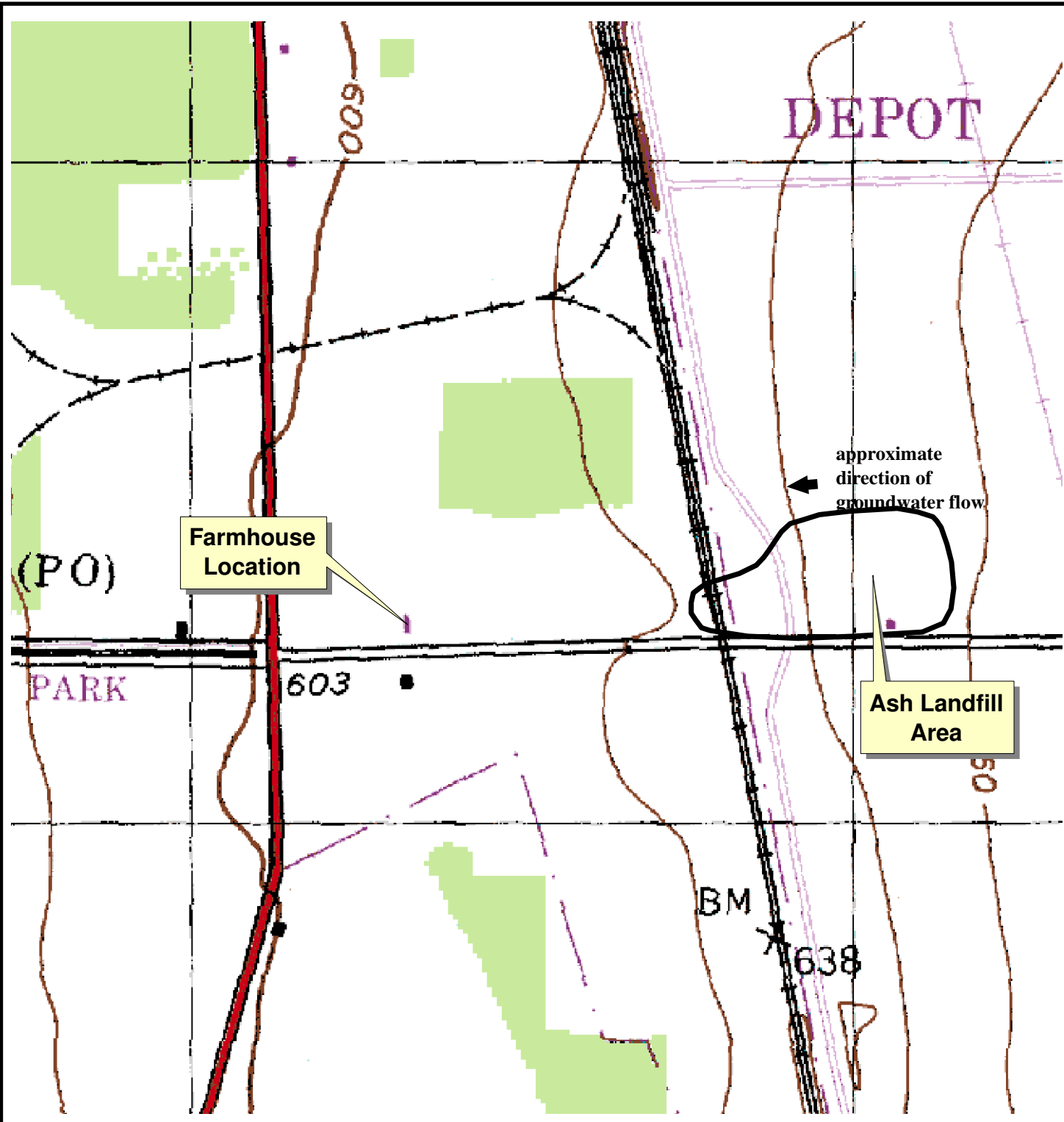
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**FIGURE 3
ASH LANDFILL
HISTORIC SITE MAP**

SCALE DATE MARCH 2016 REV

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P:\PT\Projects\Huntsville Cont W912DY08-D-0003\TO#15 - LTM and LUC\Ash Landfill LTM\Yr 7 Annual Report\Figures\FIGURE 4.mxd



— Approximate 10 µg/L total chlorinated ethenes isocontour based on groundwater results of August 2004.





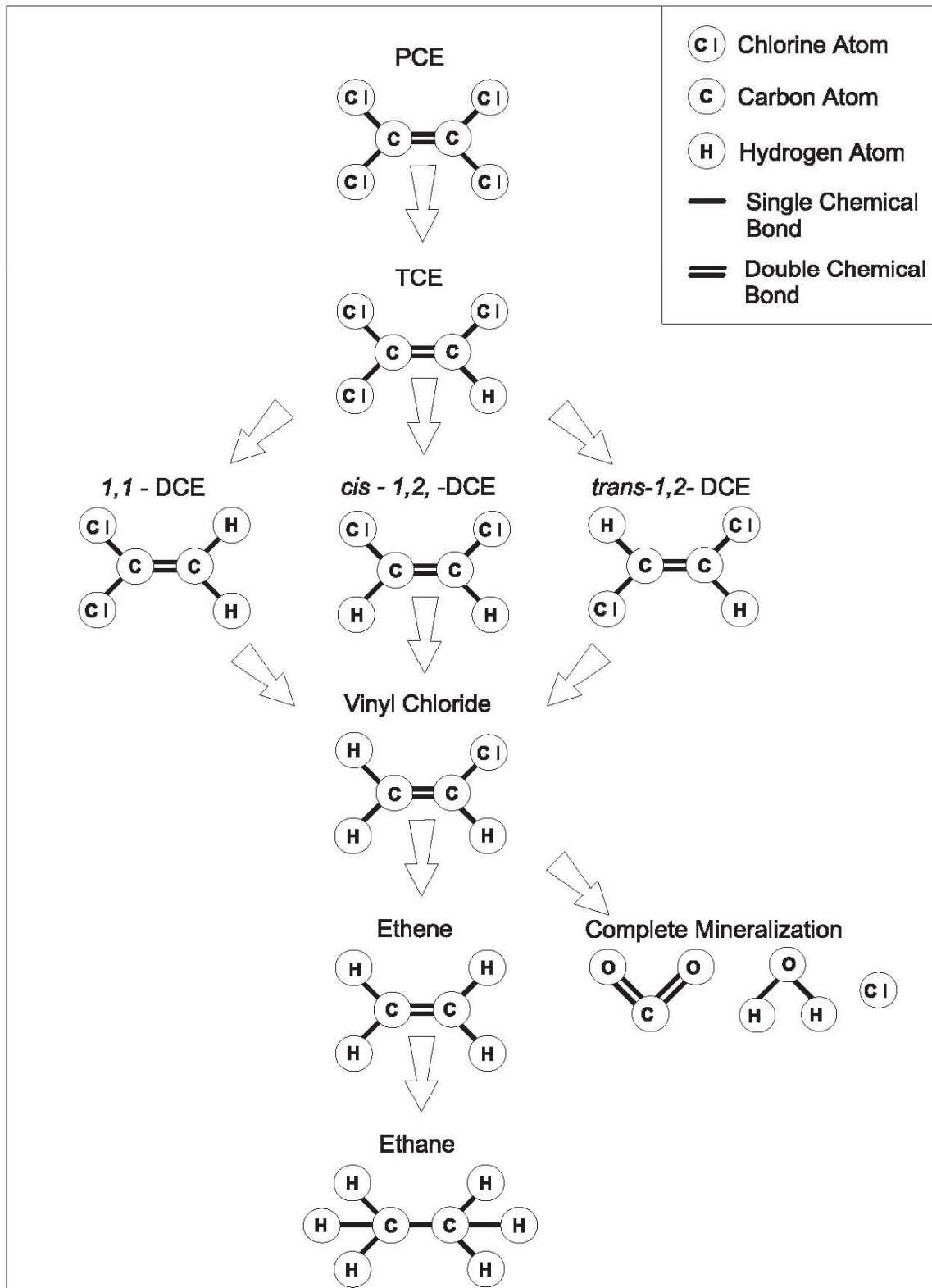
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SENECA ARMY DEPOT ACTIVITY ASH LANDFILL ANNUAL REPORT
FIGURE 4 ASH LANDFILL LOCATION OF FARMHOUSE
DATE: MARCH 2016

Figure 5
 Reductive Dechlorination of Chlorinated Ethenes
 Ash Landfill Annual Report
 Seneca Army Depot Activity



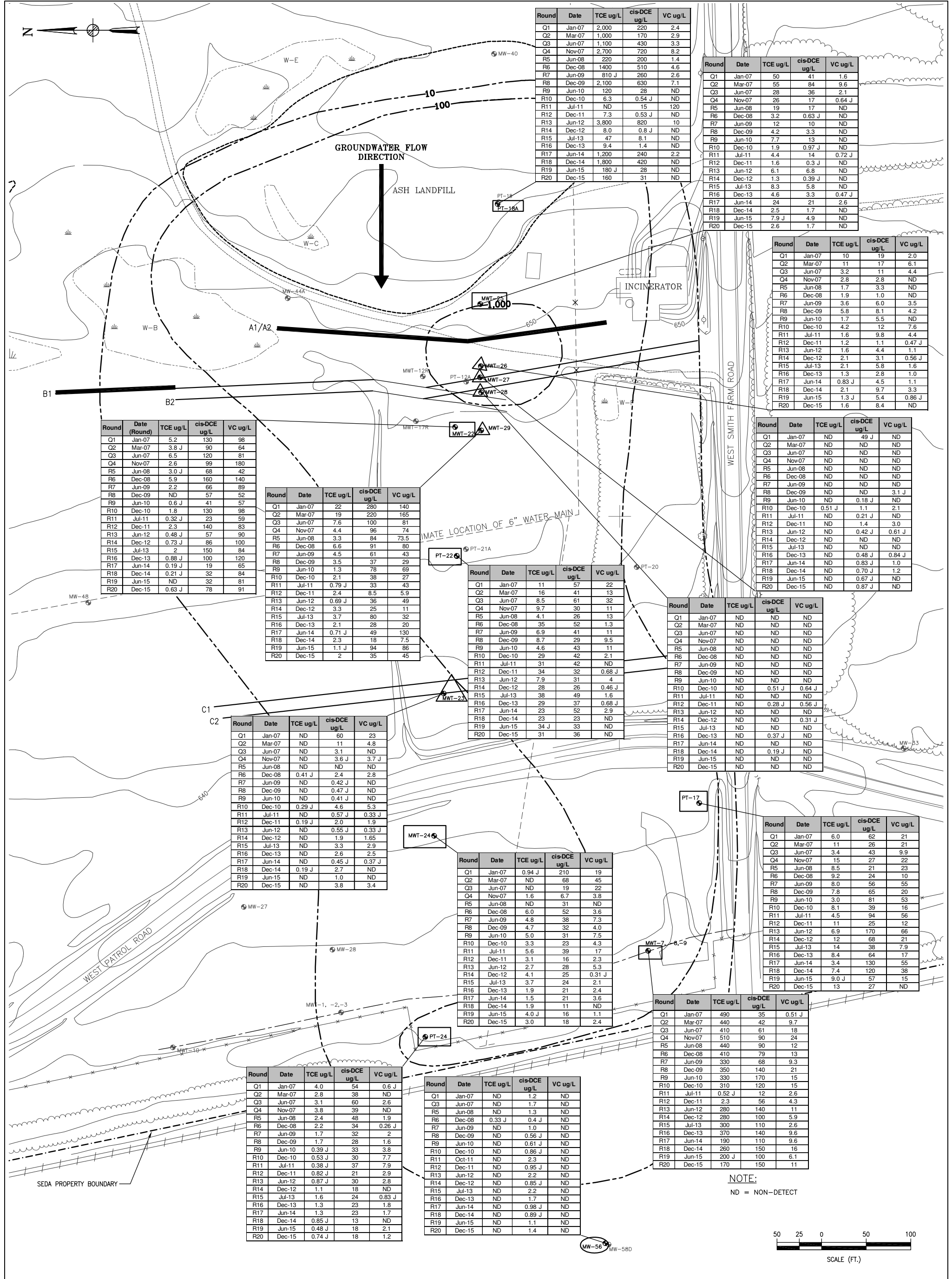


Table 1: Monitoring Well MW-40 Data

Round	Date	TCE ug/L	cis-DCE ug/L	VC ug/L
Q1	Jan-07	2,000	220	2.4
Q2	Mar-07	1,000	170	2.9
Q3	Jun-07	1,100	430	3.3
Q4	Nov-07	2,700	720	8.2
R5	Jun-08	220	200	1.4
R6	Dec-08	1400	510	4.6
R7	Jun-09	810 J	260	2.6
R8	Dec-09	2,100	630	7.1
R9	Jun-10	120	28	ND
R10	Dec-10	6.3	0.54 J	ND
R11	Jul-11	ND	15	120
R12	Dec-11	7.3	0.53 J	ND
R13	Jun-12	3,800	820	10
R14	Dec-12	8.0	0.8 J	ND
R15	Jul-13	47	8.1	ND
R16	Dec-13	9.4	1.4	ND
R17	Jun-14	1,200	240	2.2
R18	Dec-14	1,800	420	ND
R19	Jun-15	180 J	28	ND
R20	Dec-15	160	31	ND

Table 2: Monitoring Well MW-44A Data

Round	Date	TCE ug/L	cis-DCE ug/L	VC ug/L
Q1	Jan-07	5.2	130	98
Q2	Mar-07	3.8 J	90	64
Q3	Jun-07	6.5	120	81
Q4	Nov-07	2.6	99	180
R5	Jun-08	3.0 J	68	42
R6	Dec-08	5.9	160	140
R7	Jun-09	2.2	66	89
R8	Dec-09	ND	57	52
R9	Jun-10	0.6 J	41	57
R10	Dec-10	1.8	130	98
R11	Jul-11	0.32 J	23	59
R12	Dec-11	2.3	140	83
R13	Jun-12	0.48 J	57	90
R14	Dec-12	0.73 J	86	100
R15	Jul-13	2	150	84
R16	Dec-13	0.88 J	100	120
R17	Jun-14	0.19 J	19	65
R18	Dec-14	0.21 J	32	84
R19	Jun-15	ND	32	81
R20	Dec-15	0.63 J	78	91

Table 3: Monitoring Well MW-27 Data

Round	Date	TCE ug/L	cis-DCE ug/L	VC ug/L
Q1	Jan-07	ND	60	23
Q2	Mar-07	ND	11	4.8
Q3	Jun-07	ND	3.1	ND
Q4	Nov-07	ND	3.6 J	3.7 J
R5	Jun-08	ND	ND	ND
R6	Dec-08	0.41 J	2.4	2.8
R7	Jun-09	ND	0.42 J	ND
R8	Dec-09	ND	0.47 J	ND
R9	Jun-10	ND	0.41 J	ND
R10	Dec-10	0.29 J	4.6	5.3
R11	Jul-11	ND	0.57 J	0.33 J
R12	Dec-11	0.19 J	2.0	1.9
R13	Jun-12	ND	0.55 J	0.33 J
R14	Dec-12	ND	1.9	1.65
R15	Jul-13	ND	3.3	2.9
R16	Dec-13	ND	2.6	2.5
R17	Jun-14	ND	0.45 J	0.37 J
R18	Dec-14	0.19 J	2.7	ND
R19	Jun-15	ND	1.0	ND
R20	Dec-15	ND	3.8	3.4

Table 4: Monitoring Well MW-28 Data

Round	Date	TCE ug/L	cis-DCE ug/L	VC ug/L
Q1	Jan-07	0.94 J	210	19
Q2	Mar-07	ND	68	45
Q3	Jun-07	ND	19	22
Q4	Nov-07	1.6	6.7	3.8
R5	Jun-08	ND	31	ND
R6	Dec-08	6.0	52	3.6
R7	Jun-09	4.8	38	7.3
R8	Dec-09	4.7	32	4.0
R9	Jun-10	5.0	31	7.5
R10	Dec-10	3.3	23	4.3
R11	Jul-11	5.6	39	17
R12	Dec-11	3.1	16	2.3
R13	Jun-12	2.7	28	5.3
R14	Dec-12	4.1	25	0.31 J
R15	Jul-13	3.7	24	2.1
R16	Dec-13	1.9	21	2.4
R17	Jun-14	1.5	21	3.6
R18	Dec-14	1.9	11	ND
R19	Jun-15	4.0 J	16	1.1
R20	Dec-15	3.0	18	2.4

Table 5: Monitoring Well MW-29 Data

Round	Date	TCE ug/L	cis-DCE ug/L	VC ug/L
Q1	Jan-07	ND	49 J	ND
Q2	Mar-07	ND	ND	ND
Q3	Jun-07	ND	ND	ND
Q4	Nov-07	ND	ND	ND
R5	Jun-08	ND	ND	ND
R6	Dec-08	ND	ND	ND
R7	Jun-09	ND	ND	ND
R8	Dec-09	ND	ND	3.1 J
R9	Jun-10	ND	0.18 J	ND
R10	Dec-10	0.51 J	1.1	2.1
R11	Jul-11	ND	0.21 J	ND
R12	Dec-11	ND	1.4	3.0
R13	Jun-12	ND	0.42 J	0.61 J
R14	Dec-12	ND	ND	ND
R15	Jul-13	ND	ND	ND
R16	Dec-13	ND	0.48 J	0.84 J
R17	Jun-14	ND	0.83 J	1.0
R18	Dec-14	ND	0.70 J	1.2
R19	Jun-15	ND	0.67 J	ND
R20	Dec-15	ND	0.87 J	ND

Table 6: Plume Performance Monitoring Well PT-22 Data

Round	Date	TCE ug/L	cis-DCE ug/L	VC ug/L
Q1	Jan-07	11	57	22
Q2	Mar-07	16	41	13
Q3	Jun-07	8.5	61	32
Q4	Nov-07	9.7	30	11
R5	Jun-08	4.1	26	13
R6	Dec-08	35	52	1.3
R7	Jun-09	6.9	41	11
R8	Dec-09	8.7	29	9.5
R9	Jun-10	4.6	43	11
R10	Dec-10	29	42	2.1
R11	Jul-11	31	42	ND
R12	Dec-11	34	32	0.68 J
R13	Jun-12	7.9	31	4
R14	Dec-12	28	26	0.46 J
R15	Jul-13	38	49	1.6
R16	Dec-13	29	37	0.68 J
R17	Jun-14	23	52	2.9
R18	Dec-14	23	23	ND
R19	Jun-15	34 J	33	ND
R20	Dec-15	31	36	ND

Table 7: Plume Performance Monitoring Well PT-24 Data

Round	Date	TCE ug/L	cis-DCE ug/L	VC ug/L
Q1	Jan-07	4.0	54	0.6 J
Q2	Mar-07	2.8	38	ND
Q3	Jun-07	3.1	60	2.6
Q4	Nov-07	3.8	39	ND
R5	Jun-08	2.4	48	1.9
R6	Dec-08	2.2	34	0.26 J
R7	Jun-09	1.7	32	2
R8	Dec-09	1.7	28	1.6
R9	Jun-10	0.39 J	33	3.8
R10	Dec-10	0.53 J	30	7.7
R11	Jul-11	0.38 J	37	7.9
R12	Dec-11	0.82 J	21	2.9
R13	Jun-12	0.87 J	30	2.8
R14	Dec-12	1.1	18	ND
R15	Jul-13	1.6	24	0.83 J
R16	Dec-13	1.3	23	1.8
R17	Jun-14	1.3	23	1.7
R18	Dec-14	0.85 J	13	ND
R19	Jun-15	0.48 J	18	2.1
R20	Dec-15	0.74 J	18	1.2

NOTE:
ND = NON-DETECT

SCALE (FT.)
50 25 0 50 100

LEGEND:

- PILOT STUDY BIOWALL (2005)
- SINGLE BIOWALL (2006)
- DOUBLE-WIDE BIOWALL (2006)
- ZERO VALENT IRON WALL (1998)
- GROUNDWATER ISOCONTOUR (UG/L) BASED ON JANUARY 2000 DATA
- OFF-SITE PERFORMANCE MONITORING WELL IN L.T.M. PROGRAM
- ON-SITE PLUME PERFORMANCE MONITORING WELL IN L.T.M. PROGRAM
- BIOWALL PROCESS MONITORING WELL IN L.T.M. PROGRAM

PARSONS

SENECA ARMY DEPOT
ASH LANDFILL
ASH LANDFILL ANNUAL REPORT

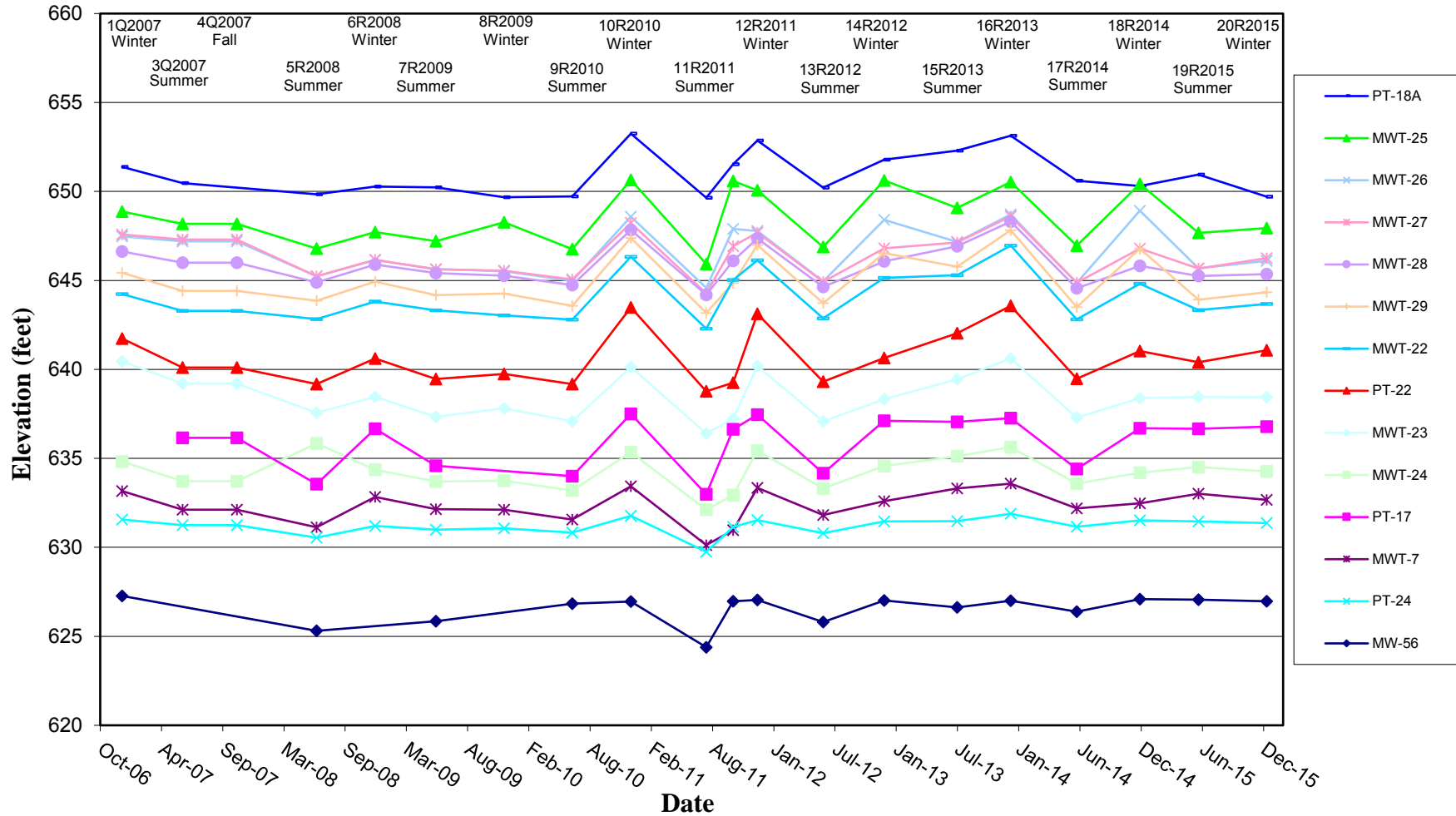
DEPT. ENVIRONMENTAL ENGINEERING
Dwg. No.

FIGURE 6
CHLORINATED ETHENES CONCENTRATIONS IN GROUNDWATER

SCALE DATE REV
MARCH 2016

FILE: P:\PIT\PROJECTS\HUNTSVILLE CONT W912DY-08-D-0003\TO#15 - LTM AND LUC\ASH LANDFILL LTM\YR 9 ANNUAL REPORT\DRAWING\Q3 - FIGURE\FIGURE 6.DWG, DATE: 03/01/2016 02:42:49PM, P0018397

Figure 7
Groundwater Elevations Rounds 1 through 20
Ash Landfill Long-Term Monitoring
Seneca Army Depot Activity

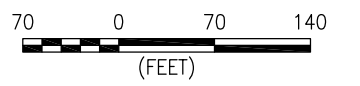


Notes: Groundwater levels were measured on: Dec 12-15, 2006; Jun 4, 2007; Nov 7, 2007; Jun 23, 2008; Dec 23, 2008; Jun 1, 2009; Dec 14, 2009; Jun 28, 2010; Dec 13, 2010; Dec 12, 2011; Jun 18, 2012; Dec 10, 2012; Jul 8, 2013; Dec 9, 2013; Jun 17, 2014; Dec 15, 2014; Jun 2, 2015, and Dec 15, 2015.
 In Round 11, Groundwater levels were collected on July 18, 2011, and again on Oct 3, 2011 when Parsons returned to sample MW-56. Groundwater elevations were not measured at well MW-56 during 3Q2007, 4Q2007, 6R2008, or 8R2009; at PT-17 during 1Q2007 or 8R2008; or at PT-18A during 4Q2007. Groundwater levels were not recorded during 2Q2007.



LEGEND:

- PAVED ROAD
- DIRT ROAD
- GROUND CONTOUR AND ELEVATION
- TREE
- WETLAND & DESIGNATION
- MONITORING WELL AND DESIGNATION
- RAILROAD TRACKS
- BRUSH
- CHAIN LINK FENCE
- UTILITY POLE
- APPROXIMATE LOCATION OF FIRE HYDRANT
- FUEL OR UNDERGROUND STORAGE TANK
- SURVEY MONUMENT
- ABANDONED MONITORING WELL
- APPROXIMATE LOCATION OF WATER MAIN
- PILOT STUDY BIOWALL (2005)
- SINGLE BIOWALL (2006)
- DOUBLE-WIDE BIOWALL (2006)
- ZERO VALENT IRON WALL (1998)
- GROUNDWATER CONTOUR
- EXTRAPOLATED GROUNDWATER CONTOUR
- GROUNDWATER FLOW DIRECTION



CLIENT/PROJECT TITLE
SENECA ARMY DEPOT
 ASH LANDFILL
 ANNUAL REPORT

DEPT. ENVIRONMENTAL ENGINEERING Dwg. No.

FIGURE 8
 ASH LANDFILL GROUNDWATER CONTOURS &
 GROUNDWATER FLOW DIRECTION DEC. 2015

SCALE DATE MARCH 2016 REV -

Figure 9A
 Concentrations of VOCs Along the Biowalls - Quarter 1, 2007
 Ash Landfill Annual Report
 Seneca Army Depot Activity

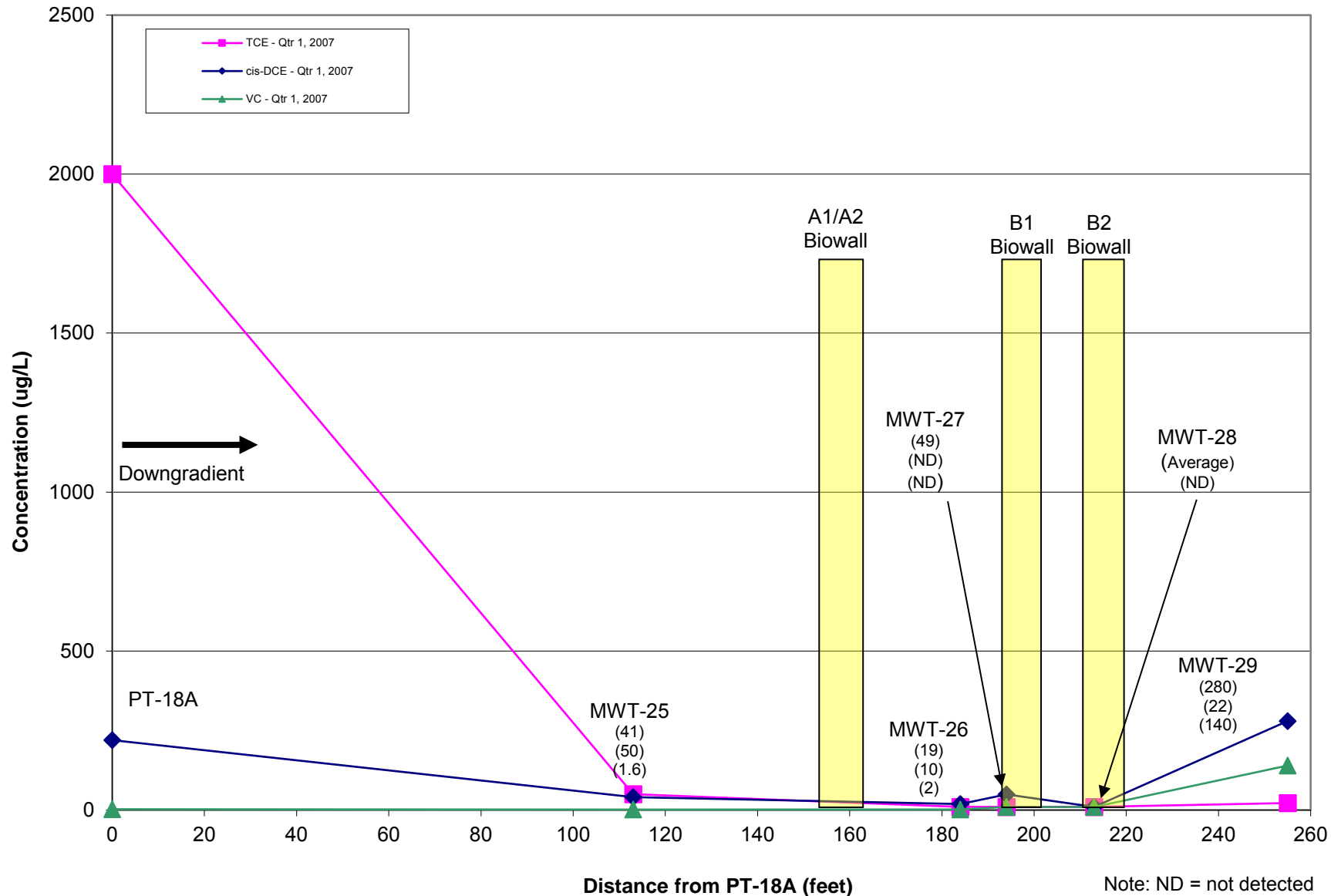


Figure 9B
 Concentrations of VOCs Along the Biowalls - Quarter 2, 2007
 Ash Landfill Annual Report
 Seneca Army Depot Activity

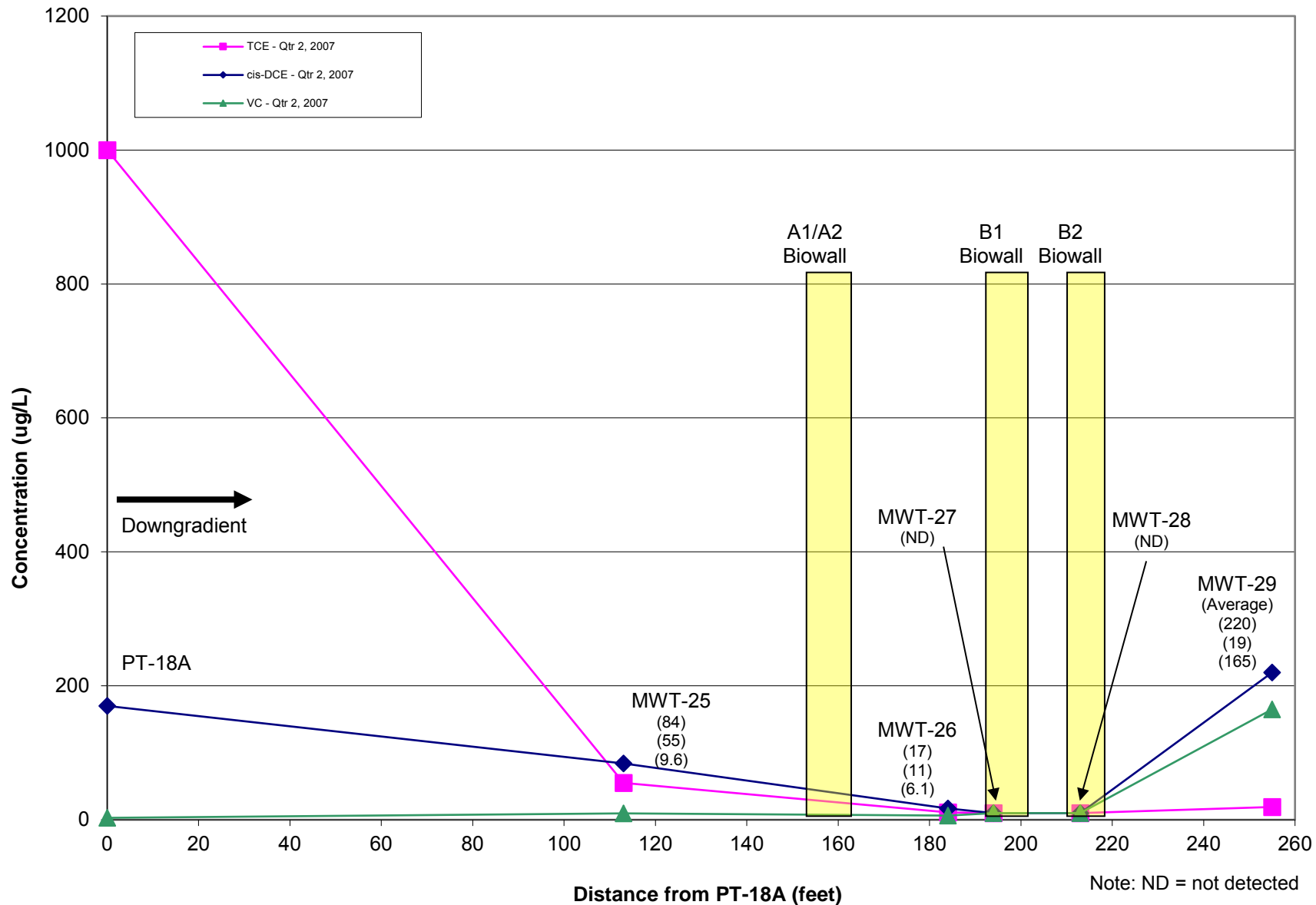


Figure 9C
 Concentrations of VOCs Along the Biowalls - Quarter 3, 2007
 Ash Landfill Annual Report
 Seneca Army Depot Activity

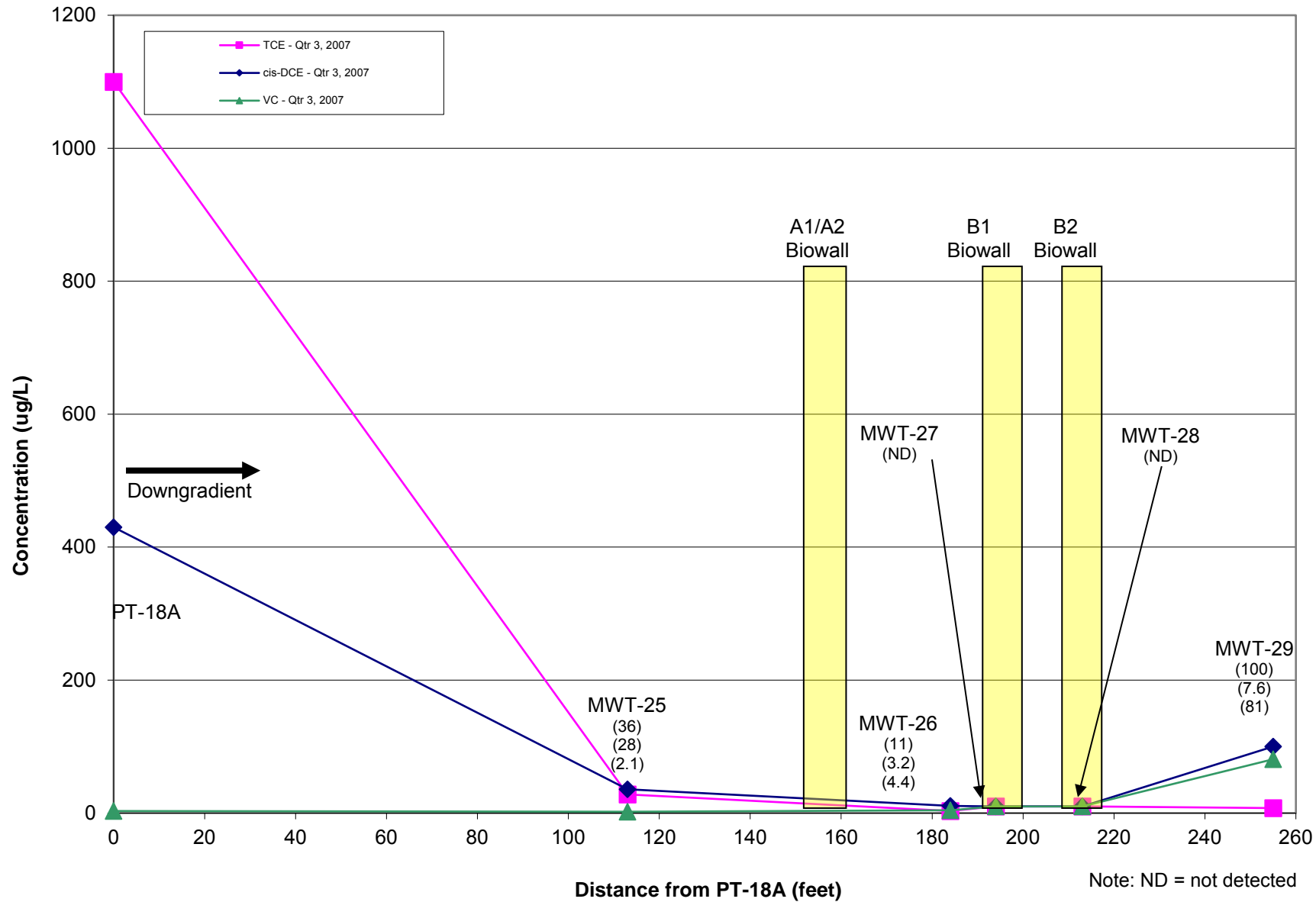


Figure 9D
 Concentrations of VOCs Along the Biowalls - Quarter 4, 2007
 Ash Landfill Annual Report
 Seneca Army Depot Activity

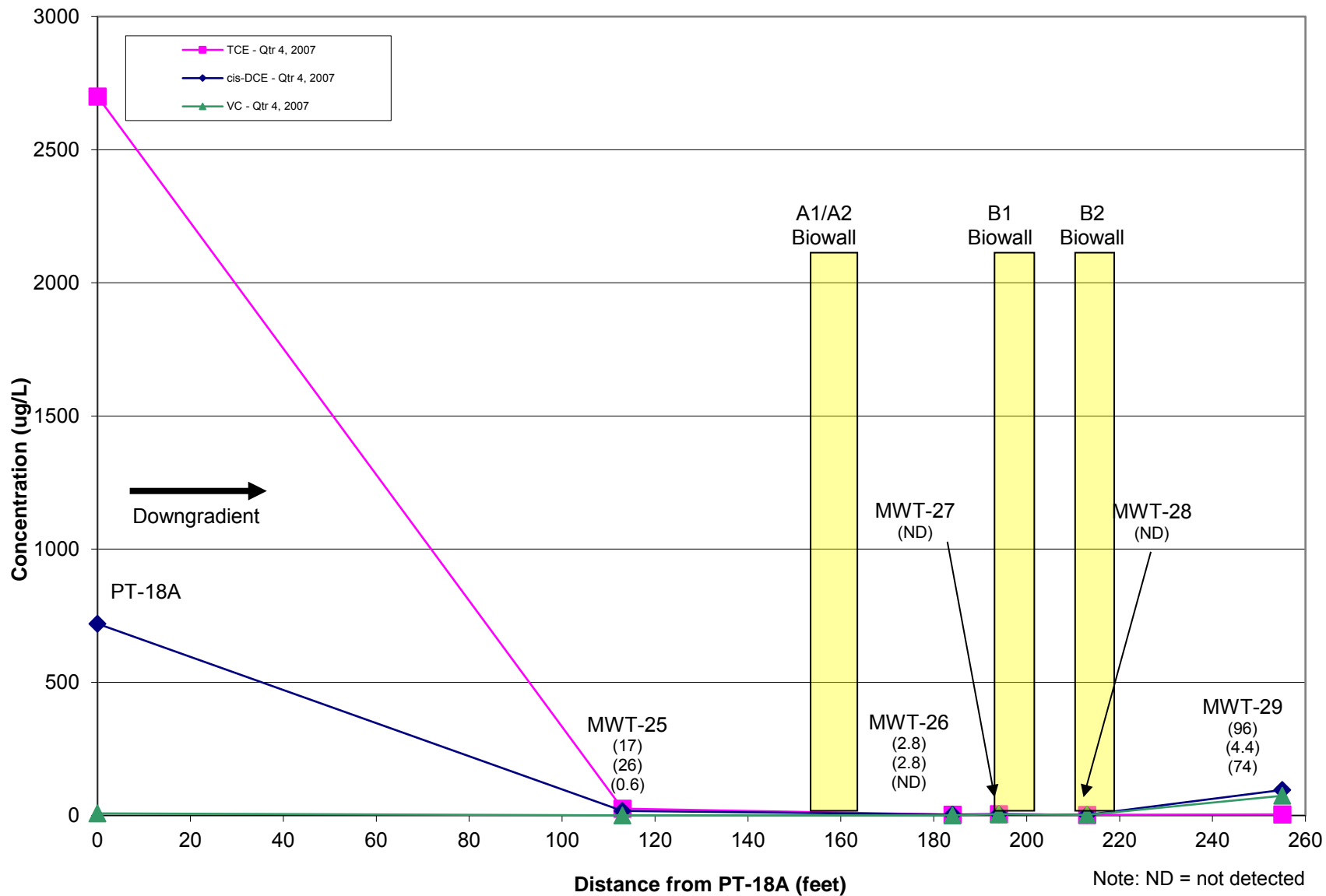


Figure 9E
 Concentrations of VOCs Along the Biowalls - Round 5, 2008
 Ash Landfill Annual Report
 Seneca Army Depot Activity

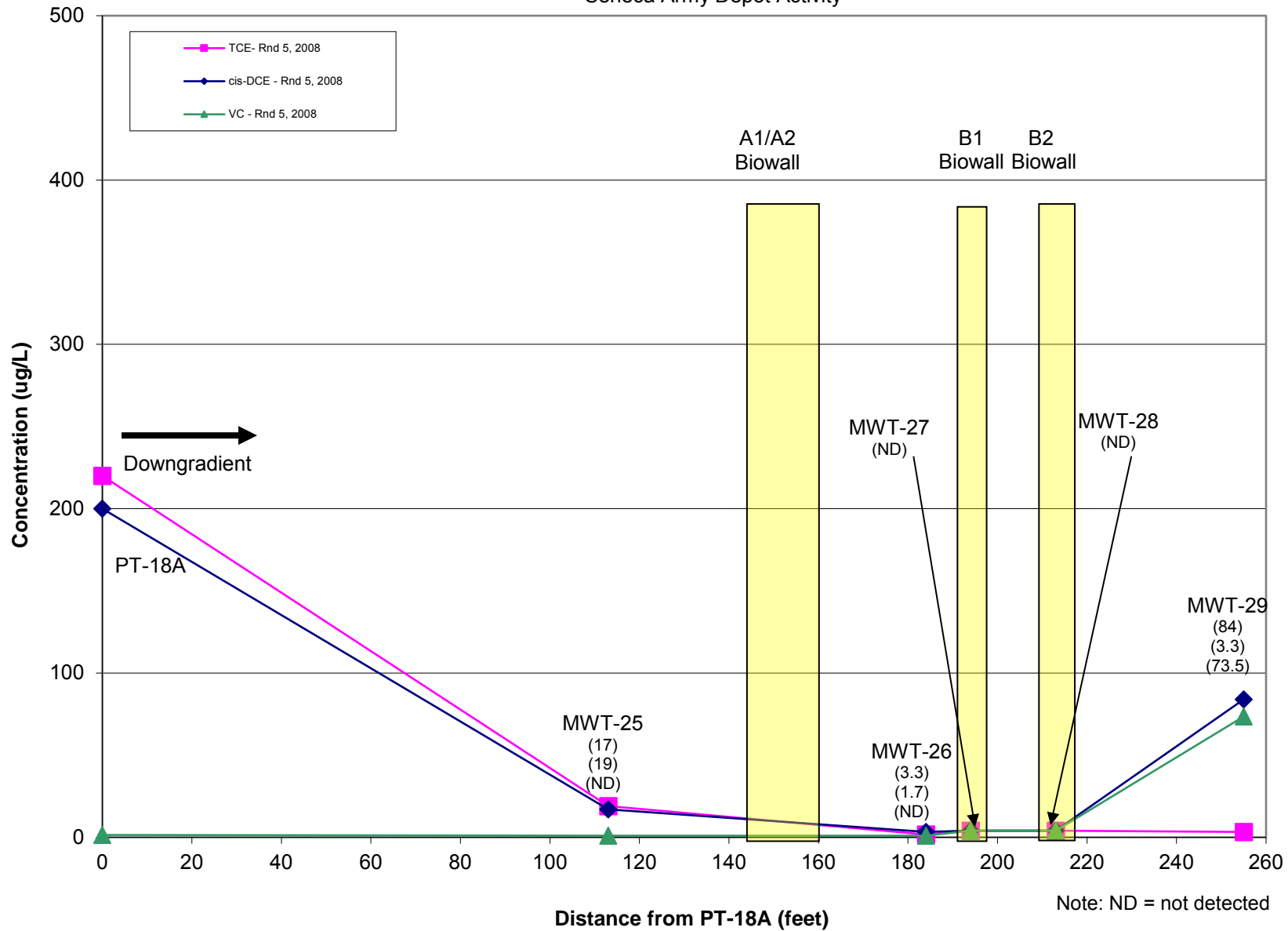


Figure 9F
 Concentrations of VOCs Along the Biowalls - Round 6, 2008
 Ash Landfill Annual Report
 Seneca Army Depot Activity

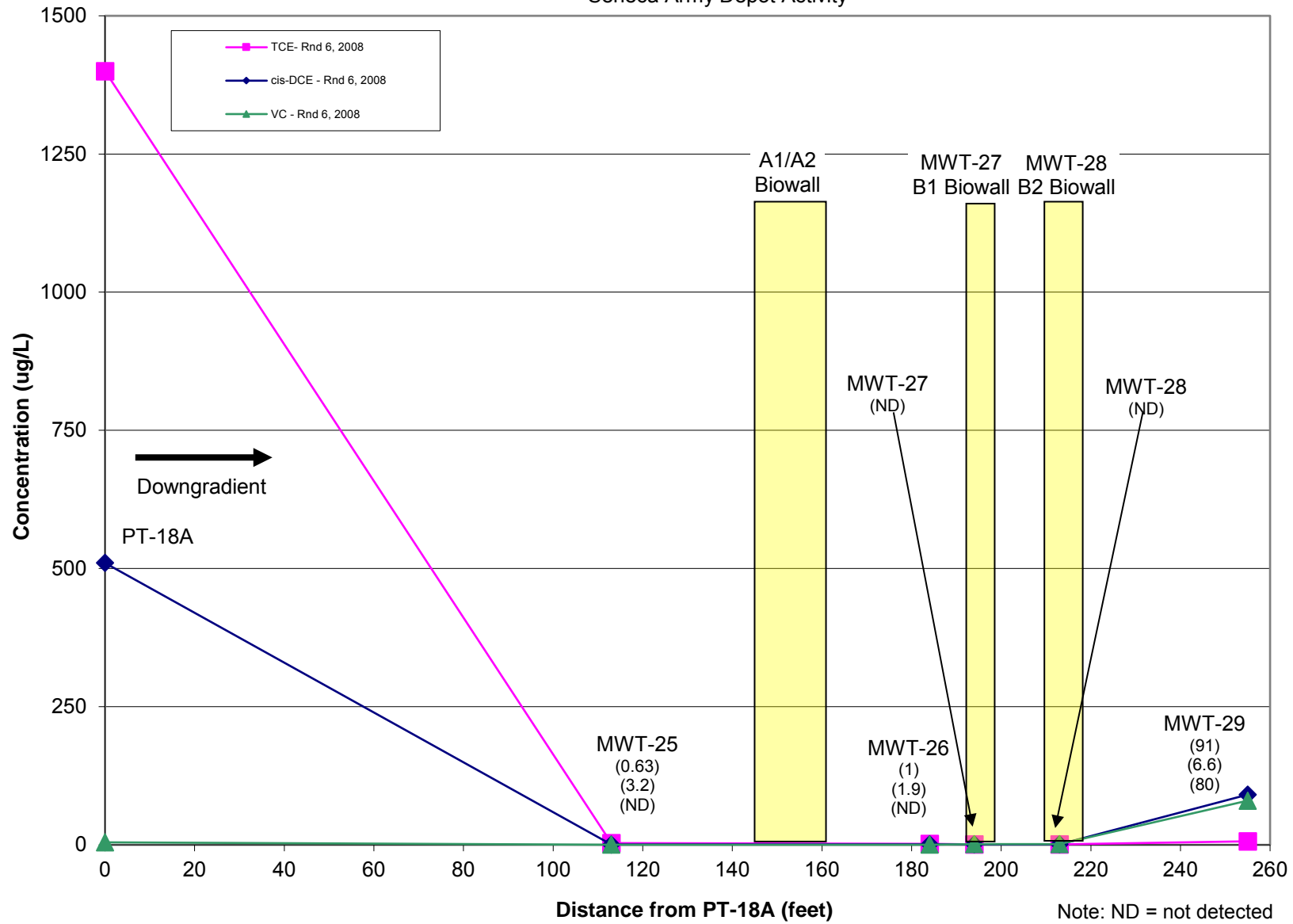


Figure 9G
 Concentrations of VOCs Along the Biowalls - Round 7, 2009
 Ash Landfill Annual Report
 Seneca Army Depot Activity

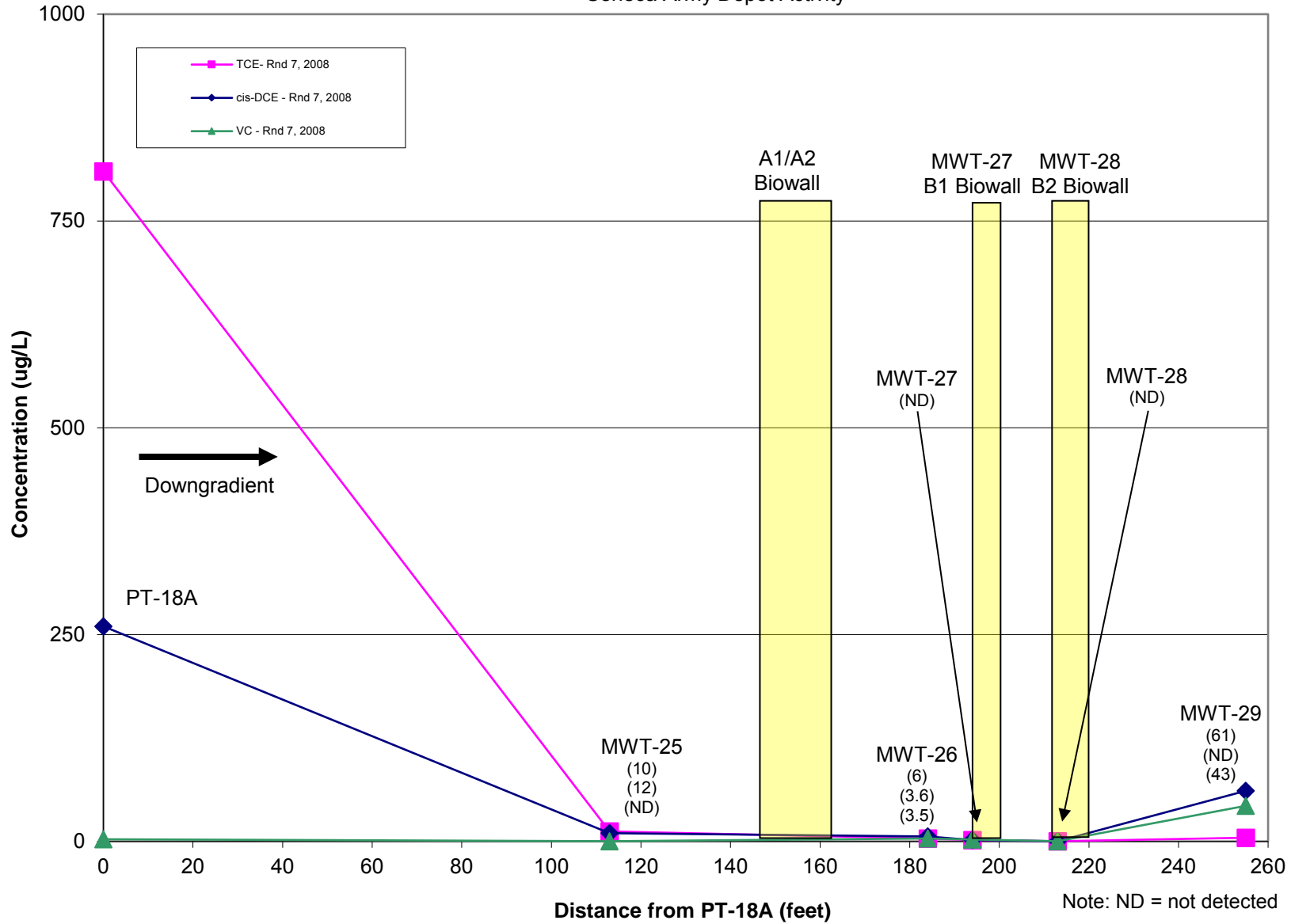


Figure 9H
 Concentrations of VOCs Along the Biowalls - Round 8, 2009
 Ash Landfill Annual Report
 Seneca Army Depot Activity

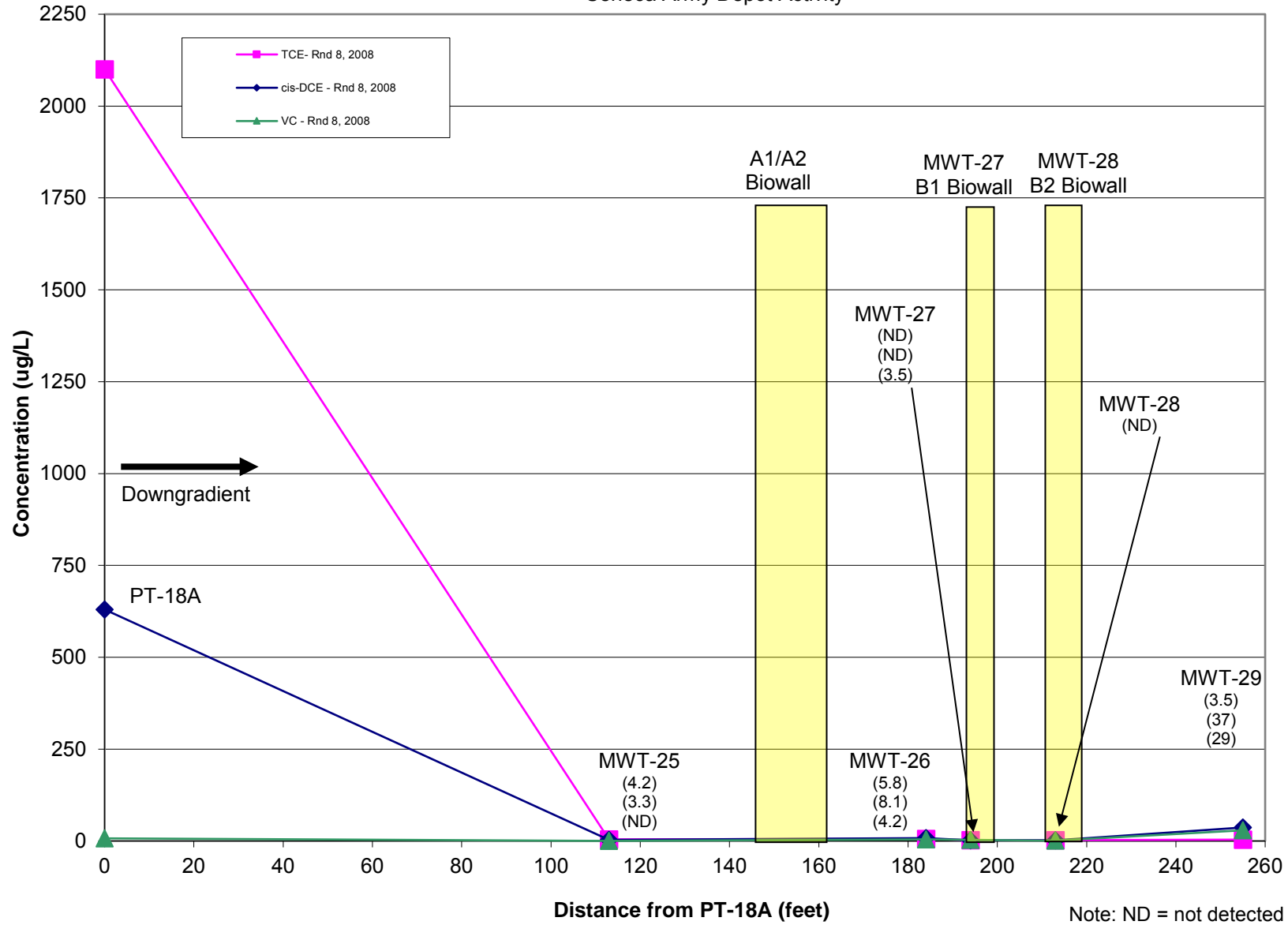


Figure 9I
 Concentrations of VOCs Along the Biowalls - Round 9, 2010
 Ash Landfill Annual Report
 Seneca Army Depot Activity

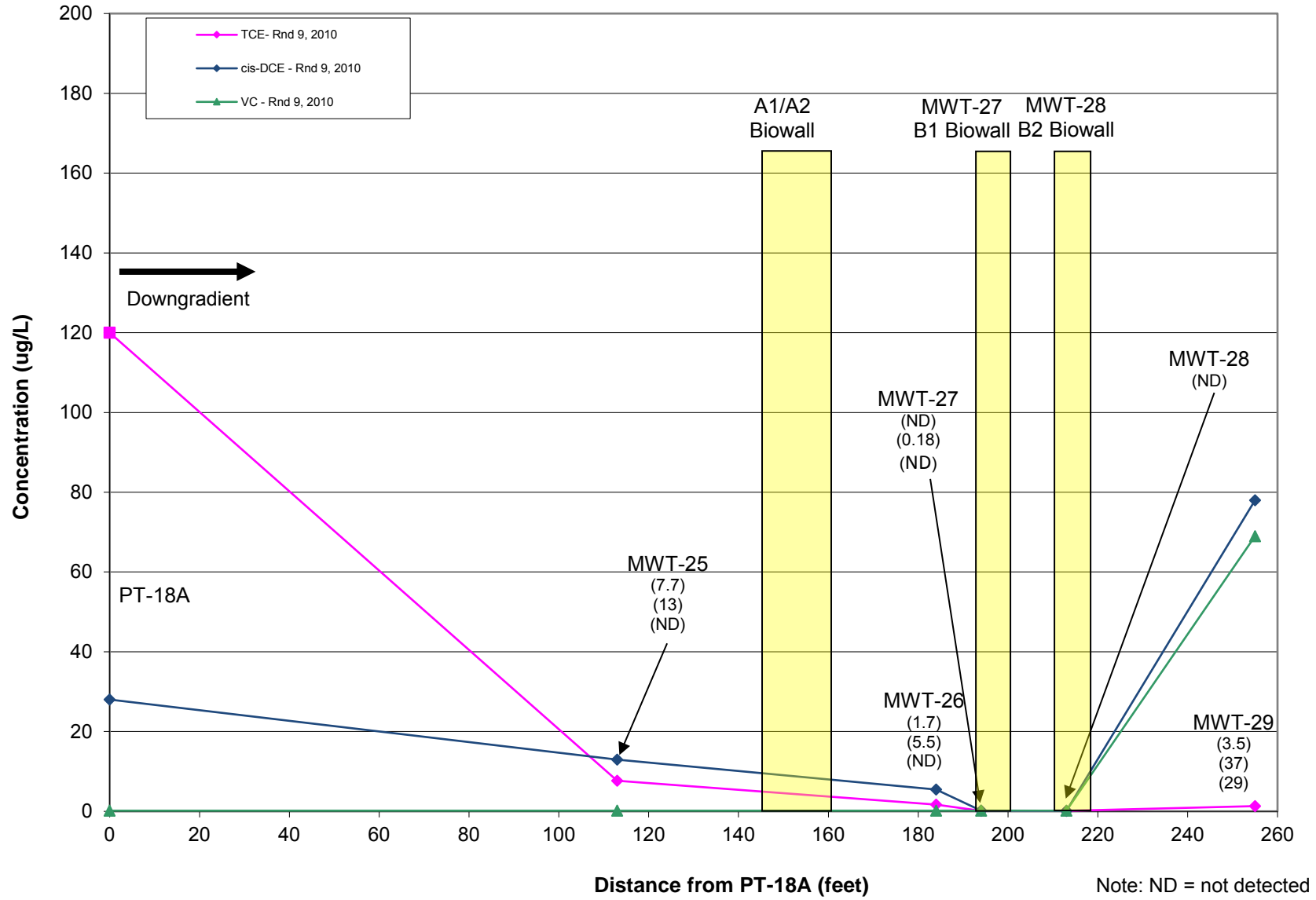


Figure 9J
 Concentrations of VOCs Along the Biowalls - Round 10, 2010
 Ash Landfill Annual Report
 Seneca Army Depot Activity

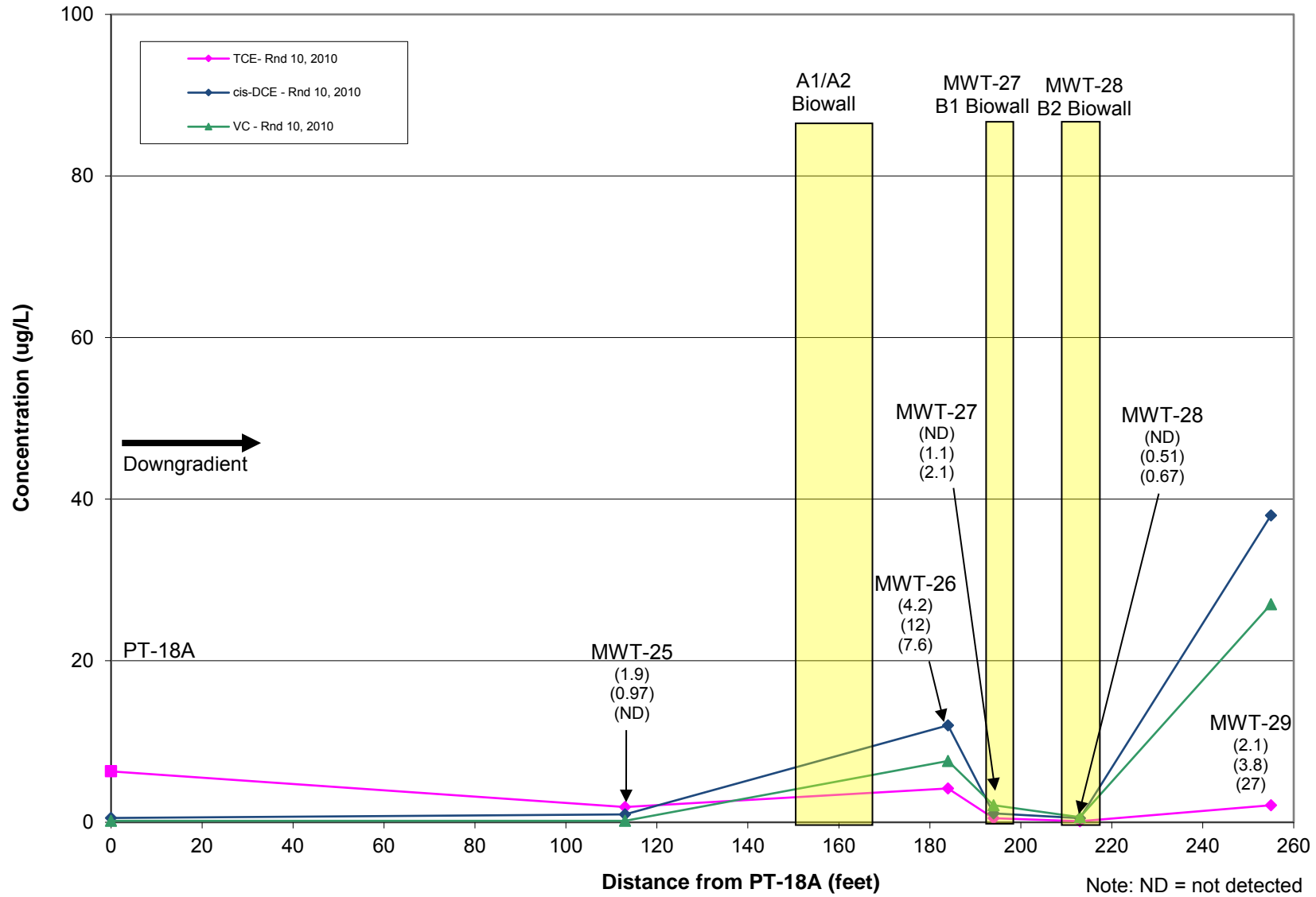


Figure 9K
 Concentrations of VOCs Along the Biowalls - Round 11, 2011
 Ash Landfill Annual Report
 Seneca Army Depot Activity

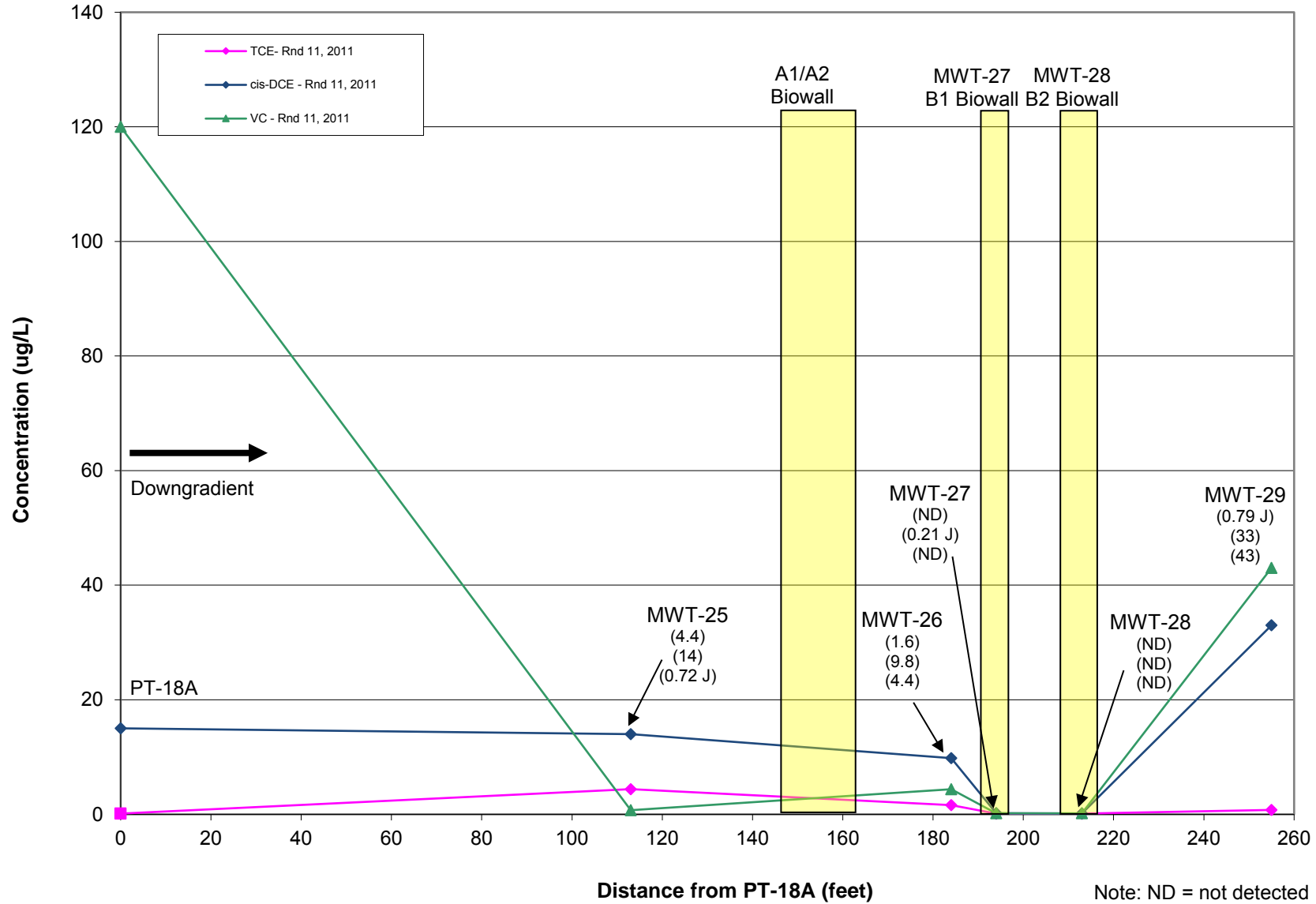


Figure 9L
 Concentrations of VOCs Along the Biowalls - Round 12, 2011
 Ash Landfill Annual Report
 Seneca Army Depot Activity

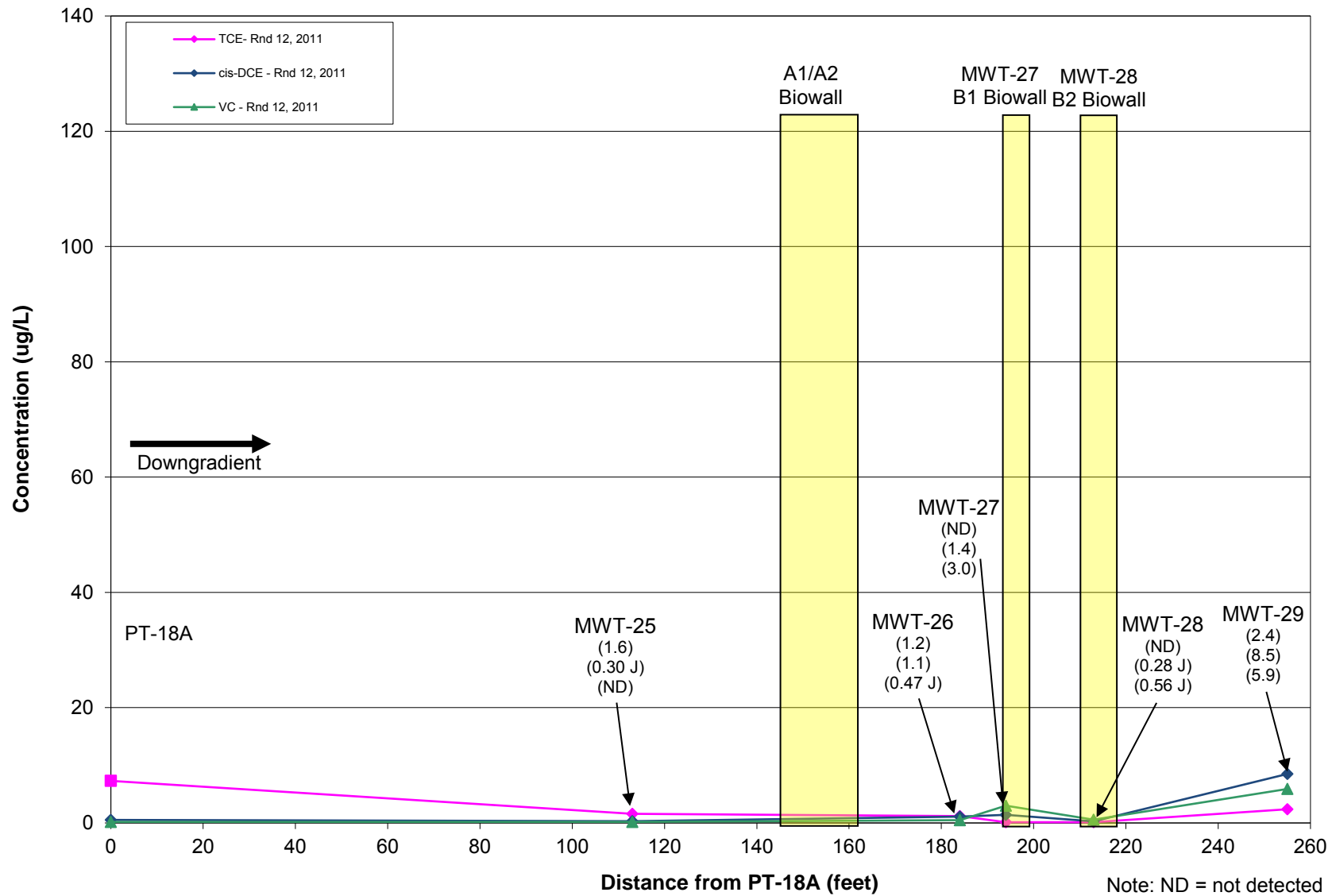


Figure 9M
 Concentrations of VOCs Along the Biowalls - Round 13, 2012
 Ash Landfill Annual Report
 Seneca Army Depot Activity

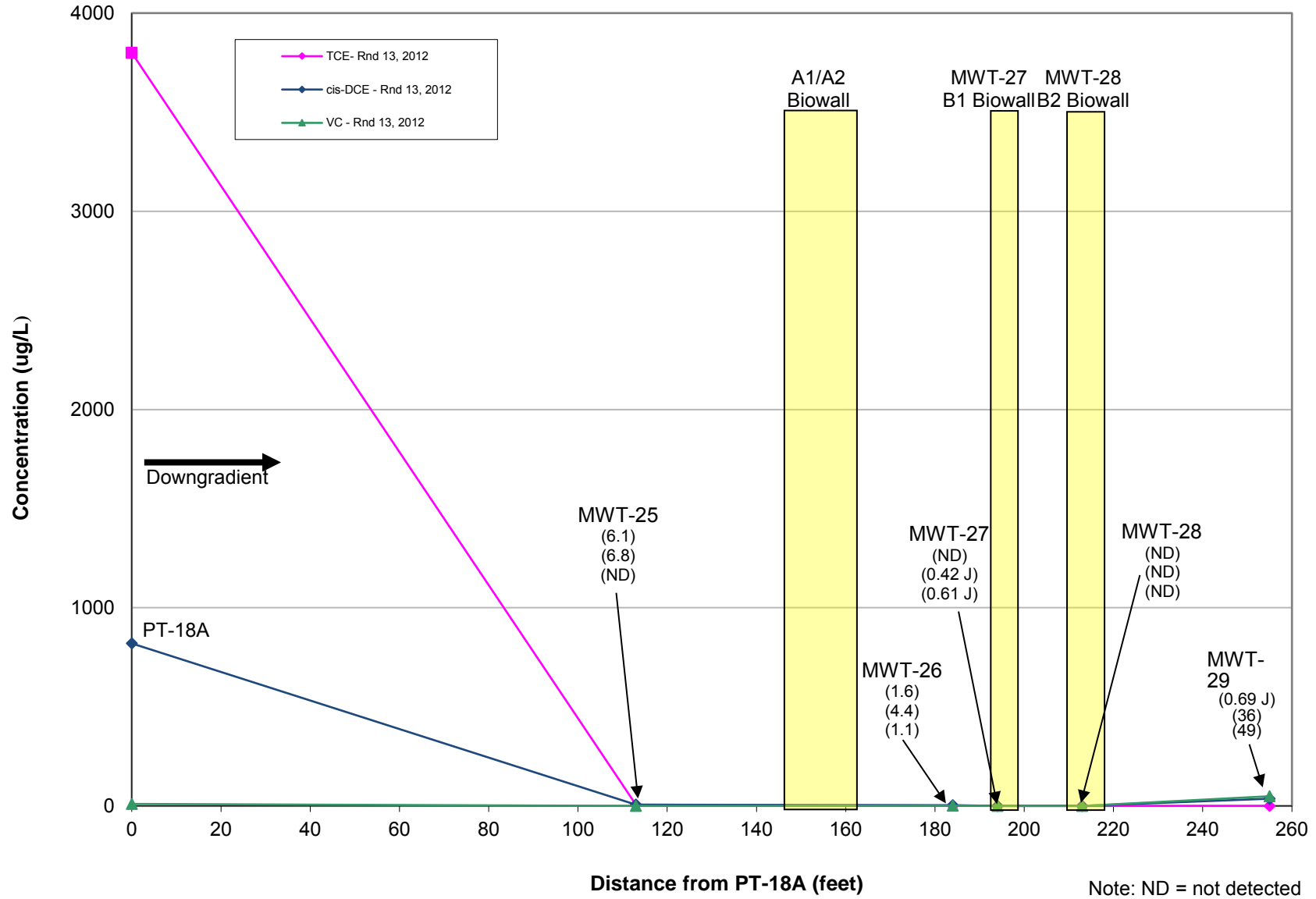


Figure 9N
 Concentrations of VOCs Along the Biowalls - Round 14, 2012
 Ash Landfill Annual Report
 Seneca Army Depot Activity

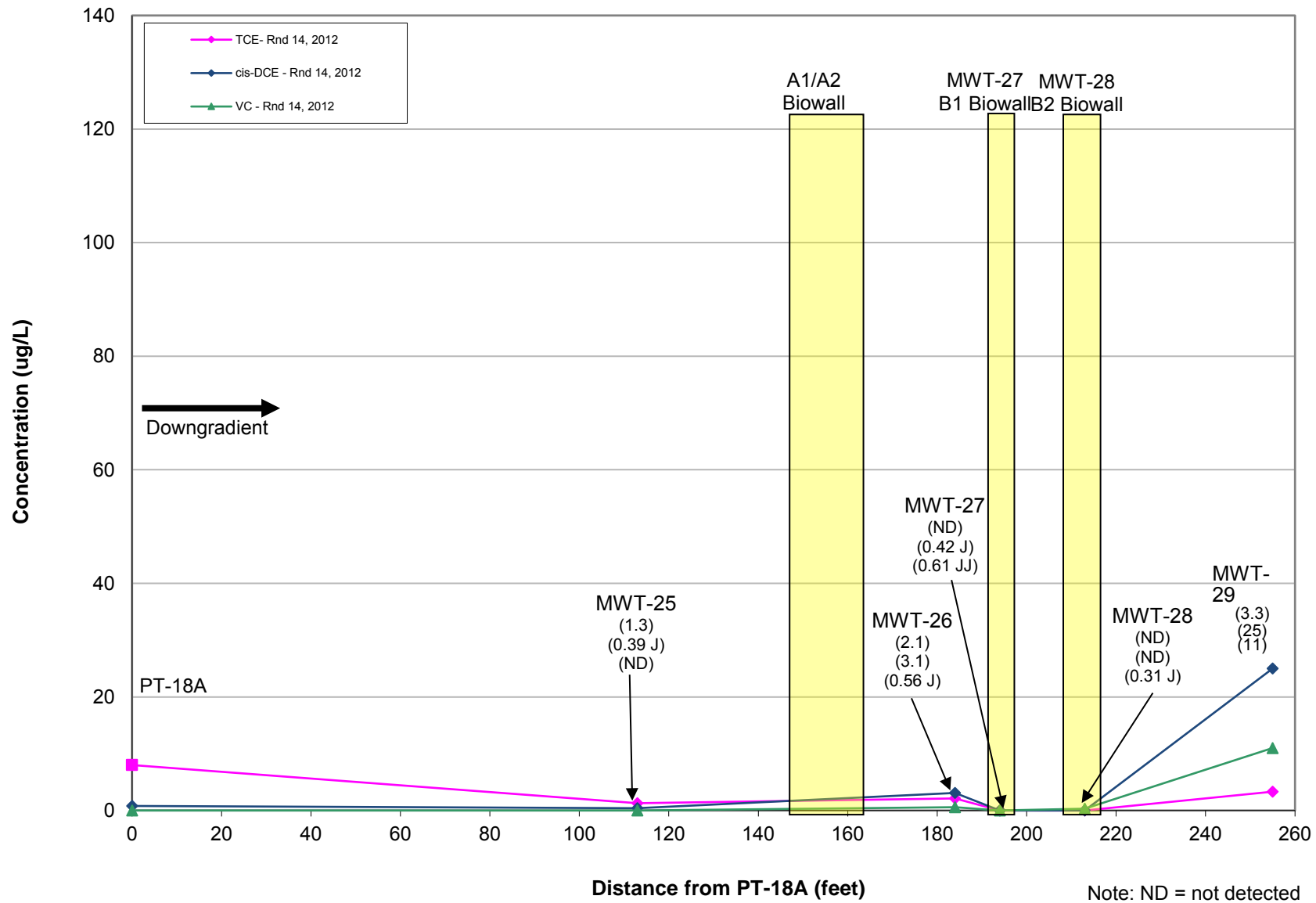


Figure 90
 Concentrations of VOCs Along the Biowalls - Round 15, 2013
 Ash Landfill Annual Report
 Seneca Army Depot Activity

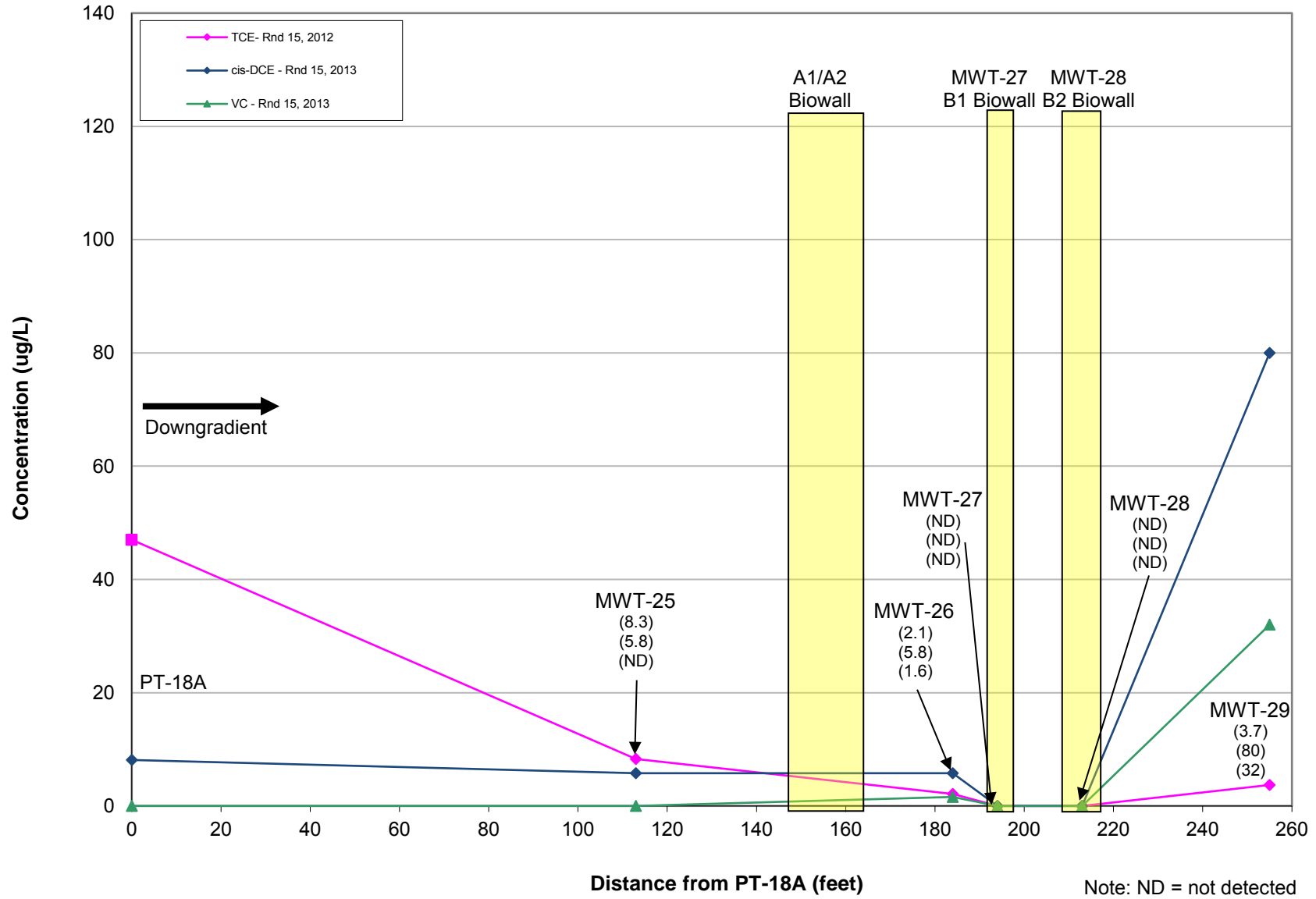


Figure 9P
 Concentrations of VOCs Along the Biowalls - Round 16, 2013
 Ash Landfill Annual Report
 Seneca Army Depot Activity

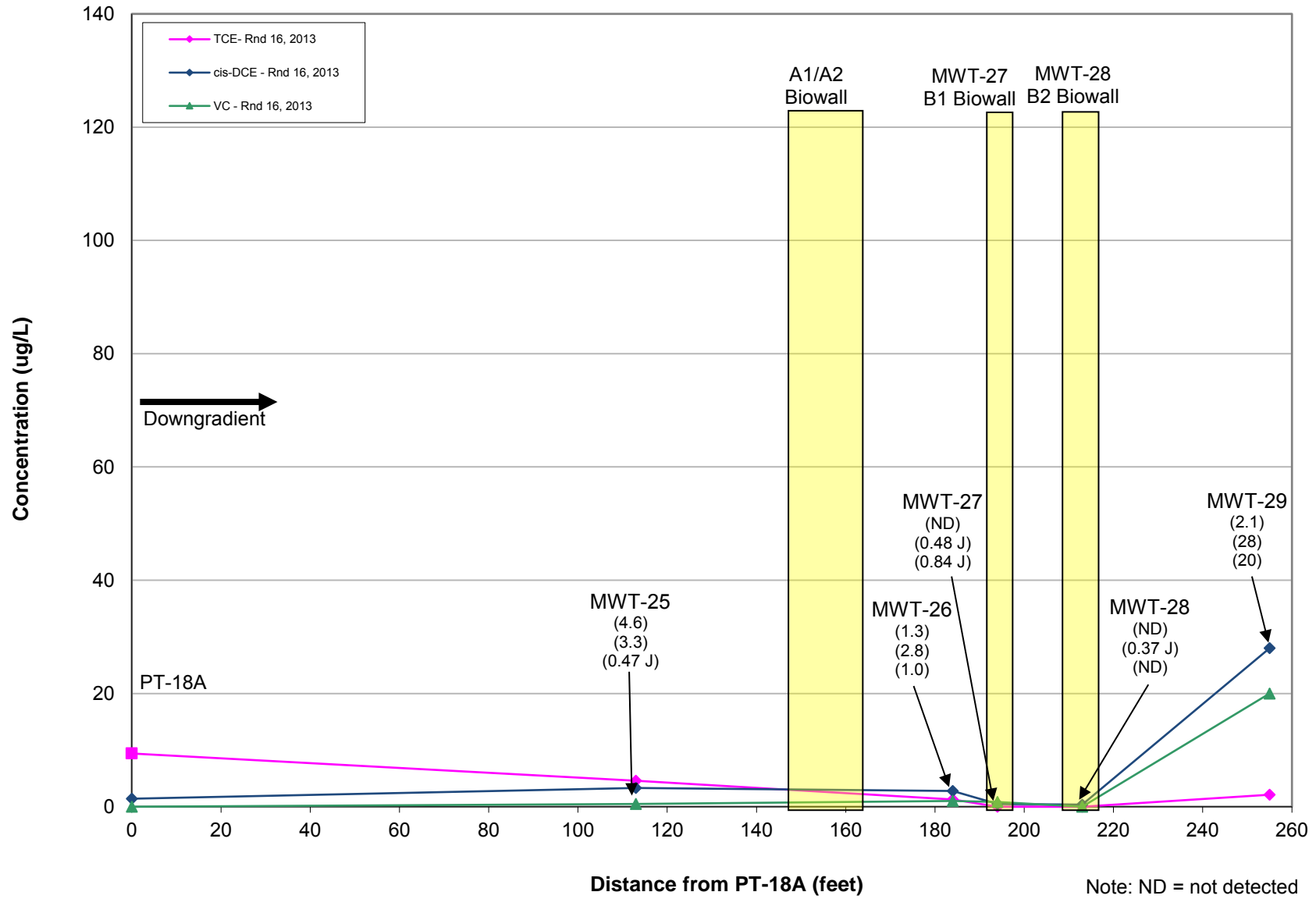


Figure 9Q
 Concentrations of VOCs Along the Biowalls - Round 17, 2014
 Ash Landfill Annual Report
 Seneca Army Depot Activity

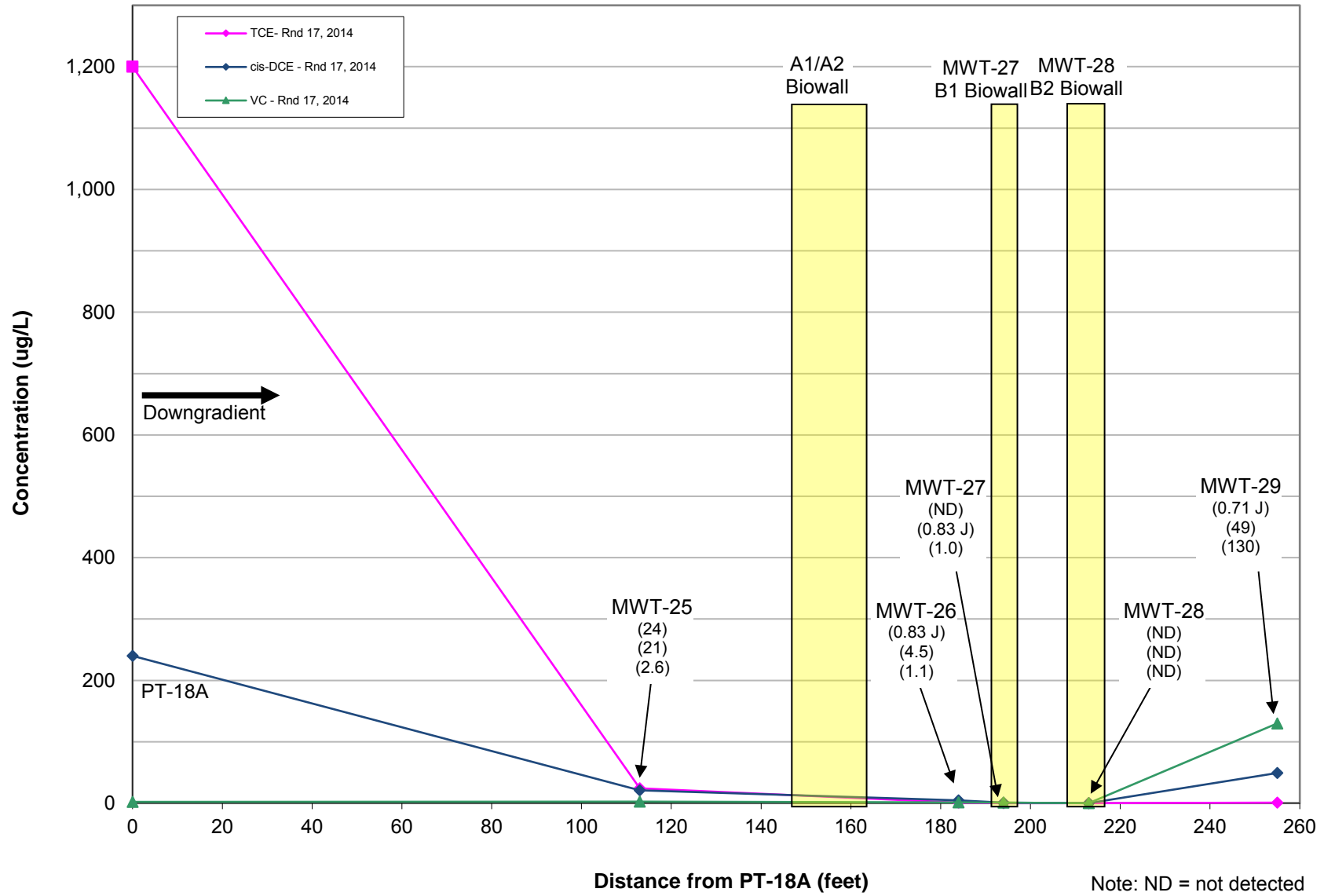


Figure 9R
 Concentrations of VOCs Along the Biowalls - Round 18, 2014
 Ash Landfill Annual Report
 Seneca Army Depot Activity

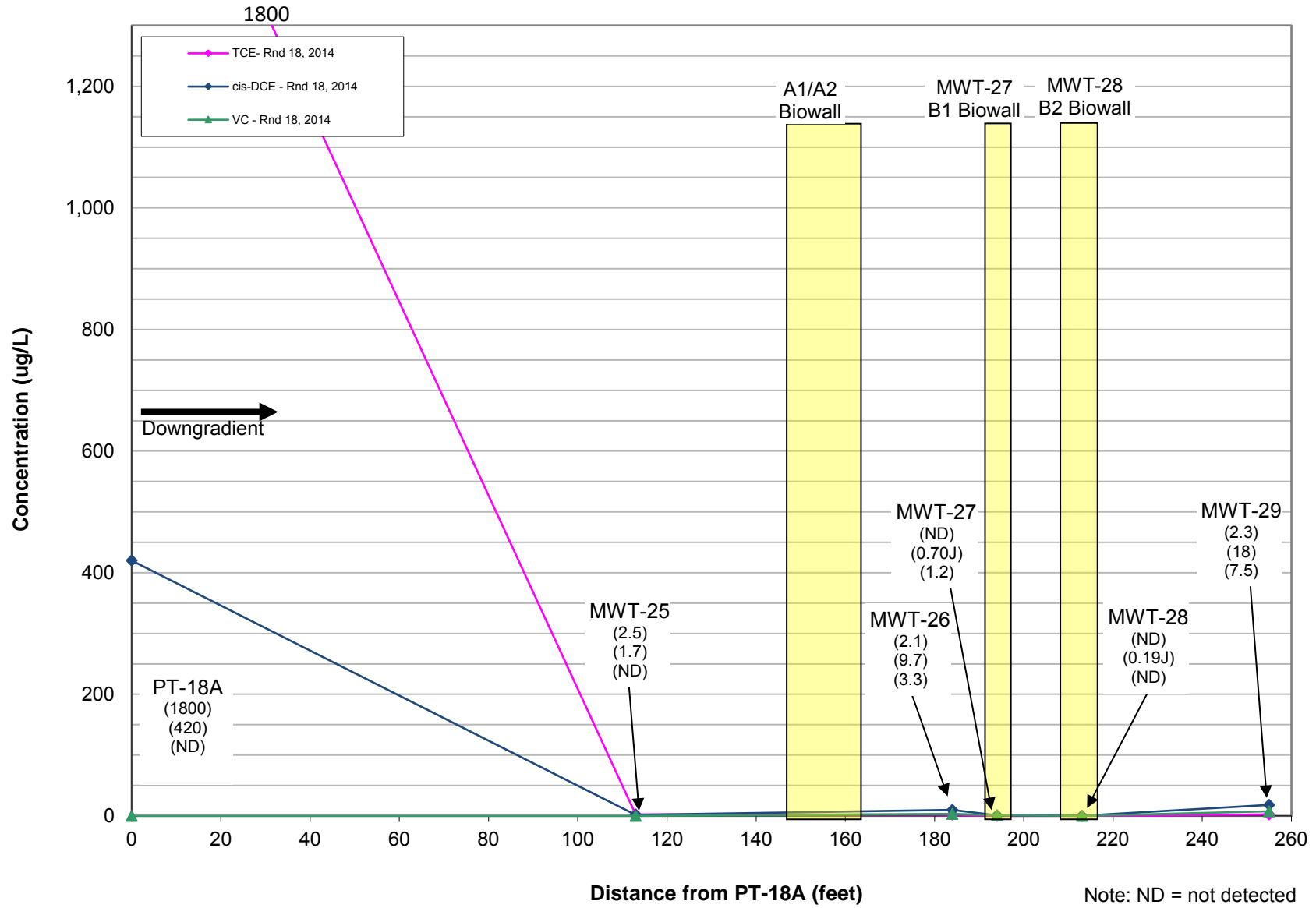


Figure 9S
 Concentrations of VOCs Along the Biowalls - Round 19, 2015
 Ash Landfill Annual Report
 Seneca Army Depot Activity

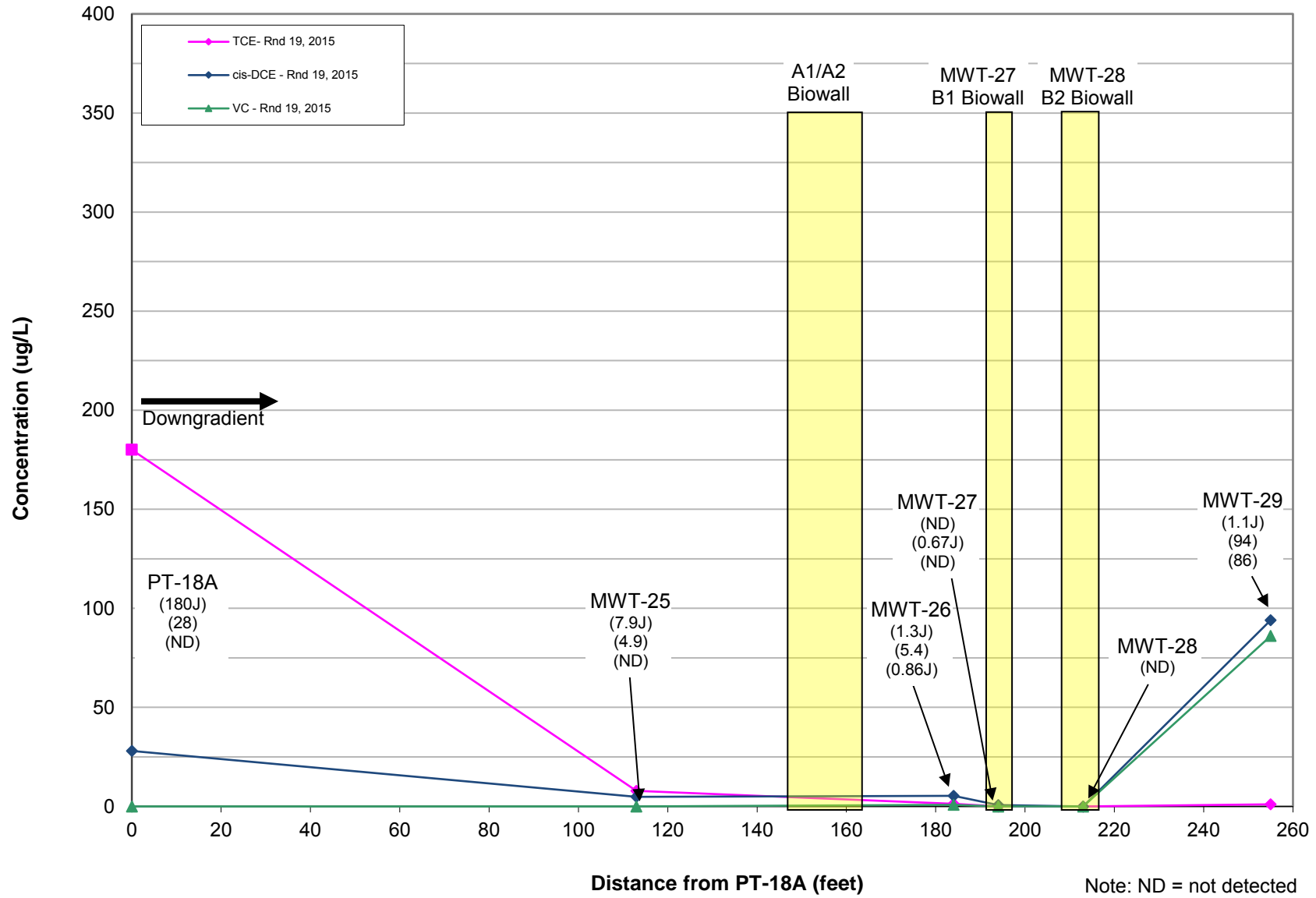


Figure 9T
 Concentrations of VOCs Along the Biowalls - Round 20, 2015
 Ash Landfill Annual Report
 Seneca Army Depot Activity

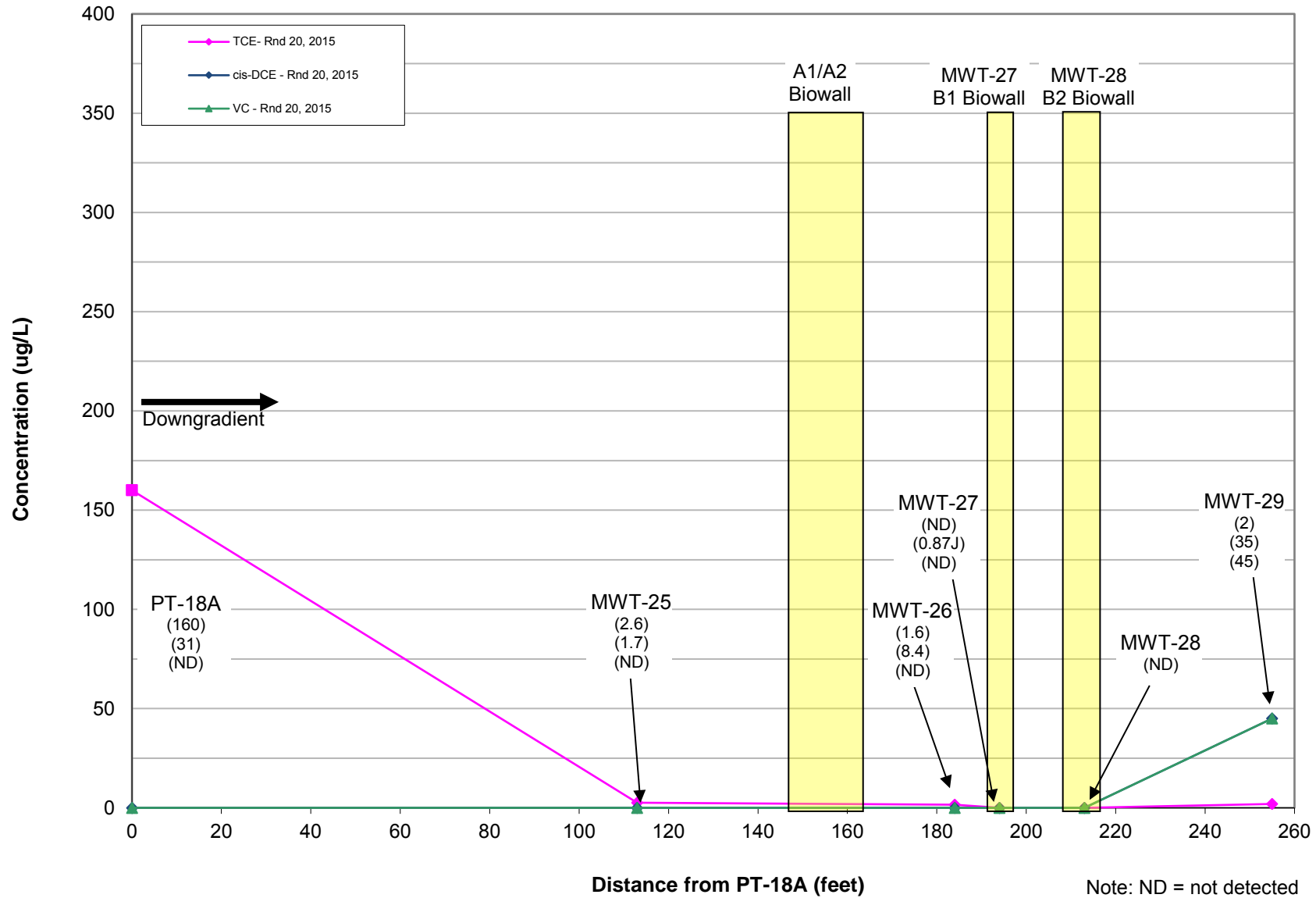
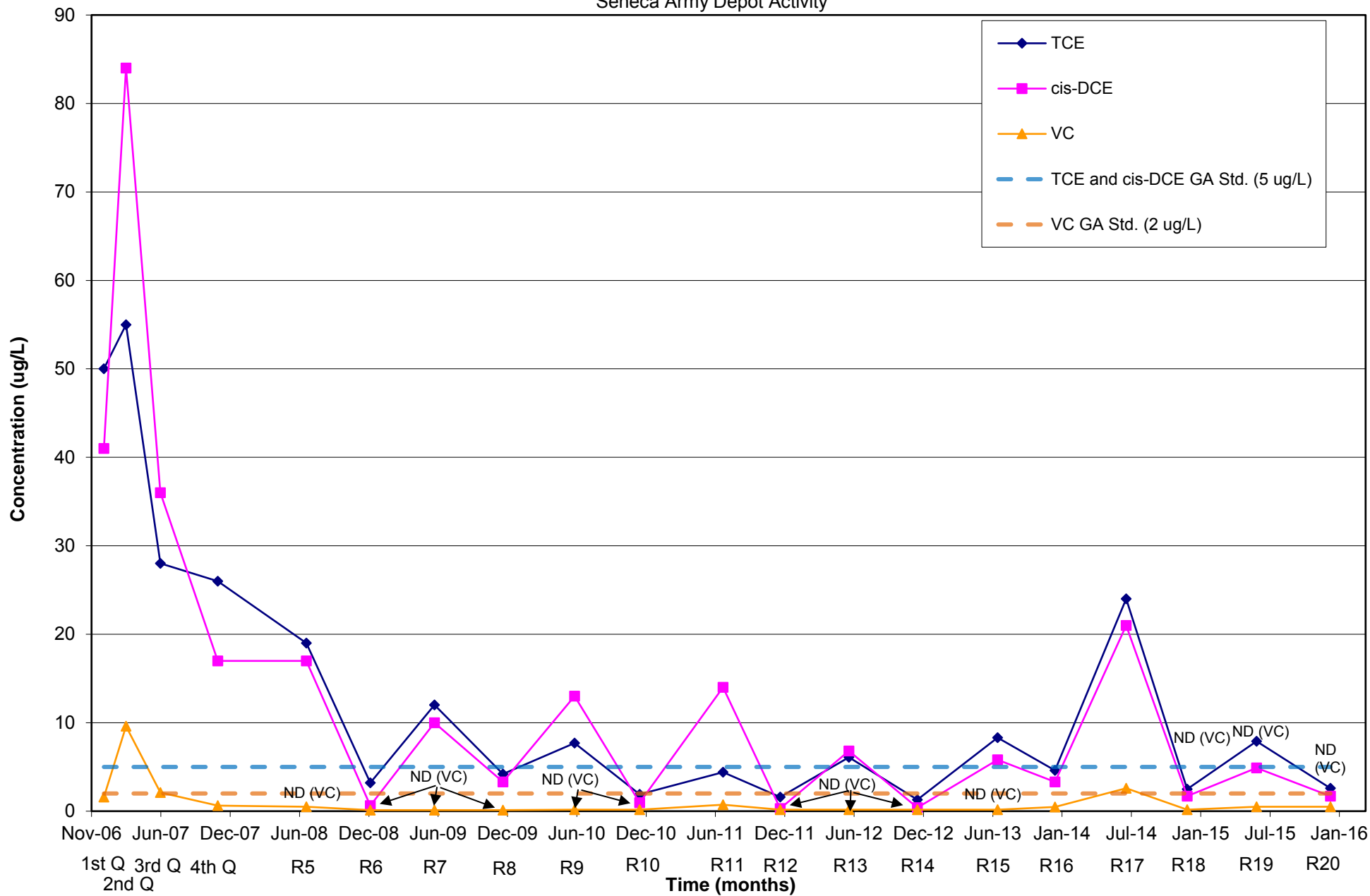
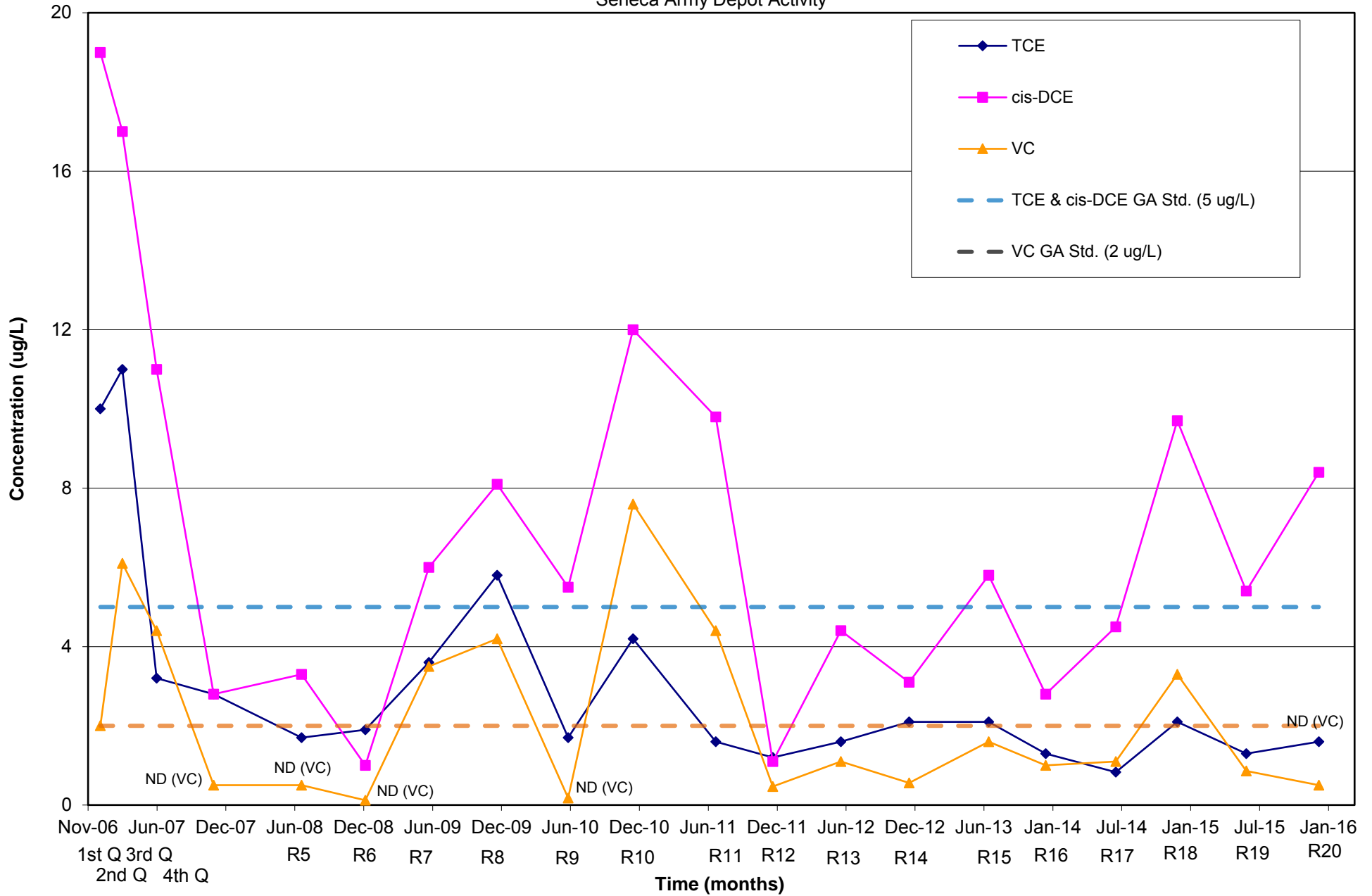


Figure 10A
 Concentrations of Chlorinated Organics Over Time at MWT-25
 Ash Landfill Annual Report
 Seneca Army Depot Activity



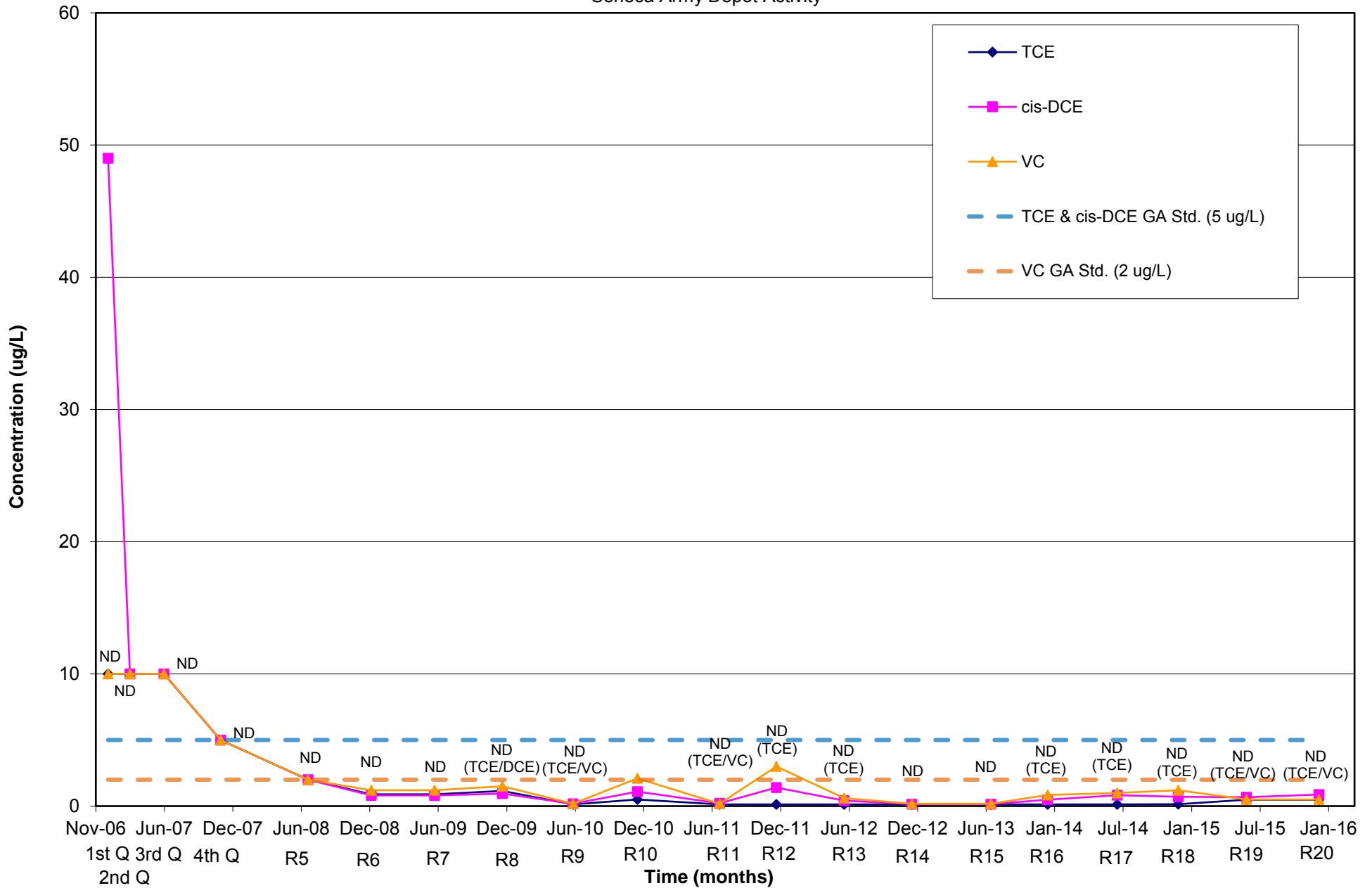
ND = not detected.

Figure 10B
 Concentrations of Chlorinated Organics Over Time at MWT-26
 Ash Landfill Annual Report
 Seneca Army Depot Activity



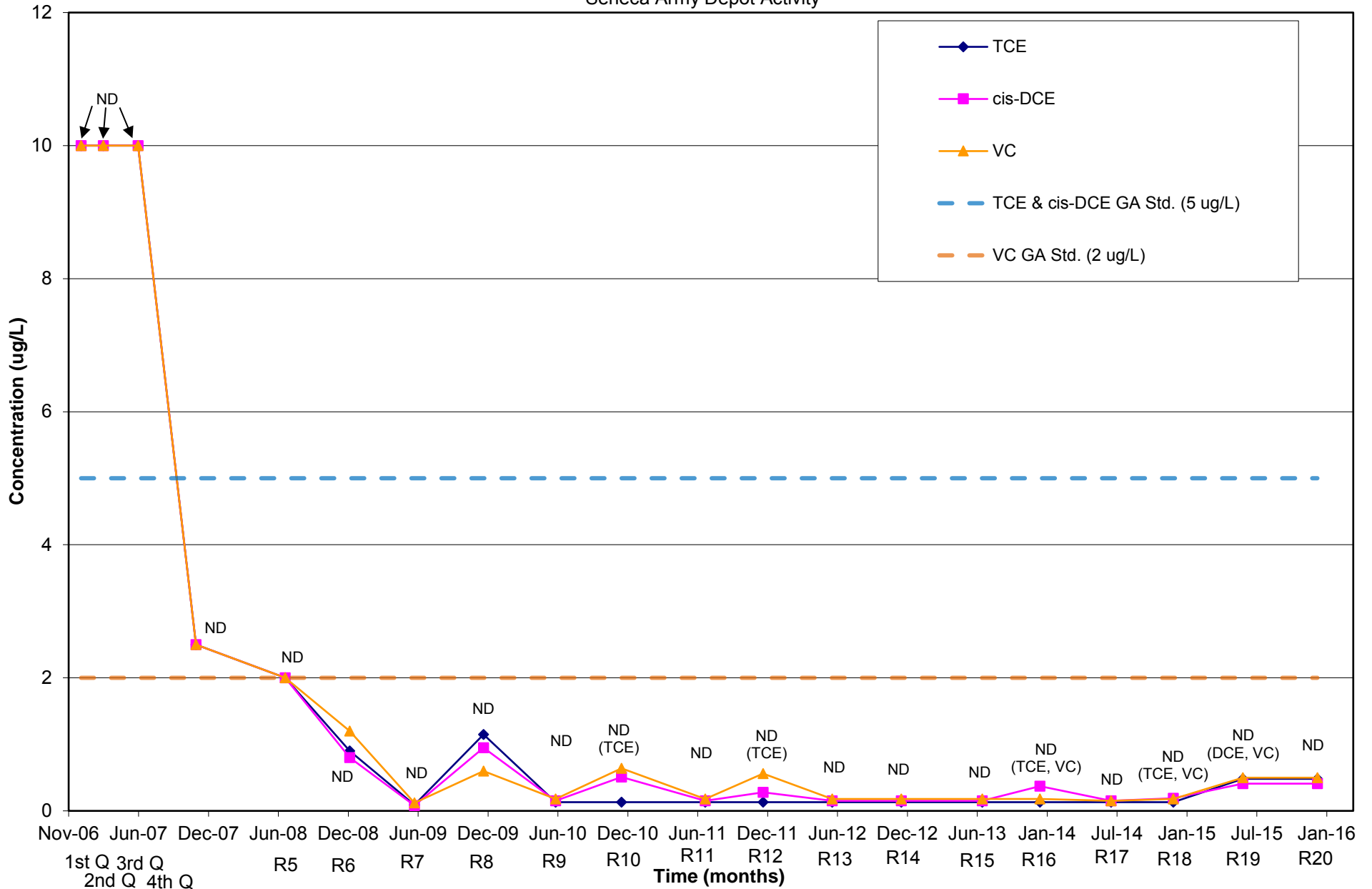
ND = not detected.

Figure 10C
 Concentrations of Chlorinated Organics Over Time at MWT-27
 Ash Landfill Annual Report
 Seneca Army Depot Activity



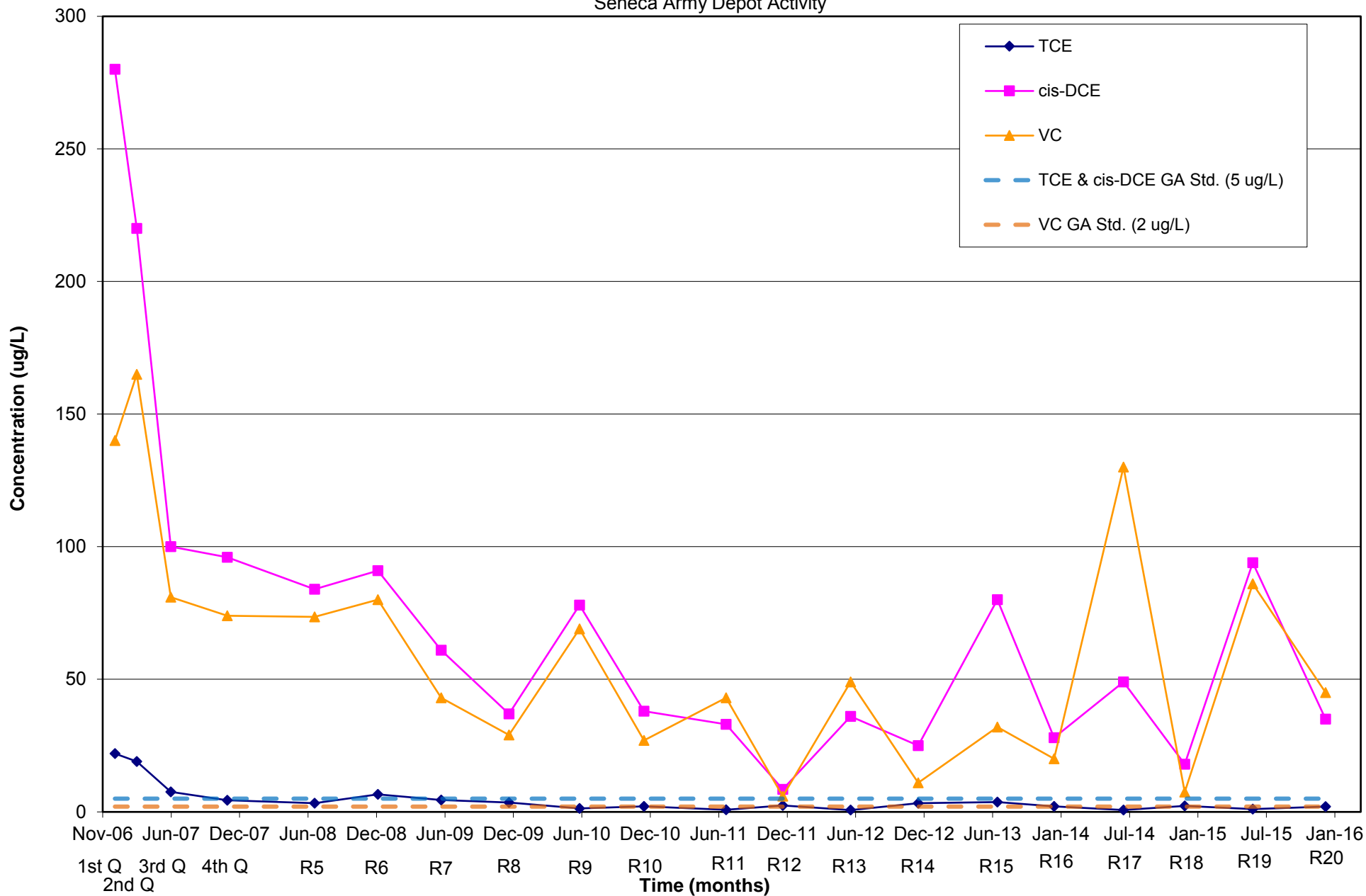
Round 3, Round 6, Round 8, Round 11, Round 15, and Round 18 data is the average of the sample and its duplicate.
 ND = not detected.

Figure 10D
 Concentrations of Chlorinated Organics Over Time at MWT-28
 Ash Landfill Annual Report
 Seneca Army Depot Activity



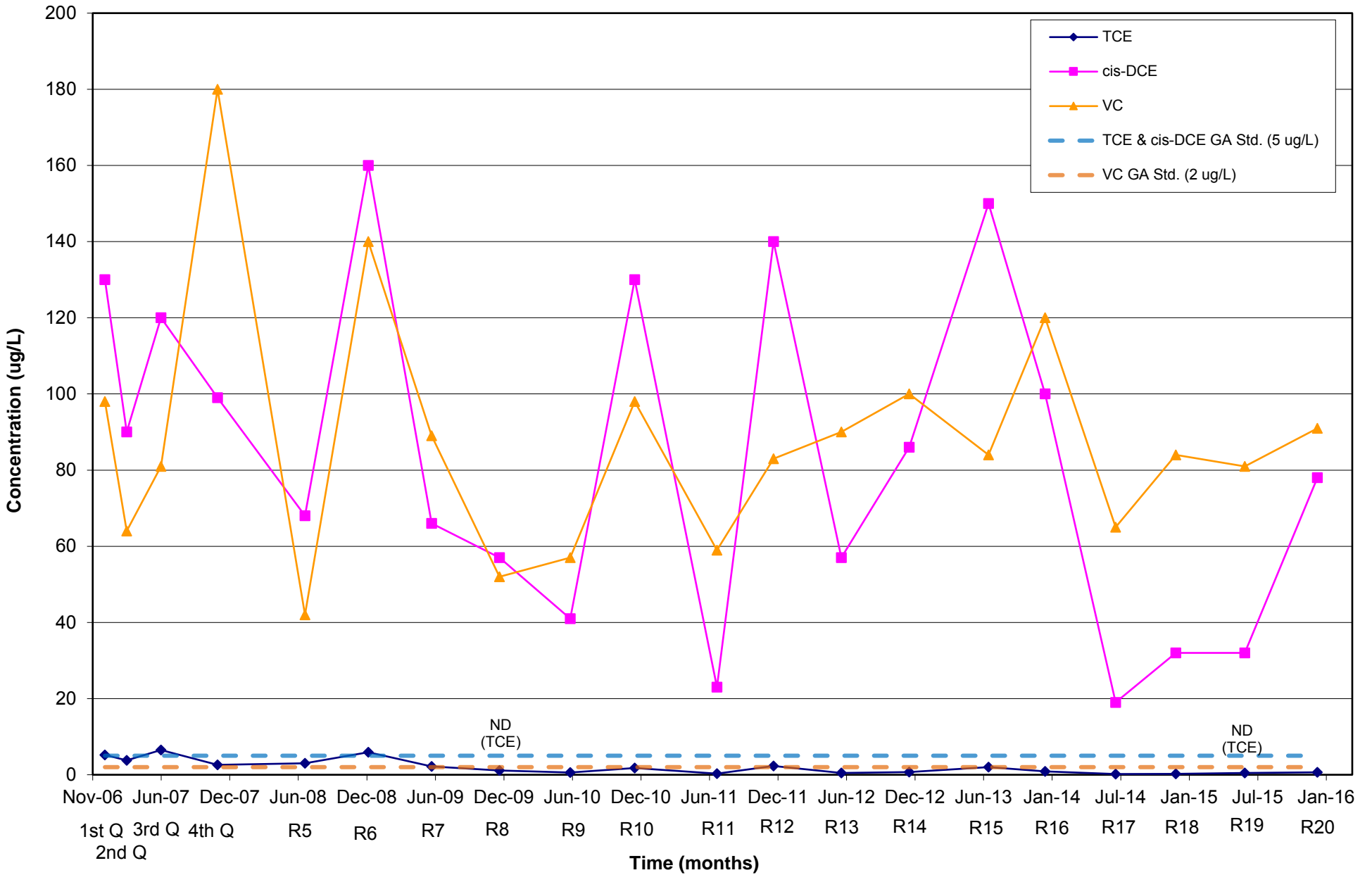
Round 1, Round 7, Round 9, Round 13, Round 16, and Round 19 data is the average of the sample and its duplicate.
 ND = not detected.

Figure 10E
 Concentrations of Chlorinated Organics Over Time at MWT-29
 Ash Landfill Annual Report
 Seneca Army Depot Activity



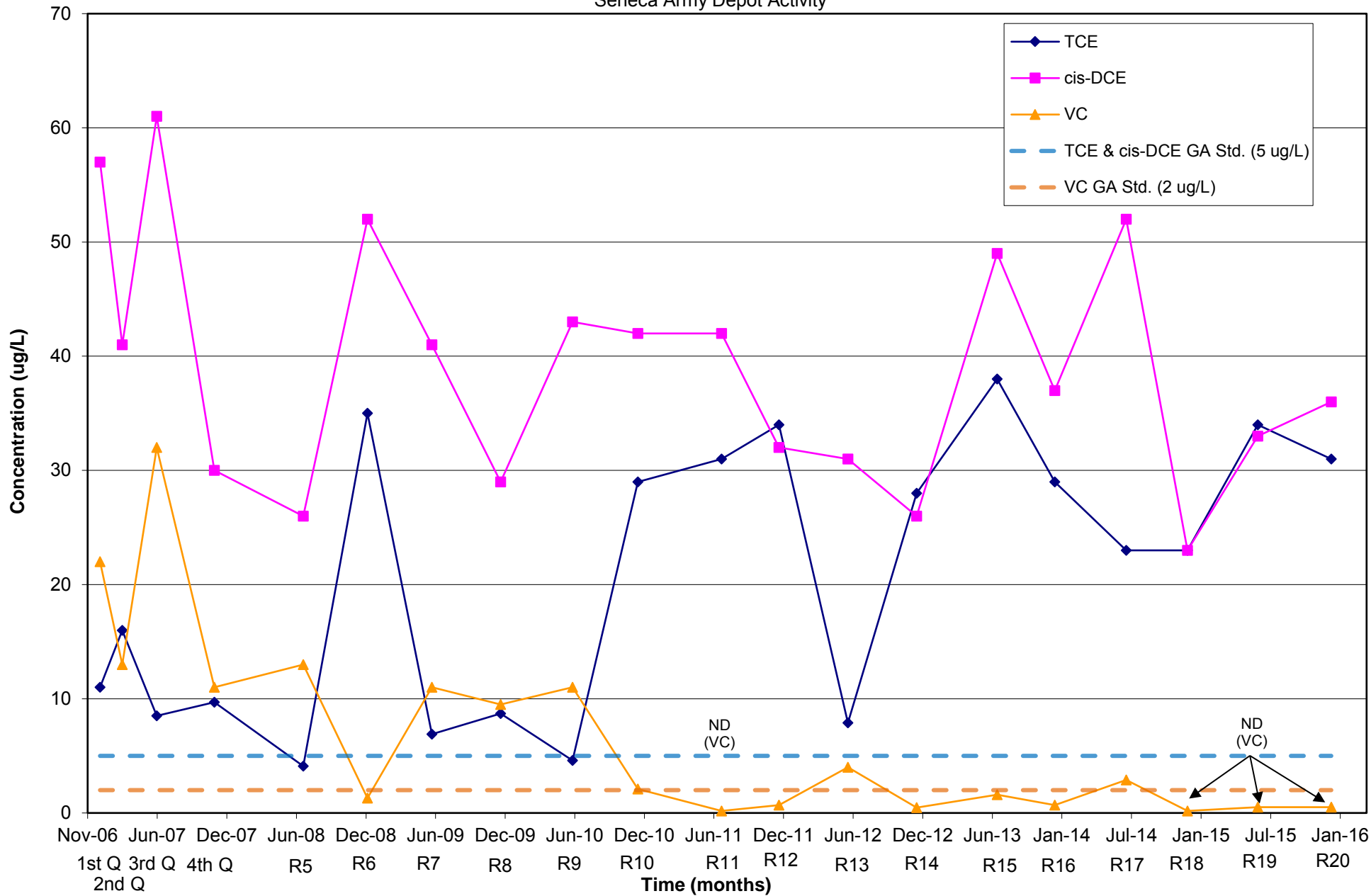
Round 2 and Round 5 data is the average of the sample and its duplicate.
 ND = not detected.

Figure 10F
 Concentrations of Chlorinated Organics Over Time at MWT-22
 Ash Landfill Annual Report
 Seneca Army Depot Activity



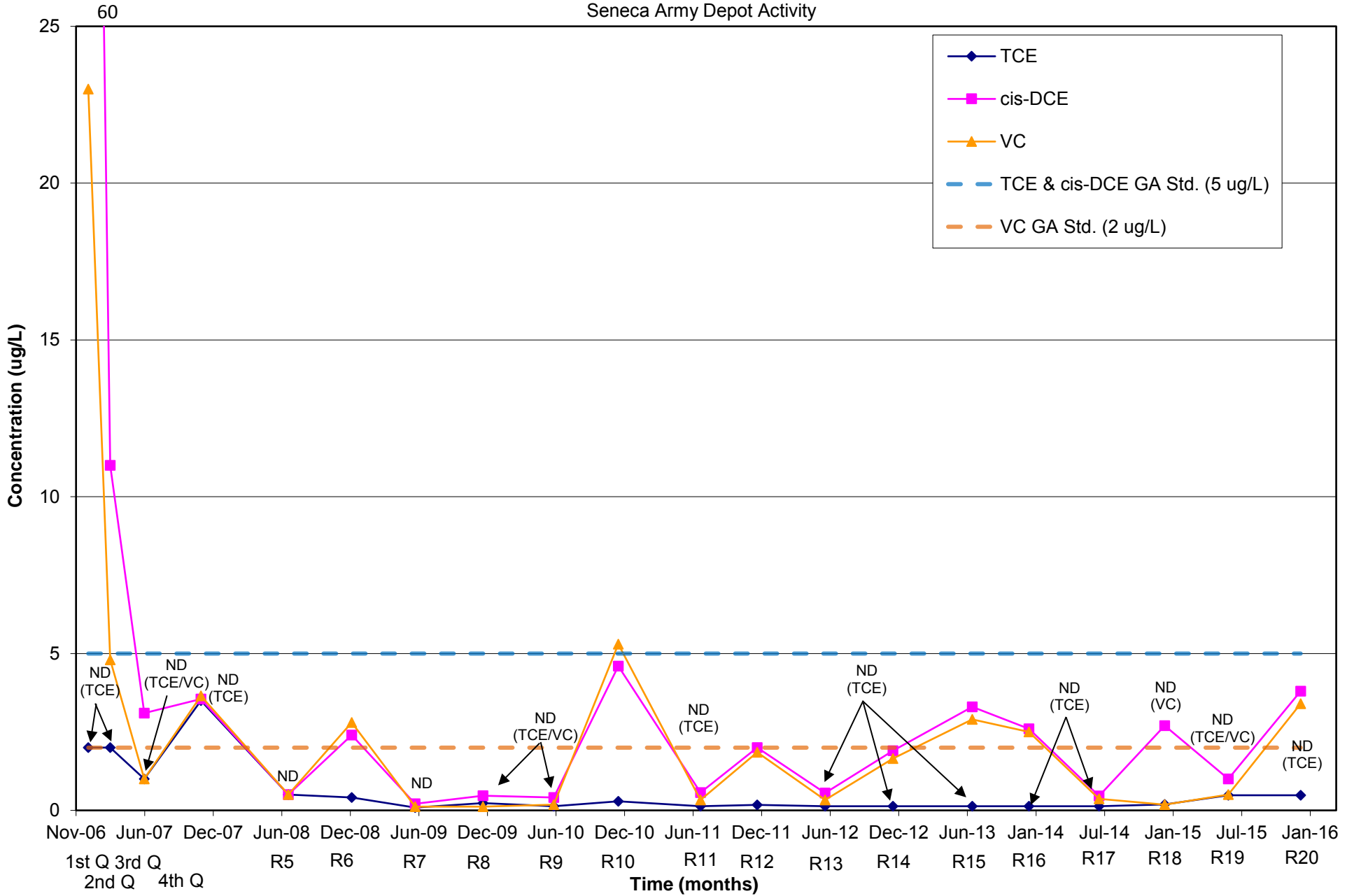
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Figure 10G
 Concentrations of Chlorinated Organics Over Time at PT-22
 Ash Landfill Annual Report
 Seneca Army Depot Activity



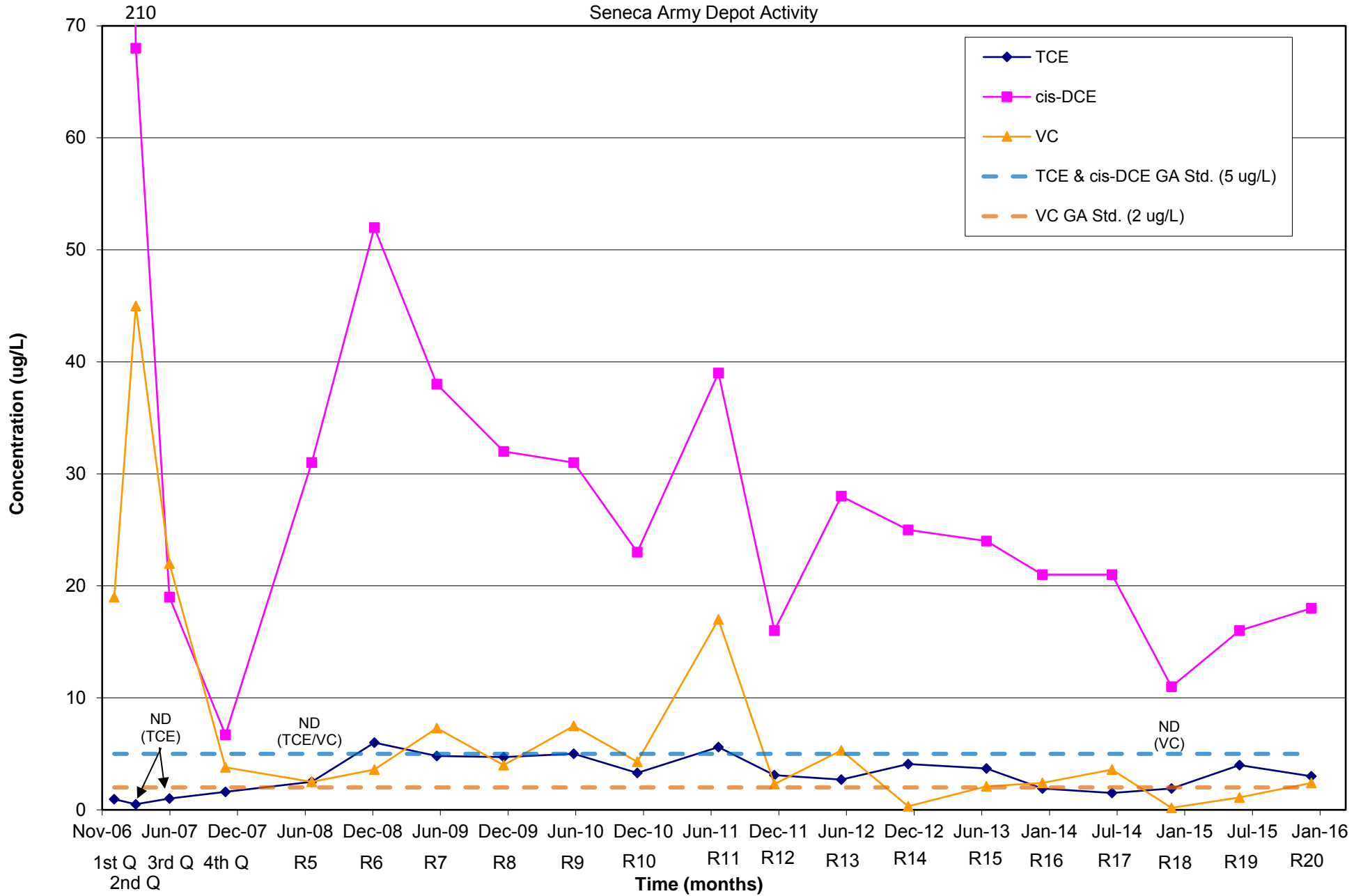
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Figure 10H
 Concentrations of Chlorinated Organics Over Time at MWT-23
 Ash Landfill Annual Report
 Seneca Army Depot Activity



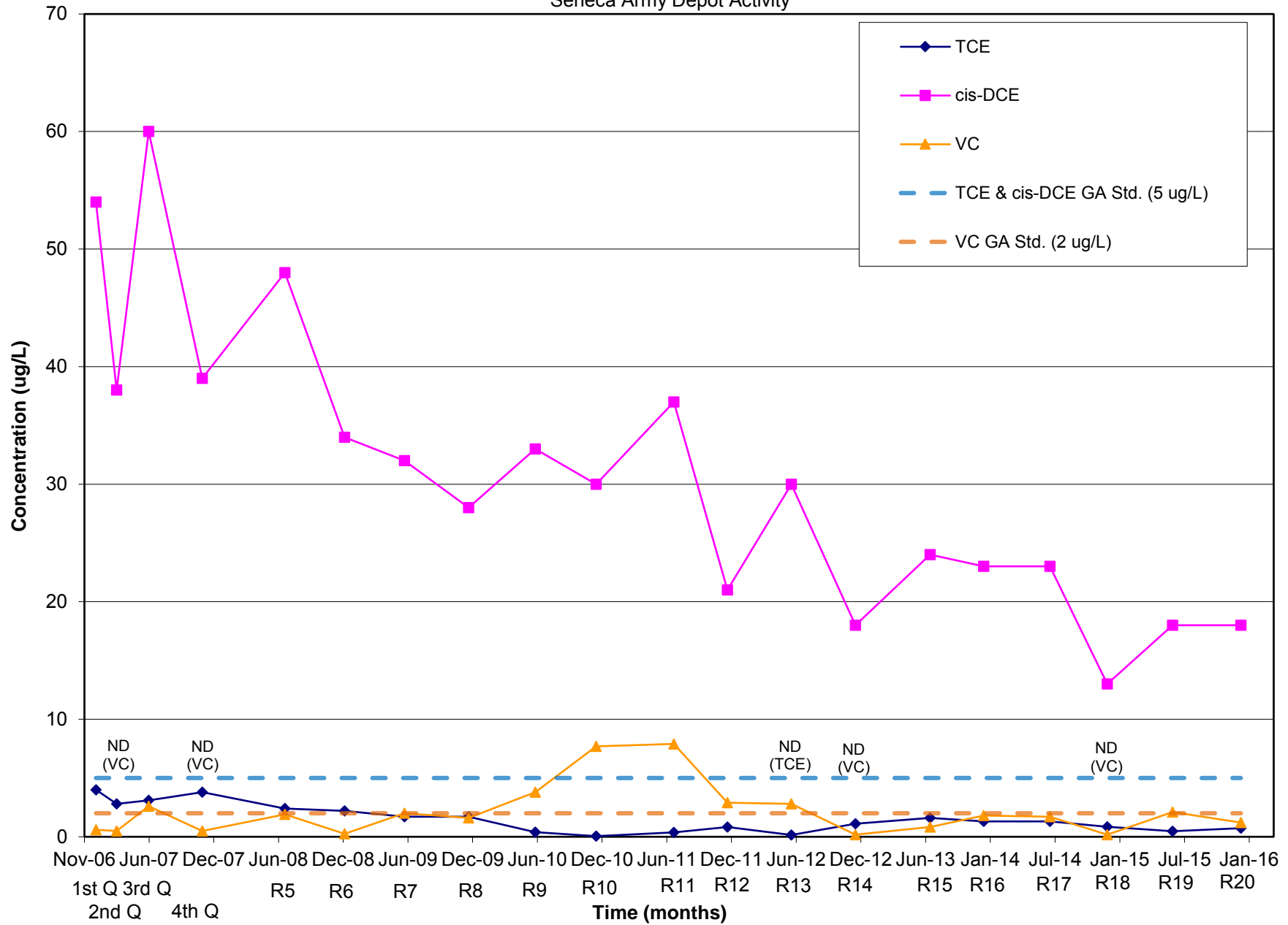
Round 4, Round 10, Round 12, Round 14, Round 17 and Round 20 data is the average of the sample and its duplicate.
 ND = not detected.

Figure 10I
 Concentrations of Chlorinated Organics Over Time at MWT-24
 Ash Landfill Annual Report
 Seneca Army Depot Activity



cis-DCE concentration in Quarter 1 was 210 ug/L.
 ND = not detected.

Figure 10J
 Concentrations of Chlorinated Organics Over Time at PT-24
 Ash Landfill Annual Report
 Seneca Army Depot Activity



ND = not detected.

Figure 11A
 Historic Concentrations of Chlorinated Organics at PT-18A
 Ash Landfill Annual Report
 Seneca Army Depot Activity

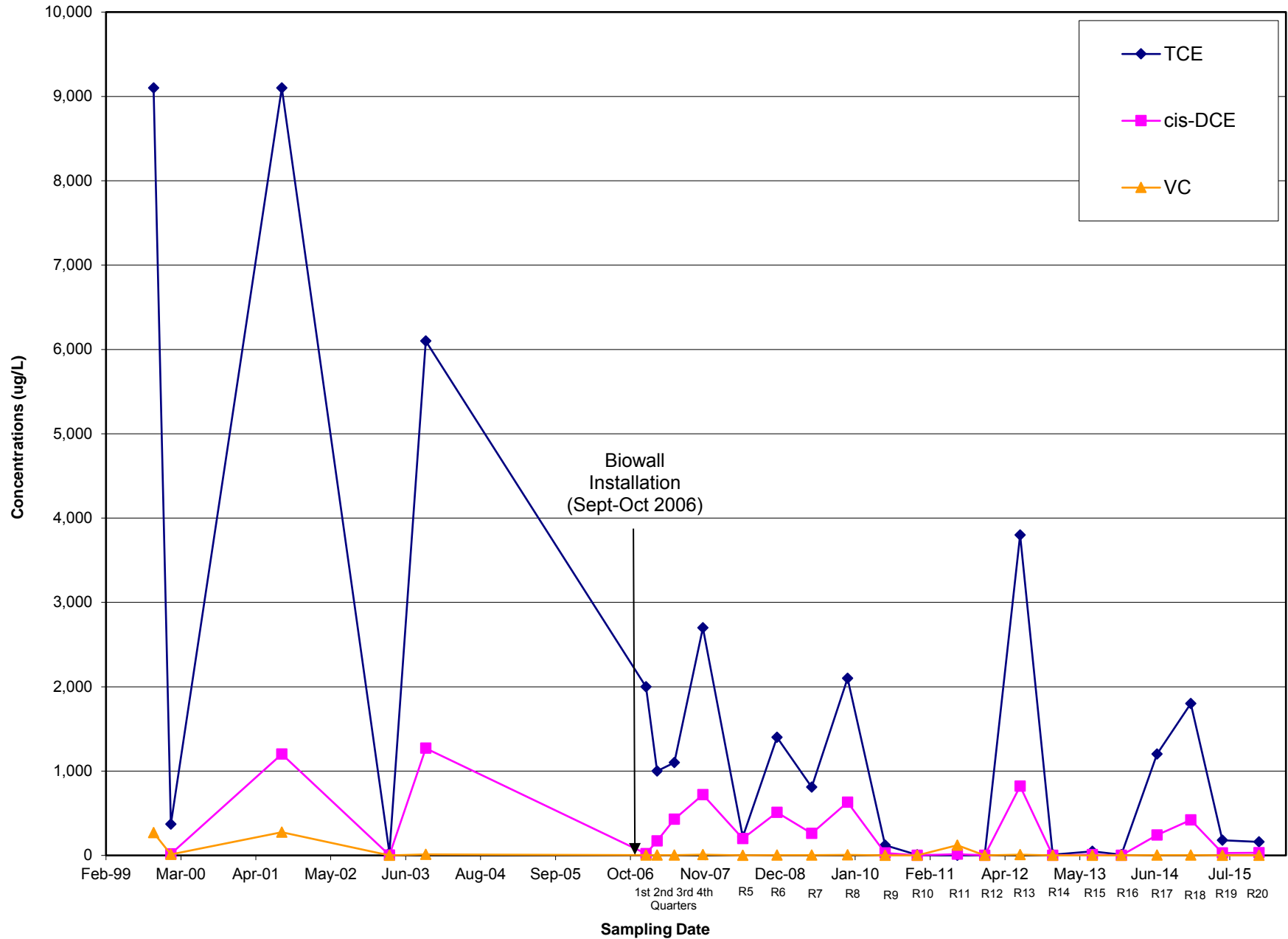


Figure 11B
 Historic Concentrations of Chlorinated Organics at PT-17
 Ash Landfill Annual Report
 Seneca Army Depot Activity

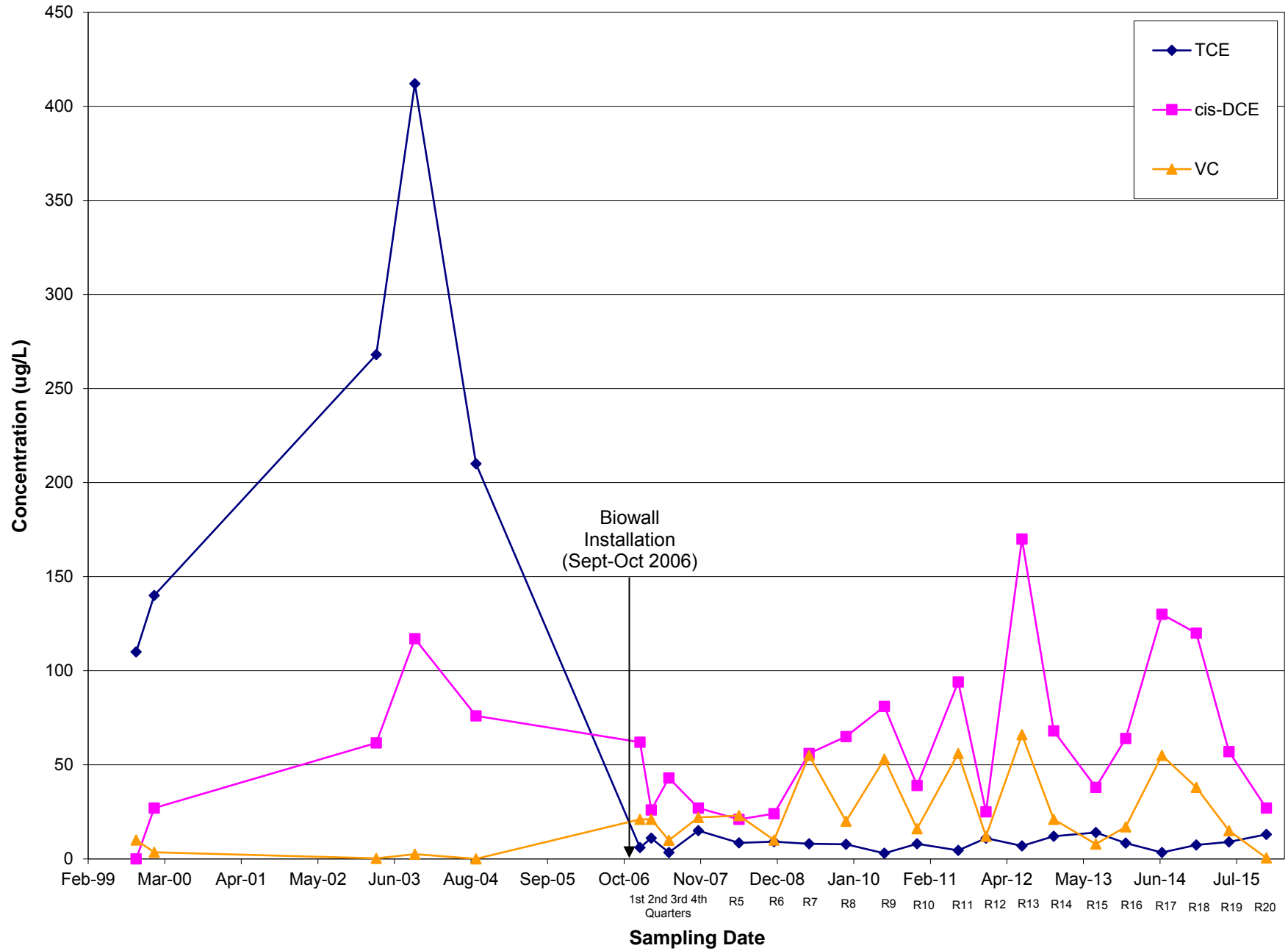
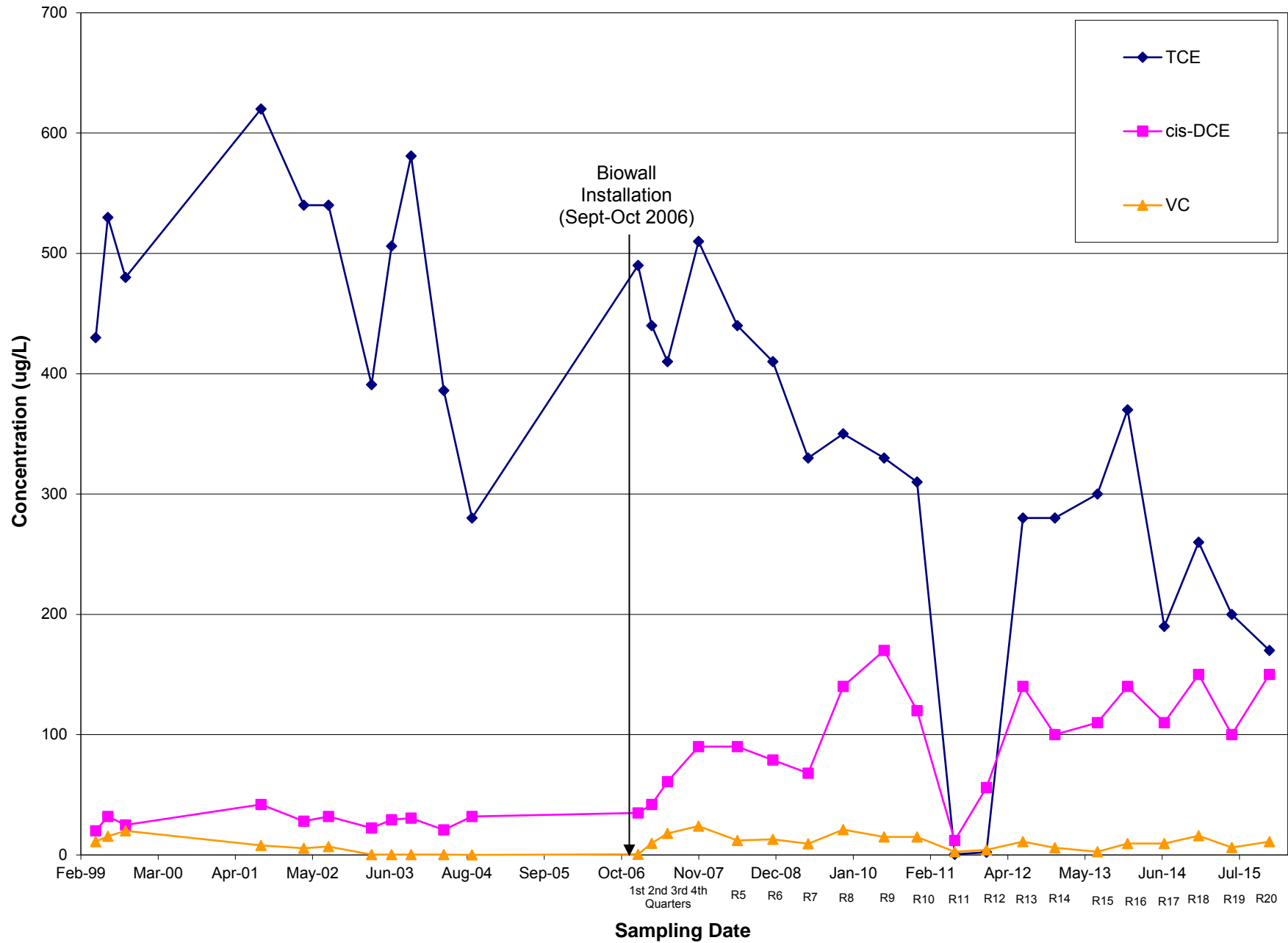
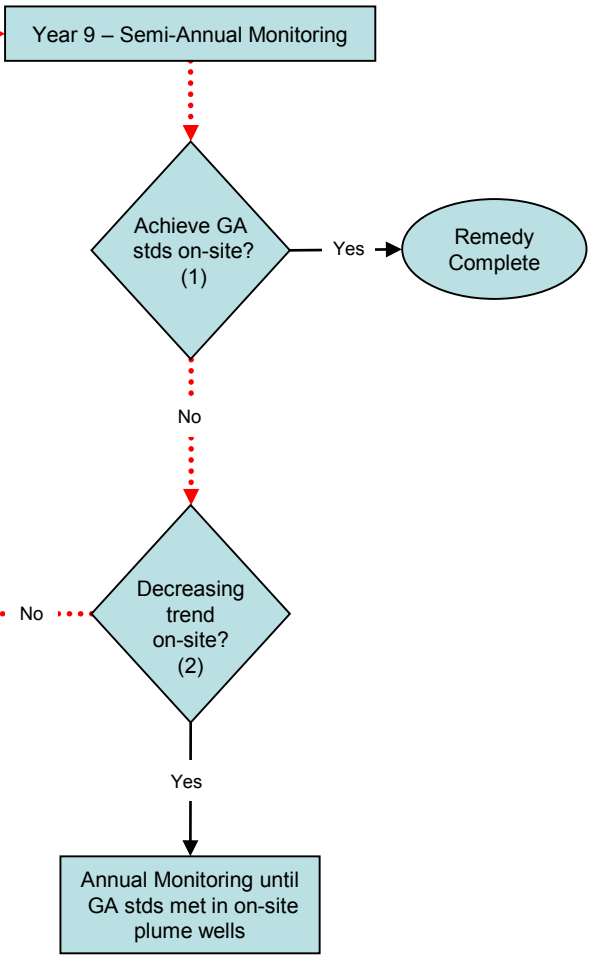


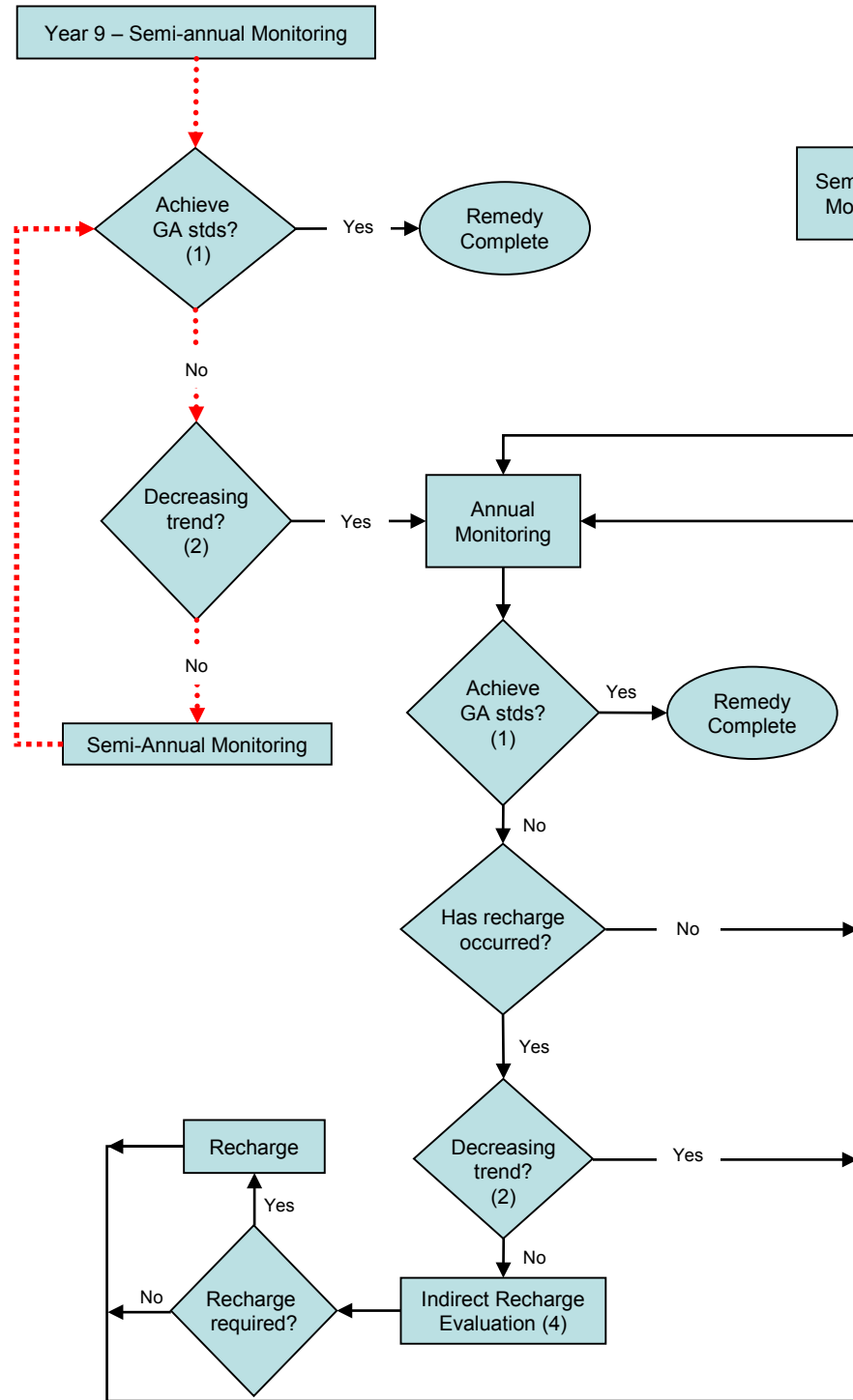
Figure 11C
 Historic Concentrations of Chlorinated Organics at MWT-7
 Ash Landfill Annual Report
 Seneca Army Depot Activity



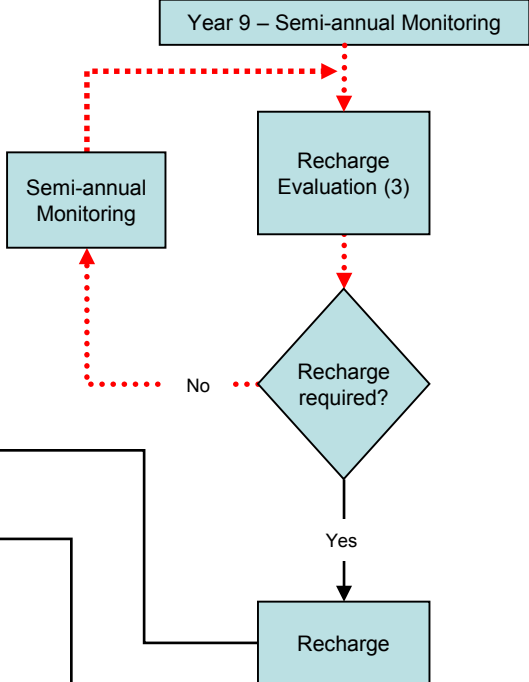
OFF-SITE PERFORMANCE MONITORING WELL (MW-56)



ON-SITE PLUME PERFORMANCE MONITORING WELLS (PT-17, PT-18, PT-22, PT-24, MWT-7, MWT-22, MWT-24, MWT-25.)



BIOWALL PROCESS WELLS (MWT-26, MWT-27, MWT-28, MWT-29, MWT-23)



←····· Current selected path

SEE SHEET 2 FOR NOTES

NOTES:

1. Achieving GA Stds: The condition of achieving GA standards applies to achieving groundwater standards for all COCs in all of the On-Site Plume Wells. If GA standards are achieved in the On-Site Plume Wells for two successive monitoring events, then the remedy is complete and no further monitoring is required at the site.

2. Decreasing Trend: After each year of sampling, the Army will review the results to determine if the chemical concentrations of the COCs are increasing, decreasing, or are unchanged. Graphical and statistical analyses will be used as the basis for this determination. For example, data points will be plotted and a best fit line (linear regression) will be graphed. The slope of the best fit line is representative of the trend in concentration; a negative slope indicates a decreasing trend in COC concentrations. A decreasing COC trend indicates that the potential for contaminants to migrate and negatively impact groundwater further downgradient is decreasing, and that the plume is being effectively managed by the remedy. Any evaluation of trends in contaminant concentrations will take into account that historic data at the Ash Landfill shows that there are seasonal fluctuations in contaminant concentrations. Semi-annual monitoring during wet and dry seasons is appropriate until it is established in which season maximum concentrations are observed. Annual monitoring would occur in the season of maximum concentrations.

3. Recharge Evaluation:

- Determining the need to recharge a biowall segment requires a review of chemical concentrations and geochemical parameters by an experienced professional. A specific, absolute set of conditions or parameter values are not appropriate to determine the need to recharge. Rather, a lines-of-evidence approach will be used that correlates a decrease in the efficiency of the system to degrade chloroethenes to geochemical evidence that indicates the cause is due to substrate depletion.

- The following parameters will be evaluated on an annual basis using at least two consecutive rounds of sampling data in order to determine if recharge of the biowalls is necessary:

- a. COC concentrations in the biowalls. Detected COC concentrations that have increased above Class GA standards in consecutive rounds indicate that recharge may need to be considered. Concentrations within the biowalls, not at downgradient locations, will be used to make this evaluation so that the effectiveness of the wall itself is being measured without the interference of effects such as desorption and mixing.

- b. Geochemical parameters, specifically ORP, TOC, and DO, in the wall. Benchmark values will be used initially to evaluate anaerobic conditions in the groundwater. These benchmarks are:

- ORP < -100 mV
- TOC > 20 mg/L
- DO < 1.0 mg/L

Parameters described in a and b above are intended to be used as guidelines and will be considered in the evaluation if, and when, a depletion of bioavailable organic substrate results in a rebound in geochemical redox conditions under which effective biodegradation does not occur.

4. Indirect Recharge Evaluation: Once the biowalls are recharged the first time, an indirect recharge evaluation will be conducted if an increasing trend in COC concentrations is observed in the plume performance monitoring wells. An increasing trend is a positive slope on the best-fit line, described in *Note 2* above. Three biowall monitoring wells, MWT-27, MWT-28 and MWT-23, will be evaluated. The evaluation will review the chemical and geochemical data and determine if the contaminant increase is a result of poor biowall performance or due to other issues, such as seasonal variations, recent precipitation events, desorption, etc. As stated in *Note 3*, a lines-of-evidence approach will be used to correlate a decrease in the efficiency of the system to degrade chloroethenes with geochemical evidence that indicates the cause is due to substrate depletion. In addition, historical conditions at the other plume performance wells will be reviewed and used by the Army to determine if the carbon source recharge is needed again.

APPENDICES

Appendix A	Field Forms for 19R2015 and 20R2015
Appendix B	Complete Groundwater Data
Appendix C	Regression Plots
Appendix D	Laboratory Reports
Appendix E	Data Validation Sheets
Appendix F	Response to Comments

APPENDIX A
FIELD FORMS FOR 19R2015 and 20R2015

GROUNDWATER ELEVATION REPORT

SENECA ARMY DEPOT ACTIVITY

PARSONS

DATE: 6/2/15

PROJECT: Ash Landfill LTM - Round 19

PROJECT NO: 748662.03300

LOCATION: Seneca Army Depot, Romulus, NY

INSPECTOR: B. Baranek-Olmstead/ S. Dillman

MONITORING EQUIPMENT:

INSTRUMENT	DETECTOR	BGD	TIME	REMARKS

WATER LEVEL INDICATOR:

INSTRUMENT	CORRECTION FACTOR
Pine Heron Dipper-T	

COMMENTS:

Field Entry

Monitoring Well	Historic Well Depth (rel. TOC) (ft)	Field Entry		Saturated thickness (ft)	Time at Check (military)	Well Condition (Fair / Bad) [circle]	Well Status / Comments (Lock?, Well #?, Surface Disturbance?, Riser marked?, Condition of riser, concrete, protective casing, etc.)
		Depth to Water (rel. TOC) (ft)	Well Depth (rel. TOC) (ft)				
PT-12A	12.62	6.22	12.61	0.00	1609	F / B	locked, no well cap
PT-16	11.00	3.18	11.02	0.00	1526	F / B	lock can't close
PT-17	7.52	3.48	7.49	0.00	1451	F / B	broken flush mount cover
PT-18A	12.78	8.10	12.78	0.00	1620	F / B	locked
PT-19	11.63	4.24	11.65	0.00	1411	F / B	locked, deep in woods, tough
* PT-20	11.63	6.86	11.75	0.00	1550	F / B	lock rusty
PT-22	11.90	8.21	11.92	0.00	1600	F / B	lock
PT-24	11.86	4.94	11.86	0.00	1512	F / B	locked ants
MW-27	10.48	6.22	10.45	0.00	1524	F / B	locked tree around well
* MW-29	10.37	5.34	10.45	0.00	1506	F / B	locked PVC lifted into lid
MW-32	10.37	6.84	10.37	0.00	1419	F / B	locked
MW-39	11.90	1.73	11.90	0.00	1428	F / B	lid being rusted off
MW-40	14.68	5.06	14.65	0.00	1618	F / B	locked
* MW-44A	12.41	5.65	12.43	0.00	1434	F / B	tree grown up around well, locked
MW-46	11.43	4.00	11.53	0.00	1443	F / B	tree grown up around well, locked
* MW-48	11.38	5.73	11.42	0.00	1439	F / B	locked, no well cap
MW-56	6.48	3.45	6.49	0.00	1537	F / B	ASB5 tube gone
* MW-60	10.20	2.39	10.05	0.00	1400	F / B	lock & mouse nest, bees
MWT-1	10.09	4.60	10.07	0.00	1515	F / B	locked
MWT-3	10.08	5.06	10.07	0.00	1516	F / B	locked
MWT-4	12.45	4.83	12.45	0.00	1507	F / B	locked
MWT-6	12.45	5.66	12.42	0.00	1508	F / B	locked
MWT-7	13.66	5.52	13.64	0.00	1454	F / B	locked
* MWT-9	13.98	6.13	14.11	0.00	1456	F / B	locked, tree around it
MWT-10	8.97	3.74	8.97	0.00	1520	F / B	locked
MWT-17R	11.38	7.21	11.32	0.00	1602	F / B	no well cap, no lock, 5' off bottom
MWT-22	14.83	7.33	14.83	0.00	1603	F / B	no lock, stick up only
* MWT-23	13.65	8.51	13.66	0.00	1553	F / B	locked, balloods pushed over
MWT-24	12.91	7.06	12.93	0.00	1528	F / B	locked, PVC lifted into lid, can't close
MWT-25	13.16	6.84	13.16	0.00	1622	F / B	locked
MWT-26	13.13	6.51	13.16	0.00	1614	F / B	locked
MWT-27	12.70	7.32	12.74	0.00	1612	F / B	locked
MWT-28	12.79	7.43	12.78	0.00	1607	F / B	locked
* MWT-29	12.99	7.89	13.06	0.00	1605	F / B	locked

SAMPLING RECORD - GROUNDWATER									
SENECA ARMY DEPOT ACTIVITY				PARSONS			WELL #: PT-17		
PROJECT: Ash Landfill LTM Groundwater Sampling - Round 19						DATE: 6/5/15		INSPECTORS: BBO	
LOCATION: ROMULUS, NY						PUMP #: 10707		SAMPLE ID #: ALBW20327	
WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)									
TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND (FROM)		GROUND / SITE SURFACE CONDITIONS	MONITORING		
				VELOCITY (APPRX)	DIRECTION (0 - 360)		INSTRUMENT		DETECTOR
712	64	Sunny		5-10	S→N	grassy	OVM-580		PID
WELL VOLUME CALCULATION FACTORS						ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]			
DIAMETER (INCHES):		0.25	1	2	3	4	6		
GALLONS / FOOT:		0.0026	0.041	0.163	0.367	0.654	1.47		
LITERS/FOOT		0.010	0.151	0.617	1.389	2.475	5.564	1 well vol = 0.57 gal, 3 well = 1.71 gal	
HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)		DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND		
	7.49'								
DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)		Pump in well DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME			
			4.0						
RADIATION SCREENING DATA		PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)					
MONITORING DATA COLLECTED DURING PURGING OPERATIONS									
TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
920	401	YSI 9	Pump in the well						
921		Pump started							
930	4.05		0	0.11	11.3	0.797	7.10	222	1.23
935	4.03	164		0.08	11.3	0.793	7.06	169	0.88
940	4.05			0.07	11.3	0.790	7.07	124	0.48
945	4.05	162		0.06	11.3	0.787	7.07	89	0.37
950	4.05			0.13	11.4	0.783	7.08	71	0.44
955	4.05		~1.0 gal	0.14	11.4	0.782	7.07	65	0.45
1000	"	160		0.15	11.4	0.782	7.06	61	0.38
1005	"			0.14	11.5	0.782	7.08	58	0.37
1010	"		~1.75 gals	0.20	11.5	0.782	7.08	53	0.45
1015	"	156		0.21	11.5	0.782	7.08	50	0.30
1020	"			0.19	11.5	0.782	7.08	47	0.44
1025	"		~2.25 gals	0.26	11.5	0.781	7.08	45	0.33
1030	"		~2.5	0.22	11.5	0.780	7.09	40	0.46
			Total purge 2.75						
1041		Sample collected				Collected bottles	3x VOAs for VOC 3x VOA for MEE 3x VOA for TOC 1x 125ml plastic for Sulfate		
		Hech Test	Fe ⁺ : 0.05 mg/L Mn ⁺ : 5.9 mg/L						

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: <u>PT-18A</u>
PROJECT: <u>Ash Landfill LTM Groundwater Sampling - Round 19</u>		DATE: <u>6/6/15</u>
LOCATION: <u>ROMULUS, NY</u>		INSPECTORS: <u>BBO</u>
		PUMP #: <u>9500 8595</u>

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)						GROUND / SITE SURFACE CONDITIONS	MONITORING	
TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	(FROM) DIRECTION (0 - 360)		INSTRUMENT	DETECTOR
1200	59	sunny		5-15	WSE	grassy	OVM-580	PID
				N-25	overnight rain			

WELL VOLUME CALCULATION FACTORS						ONE WELL VOLUME (GAL) = ((POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT))	
DIAMETER (INCHES):	0.25	1	2	3	4	6	1 well vol = 0.73 gal, 3x well = 2.18 gals
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47	
LITERS / FOOT:	0.010	0.151	0.617	1.389	2.475	5.564	

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
		12.76'				
DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME	
		8.3'				
RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)			

MONITORING DATA COLLECTED DURING PURGING OPERATIONS									
TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1209	8.07	YST 9	Pump in well						
1210			Pump Started						
1212			Stopped pump, DO spiked to 4.0+ mg/L, pull pump up to check for air leaks.						
			→ air leaking from top of pump head, could be internal O-Ring, replacing pump w/ # 8595						
1221			restarted pump						
1230	8.46	104		0.59	10.8	1.45	6.90	31	59.5
1235	8.55	108		0.67	10.6	1.43	6.74	55	55.1
1240	8.68	110		0.78	10.6	1.42	6.71	69	40.7
1245	8.74		~ 0.5 gals	0.67	10.6	1.41	6.70	78	24.8
1250	8.83	120		0.57	10.5	1.42	6.70	85	10.5
1255	9.08			0.62	10.5	1.42	6.69	90	6.0
1300	9.12	108	~ 1.0 gal	0.69	10.4	1.42	6.69	95	5.38
1305	9.18			0.61	10.3	1.42	6.68	99	3.34
1310	9.24	108	~ 1.25 gals	0.77	10.2	1.42	6.68	105	2.60
1315	9.29			0.66	10.2	1.41	6.67	110	1.65
1320	9.36	104	~ 1.5 gals	0.66	10.1	1.42	6.67	113	1.80
1325	9.41			0.63	10.1	1.41	6.67	116	1.50
1330	9.45		~ 1.75 gals	0.64	10.1	1.41	6.67	119	1.29
1335	9.48		~ 2.0 gals	0.67	10.0	1.40	6.66	121	1.10

1343 Samples Collected, 3x VOAs for VOC

GW SAMPLING RECORD

SAMPLING RECORD - GROUNDWATER										
SENECA ARMY DEPOT ACTIVITY				PARSONS			WELL #: PT22			
PROJECT: Ash Landfill LTM Groundwater Sampling - Round 19						DATE: 6/6/15				
LOCATION: ROMULUS, NY						INSPECTORS: Dillman				
						PUMP #: 16240				
WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)						SAMPLE ID #: ALBW 20329				
TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND (FROM)		GROUND / SITE SURFACE CONDITIONS	MONITORING			
				VELOCITY (APPRX)	DIRECTION (0 - 360)		INSTRUMENT	DETECTOR		
							OVM-580	PID		
WELL VOLUME CALCULATION FACTORS						ONE WELL VOLUME (GAL) = ((POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT))				
DIAMETER (INCHES):		0.25	1	2	3	4	6			
GALLONS / FOOT:		0.0026	0.041	0.163	0.367	0.654	1.47			
LITERS / FOOT:		0.010	0.151	0.617	1.389	2.475	5.564			
HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)		DEPTH TO TOP OF SCREEN (TOC)		SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND		
	11.90									
DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)		DEPTH TO STATIC WATER LEVEL (TOC)		DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME			
			8.50							
RADIATION SCREENING DATA		PUMP PRIOR TO SAMPLING (cps)			PUMP AFTER SAMPLING (cps)					
MONITORING DATA COLLECTED DURING PURGING OPERATIONS										
TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (µmhos/cm)	pH	ORP (mV)	TURBIDITY (NTU)	
246	8.50		Start Pump	45185	3217	Horiba US	7.02	121	HACH 2100P 15613	
255	8.71	130		0.43	10.1	1.07	7.07	34		
300	8.78	110		0.30	10.1	1.07	7.03	53	2.53	
305	8.75	110		0.21	10.0	1.07	7.03	70	1.65	
310	8.76	110		0.17	10.0	1.08	7.04	85	1.06	
315	8.77	110		0.13	10.0	1.08	7.03	96	0.99	
320	8.77	108	1 gal	0.12	10.0	1.08	7.03	104	0.90	
325	8.77	108		0.11	10.0	1.09	7.03	112	0.98	
330	8.78	108		0.11	10.0	1.09	7.03	113	0.79	
335	8.78	108		0.11	10.0	1.09	7.02	116	0.68	
340	8.78	108		0.11	10.0	1.09	7.03	118	0.61	
345	8.79	110		0.11	10.0	1.09	7.03	119	0.60	
350	8.79	110		0.11	10.0	1.09	7.02	120	0.61	
355	8.79	110	2.75	0.11	10.0	1.09	7.02	121	0.59	
Collect Sample for				VOCs		at		1600		

GW SAMPLING RECORD

SAMPLING RECORD - GROUNDWATER									
SENECA ARMY DEPOT ACTIVITY				PARSONS			WELL #: <u>PT-24</u>		
PROJECT: <u>Ash Landfill LTM Groundwater Sampling - Round 19</u>						DATE: <u>6/6/15</u>			
LOCATION: <u>ROMULUS, NY</u>						INSPECTORS: <u>Dillman</u>			
						PUMP #: <u>16362</u>			
WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)									
TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND (FROM)		GROUND / SITE SURFACE CONDITIONS	MONITORING		
				VELOCITY (APPRX)	DIRECTION (0 - 360)		INSTRUMENT	DETECTOR	
							OVM-580	PID	
WELL VOLUME CALCULATION FACTORS						ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]			
DIAMETER (INCHES):		0.25	1	2	3	4	6		
GALLONS / FOOT:		0.0026	0.041	0.163	0.367	0.654	1.47		
LITERS / FOOT		0.010	0.151	0.617	1.389	2.475	5.564		
HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)		DEPTH TO TOP OF SCREEN (TOC)		SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND	
	10.51								
DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)		DEPTH TO STATIC WATER LEVEL (TOC)		DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME		
RADIATION SCREENING DATA		PUMP PRIOR TO SAMPLING (cps)			PUMP AFTER SAMPLING (cps)				
MONITORING DATA COLLECTED DURING PURGING OPERATIONS									
TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
496	496	57m +	Pump at 12:20	45E8	32.17	Horiba US2	025213		1400 2100p 15613
1225	210	→		0.36	10.0	0.772	7.31	-77	
1230	115	115		0.32	10.3	0.771	7.34	-88	36.3
1235	4.98	115		0.28	10.4	0.736	7.37	-76	15.2
1240	4.98	115		0.20	10.4	0.737	7.35	-61	8.12
1245	4.98	118		0.14	10.4	0.733	7.34	-39	4.91
1250	4.98	118		0.12	10.4	0.736	7.33	-29	1.98
1255	4.99	118		6.11	10.4	0.738	7.35	-19	1.50
100	4.99	110		0.09	10.4	0.741	7.34	-12	1.23
105	4.99	110	1.5 gal	0.08	10.4	0.743	7.32	-7	0.96
110	4.99	106		0.07	10.4	0.743	7.32	-3	0.99
115	4.99	106		0.07	10.4	0.744	7.32	-1	0.93
120	4.99	112		0.06	10.4	0.746	7.31	3	0.84
125	4.99	112		0.06	10.5	0.747	7.31	4	0.83
130	4.99	112		0.05	10.5	0.747	7.32	4	0.67
135	4.99	112	2.5 gal	0.05	10.4	0.747	7.32	6	0.84
140	4.99	112		0.04	10.4	0.748	7.31	6	1.06
145	4.99	112	3 gal	0.04	10.4	0.748	7.31	6	0.69
1350			collect sample						

GW SAMPLING RECORD

SAMPLING RECORD - GROUNDWATER									
SENECA ARMY DEPOT ACTIVITY				PARSONS			WELL #: MW-40		
PROJECT: Ash Landfill LTM Groundwater Sampling - Round 19						DATE: BBO			
LOCATION: ROMULUS, NY						INSPECTORS: G/G/15			
WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)						PUMP #: Parson Peristaltic			
TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND (FROM)		GROUND / SITE SURFACE CONDITIONS	SAMPLE ID #: ALBW20342		
				VELOCITY (APPRX)	DIRECTION (0 - 360)				
1408	70s	Sunny		5-15	N→S	grassy	MONITORING		
						overnight rain			
							OVM-580	PID	
WELL VOLUME CALCULATION FACTORS						ONE WELL VOLUME (GAL) = ((POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT))			
DIAMETER (INCHES): 0.25 1 2 3 4 6						1 well vol = 1.51 gal, 3 x wells = 4.52 gals			
GALLONS / FOOT: 0.0026 0.041 0.163 0.367 0.654 1.47									
LITERS / FOOT: 0.010 0.151 0.617 1.389 2.475 5.564									
HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)		DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY		WELL DEVELOPMENT pH		WELL DEVELOPMENT SPEC. COND
	14.65								
DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)		DEPTH TO STATIC WATER LEVEL (TOC)		DEPTH TO STABILIZED WATER LEVEL (TOC)		DEPTH TO PUMP INTAKE (TOC)		PUMPING START TIME
			5.4'						
RADIATION SCREENING DATA			PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)				
MONITORING DATA COLLECTED DURING PURGING OPERATIONS									
TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1416	5.28	YST	3 Tubing to well						
1416			Peristaltic pump started						
1440	9.6		Peristaltic pump purged 3 well volumes, well now start collect GeoParsons						
1445	9.55	190	4.75 gals	0.15	7.7	0.583	7.37	54	2.43
1450	"			0.17	7.6	0.586	7.17	69	1.13
1455	1.57		5.0 gals	0.19	7.5	0.587	7.14	75	0.95
1500	9.60	200		0.23	7.5	0.588	7.12	79	0.64
1505	9.63		5.5 gals	0.29	7.4	0.590	7.10	82	0.48
1510	9.66			0.16	7.4	0.590	7.09	84	0.46
1515	9.68		6.25 gals	0.14	7.5	0.588	7.08	87	1.51
1520	9.70		6.5 gals	0.14	7.4	0.588	7.06	89	0.72
1524			Sample Collected Hach Fe & Mn Test only						
			Fe+: 0.13 mg/L						
			Mn+: 1.7 mg/L						

2000

SAMPLING RECORD - GROUNDWATER MW-56

SENECA ARMY DEPOT ACTIVITY PARSONS WELL #: 6/6/15

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 19 DATE: 6/6/15
 LOCATION: ROMULUS, NY INSPECTORS: BBO/SD
PUMP #: 15203

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND (FROM)		GROUND / SITE SURFACE CONDITIONS
				VELOCITY (APPRX)	DIRECTION (0 - 360)	
923	57	Sunny Sky Partly cloudy		5-15	W-NE	overcast
				N-75	near	rain

SAMPLE ID #: ALBW20335
MONITORING
 INSTRUMENT: OVM-580 DETECTOR: PID

WELL VOLUME CALCULATION FACTORS							ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]	
DIAMETER (INCHES):	0.25	1	2	3	4	6		
GALLONS/FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47		
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564		

1 well vol = 0.51 gal, 3 well = 1.525 gals

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
		6.49'				
DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME	
			3.39'			
RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)			

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
927	3.39	YSI?	Pump in Well	YSI	15.1	Hardly			High
938	3.34	Pump	Started						
943	3.6	220		1.03	14.8	0.489	6.49	-14	126
948	3.60	120		0.24	14.7	0.456	6.40	-69	70.9
953	"	108		0.25	14.7	0.431	6.36	-73	31.6
958	"	100		0.25	14.8	0.419	6.38	-79	20.3
1003	3.62			0.41	14.8	0.420	6.37	-83	17.9
1008	"	104		0.46	14.7	0.429	6.40	-90	19.2
1013	3.63			0.45	14.7	0.444	6.40	-94	18.8
1018	"			0.39	14.7	0.463	6.43	-99	15.7
1023	"	95	0.75 gal	0.40	14.7	0.481	6.44	-104	13.1
1028	"			0.45	14.8	0.503	6.47	-108	11.7
1033	3.64		1.0 gal	0.47	14.7	0.515	6.50	-111	12.1
1038	"			0.55	14.7	0.532	6.51	-115	10.8
1043	"			0.48	14.6	0.540	6.55	-117	12.9
1048			~1.5 gals	0.53	14.6	0.555	6.54	-119	12.9
			Total Purse 1.75 gals						
1100			Sample collected	3 x VOCs	Per	VOCs			

GW SAMPLING RECORD

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY		PARSONS			WELL #: <u>MWT-7</u>		
PROJECT: <u>Ash Landfill LTM Groundwater Sampling - Round 19</u>				DATE: <u>6/5/15</u>			
LOCATION: <u>ROMULUS, NY</u>				INSPECTORS: <u>BBO</u>			
				PUMP #: <u>11284</u>			
WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)							
TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND (FROM)		GROUND / SITE SURFACE CONDITIONS	
				VELOCITY (APPRX)	DIRECTION (0 - 360)		
<u>1117</u>	<u>~70</u>	<u>scattered clouds</u>		<u>5-10</u>	<u>S-N</u>	<u>grassy</u>	
SAMPLE ID #: <u>ALBCW20331</u>							
MONITORING							
INSTRUMENT			DETECTOR				
OVM-580			PID				
WELL VOLUME CALCULATION FACTORS				ONE WELL VOLUME (GAL) = ((POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT))			
DIAMETER (INCHES):		0.25	1	2	3	4	6
GALLONS / FOOT:		0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT		0.010	0.151	0.617	1.389	2.475	5.564
				<u>1 well vol = 1.34 gal, 3 wells = 4.02 gals</u>			
HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)		DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	<u>13.64'</u>						
DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)		DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME	
			<u>5.42'</u>				
RADIATION SCREENING DATA		PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)			

MONITORING DATA COLLECTED DURING PURGING OPERATIONS									
TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
<u>1130</u>	<u>5.34</u>	<u>YSI 2</u>	<u>Pump in well</u>	<u>YSI</u>	<u>YSI</u>	<u>Hariba</u>	<u>—————></u>	<u>—————></u>	<u>High</u>
<u>1130</u>		<u>Pump Started</u>							
<u>1143</u>	<u>5.50</u>	<u>70</u>		<u>0.10</u>	<u>9.2</u>	<u>0.801</u>	<u>7.19</u>	<u>-67</u>	<u>1.16</u>
<u>1148</u>	<u>5.53</u>	<u>116</u>		<u>0.11</u>	<u>9.1</u>	<u>0.810</u>	<u>7.16</u>	<u>-64</u>	<u>0.89</u>
<u>1153</u>	<u>"</u>			<u>0.10</u>	<u>9.1</u>	<u>0.805</u>	<u>7.14</u>	<u>-56</u>	<u>1.19</u>
<u>1158</u>	<u>"</u>	<u>114</u>		<u>0.11</u>	<u>9.1</u>	<u>0.804</u>	<u>7.13</u>	<u>-41</u>	<u>0.97</u>
<u>1203</u>	<u>"</u>		<u>~0.5 gals</u>	<u>0.11</u>	<u>9.0</u>	<u>0.800</u>	<u>7.12</u>	<u>-29</u>	<u>1.02</u>
<u>1208</u>	<u>5.51</u>			<u>0.12</u>	<u>9.0</u>	<u>0.799</u>	<u>7.11</u>	<u>-19</u>	<u>0.87</u>
<u>1213</u>	<u>"</u>	<u>110</u>		<u>0.12</u>	<u>9.0</u>	<u>0.798</u>	<u>7.11</u>	<u>-9</u>	<u>1.36</u>
<u>1218</u>	<u>1318</u>	<u>"</u>	<u>~1.0 gals</u>	<u>0.10</u>	<u>9.0</u>	<u>0.799</u>	<u>7.12</u>	<u>-1</u>	<u>0.92</u>
<u>1223</u>	<u>1323</u>	<u>"</u>		<u>0.10</u>	<u>9.0</u>	<u>0.798</u>	<u>7.12</u>	<u>4</u>	<u>0.72</u>
<u>1228</u>	<u>1328</u>	<u>"</u>	<u>~1.25 gals</u>	<u>0.09</u>	<u>9.0</u>	<u>0.799</u>	<u>7.11</u>	<u>9</u>	<u>0.71</u>
<u>1233</u>	<u>1333</u>	<u>"</u>		<u>0.11</u>	<u>9.0</u>	<u>0.798</u>	<u>7.11</u>	<u>14</u>	<u>0.54</u>
<u>1238</u>	<u>1338</u>	<u>"</u>		<u>0.10</u>	<u>9.0</u>	<u>0.798</u>	<u>7.11</u>	<u>20</u>	<u>0.68</u>
<u>1243</u>	<u>1343</u>	<u>"</u>	<u>~1.75 gals</u>	<u>0.10</u>	<u>9.0</u>	<u>0.798</u>	<u>7.12</u>	<u>21</u>	<u>1.02</u>
<u>1248</u>	<u>1348</u>	<u>"</u>		<u>0.08</u>	<u>9.0</u>	<u>0.796</u>	<u>7.13</u>	<u>25</u>	<u>—</u>
<u>1253</u>	<u>1353</u>	<u>"</u>		<u>0.09</u>	<u>9.0</u>	<u>0.797</u>	<u>7.13</u>	<u>26</u>	<u>0.47</u>
<u>1258</u>	<u>1358</u>	<u>"</u>		<u>0.08</u>	<u>8.9</u>	<u>0.803</u>	<u>7.14</u>	<u>28</u>	<u>0.44</u>
<u>1303</u>	<u>1403</u>	<u>"</u>	<u>~2.5 gals</u>	<u>0.08</u>	<u>8.9</u>	<u>0.798</u>	<u>7.14</u>	<u>30</u>	<u>0.25</u>
<u>1308</u>									
<u>1408</u>	<u>Samples Collected</u>								

120
 6/5/15
 1218
 1223
 1228
 1233
 1238
 1243
 1248
 1253
 1258
 1303
 High Test

Fe⁺: 0.30 mg/L
 Mn⁺: 0.7 mg/L

Collected Bottles 3x VOAs for VOC
 3x VOAs for MEH
 3x Amber VOAs for TOC 5/27/2015
 1x 125ml Plastic for Sulfate

GW SAMPLING RECORD

SAMPLING RECORD - GROUNDWATER									
SENECA ARMY DEPOT ACTIVITY				PARSONS			WELL #: <u>MWT-22</u>		
PROJECT: <u>Ash Landfill LTM Groundwater Sampling - Round 19</u>						DATE: <u>6/5/15</u>		INSPECTORS: <u>D. Illman</u>	
LOCATION: <u>ROMULUS, NY</u>						PUMP #: <u>15203</u>		SAMPLE ID #: <u>ALBW20332</u>	
WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)						MONITORING			
TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND (FROM)		GROUND / SITE SURFACE CONDITIONS	INSTRUMENT		DETECTOR
				VELOCITY (APPRX)	DIRECTION (0 - 360)		OVM-580	PID	
WELL VOLUME CALCULATION FACTORS						ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]			
DIAMETER (INCHES):		0.25	1	2	3	4	6		
GALLONS / FOOT:		0.0026	0.041	0.163	0.367	0.654	1.47		
LITERS/FOOT		0.010	0.151	0.617	1.389	2.475	5.564		
HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)		DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND		
	14.84								
DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)		DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME			
			7.41						
RADIATION SCREENING DATA		PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)					
MONITORING DATA COLLECTED DURING PURGING OPERATIONS									
TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND. (umhos) $\mu S/cm$	pH	ORP (mV)	TURBIDITY (NTU)
9:25	6.93	Start pump		9.40	9.2	1.46	6.70	-53	MACH 2100A 15.613
9:45	8.35	200		0.16	9.2	1.46	6.68	-52	
9:50	8.35			0.15	9.2	1.46	6.78	-57	
9:55	8.58	85		0.20	9.3	1.56	6.78	-48	
10:00	9.18	95		0.49	9.5	1.54	6.77	-42	
10:05	9.50	95		0.54	9.5	1.54	6.77	-38	
10:10	10.05	95		0.38	9.6	1.52	6.78	-34	23.4
10:15	10.20	95		0.42	9.6	1.50	6.84	-34	25.4
10:20	10.34	95		0.32	9.6	1.48	6.78	-35	22.7
10:30	10.30	90		0.60	9.5	1.47	6.78	-35	20.8
10:35	10.35	90		0.65	9.4	1.48	6.77	-27	16.7
10:40	10.36	200		0.53	9.5	1.49	6.79	-27	13.1
10:45	10.53	125	1.9 gal	0.57	9.5	1.51	6.77	-23	10.0
10:50	10.68	120		0.57	9.5	1.52	6.78	-18	5.80
10:55	10.89	105		0.44	9.4	1.52	6.78	-14	4.36
11:00	11.05	105		0.44	9.3	1.53	6.78	-14	3.97
11:05	11.20	105		0.45	9.3	1.52	6.78	-14	3.46
11:10	11.34	105	2.8 gal						
11:15	Sample for VOCs								

SAMPLING RECORD - GROUNDWATER										
SENECA ARMY DEPOT ACTIVITY				PARSONS			WELL #: <u>MWT-23</u>			
PROJECT: <u>Ash Landfill LTM Groundwater Sampling - Round 19</u>						DATE: <u>6/4/15</u>				
LOCATION: <u>ROMULUS, NY</u>						INSPECTORS: <u>BDO</u>				
WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)						PUMP #: <u>15203</u>				
TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND (FROM)		GROUND / SITE SURFACE CONDITIONS	SAMPLE ID #:			
				VELOCITY (APPRX)	DIRECTION (0 - 360)		<u>ALBW20336</u>			
<u>911</u>	<u>63</u>	<u>Sunny</u>		<u>5-10</u>	<u>W→E</u>	<u>grass</u>	MONITORING			
							INSTRUMENT	DETECTOR		
							OVM-580	PID		
WELL VOLUME CALCULATION FACTORS						ONE WELL VOLUME (GAL) = (POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)				
DIAMETER (INCHES):		0.25	1	2	3	4	6			
GALLONS / FOOT:		0.0026	0.041	0.163	0.367	0.654	1.47			
LITERS / FOOT:		0.010	0.151	0.617	1.389	2.475	5.564			
						<u>1 well vol = 0.86 gal, 3 wells = 2.57 gals</u>				
HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)		DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND			
	<u>13.66'</u>									
DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)		DEPTH TO STATIC WATER LEVEL (TOC)		DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME			
			<u>8.41'</u>							
RADIATION SCREENING DATA		PUMP PRIOR TO SAMPLING (cps)			PUMP AFTER SAMPLING (cps)					
MONITORING DATA COLLECTED DURING PURGING OPERATIONS										
TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)	
<u>922</u>	<u>8.38</u>	<u>YSI</u>	<u>Pump in well</u>	<u>YSI</u>	<u>YSI</u>	<u>Horiba</u>			<u>High</u>	
<u>923</u>		<u>Pump</u>	<u>Started → replaced tubing</u>							
<u>928</u>	<u>8.72</u>	<u>166</u>		<u>0.28</u>	<u>10.1</u>	<u>0.825</u>	<u>7.34</u>	<u>246</u>	<u>19.6</u>	
<u>933</u>	<u>8.69</u>			<u>0.25</u>	<u>9.9</u>	<u>0.803</u>	<u>7.34</u>	<u>243</u>	<u>13.7</u>	
<u>938</u>	<u>8.74</u>	<u>140</u>		<u>0.22</u>	<u>10.0</u>	<u>0.783</u>	<u>7.35</u>	<u>239</u>	<u>9.15</u>	
<u>943</u>	<u>8.68</u>		<u>~0.5 gals</u>	<u>0.21</u>	<u>10.0</u>	<u>0.789</u>	<u>7.38</u>	<u>238</u>	<u>8.31</u>	
<u>948</u>	<u>8.69</u>	<u>~138</u>		<u>0.24</u>	<u>9.9</u>	<u>0.759</u>	<u>7.41</u>	<u>237</u>	<u>7.42</u>	
<u>953</u>	<u>8.69</u>		<u>~1.0 gal</u>	<u>0.25</u>	<u>10.0</u>	<u>0.764</u>	<u>7.43</u>	<u>234</u>	<u>9.17</u>	
<u>958</u>	<u>8.69</u>			<u>0.24</u>	<u>10.0</u>	<u>0.770</u>	<u>7.42</u>	<u>233</u>	<u>6.84</u>	
<u>1003</u>	<u>8.69</u>		<u>~1.5 gals</u>	<u>0.24</u>	<u>10.0</u>	<u>0.768</u>	<u>7.42</u>	<u>231</u>	<u>-</u>	
<u>1010</u>	<u>8.69</u>			<u>0.58</u>	<u>10.0</u>	<u>0.768</u>	<u>7.41</u>	<u>231</u>	<u>6.01</u>	
<u>1015</u>	<u>8.69</u>	<u>128</u>	<u>~1.75 gals</u>	<u>0.48</u>	<u>10.0</u>	<u>0.897</u>	<u>7.40</u>	<u>232</u>	<u>6.15</u>	
<u>1020</u>	<u>8.70</u>			<u>0.57</u>	<u>10.0</u>	<u>0.702</u>	<u>7.36</u>	<u>234</u>	<u>5.27</u>	
<u>1025</u>	<u>8.69</u>		<u>~2.0 gals</u>	<u>0.28</u>	<u>9.7</u>	<u>0.742</u>	<u>7.41</u>	<u>239</u>	<u>4.42</u>	
<u>1030</u>	<u>8.69</u>	<u>112</u>		<u>0.32</u>	<u>9.8</u>	<u>0.721</u>	<u>7.53</u>	<u>240</u>	<u>7.77</u>	
<u>1035</u>	<u>8.69</u>		<u>~2.5 gals</u>	<u>0.26</u>	<u>9.7</u>	<u>0.709</u>	<u>7.54</u>	<u>236</u>	<u>4.03</u>	
<u>1040</u>	<u>8.69</u>	<u>128</u>		<u>0.26</u>	<u>9.8</u>	<u>0.758</u>	<u>7.51</u>	<u>233</u>	<u>3.81</u>	
<u>1045</u>	<u>8.70</u>		<u>~2.75 gals</u>	<u>0.27</u>	<u>9.8</u>	<u>0.742</u>	<u>7.57</u>	<u>230</u>	<u>7.38</u>	
<u>1050</u>	<u>-</u>			<u>0.25</u>	<u>9.8</u>	<u>0.709</u>	<u>7.52</u>	<u>228</u>	<u>4.65</u>	
<u>1100</u>	<u>8.69</u>		<u>~3.25 gals</u>	<u>0.20</u>	<u>9.9</u>	<u>0.733</u>	<u>7.55</u>	<u>224</u>	<u>3.35</u>	

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY			PARSONS			WELL #: <u>MWT-23</u>				
PROJECT: <u>Ash Landfill LTM Groundwater Sampling - Round 19</u>						DATE: <u>6/4/15</u>				
LOCATION: <u>ROMULUS, NY</u>						INSPECTORS: <u>BTO</u>				
WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)						PUMP #: <u>15203</u>				
TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND (FROM)		GROUND / SITE SURFACE CONDITIONS	SAMPLE ID #:			
				VELOCITY (APPRX)	DIRECTION (0 - 360)		<u>ALBW20336</u>			
<u>1103</u>	<u>~65</u>	<u>Sunny</u>		<u>5-10</u>	<u>W-SE</u>	<u>grassy</u>	MONITORING			
							INSTRUMENT		DETECTOR	
							OVM-580		PID	
WELL VOLUME CALCULATION FACTORS						ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]				
DIAMETER (INCHES):		0.25	1	2	3	4	6			
GALLONS / FOOT:		0.0026	0.041	0.163	0.367	0.654	1.47			
LITERS/FOOT		0.010	0.151	0.617	1.389	2.475	5.564			
HISTORIC DATA		DEPTH TO POINT OF WELL (TOC)		DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND		
		<u>13.66'</u>								
DATA COLLECTED AT WELL SITE		PID READING (OPENING WELL)		DEPTH TO STATIC WATER LEVEL (TOC)		DEPTH TO STABILIZED WATER LEVEL (TOC)		DEPTH TO PUMP INTAKE (TOC)		PUMPING START TIME
				<u>8.41'</u>						
RADIATION SCREENING DATA		PUMP PRIOR TO SAMPLING (cps)			PUMP AFTER SAMPLING (cps)					
MONITORING DATA COLLECTED DURING PURGING OPERATIONS										
TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)	
				<u>YSI</u>	<u>YSI</u>	<u>Hanna</u>		<u>2</u>	<u>Hach</u>	
<u>1105</u>	<u>8.69</u>	<u>128</u>	<u>~3.3 gals</u>	<u>0.27</u>	<u>9.7</u>	<u>0.734</u>	<u>7.51</u>	<u>223</u>	<u>2.84</u>	
<u>1110</u>	<u>8.69</u>		<u>~3.5 gals</u>	<u>0.25</u>	<u>9.8</u>	<u>0.739</u>	<u>7.54</u>	<u>222</u>	<u>6.59</u>	
<u>1115</u>	<u>8.69</u>			<u>0.36</u>	<u>9.8</u>	<u>0.699</u>	<u>7.49</u>	<u>222</u>	<u>8.20</u>	
<u>1120</u>	<u>8.69</u>	<u>120</u>	<u>~3.75 gals</u>	<u>0.28</u>	<u>9.6</u>	<u>0.730</u>	<u>7.52</u>	<u>221</u>	<u>7.64</u>	
<u>1125</u>	<u>8.69</u>		<u>~4.0 gals</u>	<u>0.26</u>	<u>9.7</u>	<u>0.744</u>	<u>7.51</u>	<u>221</u>	<u>6.86</u>	
<u>1130</u>	<u>8.69</u>	<u>120</u>		<u>0.28</u>	<u>9.7</u>	<u>0.704</u>	<u>7.51</u>	<u>220</u>	<u>5.96</u>	
<u>1135</u>	<u>8.69</u>		<u>~4.25 gals</u>	<u>0.32</u>	<u>9.7</u>	<u>0.727</u>	<u>7.55</u>	<u>220</u>	<u>5.51</u>	
<u>1140</u>	<u>8.69</u>			<u>0.26</u>	<u>9.7</u>	<u>0.728</u>	<u>7.53</u>	<u>220</u>	<u>5.10</u>	
<u>1145</u>	<u>8.69</u>	<u>110</u>		<u>0.37</u>	<u>9.8</u>	<u>0.665</u>	<u>7.43</u>	<u>220</u>	<u>3.09</u>	
<u>1150</u>	<u>8.69</u>		<u>~4.5 gals</u>	<u>0.25</u>	<u>9.8</u>	<u>0.692</u>	<u>7.48</u>	<u>219</u>	<u>3.26</u>	
<u>1155</u>	<u>-</u>			<u>0.22</u>	<u>9.8</u>	<u>0.670</u>	<u>7.47</u>	<u>219</u>	<u>3.33</u>	
<u>1200</u>	<u>8.69</u>	<u>106</u>	<u>~4.75 gals</u>	<u>0.27</u>	<u>9.7</u>	<u>0.721</u>	<u>7.48</u>	<u>219</u>	<u>2.70</u>	
<u>1205</u>	<u>"</u>			<u>0.28</u>	<u>9.7</u>	<u>0.725</u>	<u>7.46</u>	<u>219</u>	<u>-</u>	
<u>1223</u>	<u>"</u>			<u>0.27</u>	<u>9.5</u>	<u>0.700</u>	<u>7.40</u>	<u>220</u>	<u>-</u>	
<u>1235</u>	<u>8.69</u>	<u>100</u>	<u>5.75 gals</u>	<u>0.17</u>	<u>9.7</u>	<u>0.993</u>	<u>6.49</u>	<u>-72</u>	<u>3.20</u>	
<u>1240</u>	<u>8.69</u>			<u>0.19</u>	<u>9.7</u>	<u>0.989</u>	<u>6.48</u>	<u>-74</u>	<u>4.40</u>	
<u>1245</u>	<u>8.65</u>	<u>104</u>		<u>0.26</u>	<u>9.6</u>	<u>0.986</u>	<u>6.48</u>	<u>-77</u>	<u>2.42</u>	
<u>1250</u>	<u>"</u>		<u>~6.25 gals</u>	<u>0.26</u>	<u>9.5</u>	<u>0.987</u>	<u>6.46</u>	<u>-79</u>	<u>2.83</u>	
<u>1255</u>	<u>"</u>		<u>~6.35</u>	<u>0.24</u>	<u>9.6</u>	<u>0.989</u>	<u>6.46</u>	<u>-80</u>	<u>4.08</u>	
<u>1306</u>	<u>Samples Collected</u>									

Fet: 3.30 mg/L over limit
Mn+: 5.1 mg/L

Filled Bottles: 3x VOA's for VOC
3x VOA's for MEE
3x Amber Vols for TOC
1x 125ml Plastic for Sulfate

Parsons

Hach Test

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY			PARSONS			WELL #: <u>MWT-24</u>			
PROJECT: <u>Ash Landfill LTM Groundwater Sampling - Round 19</u>						DATE: <u>6/5/13</u>			
LOCATION: <u>ROMULUS, NY</u>						INSPECTORS: <u>Dillman</u>			
						PUMP #: <u>14264</u>			
WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)						SAMPLE ID #: <u>ALBW20333</u>			
TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND (FROM)		GROUND / SITE SURFACE CONDITIONS	MONITORING		
				VELOCITY (APPRX)	DIRECTION (0 - 360)		INSTRUMENT	DETECTOR	
							OVM-580	PID	
WELL VOLUME CALCULATION FACTORS						ONE WELL VOLUME (GAL) = ((POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT))			
DIAMETER (INCHES):		0.25	1	2	3	4	6		
GALLONS / FOOT:		0.0026	0.041	0.163	0.367	0.654	1.47		
LITERS/FOOT		0.010	0.151	0.617	1.389	2.475	5.564		
HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)		DEPTH TO TOP OF SCREEN (TOC)		SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND	
	12.93								
DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)		DEPTH TO STATIC WATER LEVEL (TOC)		DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME		
			7.17						
RADIATION SCREENING DATA		PUMP PRIOR TO SAMPLING (cps)			PUMP AFTER SAMPLING (cps)				
MONITORING DATA COLLECTED DURING PURGING OPERATIONS									
TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos/cm)	pH	ORP (mV)	TURBIDITY (NTU)
1232	7.18								
			start pump		9.6	10.2	0.980	7.19	—
1228	7.25			0.10	10.0	0.980	7.19	-43	
1233	7.24	130		0.13	10.2	0.990	7.06	-41	
1238	7.25	98		0.09	10.4	0.981	7.08	-32	50.1
1243	7.25	120		0.09	10.5	0.976	7.08	-13	27.4
1248	7.27	120		0.09	10.5	0.973	7.09	6	20.6
1252	7.27	110		0.09	10.5	0.970	7.10	14	15.7
1258	7.27	110		0.08	10.5	0.972	7.10	24	13.6
1303	7.27	110		0.07	10.5	0.974	7.09	33	11.4
1308	7.27	120		0.06	10.5	0.981	7.09	39	11.2
1313	7.27	122	1.8 gal	0.06	10.5	0.978	7.09	44	9.98
1318	7.27	120		0.06	10.5	0.979	7.08	46	9.50
1323	7.27	120		0.06	10.5	0.981	7.08	47	9.75
1328	7.27	120		0.06	10.5	0.982	7.08	50	9.54
1332	7.27	120		0.06	10.6	0.981	7.08	50	8.79
1338	7.27		2.5	0.06	10.6	0.982	7.08	51	9.35
1350			collected sample for VOCs						

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY			PARSONS			WELL #: <u>MWT-25</u>			
PROJECT: <u>Ash Landfill LTM Groundwater Sampling - Round 19</u>						DATE: <u>6/4/15</u>			
LOCATION: <u>ROMULUS, NY</u>						INSPECTORS: <u>Dillman</u>			
						PUMP #: <u>14261</u>			
WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)						SAMPLE ID #: <u>ALBW20334</u>			
TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND (FROM)		GROUND / SITE SURFACE CONDITIONS	MONITORING		
				VELOCITY (APPRX)	DIRECTION (0 - 360)		INSTRUMENT	DETECTOR	
							OVM-580	PID	
WELL VOLUME CALCULATION FACTORS						ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]			
DIAMETER (INCHES):		0.25	1	2	3	4	6		
GALLONS/FOOT:		0.0026	0.041	0.163	0.367	0.654	1.47		
LITERS/FOOT		0.010	0.151	0.617	1.389	2.475	5.564		
HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)		DEPTH TO TOP OF SCREEN (TOC)		SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND	
	13.21								
DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)		DEPTH TO STATIC WATER LEVEL (TOC)		DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME		
			7.03						
RADIATION SCREENING DATA		PUMP PRIOR TO SAMPLING (cps)			PUMP AFTER SAMPLING (cps)				
MONITORING DATA COLLECTED DURING PURGING OPERATIONS									
TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (µmhos/cm)	pH	ORP (mV)	TURBIDITY (NTU)
2:36	started pump		6.90'	dtw YSI 35 6.12	2	HORIBA U52		25213	MACH 2100P 16547
2:45		120		2.41	10.8	1.29	7.10	15	
2:50	7.45	110		3.03	11.0	1.26	7.08	35	
2:55	7.72	110		2.84	11.0	1.19	7.10	62	
3:00	7.85	120		2.74	11.1	1.14	7.11	67	2.22
3:05	8.00	80		2.85	11.1	1.14	7.11	64	1.92
3:10	8.08	95		3.45	11.0	1.15	7.07	56	1.73
3:15	8.19	100		3.22	10.9	1.19	7.09	51	1.31
3:20	8.28	100		3.09	11.0	1.18	7.09	46	1.18
3:25	8.48	105		3.00	11.1	1.18	7.06	44	1.09
3:30	8.64	105		2.93	11.0	1.19	7.07	42	0.81
3:35	8.80	100		2.88	10.9	1.20	7.06	37	0.92
3:40	8.90	100		2.69	10.8	1.21	7.04	39	0.89
3:45	9.08	100		0.60	10.5	1.21	7.05	48	1.03
3:50	9.30	100		2.28	10.5	1.22	7.04	48	1.17
3:55	9.38	100		0.70	10.3	1.23	7.03	48	1.43
4:00	9.50	100		0.29	10.3	1.24	7.04	53	1.87
4:05	9.60	100	2.8 gal	0.28	10.2	1.24	7.04	64	1.32
4:10	9.68	100		0.27	10.2	1.25	7.04	69	0.79
4:15	9.73	100		0.27	10.2	1.26	7.04	75	0.63
4:20	9.92	100	3.1 gal	0.27	10.1	1.25	7.05	84	0.52

collect sample 4:25 VOCs

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY **PARSONS** WELL #: MWT 26

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 19 DATE: 6/4/15
 LOCATION: ROMULUS, NY INSPECTORS: Dillman
PUMP #: 9580

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES) SAMPLE ID #: ALBW 20337

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND (FROM)		GROUND / SITE SURFACE CONDITIONS	MONITORING	
				VELOCITY (APPRX)	DIRECTION (0 - 360)		INSTRUMENT	DETECTOR
							OVM-580	PID

WELL VOLUME CALCULATION FACTORS						ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]	
DIAMETER (INCHES):	0.25	1	2	3	4		6
GALLONS/FOOT:	0.0026	0.041	0.163	0.367	0.654		1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564	

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
		13.15				
DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME	
		6.66				

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (µmhos/cm)	pH	ORP (mV)	TURBIDITY (NTU)
Start Pump		6.33	9:28	45.85 #6122		KORIBA 052025	213		
Flow cell leaking. Resealed. Still leaking. Bottom seal bad. Fixed seal. Resumed pumping 9:45									
955	7.67	120		1.38	11.5	1.81	6.89	233	
1000	7.72	95		1.31	11.6	1.71	6.91	231	
1005	7.90	105		1.10	11.6	1.55	6.93	209	5.27
1010	8.03	105		0.99	11.6	1.49	6.94	125	4.51
1015	8.15	104	1 gal	0.87	11.6	1.47	6.94	74	3.87
1020	8.26	104		0.74	11.6	1.45	6.93	39	2.85
1025	8.39	104		0.50	11.6	1.43	6.93	23	1.93
1030	8.50	104		0.36	11.6	1.42	6.93	13	1.72
1035	8.65	104		0.29	11.6	1.42	6.91	14	1.35
1040	8.83	110	2 gal	0.23	11.5	1.45	6.86	26	1.41
1045	8.92	108		0.22	11.5	1.48	6.85	36	0.83
1050	9.06	108		0.20	11.4	1.53	6.84	44	0.77
1055	9.16	108		0.19	11.3	1.58	6.83	55	1.21
1100	9.25	108	2.6 gal	0.18	11.3	1.63	6.83	64	1.46
1105	9.38	108		0.18	11.2	1.68	6.84	71	1.08
1110	9.48	108	3 gal	0.17	11.2	1.73	6.83	82	0.95
1115	9.57	108		0.17	11.2	1.77	6.83	90	0.86
1120	9.69	102		0.16	11.0	1.80	6.84	99	0.86
1125	9.80	102		0.16	11.0	1.83	6.84	114	0.77

Handwritten notes: HACH 2100P 16547

SAMPLING RECORD - GROUNDWATER									
SENECA ARMY DEPOT ACTIVITY				PARSONS				WELL #: MWT-26	
PROJECT: Ash Landfill LTM Groundwater Sampling - Round 19						DATE: 6/4/15		INSPECTORS: SD	
LOCATION: ROMULUS, NY						PUMP #: 9500		SAMPLE ID #: ALBW 20337	
WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)									
TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND (FROM)		GROUND / SITE SURFACE CONDITIONS	MONITORING		
				VELOCITY (APPRX)	DIRECTION (0 - 360)		INSTRUMENT	DETECTOR	
							OVM-580	PID	
WELL VOLUME CALCULATION FACTORS						ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]			
DIAMETER (INCHES):		0.25	1	2	3	4	6		
GALLONS/FOOT:		0.0026	0.041	0.163	0.367	0.654	1.47		
LITERS/FOOT		0.010	0.151	0.617	1.389	2.475	5.564		
HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)		DEPTH TO TOP OF SCREEN (TOC)		SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND	
	13.15'								
DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)		DEPTH TO STATIC WATER LEVEL (TOC)		DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME		
			6.66'						
RADIATION SCREENING DATA		PUMP PRIOR TO SAMPLING (cps)			PUMP AFTER SAMPLING (cps)				
MONITORING DATA COLLECTED DURING PURGING OPERATIONS									
TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	% DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	Horiba pH	Horiba ORP (mV)	TURBIDITY (NTU)
1130	9.90	102		0.17	10.9	1.82	6.84	113	0.93
1135	9.98	102		0.19	10.9	1.86	6.84	118	0.98
1140	10.03	100		0.21	10.8	1.88	6.84	123	1.05
1145	10.13	100		0.23	10.8	1.88	6.86	126	1.10
1150	10.23	100		0.25	10.7	1.88	6.85	132	1.12
1155	10.35	100		0.25	10.7	1.88	6.84	132	1.18
1200	10.45	100		0.28	10.7	1.90	6.85	134	
1205	10.55	100		0.27	10.7	1.90	6.86	135	
1220	10.71	100	5 gal	0.27	10.5	1.88	6.83	143	2.22
1225	collect sample								
HAC 1 Test	Fe - 0.01 mg/L			3x VOAs for VOC					
	Mn - 0.7 mg/L			3x VOAs for MEG					
				3x Amber VOAs for TOC					
				1x 125ml Plastoc for Sulfate					

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY			PARSONS			WELL #: <u>MWT-27</u>			
PROJECT: <u>Ash Landfill LTM Groundwater Sampling - Round 19</u>						DATE: <u>6/3/15</u>			
LOCATION: <u>ROMULUS, NY</u>						INSPECTORS: <u>Dillman</u>			
						PUMP #: <u>16362</u>			
WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)						SAMPLE ID #: <u>ALBW 20338</u>			
TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND (FROM)		GROUND / SITE SURFACE CONDITIONS	MONITORING		
				VELOCITY (APPRX)	DIRECTION (0 - 360)		INSTRUMENT	DETECTOR	
							OVM-580	PID	
WELL VOLUME CALCULATION FACTORS						ONE WELL VOLUME (GAL) = (POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)			
DIAMETER (INCHES):		0.25	1	2	3	4	6		
GALLONS / FOOT:		0.0026	0.041	0.163	0.367	0.654	1.47		
LITERS / FOOT:		0.010	0.151	0.617	1.389	2.475	5.564		
HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)		DEPTH TO TOP OF SCREEN (TOC)		SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND	
	12.75								
DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)		DEPTH TO STATIC WATER LEVEL (TOC)		DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME		
			7.36						
RADIATION SCREENING DATA		PUMP PRIOR TO SAMPLING (cps)			PUMP AFTER SAMPLING (cps)				
MONITORING DATA COLLECTED DURING PURGING OPERATIONS									
TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
2:10	7.25	Start pump		45T in well	11.1	1.54	6.54	-86	HACH 16347
2:17		150		0.18	11.1	1.54	6.54	-86	
2:22	7.78	140		0.22	11.4	1.54	6.51	-95	615
2:27	7.77	102		0.20	11.3	1.54	6.51	-93	
2:32	7.74	108		0.24	11.0	1.54	6.49	-86	224
2:37	7.72	108		0.21	11.0	1.54	6.48	-82	
2:42	7.72	106		0.20	10.9	1.54	6.47	-81	141
2:47	7.74	106	1 gal	0.18	10.9	1.54	6.54	-80	100
2:52	7.72	108		0.16	10.9	1.54	6.46	-83	66.5
2:57	7.72	108		0.15	10.9	1.54	6.46	-81	49.6
3:02	7.72	108		0.14	11.0	1.55	6.46	-81	41.0
3:07	7.72	104		0.14	11.0	1.55	6.46	-83	25.3
3:12	7.68	102		0.16	11.0	1.56	6.46	-85	5.03
3:17	7.72	100		0.14	11.0	1.56	6.57	-82	10.8
3:22	7.72	100	2 gal	0.14	11.0	1.55	6.45	-85	20.8
3:27	7.72	100		0.14	11.0	1.54	6.43	-85	15.0
3:35	7.72	100		0.14	11.0	1.53	6.42	-85	14.8
3:40	Collect sample for VOCs, TOC, Mn, sulfate, Field test for Fe ⁺ , Mn ⁺								

Fe⁺: 0.74 mg/L
Mn⁺: 22.0 mg/L over limit

GW SAMPLING RECORD

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY **PARSONS** WELL #: MWT-28

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 19 DATE: 6/3/15
 LOCATION: ROMULUS, NY INSPECTORS: BB0
 PUMP #: 8595

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES) SAMPLE ID #: ALBW 20340/ALBW 20339

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND (FROM)		GROUND / SITE SURFACE CONDITIONS	MONITORING	
				VELOCITY (APPRX)	DIRECTION (0 - 360)		INSTRUMENT	DETECTOR
1202	~60	Sunny		5-10	W-E	grassy	OVM-580	PID

WELL VOLUME CALCULATION FACTORS							ONE WELL VOLUME (GAL) = ((POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT))	
DIAMETER (INCHES):	0.25	1	2	3	4	6		
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47		
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564	1 well vol = 0.87 gal, 3 wells = 2.60 gals	

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
		7.46'	12.78'			
DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME	
		7.46'				
RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)			PUMP AFTER SAMPLING (cps)		

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1213	7.1	YSI 2 Pump in well							
1214		Pump started							
1224		Stopped pumping							
1232	7.1	YSI 9 Pump in well		YSI	YSI	Horiba			High
1245	7.86	96		0.18	10.3	1.15	6.60	134	51.5
1250	7.91	102		0.20	10.4	1.16	6.48	75	34.2
1255	7.95	104		0.18	10.4	1.19	6.42	-21	27.4
1300	8.00	108		0.17	10.4	1.17	6.41	-44	22.5
1305	8.01			0.17	10.4	1.17	6.39	-52	18.7
1310	8.02	98	~0.75	0.15	10.4	1.17	6.35	-57	15.7
1315	8.02			0.16	10.4	1.20	6.32	-60	12.5
1320	8.02	100	~1.0 gal	0.24	10.3	1.20	6.31	-61	12.3
1325	8.06			0.18	10.4	1.22	6.31	-64	10.0
1330	8.05	108	~1.5 gals	0.15	10.3	1.24	6.31	-65	8.76
1335	8.07			0.09	10.4	1.25	6.33	-67	8.07
1340	8.09		~1.75	0.10	10.3	1.27	6.32	-68	7.66
1345	8.08	96		0.16	10.3	1.26	6.30	-68	7.28
1350	8.07		~2.0 gals	0.14	10.3	1.27	6.33	-70	7.55
1355	8.09			0.12	10.3	1.28	6.33	-71	6.47
1400	8.1	108	~2.25 gals	0.11	10.3	1.29	6.33	-72	5.40
1405	8.12			0.11	10.3	1.29	6.35	-73	4.73
1410	8.14		~2.5 gals	0.12	10.3	1.29	6.35	-74	4.86

Fe+: 3.30 mg/L over limit SA, MS, ASD 1422
 Mn+: 36.2 mg/L DU 1431
 Time

GW SAMPLING RECORD

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY		PARSONS		WELL #: <u>MWT-29</u>		
PROJECT: <u>Ash Landfill LTM Groundwater Sampling - Round 19</u>			DATE: <u>6/3/15</u>			
LOCATION: <u>ROMULUS, NY</u>			INSPECTORS: <u>Dillman</u>			
WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)			PUMP #: <u>11284</u>			
TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND (FROM)	GROUND / SITE SURFACE CONDITIONS	SAMPLE ID #: <u>ALBW 20341</u>
				VELOCITY (APPRX)		
1047	60s	scattered cloud		5-10	W-SE	<u>gosa</u>
					MONITORING	
					INSTRUMENT	DETECTOR
					OVM-580	PID

WELL VOLUME CALCULATION FACTORS						ONE WELL VOLUME (GAL) = ((POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT))						
DIAMETER (INCHES):	0.25	1	2	3	4	6						
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47						
LITERS / FOOT:	0.010	0.151	0.617	1.389	2.475	5.564						

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	13.06					
DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME	
		7.95				
RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)			

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos/cm)	pH	ORP (mV)	TURBIDITY (NTU)
1047	7.72	Pump	YSI in well	3217	YSI	25213	Horiba	US 2	HACH 16547
10:49	7.73	start	pump, pump leaking.						
11:12	8.30	240		1.40	10.2	1.40	6.68	-33	
11:17	8.52	140		1.54	10.6	1.41	6.63	-33	
11:22	8.58	114		1.48	10.6	1.40	6.63	-51	
11:27	8.78	105		1.06	10.5	1.29	6.66	-29	
11:32	8.88	105		1.02	10.5	1.24	6.68	-25	
11:37	8.93	105	1 gal	0.77	10.5	1.17	6.71	-18	
11:42	9.07	105		0.65	10.5	1.15	6.72	-15	1.29
11:47	9.20	105		0.48	10.4	1.16	6.74	-15	1.06
11:52	9.28	105		0.43	10.4	1.18	6.72	-17	0.92
11:57	9.38	105		0.34	10.3	1.22	6.70	-25	0.98
12:02	9.48	105		0.29	10.3	1.26	6.68	-28	1.00
12:07	9.54	102		0.24	10.2	1.28	6.67	-30	1.04
12:12	9.67	100	2 gal	0.20	10.2	1.31	6.65	-31	1.11
12:17	9.78	100		0.18	10.2	1.33	6.63	-30	1.02
12:22	9.87	100		0.16	10.1	1.35	6.63	-29	0.85
12:27	9.98	100		0.16	10.1	1.36	6.63	-29	0.79
12:32	10.05	100		0.14	10.1	1.36	6.62	-30	0.80
12:37	10.15	100	3 gal.	0.15	10.0	1.37	6.62	-30	0.81
1240	Collect Sample for VOCs, TOC, nitrate, sulfate, field test Fe								330+ Limit

MN 8.0 mg/L

GROUNDWATER ELEVATION REPORT

SENECA ARMY DEPOT ACTIVITY			PARSONS		DATE: 12/15/2015	
PROJECT: Ash Landfill LTM - Round 20				PROJECT NO: 748662.03300		
LOCATION: Seneca Army Depot, Romulus, NY				INSPECTOR: B. Baranek-Olmstead		
MONITORING EQUIPMENT:					WATER LEVEL INDICATOR:	
INSTRUMENT	DETECTOR	BGD	TIME	REMARKS	INSTRUMENT	CORRECTION FACTOR
					Pine Heron Dipper-T	

COMMENTS:

Field Entry

Monitoring Well	Historic Well Depth (rel. TOC) (ft)	Depth to Water (rel. TOC) (ft)	Well Depth (rel. TOC) (ft)	Saturated thickness (ft)	Time at Check (military)	Well Condition (Fair / Bad) [circle]	Well Status / Comments
							(Lock?, Well #?, Surface Disturbance?, Riser marked?, Condition of: riser, concrete, protective casing, etc.)
PT-12A	12.62	6.54	12.60	0.00	1219	F / B	locked
PT-16	11.00	3.17	11.02	0.00	1306	F / B	
PT-17	7.52	3.36	7.50	0.00	1513	F / B	broken flush vent well
PT-18A	12.78	4.34	12.80	0.00	1411	F / B	locked, animal holes around well
PT-19	11.63	4.40	11.60	0.00	1115	F / B	locked, rusty lock inside cell
PT-20	11.63	6.85	11.75	0.00	1434	F / B	locked, thorn bush around well
PT-22	11.90	7.53	11.94	0.00	1426	F / B	locked
PT-24	11.86	5.03	11.71	0.00	1458	F / B	locked, rusty metal case, bush around well
MW-27	10.48	6.19	10.38	0.00	1526	F / B	locked
MW-29	10.37	5.70	10.48	0.00	1506	F / B	locked
MW-32	10.37	7.74	10.35	0.00	1121	F / B	locked difficult to open, rusty
MW-39	11.90	1.80	11.90	0.00	1129	F / B	lock hinge rusted off
MW-40	14.68	4.67	14.65	0.00	1134	F / B	locked
MW-44A	12.41	4.86	12.44	0.00	1355	F / B	lock rusted on, cut off, removed lock
MW-46	11.43	5.15	11.44	0.00	1254	F / B	locked
MW-48	11.38	4.00	11.53	0.00	1404	F / B	locked
MW-56	6.48	3.54	6.48	0.00	1518	F / B	PVC lifted, not locked
MW-60	10.20	2.20	10.2	0.00	1103	F / B	locked
MWT-1	10.09	4.84	10.08	0.00	1455	F / B	locked, east
MWT-3	10.08	5.13	10.09	0.00	1456	F / B	locked, west
MWT-4	12.45	5.25	12.45	0.00	1503	F / B	locked, east
MWT-6	12.45	5.93	12.49	0.00	1505	F / B	locked, west
MWT-7	13.66	5.67	13.64	0.00	1507	F / B	locked, east
MWT-9	13.98	6.46	14.12	0.00	1510	F / B	locked, bush growing up around well
MWT-10	8.97	3.85	9.0	0.00	1451	F / B	locked
MWT-17R	11.38	6.73	11.38	0.00	1426	F / B	open, no cap
MWT-22	14.83	6.99	14.83	0.00	1424	F / B	open, no cap
MWT-23	13.65	7.33	13.68	0.00	1444	F / B	locked
MWT-24	12.91	7.30	12.73	0.00	1447	F / B	locked, PVC cut last Dec
MWT-25	13.16	6.57	13.20	0.00	1413	F / B	locked
MWT-26	13.13	6.09	13.15	0.00	1415	F / B	locked
MWT-27	12.70	6.74	12.80	0.00	1417	F / B	locked
MWT-28	12.79	7.33	12.80	0.00	1421	F / B	locked
MWT-29	12.99	7.48	13.05	0.00	1423	F / B	locked

GW SAMPLING RECORD

SAMPLING RECORD - GROUNDWATER									
SENECA ARMY DEPOT ACTIVITY				PARSONS			WELL #: <u>4WT-26</u>		
PROJECT: <u>Ash Landfill LTM Groundwater Sampling - Round 20</u>						DATE: <u>12/16/15</u>			
LOCATION: <u>ROMULUS, NY</u>						INSPECTORS: <u>BB0</u>			
						PUMP #: <u>50971</u>			
WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)						SAMPLE ID #: <u>ALBW20354</u>			
TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND (FROM)		GROUND / SITE SURFACE CONDITIONS	MONITORING		
				VELOCITY (APPRX)	DIRECTION (0 - 360)		INSTRUMENT	DETECTOR	
<u>1235</u>		<u>overcast</u>		<u>5-10</u>	<u>SE-7NE</u>	<u>grassy</u>	<u>OVM-580</u>	<u>PID</u>	
WELL VOLUME CALCULATION FACTORS						ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]			
DIAMETER (INCHES):		0.25	1	<u>2</u>	3	4	6		
GALLONS / FOOT:		0.0026	0.041	<u>0.163</u>	0.367	0.654	1.47		
LITERS/FOOT		0.010	0.151	0.617	1.389	2.475	5.564	<u>Well Vol = 1.13 gals</u>	
HISTORIC DATA		DEPTH TO POINT OF WELL (TOC)		DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND	
		<u>13.15</u>							
DATA COLLECTED AT WELL SITE		PID READING (OPENING WELL)		DEPTH TO STATIC WATER LEVEL (TOC)		DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME	
				<u>6.21</u>					
RADIATION SCREENING DATA		PUMP PRIOR TO SAMPLING (cps)			PUMP AFTER SAMPLING (cps)				
MONITORING DATA COLLECTED DURING PURGING OPERATIONS									
TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (mS/cm ³)	pH	ORP (mV)	TURBIDITY (NTU)
<u>1253</u>	<u>5.99</u>	<u>YSI 8 Pump on Well</u>		<u>YSI</u>	<u>YSI</u>	<u>Horiba</u>	<u>Horiba</u>	<u>Horiba</u>	<u>LaMotte</u>
<u>1254</u>		<u>Pump Started</u>							
<u>1302</u>	<u>6.5</u>	<u>~120</u>		<u>1.72</u>	<u>11.7</u>	<u>1.66</u>	<u>7.36</u>	<u>59/48</u>	<u>7.29</u>
<u>1307</u>	<u>6.9</u>	<u>104</u>		<u>1.67</u>	<u>11.4</u>	<u>1.69</u>	<u>7.33</u>	<u>60</u>	<u>5.54</u>
<u>1312</u>	<u>7.12</u>			<u>1.69</u>	<u>11.3</u>	<u>1.70</u>	<u>7.34</u>	<u>64</u>	<u>4.30</u>
<u>1317</u>	<u>7.27</u>			<u>1.61</u>	<u>11.4</u>	<u>1.71</u>	<u>7.31</u>	<u>66</u>	<u>3.69</u>
<u>1322</u>	<u>7.37</u>	<u>100</u>		<u>1.55</u>	<u>11.4</u>	<u>1.73</u>	<u>7.27</u>	<u>65</u>	<u>2.66</u>
<u>1327</u>				<u>1.47</u>	<u>11.5</u>	<u>1.74</u>	<u>7.27</u>	<u>64</u>	<u>5.22</u>
<u>1332</u>	<u>7.54</u>		<u>~0.5 gal</u>	<u>1.42</u>	<u>11.5</u>	<u>1.75</u>	<u>7.28</u>	<u>63</u>	<u>2.51</u>
<u>1337</u>	<u>7.67</u>			<u>1.32</u>	<u>11.5</u>	<u>1.76</u>	<u>7.27</u>	<u>65</u>	<u>3.03</u>
<u>1342</u>	<u>7.75</u>	<u>100</u>	<u>~1.0 gal</u>	<u>1.27</u>	<u>11.5</u>	<u>1.77</u>	<u>7.27</u>	<u>64</u>	<u>2.45</u>
<u>1347</u>	<u>7.82</u>			<u>1.13</u>	<u>11.5</u>	<u>1.77</u>	<u>7.25</u>	<u>59</u>	<u>2.26</u>
			<u>1.5 gals</u>						
<u>1400</u>		<u>Sample Collected</u>				<u>Filled: 3 x VOA's for VOC</u>			
						<u>3 x VOA's for MEE</u>			
						<u>3 x VOA's for TOC</u>			
		<u>Fe+</u>	<u>0.0 mg/L</u>	<u>checked twice</u>		<u>1x Plate for Sulfite</u>			
		<u>Mn+</u>	<u>0.2 mg/L</u>						

GW SAMPLING RECORD

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY

PARSONS

WELL #: MWT-27

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 20
 LOCATION: ROMULUS, NY

DATE: 12/16/15
 INSPECTORS: DPD/BB0
 PUMP #: 14121
 SAMPLE ID #: ALBW/20355

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND (FROM)		GROUND / SITE SURFACE CONDITIONS
				VELOCITY (APPRX)	DIRECTION (0 - 360)	
1235	40g	Overcast		ENE	0-5	Grassy

MONITORING	
INSTRUMENT	DETECTOR
OVM-580	PID

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
		12.50				
DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME	
		6.90'				
RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)			

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (mS/cm ³)	pH	ORP (mV)	TURBIDITY (NTU)
1255	6.71	45I + Pump		YSE	YSE	Horiba	Horiba	Horiba	LaMotte
1257		Pump Started							
1305		116		0.28	11.5	1.75	6.80	-84	46.1
1310		106		0.23	11.5	1.73	6.74	-81	39.7
1315				0.24	11.4	1.72	6.71	-80	33.9
1320		116		0.25	11.4	1.72	6.69	-79	27.0
1325				0.26	11.4	1.72	6.67	-77	24.6
1330				0.26	11.4	1.72	6.64	-77	21.3
1335		100		0.27	11.3	1.72	6.66	-78	18.3
1340				0.27	11.3	1.72	6.64	-77	16.2
1345				0.28	11.3	1.73	6.63	-76	13.2
1350				0.28	11.4	1.73	6.62	-77	12.52
1355		96	1.75 gals	0.29	11.4	1.73	6.60	-77	12.2
1400	Sample Collected			ALBW 20355	Filled bottles: 3x Vials for VOC 3x Vials for MEE 3x Vials for TOC 1x Plastic for Sulfate				
	Fe = 3.14 mg/L								
	Mang = 47.5 mg/L over limit								

GW SAMPLING RECORD

SAMPLING RECORD - GROUNDWATER									
SENECA ARMY DEPOT ACTIVITY				PARSONS			WELL #: <u>MWT-23</u>		
PROJECT: <u>Ash Landfill LTM Groundwater Sampling - Round 20</u>						DATE: <u>12/16/15</u>			
LOCATION: <u>ROMULUS, NY</u>						INSPECTORS: <u>BBO/DD</u>			
						PUMP #: <u>12752</u>			
WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)									
TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND (FROM)		GROUND / SITE SURFACE CONDITIONS	MONITORING		
				VELOCITY (APPRX)	DIRECTION (0 - 360)		INSTRUMENT	DETECTOR	
<u>935</u>	<u>40.5</u>	<u>overcast/sunny</u>		<u>5-10</u>	<u>W↖E</u>	<u>grass</u>	<u>OVM-580</u>	<u>PID</u>	
WELL VOLUME CALCULATION FACTORS						ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]			
DIAMETER (INCHES):		0.25	1	<u>2</u>	3	4	6		
GALLONS / FOOT:		0.0026	0.041	<u>0.163</u>	0.367	0.654	1.47		
LITERS/FOOT		0.010	0.151	<u>0.617</u>	1.389	2.475	5.564		
HISTORIC DATA		DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND		
		<u>13.68</u>							
DATA COLLECTED AT WELL SITE		PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME			
			<u>8.36</u>						
RADIATION SCREENING DATA		PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)					
MONITORING DATA COLLECTED DURING PURGING OPERATIONS									
TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (mS/cm ³)	pH	ORP (mV)	TURBIDITY (NTU)
<u>950</u>	<u>8.33</u>	<u>YST</u>	<u>1 Pump in the well</u>	<u>VSI</u>	<u>YST</u>	<u>Horiba</u>	<u>Horiba</u>	<u>Horiba</u>	<u>LaMotto</u>
<u>950</u>		<u>Pump started</u>							
<u>1010</u>	<u>8.53</u>	<u>106</u>		<u>0.24</u>	<u>11.6</u>	<u>0.961</u>	<u>7.16</u>	<u>33</u>	<u>19.7</u>
<u>1015</u>	<u>8.65</u>			<u>0.18</u>	<u>11.5</u>	<u>0.934</u>	<u>6.87</u>	<u>-61</u>	<u>13.4</u>
<u>1021</u>	<u>8.62</u>	<u>98</u>		<u>0.15</u>	<u>11.6</u>	<u>0.932</u>	<u>6.79</u>	<u>-67</u>	<u>11.8</u>
<u>1026</u>				<u>0.12</u>	<u>11.6</u>	<u>0.931</u>	<u>6.81</u>	<u>-73</u>	<u>8.25</u>
<u>1030</u>	<u>8.65</u>	<u>108</u>		<u>0.10</u>	<u>11.6</u>	<u>0.932</u>	<u>6.86</u>	<u>-76</u>	<u>8.47</u>
<u>1035</u>			<u>~0.75</u>	<u>0.08</u>	<u>11.5</u>	<u>0.927</u>	<u>6.87</u>	<u>-80</u>	<u>6.52</u>
<u>1040</u>	<u>8.68</u>	<u>106</u>		<u>0.17</u>	<u>11.6</u>	<u>0.926</u>	<u>6.84</u>	<u>-80</u>	<u>5.31</u>
<u>1045</u>				<u>0.12</u>	<u>11.6</u>	<u>0.927</u>	<u>6.85</u>	<u>-83</u>	<u>5.30</u>
<u>1050</u>	<u>8.64</u>			<u>0.11</u>	<u>11.6</u>	<u>0.929</u>	<u>6.85</u>	<u>-84</u>	<u>5.40</u>
<u>1056</u>				<u>0.08</u>	<u>11.6</u>	<u>0.929</u>	<u>6.86</u>	<u>-85</u>	<u>4.48</u>
			<u>~1.8 gals</u>						
<u>1102</u>		<u>Sample Collected</u>				<u>Filled 4 sets of the following:</u>			
		<u>ALBW 20352</u>		<u>1102</u>		<u>3x VOAs</u>	<u>for VOC</u>		
		<u>" MS</u>		<u>1102</u>		<u>3x VOAs</u>	<u>for MEE</u>		
		<u>" MSD</u>		<u>1102</u>		<u>3x VOAs</u>	<u>for TOC</u>		
	<u>du</u>	<u>ALBW 20353</u>		<u>1112</u>		<u>1x Plastic</u>	<u>for Sulfite</u>		
		<u>Fe²⁺</u>	<u>3.30 mg/L</u>	<u>over limit</u>					
		<u>Mn²⁺</u>	<u>4.9 mg/L</u>						

SAMPLING RECORD - GROUNDWATER									
SENECA ARMY DEPOT ACTIVITY				PARSONS			WELL #: <u>MWT28</u>		
PROJECT: <u>Ash Landfill LTM Groundwater Sampling - Round 20</u>						DATE: <u>12/17/15</u>		INSPECTORS: <u>DRD</u>	
LOCATION: <u>ROMULUS, NY</u>						PUMP #: <u>15729</u>		SAMPLE ID #: <u>ALBW20356</u>	
WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)									
TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	(FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS			
<u>1005</u>	<u>40s</u>	<u>overcast, Lt Rain</u>		<u>5-10</u>	<u>ENE</u>	<u>Grassy</u>			
WELL VOLUME CALCULATION FACTORS						ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]			
DIAMETER (INCHES):		0.25	1	2	3	4	6		
GALLONS / FOOT:		0.0026	0.041	0.163	0.367	0.654	1.47		
LITERS/FOOT		0.010	0.151	0.617	1.389	2.475	5.564		
HISTORIC DATA		DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND		
		<u>12.80</u>							
DATA COLLECTED AT WELL SITE		PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)		DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME		
			<u>7.35</u>						
RADIATION SCREENING DATA		PUMP PRIOR TO SAMPLING (cps)			PUMP AFTER SAMPLING (cps)				
MONITORING DATA COLLECTED DURING PURGING OPERATIONS									
TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (mS/cm ³)	pH	ORP (mV)	TURBIDITY (NTU)
<u>1020</u>	<u>7.10</u>		<u>Bladder Pump and YSI in well</u>			<u>Horiba</u>	<u>Horiba</u>	<u>Horiba</u>	<u>Carlotta</u>
<u>1030</u>		<u>100</u>		<u>8.25</u>	<u>12.4</u>	<u>1.42</u>	<u>7.22</u>	<u>60</u>	
<u>1035</u>				<u>6.90</u>	<u>12.3</u>	<u>1.42</u>	<u>7.00</u>	<u>-66</u>	<u>25.6</u>
<u>1040</u>		<u>100</u>	<u>0.5 gals</u>	<u>6.62</u>	<u>12.3</u>	<u>1.41</u>	<u>7.00</u>	<u>-74</u>	<u>22.5</u>
<u>1045</u>			<u>Air Leak - Changed Pump - Pump #</u>						
<u>1055</u>		<u>104</u>							
<u>1100</u>	<u>7.70</u>			<u>1.79</u>	<u>12.3</u>	<u>1.26</u>	<u>7.11</u>	<u>-47</u>	<u>25.7</u>
<u>1105</u>				<u>1.45</u>	<u>12.3</u>	<u>1.40</u>	<u>7.03</u>	<u>-44</u>	
<u>1110</u>		<u>90</u>		<u>0.99</u>	<u>12.3</u>	<u>1.40</u>	<u>6.92</u>	<u>-32</u>	<u>20.5</u>
<u>1115</u>				<u>0.91</u>	<u>12.3</u>	<u>1.41</u>	<u>6.89</u>	<u>-28</u>	
<u>1120</u>		<u>110</u>		<u>0.72</u>	<u>12.2</u>	<u>1.41</u>	<u>6.82</u>	<u>-22</u>	<u>15.2</u>
<u>1125</u>				<u>0.58</u>	<u>12.2</u>	<u>1.41</u>	<u>6.78</u>	<u>-19</u>	
<u>1130</u>		<u>110</u>		<u>0.53</u>	<u>12.2</u>	<u>1.41</u>	<u>6.76</u>	<u>-17</u>	<u>11.9</u>
<u>1135</u>				<u>0.50</u>	<u>12.2</u>	<u>1.41</u>	<u>6.73</u>	<u>-77</u>	
<u>1140</u>			<u>2.0 gals</u>	<u>0.43</u>	<u>12.2</u>	<u>1.41</u>	<u>6.71</u>	<u>-18</u>	<u>10.69</u>
<u>1145</u>				<u>0.41</u>	<u>12.2</u>	<u>1.41</u>	<u>6.71</u>	<u>-18</u>	<u>9.27</u>
			<u>1150 Collected Sample #</u>			<u>ALBW 20356</u>			
						<u>Filled 3x VOA for VOC</u>			
			<u>Fe = 3.13 mg/L</u>			<u>3x VOA for TOC</u>			
			<u>Mang = 34.3 mg/L</u>			<u>3x VOA for MEE</u>			
						<u>1x Petrie for Sulfate</u>			

GW SAMPLING RECORD

SAMPLING RECORD - GROUNDWATER												
SENECA ARMY DEPOT ACTIVITY			PARSONS				WELL #: <i>MW-T7</i>					
PROJECT: <u>Ash Landfill LTM Groundwater Sampling - Round 20</u>					DATE: <u>12/17/15</u>		INSPECTORS: <u>DRD</u>					
LOCATION: <u>ROMULUS, NY</u>					PUMP #: <u>30771</u>		SAMPLE ID #: <u>ALBW20347</u>					
WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)							MONITORING					
TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND (FROM)		GROUND / SITE SURFACE CONDITIONS	INSTRUMENT		DETECTOR			
				VELOCITY (APPRX)	DIRECTION (0 - 360)		OVM-580	PID				
<i>1240</i>	<i>405</i>	<i>overcast, Lt Rain</i>		<i>5-10</i>	<i>SSW</i>	<i>Grassy</i>						
WELL VOLUME CALCULATION FACTORS					ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]							
DIAMETER (INCHES):					0.25	1	2	3	4	6		
GALLONS / FOOT:					0.0026	0.041	0.163	0.367	0.654	1.47		
LITERS/FOOT					0.010	0.151	0.617	1.389	2.475	5.564		
HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)		DEPTH TO TOP OF SCREEN (TOC)		SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY		WELL DEVELOPMENT pH		WELL DEVELOPMENT SPEC. COND		
	<i>13.64</i>											
DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)		DEPTH TO STATIC WATER LEVEL (TOC)		DEPTH TO STABILIZED WATER LEVEL (TOC)		DEPTH TO PUMP INTAKE (TOC)		PUMPING START TIME			
			<i>5.66</i>									
RADIATION SCREENING DATA			PUMP PRIOR TO SAMPLING (cps)			PUMP AFTER SAMPLING (cps)						
MONITORING DATA COLLECTED DURING PURGING OPERATIONS												
TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (mS/cm ²)	pH	ORP (mV)	TURBIDITY (NTU)			
<i>1245</i>	<i>5.88</i>	<i>Bladder Pump and YSI in Well</i>					<i>Horiba</i>	<i>Horiba</i>	<i>Horiba</i>	<i>Lutrota</i>		
<i>1255</i>		<i>104</i>		<i>0.48</i>	<i>10.8</i>	<i>0.726</i>	<i>7.54</i>	<i>-20</i>				
<i>1300</i>				<i>0.38</i>	<i>10.8</i>	<i>0.726</i>	<i>7.41</i>	<i>29</i>	<i>5.60</i>			
<i>1305</i>		<i>112</i>		<i>0.42</i>	<i>10.9</i>	<i>0.723</i>	<i>7.23</i>	<i>38</i>				
<i>1310</i>				<i>0.30</i>	<i>10.8</i>	<i>0.722</i>	<i>7.18</i>	<i>41</i>				
<i>1315</i>		<i>120</i>	<i>~0.5</i>	<i>0.26</i>	<i>10.9</i>	<i>0.721</i>	<i>7.17</i>	<i>44</i>				
<i>1320</i>				<i>0.22</i>	<i>11.0</i>	<i>0.720</i>	<i>7.14</i>	<i>48</i>	<i>1.97</i>			
<i>1325</i>				<i>0.20</i>	<i>11.0</i>	<i>0.720</i>	<i>7.12</i>	<i>50</i>				
<i>1330</i>		<i>120</i>	<i>~1.0</i>	<i>0.29</i>	<i>11.0</i>	<i>0.719</i>	<i>7.12</i>	<i>52</i>				
<i>1335</i>				<i>0.29</i>	<i>10.9</i>	<i>0.720</i>	<i>7.10</i>	<i>55</i>				
<i>1340</i>		<i>120</i>		<i>0.25</i>	<i>10.9</i>	<i>0.719</i>	<i>7.10</i>	<i>55</i>	<i>1.12</i>			
<i>1345</i>				<i>0.16</i>	<i>10.9</i>	<i>0.719</i>	<i>7.10</i>	<i>56</i>				
<i>1350</i>			<i>~2.0 g/s</i>	<i>0.23</i>	<i>10.9</i>	<i>0.719</i>	<i>7.09</i>	<i>57</i>				
			<i>1355</i>	<i>Collected Sample # ALBW 20347</i>								
									<i>Filled!</i>			
									<i>3x VOLs for VOC</i>			
									<i>3x VOLs for MEE</i>			
									<i>3x VOLs for TOC</i>			
									<i>1x Plastic for Sulfate</i>			
									<i>Fe = 0.09 mg/L</i>			
									<i>Mang = 0.2 mg/L</i>			

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY **PARSONS** WELL #: PT-17

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 20
 LOCATION: ROMULUS, NY

DATE: 12/17/15
 INSPECTORS: BBO
 PUMP #: 12752

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND (FROM)		GROUND / SITE SURFACE CONDITIONS
				VELOCITY (APPRX)	DIRECTION (0 - 360)	
1245	84.05	overcast w/ drizzle		5-15	S → N	grass-y

SAMPLE ID #: ALBW20343

MONITORING	
INSTRUMENT	DETECTOR
OVM-580	PID

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS / FOOT:	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
1 well = 0.692 3 wells = 2.07 gals

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
		7.50				
DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME	
			3.251			
RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)			

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (mS/cm^3)	pH	ORP (mV)	TURBIDITY (NTU)
1257	3.25	YSI @ Pump in well		YSI		Horiba	Horiba	Horiba	LaMotte
1258		Pump Started							
1307	3.29	50		0.89	10.6	0.526	7.41	99	5.53
1312	3.29	108		0.84	10.5	0.523	7.25	102	3.64
1317	3.29			0.83	10.5	0.523	7.19	107	2.74
1322	3.29	98		0.90	10.5	0.523	7.16	109	2.11
1327	3.30	94	~0.5 gal	0.89	10.4	0.523	7.14	112	2.05
1332	3.3	102		0.77	10.4	0.524	7.10	113	1.36
1337	3.3		~1.0 gal	0.85	10.4	0.524	7.13	109	1.65
1342	3.3	86		0.87	10.4	0.524	7.13	108	1.02
1347	3.3	164	~1.25 gal	0.77	10.4	0.525	7.12	110	1.19
1352	3.3		~1.5 gals	0.79	10.4	0.526	7.13	111	0.93
			~1.75 gal						
1402		Sample Collected							
						Filter: 3x VOA ₅ for VOC			
		Fet	0.0 mg/L	checked	twice	3x VOA ₅ for TOC			
		Mn+	0.5 mg/L			3x VOA ₅ for HEE			
						1x P ₂ S ₅ for Sulfate			

SAMPLING RECORD - GROUNDWATER									
SENECA ARMY DEPOT ACTIVITY					PARSONS			WELL #: <u>MWT-29</u>	
PROJECT: <u>Ash Landfill LTM Groundwater Sampling - Round 20</u>					DATE: <u>12/17/15</u>		INSPECTORS: <u>BBO</u>		
LOCATION: <u>ROMULUS, NY</u>					PUMP #: <u>14121</u>		SAMPLE ID #: <u>ALBW20357</u>		
WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)							MONITORING		
TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND DIRECTION (FROM) (0 - 360)	GROUND / SITE SURFACE CONDITIONS	INSTRUMENT	DETECTOR	
1009	40.5	rainy		5-10	SW-NW	grassy	OVM-580	PID	
WELL VOLUME CALCULATION FACTORS						ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]			
DIAMETER (INCHES):		0.25	1	2	3	4	6		
GALLONS / FOOT:		0.0026	0.041	0.163	0.367	0.654	1.47		
LITERS / FOOT:		0.010	0.151	0.617	1.389	2.475	5.564	0.9 gals 1 well / 2.7 gals 3x Well	
HISTORIC DATA		DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND		
		13.05							
DATA COLLECTED AT WELL SITE		PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME			
			6.21	7.49					
RADIATION SCREENING DATA		PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)					
MONITORING DATA COLLECTED DURING PURGING OPERATIONS									
TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (mS/cm ²)	pH	ORP (mV)	TURBIDITY (NTU)
1055	7.29	YSIF	Pump in well	YSIF	YSIF	Hardly	Hardly	Hardly	La Motte
1055			Pump Started						
1103	7.6	110		0.29	11.7	1.20	7.33	-56	6.60
1108	7.74			0.29	11.4	1.26	6.86	-80	7.15
1113	7.86	100		0.54	11.3	1.26	6.83	-77	7.94
1118	7.98		~0.5 gal	0.84	11.1	1.25	6.82	-70	7.26
1123	8.18			2.69	11.0	1.08	6.85	-56	6.64
1128	8.20	104		1.98	11.0	1.04	6.90	-47	6.95
1133	8.28			2.15	11.0	1.00	6.90	-33	7.90
1138	8.37	106	~1.0 gal	2.16	11.0	0.965	6.94	-22	5.88
1143	8.5			1.94	10.9	0.939	6.96	-13	4.12
1148	8.58	102	~1.25 gals	1.64	10.9	0.932	6.96	-9	3.87
1153	8.69			1.36	10.9	0.935	6.97	-11	2.05
1158	8.72			0.91	10.9	0.949	6.95	-16	1.53
1203	8.88		~1.75 gals	0.83	10.9	0.960	6.89	-16	1.55
			~2.0 gals						
1210			Samples Collected	Filled		3x VOA for VOC			
						3x VOA for MEE			
						3x VOA for TOC			
						1x Plastic for Sulfate			
			Fet = 0.54 mg/L						
			Mut = 3.1 mg/L						

SAMPLING RECORD - GROUNDWATER									
SENECA ARMY DEPOT ACTIVITY				PARSONS			WELL #: FT-18A		
PROJECT: Ash Landfill LTM Groundwater Sampling - Round 20				DATE: 12/18/15			INSPECTORS: BBO		
LOCATION: ROMULUS, NY				PUMP #: 4500			SAMPLE ID #: ALBW 20344		
WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)							MONITORING		
TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND DIRECTION (0 - 360)	GROUND / SURFACE CONDITIONS	INSTRUMENT	DETECTOR	
1244	40.5	overcast		5-15	NW-SE	STAGY	OVM-580	PID	
WELL VOLUME CALCULATION FACTORS				ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]					
DIAMETER (INCHES):	0.25	1	2	3	4	6	1x Well Vol = 0.57 gals 3x = 1.72 gals		
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47			
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564			
HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)		DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND		
	12.8'								
DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)		DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME			
			9.28'						
RADIATION SCREENING DATA		PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)					
MONITORING DATA COLLECTED DURING PURGING OPERATIONS									
TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (mS/cm^3)	pH	ORP (mV)	TURBIDITY (NTU)
1256	9.13	YST 9	Pump in well	YST	YST	Horibac	Horibac	Horibac	Lab/lotto
1256			Pump Started						
1301	9.45			4.95	11.4	1.14	7.39	-9	11.20
1306	9.58	112		4.76	11.4	1.14	7.31	54	7.46
1311	9.69	114		4.42	11.4	1.14	7.30	73	5.41
1318	9.78		0.5 gals	3.76	11.4	1.14	7.26	89	2.75
1321	9.84	108		3.16	11.4	1.14	7.24	95	3.06
1326	9.91			2.24	11.4	1.13	7.24	100	1.29
1331	9.97		~1.0 gals	1.79	11.4	1.13	7.22	104	0.96
1336	10.03	106		1.38	11.4	1.12	7.21	107	0.82
1341	10.1			1.09	11.4	1.12	7.20	110	0.73
1346	10.15			0.90	11.5	1.12	7.19	112	0.67
1351	10.2		~1.5 gals	0.87	11.5	1.12	7.18	113	0.78
1356	10.23		1.6 gals	0.86	11.5	1.12	7.17	114	0.74
1401			Sample Collected	3x Vols for VOC					
			Total	~1.75 gals					

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY		PARSONS		WELL #: <u>PT-22</u>		
PROJECT: <u>Ash Landfill LTM Groundwater Sampling - Round 20</u>				DATE: <u>12/18/15</u>		
LOCATION: <u>ROMULUS, NY</u>				INSPECTORS: <u>DRD</u>		
				PUMP #: <u>16362</u>		
WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)				SAMPLE ID #: <u>ALBW 20345</u>		
TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	(FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
<u>1005</u>	<u>305</u>	<u>overcast</u>		<u>5-10</u>	<u>NW</u>	<u>Grassy</u>

WELL VOLUME CALCULATION FACTORS						ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]	
DIAMETER (INCHES):	0.25	1	2	3	4	6	
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47	
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564	

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	<u>11.94</u>					

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
		<u>7.55</u>			

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)

MONITORING DATA COLLECTED DURING PURGING OPERATIONS									
TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (mS/cm ³)	pH	ORP (mV)	TURBIDITY (NTU)
<u>7015</u>	<u>747</u>		<u>Pump and VBI in well -</u>	<u>New</u>	<u>Water tubing installed</u>				
<u>6030</u>		<u>110</u>		<u>1.09</u>	<u>10.4</u>	<u>0.982</u>	<u>7.38</u>	<u>99</u>	
<u>1035</u>		<u>102</u>		<u>1.17</u>	<u>10.4</u>	<u>0.989</u>	<u>7.27</u>	<u>100</u>	<u>23.5</u>
<u>1040</u>				<u>1.07</u>	<u>10.4</u>	<u>0.992</u>	<u>7.11</u>	<u>108</u>	
<u>1045</u>				<u>0.97</u>	<u>10.4</u>	<u>0.992</u>	<u>7.07</u>	<u>111</u>	
<u>1050</u>		<u>104</u>		<u>0.78</u>	<u>10.4</u>	<u>0.993</u>	<u>7.03</u>	<u>114</u>	<u>4.18</u>
<u>1055</u>				<u>0.88</u>	<u>10.4</u>	<u>0.992</u>	<u>7.04</u>	<u>116</u>	
<u>1100</u>				<u>1.10</u>	<u>10.4</u>	<u>0.989</u>	<u>7.05</u>	<u>118</u>	
<u>1105</u>				<u>1.11</u>	<u>10.4</u>	<u>0.987</u>	<u>7.01</u>	<u>122</u>	
<u>1110</u>		<u>104</u>		<u>1.44</u>	<u>10.4</u>	<u>0.983</u>	<u>7.02</u>	<u>123</u>	<u>1.56</u>
<u>1115</u>				<u>1.59</u>	<u>10.4</u>	<u>0.981</u>	<u>7.02</u>	<u>124</u>	
<u>1120</u>				<u>1.37</u>	<u>10.4</u>	<u>0.982</u>	<u>7.00</u>	<u>125</u>	
<u>1125</u>		<u>106</u>		<u>1.61</u>	<u>10.4</u>	<u>0.983</u>	<u>6.98</u>	<u>128</u>	
<u>1130</u>				<u>1.60</u>	<u>10.4</u>	<u>0.981</u>	<u>7.02</u>	<u>128</u>	
<u>1135</u>		<u>106</u>		<u>1.58</u>	<u>10.4</u>	<u>0.982</u>	<u>6.99</u>	<u>130</u>	
<u>1140</u>		<u>108</u>	<u>~ 2.25 gal</u>	<u>1.59</u>	<u>10.4</u>	<u>0.981</u>	<u>7.00</u>	<u>131</u>	<u>1129</u>
			<u>1145 Collected Sample #</u>						
			<u>3x Vots for VOC</u>						

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY		PARSONS		WELL #: <u>PT-24</u>		
PROJECT: <u>Ash Landfill LTM Groundwater Sampling - Round 20</u>		DATE: <u>12/18/15</u>		INSPECTORS: <u>330</u>		
LOCATION: <u>ROMULUS, NY</u>		PUMP #: <u>20951</u>		SAMPLE ID #: <u>ALBW20346</u>		
WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)						
TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND (FROM) VELOCITY (APPRX)	DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
<u>813</u>	<u>30.5</u>	<u>overcast</u>		<u>0-5</u>	<u>NW-SE</u>	<u>wet overnite rain</u>

WELL VOLUME CALCULATION FACTORS		ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]	
DIAMETER (INCHES):	0.25 1 2 3 4 6	<u>1x well = 1.1 gal 3x well = 3.3 gal</u>	
GALLONS / FOOT:	0.0026 0.041 0.163 0.367 0.654 1.47		
LITERS/FOOT	0.010 0.151 0.617 1.389 2.475 5.564		

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	<u>11.71</u>					
DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME	
		<u>4.96'</u>				
RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)			PUMP AFTER SAMPLING (cps)		

MONITORING DATA COLLECTED DURING PURGING OPERATIONS									
TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (mS/cm ³)	pH	ORP (mV)	TURBIDITY (NTU)
<u>829</u>	<u>4.96</u>	<u>YST</u>	<u>Pump m well</u>	<u>YST</u>	<u>YST</u>	<u>Horiba</u>	<u>Horiba</u>	<u>Horiba</u>	<u>LaMott</u>
<u>830</u>		<u>Pump</u>	<u>Started</u>	<u>→ replace</u>	<u>air/water lines</u>				
<u>836</u>	<u>4.97</u>	<u>~140</u>		<u>0.59</u>	<u>10.5</u>	<u>0.591</u>	<u>7.35</u>	<u>225</u>	<u>7.75</u>
<u>841</u>	<u>4.99</u>			<u>0.42</u>	<u>10.5</u>	<u>0.594</u>	<u>7.23</u>	<u>229</u>	<u>6.68</u>
<u>846</u>	<u>5.0</u>	<u>~132</u>		<u>0.28</u>	<u>10.4</u>	<u>0.596</u>	<u>7.15</u>	<u>231</u>	<u>4.42</u>
<u>851</u>	<u>5.0</u>		<u>~0.5 gal</u>	<u>0.41</u>	<u>10.4</u>	<u>0.602</u>	<u>7.15</u>	<u>226</u>	<u>4.04</u>
<u>856</u>	<u>5.0</u>			<u>0.33</u>	<u>10.4</u>	<u>0.605</u>	<u>7.12</u>	<u>215</u>	<u>3.03</u>
<u>901</u>	<u>5.0</u>	<u>138</u>	<u>~1.0</u>	<u>0.35</u>	<u>10.4</u>	<u>0.609</u>	<u>7.10</u>	<u>201</u>	<u>3.36</u>
<u>906</u>	<u>5.0</u>			<u>0.28</u>	<u>10.3</u>	<u>0.611</u>	<u>7.07</u>	<u>187</u>	<u>2.96</u>
<u>911</u>	<u>5.0</u>		<u>~1.25 gal</u>	<u>0.28</u>	<u>10.4</u>	<u>0.613</u>	<u>7.04</u>	<u>169</u>	<u>2.16</u>
<u>916</u>	<u>5.0</u>	<u>142</u>		<u>0.26</u>	<u>10.4</u>	<u>0.615</u>	<u>7.02</u>	<u>147</u>	<u>2.06</u>
<u>921</u>	<u>5.0</u>		<u>~1.75 gal</u>	<u>0.22</u>	<u>10.3</u>	<u>0.617</u>	<u>7.03</u>	<u>126</u>	<u>2.34</u>
<u>927</u>	<u>5.0</u>	<u>136</u>		<u>0.19</u>	<u>10.4</u>	<u>0.619</u>	<u>7.00</u>	<u>103</u>	<u>1.81</u>
<u>931</u>	<u>5.0</u>		<u>~2.0 gal</u>	<u>0.17</u>	<u>10.4</u>	<u>0.621</u>	<u>6.98</u>	<u>86</u>	<u>1.81</u>
<u>937</u>	<u>5.0</u>			<u>0.16</u>	<u>10.3</u>	<u>0.621</u>	<u>6.96</u>	<u>81</u>	<u>1.54</u>
<u>941</u>	<u>5.0</u>		<u>~2.3 gal</u>	<u>0.15</u>	<u>10.3</u>	<u>0.622</u>	<u>6.96</u>	<u>76</u>	
<u>947</u>	<u>5.0</u>	<u>134</u>		<u>0.15</u>	<u>10.3</u>	<u>0.624</u>	<u>6.94</u>	<u>73</u>	<u>1.47</u>
<u>951</u>	<u>5.0</u>		<u>~2.75 gal</u>	<u>0.16</u>	<u>10.3</u>	<u>0.624</u>	<u>6.94</u>	<u>70</u>	
<u>956</u>	<u>5.0</u>			<u>0.14</u>	<u>10.3</u>	<u>0.625</u>	<u>6.95</u>	<u>67</u>	<u>1.59</u>

SAMPLING RECORD - GROUNDWATER										
SENECA ARMY DEPOT ACTIVITY					PARSONS			WELL #: <u>PT-24</u>		
PROJECT: <u>Ash Landfill LTM Groundwater Sampling - Round 20</u>								DATE: <u>12/18/15</u>		
LOCATION: <u>ROMULUS, NY</u>								INSPECTORS: <u>BBO</u>		
								PUMP #: <u>20951</u>		
WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)								SAMPLE ID #: <u>ALBW20346</u>		
TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND (FROM)		GROUND / SITE SURFACE CONDITIONS	MONITORING			
				VELOCITY (APPRX)	DIRECTION (0 - 360)		INSTRUMENT		DETECTOR	
<u>955</u>	<u>30s</u>	<u>overcast</u>		<u>5-10</u>	<u>W-E</u>	<u>grassy</u>	OVM-580		PID	
WELL VOLUME CALCULATION FACTORS DIAMETER (INCHES): 0.25 1 2 3 4 6 GALLONS / FOOT: 0.0026 0.041 0.163 0.367 0.654 1.47 LITERS/FOOT: 0.010 0.151 0.617 1.389 2.475 5.564						ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]				
HISTORIC DATA		DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND			
DATA COLLECTED AT WELL SITE		PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)		DEPTH TO STABILIZED WATER LEVEL (TOC)		DEPTH TO PUMP INTAKE (TOC)		PUMPING START TIME	
RADIATION SCREENING DATA		PUMP PRIOR TO SAMPLING (cps)			PUMP AFTER SAMPLING (cps)					
MONITORING DATA COLLECTED DURING PURGING OPERATIONS										
TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (mS/cm ³)	pH	ORP (mV)	TURBIDITY (NTU)	
				<u>YSI</u>	<u>YSI</u>	<u>Horiba</u>	<u>Horiba</u>	<u>Horiba</u>	<u>LaMotte</u>	
<u>1001</u>	<u>5.0</u>	<u>140</u>	<u>~ 3.0 gals</u>	<u>0.13</u>	<u>10.3</u>	<u>0.626</u>	<u>6.95</u>	<u>65</u>	<u>1.53</u>	
<u>1008</u>	<u>5.0</u>		<u>~ 3.25 gals</u>	<u>0.14</u>	<u>10.3</u>	<u>0.627</u>	<u>6.95</u>	<u>63</u>	<u>1.38</u>	
<u>1011</u>	<u>5.6</u>			<u>0.14</u>	<u>10.3</u>	<u>0.628</u>	<u>6.94</u>	<u>69</u>	<u>1.64</u>	
			<u>3.6 gals</u>							
<u>1016</u>		<u>Sample Collected</u>		<u>3x VOA's for VOC</u>						

GW SAMPLING RECORD

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY			PARSONS			WELL #: <u>MWT 24</u>	
PROJECT: <u>Ash Landfill LTM Groundwater Sampling - Round 20</u>			LOCATION: <u>ROMULUS, NY</u>			DATE: <u>12/18/15</u>	
WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)			MONITORING			INSPECTORS: <u>DED</u>	
PUMP #: <u>15729</u>			SAMPLE ID #: <u>ALBW20349</u>			INSTRUMENT: <u>OVM-580</u>	
WEATHER (APPRX) <u>p/cloudy</u>			WIND (FROM) VELOCITY (APPRX) <u>5-10</u> DIRECTION <u>WNW</u>			DETECTOR: <u>PID</u>	
REL. HUMIDITY (GEN) <u></u>			GROUND / SITE SURFACE CONDITIONS <u>Grassy</u>			OVM-580 PID	
TIME (24 HR) <u>0815</u>			TEMP (APPRX) <u>30s</u>				

WELL VOLUME CALCULATION FACTORS							ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]	
DIAMETER (INCHES):	0.25	1	2	3	4	6		
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47		
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564		

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	<u>12.73</u>					

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
		<u>7.24</u>			

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)

MONITORING DATA COLLECTED DURING PURGING OPERATIONS									
TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (mS/cm ³)	pH	ORP (mV)	TURBIDITY (NTU)
0835									
Pump and YSI installed - New tubing installed									
0835				0.29	11.3	0.889	7.59	185	overage
0840				0.35	11.2	0.893	7.34	85	
0845		90		0.40	11.2	0.897	7.21	63	
0850				0.31	11.1	0.899	7.12	56	1179
0855				0.27	11.1	0.899	7.06	57	
0900		100		0.25	11.1	0.898	7.03	57	81.0
0905				0.22	11.1	0.899	6.99	59	
0910				0.21	11.1	0.902	6.98	60	
0915		102		0.17	11.2	0.900	6.97	59	21.2
0920				0.15	11.2	0.903	6.98	58	
0925				0.14	11.1	0.901	6.99	58	12.3
0930				0.13	11.1	0.901	6.98	56	
0935		96	<u>~ 2.0 gals</u>	0.13	11.1	0.901	6.99	55	9.79
0940									
Collected Sample # ALBW 20349									
3x VOTs for VOC									

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: <u>MWT-22</u>				
PROJECT: <u>Ash Landfill LTM Groundwater Sampling - Round 20</u>	LOCATION: <u>ROMULUS, NY</u>	DATE: <u>12/18/15</u>				
WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)		INSPECTORS: <u>BBO</u>				
		PUMP #: <u>12867</u>				
		SAMPLE ID #: <u>ALBW20348</u>				
TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	(FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
<u>1055</u>	<u>40</u>	<u>overcast</u>		<u>5-10</u>	<u>W→E</u>	<u>grassy</u>

WELL VOLUME CALCULATION FACTORS							ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]	
DIAMETER (INCHES):	0.25	1	2	3	4	6		
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47		
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564		
							<u>1x well = 1.30</u>	<u>3x wells = 3.88 gals</u>
HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)		DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND	
	<u>14.83'</u>							
DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)		DEPTH TO STATIC WATER LEVEL (TOC)		DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME	
			<u>6.88</u>					
RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)			PUMP AFTER SAMPLING (cps)				

MONITORING DATA COLLECTED DURING PURGING OPERATIONS									
TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (mS/cm ³)	pH	ORP (mV)	TURBIDITY (NTU)
<u>1109</u>	<u>6.22</u>	<u>YST E</u>	<u>Pump in well</u>	<u>YST</u>	<u>YST</u>	<u>Harder</u>	<u>Harder</u>	<u>Harder</u>	<u>Lo/No</u>
<u>1110</u>			<u>Pump started</u>						
<u>1118</u>	<u>7.1</u>			<u>1.52</u>	<u>11.5</u>	<u>1.33</u>	<u>6.63</u>	<u>-49</u>	<u>12.1</u>
<u>1123</u>	<u>7.91</u>	<u>110</u>		<u>0.71</u>	<u>11.5</u>	<u>1.37</u>	<u>6.47</u>	<u>-65</u>	<u>11.9</u>
<u>1128</u>	<u>8.41</u>	<u>110</u>		<u>0.82</u>	<u>11.4</u>	<u>1.36</u>	<u>6.47</u>	<u>-69</u>	<u>12.0</u>
<u>1133</u>	<u>8.9</u>	<u>118</u>	<u>~0.5 gals</u>	<u>1.18</u>	<u>11.4</u>	<u>1.38</u>	<u>6.48</u>	<u>-74</u>	<u>11.36</u>
<u>1138</u>	<u>9.45</u>			<u>1.19</u>	<u>11.3</u>	<u>1.38</u>	<u>6.46</u>	<u>-76</u>	<u>8.11</u>
<u>1143</u>	<u>9.9</u>	<u>104</u>		<u>1.30</u>	<u>11.3</u>	<u>1.37</u>	<u>6.48</u>	<u>-78</u>	<u>-</u>
<u>1148</u>	<u>10.1</u>		<u>~1.0 gal</u>	<u>1.35</u>	<u>11.3</u>	<u>1.36</u>	<u>6.49</u>	<u>-79</u>	<u>5.83</u>
<u>1153</u>	<u>10.38</u>	<u>100</u>		<u>1.45</u>	<u>11.3</u>	<u>1.34</u>	<u>6.50</u>	<u>-80</u>	<u>6.18</u>
<u>1158</u>	<u>10.38</u>		<u>~1.25</u>	<u>1.25</u>	<u>11.4</u>	<u>1.31</u>	<u>6.50</u>	<u>-81</u>	<u>5.89</u>
<u>1203</u>	<u>10.37</u>	<u>102</u>		<u>1.12</u>	<u>11.5</u>	<u>1.29</u>	<u>6.52</u>	<u>-81</u>	<u>-</u>
<u>1208</u>	<u>10.37</u>		<u>~1.6 gals</u>	<u>1.31</u>	<u>11.5</u>	<u>1.30</u>	<u>6.53</u>	<u>-80</u>	<u>5.09</u>
<u>1213</u>	<u>10.37</u>			<u>1.20</u>	<u>11.5</u>	<u>1.32</u>	<u>6.53</u>	<u>-79</u>	<u>5.06</u>
<u>1218</u>	<u>10.37</u>	<u>100</u>	<u>~1.75</u>	<u>1.20</u>	<u>11.5</u>	<u>1.33</u>	<u>6.53</u>	<u>-78</u>	<u>-</u>
<u>1223</u>	<u>10.48</u>		<u>~2.0</u>	<u>1.05</u>	<u>11.5</u>	<u>1.34</u>	<u>6.55</u>	<u>-77</u>	<u>4.25</u>
			<u>~2.25 gals</u>						
<u>1228</u>			<u>Sample Collected</u>	<u>3x Vols for VOC</u>					

GW SAMPLING RECORD

SAMPLING RECORD - GROUNDWATER									
SENECA ARMY DEPOT ACTIVITY				PARSONS			WELL #: MWT-25		
PROJECT: Ash Landfill LTM Groundwater Sampling - Round 20						DATE: 10-18-15			
LOCATION: ROMULUS, NY						INSPECTORS: DRD			
						PUMP #: 12752			
WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)						SAMPLE ID #: ALBW-20350			
TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND (FROM)		GROUND / SITE SURFACE CONDITIONS	MONITORING		
				VELOCITY (APPRX)	DIRECTION (0 - 360)		INSTRUMENT	DETECTOR	
1225	30s	overcast		5-10	NW	Grassy	OVM-580	PID	
WELL VOLUME CALCULATION FACTORS						ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]			
DIAMETER (INCHES):		0.25	1	2	3	4	6		
GALLONS / FOOT:		0.0026	0.041	0.163	0.367	0.654	1.47		
LITERS/FOOT		0.010	0.151	0.617	1.389	2.475	5.564		
HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)		DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND		
	13.20								
DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)		DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME			
			5.38						
RADIATION SCREENING DATA		PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)					
MONITORING DATA COLLECTED DURING PURGING OPERATIONS									
TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L) ^{YSI}	TEMP (C)	SPEC. COND (mS/cm ³) ^{Handy}	Handy pH	Handy ORP (mV)	TURBIDITY (NTU)
1235	5.91		Pump + YSI installed - New tubing (Air + Water) installed						
1245		104		1.35	10.2	1.72	7.46	130	
1250				1.31	10.2	1.73	7.46	128	15.7
1255				1.33	10.2	1.74	7.46	128	
1300		98		1.21	10.1	1.74	7.46	126	
1305			Getting down down	1.23	10.1	1.74	7.41	128	9.27
1310		70		1.09	10.1	1.77	7.42	121	
1315				0.89	10.1	1.80	7.38	119	
1320		104		0.81	10.1	1.79	7.39	116	
1325				0.73	10.1	1.81	7.39	112	7.02
1330				0.65	10.1	1.81	7.39	111	
1335				0.78	10.1	1.82	7.38	110	
1340		110		0.86	10.1	1.82	7.37	112	
1345				0.74	10.1	1.83	7.37	111	
1350		102		0.58	10.2	1.84	7.37	112	
1355				0.49	10.2	1.84	7.35		4.75
1400	DO Reading spiked due to lack of water in column								
	~ 2.75 gals								
	1410 Collected sample # ALBW 20350								
	3x Vols for VOC								

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY			PARSONS				WELL #: <u>MW-56</u>		
PROJECT: <u>Ash Landfill LTM Groundwater Sampling - Round 20</u>						DATE: <u>12/19/15</u>			
LOCATION: <u>ROMULUS, NY</u>						INSPECTORS: <u>BBO/DD</u>			
						PUMP #: <u>14121</u>			
WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)						SAMPLE ID #: <u>ALBW20551</u>			
TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND (FROM)		GROUND / SITE SURFACE CONDITIONS	MONITORING		
				VELOCITY (APPRX)	DIRECTION (0 - 360)		INSTRUMENT	DETECTOR	
<u>811</u>	<u>30s</u>	<u>Partly cloudy</u>		<u>5-20</u>	<u>W-E</u>	<u>grassy</u> <u>frozen</u>	<u>OVM-580</u>	<u>PID</u>	
WELL VOLUME CALCULATION FACTORS						ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]			
DIAMETER (INCHES):		0.25	1	<u>2</u>	3	4	6		
GALLONS / FOOT:		0.0026	0.041	<u>0.163</u>	0.367	0.654	1.47		
LITERS / FOOT:		0.010	0.151	<u>0.617</u>	1.389	2.475	5.564		
HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)		DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND		
	<u>6.50'</u>								
DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)		DEPTH TO STATIC WATER LEVEL (TOC)		DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME		
			<u>3.56</u>						
RADIATION SCREENING DATA		PUMP PRIOR TO SAMPLING (cps)			PUMP AFTER SAMPLING (cps)				
MONITORING DATA COLLECTED DURING PURGING OPERATIONS									
TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (mS/cm ³)	pH	ORP (mV)	TURBIDITY (NTU)
<u>519</u>	<u>3.20</u>	<u>155</u>	<u>Pump in the well replaced air & water lines</u>	<u>YSI</u>	<u>YSI</u>	<u>Horiba</u>	<u>Horiba</u>	<u>Horiba</u>	<u>Laotto</u>
<u>819</u>		<u>Pump Started</u>		<u>YSI</u>	<u>YSI</u>	<u>Horiba</u>	<u>Horiba</u>	<u>Horiba</u>	<u>Laotto</u>
<u>525</u>		<u>156</u>		<u>0.95</u>	<u>7.9</u>	<u>0.594</u>	<u>7.42</u>	<u>207</u>	<u>36.1</u>
<u>830</u>	<u>3.85</u>			<u>0.68</u>	<u>8.1</u>	<u>0.590</u>	<u>7.25</u>	<u>-48</u>	<u>22.8</u>
<u>835</u>	<u>3.84</u>	<u>134</u>		<u>0.35</u>	<u>8.1</u>	<u>0.588</u>	<u>7.13</u>	<u>-88</u>	<u>12.9</u>
<u>840</u>	<u>3.85</u>	<u>168</u>		<u>0.45</u>	<u>8.0</u>	<u>0.591</u>	<u>7.01</u>	<u>-97</u>	<u>8.43</u>
<u>845</u>	<u>3.88</u>	<u>134</u>		<u>0.50</u>	<u>8.1</u>	<u>0.586</u>	<u>6.96</u>	<u>-104</u>	<u>6.88</u>
<u>550</u>	<u>3.94</u>			<u>0.58</u>	<u>8.1</u>	<u>0.586</u>	<u>6.94</u>	<u>-107</u>	<u>4.71</u>
<u>855</u>	<u>3.76</u>	<u>130</u>	<u>~1.0 gal</u>	<u>0.54</u>	<u>8.1</u>	<u>0.587</u>	<u>6.92</u>	<u>-108</u>	<u>3.97</u>
<u>700</u>				<u>0.58</u>	<u>8.1</u>	<u>0.583</u>	<u>6.90</u>	<u>-108</u>	<u>5.27</u>
<u>905</u>	<u>3.94</u>		<u>~1.5 gals</u>	<u>0.55</u>	<u>8.1</u>	<u>0.588</u>	<u>6.89</u>	<u>-108</u>	<u>3.64</u>
<u>910</u>			<u>Samples collected</u>			<u>3x VOLTs for VOC</u>			

GW SAMPLING RECORD

SAMPLING RECORD - GROUNDWATER									
SENECA ARMY DEPOT ACTIVITY				PARSONS			WELL #: <u>MW-40</u>		
PROJECT: <u>Ash Landfill LTM Groundwater Sampling - Round 20</u>						DATE: <u>12/19/15</u>			
LOCATION: <u>ROMULUS, NY</u>						INSPECTORS: <u>BBG/BD</u>			
						PUMP #: <u>Peristaltic</u>			
WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)						SAMPLE ID #: <u>ALBW20358</u>			
TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND (FROM)		GROUND / SITE SURFACE CONDITIONS	MONITORING		
				VELOCITY (APPRX)	DIRECTION (0 - 360)		INSTRUMENT	DETECTOR	
							OVM-580	PID	
WELL VOLUME CALCULATION FACTORS						ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]			
DIAMETER (INCHES):		0.25	1	2	3	4	6		
GALLONS / FOOT:		0.0026	0.041	0.163	0.367	0.654	1.47		
LITERS/FOOT		0.010	0.151	0.617	1.389	2.475	5.564		
HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)		DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY		WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND	
	14.65								
DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)		DEPTH TO STATIC WATER LEVEL (TOC)		DEPTH TO STABILIZED WATER LEVEL (TOC)		DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME	
			4.54						
RADIATION SCREENING DATA		PUMP PRIOR TO SAMPLING (cps)				PUMP AFTER SAMPLING (cps)			
MONITORING DATA COLLECTED DURING PURGING OPERATIONS									
TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (mS/cm ²)	pH	ORP (mV)	TURBIDITY (NTU)
952	4.47	YSI in well		YSI	YSI	Horiba	Horiba	Horiba	LaMotte
952		Peristaltic Pump Started							
955	5.92	230+		1.07	10.3	0.566	7.43	9	3.2
1000	6.77	360		0.83	10.2	0.555	7.40	18	1.86
1005	7.95		~1.0 gal	0.82	10.3	0.543	7.42	29	1.34
1010	8.00		~1.5 gal	0.78	10.4	0.537	7.43	36	0.98
1015	8.02			0.70	10.4	0.535	7.44	43	1.00
1020	8.02		2.5 gals	0.65	10.4	0.533	7.44	49	0.77
1025	8.13			0.62	10.4	0.530	7.44	55	0.49
1030	8.23		3.3 gals	0.63	10.4	0.530	7.45	58	0.76
1035	-			0.59	10.4	0.527	7.44	63	0.59
1040	8.42		4.25 gals	0.59	10.4	0.528	7.42	68	0.64
1045	8.6		7.75 gals	0.63	10.4	0.527	7.41	72	0.65
1050		Collected High Field Tests							
			Fe ⁺	0.01 mg/L					
			Mn ⁺	0.2 mg/L					

APPENDIX B
COMPLETE GROUNDWATER DATA

Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 9
Seneca Army Depot Activity

Area	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID	PT-18A	PT-18A	PT-18A	PT-18A	PT-18A	PT-18A
Matrix	GW	GW	GW	GW	GW	GW
Sample ID	ALBW20059	ALBW20074	ALBW20088	ALBW20103	ALBW20117	ALBW20132
Sample Date	1/3/2007	3/17/2007	6/5/2007	11/15/2007	6/24/2008	12/12/2008
QC Type	SA	SA	SA	SA	SA	SA
Study ID	LTM	LTM	LTM	LTM	LTM	LTM
Sample Round	1	2	3	4	5	6
Filtered	Total	Total	Total	Total	Total	Total

Parameter	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Detects Above Standard-1	ASH LANDFILL		ASH LANDFILL		ASH LANDFILL		ASH LANDFILL		ASH LANDFILL		
									Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual	
Volatile Organic Compounds																			
1,1,1-Trichloroethane	UG/L	15	2%	5	298	GA	5	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.26 UJ	0.26 U		
1,1,2,2-Tetrachloroethane	UG/L	0	0%	0	298	GA	5	0	1 U	1 U	1 U	1 U	1 U	1 U	0.21 U	0.21 U			
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	0	298	GA	5	0	1 U	1 U	1 UJ	1 U	1 UJ	1 U	0.31 U	0.31 U			
1,1,2-Trichloroethane	UG/L	0	0%	0	298	GA	1	0	1 U	1 U	1 U	1 U	1 U	1 U	0.23 U	0.23 U			
1,1-Dichloroethane	UG/L	62	12%	37	298	GA	5	1	1 U	1 U	1 U	1 U	1 U	1 U	0.75 U	0.75 U			
1,1-Dichloroethene	UG/L	2.6	11%	34	298	GA	5	0	0.64 J	0.73 J	1.4	2.1	1 U	1 U	1.3	0.8 J			
1,2,4-Trichlorobenzene	UG/L	0	0%	0	298	GA	5	0	1 U	1 U	1 U	1 U	1 U	1 U	0.41 U	0.41 U			
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0	298	GA	0.04	0	1 U	1 U	1 U	1 U	1 UJ	1 U	1 UJ	1 U			
1,2-Dibromoethane	UG/L	0	0%	0	298	GA	0.0006	0	1 U	1 U	1 U	1 U	1 U	1 U	0.17 U	0.17 U			
1,2-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0	1 U	1 U	1 U	1 U	1 U	1 U	0.2 U	0.2 U			
1,2-Dichloroethane	UG/L	5.6	15%	45	298	GA	0.6	37	1 U	1 U	1 U	1 U	1 U	1 U	0.21 U	0.21 U			
1,2-Dichloropropane	UG/L	0.29	0%	1	298	GA	1	0	1 U	1 U	1 U	1 U	1 U	1 U	0.14 U	0.14 U			
1,3-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0	1 U	1 U	1 U	1 U	1 U	1 U	0.16 U	0.16 U			
1,4-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0	1 U	1 U	1 U	1 U	1 U	1 U	0.16 U	0.16 U			
Acetone	UG/L	2600	16%	46	285				5 U	2 J	7	5 U	5 U	1.3 UJ	1.3 UJ				
Benzene	UG/L	0.48	2%	5	298	GA	1	0	1 U	1 U	1 U	1 U	1 U	1 U	0.16 U	0.16 U			
Bromodichloromethane	UG/L	0	0%	0	298	MCL	80	0	1 U	1 U	1 U	1 U	1 U	1 U	0.38 U	0.38 U			
Bromoform	UG/L	0	0%	0	298	MCL	80	0	1 U	1 U	1 U	1 U	1 U	1 U	0.26 U	0.26 U			
Carbon disulfide	UG/L	0	0%	0	298				1 U	1 U	1 U	1 U	1 U	1 U	0.19 U	0.19 U			
Carbon tetrachloride	UG/L	0	0%	0	298	GA	5	0	1 U	1 U	1 U	1 U	1 U	1 U	0.27 UJ	0.27 U			
Chlorobenzene	UG/L	0	0%	0	298	GA	5	0	1 U	1 U	1 U	1 U	1 U	1 U	0.18 U	0.18 U			
Chlorodibromomethane	UG/L	0	0%	0	298	MCL	80	0	1 U	1 U	1 U	1 U	1 U	1 U	0.32 U	0.32 U			
Chloroethane	UG/L	1.1	2%	7	298	GA	5	0	1 U	1 U	1 U	1 U	1 UJ	1 U	0.32 U	0.32 U			
Chloroform	UG/L	71	8%	24	298	GA	7	7	27	13 U	14	8.7	1 U	2.2	9				
Cis-1,2-Dichloroethene	UG/L	820	88%	262	298	GA	5	184	220	170	430	720	200	510	260				
Cis-1,3-Dichloropropene	UG/L	0	0%	0	298	GA	0.4	0	1 U	1 U	1 U	1 U	1 U	1 U	0.36 U	0.36 U			
Cyclohexane	UG/L	0.3	0%	1	298				1 U	1 U	1 U	1 U	1 U	1 U	0.22 U	0.53 U			
Dichlorodifluoromethane	UG/L	0.3	0%	1	298	GA	5	0	1 U	1 U	1 U	1 U	1 U	1 U	0.28 UJ	0.29 U			
Ethyl benzene	UG/L	9.2	6%	19	298	GA	5	1	1 U	1 U	1 U	1 U	1 U	1 U	0.18 U	0.18 U			
Isopropylbenzene	UG/L	0.1	0%	1	298	GA	5	0	1 U	1 U	1 U	1 U	1 U	1 U	0.19 U	0.19 U			
Methyl Acetate	UG/L	6	1%	2	283				1 U	1 UJ	1 U	1 UJ	1 UJ	1 UJ	0.17 U	0.17 U			
Methyl bromide	UG/L	2.1	0%	1	292	GA	5	0	1 U	1 U	1 U	1 U	1 U	1 U	0.28 U	0.28 U			
Methyl butyl ketone	UG/L	0	0%	0	298				5 U	5 U	5 U	5 UJ	5 UJ	1.2 U	1.2 U				
Methyl chloride	UG/L	0	0%	0	298	GA	5	0	1 U	1 U	1 U	1 U	1 U	1 U	0.34 U	0.35 U			
Methyl cyclohexane	UG/L	0.17	0%	1	298				1 U	1 U	1 U	1 U	1 U	1 U	0.22 U	0.5 U			
Methyl ethyl ketone	UG/L	4900	8%	22	291				5 U	5 U	5 U	5 U	5 UJ	1.3 U	1.3 U				
Methyl isobutyl ketone	UG/L	1.9	0%	1	298				5 U	5 U	5 U	5 U	5 UJ	0.91 U	0.91 U				
Methyl Tertbutyl Ether	UG/L	0	0%	0	298				1 U	1 U	1 U	1 U	1 U	1 U	0.16 U	0.16 U			
Methylene chloride	UG/L	18	4%	12	298	GA	5	7	1 UJ	1 U	1 U	1 U	1 U	1 U	0.44 UJ	0.44 U			
Styrene	UG/L	0	0%	0	298	GA	5	0	1 U	1 U	1 U	1 U	1 U	1 U	0.18 U	0.18 U			
Tetrachloroethene	UG/L	27	1%	2	298	GA	5	1	1 U	1 U	1 U	1 U	1 U	1 U	0.36 U	0.36 U			
Toluene	UG/L	590	11%	32	298	GA	5	18	1 U	1 U	1 U	1 U	1 U	1 U	0.51 U	0.51 U			
Total Xylenes	UG/L	60	1%	2	298	GA	5	1	3 U	3 U	3 U	3 U	3 U	0.93 U	0.66 U				
Trans-1,2-Dichloroethene	UG/L	22	52%	155	298	GA	5	14	1.6	1.4	3.3	3.4	0.9 J	2.4	1.8				
Trans-1,3-Dichloropropene	UG/L	0	0%	0	298	GA	0.4	0	1 U	1 U	1 U	1 U	1 U	1 U	0.37 U	0.37 U			
Trichloroethene	UG/L	3800	68%	204	298	GA	5	95	2,000	1,000	1,100	2,700	220	1,400	810 J				
Trichlorofluoromethane	UG/L	0	0%	0	298	GA	5	0	1 U	1 U	1 UJ	1 U	1 UJ	0.15 UJ	0.15 U				
Vinyl chloride	UG/L	180	65%	194	298	GA	2	148	2.4	2.9	3.3	8.2	1.4	4.6	2.6				
Other																			
Iron	UG/L	296,000	100%	12	12	GA	300	11											
Iron+Manganese	UG/L	352,900	100%	12	12	GA	500	12											
Manganese	UG/L	56,900	100%	12	12	GA	300	12											
Ethane	UG/L	98	95%	145	152														
Ethene	UG/L	200	89%	135	152														
Methane	UG/L	23,000	98%	149	152														
Sulfate	MG/L	1,060	84%	128	152	GA	250	24											
Total Organic Carbon	MG/L	2050	100%	152	152														

1. The cleanup goal values are NYSDEC Class GA GW Standards unless noted otherwise.
a. NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998).
b. Federal Maximum Contaminant Level (<http://www.epa.gov/safewater/contaminants/index.html>)
2. Shading indicates a concentration above the GA GW standard.

U = compound was not detected
J = the reported value is an estimated concentration
R = Rejected, data validation rejected the results
UJ = the compound was not detected; the associated reporting limit is approximate
UR = the compound was not detected; data validation rejected the results

Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 9
Seneca Army Depot Activity

Table with columns: Area, Loc ID, Matrix, Sample ID, Sample Date, QC Type, Study ID, Sample Round, Filtered, ASH LANDFILL MWT-27, ASH LANDFILL MWT-27, ASH LANDFILL MWT-27, ASH LANDFILL MWT-27, ASH LANDFILL MWT-27, ASH LANDFILL MWT-27, ASH LANDFILL MWT-27, Max Detected Value, Frequency of Detects, Num of Detects, Num of Analyses, Source Criteria, Action Level, Detects Above Standard-1, Value Qual, Value Qual, Value Qual, Value Qual, Value Qual, Value Qual, Value Qual. Rows include Volatile Organic Compounds, Acetone, Benzene, Bromodichloromethane, Bromoform, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chlorodibromomethane, Chloroethane, Chloroform, Cis-1,2-Dichloroethene, Cis-1,3-Dichloropropene, Cyclohexane, Dichlorodifluoromethane, Ethyl benzene, Isopropylbenzene, Methyl Acetate, Methyl bromide, Methyl butyl ketone, Methyl chloride, Methyl cyclohexane, Methyl ethyl ketone, Methyl isobutyl ketone, Methyl Tertbutyl Ether, Methylene chloride, Styrene, Tetrachloroethene, Toluene, Total Xylenes, Trans-1,2-Dichloroethene, Trans-1,3-Dichloropropene, Trichloroethene, Trichlorofluoromethane, Vinyl chloride, and Other (Iron, Iron+Manganese, Manganese, Ethane, Ethene, Methane, Sulfate, Total Organic Carbon).

1. The cleanup goal values are NYSDEC Class GA GW Standards unless noted otherwise.
a. NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998).
b. Federal Maximum Contaminant Level (http://www.epa.gov/safewater/contaminants/index.html)
2. Shading indicates a concentration above the GA GW standard.

U = compound was not detected
J = the reported value is and estimated concentration
R = Rejected, data validation rejected the results
UU = the compound was not detected; the associated reporting limit is approximate
UR = the compound was not detected; data validation rejected the results

Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 9
Seneca Army Depot Activity

Area	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL									
Loc ID	MWT-28	MWT-28	MWT-28	MWT-28	MWT-28	MWT-28	MWT-28									
Matrix	GW	GW	GW	GW	GW	GW	GW									
Sample ID	ALBW20128	ALBW20144	ALBW20158	ALBW20159	ALBW20174	ALBW20188	ALBW20189									
Sample Date	6/25/2008	12/15/2008	6/3/2009	6/3/2009	12/18/2009	6/29/2010	6/29/2010									
QC Type	SA	SA	SA	DU	SA	SA	DU									
Study ID	LTM	LTM	LTM	LTM	LTM	LTM	LTM									
Sample Round	5	6	7	7	8	9	9									
Filtered	Total	Total	Total	Total	Total	Total	Total									
Parameter	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Detects Above Standard-1	Value Qual	Value Qual	Value Qual	Value Qual	Value Qual	Value Qual	Value Qual	
Volatile Organic Compounds																
1,1,1-Trichloroethane	UG/L	15	2%	5	298	GA	5	1	4 U	2.6 U	0.26 U	0.26 U	1.3 U	0.5 U	0.5 U	
1,1,2,2-Tetrachloroethane	UG/L	0	0%	0	298	GA	5	0	4 U	2.1 U	0.21 U	0.21 U	1.1 U	0.18 U	0.18 U	
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	0	298	GA	5	0	4 U	3.1 U	0.31 U	0.31 U	1.5 UJ	0.5 UJ	0.5 UJ	
1,1,2-Trichloroethane	UG/L	0	0%	0	298	GA	1	0	4 U	2.3 U	0.23 U	0.23 U	1.2 U	0.13 U	0.13 U	
1,1-Dichloroethane	UG/L	62	12%	37	298	GA	5	1	4 U	7.5 U	0.75 U	0.75 U	1.9 U	0.25 U	0.25 U	
1,1-Dichloroethene	UG/L	2.6	11%	34	298	GA	5	0	4 U	2.9 U	0.29 U	0.29 U	1.5 U	0.11 U	0.11 U	
1,2,4-Trichlorobenzene	UG/L	0	0%	0	298	GA	5	0	4 U	4.1 U	0.41 U	0.41 U	2 U	0.25 U	0.25 U	
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0	298	GA	0.04	0	4 U	10 UJ	1 UJ	1 UJ	2 U	0.44 U	0.44 U	
1,2-Dibromoethane	UG/L	0	0%	0	298	GA	0.0006	0	4 U	1.7 U	0.17 U	0.17 U	0.83 U	0.25 U	0.25 U	
1,2-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0	4 U	2 U	0.2 U	0.2 U	1 U	0.21 U	0.21 U	
1,2-Dichloroethane	UG/L	5.6	15%	45	298	GA	0.6	37	4 U	2.1 U	0.21 U	0.21 U	1.1 U	0.1 U	0.1 U	
1,2-Dichloropropane	UG/L	0.29	0%	1	298	GA	1	0	4 U	1.4 U	0.14 U	0.14 U	1.6 U	0.13 U	0.13 U	
1,3-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0	4 U	1.6 U	0.16 U	0.16 U	1.8 U	0.25 U	0.25 U	
1,4-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0	4 U	1.6 U	0.16 U	0.16 U	2 U	0.28 U	0.28 U	
Acetone	UG/L	2600	16%	46	285				20 U	13 U	1.9 J	1.9 J	6.7 U	6.2 J	5.9 J	
Benzene	UG/L	0.48	2%	5	298	GA	1	0	4 U	1.6 U	0.16 U	0.16 U	2 U	0.25 U	0.25 U	
Bromodichloromethane	UG/L	0	0%	0	298	MCL	80	0	4 U	3.8 U	0.39 U	0.39 U	1.9 U	0.25 U	0.25 U	
Bromoform	UG/L	0	0%	0	298	MCL	80	0	4 U	2.6 U	0.26 U	0.26 U	1.3 U	0.5 U	0.5 U	
Carbon disulfide	UG/L	0	0%	0	298				4 U	1.9 U	0.19 UJ	0.19 UJ	0.97 U	0.6 U	0.6 U	
Carbon tetrachloride	UG/L	0	0%	0	298	GA	5	0	4 U	2.7 U	0.27 U	0.27 U	1.3 U	0.5 U	0.5 U	
Chlorobenzene	UG/L	0	0%	0	298	GA	5	0	4 U	1.8 U	0.32 U	0.32 U	1.6 U	0.25 U	0.25 U	
Chlorodibromomethane	UG/L	0	0%	0	298	MCL	80	0	4 U	3.2 U	0.32 U	0.32 U	1.6 U	0.1 U	0.1 U	
Chloroethane	UG/L	1.1	2%	7	298	GA	5	0	4 UJ	3.2 U	0.32 U	0.32 U	1.6 UJ	1 U	1 U	
Chloroform	UG/L	71	8%	24	298	GA	7	7	4 U	3.4 U	0.34 U	0.34 U	1.7 U	0.14 U	0.14 U	
Cis-1,2-Dichloroethene	UG/L	820	88%	262	298	GA	5	184	4 U	1.6 U	0.16 U	0.16 U	1.9 U	0.15 U	0.15 U	
Cis-1,3-Dichloropropene	UG/L	0	0%	0	298	GA	0.4	0	4 U	3.6 U	0.36 U	0.36 U	1.8 U	0.11 U	0.11 U	
Cyclohexane	UG/L	0.3	0%	1	298				4 U	2.2 U	0.53 U	0.53 U	2.7 U	0.25 U	0.25 U	
Dichlorodifluoromethane	UG/L	0.3	0%	1	298	GA	5	0	4 U	2.8 U	0.29 U	0.29 U	1.4 U	0.25 U	0.25 U	
Ethyl benzene	UG/L	9.2	6%	19	298	GA	5	1	4 U	1.8 U	0.18 U	0.18 U	0.92 U	0.17 J	0.17 J	
Isopropylbenzene	UG/L	0.1	0%	1	298	GA	5	0	4 U	1.9 U	0.19 U	0.19 U	0.96 U	0.1 U	0.1 U	
Methyl Acetate	UG/L	6	1%	2	283				4 UJ	1.7 U	0.17 UJ	0.17 UJ	2.5 U	0.19 UJ	0.19 UJ	
Methyl bromide	UG/L	2.1	0%	1	292	GA	5	0	4 UJ	2.8 U	0.28 U	0.28 U	1.4 UJ	0.8 UJ	0.8 UJ	
Methyl butyl ketone	UG/L	0	0%	0	298				20 UJ	12 U	1.2 U	1.2 U	6.2 U	1 UJ	1 UJ	
Methyl chloride	UG/L	0	0%	0	298	GA	5	0	4 U	3.4 U	0.35 U	0.35 U	1.7 U	0.33 U	0.33 U	
Methyl cyclohexane	UG/L	0.17	0%	1	298				4 U	2.2 U	0.5 U	0.5 U	2.5 U	0.1 U	0.1 U	
Methyl ethyl ketone	UG/L	4900	8%	22	291				20 U	13 U	1.3 U	1.3 U	6.6 U	1 U	1 U	
Methyl isobutyl ketone	UG/L	1.9	0%	1	298				20 U	9.1 U	0.91 U	0.91 U	4.5 U	1 U	1 U	
Methyl Tertbutyl Ether	UG/L	0	0%	0	298				4 U	1.6 U	0.16 U	0.16 U	0.8 U	0.2 U	0.2 U	
Methylene chloride	UG/L	18	4%	12	298	GA	5	7	4 U	4.4 UJ	0.44 U	0.44 U	2.2 U	1 U	1 U	
Styrene	UG/L	0	0%	0	298	GA	5	0	4 U	1.8 U	0.18 U	0.18 U	0.92 U	0.11 U	0.11 U	
Tetrachloroethene	UG/L	27	1%	2	298	GA	5	1	4 U	3.6 U	0.36 U	0.36 U	1.8 U	0.15 U	0.15 U	
Toluene	UG/L	590	11%	32	298	GA	5	18	53	5.1 U	0.57 J	0.6 J	2.6 U	0.52 J	0.48 J	
Total Xylenes	UG/L	60	1%	2	298	GA	5	1	12 U	9.3 U	0.66 U	0.66 U	3.3 U	0.2 U	0.2 U	
Trans-1,2-Dichloroethene	UG/L	22	52%	155	298	GA	5	14	4 U	1.3 U	0.13 U	0.13 U	2.1 U	0.2 U	0.2 U	
Trans-1,3-Dichloropropene	UG/L	0	0%	0	298	GA	0.4	0	4 U	3.7 U	0.37 U	0.37 U	1.8 U	0.21 U	0.21 U	
Trichloroethene	UG/L	3800	68%	204	298	GA	5	95	4 U	1.8 U	0.18 U	0.18 U	2.3 U	0.13 U	0.13 U	
Trichlorofluoromethane	UG/L	0	0%	0	298	GA	5	0	4 UJ	1.5 U	0.15 U	0.15 U	0.76 UJ	0.25 U	0.25 U	
Vinyl chloride	UG/L	180	65%	194	298	GA	2	148	4 U	2.4 U	0.24 U	0.24 U	1.2 U	0.18 U	0.18 U	
Other																
Iron	UG/L	296,000	100%	12	12	GA	300	11								
Iron+Manganese	UG/L	352,900	100%	12	12	GA	500	12								
Manganese	UG/L	56,900	100%	12	12	GA	300	12								
Ethane	UG/L	98	95%	145	152				0.65	2	1.9	1.7	1.6	1.6	1.5	
Ethene	UG/L	200	89%	135	152				0.044	0.12	0.062	0.066	0.12	0.057	0.061	
Methane	UG/L	23,000	98%	149	152				12,000	19,000	14,000	12,000	15,000	14,000	13,000	
Sulfate	MG/L	1,060	84%	128	152	GA	250	24	2 U	48.3	0.35 U	0.35 U	3.16	0.5 U	0.5 U	
Total Organic Carbon	MG/L	2050	100%	152	152				49.2	27.9	28.7	27.6	25.5	21	21	

1. The cleanup goal values are NYSDEC Class GA GW Standards unless noted otherwise.
 a. NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998).
 b. Federal Maximum Contaminant Level (<http://www.epa.gov/safewater/contaminants/index.html>)
 2. Shading indicates a concentration above the GA GW standard.

U = compound was not detected
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Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 9
Seneca Army Depot Activity

Area Loc ID Matrix Sample ID Sample Date QC Type Study ID Sample Round Filtered	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Detects Above Standard-1	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	
									MWT-28 GW ALBW20204 12/18/2010 SA LTM 10 Total	MWT-28 GW ALBW20219 7/19/2011 SA LTM 11 Total	MWT-28 GW ALBW20234 12/14/2011 SA LTM 12 Total	MWT-28 GW ALBW20248 6/20/2012 SA LTM 13 Total	MWT-28 GW ALBW20249 6/20/2012 DU LTM 13 Total	MWT-28 GW ALBW20264 12/14/2012 SA LTM 14 Total	MWT-28 GW ALBW20277 7/11/2013 SA LTM 15 Total	
Parameter	Unit	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual	
Volatile Organic Compounds																
1,1,1-Trichloroethane	UG/L	15	2%	5	298	GA	5	1	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.5 U	
1,1,2,2-Tetrachloroethane	UG/L	0	0%	0	298	GA	5	0	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	0	298	GA	5	0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
1,1,2-Trichloroethane	UG/L	0	0%	0	298	GA	1	0	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	
1,1-Dichloroethane	UG/L	62	12%	37	298	GA	5	1	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	
1,1-Dichloroethene	UG/L	2.6	11%	34	298	GA	5	0	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	
1,2,4-Trichlorobenzene	UG/L	0	0%	0	298	GA	5	0	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0	298	GA	0.04	0	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	
1,2-Dibromoethane	UG/L	0	0%	0	298	GA	0.0006	0	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	
1,2-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	
1,2-Dichloroethane	UG/L	5.6	15%	45	298	GA	0.6	37	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 U	
1,2-Dichloropropane	UG/L	0.29	0%	1	298	GA	1	0	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	
1,3-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	
1,4-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	
Acetone	UG/L	2600	16%	46	285				5 UJ	5 UR	5 U	5 UJ	5 UJ	5 U	5 U	
Benzene	UG/L	0.48	2%	5	298	GA	1	0	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	
Bromodichloromethane	UG/L	0	0%	0	298	MCL	80	0	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	
Bromoform	UG/L	0	0%	0	298	MCL	80	0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
Carbon disulfide	UG/L	0	0%	0	298				0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	
Carbon tetrachloride	UG/L	0	0%	0	298	GA	5	0	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.5 U	
Chlorobenzene	UG/L	0	0%	0	298	GA	5	0	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	
Chlorodibromomethane	UG/L	0	0%	0	298	MCL	80	0	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
Chloroethane	UG/L	1.1	2%	7	298	GA	5	0	1 U	1 UJ	1 U	1 UJ	1 UJ	1 U	2 U	
Chloroform	UG/L	71	8%	24	298	GA	7	7	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	
Cis-1,2-Dichloroethene	UG/L	820	88%	262	298	GA	5	184	0.51 J	0.15 U	0.28 J	0.15 U	0.15 U	0.15 U	0.15 U	
Cis-1,3-Dichloropropene	UG/L	0	0%	0	298	GA	0.4	0	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	
Cyclohexane	UG/L	0.3	0%	1	298				0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	
Dichlorodifluoromethane	UG/L	0.3	0%	1	298	GA	5	0	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	
Ethyl benzene	UG/L	9.2	6%	19	298	GA	5	1	0.11 U	0.11 U	0.11 U	0.11 J	0.13 J	0.12 J	0.11 U	
Isopropylbenzene	UG/L	0.1	0%	1	298	GA	5	0	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
Methyl Acetate	UG/L	6	1%	2	283				0.19 UJ	0.19 UJ	0.19 U	0.19 UR	0.19 UR	0.19 UJ	0.19 U	
Methyl bromide	UG/L	2.1	0%	1	292	GA	5	0	0.8 UJ	0.8 UJ	0.8 UJ	0.8 UJ	0.8 UJ	0.8 UJ	2 U	
Methyl butyl ketone	UG/L	0	0%	0	298				1 U	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	
Methyl chloride	UG/L	0	0%	0	298	GA	5	0	0.33 U	0.33 UJ	0.33 UJ	0.33 U	0.33 U	0.33 UJ	0.33 UJ	
Methyl cyclohexane	UG/L	0.17	0%	1	298				0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
Methyl ethyl ketone	UG/L	4900	8%	22	291				1 U	1 U	1 U	1 UJ	1 UJ	1 U	1 U	
Methyl isobutyl ketone	UG/L	1.9	0%	1	298				1 U	1 U	1 U	1 UJ	1 UJ	1 U	1 U	
Methyl Tertbutyl Ether	UG/L	0	0%	0	298				0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	
Methylene chloride	UG/L	18	4%	12	298	GA	5	7	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
Styrene	UG/L	0	0%	0	298	GA	5	0	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	
Tetrachloroethene	UG/L	27	1%	2	298	GA	5	1	0.15 U	0.15 U	0.15 UJ	0.15 U	0.15 U	0.15 U	0.15 U	
Toluene	UG/L	590	11%	32	298	GA	5	18	0.33 U	1 U	0.33 U	0.6 J	0.68 J	0.33 U	0.38 J	
Total Xylenes	UG/L	60	1%	2	298	GA	5	1	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	
Trans-1,2-Dichloroethene	UG/L	22	52%	155	298	GA	5	14	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	
Trans-1,3-Dichloropropene	UG/L	0	0%	0	298	GA	0.4	0	0.21 U	0.21 U	0.21 U	0.21 UJ	0.21 UJ	0.21 U	0.21 U	
Trichloroethene	UG/L	3800	68%	204	298	GA	5	95	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	
Trichlorofluoromethane	UG/L	0	0%	0	298	GA	5	0	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	
Vinyl chloride	UG/L	180	65%	194	298	GA	2	148	0.64 J	0.18 U	0.56 J	0.18 U	0.18 U	0.31 J	0.18 U	
Other																
Iron	UG/L	296,000	100%	12	12	GA	300	11								
Iron+Manganese	UG/L	352,900	100%	12	12	GA	500	12								
Manganese	UG/L	56,900	100%	12	12	GA	300	12								
Ethane	UG/L	98	95%	145	152				1.4	0.9	1.6	3.3	2.9	0.38	1.6	
Ethene	UG/L	200	89%	135	152				0.17	0.0085 J	0.425 U	0.053	0.086	0.074	0.2 U	
Methane	UG/L	23,000	98%	149	152				12,000	8,800	12,000	15,000	13,000	11,000	14,000	
Sulfate	MG/L	1,060	84%	128	152	GA	250	24	4.8	0.63 J	19	0.5 J	0.67 J	1.1	1.1 J	
Total Organic Carbon	MG/L	2050	100%	152	152				12	17	12	18	18	25	25	

1. The cleanup goal values are NYSDEC Class GA GW Standards unless noted otherwise.
a. NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998).
b. Federal Maximum Contaminant Level (<http://www.epa.gov/safewater/contaminants/index.html>)
2. Shading indicates a concentration above the GA GW standard.

U = compound was not detected
J = the reported value is and estimated concentration
R = Rejected, data validation rejected the results
UJ = the compound was not detected; the associated reporting limit is approximate
UR = the compound was not detected; data validation rejected the results

Appendix B

Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 9
Seneca Army Depot Activity

Area	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL											
Loc ID	MWT-22	MWT-22	MWT-22	MWT-22	MWT-22	MWT-22	MWT-22											
Matrix	GW	GW	GW	GW	GW	GW	GW											
Sample ID	ALBW20241	ALBW20256	ALBW20269	ALBW20281	ALBW20300	ALBW20316	ALBW20332											
Sample Date	6/21/2012	12/12/2012	7/10/2013	12/12/2013	6/21/2014	12/18/2014	6/5/2015											
QC Type	SA	SA	SA	SA	SA	SA	SA											
Study ID	LTM	LTM	LTM	LTM	LTM	LTM	LTM											
Sample Round	13	14	15	16	17	18	19											
Filtered	Total	Total	Total	Total	Total	Total	Total											
	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Detects Above Standard-1	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual	
Volatile Organic Compounds																		
1,1,1-Trichloroethane	UG/L	15	2%	5	298	GA	5	1	0.5	UJ	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	0	298	GA	5	0	0.18	U	0.18	U	0.18	U	0.18	U	0.18	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	0	298	GA	5	0	0.5	U	0.5	U	0.5	U	0.5	UJ	0.5	U
1,1,2-Trichloroethane	UG/L	0	0%	0	298	GA	1	0	0.13	U	0.13	U	0.13	U	0.13	U	0.13	U
1,1-Dichloroethane	UG/L	62	12%	37	298	GA	5	1	0.25	U	0.25	UJ	0.25	U	0.25	U	0.25	U
1,1-Dichloroethene	UG/L	2.6	11%	34	298	GA	5	0	0.11	U	0.11	U	0.27	J	0.14	J	0.11	U
1,2,4-Trichlorobenzene	UG/L	0	0%	0	298	GA	5	0	0.25	U	0.25	UJ	0.25	U	0.25	U	0.25	U
1,2-Dichloroethane	UG/L	0	0%	0	298	GA	0.04	0	0.44	U	0.44	U	0.44	U	0.44	U	0.44	U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0	298	GA	0.0006	0	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
1,2-Dibromoethane	UG/L	0	0%	0	298	GA	3	0	0.21	U	0.21	U	0.21	U	0.21	U	0.21	U
1,2-Dichlorobenzene	UG/L	5.6	15%	45	298	GA	0.6	37	0.1	UJ	0.22	J	0.28	J	0.25	J	0.11	J
1,2-Dichloropropane	UG/L	0.29	0%	1	298	GA	1	0	0.13	U	0.13	U	0.13	U	0.13	U	0.13	U
1,3-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
1,4-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0	0.28	U	0.28	U	0.28	U	0.28	U	0.28	U
Acetone	UG/L	2600	16%	46	285				5	UJ	5	U	5	U	5	U	5	U
Benzene	UG/L	0.48	2%	5	298	GA	1	0	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
Bromodichloromethane	UG/L	0	0%	0	298	MCL	80	0	0.25	UJ	0.25	UJ	0.25	U	0.25	U	0.25	U
Bromoform	UG/L	0	0%	0	298	MCL	80	0	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Carbon disulfide	UG/L	0	0%	0	298				0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
Carbon tetrachloride	UG/L	0	0%	0	298	GA	5	0	0.5	UJ	0.5	U	0.5	U	0.5	U	0.5	U
Chlorobenzene	UG/L	0	0%	0	298	GA	5	0	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
Chlorodibromomethane	UG/L	0	0%	0	298	MCL	80	0	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Chloroethane	UG/L	1.1	2%	7	298	GA	5	0	1	UJ	1	U	2	U	2	UJ	2	U
Chloroform	UG/L	71	8%	24	298	GA	7	7	0.14	U	0.14	U	0.14	U	0.14	U	0.14	U
Cis-1,2-Dichloroethene	UG/L	820	88%	262	298	GA	5	184	57		86		150		100		32	
Cis-1,3-Dichloropropene	UG/L	0	0%	0	298	GA	0.4	0	0.11	U	0.11	UJ	0.11	U	0.11	U	0.11	U
Cyclohexane	UG/L	0.3	0%	1	298				0.25	UJ	0.25	UJ	0.25	U	0.25	U	0.25	U
Dichlorodifluoromethane	UG/L	0.3	0%	1	298	GA	5	0	0.25	U	0.25	U	0.25	UJ	0.25	U	0.25	U
Ethyl benzene	UG/L	9.2	6%	19	298	GA	5	1	0.11	U	0.11	U	0.11	U	0.11	U	0.11	U
Isopropylbenzene	UG/L	0.1	0%	1	298	GA	5	0	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Methyl Acetate	UG/L	6	1%	2	283				0.19	UR	0.19	UJ	0.19	U	0.19	U	0.19	U
Methyl bromide	UG/L	2.1	0%	1	292	GA	5	0	0.8	UJ	0.8	UJ	2	U	2	UJ	2	U
Methyl butyl ketone	UG/L	0	0%	0	298				1	UJ	1	U	1	U	1	U	1	U
Methyl chloride	UG/L	0	0%	0	298	GA	5	0	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
Methyl cyclohexane	UG/L	0.17	0%	1	298				0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Methyl ethyl ketone	UG/L	4900	8%	22	291				1	UJ	1	U	1	U	1	U	1	U
Methyl isobutyl ketone	UG/L	1.9	0%	1	298				1	UJ	1	UJ	1	UJ	1	U	1	U
Methyl Tertbutyl Ether	UG/L	0	0%	0	298				0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Methylene chloride	UG/L	18	4%	12	298	GA	5	7	1	U	1	U	1	U	1	U	1	U
Styrene	UG/L	0	0%	0	298	GA	5	0	0.11	U	0.11	U	0.11	U	0.11	U	0.11	U
Tetrachloroethene	UG/L	27	1%	2	298	GA	5	1	0.15	U	0.15	U	0.15	U	0.15	U	0.15	U
Toluene	UG/L	590	11%	32	298	GA	5	18	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
Total Xylenes	UG/L	60	1%	2	298	GA	5	1	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Trans-1,2-Dichloroethene	UG/L	22	52%	155	298	GA	5	14	5		3.8		6.2		7.1		2.8	
Trans-1,3-Dichloropropene	UG/L	0	0%	0	298	GA	0.4	0	0.21	UJ	0.21	UJ	0.21	UJ	0.21	U	0.21	U
Trichloroethene	UG/L	3800	68%	204	298	GA	5	95	0.48	J	0.73	J	2		0.88	J	0.19	J
Trichlorofluoromethane	UG/L	0	0%	0	298	GA	5	0	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
Vinyl chloride	UG/L	180	65%	194	298	GA	2	148	90		100		84		120		65	
Other																		
Iron	UG/L	296,000	100%	12	12	GA	300	11										
Iron+Manganese	UG/L	352,900	100%	12	12	GA	500	12										
Manganese	UG/L	56,900	100%	12	12	GA	300	12										
Ethane	UG/L	98	95%	145	152													
Ethene	UG/L	200	89%	135	152													
Methane	UG/L	23,000	98%	149	152													
Sulfate	MG/L	1,060	84%	128	152	GA	250	24										
Total Organic Carbon	MG/L	2050	100%	152	152													

1. The cleanup goal values are NYSDEC Class GA GW Standards unless noted otherwise.
 a. NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998).
 b. Federal Maximum Contaminant Level (<http://www.epa.gov/safewater/contaminants/index.html>)
 2. Shading indicates a concentration above the GA GW standard.

U = compound was not detected
 J = the reported value is and estimated concentration
 R = Rejected, data validation rejected the results
 UJ= the compound was not detected; the associated reporting limit is approximate
 UR= the compound was not detected; data validation rejected the results

Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 9
Seneca Army Depot Activity

Area	ASH LANDFILL																					
	Loc ID	MWT-22	PT-22	PT-22	PT-22	PT-22	PT-22	PT-22	PT-22	PT-22	PT-22	PT-22	PT-22	PT-22								
Matrix	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW								
Sample ID	ALBW20348	ALBW20060	ALBW20086	ALBW20089	ALBW20104	ALBW20118	ALBW20133															
Sample Date	12/18/2015	1/3/2007	3/15/2007	6/5/2007	11/14/2007	6/26/2008	12/15/2008															
QC Type	SA	SA	SA	SA	SA	SA	SA															
Study ID	LTM	LTM	LTM	LTM	LTM	LTM	LTM															
Sample Round	20	1	2	3	4	5	6															
Filtered	Total	Total	Total	Total	Total	Total	Total															
Parameter	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Detects Above Standard-1	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual		
Volatile Organic Compounds																						
1,1,1-Trichloroethane	UG/L	15	2%	5	298	GA	5	1	0.37	U	1	U	1	U	1	U	1	U	1	U	0.26	U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	0	298	GA	5	0	0.62	U	1	U	1	U	1	U	1	U	1	U	0.21	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	0	298	GA	5	0	0.36	U	1	U	1	U	1	U	1	U	1	U	0.31	U
1,1,2-Trichloroethane	UG/L	0	0%	0	298	GA	1	0	0.33	U	1	U	1	U	1	U	1	U	1	U	0.23	U
1,1-Dichloroethane	UG/L	62	12%	37	298	GA	5	1	0.38	U	1	U	1	U	1	U	1	U	1	U	0.75	U
1,1-Dichloroethane	UG/L	2.6	11%	34	298	GA	5	0	0.36	U	1	U	1	U	1	U	1	U	1	U	0.29	U
1,2,4-Trichlorobenzene	UG/L	0	0%	0	298	GA	5	0	2.5	U	1	U	1	U	1	U	1	U	1	U	0.41	U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0	298	GA	0.04	0	1.1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dibromoethane	UG/L	0	0%	0	298	GA	0.0006	0	0.44	U	1	U	1	U	1	U	1	U	1	U	0.17	U
1,2-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0	0.37	U	1	U	1	U	1	U	1	U	1	U	0.2	U
1,2-Dichloroethane	UG/L	5.6	15%	45	298	GA	0.6	37	0.5	U	3.3	U	2.4	U	5.6	U	5	U	3.9	U	2.8	U
1,2-Dichloropropane	UG/L	0.29	0%	1	298	GA	1	0	0.67	U	1	U	1	U	1	U	1	U	1	U	0.14	U
1,3-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0	0.43	U	1	U	1	U	1	U	1	U	1	U	0.16	U
1,4-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0	0.46	U	1	U	1	U	1	U	1	U	1	U	0.16	U
Acetone	UG/L	2600	16%	46	285				7	UR	5	U	5	U	3.8	J	5.3	U	5	U	1.3	U
Benzene	UG/L	0.48	2%	5	298	GA	1	0	0.43	U	1	U	1	U	1	U	1	U	1	U	0.16	U
Bromodichloromethane	UG/L	0	0%	0	298	MCL	80	0	0.44	U	1	U	1	U	1	U	1	U	1	U	0.38	U
Bromoform	UG/L	0	0%	0	298	MCL	80	0	0.43	U	1	U	1	U	1	U	1	U	1	U	0.26	U
Carbon disulfide	UG/L	0	0%	0	298				1	U	1	U	1	U	1	U	1	U	1	U	0.19	U
Carbon tetrachloride	UG/L	0	0%	0	298	GA	5	0	0.33	U	1	U	1	U	1	U	1	U	1	U	0.27	U
Chlorobenzene	UG/L	0	0%	0	298	GA	5	0	0.26	U	1	U	1	U	1	U	1	U	1	U	0.18	U
Chlorodibromomethane	UG/L	0	0%	0	298	MCL	80	0	0.32	U	1	U	1	U	1	U	1	U	1	U	0.32	U
Chloroethane	UG/L	1.1	2%	7	298	GA	5	0	2.5	U	1	U	1	U	1.1	J	0.82	J	1	U	0.32	U
Chloroform	UG/L	71	8%	24	298	GA	7	7	0.5	U	1	U	1	U	1	U	1	U	1	U	0.34	U
Cis-1,2-Dichloroethane	UG/L	820	88%	262	298	GA	5	184	78	U	57	U	41	U	61	U	30	U	26	U	52	U
Cis-1,2-Dichloropropene	UG/L	0	0%	0	298	GA	0.4	0	0.4	U	1	U	1	U	1	U	1	U	1	U	0.36	U
Cyclohexane	UG/L	0.3	0%	1	298				0.39	U	1	U	1	U	1	U	1	U	1	U	0.22	U
Dichlorodifluoromethane	UG/L	0.3	0%	1	298	GA	5	0	0.6	U	1	U	1	U	1	U	1	U	1	U	0.28	U
Ethyl benzene	UG/L	9.2	6%	19	298	GA	5	1	0.33	U	1	U	1	U	1	U	1	U	1	U	0.18	U
Isopropylbenzene	UG/L	0.1	0%	1	298	GA	5	0	0.35	U	1	U	1	U	1	U	1	U	1	U	0.19	U
Methyl Acetate	UG/L	6	1%	2	283				1.8	U	1	U	1	U	1	U	1	U	1	U	0.17	U
Methyl bromide	UG/L	2.1	0%	1	292	GA	5	0	2.5	U	1	U	1	U	1	U	1	U	1	U	0.28	U
Methyl butyl ketone	UG/L	0	0%	0	298				2	U	5	U	5	U	5	U	5	U	5	U	1.2	U
Methyl chloride	UG/L	0	0%	0	298	GA	5	0	0.4	U	1	U	1	U	1	U	1	U	1	U	0.34	U
Methyl cyclohexane	UG/L	0.17	0%	1	298				0.43	U	1	U	1	U	1	U	1	U	1	U	0.22	U
Methyl ethyl ketone	UG/L	4900	8%	22	291				3.4	UR	5	U	5	U	5	U	5	U	5	U	1.3	U
Methyl isobutyl ketone	UG/L	1.9	0%	1	298				2.1	U	5	U	5	U	5	U	5	U	5	U	0.91	U
Methyl Tertbutyl Ether	UG/L	0	0%	0	298				0.3	U	1	U	1	U	1	U	1	U	1	U	0.16	U
Methylene chloride	UG/L	18	4%	12	298	GA	5	7	2.5	U	1	U	1	U	1	U	1	U	1	U	0.44	U
Styrene	UG/L	0	0%	0	298	GA	5	0	0.27	U	1	U	1	U	1	U	1	U	1	U	0.18	U
Tetrachloroethane	UG/L	27	1%	2	298	GA	5	1	0.74	U	1	U	1	U	1	U	1	U	1	U	0.36	U
Toluene	UG/L	590	11%	32	298	GA	5	18	0.48	U	1	U	1	U	1	U	1	U	1	U	0.51	U
Total Xylenes	UG/L	60	1%	2	298	GA	5	1	0.23	U	3	U	3	U	3	U	3	U	3	U	0.93	U
Trans-1,2-Dichloroethane	UG/L	22	52%	155	298	GA	5	14	6	U	0.86	J	0.51	J	0.72	J	0.67	J	0.57	J	0.41	J
Trans-1,3-Dichloropropene	UG/L	0	0%	0	298	GA	0.4	0	0.42	U	1	U	1	U	1	U	1	U	1	U	0.37	U
Trichloroethane	UG/L	3800	68%	204	298	GA	5	95	0.63	J	11	U	16	U	8.5	U	9.7	U	4.1	U	35	U
Trichlorofluoromethane	UG/L	0	0%	0	298	GA	5	0	0.42	U	1	U	1	U	1	U	1	U	1	U	0.15	U
Vinyl chloride	UG/L	180	65%	194	298	GA	2	148	91	U	22	U	13	U	32	U	11	U	13	U	1.3	U
Other																						
Iron	UG/L	296,000	100%	12	12	GA	300	11														
Iron+Manganese	UG/L	352,900	100%	12	12	GA	500	12														
Manganese	UG/L	56,900	100%	12	12	GA	300	12														
Ethane	UG/L	98	95%	145	152																	
Ethene	UG/L	200	89%	135	152																	
Methane	UG/L	23,000	98%	149	152																	
Sulfate	MG/L	1,060	84%	128	152	GA	250	24														
Total Organic Carbon	MG/L	2050	100%	152	152																	

1. The cleanup goal values are NYSDEC Class GA GW Standards unless noted otherwise.
a. NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998).
b. Federal Maximum Contaminant Level (<http://www.epa.gov/safewater/contaminants/index.html>)
2. Shading indicates a concentration above the GA GW standard.

U = compound was not detected
J = the reported value is an estimated concentration
R = Rejected, data validation rejected the results
UJ = the compound was not detected; the associated reporting limit is approximate
UR = the compound was not detected; data validation rejected the results

**Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 9
Seneca Army Depot Activity**

Area Loc ID Matrix Sample ID Sample Date QC Type Study ID Sample Round Filtered	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Detects Above Standard-1	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	
									PT-22 GW ALBW20148 6/2/2009 SA LTM 7 Total	PT-22 GW ALBW20163 12/16/2009 SA LTM 8 Total	PT-22 GW ALBW20178 6/30/2010 SA LTM 9 Total	PT-22 GW ALBW20193 12/17/2010 SA LTM 10 Total	PT-22 GW ALBW20208 7/22/2011 SA LTM 11 Total	PT-22 GW ALBW20223 12/14/2011 SA LTM 12 Total	PT-22 GW ALBW20238 6/21/2012 SA LTM 13 Total	
Volatile Organic Compounds																
1,1,1-Trichloroethane	UG/L	15	2%	5	298	GA	5	1	0.26 U	0.26 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	0	298	GA	5	0	0.21 U	0.21 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	0	298	GA	5	0	0.31 U	0.31 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	UG/L	0	0%	0	298	GA	1	0	0.23 U	0.23 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
1,1-Dichloroethane	UG/L	62	12%	37	298	GA	5	1	0.75 U	0.38 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,1-Dichloroethene	UG/L	2.6	11%	34	298	GA	5	0	0.29 U	0.29 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
1,2,4-Trichlorobenzene	UG/L	0	0%	0	298	GA	5	0	0.41 U	0.41 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0	298	GA	0.04	0	1 UJ	0.39 U	0.44 U	0.44 U	0.44 UJ	0.44 U	0.44 U	0.44 U
1,2-Dibromoethane	UG/L	0	0%	0	298	GA	0.0006	0	0.17 U	0.17 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0	0.2 U	0.2 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U
1,2-Dichloroethane	UG/L	5.6	15%	45	298	GA	0.6	37	4	3	3.2	1.9	1.9	1.9	2.1	2.1
1,2-Dichloropropane	UG/L	0.29	0%	1	298	GA	1	0	0.14 U	0.32 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
1,3-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0	0.16 U	0.36 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,4-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0	0.16 U	0.39 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U
Acetone	UG/L	2600	16%	46	285				1.3 U	1.3 U	5 U	5 UJ	5.3 J	5 U	5 UJ	5 UJ
Benzene	UG/L	0.48	2%	5	298	GA	1	0	0.16 U	0.41 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Bromodichloromethane	UG/L	0	0%	0	298	MCL	80	0	0.39 U	0.39 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Bromoform	UG/L	0	0%	0	298	MCL	80	0	0.26 UJ	0.26 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
Carbon disulfide	UG/L	0	0%	0	298				0.19 UJ	0.19 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
Carbon tetrachloride	UG/L	0	0%	0	298	GA	5	0	0.27 U	0.27 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 UJ
Chlorobenzene	UG/L	0	0%	0	298	GA	5	0	0.32 U	0.32 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Chlorodibromomethane	UG/L	0	0%	0	298	MCL	80	0	0.32 U	0.32 U	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.1 U
Chloroethane	UG/L	1.1	2%	7	298	GA	5	0	0.32 U	0.32 U	1 U	1 U	1 U	1 U	1 UJ	1 UJ
Chloroform	UG/L	71	8%	24	298	GA	7	7	0.34 U	0.34 U	0.14 U	0.19 J	1 U	0.14 U	0.14 U	0.14 U
Cis-1,2-Dichloroethene	UG/L	820	88%	262	298	GA	5	184	41	29	43	42	42	32	31	31
Cis-1,3-Dichloropropene	UG/L	0	0%	0	298	GA	0.4	0	0.36 U	0.36 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
Cyclohexane	UG/L	0.3	0%	1	298				0.53 U	0.53 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Dichlorodifluoromethane	UG/L	0.3	0%	1	298	GA	5	0	0.29 U	0.29 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Ethyl benzene	UG/L	9.2	6%	19	298	GA	5	1	0.18 U	0.18 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
Isopropylbenzene	UG/L	0.1	0%	1	298	GA	5	0	0.19 U	0.19 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Methyl Acetate	UG/L	6	1%	2	283				0.17 UJ	0.5 U	0.19 UJ	0.19 U	0.19 U	0.19 U	0.19 U	0.19 UR
Methyl bromide	UG/L	2.1	0%	1	292	GA	5	0	0.28 U	0.28 U	0.8 UJ	0.8 UJ	0.8 UJ	0.8 UJ	0.8 UJ	0.8 UJ
Methyl butyl ketone	UG/L	0	0%	0	298				1.2 U	1.2 U	1 UJ	1 U	1 U	1 U	1 UJ	1 UJ
Methyl chloride	UG/L	0	0%	0	298	GA	5	0	0.35 U	0.35 U	0.33 U	0.33 U	0.33 U	0.33 UJ	0.33 U	0.33 U
Methyl cyclohexane	UG/L	0.17	0%	1	298				0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Methyl ethyl ketone	UG/L	4900	8%	22	291				1.3 U	1.3 U	1 U	1 U	1 U	1 U	1 UJ	1 UJ
Methyl isobutyl ketone	UG/L	1.9	0%	1	298				0.91 U	0.91 U	1 U	1 U	1 U	1 U	1 U	1 U
Methyl Tertbutyl Ether	UG/L	0	0%	0	298				0.16 U	0.16 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Methylene chloride	UG/L	18	4%	12	298	GA	5	7	0.44 U	0.44 U	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	UG/L	0	0%	0	298	GA	5	0	0.18 U	0.18 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
Tetrachloroethene	UG/L	27	1%	2	298	GA	5	1	0.36 U	0.36 U	0.15 U	0.15 U	0.15 U	0.15 UJ	0.15 U	0.15 U
Toluene	UG/L	590	11%	32	298	GA	5	18	0.51 U	0.51 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Total Xylenes	UG/L	60	1%	2	298	GA	5	1	0.66 U	0.66 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Trans-1,2-Dichloroethene	UG/L	22	52%	155	298	GA	5	14	0.81 J	0.42 U	0.75 J	0.48 J	0.2 U	0.37 J	0.84 J	0.84 J
Trans-1,3-Dichloropropene	UG/L	0	0%	0	298	GA	0.4	0	0.37 U	0.37 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U
Trichloroethene	UG/L	3800	68%	204	298	GA	5	95	6.9	8.7	4.6	29	31	34	7.9	7.9
Trichlorofluoromethane	UG/L	0	0%	0	298	GA	5	0	0.15 U	0.15 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Vinyl chloride	UG/L	180	65%	194	298	GA	2	148	11	9.5	11	2.1	0.18 U	0.68 J	4	4
Other																
Iron	UG/L	296,000	100%	12	12	GA	300	11								
Iron+Manganese	UG/L	352,900	100%	12	12	GA	500	12								
Manganese	UG/L	56,900	100%	12	12	GA	300	12								
Ethane	UG/L	98	95%	145	152											
Ethene	UG/L	200	89%	135	152											
Methane	UG/L	23,000	98%	149	152											
Sulfate	MG/L	1,060	84%	128	152	GA	250	24								
Total Organic Carbon	MG/L	2050	100%	152	152											

1. The cleanup goal values are NYSDEC Class GA GW Standards unless noted otherwise.
a. NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998).
b. Federal Maximum Contaminant Level (<http://www.epa.gov/safewater/contaminants/index.html>)
2. Shading indicates a concentration above the GA GW standard.

U = compound was not detected
J = the reported value is an estimated concentration
R = Rejected, data validation rejected the results
UJ = the compound was not detected; the associated reporting limit is approximate
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**Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 9
Seneca Army Depot Activity**

Area								ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL					
Loc ID								PT-22	PT-22	PT-22	PT-22	PT-22	PT-22					
Matrix								GW	GW	GW	GW	GW	GW					
Sample ID								ALBW20253	ALBW20266	ALBW20284	ALBW20297	ALBW20313	ALBW20329	ALBW20345				
Sample Date								12/13/2012	7/9/2013	12/12/2013	6/21/2014	12/18/2014	6/6/2015	12/18/2015				
QC Type								SA	SA	SA	SA	SA	SA	SA				
Study ID								LTM	LTM	LTM	LTM	LTM	LTM	LTM				
Sample Round								14	15	16	17	18	19	20				
Filtered								Total	Total	Total	Total	Total	Total	Total				
Parameter	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Detects Above Standard-1	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual
Volatile Organic Compounds																		
1,1,1-Trichloroethane	UG/L	15	2%	5	298	GA	5	1	0.5	U	0.5	U	0.5	U	0.5	U	0.37	U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	0	298	GA	5	0	0.18	U	0.18	U	0.18	U	0.18	U	0.62	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	0	298	GA	5	0	0.5	U	0.5	U	0.5	U	0.5	U	0.36	U
1,1,2-Trichloroethane	UG/L	0	0%	0	298	GA	1	0	0.13	U	0.13	U	0.13	U	0.13	U	0.33	U
1,1-Dichloroethane	UG/L	62	12%	37	298	GA	5	1	0.25	U	0.25	U	0.25	U	0.25	U	0.38	U
1,1-Dichloroethene	UG/L	2.6	11%	34	298	GA	5	0	0.11	U	0.11	U	0.11	U	0.11	U	0.36	U
1,2,4-Trichlorobenzene	UG/L	0	0%	0	298	GA	5	0	0.25	U	0.25	U	0.25	U	0.25	U	2.5	U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0	298	GA	0.04	0	0.44	U	0.44	U	0.44	U	0.44	U	1.1	U
1,2-Dibromoethane	UG/L	0	0%	0	298	GA	0.0006	0	0.25	U	0.25	U	0.25	U	0.25	U	0.44	U
1,2-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0	0.21	U	0.21	U	0.21	U	0.21	U	0.37	U
1,2-Dichloroethane	UG/L	5.6	15%	45	298	GA	0.6	37	1.6	J	2.3	J	2	J	3.1	J	1.2	J
1,2-Dichloropropane	UG/L	0.29	0%	1	298	GA	1	0	0.13	U	0.13	U	0.13	U	0.13	U	0.67	U
1,3-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0	0.25	U	0.25	U	0.25	U	0.25	U	0.43	U
1,4-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0	0.28	U	0.28	U	0.28	U	0.28	U	0.46	U
Acetone	UG/L	2600	16%	46	285				5	U	5	U	5	U	5	U	7	UR
Benzene	UG/L	0.48	2%	5	298	GA	1	0	0.25	U	0.25	U	0.25	U	0.25	U	0.43	U
Bromodichloromethane	UG/L	0	0%	0	298	MCL	80	0	0.25	U	0.25	U	0.25	U	0.25	U	0.44	U
Bromoform	UG/L	0	0%	0	298	MCL	80	0	0.5	U	0.5	U	0.5	U	0.5	U	0.43	UJ
Carbon disulfide	UG/L	0	0%	0	298				0.6	U	0.6	U	0.6	U	0.6	U	1	U
Carbon tetrachloride	UG/L	0	0%	0	298	GA	5	0	0.5	U	0.5	U	0.5	U	0.5	U	0.33	U
Chlorobenzene	UG/L	0	0%	0	298	GA	5	0	0.25	U	0.25	U	0.25	U	0.25	U	0.26	U
Chlorodibromomethane	UG/L	0	0%	0	298	MCL	80	0	0.1	U	0.1	U	0.1	U	0.1	U	0.32	UJ
Chloroethane	UG/L	1.1	2%	7	298	GA	5	0	1	U	2	U	2	U	2	U	2.5	U
Chloroform	UG/L	71	8%	24	298	GA	7	7	0.14	U	0.14	U	0.14	U	0.14	U	0.5	U
Cis-1,2-Dichloroethene	UG/L	820	88%	262	298	GA	5	184	26	J	49	J	37	J	52	J	23	J
Cis-1,3-Dichloropropene	UG/L	0	0%	0	298	GA	0.4	0	0.11	U	0.11	U	0.11	U	0.11	U	0.4	U
Cyclohexane	UG/L	0.3	0%	1	298				0.25	U	0.25	U	0.25	U	0.25	U	0.39	U
Dichlorodifluoromethane	UG/L	0.3	0%	1	298	GA	5	0	0.25	U	0.25	UJ	0.25	U	0.25	U	0.6	U
Ethyl benzene	UG/L	9.2	6%	19	298	GA	5	1	0.11	U	0.11	U	0.11	U	0.11	U	0.33	U
Isopropylbenzene	UG/L	0.1	0%	1	298	GA	5	0	0.1	U	0.1	U	0.1	U	0.1	U	0.35	U
Methyl Acetate	UG/L	6	1%	2	283				0.19	UJ	0.19	U	0.19	U	0.19	U	1.8	U
Methyl bromide	UG/L	2.1	0%	1	292	GA	5	0	0.8	UJ	2	UJ	2	U	2	U	2.5	UJ
Methyl butyl ketone	UG/L	0	0%	0	298				1	U	1	U	1	U	1	U	2	U
Methyl chloride	UG/L	0	0%	0	298	GA	5	0	0.33	U	0.33	U	0.33	U	0.33	U	0.4	U
Methyl cyclohexane	UG/L	0.17	0%	1	298				0.1	U	0.1	U	0.1	U	0.1	U	0.43	U
Methyl ethyl ketone	UG/L	4900	8%	22	291				1	U	1	U	1	U	1	U	3.4	UR
Methyl isobutyl ketone	UG/L	1.9	0%	1	298				1	U	1	UJ	1	U	1	U	2.1	U
Methyl Tertbutyl Ether	UG/L	0	0%	0	298				0.2	U	0.2	U	0.2	U	0.2	U	0.3	U
Methylene chloride	UG/L	18	4%	12	298	GA	5	7	1	U	1	U	1	U	1	U	2.5	U
Styrene	UG/L	0	0%	0	298	GA	5	0	0.11	U	0.11	U	0.11	U	0.11	U	0.27	U
Tetrachloroethene	UG/L	27	1%	2	298	GA	5	1	0.15	U	0.15	U	0.15	U	0.15	U	0.74	U
Toluene	UG/L	590	11%	32	298	GA	5	18	0.33	U	0.33	U	0.33	U	0.33	U	0.48	U
Total Xylenes	UG/L	60	1%	2	298	GA	5	1	0.2	U	0.2	U	0.2	U	0.2	U	0.23	U
Trans-1,2-Dichloroethene	UG/L	22	52%	155	298	GA	5	14	0.2	U	0.45	J	0.28	J	1.3	J	0.37	U
Trans-1,3-Dichloropropene	UG/L	0	0%	0	298	GA	0.4	0	0.21	U	0.21	UJ	0.21	UJ	0.21	U	0.42	U
Trichloroethene	UG/L	3800	68%	204	298	GA	5	95	28	J	38	J	29	J	23	J	23	J
Trichlorofluoromethane	UG/L	0	0%	0	298	GA	5	0	0.25	U	0.25	U	0.25	U	0.25	U	0.42	U
Vinyl chloride	UG/L	180	65%	194	298	GA	2	148	0.46	J	1.6	J	0.68	J	2.9	J	0.18	J
Other																		
Iron	UG/L	296,000	100%	12	12	GA	300	11										
Iron+Manganese	UG/L	352,900	100%	12	12	GA	500	12										
Manganese	UG/L	56,900	100%	12	12	GA	300	12										
Ethane	UG/L	98	95%	145	152													
Ethene	UG/L	200	89%	135	152													
Methane	UG/L	23,000	98%	149	152													
Sulfate	MG/L	1,060	84%	128	152	GA	250	24										
Total Organic Carbon	MG/L	2050	100%	152	152													

- The cleanup goal values are NYSDEC Class GA GW Standards unless noted otherwise.
 - NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998).
 - Federal Maximum Contaminant Level (<http://www.epa.gov/safewater/contaminants/index.html>)
- Shading indicates a concentration above the GA GW standard.

U = compound was not detected
 J = the reported value is an estimated concentration
 R = Rejected, data validation rejected the results
 UJ = the compound was not detected; the associated reporting limit is approximate
 UR = the compound was not detected; data validation rejected the results

Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 9
Seneca Army Depot Activity

Area	ASH LANDFILL								ASH LANDFILL							
	Loc ID	MWT-23	MWT-23	MWT-23	MWT-23	MWT-23	MWT-23	MWT-23	MWT-23	MWT-23	MWT-23	MWT-23	MWT-23	MWT-23	MWT-23	
Matrix	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	
Sample ID	ALBW20231	ALBW20245	ALBW20260	ALBW20261	ALBW20273	ALBW20288	ALBW20304									
Sample Date	12/14/2011	6/20/2012	12/13/2012	12/13/2012	7/10/2013	12/14/2013	6/20/2014									
QC Type	DU	SA	SA	DU	SA	SA	SA									
Study ID	LTM	LTM	LTM	LTM	LTM	LTM	LTM									
Sample Round	12	13	14	14	15	16	17									
Filtered	Total	Total	Total	Total	Total	Total	Total									
Parameter	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Detects Above Standard-1	Value	Qual	Value	Qual	Value	Qual	Value	Qual
Volatile Organic Compounds																
1,1,1-Trichloroethane	UG/L	15	2%	5	298	GA	5	1	0.5	U	0.5	UJ	0.5	U	0.5	U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	0	298	GA	5	0	0.18	U	0.18	U	0.18	U	0.18	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	0	298	GA	5	0	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2-Trichloroethane	UG/L	0	0%	0	298	GA	1	0	0.13	U	0.13	U	0.13	U	0.13	U
1,1-Dichloroethane	UG/L	62	12%	37	298	GA	5	1	0.33	J	0.25	U	0.25	U	0.25	U
1,1-Dichloroethene	UG/L	2.6	11%	34	298	GA	5	0	0.11	U	0.11	U	0.11	U	0.11	U
1,2,4-Trichlorobenzene	UG/L	0	0%	0	298	GA	5	0	0.25	U	0.25	U	0.25	U	0.25	U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0	298	GA	0.04	0	0.44	U	0.44	U	0.44	U	0.44	U
1,2-Dibromoethane	UG/L	0	0%	0	298	GA	0.0006	0	0.25	U	0.25	U	0.25	U	0.25	U
1,2-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0	0.21	U	0.21	U	0.21	U	0.21	U
1,2-Dichloroethane	UG/L	5.6	15%	45	298	GA	0.6	37	1.2	J	0.65	J	0.72	J	0.61	J
1,2-Dichloropropane	UG/L	0.29	0%	1	298	GA	1	0	0.13	U	0.13	U	0.13	U	0.13	U
1,3-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0	0.25	U	0.25	U	0.25	U	0.25	U
1,4-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0	0.28	U	0.28	U	0.28	U	0.28	U
Acetone	UG/L	2600	16%	46	285				5	U	5	UJ	5	U	5	U
Benzene	UG/L	0.48	2%	5	298	GA	1	0	0.25	U	0.25	U	0.25	U	0.25	U
Bromodichloromethane	UG/L	0	0%	0	298	MCL	80	0	0.25	U	0.25	UJ	0.25	U	0.25	U
Bromoform	UG/L	0	0%	0	298	MCL	80	0	0.5	U	0.5	U	0.5	U	0.5	U
Carbon disulfide	UG/L	0	0%	0	298				0.6	U	0.6	U	0.6	U	0.6	U
Carbon tetrachloride	UG/L	0	0%	0	298	GA	5	0	0.5	U	0.5	UJ	0.5	U	0.5	U
Chlorobenzene	UG/L	0	0%	0	298	GA	5	0	0.25	U	0.25	U	0.25	U	0.25	U
Chlorodibromomethane	UG/L	0	0%	0	298	MCL	80	0	0.1	U	0.1	U	0.1	U	0.1	U
Chloroethane	UG/L	1.1	2%	7	298	GA	5	0	1	U	1	UJ	1	U	2	U
Chloroform	UG/L	71	8%	24	298	GA	7	7	0.14	U	0.14	U	0.14	U	0.14	U
Cis-1,2-Dichloroethene	UG/L	820	88%	262	298	GA	5	184	2		0.55	J	2		1.8	
Cis-1,3-Dichloropropene	UG/L	0	0%	0	298	GA	0.4	0	0.11	U	0.11	U	0.11	U	0.11	U
Cyclohexane	UG/L	0.3	0%	1	298				0.25	U	0.25	U	0.25	U	0.25	U
Dichlorodifluoromethane	UG/L	0.3	0%	1	298	GA	5	0	0.25	U	0.25	U	0.25	U	0.25	U
Ethyl benzene	UG/L	9.2	6%	19	298	GA	5	1	0.17	J	0.13	J	0.21	J	0.19	J
Isopropylbenzene	UG/L	0.1	0%	1	298	GA	5	0	0.1	U	0.1	U	0.1	U	0.1	U
Methyl Acetate	UG/L	6	1%	2	283				0.19	U	0.19	UR	0.19	UJ	0.19	UJ
Methyl bromide	UG/L	2.1	0%	1	292	GA	5	0	0.8	UJ	0.8	UJ	0.8	U	2	U
Methyl butyl ketone	UG/L	0	0%	0	298				1	U	1	UJ	1	U	1	U
Methyl chloride	UG/L	0	0%	0	298	GA	5	0	0.33	UJ	0.33	U	0.33	U	0.33	U
Methyl cyclohexane	UG/L	0.17	0%	1	298				0.1	U	0.1	U	0.1	U	0.1	U
Methyl ethyl ketone	UG/L	4900	8%	22	291				1	U	1	UJ	1	U	1	U
Methyl isobutyl ketone	UG/L	1.9	0%	1	298				1	U	1	UJ	1	U	1	U
Methyl Tertbutyl Ether	UG/L	0	0%	0	298				0.2	U	0.2	U	0.2	U	0.2	U
Methylene chloride	UG/L	18	4%	12	298	GA	5	7	1	U	1	U	1	U	1	U
Styrene	UG/L	0	0%	0	298	GA	5	0	0.11	U	0.11	U	0.11	U	0.11	U
Tetrachloroethene	UG/L	27	1%	2	298	GA	5	1	0.15	UJ	0.15	U	0.15	U	0.15	U
Toluene	UG/L	590	11%	32	298	GA	5	18	0.33	U	0.33	U	0.33	U	0.33	U
Total Xylenes	UG/L	60	1%	2	298	GA	5	1	0.2	U	0.2	U	0.2	U	0.2	U
Trans-1,2-Dichloroethene	UG/L	22	52%	155	298	GA	5	14	0.35	J	0.42	J	0.29	J	1.4	
Trans-1,3-Dichloropropene	UG/L	0	0%	0	298	GA	0.4	0	0.21	U	0.21	UJ	0.21	U	0.21	UJ
Trichloroethene	UG/L	3800	68%	204	298	GA	5	95	0.16	J	0.13	U	0.13	U	0.13	U
Trichlorofluoromethane	UG/L	0	0%	0	298	GA	5	0	0.25	U	0.25	U	0.25	U	0.25	U
Vinyl chloride	UG/L	180	65%	194	298	GA	2	148	1.8		0.33	J	1.9		1.4	
Other																
Iron	UG/L	296,000	100%	12	12	GA	300	11								
Iron+Manganese	UG/L	352,900	100%	12	12	GA	500	12								
Manganese	UG/L	56,900	100%	12	12	GA	300	12								
Ethane	UG/L	98	95%	145	152				8.9		5		2.5		2.6	
Ethene	UG/L	200	89%	135	152				1.2		0.26		0.63		0.65	
Methane	UG/L	23,000	98%	149	152				16,000		18,000		16,000		15,000	
Sulfate	MG/L	1,060	84%	128	152	GA	250	24	14		1.5		13		13	
Total Organic Carbon	MG/L	2050	100%	152	152				6.3		4.8		11		11	

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 a. NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998).
 b. Federal Maximum Contaminant Level (<http://www.epa.gov/safewater/contaminants/index.html>)
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Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 9
Seneca Army Depot Activity

Area	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL											
Loc ID	MWT-24	MWT-24	MWT-24	MWT-24	MWT-24	MWT-24	MWT-24											
Matrix	GW	GW	GW	GW	GW	GW	GW											
Sample ID	ALBW20092	ALBW20107	ALBW20122	ALBW20137	ALBW20152	ALBW20167	ALBW20182											
Sample Date	6/5/2007	11/13/2007	6/26/2008	12/12/2008	6/2/2009	12/15/2009	7/1/2010											
QC Type	SA	SA	SA	SA	SA	SA	SA											
Study ID	LTM	LTM	LTM	LTM	LTM	LTM	LTM											
Sample Round	3	4	5	6	7	8	9											
Filtered	Total	Total	Total	Total	Total	Total	Total											
Parameter	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Detects Above Standard-1	ASH LANDFILL		ASH LANDFILL		ASH LANDFILL		ASH LANDFILL			
									Value	Qual	Value	Qual	Value	Qual	Value	Qual		
Volatile Organic Compounds																		
1,1,1-Trichloroethane	UG/L	15	2%	5	298	GA	5	1	2	U	1	U	5	U	0.76	J	0.26	U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	0	298	GA	5	0	2	U	1	U	5	U	0.21	U	0.21	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	0	298	GA	5	0	2	UJ	1	U	5	UJ	0.31	U	0.31	U
1,1,2-Trichloroethane	UG/L	0	0%	0	298	GA	1	0	2	U	1	U	5	U	0.23	U	0.23	U
1,1-Dichloroethane	UG/L	62	12%	37	298	GA	5	1	1.1	J	1	U	5	U	0.75	U	0.75	J
1,1-Dichloroethene	UG/L	2.6	11%	34	298	GA	5	0	2	U	1	U	5	U	0.29	U	0.29	U
1,2,4-Trichlorobenzene	UG/L	0	0%	0	298	GA	5	0	2	U	1	U	5	U	0.41	U	0.41	U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0	298	GA	0.04	0	2	U	1	U	5	UJ	1	UJ	1	UJ
1,2-Dibromoethane	UG/L	0	0%	0	298	GA	0.0006	0	2	U	1	U	5	U	0.17	U	0.17	U
1,2-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0	2	U	1	U	5	U	0.2	U	0.2	U
1,2-Dichloroethane	UG/L	5.6	15%	45	298	GA	0.6	37	2	U	1	U	5	U	0.21	U	0.21	U
1,2-Dichloropropane	UG/L	0.29	0%	1	298	GA	1	0	2	U	1	U	5	U	0.14	U	0.14	U
1,3-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0	2	U	1	U	5	U	0.16	U	0.16	U
1,4-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0	2	U	1	U	5	U	0.16	U	0.16	U
Acetone	UG/L	2600	16%	46	285				73		5	U	25	U	1.3	U	1.3	U
Benzene	UG/L	0.48	2%	5	298	GA	1	0	2	U	1	U	5	U	0.16	U	0.16	U
Bromodichloromethane	UG/L	0	0%	0	298	MCL	80	0	2	U	1	U	5	U	0.38	U	0.39	U
Bromoform	UG/L	0	0%	0	298	MCL	80	0	2	U	1	U	5	U	0.26	U	0.26	UJ
Carbon disulfide	UG/L	0	0%	0	298				2	U	1	U	5	U	0.19	U	0.19	UJ
Carbon tetrachloride	UG/L	0	0%	0	298	GA	5	0	2	U	1	U	5	U	0.27	UJ	0.27	U
Chlorobenzene	UG/L	0	0%	0	298	GA	5	0	2	U	1	U	5	U	0.18	U	0.32	U
Chlorodibromomethane	UG/L	0	0%	0	298	MCL	80	0	2	U	1	U	5	U	0.32	U	0.32	U
Chloroethane	UG/L	1.1	2%	7	298	GA	5	0	2	U	1	U	5	UJ	0.32	U	0.47	J
Chloroform	UG/L	71	8%	24	298	GA	7	7	2	U	1	U	5	U	0.34	U	0.34	U
Cis-1,2-Dichloroethene	UG/L	820	88%	262	298	GA	5	184	19		6.7		31		52		38	
Cis-1,3-Dichloropropene	UG/L	0	0%	0	298	GA	0.4	0	2	U	1	U	5	U	0.36	U	0.36	U
Cyclohexane	UG/L	0.3	0%	1	298				2	U	1	U	5	U	0.22	U	0.53	U
Dichlorodifluoromethane	UG/L	0.3	0%	1	298	GA	5	0	2	U	1	U	5	U	0.28	UJ	0.29	U
Ethyl benzene	UG/L	9.2	6%	19	298	GA	5	1	2	U	1	U	5	U	0.18	U	0.18	U
Isopropylbenzene	UG/L	0.1	0%	1	298	GA	5	0	2	U	1	U	5	U	0.19	U	0.19	U
Methyl Acetate	UG/L	6	1%	2	283				6		1	UJ	5	UJ	0.17	U	0.17	UJ
Methyl bromide	UG/L	2.1	0%	1	292	GA	5	0	2	U	1	U	5	U	0.28	U	0.28	U
Methyl butyl ketone	UG/L	0	0%	0	298				10	U	5	UJ	25	UJ	1.2	U	1.2	U
Methyl chloride	UG/L	0	0%	0	298	GA	5	0	2	U	1	U	5	U	0.34	U	0.35	UJ
Methyl cyclohexane	UG/L	0.17	0%	1	298				2	U	1	U	5	U	0.22	U	0.5	U
Methyl ethyl ketone	UG/L	4900	8%	22	291				40		5	U	25	UJ	1.3	U	1.3	U
Methyl isobutyl ketone	UG/L	1.9	0%	1	298				10	U	5	U	25	UJ	0.91	U	0.91	U
Methyl Tertbutyl Ether	UG/L	0	0%	0	298				2	U	1	U	5	U	0.16	U	0.16	U
Methylene chloride	UG/L	18	4%	12	298	GA	5	7	1	J	1	U	5	U	0.44	UJ	0.44	U
Styrene	UG/L	0	0%	0	298	GA	5	0	2	U	1	U	5	U	0.18	U	0.18	U
Tetrachloroethene	UG/L	27	1%	2	298	GA	5	1	2	U	1	U	5	U	0.36	U	0.36	U
Toluene	UG/L	590	11%	32	298	GA	5	18	2	U	1	U	5	U	0.51	U	0.51	U
Total Xylenes	UG/L	60	1%	2	298	GA	5	1	6	U	3	U	15	U	0.93	U	0.66	U
Trans-1,2-Dichloroethene	UG/L	22	52%	155	298	GA	5	14	2	U	1	U	5	U	0.13	U	0.13	U
Trans-1,3-Dichloropropene	UG/L	0	0%	0	298	GA	0.4	0	2	U	1	U	5	U	0.37	U	0.37	U
Trichloroethene	UG/L	3800	68%	204	298	GA	5	95	2	U	1.6	U	5	U	6		4.8	
Trichlorofluoromethane	UG/L	0	0%	0	298	GA	5	0	2	UJ	1	U	5	U	0.15	UJ	0.15	U
Vinyl chloride	UG/L	180	65%	194	298	GA	2	148	22		3.8		5	U	3.6		7.3	
Other																		
Iron	UG/L	296,000	100%	12	12	GA	300	11										
Iron+Manganese	UG/L	352,900	100%	12	12	GA	500	12										
Manganese	UG/L	56,900	100%	12	12	GA	300	12										
Ethane	UG/L	98	95%	145	152													
Ethene	UG/L	200	89%	135	152													
Methane	UG/L	23,000	98%	149	152													
Sulfate	MG/L	1,060	84%	128	152	GA	250	24										
Total Organic Carbon	MG/L	2050	100%	152	152													

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Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 9
Seneca Army Depot Activity

Area	ASH LANDFILL							ASH LANDFILL										
Loc ID	PT-17		PT-17		PT-17		PT-17		PT-17		PT-17		PT-17					
Matrix	GW							GW										
Sample ID	ALBW20102		ALBW20116		ALBW20131		ALBW20146		ALBW20161		ALBW20176		ALBW20191					
Sample Date	11/13/2007		6/26/2008		12/11/2008		6/2/2009		12/15/2009		7/11/2010		12/18/2010					
QC Type	SA							SA										
Study ID	LTM		LTM		LTM		LTM		LTM		LTM		LTM					
Sample Round	4		5		6		7		8		9		10					
Filtered	Total							Total										
Parameter	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Detects Above Standard-1	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual
Volatile Organic Compounds																		
1,1,1-Trichloroethane	UG/L	15	2%	5	298	GA	5	1	1 U		1 U		0.26 UJ		0.26 U		0.5 U	
1,1,2,2-Tetrachloroethane	UG/L	0	0%	0	298	GA	5	0	1 U		1 U		0.21 U		0.21 U		0.18 U	
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	0	298	GA	5	0	1 U		1 UJ		0.31 U		0.31 U		0.5 U	
1,1,2-Trichloroethane	UG/L	0	0%	0	298	GA	1	0	1 U		1 U		0.23 U		0.23 U		0.13 U	
1,1-Dichloroethane	UG/L	62	12%	37	298	GA	5	1	1 U		1 U		0.75 U		0.75 U		0.38 U	
1,1-Dichloroethene	UG/L	2.6	11%	34	298	GA	5	0	1 U		1 U		0.29 U		0.29 U		0.24 J	
1,2,4-Trichlorobenzene	UG/L	0	0%	0	298	GA	5	0	1 U		1 U		0.41 U		0.41 U		0.25 U	
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0	298	GA	0.04	0	1 U		1 UJ		1 UJ		1 UJ		0.44 U	
1,2-Dibromoethane	UG/L	0	0%	0	298	GA	0.0006	0	1 U		1 U		0.17 U		0.17 U		0.25 U	
1,2-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0	1 U		1 U		0.2 U		0.2 U		0.21 U	
1,2-Dichloroethane	UG/L	5.6	15%	45	298	GA	0.6	37	1 U		1 U		0.21 U		0.21 U		0.1 U	
1,2-Dichloropropane	UG/L	0.29	0%	1	298	GA	1	0	1 U		1 U		0.14 U		0.14 U		0.13 U	
1,3-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0	1 U		1 U		0.16 U		0.16 U		0.25 U	
1,4-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0	1 U		1 U		0.16 U		0.16 U		0.28 U	
Acetone	UG/L	2600	16%	46	285				5 U		5 U		1.3 U		1.3 U		5 U	
Benzene	UG/L	0.48	2%	5	298	GA	1	0	1 U		1 U		0.16 U		0.16 U		0.25 U	
Bromodichloromethane	UG/L	0	0%	0	298	MCL	80	0	1 U		1 U		0.38 U		0.39 U		0.25 U	
Bromoform	UG/L	0	0%	0	298	MCL	80	0	1 U		1 U		0.26 U		0.26 UJ		0.5 U	
Carbon disulfide	UG/L	0	0%	0	298				1 U		1 U		0.19 UJ		0.19 UJ		0.6 U	
Carbon tetrachloride	UG/L	0	0%	0	298	GA	5	0	1 U		1 U		0.27 UJ		0.27 U		0.5 U	
Chlorobenzene	UG/L	0	0%	0	298	GA	5	0	1 U		1 U		0.18 U		0.32 U		0.25 U	
Chlorodibromomethane	UG/L	0	0%	0	298	MCL	80	0	1 U		1 U		0.32 U		0.32 U		0.1 U	
Chloroethane	UG/L	1.1	2%	7	298	GA	5	0	1 U		1 UJ		0.32 U		0.49 J		1 U	
Chloroform	UG/L	71	8%	24	298	GA	7	7	1 U		1 U		0.34 U		0.34 U		0.14 U	
Cis-1,2-Dichloroethene	UG/L	820	88%	262	298	GA	5	184	27		21		24		56		65	
Cis-1,3-Dichloropropene	UG/L	0	0%	0	298	GA	0.4	0	1 U		1 U		0.36 U		0.36 U		0.11 U	
Cyclohexane	UG/L	0.3	0%	1	298				1 U		1 U		0.22 U		0.53 U		0.25 U	
Dichlorodifluoromethane	UG/L	0.3	0%	1	298	GA	5	0	1 U		1 U		0.28 UJ		0.29 U		0.25 UJ	
Ethyl benzene	UG/L	9.2	6%	19	298	GA	5	1	1 U		1 U		0.18 U		0.18 U		0.11 U	
Isopropylbenzene	UG/L	0.1	0%	1	298	GA	5	0	1 U		1 U		0.19 U		0.19 U		0.1 U	
Methyl Acetate	UG/L	6	1%	2	283				1 UJ		1 UJ		0.17 UJ		0.17 UJ		0.19 U	
Methyl bromide	UG/L	2.1	0%	1	292	GA	5	0	1 U		1 UJ		0.28 U		0.28 U		0.8 UJ	
Methyl butyl ketone	UG/L	0	0%	0	298				5 UJ		5 UJ		1.2 U		1.2 U		1 U	
Methyl chloride	UG/L	0	0%	0	298	GA	5	0	1 U		1 UJ		0.34 U		0.35 UJ		0.33 UJ	
Methyl cyclohexane	UG/L	0.17	0%	1	298				1 U		1 U		0.22 U		0.5 U		0.1 U	
Methyl ethyl ketone	UG/L	4900	8%	22	291				5 U		5 UJ		1.3 U		1.3 U		1 U	
Methyl isobutyl ketone	UG/L	1.9	0%	1	298				5 U		5 UJ		0.91 U		0.91 U		1 U	
Methyl Tertbutyl Ether	UG/L	0	0%	0	298				1 U		1 U		0.16 U		0.16 U		0.2 U	
Methylene chloride	UG/L	18	4%	12	298	GA	5	7	1 U		1 U		0.44 UJ		0.44 U		1 U	
Styrene	UG/L	0	0%	0	298	GA	5	0	1 U		1 U		0.18 U		0.18 U		0.11 U	
Tetrachloroethene	UG/L	27	1%	2	298	GA	5	1	1 U		1 U		0.36 U		0.36 U		0.15 U	
Toluene	UG/L	590	11%	32	298	GA	5	18	1 U		1 U		0.51 U		0.51 U		0.33 U	
Total Xylenes	UG/L	60	1%	2	298	GA	5	1	3 U		3 U		0.93 U		0.66 U		0.2 U	
Trans-1,2-Dichloroethene	UG/L	22	52%	155	298	GA	5	14	0.54 J		1 U		0.46 J		1.1		3.2	
Trans-1,3-Dichloropropene	UG/L	0	0%	0	298	GA	0.4	0	1 U		1 U		0.37 U		0.37 U		0.21 U	
Trichloroethene	UG/L	3800	68%	204	298	GA	5	95	15		8.5		9.2		8		7.8	
Trichlorofluoromethane	UG/L	0	0%	0	298	GA	5	0	1 U		1 UJ		0.15 UJ		0.15 U		0.25 U	
Vinyl chloride	UG/L	180	65%	194	298	GA	2	148	22		23		10		55		20	
Other																		
Iron	UG/L	296,000	100%	12	12	GA	300	11										
Iron+Manganese	UG/L	352,900	100%	12	12	GA	500	12										
Manganese	UG/L	56,900	100%	12	12	GA	300	12										
Ethane	UG/L	98	95%	145	152						98		6.9		50		9.9	
Ethene	UG/L	200	89%	135	152						66		6.6		56		5	
Methane	UG/L	23,000	98%	149	152						5,700		380		8,300		1,500	
Sulfate	MG/L	1,060	84%	128	152	GA	250	24			15.2		45.8		28		46.2 J	
Total Organic Carbon	MG/L	2050	100%	152	152						6		2.6		4.9		2.4	

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a. NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998).
b. Federal Maximum Contaminant Level (<http://www.epa.gov/safewater/contaminants/index.html>)
2. Shading indicates a concentration above the GA GW standard.

U = compound was not detected
J = the reported value is an estimated concentration
R = Rejected, data validation rejected the results
UJ = the compound was not detected; the associated reporting limit is approximate
UR = the compound was not detected; data validation rejected the results

Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 9
Seneca Army Depot Activity

Area								ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL					
Loc ID								PT-17	PT-17	PT-17	PT-17					
Matrix								GW	GW	GW	GW					
Sample ID								ALBW20295RA	ALBW20311	ALBW20327	ALBW20343					
Sample Date								6/20/2014	12/16/2014	6/5/2015	12/17/2015					
QC Type								SA	SA	SA	SA					
Study ID								LTM	LTM	LTM	LTM					
Sample Round								17	18	19	20					
Filtered								Total	Total	Total	Total					
Parameter	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Detects Above Standard-1	Value	Qual	Value	Qual	Value	Qual	Value	Qual
Volatile Organic Compounds																
1,1,1-Trichloroethane	UG/L	15	2%	5	298	GA	5	1			0.5	U	0.37	U	0.37	U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	0	298	GA	5	0			0.18	U	0.62	U	0.62	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	0	298	GA	5	0			0.5	U	0.36	U	0.36	U
1,1,2-Trichloroethane	UG/L	0	0%	0	298	GA	1	0			0.13	U	0.33	U	0.33	U
1,1-Dichloroethane	UG/L	62	12%	37	298	GA	5	1			0.25	U	0.38	U	0.38	U
1,1-Dichloroethene	UG/L	2.6	11%	34	298	GA	5	0			0.31	J	0.36	U	0.36	U
1,2,4-Trichlorobenzene	UG/L	0	0%	0	298	GA	5	0			0.25	U	2.5	U	2.5	U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0	298	GA	0.04	0			0.44	U	1.1	U	1.1	U
1,2-Dibromoethane	UG/L	0	0%	0	298	GA	0.0006	0			0.25	U	0.44	U	0.44	U
1,2-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0			0.21	U	0.37	U	0.37	U
1,2-Dichloroethane	UG/L	5.6	15%	45	298	GA	0.6	37			0.1	U	0.5	U	0.5	U
1,2-Dichloropropane	UG/L	0.29	0%	1	298	GA	1	0			0.13	U	0.67	U	0.67	U
1,3-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0			0.25	U	0.43	U	0.43	U
1,4-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0			0.28	U	0.46	U	0.46	U
Acetone	UG/L	2600	16%	46	285						5	U	7	U	7	U
Benzene	UG/L	0.48	2%	5	298	GA	1	0			0.25	U	0.43	U	0.43	U
Bromodichloromethane	UG/L	0	0%	0	298	MCL	80	0			0.25	U	0.44	U	0.44	U
Bromoform	UG/L	0	0%	0	298	MCL	80	0			0.5	U	0.43	UJ	0.43	U
Carbon disulfide	UG/L	0	0%	0	298						0.6	U	1	U	1	U
Carbon tetrachloride	UG/L	0	0%	0	298	GA	5	0			0.5	U	0.33	U	0.33	U
Chlorobenzene	UG/L	0	0%	0	298	GA	5	0			0.25	U	0.26	U	0.26	U
Chlorodibromomethane	UG/L	0	0%	0	298	MCL	80	0			0.1	U	0.32	UJ	0.32	U
Chloroethane	UG/L	1.1	2%	7	298	GA	5	0			2	U	2.5	U	2.5	U
Chloroform	UG/L	71	8%	24	298	GA	7	7			0.14	U	0.5	U	0.5	U
Cis-1,2-Dichloroethene	UG/L	820	88%	262	298	GA	5	184			130		57		27	
Cis-1,3-Dichloropropene	UG/L	0	0%	0	298	GA	0.4	0			0.11	U	0.4	U	0.4	U
Cyclohexane	UG/L	0.3	0%	1	298						0.25	U	0.39	U	0.39	U
Dichlorodifluoromethane	UG/L	0.3	0%	1	298	GA	5	0			0.25	U	0.6	U	0.6	U
Ethyl benzene	UG/L	9.2	6%	19	298	GA	5	1			0.11	U	0.33	U	0.33	U
Isopropylbenzene	UG/L	0.1	0%	1	298	GA	5	0			0.1	U	0.35	U	0.35	U
Methyl Acetate	UG/L	6	1%	2	283						0.19	U	1.8	U	1.8	U
Methyl bromide	UG/L	2.1	0%	1	292	GA	5	0			2 U*		2.5	U	2.5	U
Methyl butyl ketone	UG/L	0	0%	0	298						1	U	2	U	2	U
Methyl chloride	UG/L	0	0%	0	298	GA	5	0			0.33	U	0.4	U	0.4	U
Methyl cyclohexane	UG/L	0.17	0%	1	298						0.1	U	0.43	U	0.43	U
Methyl ethyl ketone	UG/L	4900	8%	22	291						1	U	3.4	U	3.4	U
Methyl isobutyl ketone	UG/L	1.9	0%	1	298						1	U	2.1	U	2.1	U
Methyl Tertbutyl Ether	UG/L	0	0%	0	298						0.2	U	0.3	U	0.3	U
Methylene chloride	UG/L	18	4%	12	298	GA	5	7			1	U	2.5	U	2.5	U
Styrene	UG/L	0	0%	0	298	GA	5	0			0.11	U	0.27	U	0.27	U
Tetrachloroethene	UG/L	27	1%	2	298	GA	5	1			0.15	U	0.74	U	0.74	U
Toluene	UG/L	590	11%	32	298	GA	5	18			0.33	U	0.48	U	0.48	U
Total Xylenes	UG/L	60	1%	2	298	GA	5	1			0.2	U	0.23	U	0.23	U
Trans-1,2-Dichloroethene	UG/L	22	52%	155	298	GA	5	14			22		13		4.4	
Trans-1,3-Dichloropropene	UG/L	0	0%	0	298	GA	0.4	0			0.21	U	0.42	U	0.42	U
Trichloroethene	UG/L	3800	68%	204	298	GA	5	95			7.4		9		13	
Trichlorofluoromethane	UG/L	0	0%	0	298	GA	5	0			0.25	U	0.42	U	0.42	U
Vinyl chloride	UG/L	180	65%	194	298	GA	2	148			38		15		0.5	
Other																
Iron	UG/L	296,000	100%	12	12	GA	300	11								
Iron+Manganese	UG/L	352,900	100%	12	12	GA	500	12								
Manganese	UG/L	56,900	100%	12	12	GA	300	12								
Ethane	UG/L	98	95%	145	152						2.5		1.6		0.13	J
Ethene	UG/L	200	89%	135	152						2		1.8		0.044	J
Methane	UG/L	23,000	98%	149	152						1,600		1,600		21	
Sulfate	MG/L	1,060	84%	128	152	GA	250	24			29		25		42	
Total Organic Carbon	MG/L	2050	100%	152	152						1.7		1.6		1.7	

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a. NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998).
b. Federal Maximum Contaminant Level (<http://www.epa.gov/safewater/contaminants/index.html>)
2. Shading indicates a concentration above the GA GW standard.

U = compound was not detected
J = the reported value is and estimated concentration
R = Rejected, data validation rejected the results
UJ= the compound was not detected; the associated reporting limit is approximate
UR= the compound was not detected; data validation rejected the results

Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 9
Seneca Army Depot Activity

Area	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL												
Loc ID	MWT-7	MWT-7	MWT-7	MWT-7	MWT-7	MWT-7	MWT-7												
Matrix	GW	GW	GW	GW	GW	GW	GW												
Sample ID	ALBW20062	ALBW20077	ALBW20091	ALBW20106	ALBW20120	ALBW20135	ALBW20150												
Sample Date	1/4/2007	3/15/2007	6/5/2007	11/13/2007	6/25/2008	12/15/2008	6/2/2009												
QC Type	SA	SA	SA	SA	SA	SA	SA												
Study ID	LTM	LTM	LTM	LTM	LTM	LTM	LTM												
Sample Round	1	2	3	4	5	6	7												
Filtered	Total	Total	Total	Total	Total	Total	Total												
Parameter	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Detects Above Standard-1	Value Qual		Value Qual		Value Qual		Value Qual		Value Qual		
Volatile Organic Compounds																			
1,1,1-Trichloroethane	UG/L	15	2%	5	298	GA	5	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.26 U	0.26 U		
1,1,2,2-Tetrachloroethane	UG/L	0	0%	0	298	GA	5	0	1 U	1 U	1 U	1 U	1 U	1 U	0.21 U	0.21 U			
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	0	298	GA	5	0	1 U	1 U	1 UJ	1 U	1 UJ	1 U	0.31 U	0.31 U			
1,1,2-Trichloroethane	UG/L	0	0%	0	298	GA	1	0	1 U	1 U	1 U	1 U	1 U	1 U	0.23 U	0.23 U			
1,1-Dichloroethane	UG/L	62	12%	37	298	GA	5	1	1 U	1 U	1 U	1 U	1 U	1 U	0.75 U	0.75 U			
1,1-Dichloroethene	UG/L	2.6	11%	34	298	GA	5	0	1 U	1 U	1 U	1 U	1 U	1 U	0.29 U	0.29 U			
1,2,4-Trichlorobenzene	UG/L	0	0%	0	298	GA	5	0	1 U	1 U	1 U	1 U	1 U	1 U	0.41 U	0.41 U			
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0	298	GA	0.04	0	1 U	1 U	1 U	1 U	1 UJ	1 U	1 UJ	1 UJ			
1,2-Dibromoethane	UG/L	0	0%	0	298	GA	0.0006	0	1 U	1 U	1 U	1 U	1 U	1 U	0.17 U	0.17 U			
1,2-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0	1 U	1 U	1 U	1 U	1 U	1 U	0.2 U	0.2 U			
1,2-Dichloroethane	UG/L	5.6	15%	45	298	GA	0.6	37	1 U	1 U	1 U	1 U	1 U	1 U	0.21 U	0.21 U			
1,2-Dichloropropane	UG/L	0.29	0%	1	298	GA	1	0	1 U	1 U	1 U	1 U	1 U	1 U	0.14 U	0.14 U			
1,3-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0	1 U	1 U	1 U	1 U	1 U	1 U	0.16 U	0.16 U			
1,4-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0	1 U	1 U	1 U	1 U	1 U	1 U	0.16 U	0.16 U			
Acetone	UG/L	2600	16%	46	285				5 U	5 U	5 U	5 U	5 U	5 U	1.3 U	1.3 U			
Benzene	UG/L	0.48	2%	5	298	GA	1	0	1 U	1 U	1 U	1 U	1 U	1 U	0.16 U	0.16 U			
Bromodichloromethane	UG/L	0	0%	0	298	MCL	80	0	1 U	1 U	1 U	1 U	1 U	1 U	0.38 U	0.38 U			
Bromoform	UG/L	0	0%	0	298	MCL	80	0	1 U	1 U	1 U	1 U	1 U	1 U	0.26 U	0.26 U			
Carbon disulfide	UG/L	0	0%	0	298				1 U	1 U	1 U	1 U	1 U	1 U	0.19 U	0.19 UJ			
Carbon tetrachloride	UG/L	0	0%	0	298	GA	5	0	1 U	1 U	1 U	1 U	1 U	1 U	0.27 U	0.27 U			
Chlorobenzene	UG/L	0	0%	0	298	GA	5	0	1 U	1 U	1 U	1 U	1 U	1 U	0.18 U	0.18 U			
Chlorodibromomethane	UG/L	0	0%	0	298	MCL	80	0	1 U	1 U	1 U	1 U	1 U	1 U	0.32 U	0.32 U			
Chloroethane	UG/L	1.1	2%	7	298	GA	5	0	1 U	1 U	1 U	0.65 J	1 UJ	1 U	0.93 J	0.61 J			
Chloroform	UG/L	71	8%	24	298	GA	7	7	1 U	1 U	1 U	1 U	1 U	1 U	0.34 U	0.34 U			
Cis-1,2-Dichloroethene	UG/L	820	88%	262	298	GA	5	184	35	42	61	90	90	79	68				
Cis-1,3-Dichloropropene	UG/L	0	0%	0	298	GA	0.4	0	1 U	1 U	1 U	1 U	1 U	1 U	0.36 U	0.36 U			
Cyclohexane	UG/L	0.3	0%	1	298				1 U	1 U	1 U	1 U	1 U	1 U	0.22 U	0.53 U			
Dichlorodifluoromethane	UG/L	0.3	0%	1	298	GA	5	0	1 U	1 U	1 U	1 U	1 U	1 U	0.28 U	0.29 U			
Ethyl benzene	UG/L	9.2	6%	19	298	GA	5	1	1 U	1 U	1 U	1 U	1 U	1 U	0.18 U	0.18 U			
Isopropylbenzene	UG/L	0.1	0%	1	298	GA	5	0	1 U	1 U	1 U	1 U	1 U	1 U	0.19 U	0.19 U			
Methyl Acetate	UG/L	6	1%	2	283				1 U	1 UJ	1 U	1 UJ	1 UJ	1 UJ	0.17 UJ	0.17 UJ			
Methyl bromide	UG/L	2.1	0%	1	292	GA	5	0	1 U	1 U	1 U	1 U	1 U	1 U	0.28 U	0.28 U			
Methyl butyl ketone	UG/L	0	0%	0	298				5 U	5 U	5 U	5 UJ	5 UJ	5 U	1.2 U	1.2 U			
Methyl chloride	UG/L	0	0%	0	298	GA	5	0	1 U	1 U	1 U	1 U	1 U	1 U	0.34 U	0.35 U			
Methyl cyclohexane	UG/L	0.17	0%	1	298				1 U	1 U	1 U	1 U	1 U	1 U	0.22 U	0.5 U			
Methyl ethyl ketone	UG/L	4900	8%	22	291				5 U	5 U	5 U	5 U	5 UJ	5 UJ	1.3 U	1.3 U			
Methyl isobutyl ketone	UG/L	1.9	0%	1	298				5 U	5 U	5 U	5 U	5 UJ	5 UJ	0.91 U	0.91 U			
Methyl Tertbutyl Ether	UG/L	0	0%	0	298				1 U	1 U	1 U	1 U	1 U	1 U	0.16 U	0.16 U			
Methylene chloride	UG/L	18	4%	12	298	GA	5	7	1 U	1 U	1 U	1 U	1 U	1 U	0.44 UJ	0.44 U			
Styrene	UG/L	0	0%	0	298	GA	5	0	1 U	1 U	1 U	1 U	1 U	1 U	0.18 U	0.18 U			
Tetrachloroethene	UG/L	27	1%	2	298	GA	5	1	1 U	1 U	1 U	1 U	1 U	1 U	0.36 U	0.36 U			
Toluene	UG/L	590	11%	32	298	GA	5	18	1 U	1 U	1 U	1 U	1 U	1 U	0.51 U	0.51 U			
Total Xylenes	UG/L	60	1%	2	298	GA	5	1	3 U	3 U	3 U	3 U	3 U	3 U	0.93 U	0.66 U			
Trans-1,2-Dichloroethene	UG/L	22	52%	155	298	GA	5	14	1 U	1 U	1 U	1 U	1 U	1 U	0.13 U	0.13 U			
Trans-1,3-Dichloropropene	UG/L	0	0%	0	298	GA	0.4	0	1 U	1 U	1 U	1 U	1 U	1 U	0.37 U	0.37 U			
Trichloroethene	UG/L	3800	68%	204	298	GA	5	95	490	440	410	510	440	410	330				
Trichlorofluoromethane	UG/L	0	0%	0	298	GA	5	0	1 U	1 U	1 UJ	1 U	1 UJ	1 U	0.15 U	0.15 U			
Vinyl chloride	UG/L	180	65%	194	298	GA	2	148	0.51 J	9.7	18	24	12	13	9.3				
Other																			
Iron	UG/L	296,000	100%	12	12	GA	300	11											
Iron+Manganese	UG/L	352,900	100%	12	12	GA	500	12											
Manganese	UG/L	56,900	100%	12	12	GA	300	12											
Ethane	UG/L	98	95%	145	152								6.7	11	7.8				
Ethene	UG/L	200	89%	135	152								2	0.27	0.76				
Methane	UG/L	23,000	98%	149	152								400	670	1,100				
Sulfate	MG/L	1,060	84%	128	152	GA	250	24					29.1	29.1	27				
Total Organic Carbon	MG/L	2050	100%	152	152								2.3	3	3.1				

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a. NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998).
b. Federal Maximum Contaminant Level (<http://www.epa.gov/safewater/contaminants/index.html>)
2. Shading indicates a concentration above the GA GW standard.

U = compound was not detected
J = the reported value is an estimated concentration
R = Rejected, data validation rejected the results
UJ = the compound was not detected; the associated reporting limit is approximate
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Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 9
Seneca Army Depot Activity

Area	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL											
Loc ID	MWT-7	MWT-7	MWT-7	MWT-7	MWT-7	MWT-7	PT-24											
Matrix	GW	GW	GW	GW	GW	GW	GW											
Sample ID	ALBW20268	ALBW20283	ALBW20299	ALBW20315	ALBW20331	ALBW20347	ALBW20061											
Sample Date	7/10/2013	12/13/2013	6/20/2014	12/16/2014	6/5/2015	12/17/2015	1/2/2007											
QC Type	SA	SA	SA	SA	SA	SA	SA											
Study ID	LTM	LTM	LTM	LTM	LTM	LTM	LTM											
Sample Round	15	16	17	18	19	20	1											
Filtered	Total	Total	Total	Total	Total	Total	Total											
Parameter	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Standard-1	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual
Volatiles Organic Compounds																		
1,1,1-Trichloroethane	UG/L	15	2%	5	298	GA	5	1	0.5	U	1	U	0.5	U	2.5	U	0.37	U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	0	298	GA	5	0	0.18	U	0.36	U	0.18	U	0.9	U	0.62	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	0	298	GA	5	0	0.5	U	1	U	0.5	U	2.5	U	0.36	U
1,1,2-Trichloroethane	UG/L	0	0%	0	298	GA	1	0	0.13	U	0.26	U	0.13	U	0.65	U	0.33	U
1,1-Dichloroethane	UG/L	62	12%	37	298	GA	5	1	0.25	U	0.5	U	0.25	U	1.3	U	0.38	U
1,1-Dichloroethene	UG/L	2.6	11%	34	298	GA	5	0	0.5	J	0.22	U	0.69	J	1.8	J	0.63	J
1,2,4-Trichlorobenzene	UG/L	0	0%	0	298	GA	5	0	0.25	U	0.5	U	0.25	U	1.3	U	2.5	U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0	298	GA	0.04	0	0.44	U	0.88	U	0.44	U	2.2	U	1.1	U
1,2-Dibromoethane	UG/L	0	0%	0	298	GA	0.0006	0	0.25	U	0.5	U	0.25	U	1.3	U	0.44	U
1,2-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0	0.21	U	0.42	U	0.21	U	1.1	U	0.37	U
1,2-Dichloroethane	UG/L	5.6	15%	45	298	GA	0.6	37	0.1	U	0.2	U	0.1	U	0.5	U	0.5	U
1,2-Dichloropropane	UG/L	0.29	0%	1	298	GA	1	0	0.13	U	0.26	U	0.13	U	0.65	U	0.67	U
1,3-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0	0.25	U	0.5	U	0.25	U	1.3	U	0.43	U
1,4-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0	0.28	U	0.56	U	0.28	U	1.4	U	0.46	U
Acetone	UG/L	2600	16%	46	285				5	U	10	UJ	5	U	25	U	7	U
Benzene	UG/L	0.48	2%	5	298	GA	1	0	0.25	U	0.5	U	0.25	U	1.3	U	0.43	U
Bromodichloromethane	UG/L	0	0%	0	298	MCL	80	0	0.25	U	0.5	U	0.25	U	1.3	U	0.44	U
Bromoform	UG/L	0	0%	0	298	MCL	80	0	0.5	U	1	U	0.5	U	2.5	U	0.43	UJ
Carbon disulfide	UG/L	0	0%	0	298				0.6	U	1.2	U	0.6	U	3	U	1	U
Carbon tetrachloride	UG/L	0	0%	0	298	GA	5	0	0.5	U	1	U	0.5	UJ	2.5	U	0.33	U
Chlorobenzene	UG/L	0	0%	0	298	GA	5	0	0.25	U	0.5	U	0.25	U	1.3	U	0.26	U
Chlorodibromomethane	UG/L	0	0%	0	298	MCL	80	0	0.1	U	0.2	U	0.1	U	0.5	U	0.32	UJ
Chloroethane	UG/L	1.1	2%	7	298	GA	5	0	2	U	4	U	2	U	10	U	2.5	U
Chloroform	UG/L	71	8%	24	298	GA	7	7	0.14	U	0.53	J	0.14	U	0.95	J	0.5	U
Cis-1,2-Dichloroethene	UG/L	820	88%	262	298	GA	5	184	110		140		110		150		100	
Cis-1,3-Dichloropropene	UG/L	0	0%	0	298	GA	0.4	0	0.11	U	0.22	U	0.11	U	0.55	U	0.4	U
Cyclohexane	UG/L	0.3	0%	1	298				0.25	U	0.5	U	0.25	U	1.3	U	0.39	U
Dichlorodifluoromethane	UG/L	0.3	0%	1	298	GA	5	0	0.25	U	0.5	U	0.25	U	1.3	U	0.6	U
Ethyl benzene	UG/L	9.2	6%	19	298	GA	5	1	0.11	U	0.22	U	0.11	U	0.55	U	0.33	U
Isopropylbenzene	UG/L	0.1	0%	1	298	GA	5	0	0.1	U	0.2	U	0.1	U	0.5	U	0.35	U
Methyl Acetate	UG/L	6	1%	2	283				0.19	U	0.38	U	0.19	U	0.95	U	1.8	U
Methyl bromide	UG/L	2.1	0%	1	292	GA	5	0	2	U	4	U	2	UJ	10	U	2.5	U
Methyl butyl ketone	UG/L	0	0%	0	298				1	U	2	U	1	U	5	U	2	U
Methyl chloride	UG/L	0	0%	0	298	GA	5	0	0.33	U	0.66	U	0.33	U	1.7	U	0.4	U
Methyl cyclohexane	UG/L	0.17	0%	1	298				0.1	U	0.2	U	0.1	U	0.5	U	0.43	U
Methyl ethyl ketone	UG/L	4900	8%	22	291				1	U	2	U	1	U	5	U	3.4	U
Methyl isobutyl ketone	UG/L	1.9	0%	1	298				1	UJ	2	U	1	U	5	U	2.1	U
Methyl Tertbutyl Ether	UG/L	0	0%	0	298				0.2	U	0.4	U	0.2	U	1	U	0.3	U
Methylene chloride	UG/L	18	4%	12	298	GA	5	7	1	U	2	U	1	U	5	U	2.5	U
Styrene	UG/L	0	0%	0	298	GA	5	0	0.11	U	0.22	U	0.11	U	0.55	U	0.27	U
Tetrachloroethene	UG/L	27	1%	2	298	GA	5	1	0.15	U	0.3	U	0.15	U	0.75	U	0.74	U
Toluene	UG/L	590	11%	32	298	GA	5	18	0.33	U	0.66	U	0.33	U	7.1		0.48	U
Total Xylenes	UG/L	60	1%	2	298	GA	5	1	0.2	U	0.4	U	0.2	U	1	U	0.23	U
Trans-1,2-Dichloroethene	UG/L	22	52%	155	298	GA	5	14	0.46	J	0.4	U	0.73	J	1.8	J	0.57	J
Trans-1,3-Dichloropropene	UG/L	0	0%	0	298	GA	0.4	0	0.21	UJ	0.42	U	0.21	U	1.1	U	0.42	U
Trichloroethene	UG/L	3800	68%	204	298	GA	5	95	300		370		190		260		200	
Trichlorofluoromethane	UG/L	0	0%	0	298	GA	5	0	0.25	U	0.5	U	0.25	U	1.3	U	0.42	U
Vinyl chloride	UG/L	180	65%	194	298	GA	2	148	2.6		9.6		9.6		16		6.1	
Other																		
Iron	UG/L	296,000	100%	12	12	GA	300	11										
Iron+Manganese	UG/L	352,900	100%	12	12	GA	500	12										
Manganese	UG/L	56,900	100%	12	12	GA	300	12										
Ethane	UG/L	98	95%	145	152				0.5		1.2		1.2		1.1		0.74	J
Ethene	UG/L	200	89%	135	152				0.2	U	0.18	J	0.19	J	0.095	J	0.084	J
Methane	UG/L	23,000	98%	149	152				160		1,000		510		1,300		160	
Sulfate	MG/L	1,060	84%	128	152	GA	250	24	31		26		23		23		23	
Total Organic Carbon	MG/L	2050	100%	152	152				0.89	J	2		1.4		2		0.86	J

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 2. Shading indicates a concentration above the GA GW standard.

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 R = Rejected, data validation rejected the results
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Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 9
Seneca Army Depot Activity

		ASH LANDFILL PT-24		ASH LANDFILL PT-24		ASH LANDFILL PT-24		ASH LANDFILL PT-24		ASH LANDFILL PT-24		ASH LANDFILL PT-24		ASH LANDFILL PT-24		
		GW		GW		GW		GW		GW		GW		GW		
Sample ID		ALBW20076		ALBW20090		ALBW20105		ALBW20119		ALBW20134		ALBW20149		ALBW20164		
Sample Date		3/15/2007		6/5/2007		11/13/2007		6/26/2008		12/12/2008		6/2/2009		12/15/2009		
QC Type		SA		SA		SA		SA		SA		SA		SA		
Study ID		LTM		LTM		LTM		LTM		LTM		LTM		LTM		
Sample Round		2		3		4		5		6		7		8		
Filtered		Total		Total		Total		Total		Total		Total		Total		
Parameter	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Detects Above Standard-1	Value	Qual	Value	Qual	Value	Qual	Value	Qual
Volatile Organic Compounds																
1,1,1-Trichloroethane	UG/L	15	2%	5	298	GA	5	1	1	U	1	U	1	U	0.26	U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	0	298	GA	5	0	1	U	1	U	1	U	0.21	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	0	298	GA	5	0	1	U	1	UU	1	U	0.31	U
1,1,2-Trichloroethane	UG/L	0	0%	0	298	GA	1	0	1	U	1	U	1	U	0.23	U
1,1-Dichloroethane	UG/L	62	12%	37	298	GA	5	1	0.75	J	0.56	J	0.69	J	0.75	U
1,1-Dichloroethene	UG/L	2.6	11%	34	298	GA	5	0	1	U	1	U	1	U	0.29	U
1,2,4-Trichlorobenzene	UG/L	0	0%	0	298	GA	5	0	1	U	1	U	1	U	0.41	U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0	298	GA	0.04	0	1	U	1	U	1	UU	1	UU
1,2-Dibromoethane	UG/L	0	0%	0	298	GA	0.0006	0	1	U	1	U	1	U	0.17	U
1,2-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0	1	U	1	U	1	U	0.2	U
1,2-Dichloroethane	UG/L	5.6	15%	45	298	GA	0.6	37	1	U	1	U	1	U	0.21	U
1,2-Dichloropropane	UG/L	0.29	0%	1	298	GA	1	0	1	U	1	U	1	U	0.14	U
1,3-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0	1	U	1	U	1	U	0.16	U
1,4-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0	1	U	1	U	1	U	0.16	U
Acetone	UG/L	2600	16%	46	285				5	U	5	U	5	U	1.3	U
Benzene	UG/L	0.48	2%	5	298	GA	1	0	1	U	1	U	1	U	0.16	U
Bromodichloromethane	UG/L	0	0%	0	298	MCL	80	0	1	U	1	U	1	U	0.38	U
Bromoform	UG/L	0	0%	0	298	MCL	80	0	1	U	1	U	1	U	0.26	U
Carbon disulfide	UG/L	0	0%	0	298				1	U	1	U	1	U	0.19	UU
Carbon tetrachloride	UG/L	0	0%	0	298	GA	5	0	1	U	1	U	1	U	0.27	U
Chlorobenzene	UG/L	0	0%	0	298	GA	5	0	1	U	1	U	1	U	0.18	U
Chlorodibromomethane	UG/L	0	0%	0	298	MCL	80	0	1	U	1	U	1	U	0.32	U
Chloroethane	UG/L	1.1	2%	7	298	GA	5	0	1	U	1	U	1	UU	0.32	UU
Chloroform	UG/L	71	8%	24	298	GA	7	7	1	U	1	U	1	U	0.34	U
Cis-1,2-Dichloroethene	UG/L	820	88%	262	298	GA	5	184	38	60	39	48	34	32	28	
Cis-1,3-Dichloropropene	UG/L	0	0%	0	298	GA	0.4	0	1	U	1	U	1	U	0.36	U
Cyclohexane	UG/L	0.3	0%	1	298				1	U	1	U	1	U	0.22	U
Dichlorodifluoromethane	UG/L	0.3	0%	1	298	GA	5	0	1	U	1	U	1	U	0.28	U
Ethyl benzene	UG/L	9.2	6%	19	298	GA	5	1	1	U	1	U	1	U	0.18	U
Isopropylbenzene	UG/L	0.1	0%	1	298	GA	5	0	1	U	1	U	1	U	0.19	U
Methyl Acetate	UG/L	6	1%	2	283				1	UU	1	U	1	UU	0.17	UU
Methyl bromide	UG/L	2.1	0%	1	292	GA	5	0	1	U	1	U	1	U	0.28	U
Methyl butyl ketone	UG/L	0	0%	0	298				5	U	5	U	5	UU	1.2	U
Methyl chloride	UG/L	0	0%	0	298	GA	5	0	1	U	1	U	1	UU	0.34	UU
Methyl cyclohexane	UG/L	0.17	0%	1	298				1	U	1	U	1	U	0.22	U
Methyl ethyl ketone	UG/L	4900	8%	22	291				5	U	5	U	5	UU	1.3	U
Methyl isobutyl ketone	UG/L	1.9	0%	1	298				5	U	5	U	5	UU	0.91	U
Methyl Tertbutyl Ether	UG/L	0	0%	0	298				1	U	1	U	1	U	0.16	U
Methylene chloride	UG/L	18	4%	12	298	GA	5	7	1	U	1	U	1	UU	0.44	UU
Styrene	UG/L	0	0%	0	298	GA	5	0	1	U	1	U	1	U	0.18	U
Tetrachloroethene	UG/L	27	1%	2	298	GA	5	1	1	U	1	U	1	U	0.36	U
Toluene	UG/L	590	11%	32	298	GA	5	18	1	U	1	U	1	U	0.51	U
Total Xylenes	UG/L	60	1%	2	298	GA	5	1	3	U	3	U	3	U	0.93	U
Trans-1,2-Dichloroethene	UG/L	22	52%	155	298	GA	5	14	0.81	J	1.6	J	1	U	0.36	J
Trans-1,3-Dichloropropene	UG/L	0	0%	0	298	GA	0.4	0	1	U	1	U	1	U	0.37	U
Trichloroethene	UG/L	3800	68%	204	298	GA	5	95	2.8	J	3.1	J	3.8	J	2.2	U
Trichlorofluoromethane	UG/L	0	0%	0	298	GA	5	0	1	U	1	U	1	UU	0.15	U
Vinyl chloride	UG/L	180	65%	194	298	GA	2	148	1	U	2.6	J	1	U	0.26	J
Other																
Iron	UG/L	296,000	100%	12	12	GA	300	11								
Iron+Manganese	UG/L	352,900	100%	12	12	GA	500	12								
Manganese	UG/L	56,900	100%	12	12	GA	300	12								
Ethane	UG/L	98	95%	145	152											
Ethene	UG/L	200	89%	135	152											
Methane	UG/L	23,000	98%	149	152											
Sulfate	MG/L	1,060	84%	128	152	GA	250	24								
Total Organic Carbon	MG/L	2050	100%	152	152											

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Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 9
Seneca Army Depot Activity

Area								ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL				
Loc ID								PT-24	PT-24	PT-24	PT-24	PT-24	PT-24	PT-24				
Matrix								GW	GW	GW	GW	GW	GW	GW				
Sample ID								ALBW20179	ALBW20194	ALBW20209	ALBW20224	ALBW20239	ALBW20254	ALBW20267				
Sample Date								6/30/2010	12/17/2010	7/21/2011	12/13/2011	6/19/2012	12/12/2012	7/9/2013				
QC Type								SA	SA	SA	SA	SA	SA	SA				
Study ID								LTM	LTM	LTM	LTM	LTM	LTM	LTM				
Sample Round								9	10	11	12	13	14	15				
Filtered								Total	Total	Total	Total	Total	Total	Total				
Parameter	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Detects Above Standard-1	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual
Volatile Organic Compounds																		
1,1,1-Trichloroethane	UG/L	15	2%	5	298	GA	5	1	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	0	298	GA	5	0	0.18	U	0.18	U	0.18	U	0.18	U	0.18	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	0	298	GA	5	0	0.5	UU	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2-Trichloroethane	UG/L	0	0%	0	298	GA	1	0	0.13	U	0.13	U	0.13	U	0.13	U	0.13	U
1,1-Dichloroethane	UG/L	62	12%	37	298	GA	5	1	0.54	J	0.54	J	0.78	J	0.48	J	0.57	J
1,1-Dichloroethene	UG/L	2.6	11%	34	298	GA	5	0	0.11	U	0.11	U	0.11	U	0.11	U	0.11	U
1,2,4-Trichlorobenzene	UG/L	0	0%	0	298	GA	5	0	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0	298	GA	0.04	0	0.44	U	0.44	U	0.44	U	0.44	U	0.44	U
1,2-Dibromoethane	UG/L	0	0%	0	298	GA	0.0006	0	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
1,2-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0	0.21	U	0.21	U	0.21	U	0.21	U	0.21	U
1,2-Dichloroethane	UG/L	5.6	15%	45	298	GA	0.6	37	0.1	U	0.1	U	0.1	U	0.1	UU	0.1	U
1,2-Dichloropropane	UG/L	0.29	0%	1	298	GA	1	0	0.13	U	0.13	U	0.13	U	0.13	U	0.13	U
1,3-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
1,4-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0	0.28	U	0.28	U	0.28	U	0.28	U	0.28	U
Acetone	UG/L	2600	16%	46	285				5	U	5	UU	5	U	5	U	5	U
Benzene	UG/L	0.48	2%	5	298	GA	1	0	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
Bromodichloromethane	UG/L	0	0%	0	298	MCL	80	0	0.25	U	0.25	U	0.25	U	0.25	UU	0.25	U
Bromoform	UG/L	0	0%	0	298	MCL	80	0	0.5	U	0.5	U	0.5	UU	0.5	U	0.5	U
Carbon disulfide	UG/L	0	0%	0	298				0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
Carbon tetrachloride	UG/L	0	0%	0	298	GA	5	0	0.5	U	0.5	U	0.5	U	0.5	UU	0.5	U
Chlorobenzene	UG/L	0	0%	0	298	GA	5	0	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
Chlorodibromomethane	UG/L	0	0%	0	298	MCL	80	0	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Chloroethane	UG/L	1.1	2%	7	298	GA	5	0	1	U	1	U	1	U	1	UU	1	U
Chloroform	UG/L	71	8%	24	298	GA	7	7	0.14	U	0.16	J	0.14	U	0.14	U	0.14	U
Cis-1,2-Dichloroethene	UG/L	820	88%	262	298	GA	5	184	33		30		37		21		30	
Cis-1,3-Dichloropropene	UG/L	0	0%	0	298	GA	0.4	0	0.11	U	0.11	U	0.11	U	0.11	U	0.11	U
Cyclohexane	UG/L	0.3	0%	1	298				0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
Dichlorodifluoromethane	UG/L	0.3	0%	1	298	GA	5	0	0.25	U	0.25	U	0.25	UU	0.25	U	0.25	U
Ethyl benzene	UG/L	9.2	6%	19	298	GA	5	1	0.11	U	0.11	U	0.11	U	0.11	U	0.11	U
Isopropylbenzene	UG/L	0.1	0%	1	298	GA	5	0	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Methyl Acetate	UG/L	6	1%	2	283				0.19	UU	0.19	U	0.19	U	0.19	UR	0.19	UU
Methyl bromide	UG/L	2.1	0%	1	292	GA	5	0	0.8	UU	0.8	UU	0.8	U	0.8	UU	0.8	UU
Methyl butyl ketone	UG/L	0	0%	0	298				1	UU	1	U	1	U	1	U	1	U
Methyl chloride	UG/L	0	0%	0	298	GA	5	0	0.33	U	0.33	UU	0.33	UU	0.33	U	0.33	U
Methyl cyclohexane	UG/L	0.17	0%	1	298				0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Methyl ethyl ketone	UG/L	4900	8%	22	291				1	U	1	U	1	U	1	U	1	U
Methyl isobutyl ketone	UG/L	1.9	0%	1	298				1	U	1	U	1	U	1	U	1	UU
Methyl Tertbutyl Ether	UG/L	0	0%	0	298				0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Methylene chloride	UG/L	18	4%	12	298	GA	5	7	1	U	1	U	1	U	1	U	1	U
Styrene	UG/L	0	0%	0	298	GA	5	0	0.11	U	0.11	U	0.11	U	0.11	U	0.11	U
Tetrachloroethene	UG/L	27	1%	2	298	GA	5	1	0.15	U	0.15	U	0.15	U	0.15	U	0.15	U
Toluene	UG/L	590	11%	32	298	GA	5	18	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
Total Xylenes	UG/L	60	1%	2	298	GA	5	1	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Trans-1,2-Dichloroethene	UG/L	22	52%	155	298	GA	5	14	1.1		1.4		0.63	J	0.84	J	0.38	J
Trans-1,3-Dichloropropene	UG/L	0	0%	0	298	GA	0.4	0	0.21	U	0.21	U	0.21	U	0.21	UU	0.21	UU
Trichloroethene	UG/L	3800	68%	204	298	GA	5	95	0.39	J	0.53	J	0.38	J	0.82	J	1.1	1.6
Trichlorofluoromethane	UG/L	0	0%	0	298	GA	5	0	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U
Vinyl chloride	UG/L	180	65%	194	298	GA	2	148	3.8		7.7		7.9		2.9		2.8	
Other																		
Iron	UG/L	296,000	100%	12	12	GA	300	11										
Iron+Manganese	UG/L	352,900	100%	12	12	GA	500	12										
Manganese	UG/L	56,900	100%	12	12	GA	300	12										
Ethane	UG/L	98	95%	145	152													
Ethene	UG/L	200	89%	135	152													
Methane	UG/L	23,000	98%	149	152													
Sulfate	MG/L	1,060	84%	128	152	GA	250	24										
Total Organic Carbon	MG/L	2050	100%	152	152													

- The cleanup goal values are NYSDEC Class GA GW Standards unless noted otherwise.
 - NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998).
 - Federal Maximum Contaminant Level (<http://www.epa.gov/safewater/contaminants/index.html>)
- Shading indicates a concentration above the GA GW standard.

U = compound was not detected
 J = the reported value is an estimated concentration
 R = Rejected, data validation rejected the results
 UU = the compound was not detected; the associated reporting limit is approximate
 UR = the compound was not detected; data validation rejected the results

Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 9
Seneca Army Depot Activity

Area	ASH LANDFILL							ASH LANDFILL		ASH LANDFILL		ASH LANDFILL		ASH LANDFILL		
Loc ID	PT-24	PT-24	PT-24	PT-24	PT-24	PT-24	PT-24	MW-56	MW-56	MW-56	MW-56	MW-56	MW-56	MW-56	MW-56	
Matrix	GW							GW		GW		GW		GW		
Sample ID	ALBW20282							ALBW20298		ALBW20314		ALBW20330		ALBW20346		
Sample Date	12/11/2013							6/20/2014		12/19/2014		6/6/2015		12/18/2015		
QC Type	SA							SA		SA		SA		SA		
Study ID	LTM							LTM		LTM		LTM		LTM		
Sample Round	16							17		18		19		20		
Filtered	Total							Total		Total		Total		Total		
Parameter	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Detects Above Standard-1	Value	Qual	Value	Qual	Value	Qual	Value	Qual
Volatile Organic Compounds																
1,1,1-Trichloroethane	UG/L	15	2%	5	298	GA	5	1	0.5	U	0.5	U	0.5	U	0.37	U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	0	298	GA	5	0	0.18	U	0.18	U	0.18	U	0.62	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	0	298	GA	5	0	0.5	U	0.5	U	0.5	U	0.36	U
1,1,2-Trichloroethane	UG/L	0	0%	0	298	GA	1	0	0.13	U	0.13	U	0.13	U	0.33	U
1,1-Dichloroethane	UG/L	62	12%	37	298	GA	5	1	0.52	J	0.25	U	0.29	J	0.41	J
1,1-Dichloroethene	UG/L	2.6	11%	34	298	GA	5	0	0.11	U	0.11	U	0.11	U	0.36	U
1,2,4-Trichlorobenzene	UG/L	0	0%	0	298	GA	5	0	0.25	U	0.25	U	0.25	U	2.5	U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0	298	GA	0.04	0	0.44	U	0.44	U	0.44	U	1.1	U
1,2-Dibromoethane	UG/L	0	0%	0	298	GA	0.0006	0	0.25	U	0.25	U	0.25	U	0.44	U
1,2-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0	0.21	U	0.21	U	0.21	U	0.37	U
1,2-Dichloroethane	UG/L	5.6	15%	45	298	GA	0.6	37	0.1	U	0.1	U	0.1	U	0.5	U
1,2-Dichloropropane	UG/L	0.29	0%	1	298	GA	1	0	0.13	U	0.13	U	0.13	U	0.67	U
1,3-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0	0.25	U	0.25	U	0.25	U	0.43	U
1,4-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0	0.28	U	0.28	U	0.28	U	0.46	U
Acetone	UG/L	2600	16%	46	285				5	U	5	U	5	U	7	UR
Benzene	UG/L	0.48	2%	5	298	GA	1	0	0.25	U	0.25	U	0.25	U	0.43	U
Bromodichloromethane	UG/L	0	0%	0	298	MCL	80	0	0.25	U	0.25	U	0.25	U	0.44	U
Bromoform	UG/L	0	0%	0	298	MCL	80	0	0.5	U	0.5	U	0.5	U	0.43	UJ
Carbon disulfide	UG/L	0	0%	0	298				0.6	U	0.6	U	0.6	U	1	U
Carbon tetrachloride	UG/L	0	0%	0	298	GA	5	0	0.5	U	0.5	UJ	0.5	U	0.33	U
Chlorobenzene	UG/L	0	0%	0	298	GA	5	0	0.25	U	0.25	U	0.25	U	0.26	U
Chlorodibromomethane	UG/L	0	0%	0	298	MCL	80	0	0.1	U	0.1	U	0.1	U	0.32	UJ
Chloroethane	UG/L	1.1	2%	7	298	GA	5	0	2	U	2	U	2	U	2.5	U
Chloroform	UG/L	71	8%	24	298	GA	7	7	0.14	U	0.14	U	0.14	U	0.5	U
Cis-1,2-Dichloroethene	UG/L	820	88%	262	298	GA	5	184	23		23		13		18	
Cis-1,3-Dichloropropene	UG/L	0	0%	0	298	GA	0.4	0	0.11	U	0.11	U	0.11	U	0.4	U
Cyclohexane	UG/L	0.3	0%	1	298				0.25	U	0.25	U	0.25	U	0.39	U
Dichlorodifluoromethane	UG/L	0.3	0%	1	298	GA	5	0	0.25	UJ	0.25	U	0.25	U	0.6	U
Ethyl benzene	UG/L	9.2	6%	19	298	GA	5	1	0.11	U	0.11	U	0.11	U	0.33	U
Isopropylbenzene	UG/L	0.1	0%	1	298	GA	5	0	0.1	U	0.1	U	0.1	U	0.35	U
Methyl Acetate	UG/L	6	1%	2	283				0.19	U	0.19	U	0.19	U	1.8	U
Methyl bromide	UG/L	2.1	0%	1	292	GA	5	0	2	UJ	2	UJ	2	U	2.5	UJ
Methyl butyl ketone	UG/L	0	0%	0	298				1	U	1	U	1	U	2	U
Methyl chloride	UG/L	0	0%	0	298	GA	5	0	0.33	U	0.33	U	0.33	U	0.4	U
Methyl cyclohexane	UG/L	0.17	0%	1	298				0.1	U	0.1	U	0.1	U	0.43	U
Methyl ethyl ketone	UG/L	4900	8%	22	291				1	U	1	U	1	U	3.4	UR
Methyl isobutyl ketone	UG/L	1.9	0%	1	298				1	U	1	U	1	U	2.1	U
Methyl Tertbutyl Ether	UG/L	0	0%	0	298				0.2	U	0.2	U	0.2	U	0.3	U
Methylene chloride	UG/L	18	4%	12	298	GA	5	7	1	U	1	U	1	U	2.5	U
Styrene	UG/L	0	0%	0	298	GA	5	0	0.11	U	0.11	U	0.11	U	0.27	U
Tetrachloroethene	UG/L	27	1%	2	298	GA	5	1	0.15	U	0.15	U	0.15	U	0.74	U
Toluene	UG/L	590	11%	32	298	GA	5	18	0.33	U	0.33	U	0.33	U	0.48	U
Total Xylenes	UG/L	60	1%	2	298	GA	5	1	0.2	U	0.2	U	0.2	U	0.23	U
Trans-1,2-Dichloroethene	UG/L	22	52%	155	298	GA	5	14	0.86	J	1		0.53	J	1.2	
Trans-1,3-Dichloropropene	UG/L	0	0%	0	298	GA	0.4	0	0.21	UJ	0.21	U	0.21	U	0.42	U
Trichloroethene	UG/L	3800	68%	204	298	GA	5	95	1.3		1.3		0.85	J	0.74	J
Trichlorofluoromethane	UG/L	0	0%	0	298	GA	5	0	0.25	U	0.25	U	0.25	U	0.42	U
Vinyl chloride	UG/L	180	65%	194	298	GA	2	148	1.8		1.7		0.18	U	2.1	
Other																
Iron	UG/L	296,000	100%	12	12	GA	300	11								
Iron+Manganese	UG/L	352,900	100%	12	12	GA	500	12								
Manganese	UG/L	56,900	100%	12	12	GA	300	12								
Ethane	UG/L	98	95%	145	152											
Ethene	UG/L	200	89%	135	152											
Methane	UG/L	23,000	98%	149	152											
Sulfate	MG/L	1,060	84%	128	152	GA	250	24								
Total Organic Carbon	MG/L	2050	100%	152	152											

1. The cleanup goal values are NYSDEC Class GA GW Standards unless noted otherwise.
a. NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998).
b. Federal Maximum Contaminant Level (<http://www.epa.gov/safewater/contaminants/index.html>)
2. Shading indicates a concentration above the GA GW standard.

U = compound was not detected
J = the reported value is an estimated concentration
R = Rejected, data validation rejected the results
UJ = the compound was not detected; the associated reporting limit is approximate
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Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 9
Seneca Army Depot Activity

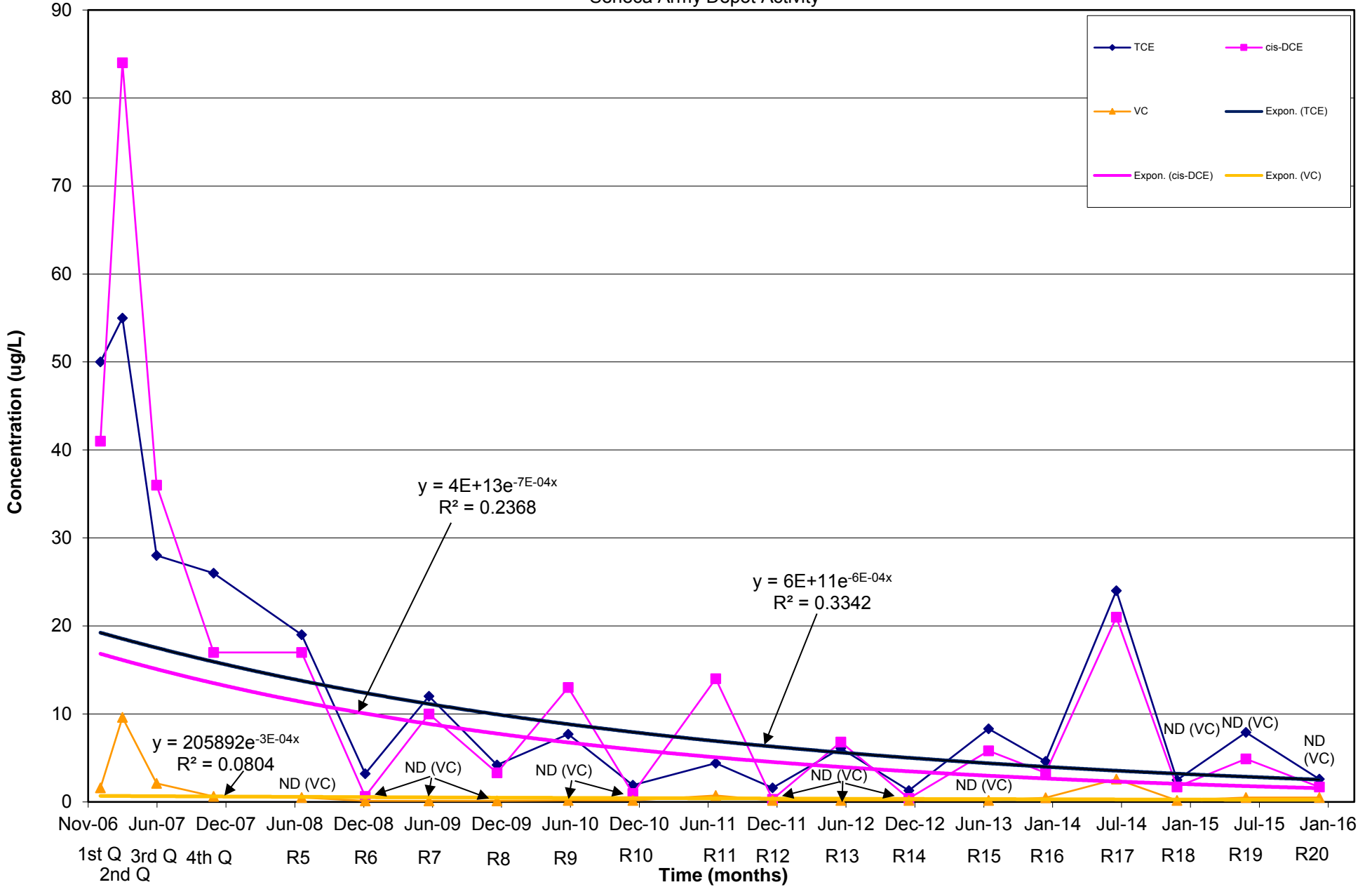
Area									ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL				
Loc ID									MW-56	MW-56	MW-56	MW-56				
Matrix									GW	GW	GW	GW				
Sample ID									ALBW20303	ALBW20319	ALBW20335	ALBW20351				
Sample Date									6/22/2014	12/19/2014	6/6/2015	12/19/2015				
QC Type									SA	SA	SA	SA				
Study ID									LTM	LTM	LTM	LTM				
Sample Round									17	18	19	20				
Filtered									Total	Total	Total	Total				
Parameter	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Detects Above Standard-1	Value	Qual	Value	Qual	Value	Qual	Value	Qual
Volatile Organic Compounds																
1,1,1-Trichloroethane	UG/L	15	2%	5	298	GA	5	1	0.5	U	0.5	U	0.37	U	0.37	U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	0	298	GA	5	0	0.18	U	0.18	U	0.62	U	0.62	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	0	298	GA	5	0	0.5	UU	0.5	U	0.36	U	0.36	U
1,1,2-Trichloroethane	UG/L	0	0%	0	298	GA	1	0	0.13	U	0.13	U	0.33	U	0.33	U
1,1-Dichloroethane	UG/L	62	12%	37	298	GA	5	1	0.25	U	0.25	U	0.38	U	0.38	U
1,1-Dichloroethene	UG/L	2.6	11%	34	298	GA	5	0	0.11	U	0.11	U	0.36	U	0.36	U
1,2,4-Trichlorobenzene	UG/L	0	0%	0	298	GA	5	0	0.25	U	0.25	U	2.5	U	2.5	U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0	298	GA	0.04	0	0.44	U	0.44	U	1.1	U	1.1	U
1,2-Dibromoethane	UG/L	0	0%	0	298	GA	0.0006	0	0.25	U	0.25	U	0.44	U	0.44	U
1,2-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0	0.21	U	0.21	U	0.37	U	0.37	U
1,2-Dichloroethane	UG/L	5.6	15%	45	298	GA	0.6	37	0.1	U	0.1	U	0.5	U	0.5	U
1,2-Dichloropropane	UG/L	0.29	0%	1	298	GA	1	0	0.13	U	0.13	U	0.67	U	0.67	U
1,3-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0	0.25	U	0.25	U	0.43	U	0.43	U
1,4-Dichlorobenzene	UG/L	0	0%	0	298	GA	3	0	0.28	U	0.28	U	0.46	U	0.46	U
Acetone	UG/L	2600	16%	46	285				5	U	5	U	7	U	7	UR
Benzene	UG/L	0.48	2%	5	298	GA	1	0	0.25	U	0.25	U	0.43	U	0.43	U
Bromodichloromethane	UG/L	0	0%	0	298	MCL	80	0	0.25	U	0.25	U	0.44	U	0.44	U
Bromoform	UG/L	0	0%	0	298	MCL	80	0	0.5	U	0.5	U	0.43	UU	0.43	U
Carbon disulfide	UG/L	0	0%	0	298				0.6	U	0.6	U	1	U	1	U
Carbon tetrachloride	UG/L	0	0%	0	298	GA	5	0	0.5	U	0.5	U	0.33	U	0.33	U
Chlorobenzene	UG/L	0	0%	0	298	GA	5	0	0.25	U	0.25	U	0.26	U	0.26	U
Chlorodibromomethane	UG/L	0	0%	0	298	MCL	80	0	0.1	U	0.1	U	0.32	UU	0.32	U
Chloroethane	UG/L	1.1	2%	7	298	GA	5	0	2	UU	2	U	2.5	U	2.5	U
Chloroform	UG/L	71	8%	24	298	GA	7	7	0.14	U	0.14	U	0.5	U	0.5	U
Cis-1,2-Dichloroethene	UG/L	820	88%	262	298	GA	5	184	0.98	J	0.89	J	1.1	U	1.4	U
Cis-1,3-Dichloropropene	UG/L	0	0%	0	298	GA	0.4	0	0.11	U	0.11	U	0.4	U	0.4	U
Cyclohexane	UG/L	0.3	0%	1	298				0.25	U	0.25	U	0.39	U	0.39	U
Dichlorodifluoromethane	UG/L	0.3	0%	1	298	GA	5	0	0.25	U	0.25	U	0.6	U	0.6	U
Ethyl benzene	UG/L	9.2	6%	19	298	GA	5	1	0.11	U	0.11	U	0.33	U	0.33	U
Isopropylbenzene	UG/L	0.1	0%	1	298	GA	5	0	0.1	U	0.1	U	0.35	U	0.35	U
Methyl Acetate	UG/L	6	1%	2	283				0.19	U	0.19	U	1.8	U	1.8	U
Methyl bromide	UG/L	2.1	0%	1	292	GA	5	0	2	U	2	U	2.5	U	2.5	UU
Methyl butyl ketone	UG/L	0	0%	0	298				1	U	1	U	2	U	2	U
Methyl chloride	UG/L	0	0%	0	298	GA	5	0	0.33	U	0.33	U	0.4	U	0.4	U
Methyl cyclohexane	UG/L	0.17	0%	1	298				0.1	U	0.1	U	0.43	U	0.43	U
Methyl ethyl ketone	UG/L	4900	8%	22	291				1	U	1	U	3.4	U	3.4	UR
Methyl isobutyl ketone	UG/L	1.9	0%	1	298				1	U	1	U	2.1	U	2.1	U
Methyl Tertbutyl Ether	UG/L	0	0%	0	298				0.2	U	0.2	U	0.3	U	0.3	U
Methylene chloride	UG/L	18	4%	12	298	GA	5	7	1	U	1	U	2.5	U	2.5	U
Styrene	UG/L	0	0%	0	298	GA	5	0	0.11	U	0.11	U	0.27	U	0.27	U
Tetrachloroethene	UG/L	27	1%	2	298	GA	5	1	0.15	U	0.15	U	0.74	U	0.74	U
Toluene	UG/L	590	11%	32	298	GA	5	18	0.33	U	0.33	U	0.48	U	0.48	U
Total Xylenes	UG/L	60	1%	2	298	GA	5	1	0.2	U	0.2	U	0.23	U	0.23	U
Trans-1,2-Dichloroethene	UG/L	22	52%	155	298	GA	5	14	0.2	U	0.2	U	0.37	U	0.37	U
Trans-1,3-Dichloropropene	UG/L	0	0%	0	298	GA	0.4	0	0.21	U	0.21	U	0.42	U	0.42	U
Trichloroethene	UG/L	3800	68%	204	298	GA	5	95	0.13	U	0.13	U	0.48	UU	0.48	U
Trichlorofluoromethane	UG/L	0	0%	0	298	GA	5	0	0.25	U	0.25	U	0.42	U	0.42	U
Vinyl chloride	UG/L	180	65%	194	298	GA	2	148	0.18	U	0.18	U	0.5	U	0.5	U
Other																
Iron	UG/L	296,000	100%	12	12	GA	300	11								
Iron+Manganese	UG/L	352,900	100%	12	12	GA	500	12								
Manganese	UG/L	56,900	100%	12	12	GA	300	12								
Ethane	UG/L	98	95%	145	152											
Ethene	UG/L	200	89%	135	152											
Methane	UG/L	23,000	98%	149	152											
Sulfate	MG/L	1,060	84%	128	152	GA	250	24								
Total Organic Carbon	MG/L	2050	100%	152	152											

- The cleanup goal values are NYSDEC Class GA GW Standards unless noted otherwise.
 - NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998).
 - Federal Maximum Contaminant Level (<http://www.epa.gov/safewater/contaminants/index.html>)
- Shading indicates a concentration above the GA GW standard.

U = compound was not detected
 J = the reported value is and estimated concentration
 R = Rejected, data validation rejected the results
 UU = the compound was not detected; the associated reporting limit is approximate
 UR = the compound was not detected; data validation rejected the results

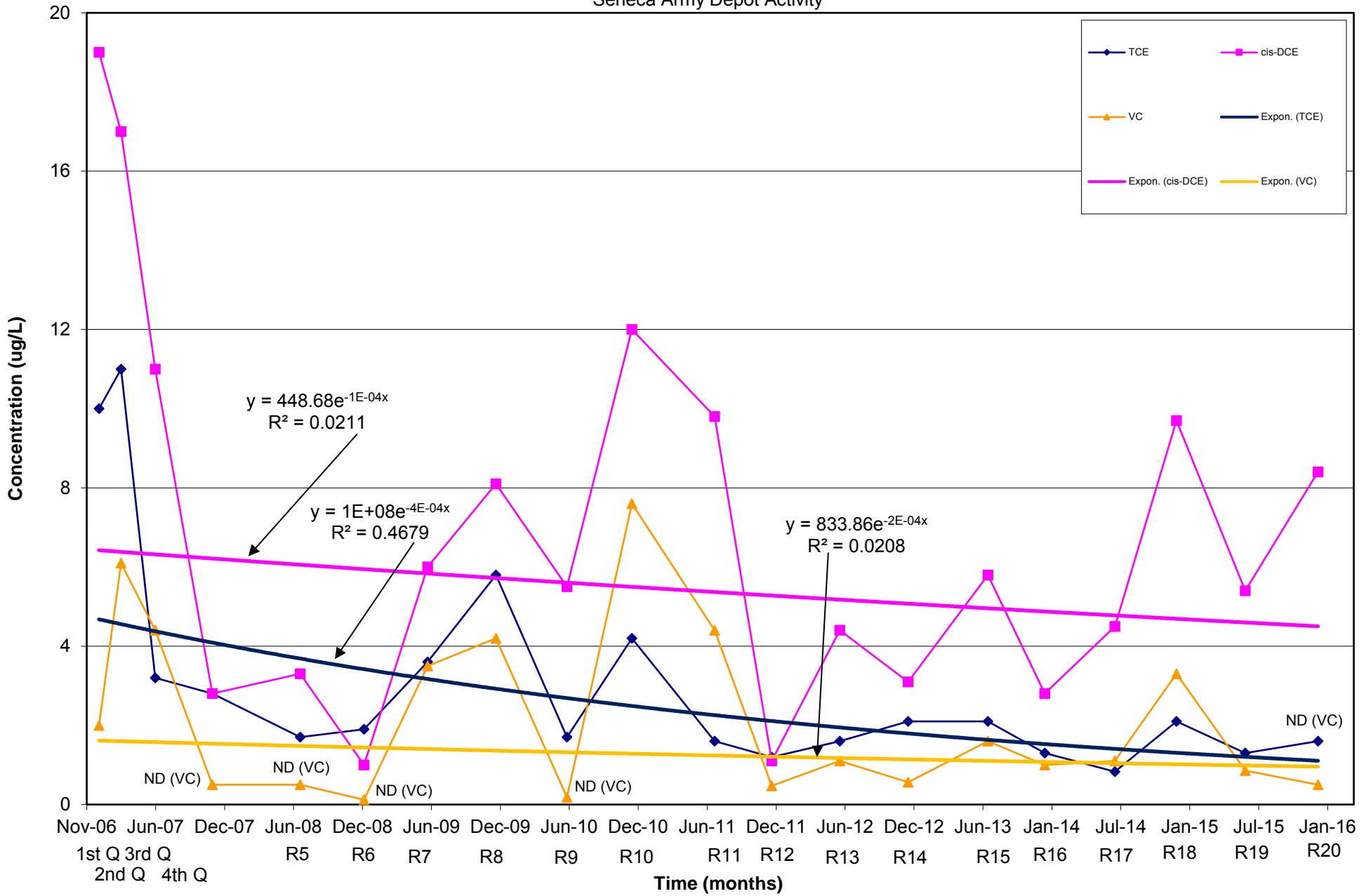
APPENDIX C
REGRESSION PLOTS

Figure C-1
 Regression Plot of Well Concentrations At MWT-25
 Ash Landfill Annual Report, Year 9
 Seneca Army Depot Activity



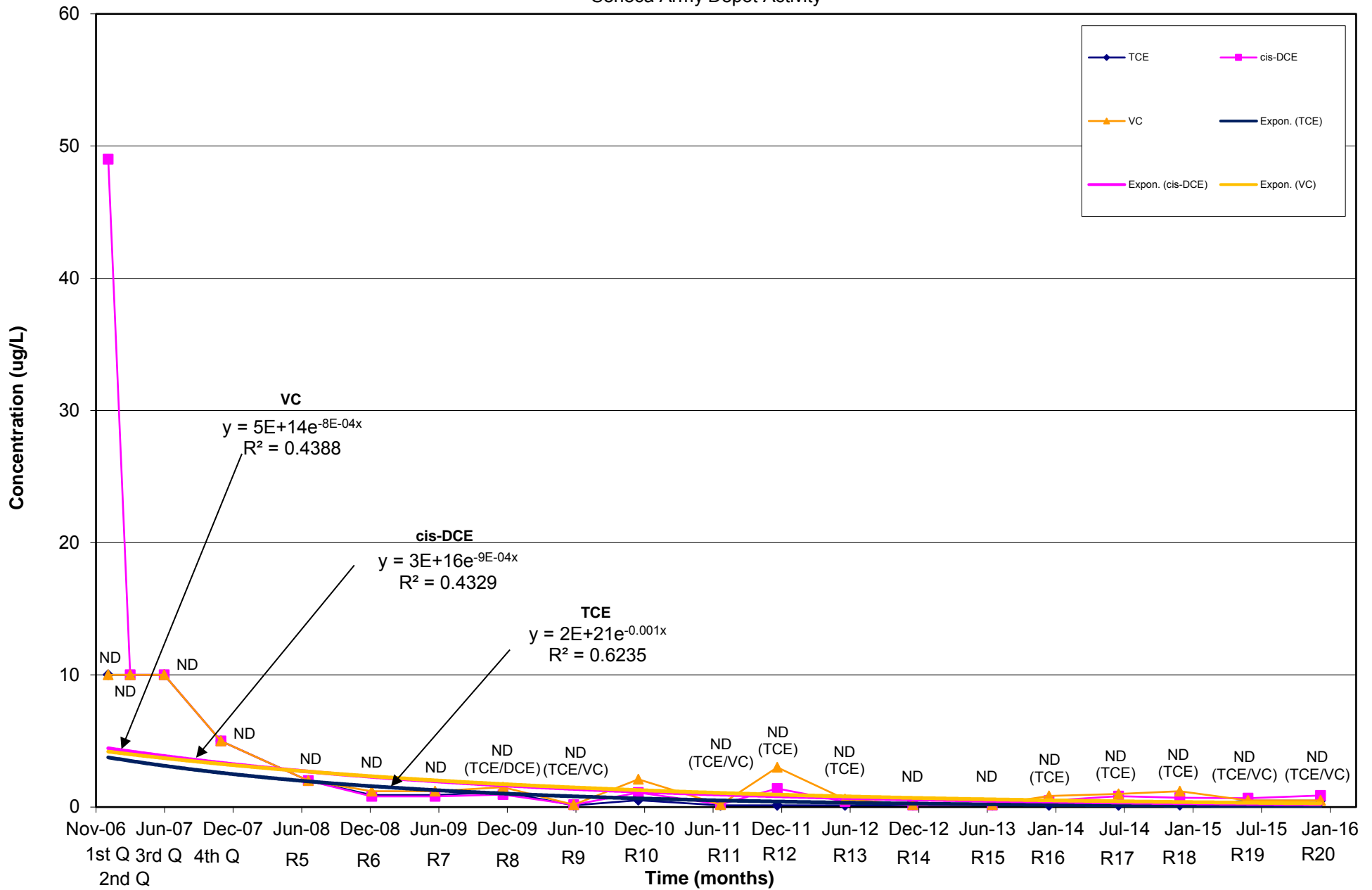
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Figure C-2
 Regression Plot of Well Concentrations At MWT-26
 Ash Landfill Annual Report, Year 9
 Seneca Army Depot Activity



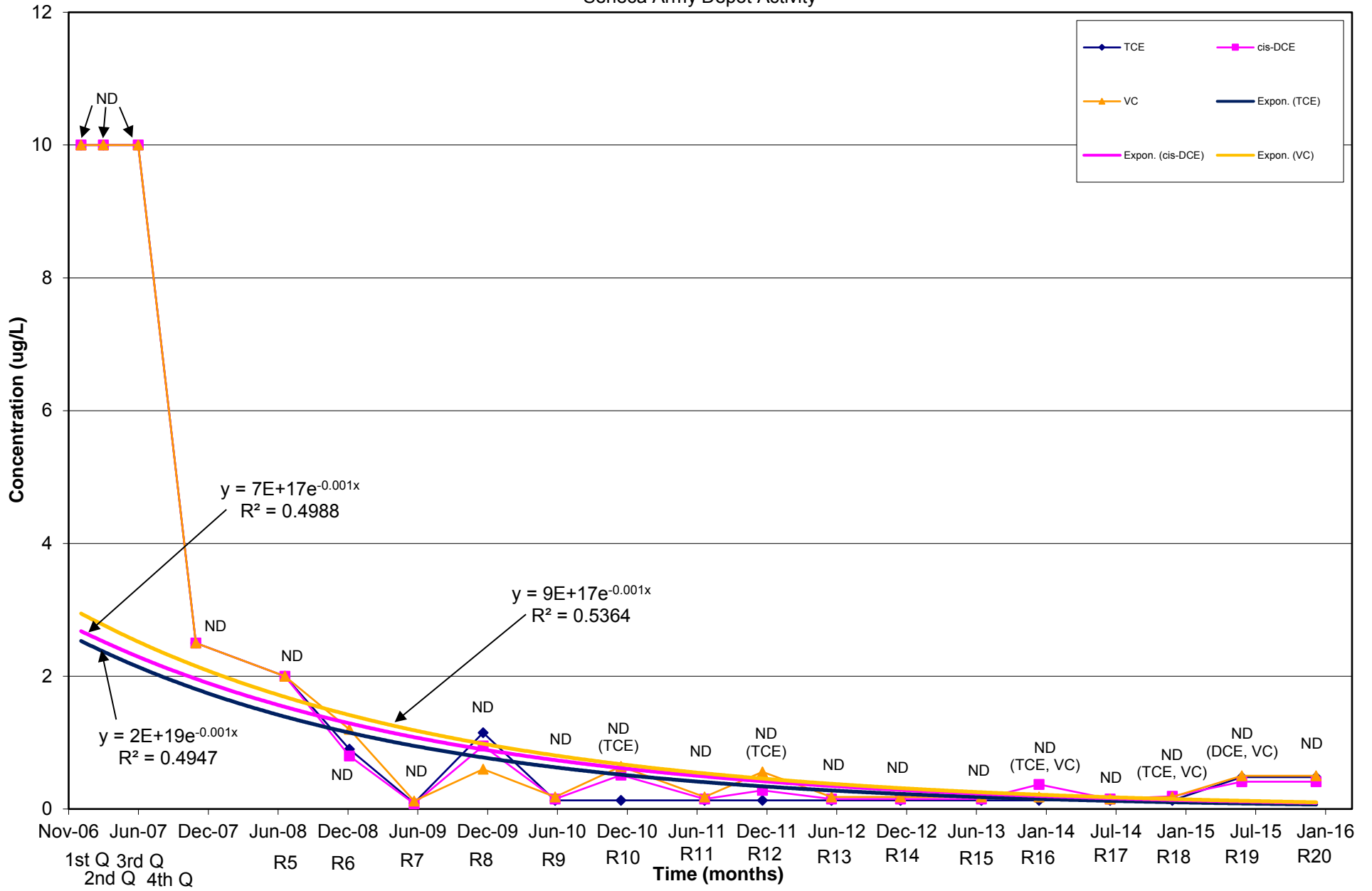
ND = not detected.

Figure C-3
 Regression Plot of Well Concentrations At MWT-27
 Ash Landfill Annual Report, Year 9
 Seneca Army Depot Activity



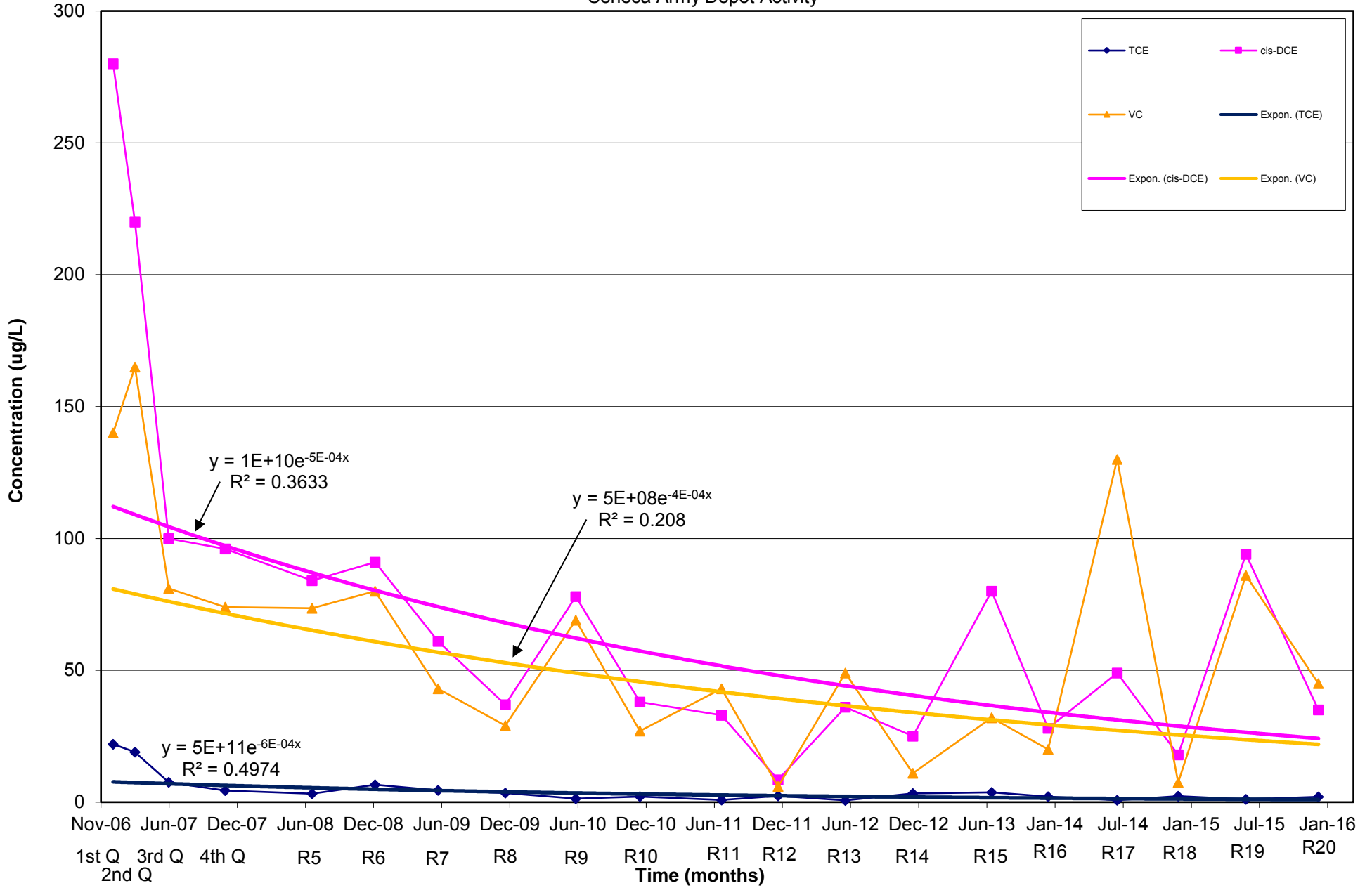
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Figure C-4
 Regression Plot of Well Concentrations At MWT-28
 Ash Landfill Annual Report, Year 9
 Seneca Army Depot Activity



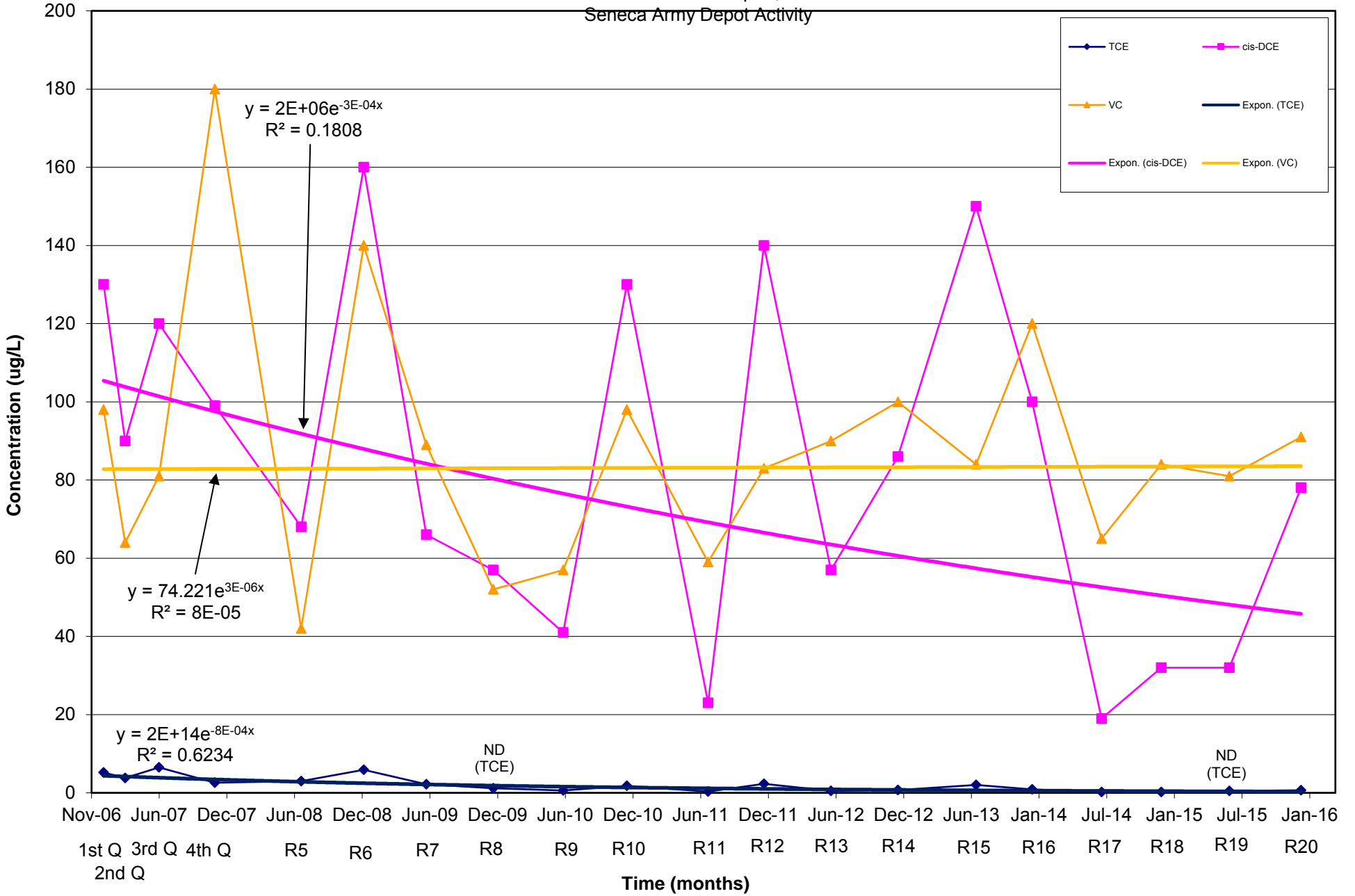
ND = not detected.

Figure C-5
 Regression Plot of Well Concentrations At MWT-29
 Ash Landfill Annual Report, Year 9
 Seneca Army Depot Activity



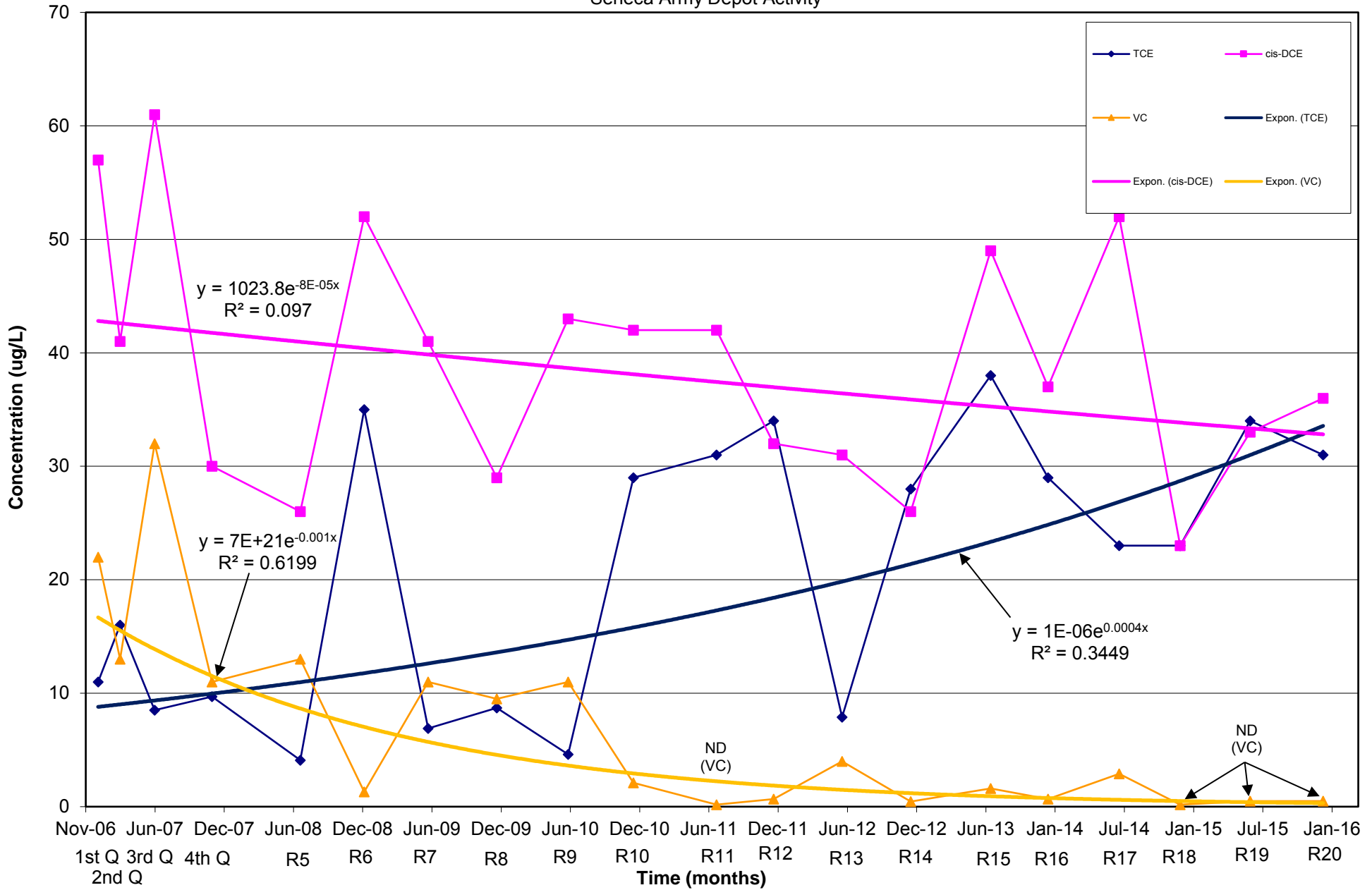
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Figure C-6
 Regression Plot of Well Concentrations At MWT-22
 Ash Landfill Annual Report, Year 9
 Seneca Army Depot Activity



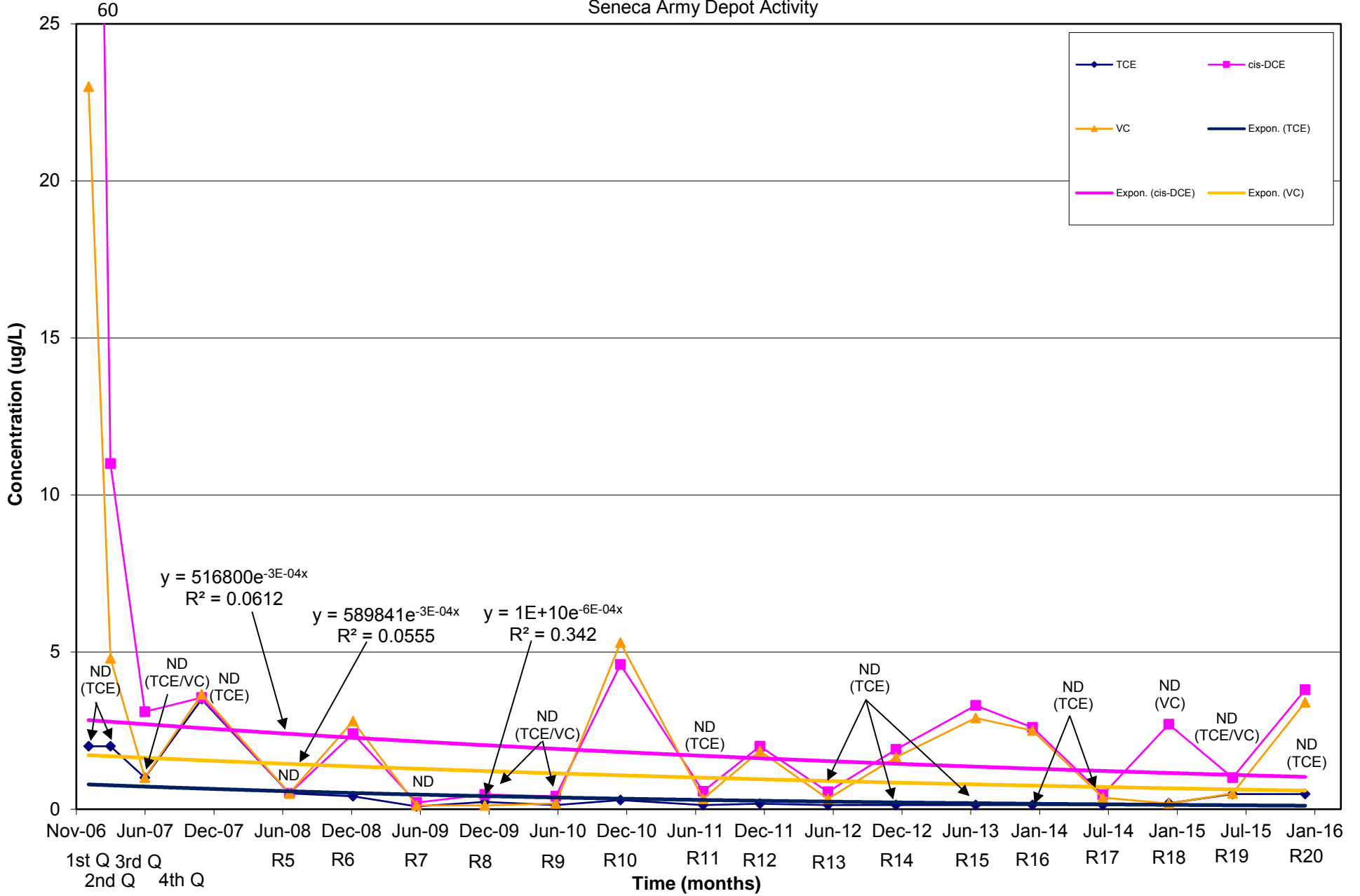
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Figure C-7
 Regression Plot of Well Concentrations At PT-22
 Ash Landfill Annual Report, Year 9
 Seneca Army Depot Activity



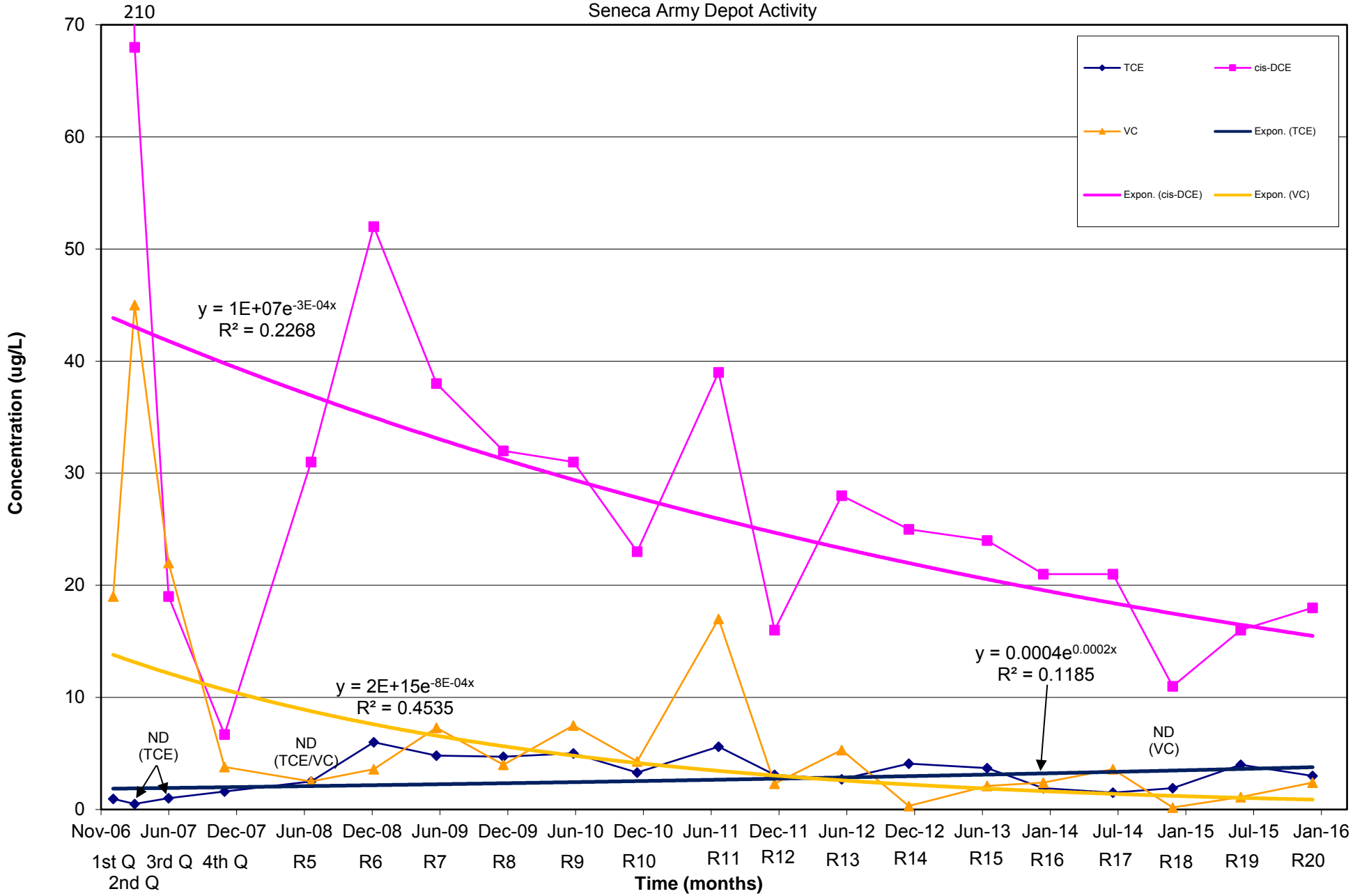
ND = not detected.

Figure C-8
 Regression Plot of Well Concentrations At MWT-23
 Ash Landfill Annual Report, Year 9
 Seneca Army Depot Activity



ND = not detected.

Figure C-9
 Regression Plot of Well Concentrations At MWT-24
 Ash Landfill Annual Report, Year 9
 Seneca Army Depot Activity



ND = not detected.

Figure C-10
 Regression Plot of Well Concentrations At PT-24
 Ash Landfill Annual Report, Year 9
 Seneca Army Depot Activity

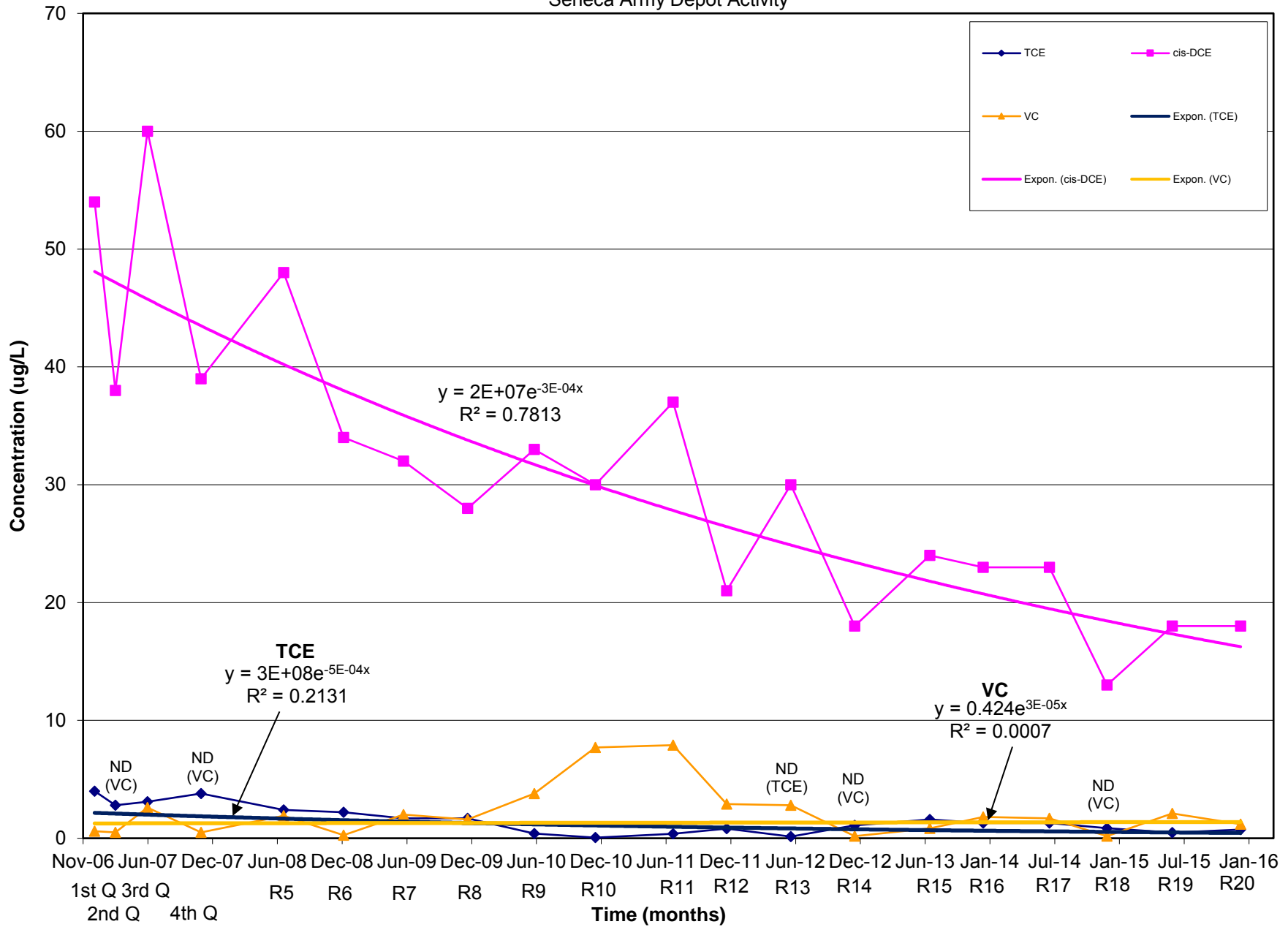
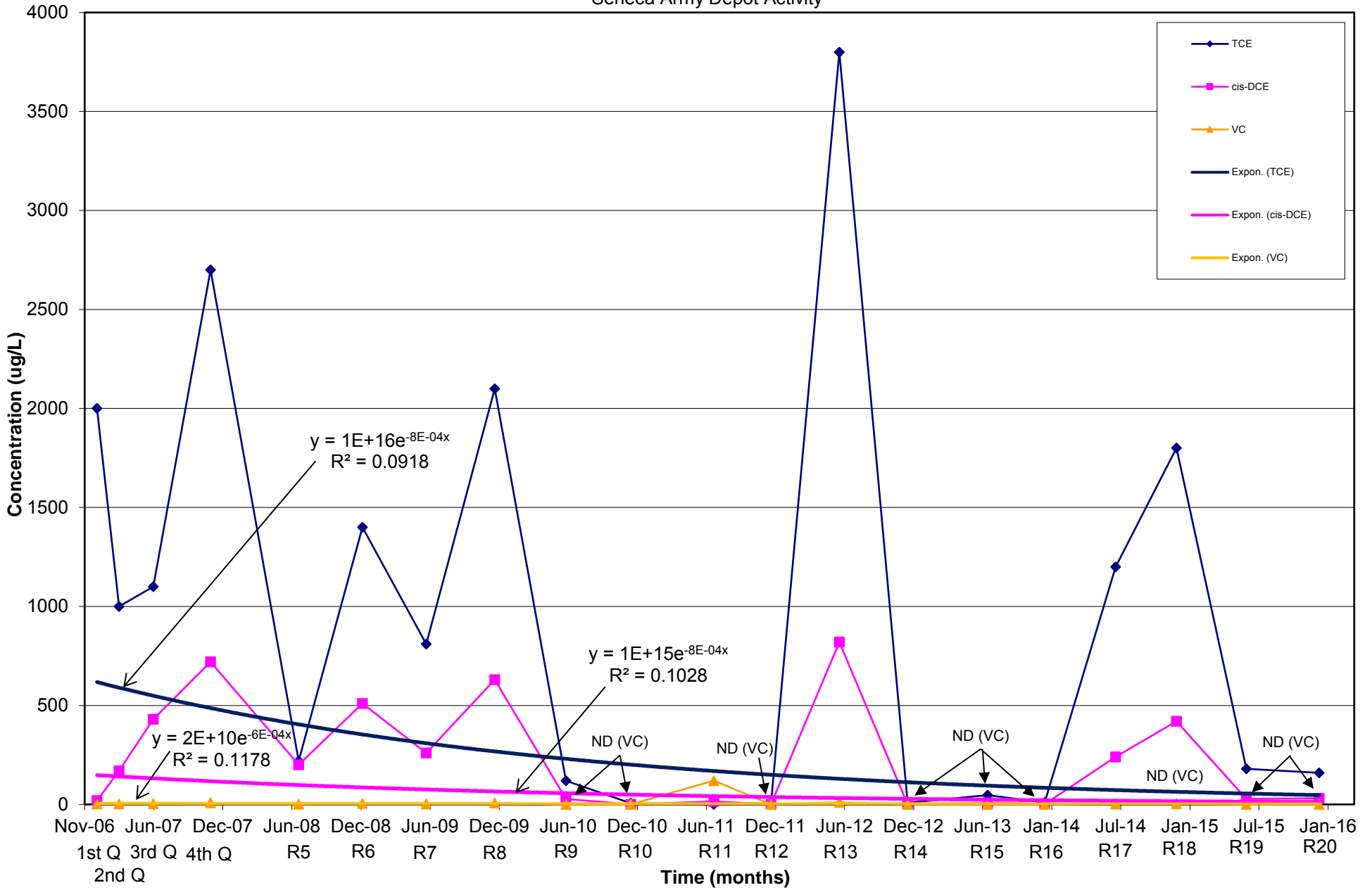
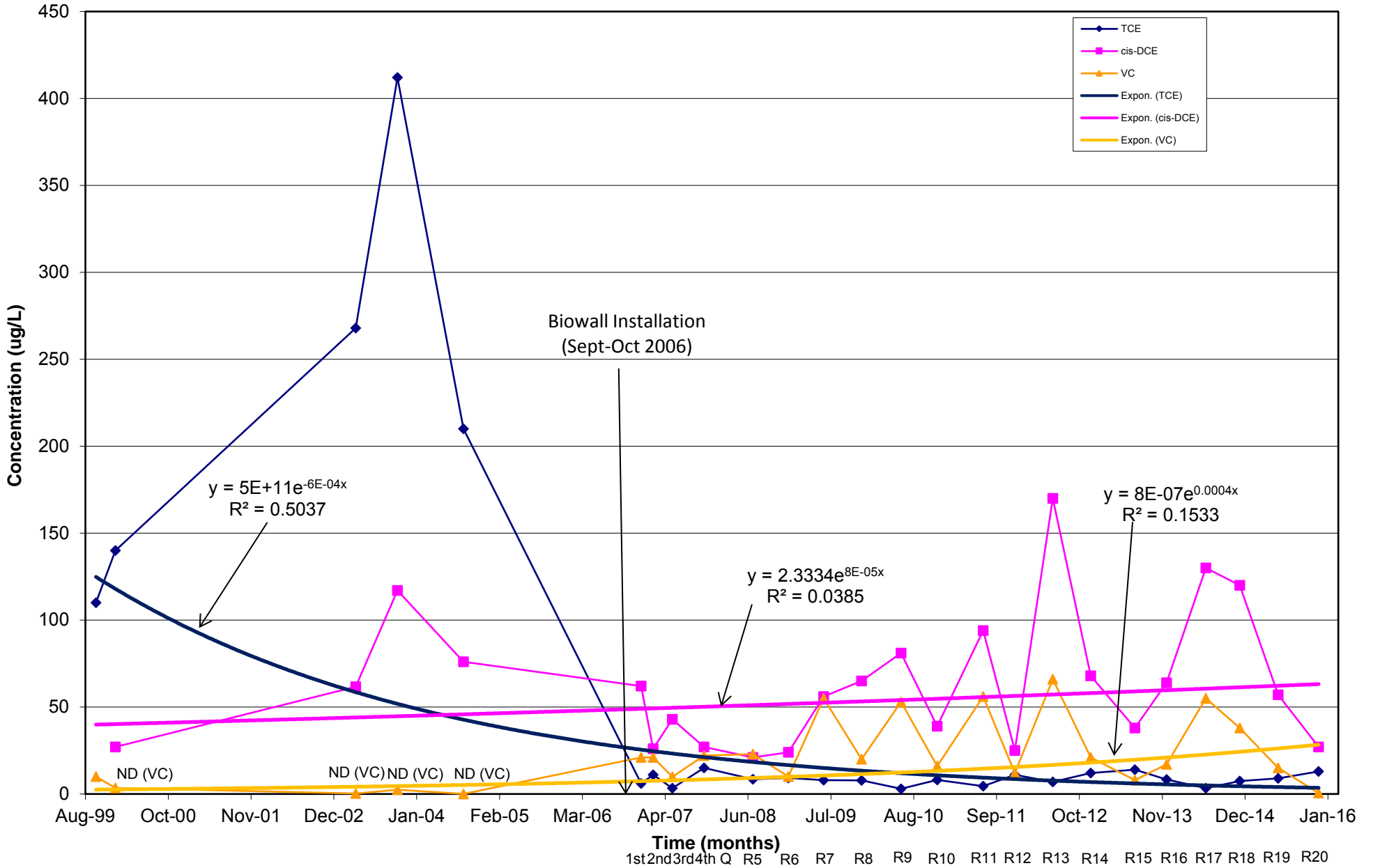


Figure C-11
 Regression Plot of Well Concentrations At PT-18A
 Ash Landfill Annual Report, Year 9
 Seneca Army Depot Activity



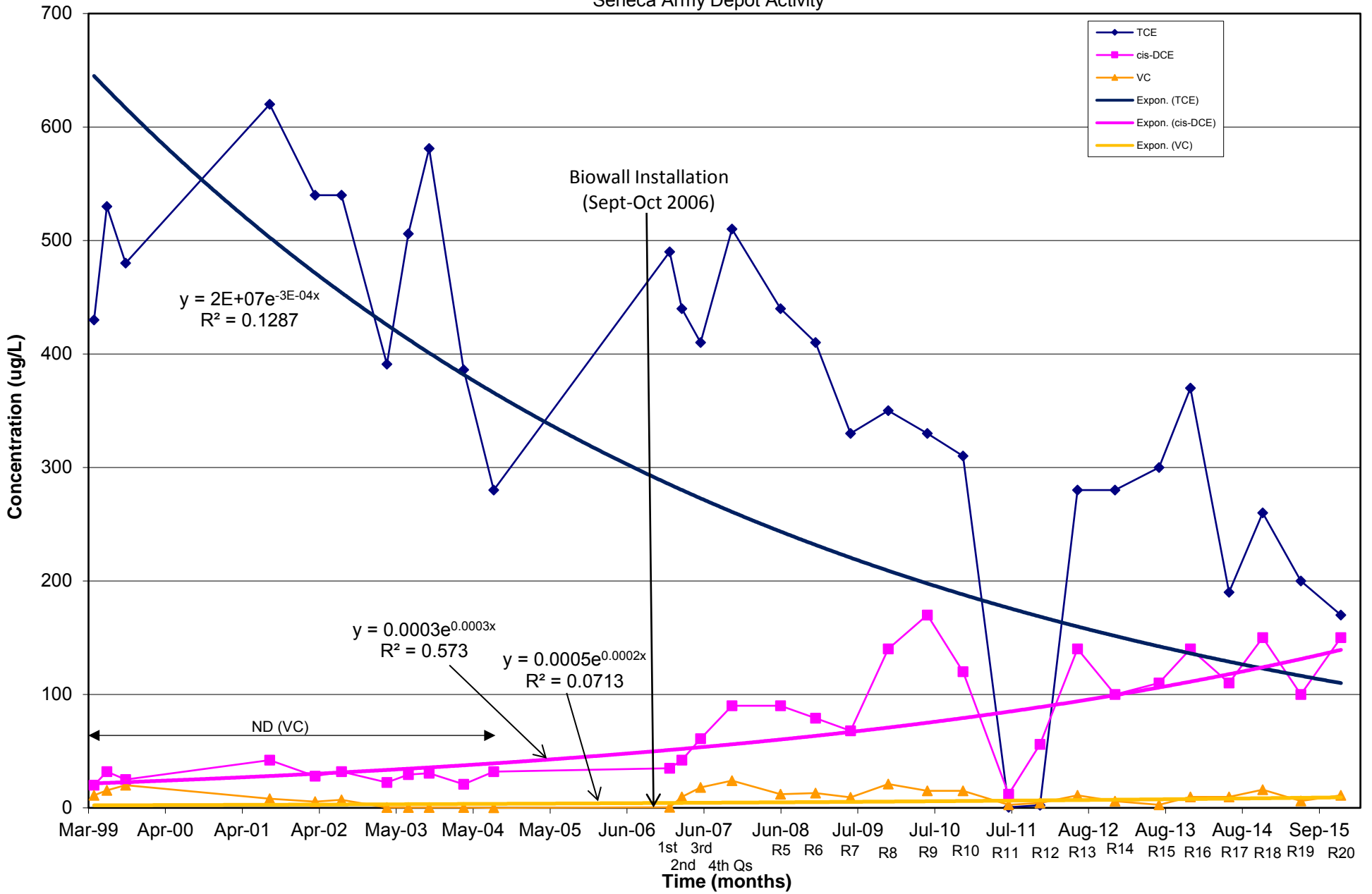
ND = not detected.

Figure C-12
 Regression Plot of Well Concentrations At PT-17
 Ash Landfill Annual Report, Year 9
 Seneca Army Depot Activity



ND = not detected.

Figure C-13
 Regression Plot of Well Concentrations At MWT-7
 Ash Landfill Annual Report, Year 9
 Seneca Army Depot Activity



ND = not detected.

APPENDIX D
LABORATORY REPORTS

Laboratory Reports are provided on the electronic (CD) version of this report.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Savannah

5102 LaRoche Avenue

Savannah, GA 31404

Tel: (912)354-7858

TestAmerica Job ID: 680-113295-1

TestAmerica Sample Delivery Group: SALF07

Client Project/Site: Ash Landfill Long Term Monitoring

For:

Parsons Corporation

100 High Street

4th Floor

Boston, Massachusetts 02110-1713

Attn: Cris Grill

Linda A. Wolfe

Authorized for release by:

6/25/2015 4:41:08 PM

Linda Wolfe, Project Manager II

(912)354-7858 e.3005

linda.wolfe@testamericainc.com

LINKS

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results through
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Have a Question?



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www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

- 1
- 2
- 3
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- 13
- 14
- 15



Table of Contents

Cover Page	1
Table of Contents	2
Case Narrative	3
Sample Summary	5
Method Summary	6
Definitions	7
Detection Summary	8
Client Sample Results	11
Surrogate Summary	35
QC Sample Results	36
QC Association	53
Chronicle	55
Chain of Custody	60
Receipt Checklists	63
Certification Summary	66

Case Narrative

Client: Parsons Corporation
Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
SDG: SALF07

Job ID: 680-113295-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: Parsons Corporation

Project: Ash Landfill Long Term Monitoring

Report Number: 680-113295-1

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

RECEIPT

The samples were received on 06/06/2015 and 06/09/2015; the samples arrived in good condition, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 3.5° C and 4.7° C.

Due to instrument issues the samples for TOC were submitted to TestAmerica Buffalo. The samples were shipped on June 9, 2015 under chain of custody and were received in Buffalo on June 10, 2015 in good condition and on ice. The temperature of the cooler upon receipt was 3.8 C.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples ALBW20327 (680-113295-1), ALBW20328 (680-113338-1), ALBW20331 (680-113295-2), ALBW20329 (680-113338-2), ALBW20332 (680-113295-3), ALBW20330 (680-113338-3), ALBW20333 (680-113295-4), ALBW20335 (680-113338-4), ALBW20334 (680-113295-5), ALBW00044 (680-113338-5), ALBW20336 (680-113295-6), ALBW20337 (680-113295-7), ALBW20338 (680-113295-8), ALBW20339 (680-113295-9), ALBW20340 (680-113295-12), ALBW20341 (680-113295-13), ALBW00123 (680-113295-14) and ALBW00043 (680-113295-15) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 06/14/2015 and 06/15/2015.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 680-387548 and batch 680-387612.

The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for analytical batch 680-387612 recovered outside control limits for Dichlorodifluoromethane. This analyte was biased high in the LCS and were not detected in the associated samples

Methylene Chloride exceeded the RPD limit for the LCS and LCSD in batch 680-387492.

Sample ALBW20331 (680-113295-2)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

ANIONS BY ION CHROMATOGRAPHY (SULFATE)

Samples ALBW20327 (680-113295-1), ALBW20331 (680-113295-2), ALBW20336 (680-113295-6), ALBW20337 (680-113295-7), ALBW20338 (680-113295-8), ALBW20339 (680-113295-9), ALBW20340 (680-113295-12), ALBW20341 (680-113295-13) and ALBW00123 (680-113295-14) were analyzed for Anions by Ion Chromatography (Sulfate) in accordance with EPA Method 300.0. The samples were analyzed on 06/09/2015 and 06/10/2015.

Case Narrative

Client: Parsons Corporation
Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
SDG: SALF07

Job ID: 680-113295-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

Samples ALBW20337 (680-113295-7)[25X] and ALBW20341 (680-113295-13)[4X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

TOTAL ORGANIC CARBON

Samples ALBW20327 (680-113295-1), ALBW20331 (680-113295-2), ALBW20336 (680-113295-6), ALBW20337 (680-113295-7), ALBW20338 (680-113295-8), ALBW20339 (680-113295-9), ALBW20340 (680-113295-12), ALBW20341 (680-113295-13) and ALBW00123 (680-113295-14) were analyzed for total organic carbon in accordance with EPA SW-846 Method 9060A. The samples were analyzed on 06/17/2015, 06/18/2015 and 06/24/2015.

Total Organic Carbon was detected in method blank MB 480-250006/3 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

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



Sample Summary

Client: Parsons Corporation
Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
SDG: SALF07

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-113295-1	ALBW20327	Water	06/05/15 10:41	06/06/15 10:12
680-113295-2	ALBW20331	Water	06/05/15 13:08	06/06/15 10:12
680-113295-3	ALBW20332	Water	06/05/15 11:15	06/06/15 10:12
680-113295-4	ALBW20333	Water	06/05/15 13:50	06/06/15 10:12
680-113295-5	ALBW20334	Water	06/04/15 16:25	06/06/15 10:12
680-113295-6	ALBW20336	Water	06/04/15 13:06	06/06/15 10:12
680-113295-7	ALBW20337	Water	06/04/15 12:25	06/06/15 10:12
680-113295-8	ALBW20338	Water	06/03/15 15:40	06/06/15 10:12
680-113295-9	ALBW20339	Water	06/03/15 14:22	06/06/15 10:12
680-113295-12	ALBW20340	Water	06/03/15 14:31	06/06/15 10:12
680-113295-13	ALBW20341	Water	06/03/15 12:40	06/06/15 10:12
680-113295-14	ALBW00123	Water	06/05/15 15:29	06/06/15 10:12
680-113295-15	ALBW00043	Water	06/05/15 16:10	06/06/15 10:12
680-113338-1	ALBW20328	Water	06/06/15 13:43	06/09/15 09:34
680-113338-2	ALBW20329	Water	06/06/15 16:00	06/09/15 09:34
680-113338-3	ALBW20330	Water	06/06/15 13:50	06/09/15 09:34
680-113338-4	ALBW20335	Water	06/06/15 11:00	06/09/15 09:34
680-113338-5	ALBW00044	Water	06/06/15 17:46	06/09/15 09:34

Method Summary

Client: Parsons Corporation
Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
SDG: SALF07

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
300.0	Anions, Ion Chromatography	MCAWW	TAL SAV
9060A	Organic Carbon, Total (TOC)	SW846	TAL BUF

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600
TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858



Definitions/Glossary

Client: Parsons Corporation
Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
SDG: SALF07

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*	RPD of the LCS and LCSD exceeds the control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
*	LCS or LCSD is outside acceptance limits.

HPLC/IC

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

General Chemistry

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

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

Detection Summary

Client: Parsons Corporation
 Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
 SDG: SALF07

Client Sample ID: ALBW20327

Lab Sample ID: 680-113295-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	57		1.0	0.41	ug/L	1		8260B	Total/NA
trans-1,2-Dichloroethene	13		1.0	0.37	ug/L	1		8260B	Total/NA
Trichloroethene	9.0		1.0	0.48	ug/L	1		8260B	Total/NA
Vinyl chloride	15		1.0	0.50	ug/L	1		8260B	Total/NA
Sulfate	25		1.0	0.40	mg/L	1		300.0	Total/NA
Total Organic Carbon	1.6	B	1.0	0.43	mg/L	1		9060A	Total/NA

Client Sample ID: ALBW20331

Lab Sample ID: 680-113295-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	0.63	J	1.0	0.36	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	100		1.0	0.41	ug/L	1		8260B	Total/NA
trans-1,2-Dichloroethene	0.57	J	1.0	0.37	ug/L	1		8260B	Total/NA
Vinyl chloride	6.1		1.0	0.50	ug/L	1		8260B	Total/NA
Trichloroethene - DL	200		2.0	0.96	ug/L	2		8260B	Total/NA
Sulfate	23		1.0	0.40	mg/L	1		300.0	Total/NA
Total Organic Carbon	0.86	J B	1.0	0.43	mg/L	1		9060A	Total/NA

Client Sample ID: ALBW20332

Lab Sample ID: 680-113295-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	32		1.0	0.41	ug/L	1		8260B	Total/NA
trans-1,2-Dichloroethene	4.0		1.0	0.37	ug/L	1		8260B	Total/NA
Vinyl chloride	81		1.0	0.50	ug/L	1		8260B	Total/NA

Client Sample ID: ALBW20333

Lab Sample ID: 680-113295-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	0.58	J	1.0	0.38	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	16		1.0	0.41	ug/L	1		8260B	Total/NA
trans-1,2-Dichloroethene	0.74	J	1.0	0.37	ug/L	1		8260B	Total/NA
Trichloroethene	4.0		1.0	0.48	ug/L	1		8260B	Total/NA
Vinyl chloride	1.1		1.0	0.50	ug/L	1		8260B	Total/NA

Client Sample ID: ALBW20334

Lab Sample ID: 680-113295-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	4.9		1.0	0.41	ug/L	1		8260B	Total/NA
Trichloroethene	7.9		1.0	0.48	ug/L	1		8260B	Total/NA

Client Sample ID: ALBW20336

Lab Sample ID: 680-113295-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2-Dichloroethane	0.90	J	1.0	0.50	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	1.0		1.0	0.41	ug/L	1		8260B	Total/NA
trans-1,2-Dichloroethene	1.2		1.0	0.37	ug/L	1		8260B	Total/NA
Sulfate	13		1.0	0.40	mg/L	1		300.0	Total/NA
Total Organic Carbon	3.4	B	1.0	0.43	mg/L	1		9060A	Total/NA

Client Sample ID: ALBW20337

Lab Sample ID: 680-113295-7

This Detection Summary does not include radiochemical test results.

TestAmerica Savannah

Detection Summary

Client: Parsons Corporation
Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
SDG: SALF07

Client Sample ID: ALBW20337 (Continued)

Lab Sample ID: 680-113295-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	5.4		1.0	0.41	ug/L	1		8260B	Total/NA
trans-1,2-Dichloroethene	0.49	J	1.0	0.37	ug/L	1		8260B	Total/NA
Trichloroethene	1.3		1.0	0.48	ug/L	1		8260B	Total/NA
Vinyl chloride	0.86	J	1.0	0.50	ug/L	1		8260B	Total/NA
Sulfate	680		25	10	mg/L	25		300.0	Total/NA
Total Organic Carbon	5.5		1.0	0.43	mg/L	1		9060A	Total/NA

Client Sample ID: ALBW20338

Lab Sample ID: 680-113295-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	7.6	J	10	7.0	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	0.67	J	1.0	0.41	ug/L	1		8260B	Total/NA
Sulfate	5.7		1.0	0.40	mg/L	1		300.0	Total/NA
Total Organic Carbon	37		1.0	0.43	mg/L	1		9060A	Total/NA

Client Sample ID: ALBW20339

Lab Sample ID: 680-113295-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	0.58	J	1.0	0.40	mg/L	1		300.0	Total/NA
Total Organic Carbon	24		1.0	0.43	mg/L	1		9060A	Total/NA

Client Sample ID: ALBW20340

Lab Sample ID: 680-113295-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	1.1		1.0	0.40	mg/L	1		300.0	Total/NA
Total Organic Carbon	24		1.0	0.43	mg/L	1		9060A	Total/NA

Client Sample ID: ALBW20341

Lab Sample ID: 680-113295-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	94		1.0	0.41	ug/L	1		8260B	Total/NA
trans-1,2-Dichloroethene	1.3		1.0	0.37	ug/L	1		8260B	Total/NA
Trichloroethene	1.1		1.0	0.48	ug/L	1		8260B	Total/NA
Vinyl chloride	86		1.0	0.50	ug/L	1		8260B	Total/NA
Sulfate	84		4.0	1.6	mg/L	4		300.0	Total/NA
Total Organic Carbon	8.6		1.0	0.43	mg/L	1		9060A	Total/NA

Client Sample ID: ALBW00123

Lab Sample ID: 680-113295-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	35		10	7.0	ug/L	1		8260B	Total/NA
Sulfate	0.46	J	1.0	0.40	mg/L	1		300.0	Total/NA
Total Organic Carbon	0.87	J	1.0	0.43	mg/L	1		9060A	Total/NA

Client Sample ID: ALBW00043

Lab Sample ID: 680-113295-15

No Detections.

Client Sample ID: ALBW20328

Lab Sample ID: 680-113338-1

This Detection Summary does not include radiochemical test results.

TestAmerica Savannah

Detection Summary

Client: Parsons Corporation
Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
SDG: SALF07

Client Sample ID: ALBW20328 (Continued)

Lab Sample ID: 680-113338-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloroform	1.1		1.0	0.50	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	28		1.0	0.41	ug/L	1		8260B	Total/NA
Trichloroethene	180		1.0	0.48	ug/L	1		8260B	Total/NA

Client Sample ID: ALBW20329

Lab Sample ID: 680-113338-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2-Dichloroethane	2.3		1.0	0.50	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	33		1.0	0.41	ug/L	1		8260B	Total/NA
Trichloroethene	34		1.0	0.48	ug/L	1		8260B	Total/NA

Client Sample ID: ALBW20330

Lab Sample ID: 680-113338-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	0.41	J	1.0	0.38	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	18		1.0	0.41	ug/L	1		8260B	Total/NA
trans-1,2-Dichloroethene	1.2		1.0	0.37	ug/L	1		8260B	Total/NA
Trichloroethene	0.48	J	1.0	0.48	ug/L	1		8260B	Total/NA
Vinyl chloride	2.1		1.0	0.50	ug/L	1		8260B	Total/NA

Client Sample ID: ALBW20335

Lab Sample ID: 680-113338-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1.1		1.0	0.41	ug/L	1		8260B	Total/NA

Client Sample ID: ALBW00044

Lab Sample ID: 680-113338-5

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Savannah

Client Sample Results

Client: Parsons Corporation
 Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
 SDG: SALF07

Client Sample ID: ALBW20327

Lab Sample ID: 680-113295-1

Date Collected: 06/05/15 10:41

Matrix: Water

Date Received: 06/06/15 10:12

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.37	ug/L			06/14/15 13:57	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.62	ug/L			06/14/15 13:57	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.36	ug/L			06/14/15 13:57	1
1,1,2-Trichloroethane	ND		1.0	0.33	ug/L			06/14/15 13:57	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			06/14/15 13:57	1
1,1-Dichloroethene	ND		1.0	0.36	ug/L			06/14/15 13:57	1
1,2,4-Trichlorobenzene	ND		5.0	2.5	ug/L			06/14/15 13:57	1
1,2-Dibromo-3-Chloropropane	ND		5.0	1.1	ug/L			06/14/15 13:57	1
1,2-Dibromoethane	ND		1.0	0.44	ug/L			06/14/15 13:57	1
1,2-Dichlorobenzene	ND		1.0	0.37	ug/L			06/14/15 13:57	1
1,2-Dichloroethane	ND		1.0	0.50	ug/L			06/14/15 13:57	1
1,2-Dichloropropane	ND		1.0	0.67	ug/L			06/14/15 13:57	1
1,3-Dichlorobenzene	ND		1.0	0.43	ug/L			06/14/15 13:57	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			06/14/15 13:57	1
2-Butanone	ND		10	3.4	ug/L			06/14/15 13:57	1
2-Hexanone	ND		10	2.0	ug/L			06/14/15 13:57	1
4-Methyl-2-pentanone	ND		10	2.1	ug/L			06/14/15 13:57	1
Acetone	ND		10	7.0	ug/L			06/14/15 13:57	1
Benzene	ND		1.0	0.43	ug/L			06/14/15 13:57	1
Bromodichloromethane	ND		1.0	0.44	ug/L			06/14/15 13:57	1
Bromoform	ND		1.0	0.43	ug/L			06/14/15 13:57	1
Bromomethane	ND		5.0	2.5	ug/L			06/14/15 13:57	1
Carbon disulfide	ND		2.0	1.0	ug/L			06/14/15 13:57	1
Carbon tetrachloride	ND		1.0	0.33	ug/L			06/14/15 13:57	1
Chlorobenzene	ND		1.0	0.26	ug/L			06/14/15 13:57	1
Chloroethane	ND		5.0	2.5	ug/L			06/14/15 13:57	1
Chloroform	ND		1.0	0.50	ug/L			06/14/15 13:57	1
Chloromethane	ND		1.0	0.40	ug/L			06/14/15 13:57	1
cis-1,2-Dichloroethene	57		1.0	0.41	ug/L			06/14/15 13:57	1
cis-1,3-Dichloropropene	ND		1.0	0.40	ug/L			06/14/15 13:57	1
Cyclohexane	ND		1.0	0.39	ug/L			06/14/15 13:57	1
Dibromochloromethane	ND		1.0	0.32	ug/L			06/14/15 13:57	1
Dichlorodifluoromethane	ND		1.0	0.60	ug/L			06/14/15 13:57	1
Ethylbenzene	ND		1.0	0.33	ug/L			06/14/15 13:57	1
Isopropylbenzene	ND		1.0	0.35	ug/L			06/14/15 13:57	1
Methyl acetate	ND		5.0	1.8	ug/L			06/14/15 13:57	1
Methyl tert-butyl ether	ND		10	0.30	ug/L			06/14/15 13:57	1
Methylcyclohexane	ND		1.0	0.43	ug/L			06/14/15 13:57	1
Methylene Chloride	ND *		5.0	2.5	ug/L			06/14/15 13:57	1
Styrene	ND		1.0	0.27	ug/L			06/14/15 13:57	1
Tetrachloroethene	ND		1.0	0.74	ug/L			06/14/15 13:57	1
Toluene	ND		1.0	0.48	ug/L			06/14/15 13:57	1
trans-1,2-Dichloroethene	13		1.0	0.37	ug/L			06/14/15 13:57	1
trans-1,3-Dichloropropene	ND		1.0	0.42	ug/L			06/14/15 13:57	1
Trichloroethene	9.0		1.0	0.48	ug/L			06/14/15 13:57	1
Trichlorofluoromethane	ND		1.0	0.42	ug/L			06/14/15 13:57	1
Vinyl chloride	15		1.0	0.50	ug/L			06/14/15 13:57	1
Xylenes, Total	ND		1.0	0.23	ug/L			06/14/15 13:57	1

TestAmerica Savannah

Client Sample Results

Client: Parsons Corporation
 Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
 SDG: SALF07

Client Sample ID: ALBW20327

Lab Sample ID: 680-113295-1

Date Collected: 06/05/15 10:41

Matrix: Water

Date Received: 06/06/15 10:12

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		70 - 130		06/14/15 13:57	1
1,2-Dichloroethane-d4 (Surr)	90		70 - 130		06/14/15 13:57	1
Dibromofluoromethane (Surr)	103		70 - 130		06/14/15 13:57	1
4-Bromofluorobenzene (Surr)	90		70 - 130		06/14/15 13:57	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	25		1.0	0.40	mg/L			06/09/15 13:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.6	B	1.0	0.43	mg/L			06/24/15 12:04	1

Client Sample ID: ALBW20331

Lab Sample ID: 680-113295-2

Date Collected: 06/05/15 13:08

Matrix: Water

Date Received: 06/06/15 10:12

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.37	ug/L			06/14/15 14:18	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.62	ug/L			06/14/15 14:18	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.36	ug/L			06/14/15 14:18	1
1,1,2-Trichloroethane	ND		1.0	0.33	ug/L			06/14/15 14:18	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			06/14/15 14:18	1
1,1-Dichloroethene	0.63	J	1.0	0.36	ug/L			06/14/15 14:18	1
1,2,4-Trichlorobenzene	ND		5.0	2.5	ug/L			06/14/15 14:18	1
1,2-Dibromo-3-Chloropropane	ND		5.0	1.1	ug/L			06/14/15 14:18	1
1,2-Dibromoethane	ND		1.0	0.44	ug/L			06/14/15 14:18	1
1,2-Dichlorobenzene	ND		1.0	0.37	ug/L			06/14/15 14:18	1
1,2-Dichloroethane	ND		1.0	0.50	ug/L			06/14/15 14:18	1
1,2-Dichloropropane	ND		1.0	0.67	ug/L			06/14/15 14:18	1
1,3-Dichlorobenzene	ND		1.0	0.43	ug/L			06/14/15 14:18	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			06/14/15 14:18	1
2-Butanone	ND		10	3.4	ug/L			06/14/15 14:18	1
2-Hexanone	ND		10	2.0	ug/L			06/14/15 14:18	1
4-Methyl-2-pentanone	ND		10	2.1	ug/L			06/14/15 14:18	1
Acetone	ND		10	7.0	ug/L			06/14/15 14:18	1
Benzene	ND		1.0	0.43	ug/L			06/14/15 14:18	1
Bromodichloromethane	ND		1.0	0.44	ug/L			06/14/15 14:18	1
Bromoform	ND		1.0	0.43	ug/L			06/14/15 14:18	1
Bromomethane	ND		5.0	2.5	ug/L			06/14/15 14:18	1
Carbon disulfide	ND		2.0	1.0	ug/L			06/14/15 14:18	1
Carbon tetrachloride	ND		1.0	0.33	ug/L			06/14/15 14:18	1
Chlorobenzene	ND		1.0	0.26	ug/L			06/14/15 14:18	1
Chloroethane	ND		5.0	2.5	ug/L			06/14/15 14:18	1
Chloroform	ND		1.0	0.50	ug/L			06/14/15 14:18	1
Chloromethane	ND		1.0	0.40	ug/L			06/14/15 14:18	1
cis-1,2-Dichloroethene	100		1.0	0.41	ug/L			06/14/15 14:18	1
cis-1,3-Dichloropropene	ND		1.0	0.40	ug/L			06/14/15 14:18	1
Cyclohexane	ND		1.0	0.39	ug/L			06/14/15 14:18	1
Dibromochloromethane	ND		1.0	0.32	ug/L			06/14/15 14:18	1

TestAmerica Savannah

Client Sample Results

Client: Parsons Corporation
 Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
 SDG: SALF07

Client Sample ID: ALBW20331

Lab Sample ID: 680-113295-2

Date Collected: 06/05/15 13:08

Matrix: Water

Date Received: 06/06/15 10:12

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		1.0	0.60	ug/L			06/14/15 14:18	1
Ethylbenzene	ND		1.0	0.33	ug/L			06/14/15 14:18	1
Isopropylbenzene	ND		1.0	0.35	ug/L			06/14/15 14:18	1
Methyl acetate	ND		5.0	1.8	ug/L			06/14/15 14:18	1
Methyl tert-butyl ether	ND		10	0.30	ug/L			06/14/15 14:18	1
Methylcyclohexane	ND		1.0	0.43	ug/L			06/14/15 14:18	1
Methylene Chloride	ND	*	5.0	2.5	ug/L			06/14/15 14:18	1
Styrene	ND		1.0	0.27	ug/L			06/14/15 14:18	1
Tetrachloroethene	ND		1.0	0.74	ug/L			06/14/15 14:18	1
Toluene	ND		1.0	0.48	ug/L			06/14/15 14:18	1
trans-1,2-Dichloroethene	0.57	J	1.0	0.37	ug/L			06/14/15 14:18	1
trans-1,3-Dichloropropene	ND		1.0	0.42	ug/L			06/14/15 14:18	1
Trichlorofluoromethane	ND		1.0	0.42	ug/L			06/14/15 14:18	1
Vinyl chloride	6.1		1.0	0.50	ug/L			06/14/15 14:18	1
Xylenes, Total	ND		1.0	0.23	ug/L			06/14/15 14:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	106		70 - 130		06/14/15 14:18	1
1,2-Dichloroethane-d4 (Surr)	88		70 - 130		06/14/15 14:18	1
Dibromofluoromethane (Surr)	103		70 - 130		06/14/15 14:18	1
4-Bromofluorobenzene (Surr)	90		70 - 130		06/14/15 14:18	1

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	200		2.0	0.96	ug/L			06/15/15 13:40	2

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		70 - 130		06/15/15 13:40	2
1,2-Dichloroethane-d4 (Surr)	91		70 - 130		06/15/15 13:40	2
Dibromofluoromethane (Surr)	103		70 - 130		06/15/15 13:40	2
4-Bromofluorobenzene (Surr)	92		70 - 130		06/15/15 13:40	2

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	23		1.0	0.40	mg/L			06/09/15 14:14	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	0.86	J B	1.0	0.43	mg/L			06/24/15 12:30	1

Client Sample ID: ALBW20332

Lab Sample ID: 680-113295-3

Date Collected: 06/05/15 11:15

Matrix: Water

Date Received: 06/06/15 10:12

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.37	ug/L			06/14/15 14:39	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.62	ug/L			06/14/15 14:39	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.36	ug/L			06/14/15 14:39	1
1,1,2-Trichloroethane	ND		1.0	0.33	ug/L			06/14/15 14:39	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			06/14/15 14:39	1

TestAmerica Savannah

Client Sample Results

Client: Parsons Corporation
 Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
 SDG: SALF07

Client Sample ID: ALBW20332

Lab Sample ID: 680-113295-3

Date Collected: 06/05/15 11:15

Matrix: Water

Date Received: 06/06/15 10:12

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		1.0	0.36	ug/L			06/14/15 14:39	1
1,2,4-Trichlorobenzene	ND		5.0	2.5	ug/L			06/14/15 14:39	1
1,2-Dibromo-3-Chloropropane	ND		5.0	1.1	ug/L			06/14/15 14:39	1
1,2-Dibromoethane	ND		1.0	0.44	ug/L			06/14/15 14:39	1
1,2-Dichlorobenzene	ND		1.0	0.37	ug/L			06/14/15 14:39	1
1,2-Dichloroethane	ND		1.0	0.50	ug/L			06/14/15 14:39	1
1,2-Dichloropropane	ND		1.0	0.67	ug/L			06/14/15 14:39	1
1,3-Dichlorobenzene	ND		1.0	0.43	ug/L			06/14/15 14:39	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			06/14/15 14:39	1
2-Butanone	ND		10	3.4	ug/L			06/14/15 14:39	1
2-Hexanone	ND		10	2.0	ug/L			06/14/15 14:39	1
4-Methyl-2-pentanone	ND		10	2.1	ug/L			06/14/15 14:39	1
Acetone	ND		10	7.0	ug/L			06/14/15 14:39	1
Benzene	ND		1.0	0.43	ug/L			06/14/15 14:39	1
Bromodichloromethane	ND		1.0	0.44	ug/L			06/14/15 14:39	1
Bromoform	ND		1.0	0.43	ug/L			06/14/15 14:39	1
Bromomethane	ND		5.0	2.5	ug/L			06/14/15 14:39	1
Carbon disulfide	ND		2.0	1.0	ug/L			06/14/15 14:39	1
Carbon tetrachloride	ND		1.0	0.33	ug/L			06/14/15 14:39	1
Chlorobenzene	ND		1.0	0.26	ug/L			06/14/15 14:39	1
Chloroethane	ND		5.0	2.5	ug/L			06/14/15 14:39	1
Chloroform	ND		1.0	0.50	ug/L			06/14/15 14:39	1
Chloromethane	ND		1.0	0.40	ug/L			06/14/15 14:39	1
cis-1,2-Dichloroethene	32		1.0	0.41	ug/L			06/14/15 14:39	1
cis-1,3-Dichloropropene	ND		1.0	0.40	ug/L			06/14/15 14:39	1
Cyclohexane	ND		1.0	0.39	ug/L			06/14/15 14:39	1
Dibromochloromethane	ND		1.0	0.32	ug/L			06/14/15 14:39	1
Dichlorodifluoromethane	ND		1.0	0.60	ug/L			06/14/15 14:39	1
Ethylbenzene	ND		1.0	0.33	ug/L			06/14/15 14:39	1
Isopropylbenzene	ND		1.0	0.35	ug/L			06/14/15 14:39	1
Methyl acetate	ND		5.0	1.8	ug/L			06/14/15 14:39	1
Methyl tert-butyl ether	ND		10	0.30	ug/L			06/14/15 14:39	1
Methylcyclohexane	ND		1.0	0.43	ug/L			06/14/15 14:39	1
Methylene Chloride	ND *		5.0	2.5	ug/L			06/14/15 14:39	1
Styrene	ND		1.0	0.27	ug/L			06/14/15 14:39	1
Tetrachloroethene	ND		1.0	0.74	ug/L			06/14/15 14:39	1
Toluene	ND		1.0	0.48	ug/L			06/14/15 14:39	1
trans-1,2-Dichloroethene	4.0		1.0	0.37	ug/L			06/14/15 14:39	1
trans-1,3-Dichloropropene	ND		1.0	0.42	ug/L			06/14/15 14:39	1
Trichloroethene	ND		1.0	0.48	ug/L			06/14/15 14:39	1
Trichlorofluoromethane	ND		1.0	0.42	ug/L			06/14/15 14:39	1
Vinyl chloride	81		1.0	0.50	ug/L			06/14/15 14:39	1
Xylenes, Total	ND		1.0	0.23	ug/L			06/14/15 14:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	105		70 - 130		06/14/15 14:39	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	90		70 - 130		06/14/15 14:39	1
<i>Dibromofluoromethane (Surr)</i>	103		70 - 130		06/14/15 14:39	1
<i>4-Bromofluorobenzene (Surr)</i>	89		70 - 130		06/14/15 14:39	1

TestAmerica Savannah

Client Sample Results

Client: Parsons Corporation
 Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
 SDG: SALF07

Client Sample ID: ALBW20333

Lab Sample ID: 680-113295-4

Date Collected: 06/05/15 13:50

Matrix: Water

Date Received: 06/06/15 10:12

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.37	ug/L			06/14/15 15:00	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.62	ug/L			06/14/15 15:00	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.36	ug/L			06/14/15 15:00	1
1,1,2-Trichloroethane	ND		1.0	0.33	ug/L			06/14/15 15:00	1
1,1-Dichloroethane	0.58	J	1.0	0.38	ug/L			06/14/15 15:00	1
1,1-Dichloroethene	ND		1.0	0.36	ug/L			06/14/15 15:00	1
1,2,4-Trichlorobenzene	ND		5.0	2.5	ug/L			06/14/15 15:00	1
1,2-Dibromo-3-Chloropropane	ND		5.0	1.1	ug/L			06/14/15 15:00	1
1,2-Dibromoethane	ND		1.0	0.44	ug/L			06/14/15 15:00	1
1,2-Dichlorobenzene	ND		1.0	0.37	ug/L			06/14/15 15:00	1
1,2-Dichloroethane	ND		1.0	0.50	ug/L			06/14/15 15:00	1
1,2-Dichloropropane	ND		1.0	0.67	ug/L			06/14/15 15:00	1
1,3-Dichlorobenzene	ND		1.0	0.43	ug/L			06/14/15 15:00	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			06/14/15 15:00	1
2-Butanone	ND		10	3.4	ug/L			06/14/15 15:00	1
2-Hexanone	ND		10	2.0	ug/L			06/14/15 15:00	1
4-Methyl-2-pentanone	ND		10	2.1	ug/L			06/14/15 15:00	1
Acetone	ND		10	7.0	ug/L			06/14/15 15:00	1
Benzene	ND		1.0	0.43	ug/L			06/14/15 15:00	1
Bromodichloromethane	ND		1.0	0.44	ug/L			06/14/15 15:00	1
Bromoform	ND		1.0	0.43	ug/L			06/14/15 15:00	1
Bromomethane	ND		5.0	2.5	ug/L			06/14/15 15:00	1
Carbon disulfide	ND		2.0	1.0	ug/L			06/14/15 15:00	1
Carbon tetrachloride	ND		1.0	0.33	ug/L			06/14/15 15:00	1
Chlorobenzene	ND		1.0	0.26	ug/L			06/14/15 15:00	1
Chloroethane	ND		5.0	2.5	ug/L			06/14/15 15:00	1
Chloroform	ND		1.0	0.50	ug/L			06/14/15 15:00	1
Chloromethane	ND		1.0	0.40	ug/L			06/14/15 15:00	1
cis-1,2-Dichloroethene	16		1.0	0.41	ug/L			06/14/15 15:00	1
cis-1,3-Dichloropropene	ND		1.0	0.40	ug/L			06/14/15 15:00	1
Cyclohexane	ND		1.0	0.39	ug/L			06/14/15 15:00	1
Dibromochloromethane	ND		1.0	0.32	ug/L			06/14/15 15:00	1
Dichlorodifluoromethane	ND		1.0	0.60	ug/L			06/14/15 15:00	1
Ethylbenzene	ND		1.0	0.33	ug/L			06/14/15 15:00	1
Isopropylbenzene	ND		1.0	0.35	ug/L			06/14/15 15:00	1
Methyl acetate	ND		5.0	1.8	ug/L			06/14/15 15:00	1
Methyl tert-butyl ether	ND		10	0.30	ug/L			06/14/15 15:00	1
Methylcyclohexane	ND		1.0	0.43	ug/L			06/14/15 15:00	1
Methylene Chloride	ND	*	5.0	2.5	ug/L			06/14/15 15:00	1
Styrene	ND		1.0	0.27	ug/L			06/14/15 15:00	1
Tetrachloroethene	ND		1.0	0.74	ug/L			06/14/15 15:00	1
Toluene	ND		1.0	0.48	ug/L			06/14/15 15:00	1
trans-1,2-Dichloroethene	0.74	J	1.0	0.37	ug/L			06/14/15 15:00	1
trans-1,3-Dichloropropene	ND		1.0	0.42	ug/L			06/14/15 15:00	1
Trichloroethene	4.0		1.0	0.48	ug/L			06/14/15 15:00	1
Trichlorofluoromethane	ND		1.0	0.42	ug/L			06/14/15 15:00	1
Vinyl chloride	1.1		1.0	0.50	ug/L			06/14/15 15:00	1
Xylenes, Total	ND		1.0	0.23	ug/L			06/14/15 15:00	1

TestAmerica Savannah

Client Sample Results

Client: Parsons Corporation
 Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
 SDG: SALF07

Client Sample ID: ALBW20333

Lab Sample ID: 680-113295-4

Date Collected: 06/05/15 13:50

Matrix: Water

Date Received: 06/06/15 10:12

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		70 - 130		06/14/15 15:00	1
1,2-Dichloroethane-d4 (Surr)	90		70 - 130		06/14/15 15:00	1
Dibromofluoromethane (Surr)	103		70 - 130		06/14/15 15:00	1
4-Bromofluorobenzene (Surr)	91		70 - 130		06/14/15 15:00	1

Client Sample ID: ALBW20334

Lab Sample ID: 680-113295-5

Date Collected: 06/04/15 16:25

Matrix: Water

Date Received: 06/06/15 10:12

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.37	ug/L			06/14/15 15:21	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.62	ug/L			06/14/15 15:21	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.36	ug/L			06/14/15 15:21	1
1,1,2-Trichloroethane	ND		1.0	0.33	ug/L			06/14/15 15:21	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			06/14/15 15:21	1
1,1-Dichloroethene	ND		1.0	0.36	ug/L			06/14/15 15:21	1
1,2,4-Trichlorobenzene	ND		5.0	2.5	ug/L			06/14/15 15:21	1
1,2-Dibromo-3-Chloropropane	ND		5.0	1.1	ug/L			06/14/15 15:21	1
1,2-Dibromoethane	ND		1.0	0.44	ug/L			06/14/15 15:21	1
1,2-Dichlorobenzene	ND		1.0	0.37	ug/L			06/14/15 15:21	1
1,2-Dichloroethane	ND		1.0	0.50	ug/L			06/14/15 15:21	1
1,2-Dichloropropane	ND		1.0	0.67	ug/L			06/14/15 15:21	1
1,3-Dichlorobenzene	ND		1.0	0.43	ug/L			06/14/15 15:21	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			06/14/15 15:21	1
2-Butanone	ND		10	3.4	ug/L			06/14/15 15:21	1
2-Hexanone	ND		10	2.0	ug/L			06/14/15 15:21	1
4-Methyl-2-pentanone	ND		10	2.1	ug/L			06/14/15 15:21	1
Acetone	ND		10	7.0	ug/L			06/14/15 15:21	1
Benzene	ND		1.0	0.43	ug/L			06/14/15 15:21	1
Bromodichloromethane	ND		1.0	0.44	ug/L			06/14/15 15:21	1
Bromoform	ND		1.0	0.43	ug/L			06/14/15 15:21	1
Bromomethane	ND		5.0	2.5	ug/L			06/14/15 15:21	1
Carbon disulfide	ND		2.0	1.0	ug/L			06/14/15 15:21	1
Carbon tetrachloride	ND		1.0	0.33	ug/L			06/14/15 15:21	1
Chlorobenzene	ND		1.0	0.26	ug/L			06/14/15 15:21	1
Chloroethane	ND		5.0	2.5	ug/L			06/14/15 15:21	1
Chloroform	ND		1.0	0.50	ug/L			06/14/15 15:21	1
Chloromethane	ND		1.0	0.40	ug/L			06/14/15 15:21	1
cis-1,2-Dichloroethene	4.9		1.0	0.41	ug/L			06/14/15 15:21	1
cis-1,3-Dichloropropene	ND		1.0	0.40	ug/L			06/14/15 15:21	1
Cyclohexane	ND		1.0	0.39	ug/L			06/14/15 15:21	1
Dibromochloromethane	ND		1.0	0.32	ug/L			06/14/15 15:21	1
Dichlorodifluoromethane	ND		1.0	0.60	ug/L			06/14/15 15:21	1
Ethylbenzene	ND		1.0	0.33	ug/L			06/14/15 15:21	1
Isopropylbenzene	ND		1.0	0.35	ug/L			06/14/15 15:21	1
Methyl acetate	ND		5.0	1.8	ug/L			06/14/15 15:21	1
Methyl tert-butyl ether	ND		10	0.30	ug/L			06/14/15 15:21	1
Methylcyclohexane	ND		1.0	0.43	ug/L			06/14/15 15:21	1
Methylene Chloride	ND	*	5.0	2.5	ug/L			06/14/15 15:21	1

TestAmerica Savannah

Client Sample Results

Client: Parsons Corporation
 Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
 SDG: SALF07

Client Sample ID: ALBW20334

Lab Sample ID: 680-113295-5

Date Collected: 06/04/15 16:25

Matrix: Water

Date Received: 06/06/15 10:12

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Styrene	ND		1.0	0.27	ug/L			06/14/15 15:21	1
Tetrachloroethene	ND		1.0	0.74	ug/L			06/14/15 15:21	1
Toluene	ND		1.0	0.48	ug/L			06/14/15 15:21	1
trans-1,2-Dichloroethene	ND		1.0	0.37	ug/L			06/14/15 15:21	1
trans-1,3-Dichloropropene	ND		1.0	0.42	ug/L			06/14/15 15:21	1
Trichloroethene	7.9		1.0	0.48	ug/L			06/14/15 15:21	1
Trichlorofluoromethane	ND		1.0	0.42	ug/L			06/14/15 15:21	1
Vinyl chloride	ND		1.0	0.50	ug/L			06/14/15 15:21	1
Xylenes, Total	ND		1.0	0.23	ug/L			06/14/15 15:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	106		70 - 130					06/14/15 15:21	1
1,2-Dichloroethane-d4 (Surr)	90		70 - 130					06/14/15 15:21	1
Dibromofluoromethane (Surr)	101		70 - 130					06/14/15 15:21	1
4-Bromofluorobenzene (Surr)	93		70 - 130					06/14/15 15:21	1

Client Sample ID: ALBW20336

Lab Sample ID: 680-113295-6

Date Collected: 06/04/15 13:06

Matrix: Water

Date Received: 06/06/15 10:12

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.37	ug/L			06/14/15 15:42	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.62	ug/L			06/14/15 15:42	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.36	ug/L			06/14/15 15:42	1
1,1,2-Trichloroethane	ND		1.0	0.33	ug/L			06/14/15 15:42	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			06/14/15 15:42	1
1,1-Dichloroethene	ND		1.0	0.36	ug/L			06/14/15 15:42	1
1,2,4-Trichlorobenzene	ND		5.0	2.5	ug/L			06/14/15 15:42	1
1,2-Dibromo-3-Chloropropane	ND		5.0	1.1	ug/L			06/14/15 15:42	1
1,2-Dibromoethane	ND		1.0	0.44	ug/L			06/14/15 15:42	1
1,2-Dichlorobenzene	ND		1.0	0.37	ug/L			06/14/15 15:42	1
1,2-Dichloroethane	0.90	J	1.0	0.50	ug/L			06/14/15 15:42	1
1,2-Dichloropropane	ND		1.0	0.67	ug/L			06/14/15 15:42	1
1,3-Dichlorobenzene	ND		1.0	0.43	ug/L			06/14/15 15:42	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			06/14/15 15:42	1
2-Butanone	ND		10	3.4	ug/L			06/14/15 15:42	1
2-Hexanone	ND		10	2.0	ug/L			06/14/15 15:42	1
4-Methyl-2-pentanone	ND		10	2.1	ug/L			06/14/15 15:42	1
Acetone	ND		10	7.0	ug/L			06/14/15 15:42	1
Benzene	ND		1.0	0.43	ug/L			06/14/15 15:42	1
Bromodichloromethane	ND		1.0	0.44	ug/L			06/14/15 15:42	1
Bromoform	ND		1.0	0.43	ug/L			06/14/15 15:42	1
Bromomethane	ND		5.0	2.5	ug/L			06/14/15 15:42	1
Carbon disulfide	ND		2.0	1.0	ug/L			06/14/15 15:42	1
Carbon tetrachloride	ND		1.0	0.33	ug/L			06/14/15 15:42	1
Chlorobenzene	ND		1.0	0.26	ug/L			06/14/15 15:42	1
Chloroethane	ND		5.0	2.5	ug/L			06/14/15 15:42	1
Chloroform	ND		1.0	0.50	ug/L			06/14/15 15:42	1
Chloromethane	ND		1.0	0.40	ug/L			06/14/15 15:42	1

TestAmerica Savannah

Client Sample Results

Client: Parsons Corporation
 Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
 SDG: SALF07

Client Sample ID: ALBW20336

Lab Sample ID: 680-113295-6

Date Collected: 06/04/15 13:06

Matrix: Water

Date Received: 06/06/15 10:12

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	1.0		1.0	0.41	ug/L			06/14/15 15:42	1
cis-1,3-Dichloropropene	ND		1.0	0.40	ug/L			06/14/15 15:42	1
Cyclohexane	ND		1.0	0.39	ug/L			06/14/15 15:42	1
Dibromochloromethane	ND		1.0	0.32	ug/L			06/14/15 15:42	1
Dichlorodifluoromethane	ND		1.0	0.60	ug/L			06/14/15 15:42	1
Ethylbenzene	ND		1.0	0.33	ug/L			06/14/15 15:42	1
Isopropylbenzene	ND		1.0	0.35	ug/L			06/14/15 15:42	1
Methyl acetate	ND		5.0	1.8	ug/L			06/14/15 15:42	1
Methyl tert-butyl ether	ND		10	0.30	ug/L			06/14/15 15:42	1
Methylcyclohexane	ND		1.0	0.43	ug/L			06/14/15 15:42	1
Methylene Chloride	ND *		5.0	2.5	ug/L			06/14/15 15:42	1
Styrene	ND		1.0	0.27	ug/L			06/14/15 15:42	1
Tetrachloroethene	ND		1.0	0.74	ug/L			06/14/15 15:42	1
Toluene	ND		1.0	0.48	ug/L			06/14/15 15:42	1
trans-1,2-Dichloroethene	1.2		1.0	0.37	ug/L			06/14/15 15:42	1
trans-1,3-Dichloropropene	ND		1.0	0.42	ug/L			06/14/15 15:42	1
Trichloroethene	ND		1.0	0.48	ug/L			06/14/15 15:42	1
Trichlorofluoromethane	ND		1.0	0.42	ug/L			06/14/15 15:42	1
Vinyl chloride	ND		1.0	0.50	ug/L			06/14/15 15:42	1
Xylenes, Total	ND		1.0	0.23	ug/L			06/14/15 15:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	106		70 - 130		06/14/15 15:42	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	90		70 - 130		06/14/15 15:42	1
<i>Dibromofluoromethane (Surr)</i>	102		70 - 130		06/14/15 15:42	1
<i>4-Bromofluorobenzene (Surr)</i>	90		70 - 130		06/14/15 15:42	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	13		1.0	0.40	mg/L			06/09/15 14:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	3.4	B	1.0	0.43	mg/L			06/24/15 12:57	1

Client Sample ID: ALBW20337

Lab Sample ID: 680-113295-7

Date Collected: 06/04/15 12:25

Matrix: Water

Date Received: 06/06/15 10:12

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.37	ug/L			06/14/15 16:04	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.62	ug/L			06/14/15 16:04	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.36	ug/L			06/14/15 16:04	1
1,1,2-Trichloroethane	ND		1.0	0.33	ug/L			06/14/15 16:04	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			06/14/15 16:04	1
1,1-Dichloroethene	ND		1.0	0.36	ug/L			06/14/15 16:04	1
1,2,4-Trichlorobenzene	ND		5.0	2.5	ug/L			06/14/15 16:04	1
1,2-Dibromo-3-Chloropropane	ND		5.0	1.1	ug/L			06/14/15 16:04	1
1,2-Dibromoethane	ND		1.0	0.44	ug/L			06/14/15 16:04	1

TestAmerica Savannah

Client Sample Results

Client: Parsons Corporation
 Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
 SDG: SALF07

Client Sample ID: ALBW20337

Lab Sample ID: 680-113295-7

Date Collected: 06/04/15 12:25

Matrix: Water

Date Received: 06/06/15 10:12

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		1.0	0.37	ug/L			06/14/15 16:04	1
1,2-Dichloroethane	ND		1.0	0.50	ug/L			06/14/15 16:04	1
1,2-Dichloropropane	ND		1.0	0.67	ug/L			06/14/15 16:04	1
1,3-Dichlorobenzene	ND		1.0	0.43	ug/L			06/14/15 16:04	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			06/14/15 16:04	1
2-Butanone	ND		10	3.4	ug/L			06/14/15 16:04	1
2-Hexanone	ND		10	2.0	ug/L			06/14/15 16:04	1
4-Methyl-2-pentanone	ND		10	2.1	ug/L			06/14/15 16:04	1
Acetone	ND		10	7.0	ug/L			06/14/15 16:04	1
Benzene	ND		1.0	0.43	ug/L			06/14/15 16:04	1
Bromodichloromethane	ND		1.0	0.44	ug/L			06/14/15 16:04	1
Bromoform	ND		1.0	0.43	ug/L			06/14/15 16:04	1
Bromomethane	ND		5.0	2.5	ug/L			06/14/15 16:04	1
Carbon disulfide	ND		2.0	1.0	ug/L			06/14/15 16:04	1
Carbon tetrachloride	ND		1.0	0.33	ug/L			06/14/15 16:04	1
Chlorobenzene	ND		1.0	0.26	ug/L			06/14/15 16:04	1
Chloroethane	ND		5.0	2.5	ug/L			06/14/15 16:04	1
Chloroform	ND		1.0	0.50	ug/L			06/14/15 16:04	1
Chloromethane	ND		1.0	0.40	ug/L			06/14/15 16:04	1
cis-1,2-Dichloroethene	5.4		1.0	0.41	ug/L			06/14/15 16:04	1
cis-1,3-Dichloropropene	ND		1.0	0.40	ug/L			06/14/15 16:04	1
Cyclohexane	ND		1.0	0.39	ug/L			06/14/15 16:04	1
Dibromochloromethane	ND		1.0	0.32	ug/L			06/14/15 16:04	1
Dichlorodifluoromethane	ND		1.0	0.60	ug/L			06/14/15 16:04	1
Ethylbenzene	ND		1.0	0.33	ug/L			06/14/15 16:04	1
Isopropylbenzene	ND		1.0	0.35	ug/L			06/14/15 16:04	1
Methyl acetate	ND		5.0	1.8	ug/L			06/14/15 16:04	1
Methyl tert-butyl ether	ND		10	0.30	ug/L			06/14/15 16:04	1
Methylcyclohexane	ND		1.0	0.43	ug/L			06/14/15 16:04	1
Methylene Chloride	ND *		5.0	2.5	ug/L			06/14/15 16:04	1
Styrene	ND		1.0	0.27	ug/L			06/14/15 16:04	1
Tetrachloroethene	ND		1.0	0.74	ug/L			06/14/15 16:04	1
Toluene	ND		1.0	0.48	ug/L			06/14/15 16:04	1
trans-1,2-Dichloroethene	0.49 J		1.0	0.37	ug/L			06/14/15 16:04	1
trans-1,3-Dichloropropene	ND		1.0	0.42	ug/L			06/14/15 16:04	1
Trichloroethene	1.3		1.0	0.48	ug/L			06/14/15 16:04	1
Trichlorofluoromethane	ND		1.0	0.42	ug/L			06/14/15 16:04	1
Vinyl chloride	0.86 J		1.0	0.50	ug/L			06/14/15 16:04	1
Xylenes, Total	ND		1.0	0.23	ug/L			06/14/15 16:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		70 - 130		06/14/15 16:04	1
1,2-Dichloroethane-d4 (Surr)	90		70 - 130		06/14/15 16:04	1
Dibromofluoromethane (Surr)	103		70 - 130		06/14/15 16:04	1
4-Bromofluorobenzene (Surr)	91		70 - 130		06/14/15 16:04	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	680		25	10	mg/L			06/10/15 01:17	25

Client Sample Results

Client: Parsons Corporation
 Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
 SDG: SALF07

Client Sample ID: ALBW20337

Lab Sample ID: 680-113295-7

Date Collected: 06/04/15 12:25

Matrix: Water

Date Received: 06/06/15 10:12

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	5.5		1.0	0.43	mg/L			06/18/15 02:27	1

Client Sample ID: ALBW20338

Lab Sample ID: 680-113295-8

Date Collected: 06/03/15 15:40

Matrix: Water

Date Received: 06/06/15 10:12

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.37	ug/L			06/14/15 16:25	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.62	ug/L			06/14/15 16:25	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.36	ug/L			06/14/15 16:25	1
1,1,2-Trichloroethane	ND		1.0	0.33	ug/L			06/14/15 16:25	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			06/14/15 16:25	1
1,1-Dichloroethene	ND		1.0	0.36	ug/L			06/14/15 16:25	1
1,2,4-Trichlorobenzene	ND		5.0	2.5	ug/L			06/14/15 16:25	1
1,2-Dibromo-3-Chloropropane	ND		5.0	1.1	ug/L			06/14/15 16:25	1
1,2-Dibromoethane	ND		1.0	0.44	ug/L			06/14/15 16:25	1
1,2-Dichlorobenzene	ND		1.0	0.37	ug/L			06/14/15 16:25	1
1,2-Dichloroethane	ND		1.0	0.50	ug/L			06/14/15 16:25	1
1,2-Dichloropropane	ND		1.0	0.67	ug/L			06/14/15 16:25	1
1,3-Dichlorobenzene	ND		1.0	0.43	ug/L			06/14/15 16:25	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			06/14/15 16:25	1
2-Butanone	ND		10	3.4	ug/L			06/14/15 16:25	1
2-Hexanone	ND		10	2.0	ug/L			06/14/15 16:25	1
4-Methyl-2-pentanone	ND		10	2.1	ug/L			06/14/15 16:25	1
Acetone	7.6	J	10	7.0	ug/L			06/14/15 16:25	1
Benzene	ND		1.0	0.43	ug/L			06/14/15 16:25	1
Bromodichloromethane	ND		1.0	0.44	ug/L			06/14/15 16:25	1
Bromoform	ND		1.0	0.43	ug/L			06/14/15 16:25	1
Bromomethane	ND		5.0	2.5	ug/L			06/14/15 16:25	1
Carbon disulfide	ND		2.0	1.0	ug/L			06/14/15 16:25	1
Carbon tetrachloride	ND		1.0	0.33	ug/L			06/14/15 16:25	1
Chlorobenzene	ND		1.0	0.26	ug/L			06/14/15 16:25	1
Chloroethane	ND		5.0	2.5	ug/L			06/14/15 16:25	1
Chloroform	ND		1.0	0.50	ug/L			06/14/15 16:25	1
Chloromethane	ND		1.0	0.40	ug/L			06/14/15 16:25	1
cis-1,2-Dichloroethene	0.67	J	1.0	0.41	ug/L			06/14/15 16:25	1
cis-1,3-Dichloropropene	ND		1.0	0.40	ug/L			06/14/15 16:25	1
Cyclohexane	ND		1.0	0.39	ug/L			06/14/15 16:25	1
Dibromochloromethane	ND		1.0	0.32	ug/L			06/14/15 16:25	1
Dichlorodifluoromethane	ND		1.0	0.60	ug/L			06/14/15 16:25	1
Ethylbenzene	ND		1.0	0.33	ug/L			06/14/15 16:25	1
Isopropylbenzene	ND		1.0	0.35	ug/L			06/14/15 16:25	1
Methyl acetate	ND		5.0	1.8	ug/L			06/14/15 16:25	1
Methyl tert-butyl ether	ND		10	0.30	ug/L			06/14/15 16:25	1
Methylcyclohexane	ND		1.0	0.43	ug/L			06/14/15 16:25	1
Methylene Chloride	ND	*	5.0	2.5	ug/L			06/14/15 16:25	1
Styrene	ND		1.0	0.27	ug/L			06/14/15 16:25	1
Tetrachloroethene	ND		1.0	0.74	ug/L			06/14/15 16:25	1
Toluene	ND		1.0	0.48	ug/L			06/14/15 16:25	1

TestAmerica Savannah

Client Sample Results

Client: Parsons Corporation
 Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
 SDG: SALF07

Client Sample ID: ALBW20338

Lab Sample ID: 680-113295-8

Date Collected: 06/03/15 15:40

Matrix: Water

Date Received: 06/06/15 10:12

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,2-Dichloroethene	ND		1.0	0.37	ug/L			06/14/15 16:25	1
trans-1,3-Dichloropropene	ND		1.0	0.42	ug/L			06/14/15 16:25	1
Trichloroethene	ND		1.0	0.48	ug/L			06/14/15 16:25	1
Trichlorofluoromethane	ND		1.0	0.42	ug/L			06/14/15 16:25	1
Vinyl chloride	ND		1.0	0.50	ug/L			06/14/15 16:25	1
Xylenes, Total	ND		1.0	0.23	ug/L			06/14/15 16:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	106		70 - 130		06/14/15 16:25	1
1,2-Dichloroethane-d4 (Surr)	90		70 - 130		06/14/15 16:25	1
Dibromofluoromethane (Surr)	102		70 - 130		06/14/15 16:25	1
4-Bromofluorobenzene (Surr)	92		70 - 130		06/14/15 16:25	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	5.7		1.0	0.40	mg/L			06/09/15 15:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	37		1.0	0.43	mg/L			06/18/15 03:51	1

Client Sample ID: ALBW20339

Lab Sample ID: 680-113295-9

Date Collected: 06/03/15 14:22

Matrix: Water

Date Received: 06/06/15 10:12

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.37	ug/L			06/14/15 16:46	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.62	ug/L			06/14/15 16:46	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.36	ug/L			06/14/15 16:46	1
1,1,2-Trichloroethane	ND		1.0	0.33	ug/L			06/14/15 16:46	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			06/14/15 16:46	1
1,1-Dichloroethene	ND		1.0	0.36	ug/L			06/14/15 16:46	1
1,2,4-Trichlorobenzene	ND		5.0	2.5	ug/L			06/14/15 16:46	1
1,2-Dibromo-3-Chloropropane	ND		5.0	1.1	ug/L			06/14/15 16:46	1
1,2-Dibromoethane	ND		1.0	0.44	ug/L			06/14/15 16:46	1
1,2-Dichlorobenzene	ND		1.0	0.37	ug/L			06/14/15 16:46	1
1,2-Dichloroethane	ND		1.0	0.50	ug/L			06/14/15 16:46	1
1,2-Dichloropropane	ND		1.0	0.67	ug/L			06/14/15 16:46	1
1,3-Dichlorobenzene	ND		1.0	0.43	ug/L			06/14/15 16:46	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			06/14/15 16:46	1
2-Butanone	ND		10	3.4	ug/L			06/14/15 16:46	1
2-Hexanone	ND		10	2.0	ug/L			06/14/15 16:46	1
4-Methyl-2-pentanone	ND		10	2.1	ug/L			06/14/15 16:46	1
Acetone	ND		10	7.0	ug/L			06/14/15 16:46	1
Benzene	ND		1.0	0.43	ug/L			06/14/15 16:46	1
Bromodichloromethane	ND		1.0	0.44	ug/L			06/14/15 16:46	1
Bromoform	ND		1.0	0.43	ug/L			06/14/15 16:46	1
Bromomethane	ND		5.0	2.5	ug/L			06/14/15 16:46	1
Carbon disulfide	ND		2.0	1.0	ug/L			06/14/15 16:46	1

TestAmerica Savannah

Client Sample Results

Client: Parsons Corporation
Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
SDG: SALF07

Client Sample ID: ALBW20339

Lab Sample ID: 680-113295-9

Date Collected: 06/03/15 14:22

Matrix: Water

Date Received: 06/06/15 10:12

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon tetrachloride	ND		1.0	0.33	ug/L			06/14/15 16:46	1
Chlorobenzene	ND		1.0	0.26	ug/L			06/14/15 16:46	1
Chloroethane	ND		5.0	2.5	ug/L			06/14/15 16:46	1
Chloroform	ND		1.0	0.50	ug/L			06/14/15 16:46	1
Chloromethane	ND		1.0	0.40	ug/L			06/14/15 16:46	1
cis-1,2-Dichloroethene	ND		1.0	0.41	ug/L			06/14/15 16:46	1
cis-1,3-Dichloropropene	ND		1.0	0.40	ug/L			06/14/15 16:46	1
Cyclohexane	ND		1.0	0.39	ug/L			06/14/15 16:46	1
Dibromochloromethane	ND		1.0	0.32	ug/L			06/14/15 16:46	1
Dichlorodifluoromethane	ND		1.0	0.60	ug/L			06/14/15 16:46	1
Ethylbenzene	ND		1.0	0.33	ug/L			06/14/15 16:46	1
Isopropylbenzene	ND		1.0	0.35	ug/L			06/14/15 16:46	1
Methyl acetate	ND		5.0	1.8	ug/L			06/14/15 16:46	1
Methyl tert-butyl ether	ND		10	0.30	ug/L			06/14/15 16:46	1
Methylcyclohexane	ND		1.0	0.43	ug/L			06/14/15 16:46	1
Methylene Chloride	ND *		5.0	2.5	ug/L			06/14/15 16:46	1
Styrene	ND		1.0	0.27	ug/L			06/14/15 16:46	1
Tetrachloroethene	ND		1.0	0.74	ug/L			06/14/15 16:46	1
Toluene	ND		1.0	0.48	ug/L			06/14/15 16:46	1
trans-1,2-Dichloroethene	ND		1.0	0.37	ug/L			06/14/15 16:46	1
trans-1,3-Dichloropropene	ND		1.0	0.42	ug/L			06/14/15 16:46	1
Trichloroethene	ND		1.0	0.48	ug/L			06/14/15 16:46	1
Trichlorofluoromethane	ND		1.0	0.42	ug/L			06/14/15 16:46	1
Vinyl chloride	ND		1.0	0.50	ug/L			06/14/15 16:46	1
Xylenes, Total	ND		1.0	0.23	ug/L			06/14/15 16:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		70 - 130		06/14/15 16:46	1
1,2-Dichloroethane-d4 (Surr)	90		70 - 130		06/14/15 16:46	1
Dibromofluoromethane (Surr)	101		70 - 130		06/14/15 16:46	1
4-Bromofluorobenzene (Surr)	90		70 - 130		06/14/15 16:46	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	0.58	J	1.0	0.40	mg/L			06/09/15 13:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	24		1.0	0.43	mg/L			06/17/15 23:39	1

Client Sample ID: ALBW20340

Lab Sample ID: 680-113295-12

Date Collected: 06/03/15 14:31

Matrix: Water

Date Received: 06/06/15 10:12

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.37	ug/L			06/14/15 17:07	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.62	ug/L			06/14/15 17:07	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.36	ug/L			06/14/15 17:07	1
1,1,2-Trichloroethane	ND		1.0	0.33	ug/L			06/14/15 17:07	1

TestAmerica Savannah

Client Sample Results

Client: Parsons Corporation
 Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
 SDG: SALF07

Client Sample ID: ALBW20340

Lab Sample ID: 680-113295-12

Date Collected: 06/03/15 14:31

Matrix: Water

Date Received: 06/06/15 10:12

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	ND		1.0	0.38	ug/L			06/14/15 17:07	1
1,1-Dichloroethene	ND		1.0	0.36	ug/L			06/14/15 17:07	1
1,2,4-Trichlorobenzene	ND		5.0	2.5	ug/L			06/14/15 17:07	1
1,2-Dibromo-3-Chloropropane	ND		5.0	1.1	ug/L			06/14/15 17:07	1
1,2-Dibromoethane	ND		1.0	0.44	ug/L			06/14/15 17:07	1
1,2-Dichlorobenzene	ND		1.0	0.37	ug/L			06/14/15 17:07	1
1,2-Dichloroethane	ND		1.0	0.50	ug/L			06/14/15 17:07	1
1,2-Dichloropropane	ND		1.0	0.67	ug/L			06/14/15 17:07	1
1,3-Dichlorobenzene	ND		1.0	0.43	ug/L			06/14/15 17:07	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			06/14/15 17:07	1
2-Butanone	ND		10	3.4	ug/L			06/14/15 17:07	1
2-Hexanone	ND		10	2.0	ug/L			06/14/15 17:07	1
4-Methyl-2-pentanone	ND		10	2.1	ug/L			06/14/15 17:07	1
Acetone	ND		10	7.0	ug/L			06/14/15 17:07	1
Benzene	ND		1.0	0.43	ug/L			06/14/15 17:07	1
Bromodichloromethane	ND		1.0	0.44	ug/L			06/14/15 17:07	1
Bromoform	ND		1.0	0.43	ug/L			06/14/15 17:07	1
Bromomethane	ND		5.0	2.5	ug/L			06/14/15 17:07	1
Carbon disulfide	ND		2.0	1.0	ug/L			06/14/15 17:07	1
Carbon tetrachloride	ND		1.0	0.33	ug/L			06/14/15 17:07	1
Chlorobenzene	ND		1.0	0.26	ug/L			06/14/15 17:07	1
Chloroethane	ND		5.0	2.5	ug/L			06/14/15 17:07	1
Chloroform	ND		1.0	0.50	ug/L			06/14/15 17:07	1
Chloromethane	ND		1.0	0.40	ug/L			06/14/15 17:07	1
cis-1,2-Dichloroethene	ND		1.0	0.41	ug/L			06/14/15 17:07	1
cis-1,3-Dichloropropene	ND		1.0	0.40	ug/L			06/14/15 17:07	1
Cyclohexane	ND		1.0	0.39	ug/L			06/14/15 17:07	1
Dibromochloromethane	ND		1.0	0.32	ug/L			06/14/15 17:07	1
Dichlorodifluoromethane	ND		1.0	0.60	ug/L			06/14/15 17:07	1
Ethylbenzene	ND		1.0	0.33	ug/L			06/14/15 17:07	1
Isopropylbenzene	ND		1.0	0.35	ug/L			06/14/15 17:07	1
Methyl acetate	ND		5.0	1.8	ug/L			06/14/15 17:07	1
Methyl tert-butyl ether	ND		10	0.30	ug/L			06/14/15 17:07	1
Methylcyclohexane	ND		1.0	0.43	ug/L			06/14/15 17:07	1
Methylene Chloride	ND	*	5.0	2.5	ug/L			06/14/15 17:07	1
Styrene	ND		1.0	0.27	ug/L			06/14/15 17:07	1
Tetrachloroethene	ND		1.0	0.74	ug/L			06/14/15 17:07	1
Toluene	ND		1.0	0.48	ug/L			06/14/15 17:07	1
trans-1,2-Dichloroethene	ND		1.0	0.37	ug/L			06/14/15 17:07	1
trans-1,3-Dichloropropene	ND		1.0	0.42	ug/L			06/14/15 17:07	1
Trichloroethene	ND		1.0	0.48	ug/L			06/14/15 17:07	1
Trichlorofluoromethane	ND		1.0	0.42	ug/L			06/14/15 17:07	1
Vinyl chloride	ND		1.0	0.50	ug/L			06/14/15 17:07	1
Xylenes, Total	ND		1.0	0.23	ug/L			06/14/15 17:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		70 - 130		06/14/15 17:07	1
1,2-Dichloroethane-d4 (Surr)	91		70 - 130		06/14/15 17:07	1
Dibromofluoromethane (Surr)	103		70 - 130		06/14/15 17:07	1
4-Bromofluorobenzene (Surr)	90		70 - 130		06/14/15 17:07	1

TestAmerica Savannah

Client Sample Results

Client: Parsons Corporation
 Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
 SDG: SALF07

Client Sample ID: ALBW20340

Lab Sample ID: 680-113295-12

Date Collected: 06/03/15 14:31

Matrix: Water

Date Received: 06/06/15 10:12

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.1		1.0	0.40	mg/L			06/09/15 15:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	24		1.0	0.43	mg/L			06/18/15 04:19	1

Client Sample ID: ALBW20341

Lab Sample ID: 680-113295-13

Date Collected: 06/03/15 12:40

Matrix: Water

Date Received: 06/06/15 10:12

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.37	ug/L			06/14/15 17:28	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.62	ug/L			06/14/15 17:28	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.36	ug/L			06/14/15 17:28	1
1,1,2-Trichloroethane	ND		1.0	0.33	ug/L			06/14/15 17:28	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			06/14/15 17:28	1
1,1-Dichloroethene	ND		1.0	0.36	ug/L			06/14/15 17:28	1
1,2,4-Trichlorobenzene	ND		5.0	2.5	ug/L			06/14/15 17:28	1
1,2-Dibromo-3-Chloropropane	ND		5.0	1.1	ug/L			06/14/15 17:28	1
1,2-Dibromoethane	ND		1.0	0.44	ug/L			06/14/15 17:28	1
1,2-Dichlorobenzene	ND		1.0	0.37	ug/L			06/14/15 17:28	1
1,2-Dichloroethane	ND		1.0	0.50	ug/L			06/14/15 17:28	1
1,2-Dichloropropane	ND		1.0	0.67	ug/L			06/14/15 17:28	1
1,3-Dichlorobenzene	ND		1.0	0.43	ug/L			06/14/15 17:28	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			06/14/15 17:28	1
2-Butanone	ND		10	3.4	ug/L			06/14/15 17:28	1
2-Hexanone	ND		10	2.0	ug/L			06/14/15 17:28	1
4-Methyl-2-pentanone	ND		10	2.1	ug/L			06/14/15 17:28	1
Acetone	ND		10	7.0	ug/L			06/14/15 17:28	1
Benzene	ND		1.0	0.43	ug/L			06/14/15 17:28	1
Bromodichloromethane	ND		1.0	0.44	ug/L			06/14/15 17:28	1
Bromoform	ND		1.0	0.43	ug/L			06/14/15 17:28	1
Bromomethane	ND		5.0	2.5	ug/L			06/14/15 17:28	1
Carbon disulfide	ND		2.0	1.0	ug/L			06/14/15 17:28	1
Carbon tetrachloride	ND		1.0	0.33	ug/L			06/14/15 17:28	1
Chlorobenzene	ND		1.0	0.26	ug/L			06/14/15 17:28	1
Chloroethane	ND		5.0	2.5	ug/L			06/14/15 17:28	1
Chloroform	ND		1.0	0.50	ug/L			06/14/15 17:28	1
Chloromethane	ND		1.0	0.40	ug/L			06/14/15 17:28	1
cis-1,2-Dichloroethene	94		1.0	0.41	ug/L			06/14/15 17:28	1
cis-1,3-Dichloropropene	ND		1.0	0.40	ug/L			06/14/15 17:28	1
Cyclohexane	ND		1.0	0.39	ug/L			06/14/15 17:28	1
Dibromochloromethane	ND		1.0	0.32	ug/L			06/14/15 17:28	1
Dichlorodifluoromethane	ND		1.0	0.60	ug/L			06/14/15 17:28	1
Ethylbenzene	ND		1.0	0.33	ug/L			06/14/15 17:28	1
Isopropylbenzene	ND		1.0	0.35	ug/L			06/14/15 17:28	1
Methyl acetate	ND		5.0	1.8	ug/L			06/14/15 17:28	1
Methyl tert-butyl ether	ND		10	0.30	ug/L			06/14/15 17:28	1
Methylcyclohexane	ND		1.0	0.43	ug/L			06/14/15 17:28	1

TestAmerica Savannah

Client Sample Results

Client: Parsons Corporation
 Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
 SDG: SALF07

Client Sample ID: ALBW20341

Lab Sample ID: 680-113295-13

Date Collected: 06/03/15 12:40

Matrix: Water

Date Received: 06/06/15 10:12

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	ND	*	5.0	2.5	ug/L			06/14/15 17:28	1
Styrene	ND		1.0	0.27	ug/L			06/14/15 17:28	1
Tetrachloroethene	ND		1.0	0.74	ug/L			06/14/15 17:28	1
Toluene	ND		1.0	0.48	ug/L			06/14/15 17:28	1
trans-1,2-Dichloroethene	1.3		1.0	0.37	ug/L			06/14/15 17:28	1
trans-1,3-Dichloropropene	ND		1.0	0.42	ug/L			06/14/15 17:28	1
Trichloroethene	1.1		1.0	0.48	ug/L			06/14/15 17:28	1
Trichlorofluoromethane	ND		1.0	0.42	ug/L			06/14/15 17:28	1
Vinyl chloride	86		1.0	0.50	ug/L			06/14/15 17:28	1
Xylenes, Total	ND		1.0	0.23	ug/L			06/14/15 17:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		70 - 130		06/14/15 17:28	1
1,2-Dichloroethane-d4 (Surr)	91		70 - 130		06/14/15 17:28	1
Dibromofluoromethane (Surr)	107		70 - 130		06/14/15 17:28	1
4-Bromofluorobenzene (Surr)	91		70 - 130		06/14/15 17:28	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	84		4.0	1.6	mg/L			06/10/15 01:32	4

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	8.6		1.0	0.43	mg/L			06/18/15 04:47	1

Client Sample ID: ALBW00123

Lab Sample ID: 680-113295-14

Date Collected: 06/05/15 15:29

Matrix: Water

Date Received: 06/06/15 10:12

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.37	ug/L			06/14/15 17:49	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.62	ug/L			06/14/15 17:49	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.36	ug/L			06/14/15 17:49	1
1,1,2-Trichloroethane	ND		1.0	0.33	ug/L			06/14/15 17:49	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			06/14/15 17:49	1
1,1-Dichloroethene	ND		1.0	0.36	ug/L			06/14/15 17:49	1
1,2,4-Trichlorobenzene	ND		5.0	2.5	ug/L			06/14/15 17:49	1
1,2-Dibromo-3-Chloropropane	ND		5.0	1.1	ug/L			06/14/15 17:49	1
1,2-Dibromoethane	ND		1.0	0.44	ug/L			06/14/15 17:49	1
1,2-Dichlorobenzene	ND		1.0	0.37	ug/L			06/14/15 17:49	1
1,2-Dichloroethane	ND		1.0	0.50	ug/L			06/14/15 17:49	1
1,2-Dichloropropane	ND		1.0	0.67	ug/L			06/14/15 17:49	1
1,3-Dichlorobenzene	ND		1.0	0.43	ug/L			06/14/15 17:49	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			06/14/15 17:49	1
2-Butanone	ND		10	3.4	ug/L			06/14/15 17:49	1
2-Hexanone	ND		10	2.0	ug/L			06/14/15 17:49	1
4-Methyl-2-pentanone	ND		10	2.1	ug/L			06/14/15 17:49	1
Acetone	35		10	7.0	ug/L			06/14/15 17:49	1
Benzene	ND		1.0	0.43	ug/L			06/14/15 17:49	1

TestAmerica Savannah

Client Sample Results

Client: Parsons Corporation
 Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
 SDG: SALF07

Client Sample ID: ALBW00123

Lab Sample ID: 680-113295-14

Date Collected: 06/05/15 15:29

Matrix: Water

Date Received: 06/06/15 10:12

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	ND		1.0	0.44	ug/L			06/14/15 17:49	1
Bromoform	ND		1.0	0.43	ug/L			06/14/15 17:49	1
Bromomethane	ND		5.0	2.5	ug/L			06/14/15 17:49	1
Carbon disulfide	ND		2.0	1.0	ug/L			06/14/15 17:49	1
Carbon tetrachloride	ND		1.0	0.33	ug/L			06/14/15 17:49	1
Chlorobenzene	ND		1.0	0.26	ug/L			06/14/15 17:49	1
Chloroethane	ND		5.0	2.5	ug/L			06/14/15 17:49	1
Chloroform	ND		1.0	0.50	ug/L			06/14/15 17:49	1
Chloromethane	ND		1.0	0.40	ug/L			06/14/15 17:49	1
cis-1,2-Dichloroethene	ND		1.0	0.41	ug/L			06/14/15 17:49	1
cis-1,3-Dichloropropene	ND		1.0	0.40	ug/L			06/14/15 17:49	1
Cyclohexane	ND		1.0	0.39	ug/L			06/14/15 17:49	1
Dibromochloromethane	ND		1.0	0.32	ug/L			06/14/15 17:49	1
Dichlorodifluoromethane	ND		1.0	0.60	ug/L			06/14/15 17:49	1
Ethylbenzene	ND		1.0	0.33	ug/L			06/14/15 17:49	1
Isopropylbenzene	ND		1.0	0.35	ug/L			06/14/15 17:49	1
Methyl acetate	ND		5.0	1.8	ug/L			06/14/15 17:49	1
Methyl tert-butyl ether	ND		10	0.30	ug/L			06/14/15 17:49	1
Methylcyclohexane	ND		1.0	0.43	ug/L			06/14/15 17:49	1
Methylene Chloride	ND *		5.0	2.5	ug/L			06/14/15 17:49	1
Styrene	ND		1.0	0.27	ug/L			06/14/15 17:49	1
Tetrachloroethene	ND		1.0	0.74	ug/L			06/14/15 17:49	1
Toluene	ND		1.0	0.48	ug/L			06/14/15 17:49	1
trans-1,2-Dichloroethene	ND		1.0	0.37	ug/L			06/14/15 17:49	1
trans-1,3-Dichloropropene	ND		1.0	0.42	ug/L			06/14/15 17:49	1
Trichloroethene	ND		1.0	0.48	ug/L			06/14/15 17:49	1
Trichlorofluoromethane	ND		1.0	0.42	ug/L			06/14/15 17:49	1
Vinyl chloride	ND		1.0	0.50	ug/L			06/14/15 17:49	1
Xylenes, Total	ND		1.0	0.23	ug/L			06/14/15 17:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		70 - 130		06/14/15 17:49	1
1,2-Dichloroethane-d4 (Surr)	90		70 - 130		06/14/15 17:49	1
Dibromofluoromethane (Surr)	102		70 - 130		06/14/15 17:49	1
4-Bromofluorobenzene (Surr)	92		70 - 130		06/14/15 17:49	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	0.46	J	1.0	0.40	mg/L			06/09/15 18:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	0.87	J	1.0	0.43	mg/L			06/18/15 05:15	1

Client Sample Results

Client: Parsons Corporation
 Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
 SDG: SALF07

Client Sample ID: ALBW00043

Lab Sample ID: 680-113295-15

Date Collected: 06/05/15 16:10

Matrix: Water

Date Received: 06/06/15 10:12

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.37	ug/L			06/14/15 18:11	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.62	ug/L			06/14/15 18:11	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.36	ug/L			06/14/15 18:11	1
1,1,2-Trichloroethane	ND		1.0	0.33	ug/L			06/14/15 18:11	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			06/14/15 18:11	1
1,1-Dichloroethene	ND		1.0	0.36	ug/L			06/14/15 18:11	1
1,2,4-Trichlorobenzene	ND		5.0	2.5	ug/L			06/14/15 18:11	1
1,2-Dibromo-3-Chloropropane	ND		5.0	1.1	ug/L			06/14/15 18:11	1
1,2-Dibromoethane	ND		1.0	0.44	ug/L			06/14/15 18:11	1
1,2-Dichlorobenzene	ND		1.0	0.37	ug/L			06/14/15 18:11	1
1,2-Dichloroethane	ND		1.0	0.50	ug/L			06/14/15 18:11	1
1,2-Dichloropropane	ND		1.0	0.67	ug/L			06/14/15 18:11	1
1,3-Dichlorobenzene	ND		1.0	0.43	ug/L			06/14/15 18:11	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			06/14/15 18:11	1
2-Butanone	ND		10	3.4	ug/L			06/14/15 18:11	1
2-Hexanone	ND		10	2.0	ug/L			06/14/15 18:11	1
4-Methyl-2-pentanone	ND		10	2.1	ug/L			06/14/15 18:11	1
Acetone	ND		10	7.0	ug/L			06/14/15 18:11	1
Benzene	ND		1.0	0.43	ug/L			06/14/15 18:11	1
Bromodichloromethane	ND		1.0	0.44	ug/L			06/14/15 18:11	1
Bromoform	ND		1.0	0.43	ug/L			06/14/15 18:11	1
Bromomethane	ND		5.0	2.5	ug/L			06/14/15 18:11	1
Carbon disulfide	ND		2.0	1.0	ug/L			06/14/15 18:11	1
Carbon tetrachloride	ND		1.0	0.33	ug/L			06/14/15 18:11	1
Chlorobenzene	ND		1.0	0.26	ug/L			06/14/15 18:11	1
Chloroethane	ND		5.0	2.5	ug/L			06/14/15 18:11	1
Chloroform	ND		1.0	0.50	ug/L			06/14/15 18:11	1
Chloromethane	ND		1.0	0.40	ug/L			06/14/15 18:11	1
cis-1,2-Dichloroethene	ND		1.0	0.41	ug/L			06/14/15 18:11	1
cis-1,3-Dichloropropene	ND		1.0	0.40	ug/L			06/14/15 18:11	1
Cyclohexane	ND		1.0	0.39	ug/L			06/14/15 18:11	1
Dibromochloromethane	ND		1.0	0.32	ug/L			06/14/15 18:11	1
Dichlorodifluoromethane	ND		1.0	0.60	ug/L			06/14/15 18:11	1
Ethylbenzene	ND		1.0	0.33	ug/L			06/14/15 18:11	1
Isopropylbenzene	ND		1.0	0.35	ug/L			06/14/15 18:11	1
Methyl acetate	ND		5.0	1.8	ug/L			06/14/15 18:11	1
Methyl tert-butyl ether	ND		10	0.30	ug/L			06/14/15 18:11	1
Methylcyclohexane	ND		1.0	0.43	ug/L			06/14/15 18:11	1
Methylene Chloride	ND *		5.0	2.5	ug/L			06/14/15 18:11	1
Styrene	ND		1.0	0.27	ug/L			06/14/15 18:11	1
Tetrachloroethene	ND		1.0	0.74	ug/L			06/14/15 18:11	1
Toluene	ND		1.0	0.48	ug/L			06/14/15 18:11	1
trans-1,2-Dichloroethene	ND		1.0	0.37	ug/L			06/14/15 18:11	1
trans-1,3-Dichloropropene	ND		1.0	0.42	ug/L			06/14/15 18:11	1
Trichloroethene	ND		1.0	0.48	ug/L			06/14/15 18:11	1
Trichlorofluoromethane	ND		1.0	0.42	ug/L			06/14/15 18:11	1
Vinyl chloride	ND		1.0	0.50	ug/L			06/14/15 18:11	1
Xylenes, Total	ND		1.0	0.23	ug/L			06/14/15 18:11	1

Client Sample Results

Client: Parsons Corporation
 Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
 SDG: SALF07

Client Sample ID: ALBW00043

Lab Sample ID: 680-113295-15

Date Collected: 06/05/15 16:10

Matrix: Water

Date Received: 06/06/15 10:12

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		70 - 130		06/14/15 18:11	1
1,2-Dichloroethane-d4 (Surr)	90		70 - 130		06/14/15 18:11	1
Dibromofluoromethane (Surr)	103		70 - 130		06/14/15 18:11	1
4-Bromofluorobenzene (Surr)	95		70 - 130		06/14/15 18:11	1

Client Sample ID: ALBW20328

Lab Sample ID: 680-113338-1

Date Collected: 06/06/15 13:43

Matrix: Water

Date Received: 06/09/15 09:34

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.37	ug/L			06/14/15 12:32	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.62	ug/L			06/14/15 12:32	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.36	ug/L			06/14/15 12:32	1
1,1,2-Trichloroethane	ND		1.0	0.33	ug/L			06/14/15 12:32	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			06/14/15 12:32	1
1,1-Dichloroethene	ND		1.0	0.36	ug/L			06/14/15 12:32	1
1,2,4-Trichlorobenzene	ND		5.0	2.5	ug/L			06/14/15 12:32	1
1,2-Dibromo-3-Chloropropane	ND		5.0	1.1	ug/L			06/14/15 12:32	1
1,2-Dibromoethane	ND		1.0	0.44	ug/L			06/14/15 12:32	1
1,2-Dichlorobenzene	ND		1.0	0.37	ug/L			06/14/15 12:32	1
1,2-Dichloroethane	ND		1.0	0.50	ug/L			06/14/15 12:32	1
1,2-Dichloropropane	ND		1.0	0.67	ug/L			06/14/15 12:32	1
1,3-Dichlorobenzene	ND		1.0	0.43	ug/L			06/14/15 12:32	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			06/14/15 12:32	1
2-Butanone	ND		10	3.4	ug/L			06/14/15 12:32	1
2-Hexanone	ND		10	2.0	ug/L			06/14/15 12:32	1
4-Methyl-2-pentanone	ND		10	2.1	ug/L			06/14/15 12:32	1
Acetone	ND		10	7.0	ug/L			06/14/15 12:32	1
Benzene	ND		1.0	0.43	ug/L			06/14/15 12:32	1
Bromodichloromethane	ND		1.0	0.44	ug/L			06/14/15 12:32	1
Bromoform	ND		1.0	0.43	ug/L			06/14/15 12:32	1
Bromomethane	ND		5.0	2.5	ug/L			06/14/15 12:32	1
Carbon disulfide	ND		2.0	1.0	ug/L			06/14/15 12:32	1
Carbon tetrachloride	ND		1.0	0.33	ug/L			06/14/15 12:32	1
Chlorobenzene	ND		1.0	0.26	ug/L			06/14/15 12:32	1
Chloroethane	ND		5.0	2.5	ug/L			06/14/15 12:32	1
Chloroform	1.1		1.0	0.50	ug/L			06/14/15 12:32	1
Chloromethane	ND		1.0	0.40	ug/L			06/14/15 12:32	1
cis-1,2-Dichloroethene	28		1.0	0.41	ug/L			06/14/15 12:32	1
cis-1,3-Dichloropropene	ND		1.0	0.40	ug/L			06/14/15 12:32	1
Cyclohexane	ND		1.0	0.39	ug/L			06/14/15 12:32	1
Dibromochloromethane	ND		1.0	0.32	ug/L			06/14/15 12:32	1
Dichlorodifluoromethane	ND		1.0	0.60	ug/L			06/14/15 12:32	1
Ethylbenzene	ND		1.0	0.33	ug/L			06/14/15 12:32	1
Isopropylbenzene	ND		1.0	0.35	ug/L			06/14/15 12:32	1
Methyl acetate	ND		5.0	1.8	ug/L			06/14/15 12:32	1
Methyl tert-butyl ether	ND		10	0.30	ug/L			06/14/15 12:32	1
Methylcyclohexane	ND		1.0	0.43	ug/L			06/14/15 12:32	1
Methylene Chloride	ND	*	5.0	2.5	ug/L			06/14/15 12:32	1

TestAmerica Savannah

Client Sample Results

Client: Parsons Corporation
 Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
 SDG: SALF07

Client Sample ID: ALBW20328

Lab Sample ID: 680-113338-1

Date Collected: 06/06/15 13:43

Matrix: Water

Date Received: 06/09/15 09:34

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Styrene	ND		1.0	0.27	ug/L			06/14/15 12:32	1
Tetrachloroethene	ND		1.0	0.74	ug/L			06/14/15 12:32	1
Toluene	ND		1.0	0.48	ug/L			06/14/15 12:32	1
trans-1,2-Dichloroethene	ND		1.0	0.37	ug/L			06/14/15 12:32	1
trans-1,3-Dichloropropene	ND		1.0	0.42	ug/L			06/14/15 12:32	1
Trichloroethene	180		1.0	0.48	ug/L			06/14/15 12:32	1
Trichlorofluoromethane	ND		1.0	0.42	ug/L			06/14/15 12:32	1
Vinyl chloride	ND		1.0	0.50	ug/L			06/14/15 12:32	1
Xylenes, Total	ND		1.0	0.23	ug/L			06/14/15 12:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	106		70 - 130					06/14/15 12:32	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	89		70 - 130					06/14/15 12:32	1
<i>Dibromofluoromethane (Surr)</i>	103		70 - 130					06/14/15 12:32	1
<i>4-Bromofluorobenzene (Surr)</i>	92		70 - 130					06/14/15 12:32	1

Client Sample ID: ALBW20329

Lab Sample ID: 680-113338-2

Date Collected: 06/06/15 16:00

Matrix: Water

Date Received: 06/09/15 09:34

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.37	ug/L			06/14/15 12:53	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.62	ug/L			06/14/15 12:53	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.36	ug/L			06/14/15 12:53	1
1,1,2-Trichloroethane	ND		1.0	0.33	ug/L			06/14/15 12:53	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			06/14/15 12:53	1
1,1-Dichloroethene	ND		1.0	0.36	ug/L			06/14/15 12:53	1
1,2,4-Trichlorobenzene	ND		5.0	2.5	ug/L			06/14/15 12:53	1
1,2-Dibromo-3-Chloropropane	ND		5.0	1.1	ug/L			06/14/15 12:53	1
1,2-Dibromoethane	ND		1.0	0.44	ug/L			06/14/15 12:53	1
1,2-Dichlorobenzene	ND		1.0	0.37	ug/L			06/14/15 12:53	1
1,2-Dichloroethane	2.3		1.0	0.50	ug/L			06/14/15 12:53	1
1,2-Dichloropropane	ND		1.0	0.67	ug/L			06/14/15 12:53	1
1,3-Dichlorobenzene	ND		1.0	0.43	ug/L			06/14/15 12:53	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			06/14/15 12:53	1
2-Butanone	ND		10	3.4	ug/L			06/14/15 12:53	1
2-Hexanone	ND		10	2.0	ug/L			06/14/15 12:53	1
4-Methyl-2-pentanone	ND		10	2.1	ug/L			06/14/15 12:53	1
Acetone	ND		10	7.0	ug/L			06/14/15 12:53	1
Benzene	ND		1.0	0.43	ug/L			06/14/15 12:53	1
Bromodichloromethane	ND		1.0	0.44	ug/L			06/14/15 12:53	1
Bromoform	ND		1.0	0.43	ug/L			06/14/15 12:53	1
Bromomethane	ND		5.0	2.5	ug/L			06/14/15 12:53	1
Carbon disulfide	ND		2.0	1.0	ug/L			06/14/15 12:53	1
Carbon tetrachloride	ND		1.0	0.33	ug/L			06/14/15 12:53	1
Chlorobenzene	ND		1.0	0.26	ug/L			06/14/15 12:53	1
Chloroethane	ND		5.0	2.5	ug/L			06/14/15 12:53	1
Chloroform	ND		1.0	0.50	ug/L			06/14/15 12:53	1
Chloromethane	ND		1.0	0.40	ug/L			06/14/15 12:53	1

TestAmerica Savannah

Client Sample Results

Client: Parsons Corporation
 Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
 SDG: SALF07

Client Sample ID: ALBW20329

Lab Sample ID: 680-113338-2

Date Collected: 06/06/15 16:00

Matrix: Water

Date Received: 06/09/15 09:34

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	33		1.0	0.41	ug/L			06/14/15 12:53	1
cis-1,3-Dichloropropene	ND		1.0	0.40	ug/L			06/14/15 12:53	1
Cyclohexane	ND		1.0	0.39	ug/L			06/14/15 12:53	1
Dibromochloromethane	ND		1.0	0.32	ug/L			06/14/15 12:53	1
Dichlorodifluoromethane	ND		1.0	0.60	ug/L			06/14/15 12:53	1
Ethylbenzene	ND		1.0	0.33	ug/L			06/14/15 12:53	1
Isopropylbenzene	ND		1.0	0.35	ug/L			06/14/15 12:53	1
Methyl acetate	ND		5.0	1.8	ug/L			06/14/15 12:53	1
Methyl tert-butyl ether	ND		10	0.30	ug/L			06/14/15 12:53	1
Methylcyclohexane	ND		1.0	0.43	ug/L			06/14/15 12:53	1
Methylene Chloride	ND *		5.0	2.5	ug/L			06/14/15 12:53	1
Styrene	ND		1.0	0.27	ug/L			06/14/15 12:53	1
Tetrachloroethene	ND		1.0	0.74	ug/L			06/14/15 12:53	1
Toluene	ND		1.0	0.48	ug/L			06/14/15 12:53	1
trans-1,2-Dichloroethene	ND		1.0	0.37	ug/L			06/14/15 12:53	1
trans-1,3-Dichloropropene	ND		1.0	0.42	ug/L			06/14/15 12:53	1
Trichloroethene	34		1.0	0.48	ug/L			06/14/15 12:53	1
Trichlorofluoromethane	ND		1.0	0.42	ug/L			06/14/15 12:53	1
Vinyl chloride	ND		1.0	0.50	ug/L			06/14/15 12:53	1
Xylenes, Total	ND		1.0	0.23	ug/L			06/14/15 12:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	105		70 - 130		06/14/15 12:53	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	89		70 - 130		06/14/15 12:53	1
<i>Dibromofluoromethane (Surr)</i>	101		70 - 130		06/14/15 12:53	1
<i>4-Bromofluorobenzene (Surr)</i>	95		70 - 130		06/14/15 12:53	1

Client Sample ID: ALBW20330

Lab Sample ID: 680-113338-3

Date Collected: 06/06/15 13:50

Matrix: Water

Date Received: 06/09/15 09:34

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.37	ug/L			06/14/15 13:14	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.62	ug/L			06/14/15 13:14	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.36	ug/L			06/14/15 13:14	1
1,1,2-Trichloroethane	ND		1.0	0.33	ug/L			06/14/15 13:14	1
1,1-Dichloroethane	0.41	J	1.0	0.38	ug/L			06/14/15 13:14	1
1,1-Dichloroethene	ND		1.0	0.36	ug/L			06/14/15 13:14	1
1,2,4-Trichlorobenzene	ND		5.0	2.5	ug/L			06/14/15 13:14	1
1,2-Dibromo-3-Chloropropane	ND		5.0	1.1	ug/L			06/14/15 13:14	1
1,2-Dibromoethane	ND		1.0	0.44	ug/L			06/14/15 13:14	1
1,2-Dichlorobenzene	ND		1.0	0.37	ug/L			06/14/15 13:14	1
1,2-Dichloroethane	ND		1.0	0.50	ug/L			06/14/15 13:14	1
1,2-Dichloropropane	ND		1.0	0.67	ug/L			06/14/15 13:14	1
1,3-Dichlorobenzene	ND		1.0	0.43	ug/L			06/14/15 13:14	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			06/14/15 13:14	1
2-Butanone	ND		10	3.4	ug/L			06/14/15 13:14	1
2-Hexanone	ND		10	2.0	ug/L			06/14/15 13:14	1
4-Methyl-2-pentanone	ND		10	2.1	ug/L			06/14/15 13:14	1

TestAmerica Savannah

Client Sample Results

Client: Parsons Corporation
 Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
 SDG: SALF07

Client Sample ID: ALBW20330

Lab Sample ID: 680-113338-3

Date Collected: 06/06/15 13:50

Matrix: Water

Date Received: 06/09/15 09:34

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		10	7.0	ug/L			06/14/15 13:14	1
Benzene	ND		1.0	0.43	ug/L			06/14/15 13:14	1
Bromodichloromethane	ND		1.0	0.44	ug/L			06/14/15 13:14	1
Bromoform	ND		1.0	0.43	ug/L			06/14/15 13:14	1
Bromomethane	ND		5.0	2.5	ug/L			06/14/15 13:14	1
Carbon disulfide	ND		2.0	1.0	ug/L			06/14/15 13:14	1
Carbon tetrachloride	ND		1.0	0.33	ug/L			06/14/15 13:14	1
Chlorobenzene	ND		1.0	0.26	ug/L			06/14/15 13:14	1
Chloroethane	ND		5.0	2.5	ug/L			06/14/15 13:14	1
Chloroform	ND		1.0	0.50	ug/L			06/14/15 13:14	1
Chloromethane	ND		1.0	0.40	ug/L			06/14/15 13:14	1
cis-1,2-Dichloroethene	18		1.0	0.41	ug/L			06/14/15 13:14	1
cis-1,3-Dichloropropene	ND		1.0	0.40	ug/L			06/14/15 13:14	1
Cyclohexane	ND		1.0	0.39	ug/L			06/14/15 13:14	1
Dibromochloromethane	ND		1.0	0.32	ug/L			06/14/15 13:14	1
Dichlorodifluoromethane	ND		1.0	0.60	ug/L			06/14/15 13:14	1
Ethylbenzene	ND		1.0	0.33	ug/L			06/14/15 13:14	1
Isopropylbenzene	ND		1.0	0.35	ug/L			06/14/15 13:14	1
Methyl acetate	ND		5.0	1.8	ug/L			06/14/15 13:14	1
Methyl tert-butyl ether	ND		10	0.30	ug/L			06/14/15 13:14	1
Methylcyclohexane	ND		1.0	0.43	ug/L			06/14/15 13:14	1
Methylene Chloride	ND *		5.0	2.5	ug/L			06/14/15 13:14	1
Styrene	ND		1.0	0.27	ug/L			06/14/15 13:14	1
Tetrachloroethene	ND		1.0	0.74	ug/L			06/14/15 13:14	1
Toluene	ND		1.0	0.48	ug/L			06/14/15 13:14	1
trans-1,2-Dichloroethene	1.2		1.0	0.37	ug/L			06/14/15 13:14	1
trans-1,3-Dichloropropene	ND		1.0	0.42	ug/L			06/14/15 13:14	1
Trichloroethene	0.48 J		1.0	0.48	ug/L			06/14/15 13:14	1
Trichlorofluoromethane	ND		1.0	0.42	ug/L			06/14/15 13:14	1
Vinyl chloride	2.1		1.0	0.50	ug/L			06/14/15 13:14	1
Xylenes, Total	ND		1.0	0.23	ug/L			06/14/15 13:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	107		70 - 130		06/14/15 13:14	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	88		70 - 130		06/14/15 13:14	1
<i>Dibromofluoromethane (Surr)</i>	102		70 - 130		06/14/15 13:14	1
<i>4-Bromofluorobenzene (Surr)</i>	95		70 - 130		06/14/15 13:14	1

Client Sample ID: ALBW20335

Lab Sample ID: 680-113338-4

Date Collected: 06/06/15 11:00

Matrix: Water

Date Received: 06/09/15 09:34

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.37	ug/L			06/14/15 13:35	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.62	ug/L			06/14/15 13:35	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.36	ug/L			06/14/15 13:35	1
1,1,2-Trichloroethane	ND		1.0	0.33	ug/L			06/14/15 13:35	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			06/14/15 13:35	1
1,1-Dichloroethene	ND		1.0	0.36	ug/L			06/14/15 13:35	1

TestAmerica Savannah

Client Sample Results

Client: Parsons Corporation
 Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
 SDG: SALF07

Client Sample ID: ALBW20335

Lab Sample ID: 680-113338-4

Date Collected: 06/06/15 11:00

Matrix: Water

Date Received: 06/09/15 09:34

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		5.0	2.5	ug/L			06/14/15 13:35	1
1,2-Dibromo-3-Chloropropane	ND		5.0	1.1	ug/L			06/14/15 13:35	1
1,2-Dibromoethane	ND		1.0	0.44	ug/L			06/14/15 13:35	1
1,2-Dichlorobenzene	ND		1.0	0.37	ug/L			06/14/15 13:35	1
1,2-Dichloroethane	ND		1.0	0.50	ug/L			06/14/15 13:35	1
1,2-Dichloropropane	ND		1.0	0.67	ug/L			06/14/15 13:35	1
1,3-Dichlorobenzene	ND		1.0	0.43	ug/L			06/14/15 13:35	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			06/14/15 13:35	1
2-Butanone	ND		10	3.4	ug/L			06/14/15 13:35	1
2-Hexanone	ND		10	2.0	ug/L			06/14/15 13:35	1
4-Methyl-2-pentanone	ND		10	2.1	ug/L			06/14/15 13:35	1
Acetone	ND		10	7.0	ug/L			06/14/15 13:35	1
Benzene	ND		1.0	0.43	ug/L			06/14/15 13:35	1
Bromodichloromethane	ND		1.0	0.44	ug/L			06/14/15 13:35	1
Bromoform	ND		1.0	0.43	ug/L			06/14/15 13:35	1
Bromomethane	ND		5.0	2.5	ug/L			06/14/15 13:35	1
Carbon disulfide	ND		2.0	1.0	ug/L			06/14/15 13:35	1
Carbon tetrachloride	ND		1.0	0.33	ug/L			06/14/15 13:35	1
Chlorobenzene	ND		1.0	0.26	ug/L			06/14/15 13:35	1
Chloroethane	ND		5.0	2.5	ug/L			06/14/15 13:35	1
Chloroform	ND		1.0	0.50	ug/L			06/14/15 13:35	1
Chloromethane	ND		1.0	0.40	ug/L			06/14/15 13:35	1
cis-1,2-Dichloroethene	1.1		1.0	0.41	ug/L			06/14/15 13:35	1
cis-1,3-Dichloropropene	ND		1.0	0.40	ug/L			06/14/15 13:35	1
Cyclohexane	ND		1.0	0.39	ug/L			06/14/15 13:35	1
Dibromochloromethane	ND		1.0	0.32	ug/L			06/14/15 13:35	1
Dichlorodifluoromethane	ND		1.0	0.60	ug/L			06/14/15 13:35	1
Ethylbenzene	ND		1.0	0.33	ug/L			06/14/15 13:35	1
Isopropylbenzene	ND		1.0	0.35	ug/L			06/14/15 13:35	1
Methyl acetate	ND		5.0	1.8	ug/L			06/14/15 13:35	1
Methyl tert-butyl ether	ND		10	0.30	ug/L			06/14/15 13:35	1
Methylcyclohexane	ND		1.0	0.43	ug/L			06/14/15 13:35	1
Methylene Chloride	ND *		5.0	2.5	ug/L			06/14/15 13:35	1
Styrene	ND		1.0	0.27	ug/L			06/14/15 13:35	1
Tetrachloroethene	ND		1.0	0.74	ug/L			06/14/15 13:35	1
Toluene	ND		1.0	0.48	ug/L			06/14/15 13:35	1
trans-1,2-Dichloroethene	ND		1.0	0.37	ug/L			06/14/15 13:35	1
trans-1,3-Dichloropropene	ND		1.0	0.42	ug/L			06/14/15 13:35	1
Trichloroethene	ND		1.0	0.48	ug/L			06/14/15 13:35	1
Trichlorofluoromethane	ND		1.0	0.42	ug/L			06/14/15 13:35	1
Vinyl chloride	ND		1.0	0.50	ug/L			06/14/15 13:35	1
Xylenes, Total	ND		1.0	0.23	ug/L			06/14/15 13:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		70 - 130		06/14/15 13:35	1
1,2-Dichloroethane-d4 (Surr)	90		70 - 130		06/14/15 13:35	1
Dibromofluoromethane (Surr)	101		70 - 130		06/14/15 13:35	1
4-Bromofluorobenzene (Surr)	91		70 - 130		06/14/15 13:35	1

TestAmerica Savannah

Client Sample Results

Client: Parsons Corporation
 Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
 SDG: SALF07

Client Sample ID: ALBW00044

Lab Sample ID: 680-113338-5

Date Collected: 06/06/15 17:46

Matrix: Water

Date Received: 06/09/15 09:34

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.37	ug/L			06/15/15 16:38	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.62	ug/L			06/15/15 16:38	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.36	ug/L			06/15/15 16:38	1
1,1,2-Trichloroethane	ND		1.0	0.33	ug/L			06/15/15 16:38	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			06/15/15 16:38	1
1,1-Dichloroethene	ND		1.0	0.36	ug/L			06/15/15 16:38	1
1,2,4-Trichlorobenzene	ND		5.0	2.5	ug/L			06/15/15 16:38	1
1,2-Dibromo-3-Chloropropane	ND		5.0	1.1	ug/L			06/15/15 16:38	1
1,2-Dibromoethane	ND		1.0	0.44	ug/L			06/15/15 16:38	1
1,2-Dichlorobenzene	ND		1.0	0.37	ug/L			06/15/15 16:38	1
1,2-Dichloroethane	ND		1.0	0.50	ug/L			06/15/15 16:38	1
1,2-Dichloropropane	ND		1.0	0.67	ug/L			06/15/15 16:38	1
1,3-Dichlorobenzene	ND		1.0	0.43	ug/L			06/15/15 16:38	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			06/15/15 16:38	1
2-Butanone	ND		10	3.4	ug/L			06/15/15 16:38	1
2-Hexanone	ND		10	2.0	ug/L			06/15/15 16:38	1
4-Methyl-2-pentanone	ND		10	2.1	ug/L			06/15/15 16:38	1
Acetone	ND		10	7.0	ug/L			06/15/15 16:38	1
Benzene	ND		1.0	0.43	ug/L			06/15/15 16:38	1
Bromodichloromethane	ND		1.0	0.44	ug/L			06/15/15 16:38	1
Bromoform	ND		1.0	0.43	ug/L			06/15/15 16:38	1
Bromomethane	ND		5.0	2.5	ug/L			06/15/15 16:38	1
Carbon disulfide	ND		2.0	1.0	ug/L			06/15/15 16:38	1
Carbon tetrachloride	ND		1.0	0.33	ug/L			06/15/15 16:38	1
Chlorobenzene	ND		1.0	0.26	ug/L			06/15/15 16:38	1
Chloroethane	ND		5.0	2.5	ug/L			06/15/15 16:38	1
Chloroform	ND		1.0	0.50	ug/L			06/15/15 16:38	1
Chloromethane	ND		1.0	0.40	ug/L			06/15/15 16:38	1
cis-1,2-Dichloroethene	ND		1.0	0.41	ug/L			06/15/15 16:38	1
cis-1,3-Dichloropropene	ND		1.0	0.40	ug/L			06/15/15 16:38	1
Cyclohexane	ND		1.0	0.39	ug/L			06/15/15 16:38	1
Dibromochloromethane	ND		1.0	0.32	ug/L			06/15/15 16:38	1
Dichlorodifluoromethane	ND *		1.0	0.60	ug/L			06/15/15 16:38	1
Ethylbenzene	ND		1.0	0.33	ug/L			06/15/15 16:38	1
Isopropylbenzene	ND		1.0	0.35	ug/L			06/15/15 16:38	1
Methyl acetate	ND		5.0	1.8	ug/L			06/15/15 16:38	1
Methyl tert-butyl ether	ND		10	0.30	ug/L			06/15/15 16:38	1
Methylcyclohexane	ND		1.0	0.43	ug/L			06/15/15 16:38	1
Methylene Chloride	ND		5.0	2.5	ug/L			06/15/15 16:38	1
Styrene	ND		1.0	0.27	ug/L			06/15/15 16:38	1
Tetrachloroethene	ND		1.0	0.74	ug/L			06/15/15 16:38	1
Toluene	ND		1.0	0.48	ug/L			06/15/15 16:38	1
trans-1,2-Dichloroethene	ND		1.0	0.37	ug/L			06/15/15 16:38	1
trans-1,3-Dichloropropene	ND		1.0	0.42	ug/L			06/15/15 16:38	1
Trichloroethene	ND		1.0	0.48	ug/L			06/15/15 16:38	1
Trichlorofluoromethane	ND		1.0	0.42	ug/L			06/15/15 16:38	1
Vinyl chloride	ND		1.0	0.50	ug/L			06/15/15 16:38	1
Xylenes, Total	ND		1.0	0.23	ug/L			06/15/15 16:38	1

Client Sample Results

Client: Parsons Corporation
Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
SDG: SALF07

Client Sample ID: ALBW00044

Date Collected: 06/06/15 17:46

Date Received: 06/09/15 09:34

Lab Sample ID: 680-113338-5

Matrix: Water

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>Toluene-d8 (Surr)</i>	100		70 - 130		06/15/15 16:38	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	100		70 - 130		06/15/15 16:38	1
<i>Dibromofluoromethane (Surr)</i>	100		70 - 130		06/15/15 16:38	1
<i>4-Bromofluorobenzene (Surr)</i>	97		70 - 130		06/15/15 16:38	1

Surrogate Summary

Client: Parsons Corporation
 Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
 SDG: SALF07

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (70-130)	12DCE (70-130)	DBFM (70-130)	BFB (70-130)
680-113295-1	ALBW20327	105	90	103	90
680-113295-2	ALBW20331	106	88	103	90
680-113295-2 - DL	ALBW20331	104	91	103	92
680-113295-3	ALBW20332	105	90	103	89
680-113295-4	ALBW20333	105	90	103	91
680-113295-5	ALBW20334	106	90	101	93
680-113295-6	ALBW20336	106	90	102	90
680-113295-7	ALBW20337	104	90	103	91
680-113295-8	ALBW20338	106	90	102	92
680-113295-9	ALBW20339	104	90	101	90
680-113295-9 MS	ALBW20339	107	94	109	94
680-113295-9 MSD	ALBW20339	109	97	109	97
680-113295-12	ALBW20340	105	91	103	90
680-113295-13	ALBW20341	105	91	107	91
680-113295-14	ALBW00123	105	90	102	92
680-113295-15	ALBW00043	105	90	103	95
680-113338-1	ALBW20328	106	89	103	92
680-113338-2	ALBW20329	105	89	101	95
680-113338-3	ALBW20330	107	88	102	95
680-113338-4	ALBW20335	105	90	101	91
680-113338-5	ALBW00044	100	100	100	97
LCS 680-387492/5	Lab Control Sample	105	103	112	98
LCS 680-387548/4	Lab Control Sample	106	100	110	97
LCS 680-387612/4	Lab Control Sample	103	104	105	99
LCSD 680-387492/6	Lab Control Sample Dup	108	99	109	100
LCSD 680-387548/5	Lab Control Sample Dup	107	100	110	97
LCSD 680-387612/5	Lab Control Sample Dup	102	101	106	99
MB 680-387492/10	Method Blank	104	88	101	95
MB 680-387548/9	Method Blank	105	90	101	93
MB 680-387612/11	Method Blank	101	100	100	97

Surrogate Legend

- TOL = Toluene-d8 (Surr)
- 12DCE = 1,2-Dichloroethane-d4 (Surr)
- DBFM = Dibromofluoromethane (Surr)
- BFB = 4-Bromofluorobenzene (Surr)

QC Sample Results

Client: Parsons Corporation
 Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
 SDG: SALF07

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-387492/10
Matrix: Water
Analysis Batch: 387492

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.37	ug/L			06/14/15 12:11	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.62	ug/L			06/14/15 12:11	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.36	ug/L			06/14/15 12:11	1
1,1,2-Trichloroethane	ND		1.0	0.33	ug/L			06/14/15 12:11	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			06/14/15 12:11	1
1,1-Dichloroethene	ND		1.0	0.36	ug/L			06/14/15 12:11	1
1,2,4-Trichlorobenzene	ND		5.0	2.5	ug/L			06/14/15 12:11	1
1,2-Dibromo-3-Chloropropane	ND		5.0	1.1	ug/L			06/14/15 12:11	1
1,2-Dibromoethane	ND		1.0	0.44	ug/L			06/14/15 12:11	1
1,2-Dichlorobenzene	ND		1.0	0.37	ug/L			06/14/15 12:11	1
1,2-Dichloroethane	ND		1.0	0.50	ug/L			06/14/15 12:11	1
1,2-Dichloropropane	ND		1.0	0.67	ug/L			06/14/15 12:11	1
1,3-Dichlorobenzene	ND		1.0	0.43	ug/L			06/14/15 12:11	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			06/14/15 12:11	1
2-Butanone	ND		10	3.4	ug/L			06/14/15 12:11	1
2-Hexanone	ND		10	2.0	ug/L			06/14/15 12:11	1
4-Methyl-2-pentanone	ND		10	2.1	ug/L			06/14/15 12:11	1
Acetone	ND		10	7.0	ug/L			06/14/15 12:11	1
Benzene	ND		1.0	0.43	ug/L			06/14/15 12:11	1
Bromodichloromethane	ND		1.0	0.44	ug/L			06/14/15 12:11	1
Bromoform	ND		1.0	0.43	ug/L			06/14/15 12:11	1
Bromomethane	ND		5.0	2.5	ug/L			06/14/15 12:11	1
Carbon disulfide	ND		2.0	1.0	ug/L			06/14/15 12:11	1
Carbon tetrachloride	ND		1.0	0.33	ug/L			06/14/15 12:11	1
Chlorobenzene	ND		1.0	0.26	ug/L			06/14/15 12:11	1
Chloroethane	ND		5.0	2.5	ug/L			06/14/15 12:11	1
Chloroform	ND		1.0	0.50	ug/L			06/14/15 12:11	1
Chloromethane	ND		1.0	0.40	ug/L			06/14/15 12:11	1
cis-1,2-Dichloroethene	ND		1.0	0.41	ug/L			06/14/15 12:11	1
cis-1,3-Dichloropropene	ND		1.0	0.40	ug/L			06/14/15 12:11	1
Cyclohexane	ND		1.0	0.39	ug/L			06/14/15 12:11	1
Dibromochloromethane	ND		1.0	0.32	ug/L			06/14/15 12:11	1
Dichlorodifluoromethane	ND		1.0	0.60	ug/L			06/14/15 12:11	1
Ethylbenzene	ND		1.0	0.33	ug/L			06/14/15 12:11	1
Isopropylbenzene	ND		1.0	0.35	ug/L			06/14/15 12:11	1
Methyl acetate	ND		5.0	1.8	ug/L			06/14/15 12:11	1
Methyl tert-butyl ether	ND		10	0.30	ug/L			06/14/15 12:11	1
Methylcyclohexane	ND		1.0	0.43	ug/L			06/14/15 12:11	1
Methylene Chloride	ND		5.0	2.5	ug/L			06/14/15 12:11	1
Styrene	ND		1.0	0.27	ug/L			06/14/15 12:11	1
Tetrachloroethene	ND		1.0	0.74	ug/L			06/14/15 12:11	1
Toluene	ND		1.0	0.48	ug/L			06/14/15 12:11	1
trans-1,2-Dichloroethene	ND		1.0	0.37	ug/L			06/14/15 12:11	1
trans-1,3-Dichloropropene	ND		1.0	0.42	ug/L			06/14/15 12:11	1
Trichloroethene	ND		1.0	0.48	ug/L			06/14/15 12:11	1
Trichlorofluoromethane	ND		1.0	0.42	ug/L			06/14/15 12:11	1
Vinyl chloride	ND		1.0	0.50	ug/L			06/14/15 12:11	1
Xylenes, Total	ND		1.0	0.23	ug/L			06/14/15 12:11	1

TestAmerica Savannah

QC Sample Results

Client: Parsons Corporation
 Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
 SDG: SALF07

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-387492/10
Matrix: Water
Analysis Batch: 387492

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

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		70 - 130		06/14/15 12:11	1
1,2-Dichloroethane-d4 (Surr)	88		70 - 130		06/14/15 12:11	1
Dibromofluoromethane (Surr)	101		70 - 130		06/14/15 12:11	1
4-Bromofluorobenzene (Surr)	95		70 - 130		06/14/15 12:11	1

Lab Sample ID: LCS 680-387492/5
Matrix: Water
Analysis Batch: 387492

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	50.0	54.0		ug/L		108	74 - 128
1,1,2,2-Tetrachloroethane	50.0	56.1		ug/L		112	72 - 128
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	57.0		ug/L		114	65 - 131
1,1,2-Trichloroethane	50.0	54.9		ug/L		110	79 - 125
1,1-Dichloroethane	50.0	52.0		ug/L		104	80 - 120
1,1-Dichloroethene	50.0	47.6		ug/L		95	74 - 125
1,2,4-Trichlorobenzene	50.0	57.5		ug/L		115	77 - 131
1,2-Dibromo-3-Chloropropane	50.0	59.5		ug/L		119	59 - 141
1,2-Dibromoethane	50.0	58.5		ug/L		117	77 - 131
1,2-Dichlorobenzene	50.0	54.4		ug/L		109	80 - 120
1,2-Dichloroethane	50.0	52.5		ug/L		105	75 - 130
1,2-Dichloropropane	50.0	52.5		ug/L		105	80 - 123
1,3-Dichlorobenzene	50.0	53.2		ug/L		106	80 - 120
1,4-Dichlorobenzene	50.0	53.3		ug/L		107	80 - 120
2-Butanone	250	294		ug/L		118	75 - 133
2-Hexanone	250	291		ug/L		117	70 - 141
4-Methyl-2-pentanone	250	281		ug/L		113	75 - 135
Benzene	50.0	51.9		ug/L		104	73 - 131
Bromodichloromethane	50.0	56.5		ug/L		113	77 - 129
Bromoform	50.0	64.7		ug/L		129	69 - 135
Bromomethane	50.0	41.9		ug/L		84	20 - 180
Carbon disulfide	50.0	50.2		ug/L		100	73 - 127
Carbon tetrachloride	50.0	57.4		ug/L		115	75 - 130
Chlorobenzene	50.0	54.6		ug/L		109	80 - 120
Chloroethane	50.0	38.4		ug/L		77	50 - 151
Chloroform	50.0	54.0		ug/L		108	79 - 122
Chloromethane	50.0	39.0		ug/L		78	63 - 126
cis-1,2-Dichloroethene	50.0	52.8		ug/L		106	80 - 122
cis-1,3-Dichloropropene	50.0	55.7		ug/L		111	80 - 133
Cyclohexane	50.0	51.9		ug/L		104	69 - 130
Dibromochloromethane	50.0	63.6		ug/L		127	71 - 136
Dichlorodifluoromethane	50.0	43.1		ug/L		86	51 - 140
Ethylbenzene	50.0	53.2		ug/L		106	80 - 120
Isopropylbenzene	50.0	55.4		ug/L		111	80 - 120
Methyl acetate	250	276		ug/L		110	66 - 134
Methyl tert-butyl ether	50.0	55.1		ug/L		110	74 - 135
Methylcyclohexane	50.0	53.2		ug/L		106	75 - 127

TestAmerica Savannah

QC Sample Results

Client: Parsons Corporation
 Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
 SDG: SALF07

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-387492/5
Matrix: Water
Analysis Batch: 387492

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methylene Chloride	50.0	52.4		ug/L		105	76 - 129
Styrene	50.0	55.3		ug/L		111	80 - 122
Tetrachloroethene	50.0	59.0		ug/L		118	77 - 123
Toluene	50.0	53.9		ug/L		108	80 - 122
trans-1,2-Dichloroethene	50.0	53.1		ug/L		106	78 - 123
trans-1,3-Dichloropropene	50.0	57.4		ug/L		115	74 - 140
Trichloroethene	50.0	58.4		ug/L		117	80 - 123
Trichlorofluoromethane	50.0	48.6		ug/L		97	58 - 145
Vinyl chloride	50.0	41.0		ug/L		82	68 - 132
Xylenes, Total	100	106		ug/L		106	80 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	105		70 - 130
1,2-Dichloroethane-d4 (Surr)	103		70 - 130
Dibromofluoromethane (Surr)	112		70 - 130
4-Bromofluorobenzene (Surr)	98		70 - 130

Lab Sample ID: LCSD 680-387492/6
Matrix: Water
Analysis Batch: 387492

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	50.0	55.8		ug/L		112	74 - 128	3	20
1,1,1,2-Tetrachloroethane	50.0	53.8		ug/L		108	72 - 128	4	20
1,1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	58.8		ug/L		118	65 - 131	3	30
1,1,2-Trichloroethane	50.0	52.7		ug/L		105	79 - 125	4	20
1,1-Dichloroethane	50.0	51.8		ug/L		104	80 - 120	0	20
1,1-Dichloroethene	50.0	48.8		ug/L		98	74 - 125	2	20
1,2,4-Trichlorobenzene	50.0	58.0		ug/L		116	77 - 131	1	20
1,2-Dibromo-3-Chloropropane	50.0	55.5		ug/L		111	59 - 141	7	30
1,2-Dibromoethane	50.0	54.9		ug/L		110	77 - 131	6	30
1,2-Dichlorobenzene	50.0	54.5		ug/L		109	80 - 120	0	20
1,2-Dichloroethane	50.0	49.3		ug/L		99	75 - 130	6	20
1,2-Dichloropropane	50.0	49.9		ug/L		100	80 - 123	5	20
1,3-Dichlorobenzene	50.0	53.8		ug/L		108	80 - 120	1	20
1,4-Dichlorobenzene	50.0	53.1		ug/L		106	80 - 120	0	20
2-Butanone	250	259		ug/L		104	75 - 133	13	30
2-Hexanone	250	259		ug/L		104	70 - 141	12	40
4-Methyl-2-pentanone	250	256		ug/L		103	75 - 135	9	30
Benzene	50.0	51.4		ug/L		103	73 - 131	1	30
Bromodichloromethane	50.0	54.6		ug/L		109	77 - 129	3	20
Bromoform	50.0	61.9		ug/L		124	69 - 135	4	20
Bromomethane	50.0	40.5		ug/L		81	20 - 180	3	40
Carbon disulfide	50.0	48.5		ug/L		97	73 - 127	3	20
Carbon tetrachloride	50.0	59.2		ug/L		118	75 - 130	3	20
Chlorobenzene	50.0	55.8		ug/L		112	80 - 120	2	20
Chloroethane	50.0	38.8		ug/L		78	50 - 151	1	30

TestAmerica Savannah

QC Sample Results

Client: Parsons Corporation
 Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
 SDG: SALF07

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 680-387492/6
Matrix: Water
Analysis Batch: 387492

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloroform	50.0	52.8		ug/L		106	79 - 122	2	20
Chloromethane	50.0	40.4		ug/L		81	63 - 126	3	30
cis-1,2-Dichloroethene	50.0	52.5		ug/L		105	80 - 122	0	20
cis-1,3-Dichloropropene	50.0	54.4		ug/L		109	80 - 133	2	20
Cyclohexane	50.0	53.7		ug/L		107	69 - 130	4	30
Dibromochloromethane	50.0	60.3		ug/L		121	71 - 136	5	20
Dichlorodifluoromethane	50.0	44.6		ug/L		89	51 - 140	3	40
Ethylbenzene	50.0	55.5		ug/L		111	80 - 120	4	20
Isopropylbenzene	50.0	58.1		ug/L		116	80 - 120	5	20
Methyl acetate	250	249		ug/L		100	66 - 134	10	30
Methyl tert-butyl ether	50.0	52.3		ug/L		105	74 - 135	5	20
Methylcyclohexane	50.0	55.8		ug/L		112	75 - 127	5	30
Methylene Chloride	50.0	42.1	*	ug/L		84	76 - 129	22	20
Styrene	50.0	55.9		ug/L		112	80 - 122	1	20
Tetrachloroethene	50.0	60.7		ug/L		121	77 - 123	3	20
Toluene	50.0	54.7		ug/L		109	80 - 122	1	20
trans-1,2-Dichloroethene	50.0	54.6		ug/L		109	78 - 123	3	20
trans-1,3-Dichloropropene	50.0	55.4		ug/L		111	74 - 140	4	20
Trichloroethene	50.0	58.1		ug/L		116	80 - 123	1	20
Trichlorofluoromethane	50.0	51.4		ug/L		103	58 - 145	6	30
Vinyl chloride	50.0	50.5		ug/L		101	68 - 132	21	30
Xylenes, Total	100	111		ug/L		111	80 - 120	4	20

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
Toluene-d8 (Surr)	108		70 - 130
1,2-Dichloroethane-d4 (Surr)	99		70 - 130
Dibromofluoromethane (Surr)	109		70 - 130
4-Bromofluorobenzene (Surr)	100		70 - 130

Lab Sample ID: 680-113295-9 MS
Matrix: Water
Analysis Batch: 387492

Client Sample ID: ALBW20339
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	ND		50.0	54.8		ug/L		110	74 - 128
1,1,2,2-Tetrachloroethane	ND		50.0	52.6		ug/L		105	72 - 128
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		50.0	58.2		ug/L		116	65 - 131
1,1,2-Trichloroethane	ND		50.0	49.6		ug/L		99	79 - 125
1,1-Dichloroethane	ND		50.0	50.7		ug/L		101	80 - 120
1,1-Dichloroethene	ND		50.0	49.9		ug/L		100	74 - 125
1,2,4-Trichlorobenzene	ND		50.0	52.1		ug/L		104	77 - 131
1,2-Dibromo-3-Chloropropane	ND		50.0	53.4		ug/L		107	59 - 141
1,2-Dibromoethane	ND		50.0	52.1		ug/L		104	77 - 131
1,2-Dichlorobenzene	ND		50.0	53.0		ug/L		106	80 - 120
1,2-Dichloroethane	ND		50.0	47.2		ug/L		94	75 - 130
1,2-Dichloropropane	ND		50.0	49.1		ug/L		98	80 - 123
1,3-Dichlorobenzene	ND		50.0	53.2		ug/L		106	80 - 120

TestAmerica Savannah

QC Sample Results

Client: Parsons Corporation
 Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
 SDG: SALF07

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 680-113295-9 MS

Matrix: Water

Analysis Batch: 387492

Client Sample ID: ALBW20339

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dichlorobenzene	ND		50.0	51.7		ug/L		103	80 - 120
2-Butanone	ND		250	247		ug/L		99	75 - 133
2-Hexanone	ND		250	256		ug/L		103	70 - 141
4-Methyl-2-pentanone	ND		250	252		ug/L		101	75 - 135
Benzene	ND		50.0	51.3		ug/L		103	73 - 131
Bromodichloromethane	ND		50.0	52.9		ug/L		106	77 - 129
Bromoform	ND		50.0	59.2		ug/L		118	69 - 135
Bromomethane	ND		50.0	22.9		ug/L		46	20 - 180
Carbon disulfide	ND		50.0	52.0		ug/L		104	73 - 127
Carbon tetrachloride	ND		50.0	59.0		ug/L		118	75 - 130
Chlorobenzene	ND		50.0	55.0		ug/L		110	80 - 120
Chloroethane	ND		50.0	38.6		ug/L		77	50 - 151
Chloroform	ND		50.0	52.6		ug/L		105	79 - 122
Chloromethane	ND		50.0	39.4		ug/L		79	63 - 126
cis-1,2-Dichloroethene	ND		50.0	49.5		ug/L		99	80 - 122
cis-1,3-Dichloropropene	ND		50.0	49.7		ug/L		99	80 - 133
Cyclohexane	ND		50.0	53.2		ug/L		106	69 - 130
Dibromochloromethane	ND		50.0	56.8		ug/L		114	71 - 136
Dichlorodifluoromethane	ND		50.0	41.1		ug/L		82	51 - 140
Ethylbenzene	ND		50.0	55.1		ug/L		110	80 - 120
Isopropylbenzene	ND		50.0	58.3		ug/L		117	80 - 120
Methyl acetate	ND		250	225		ug/L		90	66 - 134
Methyl tert-butyl ether	ND		50.0	48.9		ug/L		98	74 - 135
Methylcyclohexane	ND		50.0	54.0		ug/L		108	75 - 127
Methylene Chloride	ND	*	50.0	50.2		ug/L		100	76 - 129
Styrene	ND		50.0	54.1		ug/L		108	80 - 122
Tetrachloroethene	ND		50.0	59.8		ug/L		120	77 - 123
Toluene	ND		50.0	54.1		ug/L		108	80 - 122
trans-1,2-Dichloroethene	ND		50.0	54.0		ug/L		108	78 - 123
trans-1,3-Dichloropropene	ND		50.0	50.8		ug/L		102	74 - 140
Trichloroethene	ND		50.0	57.4		ug/L		115	80 - 123
Trichlorofluoromethane	ND		50.0	48.8		ug/L		98	58 - 145
Vinyl chloride	ND		50.0	41.7		ug/L		83	68 - 132
Xylenes, Total	ND		100	110		ug/L		110	80 - 120

Surrogate	MS %Recovery	MS Qualifier	Limits
Toluene-d8 (Surr)	107		70 - 130
1,2-Dichloroethane-d4 (Surr)	94		70 - 130
Dibromofluoromethane (Surr)	109		70 - 130
4-Bromofluorobenzene (Surr)	94		70 - 130

Lab Sample ID: 680-113295-9 MSD

Matrix: Water

Analysis Batch: 387492

Client Sample ID: ALBW20339

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	ND		50.0	56.2		ug/L		112	74 - 128	3	20
1,1,1,2-Tetrachloroethane	ND		50.0	52.9		ug/L		106	72 - 128	1	20

TestAmerica Savannah

QC Sample Results

Client: Parsons Corporation
 Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
 SDG: SALF07

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 680-113295-9 MSD

Client Sample ID: ALBW20339

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 387492

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		50.0	57.9		ug/L		116	65 - 131	0	30
1,1,2-Trichloroethane	ND		50.0	50.0		ug/L		100	79 - 125	1	20
1,1-Dichloroethane	ND		50.0	51.7		ug/L		103	80 - 120	2	20
1,1-Dichloroethene	ND		50.0	52.4		ug/L		105	74 - 125	5	20
1,2,4-Trichlorobenzene	ND		50.0	54.6		ug/L		109	77 - 131	5	20
1,2-Dibromo-3-Chloropropane	ND		50.0	55.7		ug/L		111	59 - 141	4	30
1,2-Dibromoethane	ND		50.0	52.9		ug/L		106	77 - 131	1	30
1,2-Dichlorobenzene	ND		50.0	54.7		ug/L		109	80 - 120	3	20
1,2-Dichloroethane	ND		50.0	48.7		ug/L		97	75 - 130	3	20
1,2-Dichloropropane	ND		50.0	50.3		ug/L		101	80 - 123	2	20
1,3-Dichlorobenzene	ND		50.0	54.3		ug/L		109	80 - 120	2	20
1,4-Dichlorobenzene	ND		50.0	53.5		ug/L		107	80 - 120	3	20
2-Butanone	ND		250	255		ug/L		102	75 - 133	3	30
2-Hexanone	ND		250	263		ug/L		105	70 - 141	3	40
4-Methyl-2-pentanone	ND		250	262		ug/L		105	75 - 135	4	30
Benzene	ND		50.0	52.0		ug/L		104	73 - 131	1	30
Bromodichloromethane	ND		50.0	53.0		ug/L		106	77 - 129	0	20
Bromoform	ND		50.0	60.0		ug/L		120	69 - 135	1	20
Bromomethane	ND		50.0	27.7		ug/L		55	20 - 180	19	40
Carbon disulfide	ND		50.0	53.1		ug/L		106	73 - 127	2	20
Carbon tetrachloride	ND		50.0	59.8		ug/L		120	75 - 130	1	20
Chlorobenzene	ND		50.0	54.8		ug/L		110	80 - 120	0	20
Chloroethane	ND		50.0	39.8		ug/L		80	50 - 151	3	30
Chloroform	ND		50.0	53.1		ug/L		106	79 - 122	1	20
Chloromethane	ND		50.0	40.2		ug/L		80	63 - 126	2	30
cis-1,2-Dichloroethene	ND		50.0	50.8		ug/L		102	80 - 122	3	20
cis-1,3-Dichloropropene	ND		50.0	50.6		ug/L		101	80 - 133	2	20
Cyclohexane	ND		50.0	54.2		ug/L		108	69 - 130	2	30
Dibromochloromethane	ND		50.0	57.9		ug/L		116	71 - 136	2	20
Dichlorodifluoromethane	ND		50.0	43.7		ug/L		87	51 - 140	6	40
Ethylbenzene	ND		50.0	55.5		ug/L		111	80 - 120	1	20
Isopropylbenzene	ND		50.0	58.7		ug/L		117	80 - 120	1	20
Methyl acetate	ND		250	234		ug/L		94	66 - 134	4	30
Methyl tert-butyl ether	ND		50.0	50.9		ug/L		102	74 - 135	4	20
Methylcyclohexane	ND		50.0	54.6		ug/L		109	75 - 127	1	30
Methylene Chloride	ND	*	50.0	51.7		ug/L		103	76 - 129	3	20
Styrene	ND		50.0	54.6		ug/L		109	80 - 122	1	20
Tetrachloroethene	ND		50.0	60.3		ug/L		121	77 - 123	1	20
Toluene	ND		50.0	54.6		ug/L		109	80 - 122	1	20
trans-1,2-Dichloroethene	ND		50.0	54.0		ug/L		108	78 - 123	0	20
trans-1,3-Dichloropropene	ND		50.0	52.2		ug/L		104	74 - 140	3	20
Trichloroethene	ND		50.0	58.6		ug/L		117	80 - 123	2	20
Trichlorofluoromethane	ND		50.0	57.7		ug/L		115	58 - 145	17	30
Vinyl chloride	ND		50.0	42.3		ug/L		85	68 - 132	1	30
Xylenes, Total	ND		100	110		ug/L		110	80 - 120	0	20

QC Sample Results

Client: Parsons Corporation
 Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
 SDG: SALF07

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 680-113295-9 MSD
Matrix: Water
Analysis Batch: 387492

Client Sample ID: ALBW20339
Prep Type: Total/NA

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Toluene-d8 (Surr)	109		70 - 130
1,2-Dichloroethane-d4 (Surr)	97		70 - 130
Dibromofluoromethane (Surr)	109		70 - 130
4-Bromofluorobenzene (Surr)	97		70 - 130

Lab Sample ID: MB 680-387548/9
Matrix: Water
Analysis Batch: 387548

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.37	ug/L			06/15/15 10:51	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.62	ug/L			06/15/15 10:51	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.36	ug/L			06/15/15 10:51	1
1,1,2-Trichloroethane	ND		1.0	0.33	ug/L			06/15/15 10:51	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			06/15/15 10:51	1
1,1-Dichloroethene	ND		1.0	0.36	ug/L			06/15/15 10:51	1
1,2,4-Trichlorobenzene	ND		5.0	2.5	ug/L			06/15/15 10:51	1
1,2-Dibromo-3-Chloropropane	ND		5.0	1.1	ug/L			06/15/15 10:51	1
1,2-Dibromoethane	ND		1.0	0.44	ug/L			06/15/15 10:51	1
1,2-Dichlorobenzene	ND		1.0	0.37	ug/L			06/15/15 10:51	1
1,2-Dichloroethane	ND		1.0	0.50	ug/L			06/15/15 10:51	1
1,2-Dichloropropane	ND		1.0	0.67	ug/L			06/15/15 10:51	1
1,3-Dichlorobenzene	ND		1.0	0.43	ug/L			06/15/15 10:51	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			06/15/15 10:51	1
2-Butanone	ND		10	3.4	ug/L			06/15/15 10:51	1
2-Hexanone	ND		10	2.0	ug/L			06/15/15 10:51	1
4-Methyl-2-pentanone	ND		10	2.1	ug/L			06/15/15 10:51	1
Acetone	ND		10	7.0	ug/L			06/15/15 10:51	1
Benzene	ND		1.0	0.43	ug/L			06/15/15 10:51	1
Bromodichloromethane	ND		1.0	0.44	ug/L			06/15/15 10:51	1
Bromoform	ND		1.0	0.43	ug/L			06/15/15 10:51	1
Bromomethane	ND		5.0	2.5	ug/L			06/15/15 10:51	1
Carbon disulfide	ND		2.0	1.0	ug/L			06/15/15 10:51	1
Carbon tetrachloride	ND		1.0	0.33	ug/L			06/15/15 10:51	1
Chlorobenzene	ND		1.0	0.26	ug/L			06/15/15 10:51	1
Chloroethane	ND		5.0	2.5	ug/L			06/15/15 10:51	1
Chloroform	ND		1.0	0.50	ug/L			06/15/15 10:51	1
Chloromethane	ND		1.0	0.40	ug/L			06/15/15 10:51	1
cis-1,2-Dichloroethene	ND		1.0	0.41	ug/L			06/15/15 10:51	1
cis-1,3-Dichloropropene	ND		1.0	0.40	ug/L			06/15/15 10:51	1
Cyclohexane	ND		1.0	0.39	ug/L			06/15/15 10:51	1
Dibromochloromethane	ND		1.0	0.32	ug/L			06/15/15 10:51	1
Dichlorodifluoromethane	ND		1.0	0.60	ug/L			06/15/15 10:51	1
Ethylbenzene	ND		1.0	0.33	ug/L			06/15/15 10:51	1
Isopropylbenzene	ND		1.0	0.35	ug/L			06/15/15 10:51	1
Methyl acetate	ND		5.0	1.8	ug/L			06/15/15 10:51	1
Methyl tert-butyl ether	ND		10	0.30	ug/L			06/15/15 10:51	1
Methylcyclohexane	ND		1.0	0.43	ug/L			06/15/15 10:51	1

TestAmerica Savannah

QC Sample Results

Client: Parsons Corporation
 Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
 SDG: SALF07

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-387548/9
Matrix: Water
Analysis Batch: 387548

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	ND		5.0	2.5	ug/L			06/15/15 10:51	1
Styrene	ND		1.0	0.27	ug/L			06/15/15 10:51	1
Tetrachloroethene	ND		1.0	0.74	ug/L			06/15/15 10:51	1
Toluene	ND		1.0	0.48	ug/L			06/15/15 10:51	1
trans-1,2-Dichloroethene	ND		1.0	0.37	ug/L			06/15/15 10:51	1
trans-1,3-Dichloropropene	ND		1.0	0.42	ug/L			06/15/15 10:51	1
Trichloroethene	ND		1.0	0.48	ug/L			06/15/15 10:51	1
Trichlorofluoromethane	ND		1.0	0.42	ug/L			06/15/15 10:51	1
Vinyl chloride	ND		1.0	0.50	ug/L			06/15/15 10:51	1
Xylenes, Total	ND		1.0	0.23	ug/L			06/15/15 10:51	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		70 - 130		06/15/15 10:51	1
1,2-Dichloroethane-d4 (Surr)	90		70 - 130		06/15/15 10:51	1
Dibromofluoromethane (Surr)	101		70 - 130		06/15/15 10:51	1
4-Bromofluorobenzene (Surr)	93		70 - 130		06/15/15 10:51	1

Lab Sample ID: LCS 680-387548/4
Matrix: Water
Analysis Batch: 387548

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	50.0	55.9		ug/L		112	74 - 128
1,1,1,2-Tetrachloroethane	50.0	54.3		ug/L		109	72 - 128
1,1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	58.4		ug/L		117	65 - 131
1,1,2-Trichloroethane	50.0	53.7		ug/L		107	79 - 125
1,1-Dichloroethane	50.0	53.1		ug/L		106	80 - 120
1,1-Dichloroethene	50.0	49.4		ug/L		99	74 - 125
1,2,4-Trichlorobenzene	50.0	57.5		ug/L		115	77 - 131
1,2-Dibromo-3-Chloropropane	50.0	56.8		ug/L		114	59 - 141
1,2-Dibromoethane	50.0	56.2		ug/L		112	77 - 131
1,2-Dichlorobenzene	50.0	54.1		ug/L		108	80 - 120
1,2-Dichloroethane	50.0	51.5		ug/L		103	75 - 130
1,2-Dichloropropane	50.0	51.5		ug/L		103	80 - 123
1,3-Dichlorobenzene	50.0	53.1		ug/L		106	80 - 120
1,4-Dichlorobenzene	50.0	52.5		ug/L		105	80 - 120
2-Butanone	250	264		ug/L		106	75 - 133
2-Hexanone	250	266		ug/L		106	70 - 141
4-Methyl-2-pentanone	250	261		ug/L		104	75 - 135
Benzene	50.0	52.6		ug/L		105	73 - 131
Bromodichloromethane	50.0	56.6		ug/L		113	77 - 129
Bromoform	50.0	64.2		ug/L		128	69 - 135
Bromomethane	50.0	38.5		ug/L		77	20 - 180
Carbon disulfide	50.0	48.2		ug/L		96	73 - 127
Carbon tetrachloride	50.0	59.6		ug/L		119	75 - 130
Chlorobenzene	50.0	55.7		ug/L		111	80 - 120
Chloroethane	50.0	37.5		ug/L		75	50 - 151

TestAmerica Savannah

QC Sample Results

Client: Parsons Corporation
 Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
 SDG: SALF07

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-387548/4
Matrix: Water
Analysis Batch: 387548

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloroform	50.0	54.2		ug/L		108	79 - 122
Chloromethane	50.0	42.6		ug/L		85	63 - 126
cis-1,2-Dichloroethene	50.0	53.0		ug/L		106	80 - 122
cis-1,3-Dichloropropene	50.0	56.0		ug/L		112	80 - 133
Cyclohexane	50.0	53.4		ug/L		107	69 - 130
Dibromochloromethane	50.0	61.7		ug/L		123	71 - 136
Dichlorodifluoromethane	50.0	54.4		ug/L		109	51 - 140
Ethylbenzene	50.0	55.4		ug/L		111	80 - 120
Isopropylbenzene	50.0	57.8		ug/L		116	80 - 120
Methyl acetate	250	256		ug/L		102	66 - 134
Methyl tert-butyl ether	50.0	53.9		ug/L		108	74 - 135
Methylcyclohexane	50.0	55.3		ug/L		111	75 - 127
Methylene Chloride	50.0	52.7		ug/L		105	76 - 129
Styrene	50.0	55.3		ug/L		111	80 - 122
Tetrachloroethene	50.0	60.6		ug/L		121	77 - 123
Toluene	50.0	54.3		ug/L		109	80 - 122
trans-1,2-Dichloroethene	50.0	54.9		ug/L		110	78 - 123
trans-1,3-Dichloropropene	50.0	56.3		ug/L		113	74 - 140
Trichloroethene	50.0	59.8		ug/L		120	80 - 123
Trichlorofluoromethane	50.0	49.5		ug/L		99	58 - 145
Vinyl chloride	50.0	46.7		ug/L		93	68 - 132
Xylenes, Total	100	111		ug/L		111	80 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	106		70 - 130
1,2-Dichloroethane-d4 (Surr)	100		70 - 130
Dibromofluoromethane (Surr)	110		70 - 130
4-Bromofluorobenzene (Surr)	97		70 - 130

Lab Sample ID: LCSD 680-387548/5
Matrix: Water
Analysis Batch: 387548

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	50.0	56.8		ug/L		114	74 - 128	1	20
1,1,2,2-Tetrachloroethane	50.0	54.9		ug/L		110	72 - 128	1	20
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	58.5		ug/L		117	65 - 131	0	30
1,1,2-Trichloroethane	50.0	52.9		ug/L		106	79 - 125	1	20
1,1-Dichloroethane	50.0	54.3		ug/L		109	80 - 120	2	20
1,1-Dichloroethene	50.0	48.4		ug/L		97	74 - 125	2	20
1,2,4-Trichlorobenzene	50.0	57.9		ug/L		116	77 - 131	1	20
1,2-Dibromo-3-Chloropropane	50.0	57.1		ug/L		114	59 - 141	1	30
1,2-Dibromoethane	50.0	56.6		ug/L		113	77 - 131	1	30
1,2-Dichlorobenzene	50.0	54.6		ug/L		109	80 - 120	1	20
1,2-Dichloroethane	50.0	50.9		ug/L		102	75 - 130	1	20
1,2-Dichloropropane	50.0	51.6		ug/L		103	80 - 123	0	20
1,3-Dichlorobenzene	50.0	53.8		ug/L		108	80 - 120	1	20

TestAmerica Savannah

QC Sample Results

Client: Parsons Corporation
 Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
 SDG: SALF07

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 680-387548/5
Matrix: Water
Analysis Batch: 387548

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dichlorobenzene	50.0	53.6		ug/L		107	80 - 120	2	20
2-Butanone	250	268		ug/L		107	75 - 133	1	30
2-Hexanone	250	266		ug/L		106	70 - 141	0	40
4-Methyl-2-pentanone	250	261		ug/L		104	75 - 135	0	30
Benzene	50.0	52.7		ug/L		105	73 - 131	0	30
Bromodichloromethane	50.0	56.0		ug/L		112	77 - 129	1	20
Bromoform	50.0	64.1		ug/L		128	69 - 135	0	20
Bromomethane	50.0	41.4		ug/L		83	20 - 180	7	40
Carbon disulfide	50.0	49.9		ug/L		100	73 - 127	4	20
Carbon tetrachloride	50.0	60.5		ug/L		121	75 - 130	2	20
Chlorobenzene	50.0	56.1		ug/L		112	80 - 120	1	20
Chloroethane	50.0	41.8		ug/L		84	50 - 151	11	30
Chloroform	50.0	54.7		ug/L		109	79 - 122	1	20
Chloromethane	50.0	42.7		ug/L		85	63 - 126	0	30
cis-1,2-Dichloroethene	50.0	53.5		ug/L		107	80 - 122	1	20
cis-1,3-Dichloropropene	50.0	56.1		ug/L		112	80 - 133	0	20
Cyclohexane	50.0	54.2		ug/L		108	69 - 130	2	30
Dibromochloromethane	50.0	61.5		ug/L		123	71 - 136	0	20
Dichlorodifluoromethane	50.0	52.0		ug/L		104	51 - 140	4	40
Ethylbenzene	50.0	56.1		ug/L		112	80 - 120	1	20
Isopropylbenzene	50.0	58.7		ug/L		117	80 - 120	2	20
Methyl acetate	250	250		ug/L		100	66 - 134	2	30
Methyl tert-butyl ether	50.0	54.0		ug/L		108	74 - 135	0	20
Methylcyclohexane	50.0	56.0		ug/L		112	75 - 127	1	30
Methylene Chloride	50.0	53.7		ug/L		107	76 - 129	2	20
Styrene	50.0	55.9		ug/L		112	80 - 122	1	20
Tetrachloroethene	50.0	61.1		ug/L		122	77 - 123	1	20
Toluene	50.0	54.9		ug/L		110	80 - 122	1	20
trans-1,2-Dichloroethene	50.0	55.9		ug/L		112	78 - 123	2	20
trans-1,3-Dichloropropene	50.0	57.0		ug/L		114	74 - 140	1	20
Trichloroethene	50.0	60.0		ug/L		120	80 - 123	0	20
Trichlorofluoromethane	50.0	49.2		ug/L		98	58 - 145	1	30
Vinyl chloride	50.0	50.5		ug/L		101	68 - 132	8	30
Xylenes, Total	100	112		ug/L		112	80 - 120	2	20

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
Toluene-d8 (Surr)	107		70 - 130
1,2-Dichloroethane-d4 (Surr)	100		70 - 130
Dibromofluoromethane (Surr)	110		70 - 130
4-Bromofluorobenzene (Surr)	97		70 - 130

Lab Sample ID: MB 680-387612/11
Matrix: Water
Analysis Batch: 387612

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.37	ug/L			06/15/15 16:16	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.62	ug/L			06/15/15 16:16	1

TestAmerica Savannah

QC Sample Results

Client: Parsons Corporation
 Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
 SDG: SALF07

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-387612/11
Matrix: Water
Analysis Batch: 387612

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.36	ug/L			06/15/15 16:16	1
1,1,2-Trichloroethane	ND		1.0	0.33	ug/L			06/15/15 16:16	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			06/15/15 16:16	1
1,1-Dichloroethene	ND		1.0	0.36	ug/L			06/15/15 16:16	1
1,2,4-Trichlorobenzene	ND		5.0	2.5	ug/L			06/15/15 16:16	1
1,2-Dibromo-3-Chloropropane	ND		5.0	1.1	ug/L			06/15/15 16:16	1
1,2-Dibromoethane	ND		1.0	0.44	ug/L			06/15/15 16:16	1
1,2-Dichlorobenzene	ND		1.0	0.37	ug/L			06/15/15 16:16	1
1,2-Dichloroethane	ND		1.0	0.50	ug/L			06/15/15 16:16	1
1,2-Dichloropropane	ND		1.0	0.67	ug/L			06/15/15 16:16	1
1,3-Dichlorobenzene	ND		1.0	0.43	ug/L			06/15/15 16:16	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			06/15/15 16:16	1
2-Butanone	ND		10	3.4	ug/L			06/15/15 16:16	1
2-Hexanone	ND		10	2.0	ug/L			06/15/15 16:16	1
4-Methyl-2-pentanone	ND		10	2.1	ug/L			06/15/15 16:16	1
Acetone	ND		10	7.0	ug/L			06/15/15 16:16	1
Benzene	ND		1.0	0.43	ug/L			06/15/15 16:16	1
Bromodichloromethane	ND		1.0	0.44	ug/L			06/15/15 16:16	1
Bromoform	ND		1.0	0.43	ug/L			06/15/15 16:16	1
Bromomethane	ND		5.0	2.5	ug/L			06/15/15 16:16	1
Carbon disulfide	ND		2.0	1.0	ug/L			06/15/15 16:16	1
Carbon tetrachloride	ND		1.0	0.33	ug/L			06/15/15 16:16	1
Chlorobenzene	ND		1.0	0.26	ug/L			06/15/15 16:16	1
Chloroethane	ND		5.0	2.5	ug/L			06/15/15 16:16	1
Chloroform	ND		1.0	0.50	ug/L			06/15/15 16:16	1
Chloromethane	ND		1.0	0.40	ug/L			06/15/15 16:16	1
cis-1,2-Dichloroethene	ND		1.0	0.41	ug/L			06/15/15 16:16	1
cis-1,3-Dichloropropene	ND		1.0	0.40	ug/L			06/15/15 16:16	1
Cyclohexane	ND		1.0	0.39	ug/L			06/15/15 16:16	1
Dibromochloromethane	ND		1.0	0.32	ug/L			06/15/15 16:16	1
Dichlorodifluoromethane	ND		1.0	0.60	ug/L			06/15/15 16:16	1
Ethylbenzene	ND		1.0	0.33	ug/L			06/15/15 16:16	1
Isopropylbenzene	ND		1.0	0.35	ug/L			06/15/15 16:16	1
Methyl acetate	ND		5.0	1.8	ug/L			06/15/15 16:16	1
Methyl tert-butyl ether	ND		10	0.30	ug/L			06/15/15 16:16	1
Methylcyclohexane	ND		1.0	0.43	ug/L			06/15/15 16:16	1
Methylene Chloride	ND		5.0	2.5	ug/L			06/15/15 16:16	1
Styrene	ND		1.0	0.27	ug/L			06/15/15 16:16	1
Tetrachloroethene	ND		1.0	0.74	ug/L			06/15/15 16:16	1
Toluene	ND		1.0	0.48	ug/L			06/15/15 16:16	1
trans-1,2-Dichloroethene	ND		1.0	0.37	ug/L			06/15/15 16:16	1
trans-1,3-Dichloropropene	ND		1.0	0.42	ug/L			06/15/15 16:16	1
Trichloroethene	ND		1.0	0.48	ug/L			06/15/15 16:16	1
Trichlorofluoromethane	ND		1.0	0.42	ug/L			06/15/15 16:16	1
Vinyl chloride	ND		1.0	0.50	ug/L			06/15/15 16:16	1
Xylenes, Total	ND		1.0	0.23	ug/L			06/15/15 16:16	1

QC Sample Results

Client: Parsons Corporation
 Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
 SDG: SALF07

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-387612/11
Matrix: Water
Analysis Batch: 387612

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

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		70 - 130		06/15/15 16:16	1
1,2-Dichloroethane-d4 (Surr)	100		70 - 130		06/15/15 16:16	1
Dibromofluoromethane (Surr)	100		70 - 130		06/15/15 16:16	1
4-Bromofluorobenzene (Surr)	97		70 - 130		06/15/15 16:16	1

Lab Sample ID: LCS 680-387612/4
Matrix: Water
Analysis Batch: 387612

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	50.0	55.8		ug/L		112	74 - 128
1,1,2,2-Tetrachloroethane	50.0	54.8		ug/L		110	72 - 128
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	57.5		ug/L		115	65 - 131
1,1,2-Trichloroethane	50.0	54.0		ug/L		108	79 - 125
1,1-Dichloroethane	50.0	54.6		ug/L		109	80 - 120
1,1-Dichloroethene	50.0	54.5		ug/L		109	74 - 125
1,2,4-Trichlorobenzene	50.0	54.4		ug/L		109	77 - 131
1,2-Dibromo-3-Chloropropane	50.0	47.0		ug/L		94	59 - 141
1,2-Dibromoethane	50.0	53.6		ug/L		107	77 - 131
1,2-Dichlorobenzene	50.0	51.5		ug/L		103	80 - 120
1,2-Dichloroethane	50.0	53.2		ug/L		106	75 - 130
1,2-Dichloropropane	50.0	56.0		ug/L		112	80 - 123
1,3-Dichlorobenzene	50.0	50.7		ug/L		101	80 - 120
1,4-Dichlorobenzene	50.0	50.6		ug/L		101	80 - 120
2-Butanone	250	291		ug/L		116	75 - 133
2-Hexanone	250	292		ug/L		117	70 - 141
4-Methyl-2-pentanone	250	293		ug/L		117	75 - 135
Benzene	50.0	53.7		ug/L		107	73 - 131
Bromodichloromethane	50.0	58.7		ug/L		117	77 - 129
Bromoform	50.0	55.2		ug/L		110	69 - 135
Bromomethane	50.0	51.0		ug/L		102	20 - 180
Carbon disulfide	50.0	54.8		ug/L		110	73 - 127
Carbon tetrachloride	50.0	50.4		ug/L		101	75 - 130
Chlorobenzene	50.0	51.3		ug/L		103	80 - 120
Chloroethane	50.0	58.5		ug/L		117	50 - 151
Chloroform	50.0	54.1		ug/L		108	79 - 122
Chloromethane	50.0	55.8		ug/L		112	63 - 126
cis-1,2-Dichloroethene	50.0	54.9		ug/L		110	80 - 122
cis-1,3-Dichloropropene	50.0	56.4		ug/L		113	80 - 133
Cyclohexane	50.0	57.0		ug/L		114	69 - 130
Dibromochloromethane	50.0	47.6		ug/L		95	71 - 136
Dichlorodifluoromethane	50.0	73.8	*	ug/L		148	51 - 140
Ethylbenzene	50.0	52.5		ug/L		105	80 - 120
Isopropylbenzene	50.0	52.3		ug/L		105	80 - 120
Methyl acetate	250	295		ug/L		118	66 - 134
Methyl tert-butyl ether	50.0	54.3		ug/L		109	74 - 135
Methylcyclohexane	50.0	57.1		ug/L		114	75 - 127

TestAmerica Savannah

QC Sample Results

Client: Parsons Corporation
 Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
 SDG: SALF07

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-387612/4
Matrix: Water
Analysis Batch: 387612

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methylene Chloride	50.0	51.8		ug/L		104	76 - 129
Styrene	50.0	52.6		ug/L		105	80 - 122
Tetrachloroethene	50.0	51.7		ug/L		103	77 - 123
Toluene	50.0	53.4		ug/L		107	80 - 122
trans-1,2-Dichloroethene	50.0	52.7		ug/L		105	78 - 123
trans-1,3-Dichloropropene	50.0	55.2		ug/L		110	74 - 140
Trichloroethene	50.0	52.6		ug/L		105	80 - 123
Trichlorofluoromethane	50.0	63.6		ug/L		127	58 - 145
Vinyl chloride	50.0	58.2		ug/L		116	68 - 132
Xylenes, Total	100	105		ug/L		105	80 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	103		70 - 130
1,2-Dichloroethane-d4 (Surr)	104		70 - 130
Dibromofluoromethane (Surr)	105		70 - 130
4-Bromofluorobenzene (Surr)	99		70 - 130

Lab Sample ID: LCSD 680-387612/5
Matrix: Water
Analysis Batch: 387612

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	50.0	56.7		ug/L		113	74 - 128	2	20
1,1,2,2-Tetrachloroethane	50.0	53.2		ug/L		106	72 - 128	3	20
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	57.5		ug/L		115	65 - 131	0	30
1,1,2-Trichloroethane	50.0	52.6		ug/L		105	79 - 125	3	20
1,1-Dichloroethane	50.0	54.1		ug/L		108	80 - 120	1	20
1,1-Dichloroethene	50.0	55.4		ug/L		111	74 - 125	2	20
1,2,4-Trichlorobenzene	50.0	53.7		ug/L		107	77 - 131	1	20
1,2-Dibromo-3-Chloropropane	50.0	46.4		ug/L		93	59 - 141	1	30
1,2-Dibromoethane	50.0	51.7		ug/L		103	77 - 131	4	30
1,2-Dichlorobenzene	50.0	51.1		ug/L		102	80 - 120	1	20
1,2-Dichloroethane	50.0	51.8		ug/L		104	75 - 130	3	20
1,2-Dichloropropane	50.0	55.2		ug/L		110	80 - 123	1	20
1,3-Dichlorobenzene	50.0	50.6		ug/L		101	80 - 120	0	20
1,4-Dichlorobenzene	50.0	50.0		ug/L		100	80 - 120	1	20
2-Butanone	250	284		ug/L		113	75 - 133	3	30
2-Hexanone	250	286		ug/L		115	70 - 141	2	40
4-Methyl-2-pentanone	250	286		ug/L		114	75 - 135	3	30
Benzene	50.0	53.3		ug/L		107	73 - 131	1	30
Bromodichloromethane	50.0	58.3		ug/L		117	77 - 129	1	20
Bromoform	50.0	55.0		ug/L		110	69 - 135	0	20
Bromomethane	50.0	50.0		ug/L		100	20 - 180	2	40
Carbon disulfide	50.0	55.4		ug/L		111	73 - 127	1	20
Carbon tetrachloride	50.0	52.0		ug/L		104	75 - 130	3	20
Chlorobenzene	50.0	51.1		ug/L		102	80 - 120	0	20
Chloroethane	50.0	59.2		ug/L		118	50 - 151	1	30

TestAmerica Savannah

QC Sample Results

Client: Parsons Corporation
 Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
 SDG: SALF07

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 680-387612/5
Matrix: Water
Analysis Batch: 387612

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloroform	50.0	53.7		ug/L		107	79 - 122	1	20
Chloromethane	50.0	55.9		ug/L		112	63 - 126	0	30
cis-1,2-Dichloroethene	50.0	54.5		ug/L		109	80 - 122	1	20
cis-1,3-Dichloropropene	50.0	55.3		ug/L		111	80 - 133	2	20
Cyclohexane	50.0	57.2		ug/L		114	69 - 130	0	30
Dibromochloromethane	50.0	47.0		ug/L		94	71 - 136	1	20
Dichlorodifluoromethane	50.0	74.1	*	ug/L		148	51 - 140	0	40
Ethylbenzene	50.0	52.1		ug/L		104	80 - 120	1	20
Isopropylbenzene	50.0	52.7		ug/L		105	80 - 120	1	20
Methyl acetate	250	287		ug/L		115	66 - 134	3	30
Methyl tert-butyl ether	50.0	53.0		ug/L		106	74 - 135	3	20
Methylcyclohexane	50.0	57.4		ug/L		115	75 - 127	0	30
Methylene Chloride	50.0	50.7		ug/L		101	76 - 129	2	20
Styrene	50.0	52.7		ug/L		105	80 - 122	0	20
Tetrachloroethene	50.0	52.8		ug/L		106	77 - 123	2	20
Toluene	50.0	53.2		ug/L		106	80 - 122	0	20
trans-1,2-Dichloroethene	50.0	53.6		ug/L		107	78 - 123	2	20
trans-1,3-Dichloropropene	50.0	54.2		ug/L		108	74 - 140	2	20
Trichloroethene	50.0	52.4		ug/L		105	80 - 123	0	20
Trichlorofluoromethane	50.0	62.7		ug/L		125	58 - 145	1	30
Vinyl chloride	50.0	58.5		ug/L		117	68 - 132	1	30
Xylenes, Total	100	105		ug/L		105	80 - 120	0	20

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
Toluene-d8 (Surr)	102		70 - 130
1,2-Dichloroethane-d4 (Surr)	101		70 - 130
Dibromofluoromethane (Surr)	106		70 - 130
4-Bromofluorobenzene (Surr)	99		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 680-386658/2
Matrix: Water
Analysis Batch: 386658

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.40	mg/L			06/09/15 09:07	1

Lab Sample ID: LCS 680-386658/3
Matrix: Water
Analysis Batch: 386658

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	10.0	10.0		mg/L		100	90 - 110

TestAmerica Savannah

QC Sample Results

Client: Parsons Corporation
 Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
 SDG: SALF07

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 680-386658/4
Matrix: Water
Analysis Batch: 386658

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	10.0	10.1		mg/L		101	90 - 110	0	30

Lab Sample ID: 680-113295-9 MS
Matrix: Water
Analysis Batch: 386658

Client Sample ID: ALBW20339
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	0.58	J	10.0	9.40		mg/L		88	80 - 120

Lab Sample ID: 680-113295-9 MSD
Matrix: Water
Analysis Batch: 386658

Client Sample ID: ALBW20339
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	0.58	J	10.0	9.41		mg/L		88	80 - 120	0	30

Lab Sample ID: MB 680-386846/35
Matrix: Water
Analysis Batch: 386846

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.40	mg/L			06/09/15 18:06	1

Lab Sample ID: LCS 680-386846/36
Matrix: Water
Analysis Batch: 386846

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	10.0	9.97		mg/L		100	90 - 110

Lab Sample ID: LCSD 680-386846/37
Matrix: Water
Analysis Batch: 386846

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	10.0	10.0		mg/L		100	90 - 110	1	30

Lab Sample ID: 680-113295-14 MS
Matrix: Water
Analysis Batch: 386846

Client Sample ID: ALBW00123
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	0.46	J	10.0	10.5		mg/L		101	80 - 120

Lab Sample ID: 680-113295-14 MSD
Matrix: Water
Analysis Batch: 386846

Client Sample ID: ALBW00123
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	0.46	J	10.0	10.5		mg/L		101	80 - 120	0	30

TestAmerica Savannah

QC Sample Results

Client: Parsons Corporation
 Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
 SDG: SALF07

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 480-249094/28
Matrix: Water
Analysis Batch: 249094

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0	0.43	mg/L			06/17/15 22:16	1

Lab Sample ID: LCS 480-249094/29
Matrix: Water
Analysis Batch: 249094

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	60.0	65.7		mg/L		109	90 - 110

Lab Sample ID: LCSD 480-249094/30
Matrix: Water
Analysis Batch: 249094

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	60.0	66.1		mg/L		110	90 - 110	1	20

Lab Sample ID: 680-113295-9 MS
Matrix: Water
Analysis Batch: 249094

Client Sample ID: ALBW20339
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	24		20.0	44.2		mg/L		102	54 - 131

Lab Sample ID: 680-113295-9 MSD
Matrix: Water
Analysis Batch: 249094

Client Sample ID: ALBW20339
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	24		20.0	41.6		mg/L		89	54 - 131	6	20

Lab Sample ID: MB 480-250006/3
Matrix: Water
Analysis Batch: 250006

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	0.729	J	1.0	0.43	mg/L			06/24/15 10:43	1

Lab Sample ID: LCS 480-250006/4
Matrix: Water
Analysis Batch: 250006

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	60.0	63.6		mg/L		106	90 - 110

QC Sample Results

Client: Parsons Corporation
 Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
 SDG: SALF07

Method: 9060A - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: LCSD 480-250006/5
Matrix: Water
Analysis Batch: 250006

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	60.0	63.7		mg/L		106	90 - 110	0	20

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QC Association Summary

Client: Parsons Corporation
 Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
 SDG: SALF07

GC/MS VOA

Analysis Batch: 387492

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-113295-1	ALBW20327	Total/NA	Water	8260B	
680-113295-2	ALBW20331	Total/NA	Water	8260B	
680-113295-3	ALBW20332	Total/NA	Water	8260B	
680-113295-4	ALBW20333	Total/NA	Water	8260B	
680-113295-5	ALBW20334	Total/NA	Water	8260B	
680-113295-6	ALBW20336	Total/NA	Water	8260B	
680-113295-7	ALBW20337	Total/NA	Water	8260B	
680-113295-8	ALBW20338	Total/NA	Water	8260B	
680-113295-9	ALBW20339	Total/NA	Water	8260B	
680-113295-9 MS	ALBW20339	Total/NA	Water	8260B	
680-113295-9 MSD	ALBW20339	Total/NA	Water	8260B	
680-113295-12	ALBW20340	Total/NA	Water	8260B	
680-113295-13	ALBW20341	Total/NA	Water	8260B	
680-113295-14	ALBW00123	Total/NA	Water	8260B	
680-113295-15	ALBW00043	Total/NA	Water	8260B	
680-113338-1	ALBW20328	Total/NA	Water	8260B	
680-113338-2	ALBW20329	Total/NA	Water	8260B	
680-113338-3	ALBW20330	Total/NA	Water	8260B	
680-113338-4	ALBW20335	Total/NA	Water	8260B	
LCS 680-387492/5	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-387492/6	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-387492/10	Method Blank	Total/NA	Water	8260B	

Analysis Batch: 387548

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-113295-2 - DL	ALBW20331	Total/NA	Water	8260B	
LCS 680-387548/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-387548/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-387548/9	Method Blank	Total/NA	Water	8260B	

Analysis Batch: 387612

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-113338-5	ALBW00044	Total/NA	Water	8260B	
LCS 680-387612/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-387612/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-387612/11	Method Blank	Total/NA	Water	8260B	

HPLC/IC

Analysis Batch: 386658

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-113295-1	ALBW20327	Total/NA	Water	300.0	
680-113295-2	ALBW20331	Total/NA	Water	300.0	
680-113295-6	ALBW20336	Total/NA	Water	300.0	
680-113295-8	ALBW20338	Total/NA	Water	300.0	
680-113295-9	ALBW20339	Total/NA	Water	300.0	
680-113295-9 MS	ALBW20339	Total/NA	Water	300.0	
680-113295-9 MSD	ALBW20339	Total/NA	Water	300.0	
680-113295-12	ALBW20340	Total/NA	Water	300.0	
LCS 680-386658/3	Lab Control Sample	Total/NA	Water	300.0	

TestAmerica Savannah

QC Association Summary

Client: Parsons Corporation
 Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
 SDG: SALF07

HPLC/IC (Continued)

Analysis Batch: 386658 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 680-386658/4	Lab Control Sample Dup	Total/NA	Water	300.0	
MB 680-386658/2	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 386846

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-113295-7	ALBW20337	Total/NA	Water	300.0	
680-113295-13	ALBW20341	Total/NA	Water	300.0	
680-113295-14	ALBW00123	Total/NA	Water	300.0	
680-113295-14 MS	ALBW00123	Total/NA	Water	300.0	
680-113295-14 MSD	ALBW00123	Total/NA	Water	300.0	
LCS 680-386846/36	Lab Control Sample	Total/NA	Water	300.0	
LCSD 680-386846/37	Lab Control Sample Dup	Total/NA	Water	300.0	
MB 680-386846/35	Method Blank	Total/NA	Water	300.0	

General Chemistry

Analysis Batch: 249094

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-113295-7	ALBW20337	Total/NA	Water	9060A	
680-113295-8	ALBW20338	Total/NA	Water	9060A	
680-113295-9	ALBW20339	Total/NA	Water	9060A	
680-113295-9 MS	ALBW20339	Total/NA	Water	9060A	
680-113295-9 MSD	ALBW20339	Total/NA	Water	9060A	
680-113295-12	ALBW20340	Total/NA	Water	9060A	
680-113295-13	ALBW20341	Total/NA	Water	9060A	
680-113295-14	ALBW00123	Total/NA	Water	9060A	
LCS 480-249094/29	Lab Control Sample	Total/NA	Water	9060A	
LCSD 480-249094/30	Lab Control Sample Dup	Total/NA	Water	9060A	
MB 480-249094/28	Method Blank	Total/NA	Water	9060A	

Analysis Batch: 250006

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-113295-1	ALBW20327	Total/NA	Water	9060A	
680-113295-2	ALBW20331	Total/NA	Water	9060A	
680-113295-6	ALBW20336	Total/NA	Water	9060A	
LCS 480-250006/4	Lab Control Sample	Total/NA	Water	9060A	
LCSD 480-250006/5	Lab Control Sample Dup	Total/NA	Water	9060A	
MB 480-250006/3	Method Blank	Total/NA	Water	9060A	

Lab Chronicle

Client: Parsons Corporation
 Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
 SDG: SALF07

Client Sample ID: ALBW20327

Date Collected: 06/05/15 10:41

Date Received: 06/06/15 10:12

Lab Sample ID: 680-113295-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	387492	06/14/15 13:57	JD1	TAL SAV
		Instrument ID: CMSO2								
Total/NA	Analysis	300.0		1	5 mL	5 mL	386658	06/09/15 13:59	AJO	TAL SAV
		Instrument ID: CICH								
Total/NA	Analysis	9060A		1			250006	06/24/15 12:04	EKB	TAL BUF
		Instrument ID: TOC10303								

Client Sample ID: ALBW20331

Date Collected: 06/05/15 13:08

Date Received: 06/06/15 10:12

Lab Sample ID: 680-113295-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	387492	06/14/15 14:18	JD1	TAL SAV
		Instrument ID: CMSO2								
Total/NA	Analysis	8260B	DL	2	5 mL	5 mL	387548	06/15/15 13:40	JD1	TAL SAV
		Instrument ID: CMSO2								
Total/NA	Analysis	300.0		1	5 mL	5 mL	386658	06/09/15 14:14	AJO	TAL SAV
		Instrument ID: CICH								
Total/NA	Analysis	9060A		1			250006	06/24/15 12:30	EKB	TAL BUF
		Instrument ID: TOC10303								

Client Sample ID: ALBW20332

Date Collected: 06/05/15 11:15

Date Received: 06/06/15 10:12

Lab Sample ID: 680-113295-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	387492	06/14/15 14:39	JD1	TAL SAV
		Instrument ID: CMSO2								

Client Sample ID: ALBW20333

Date Collected: 06/05/15 13:50

Date Received: 06/06/15 10:12

Lab Sample ID: 680-113295-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	387492	06/14/15 15:00	JD1	TAL SAV
		Instrument ID: CMSO2								

Lab Chronicle

Client: Parsons Corporation
 Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
 SDG: SALF07

Client Sample ID: ALBW20334

Lab Sample ID: 680-113295-5

Date Collected: 06/04/15 16:25

Matrix: Water

Date Received: 06/06/15 10:12

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	387492	06/14/15 15:21	JD1	TAL SAV
Instrument ID: CMSO2										

Client Sample ID: ALBW20336

Lab Sample ID: 680-113295-6

Date Collected: 06/04/15 13:06

Matrix: Water

Date Received: 06/06/15 10:12

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	387492	06/14/15 15:42	JD1	TAL SAV
Instrument ID: CMSO2										
Total/NA	Analysis	300.0		1	5 mL	5 mL	386658	06/09/15 14:30	AJO	TAL SAV
Instrument ID: CICH										
Total/NA	Analysis	9060A		1			250006	06/24/15 12:57	EKB	TAL BUF
Instrument ID: TOC10303										

Client Sample ID: ALBW20337

Lab Sample ID: 680-113295-7

Date Collected: 06/04/15 12:25

Matrix: Water

Date Received: 06/06/15 10:12

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	387492	06/14/15 16:04	JD1	TAL SAV
Instrument ID: CMSO2										
Total/NA	Analysis	300.0		25	5 mL	5 mL	386846	06/10/15 01:17	AJO	TAL SAV
Instrument ID: CICH										
Total/NA	Analysis	9060A		1			249094	06/18/15 02:27	NCH	TAL BUF
Instrument ID: TOC10301										

Client Sample ID: ALBW20338

Lab Sample ID: 680-113295-8

Date Collected: 06/03/15 15:40

Matrix: Water

Date Received: 06/06/15 10:12

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	387492	06/14/15 16:25	JD1	TAL SAV
Instrument ID: CMSO2										
Total/NA	Analysis	300.0		1	5 mL	5 mL	386658	06/09/15 15:01	AJO	TAL SAV
Instrument ID: CICH										
Total/NA	Analysis	9060A		1			249094	06/18/15 03:51	NCH	TAL BUF
Instrument ID: TOC10301										

Lab Chronicle

Client: Parsons Corporation
 Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
 SDG: SALF07

Client Sample ID: ALBW20339

Lab Sample ID: 680-113295-9

Date Collected: 06/03/15 14:22

Matrix: Water

Date Received: 06/06/15 10:12

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	387492	06/14/15 16:46	JD1	TAL SAV
		Instrument ID: CMSO2								
Total/NA	Analysis	300.0		1	5 mL	5 mL	386658	06/09/15 13:05	AJO	TAL SAV
		Instrument ID: CICH								
Total/NA	Analysis	9060A		1			249094	06/17/15 23:39	NCH	TAL BUF
		Instrument ID: TOC10301								

Client Sample ID: ALBW20340

Lab Sample ID: 680-113295-12

Date Collected: 06/03/15 14:31

Matrix: Water

Date Received: 06/06/15 10:12

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	387492	06/14/15 17:07	JD1	TAL SAV
		Instrument ID: CMSO2								
Total/NA	Analysis	300.0		1	5 mL	5 mL	386658	06/09/15 15:16	AJO	TAL SAV
		Instrument ID: CICH								
Total/NA	Analysis	9060A		1			249094	06/18/15 04:19	NCH	TAL BUF
		Instrument ID: TOC10301								

Client Sample ID: ALBW20341

Lab Sample ID: 680-113295-13

Date Collected: 06/03/15 12:40

Matrix: Water

Date Received: 06/06/15 10:12

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	387492	06/14/15 17:28	JD1	TAL SAV
		Instrument ID: CMSO2								
Total/NA	Analysis	300.0		4	5 mL	5 mL	386846	06/10/15 01:32	AJO	TAL SAV
		Instrument ID: CICH								
Total/NA	Analysis	9060A		1			249094	06/18/15 04:47	NCH	TAL BUF
		Instrument ID: TOC10301								

Client Sample ID: ALBW00123

Lab Sample ID: 680-113295-14

Date Collected: 06/05/15 15:29

Matrix: Water

Date Received: 06/06/15 10:12

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	387492	06/14/15 17:49	JD1	TAL SAV
		Instrument ID: CMSO2								
Total/NA	Analysis	300.0		1	5 mL	5 mL	386846	06/09/15 18:52	AJO	TAL SAV
		Instrument ID: CICH								
Total/NA	Analysis	9060A		1			249094	06/18/15 05:15	NCH	TAL BUF
		Instrument ID: TOC10301								

TestAmerica Savannah

Lab Chronicle

Client: Parsons Corporation
 Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
 SDG: SALF07

Client Sample ID: ALBW00043

Lab Sample ID: 680-113295-15

Date Collected: 06/05/15 16:10

Matrix: Water

Date Received: 06/06/15 10:12

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	387492	06/14/15 18:11	JD1	TAL SAV
Instrument ID: CMSO2										

Client Sample ID: ALBW20328

Lab Sample ID: 680-113338-1

Date Collected: 06/06/15 13:43

Matrix: Water

Date Received: 06/09/15 09:34

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	387492	06/14/15 12:32	JD1	TAL SAV
Instrument ID: CMSO2										

Client Sample ID: ALBW20329

Lab Sample ID: 680-113338-2

Date Collected: 06/06/15 16:00

Matrix: Water

Date Received: 06/09/15 09:34

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	387492	06/14/15 12:53	JD1	TAL SAV
Instrument ID: CMSO2										

Client Sample ID: ALBW20330

Lab Sample ID: 680-113338-3

Date Collected: 06/06/15 13:50

Matrix: Water

Date Received: 06/09/15 09:34

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	387492	06/14/15 13:14	JD1	TAL SAV
Instrument ID: CMSO2										

Client Sample ID: ALBW20335

Lab Sample ID: 680-113338-4

Date Collected: 06/06/15 11:00

Matrix: Water

Date Received: 06/09/15 09:34

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	387492	06/14/15 13:35	JD1	TAL SAV
Instrument ID: CMSO2										

Client Sample ID: ALBW00044

Lab Sample ID: 680-113338-5

Date Collected: 06/06/15 17:46

Matrix: Water

Date Received: 06/09/15 09:34

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	387612	06/15/15 16:38	JD1	TAL SAV
Instrument ID: CMSP2										

TestAmerica Savannah

Lab Chronicle

Client: Parsons Corporation
Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
SDG: SALF07

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600
TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

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TestAmerica Inc.
5102 LaRoche Avenue
Savannah, GA 31404
Ph: 912-354-7858
Fax:
Website: www.testamericainc.com

TestAmerica Inc.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

PROJECT & CLIENT INFORMATION

PROJECT REFERENCE NAME: Ash Landfill Long Term Monitoring
LAB PROJECT MANAGER: Linda Wolfe

PROJECT NO.: 748662-03300
P.O. NUMBER: 748662-03300

CLIENT (SITE) PM: Beth Badik
CLIENT PHONE: 617-449-1565
CLIENT FAX: 617-946-9777

CLIENT NAME: Parsons
CLIENT EMAIL: beth.badik@parsons.com

PROJECT STATE: NY
CONTRACT/QUOTE NO.:

CLIENT ADDRESS: 100 High Street, 4th Floor, Boston, MA 02110
Samplers Signature & Initials

SAMPLED ON		SAMPLE IDENTIFICATION	
DATE	TIME	DATE	TIME
6/5/2015	1041	ALBW20327	
6/5/2015	1308	ALBW20331	
6/5/2015	1115	ALBW20332	
6/5/2015	1350	ALBW20333	
6/4/2015	1625	ALBW20334	
6/4/2015	1306	ALBW20336	
6/4/2015	1225	ALBW20337	
6/3/2015	1540	ALBW20338	
6/3/2015	1422	ALBW20339	
6/3/2015	1422	ALBW20339MS	
6/3/2015	1422	ALBW20339MSD	

RELINQUISHED BY: (SIGNATURE) *[Signature]* DATE: 6/5/15 TIME: 1638
RECEIVED BY: (SIGNATURE) *[Signature]* DATE: TIME:

RECEIVED FOR LABORATORY BY: *[Signature]* DATE: 06/26/15 TIME: 1012
CUSTODY SEAL NO. 8
LABORATORY SEAL NO. 680-113295

REQUIRED ANALYSES

Method 8260B - VOCs
Method 8060A - TOC
EPA 300.1 - sulfate

LABORATORY SAMPLE ID		SAMPLE TYPE	FIELD FILTERED	MATRIX
1	1	8		
3	3	1	N	GW
3	3	1	N	GW
3	3	1	N	GW
3	3	1	N	GW
3	3	1	N	GW
3	3	1	N	GW
3	3	1	N	GW
3	3	1	N	GW
3	3	1	N	GW
3	3	1	N	GW
3	3	1	N	GW

NUMBER OF CONTAINERS SUBMITTED		RELINQUISHED BY: (SIGNATURE)	DATE	TIME
1	8			
3	1			
3	1			
3				
3				
3	1			
3	1			
3	1			
3	1			
3	1			
3	1			
3	1			

Possible Hazards: Unknown
Sample Disposal: Lab Disposal
PAGE 1 OF 2

Final Report Type: ASP2000 Category B
EDD: 15 calendar days
TAT: DATE DUE 15 calendar days
EXPEDITED REPORT (circle one)
EMAIL or FAX
TAT: DATE DUE

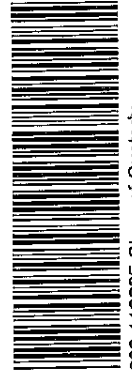
NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

REMARKS

1. Run straight sample analysis (without dilution) for every sample.
2. Use ALBW20339 as QA/QC sample for all analyses.
3. Hold SDG # open, more samples will be shipped morning of Monday 6/8/15 and are to be included in the SDG #.

Preservative
1 HCl
8 Ice

LABORATORY REMARKS: 3.0 (CF) B.S.E



680-113295 Chain of Custody

Original - Return to Laboratory with Sample(s)

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica Inc.

TestAmerica Inc.
5102 LaRoche Avenue
Savannah, GA 31404
Ph: 912-354-7858
Fax:
Website: www.testamericainc.com

STL JOB/LOG #: _____
Possible Hazards: Unknown
Sample Disposal: Lab Disposal

PROJECT & CLIENT INFORMATION

PROJECT NO. 748662-03300
LAB PROJECT NAME Ash Landfill Long Term Monitoring
LAB PROJECT MANAGER Linda Wolfe
CLIENT (SITE) PM Beth Badik
CLIENT NAME Parsons
CLIENT ADDRESS 100 High Street, 4th Floor, Boston, MA 02110
Samplers Signature & Initials: _____

Project State NY
CONTRACT/Quote NO
CLIENT PHONE 617-449-1565
CLIENT FAX 617-946-9777
CLIENT EMAIL beth.badik@parsons.com

LABORATORY SAMPLE ID		SAMPLE TYPE	FIELD FILTERED	MATRIX
Method 826B - VOCs	Method 9060A - TOC	EPA 300.1 - sulfate		

SAMPLED ON DATE	TIME	SAMPLE IDENTIFICATION		FIELD FILTERED	SAMPLE TYPE	MATRIX	NUMBER OF CONTAINERS SUBMITTED								REMARKS	
		DATE	TIME				1	2	3	4	5	6	7	8		
6/3/2015	1431	ALBW20340		N	GW		3	3	1							1. Run straight sample analysis (without dilution) for every sample. 2. Use ALBW20339 as QA/QC sample for all analyses. 3. Hold SDG # open, more samples will be shipped morning of Monday 6/8/15 and are to be included in the SDG #.
6/3/2015	1240	ALBW20341		N	GW		3	3	1							
6/5/2015	1529	ALBW00123		N	W		3	3	1							
6/5/2015	1610	ALBW00043		N	W		3									
																Preservative
																1 HCl
																8 Ice

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
<i>[Signature]</i>	6/5/15	1638			
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
<i>[Signature]</i>					

LABORATORY SEAL NO. 680113295
CUSTODY INTACT YES NO 8
REMARKS: 3.0(CF) 3.5c



ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD		TestAmerica Inc.	
PROJECT & CLIENT INFORMATION PROJECT REFERENCE NAME: Ash Landfill Long Term Monitoring LAB PROJECT MANAGER: Linda Wolfe CLIENT (SITE) PM: Beth Badik CLIENT NAME: Parsons CLIENT ADDRESS: 100 High Street, 4th Floor, Boston, MA 02110 (Samplers Signature & Initials: _____)		Project State: NY PROJECT NO.: 748662-03300 P.O. NUMBER: 748662-03300 CLIENT PHONE: 617-449-1565 CLIENT EMAIL: beth.badik@parsons.com CONTRACT/Quote NO.: _____ CLIENT FAX: 617-946-8777	
TestAmerica Inc. 5102 LaRoche Avenue Savannah, GA 31404 Ph: 912-354-7858 Fax: _____ Website: www.testamericainc.com		Possible Hazards: Unknown Sample Disposal: Lab Disposal Page: 1 of 1	
EPA 300.1 - sulfate Method 9080A - TOC Method 8260B - VOCs		REQUIRED ANALYSES Final Report Type: ASP2000 Category B EDD: 15 calendar days TAT/DATE DUE: 15 calendar days EXPEDITED REPORT (circle one) EMAIL or FAX TAT/DATE DUE NUMBER OF COOLERS SUBMITTED PER SHIPMENT:	
LABORATORY SAMPLE ID FIELD FILTERED SAMPLE TYPE MATRIX		NUMBER OF CONTAINERS SUBMITTED REMARKS 1. Run straight sample analysis (without dilution) for every sample. 2. Use ALBW20339 as QA/QC sample for all analyses.	
SAMPLED ON DATE: 6/6/2015 TIME: 1343 SAMPLE IDENTIFICATION: ALBW20328		1 8 1 HCl	
DATE: 6/6/2015 TIME: 1600 SAMPLE IDENTIFICATION: ALBW20329		1 8 1 HCl	
DATE: 6/6/2015 TIME: 1350 SAMPLE IDENTIFICATION: ALBW20330		1 8 1 HCl	
DATE: 6/6/2015 TIME: 1100 SAMPLE IDENTIFICATION: ALBW20335		1 8 1 HCl	
DATE: 6/6/2015 TIME: 1746 SAMPLE IDENTIFICATION: ALBW00044		1 8 1 HCl	
RELINQUISHED BY (SIGNATURE): [Signature] DATE: 6/8/15 TIME: 726		8 Ice DATE: _____ TIME: _____	
RECEIVED BY (SIGNATURE): [Signature] DATE: _____ TIME: _____		DATE: _____ TIME: _____	
RECEIVED FOR LABORATORY BY (SIGNATURE): [Signature] DATE: 6/9/15 TIME: 09:34		DATE: _____ TIME: _____	
CUSTODY INTACT YES NO YES NO YES NO		LABORATORY SEAL NO.: 680-113338 LABORATORY REMARKS: 4.2/4.7	



Login Sample Receipt Checklist

Client: Parsons Corporation

Job Number: 680-113295-1

SDG Number: SALF07

Login Number: 113295

List Number: 1

Creator: Elliot, William J

List Source: TestAmerica Savannah

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



Login Sample Receipt Checklist

Client: Parsons Corporation

Job Number: 680-113295-1

SDG Number: SALF07

Login Number: 113295

List Number: 2

Creator: Kinecki, Kenneth P

List Source: TestAmerica Buffalo

List Creation: 06/10/15 01:43 PM

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.8 C
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	False	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	

Login Sample Receipt Checklist

Client: Parsons Corporation

Job Number: 680-113295-1

SDG Number: SALF07

Login Number: 113338

List Number: 1

Creator: Kicklighter, Marilyn D

List Source: TestAmerica Savannah

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



Certification Summary

Client: Parsons Corporation
Project/Site: Ash Landfill Long Term Monitoring

TestAmerica Job ID: 680-113295-1
SDG: SALF07

Laboratory: TestAmerica Savannah

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
New York	NELAP	2	10842	03-31-16

Laboratory: TestAmerica Buffalo

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
New York	NELAP	2	10026	03-31-16

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Pace Analytical Energy Services, LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

June 23, 2015

Marilyn Boyd-Goshay
Parsons Government Services Inc
401 Diamond Dr NW
Huntsville, AL 35806-2192

RE: **ASH LANDFILL/ 748662-03300**

Pace Workorder: 15779

Dear Marilyn Boyd-Goshay:

Enclosed are the analytical results for sample(s) received by the laboratory on Monday, June 08, 2015. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Robbin Robl 06/23/2015
rrobl@microseeps.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email info@microseeps.com.

Total Number of Pages 165

Report ID: 15779 - 669547

Page 1 of 23



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LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water and Solid & Hazardous Waste
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water; Solid and Chemical Materials
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water; Solid and Hazardous Waste
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, PAES is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).



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SAMPLE SUMMARY

Workorder: 15779 ASH LANDFILL/ 748662-03300

Lab ID	Sample ID	Matrix	Date Collected	Date Received
157790001	ALBW20327	Water	6/5/2015 10:41	6/8/2015 12:40
157790002	ALBW20331	Water	6/5/2015 13:08	6/8/2015 12:40
157790003	ALBW20336	Water	6/4/2015 13:06	6/8/2015 12:40
157790004	ALBW20337	Water	6/4/2015 12:25	6/8/2015 12:40
157790005	ALBW20338	Water	6/3/2015 15:40	6/8/2015 12:40
157790006	ALBW20339	Water	6/3/2015 14:22	6/8/2015 12:40
157790007	ALBW20339 MS	Water	6/3/2015 14:22	6/8/2015 12:40
157790008	ALBW20339 MSD	Water	6/3/2015 14:22	6/8/2015 12:40
157790009	ALBW20340	Water	6/3/2015 14:31	6/8/2015 12:40
157790010	ALBW20341	Water	6/3/2015 12:40	6/8/2015 12:40
157790011	ALBW00123	Water	6/5/2015 15:29	6/8/2015 12:40



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PROJECT SUMMARY

Workorder: 15779 ASH LANDFILL/ 748662-03300

Batch Comments

Batch: DISG/4629 - RSK175 QC

The relative percent difference between the sample and sample duplicate exceeded laboratory control limits; reference sample 157860002. Analyte Ethane. Both results were below reporting limits.

Batch: DISG/4637 - RSK175 QC

The relative percent difference between the sample and sample duplicate exceeded laboratory control limits; reference sample 157790011. Analyte Methane and Ethene. Both results were below reporting limits.

Batch: DISG/4644 - RSK175 QC

The matrix spike and/or spike duplicate, recovery or relative percent difference; accuracy influenced by the concentration of the reference sample 157790006. Analyte Methane. Batch acceptance based on laboratory control sample recovery.

The relative percent difference between the sample and sample duplicate exceeded laboratory control limits; reference sample 158140002. Analyte iso-Butane and n-Butane.

The relative percent difference between the sample and sample duplicate exceeded laboratory control limits; reference sample 158340002. Analyte Ethane. Both results were below reporting limits.



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ANALYTICAL RESULTS

Workorder: 15779 ASH LANDFILL/ 748662-03300

Lab ID: 157790001 Date Received: 6/8/2015 12:40 Matrix: Water
 Sample ID: ALBW20327 Date Collected: 6/5/2015 10:41

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - MICR								
Analysis Desc: EPA RSK175			Analytical Method: EPA RSK175					
Methane	1600	ug/l	50	4.2	100	6/15/2015 13:45	SL	D1,d
Ethane	1.6	ug/l	0.20	0.0080	1	6/11/2015 16:24	SL	D1
Ethene	1.8	ug/l	0.20	0.030	1	6/11/2015 16:24	SL	



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ANALYTICAL RESULTS

Workorder: 15779 ASH LANDFILL/ 748662-03300

Lab ID: 157790002 Date Received: 6/8/2015 12:40 Matrix: Water
 Sample ID: ALBW20331 Date Collected: 6/5/2015 13:08

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - MICR								
Analysis Desc: EPA RSK175			Analytical Method: EPA RSK175					
Methane	160	ug/l	0.50	0.042	1	6/11/2015 16:35	SL	
Ethane	0.74	ug/l	0.20	0.0080	1	6/11/2015 16:35	SL	D1
Ethene	0.084J	ug/l	0.20	0.030	1	6/11/2015 16:35	SL	



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ANALYTICAL RESULTS

Workorder: 15779 ASH LANDFILL/ 748662-03300

Lab ID: 157790003 Date Received: 6/8/2015 12:40 Matrix: Water
 Sample ID: ALBW20336 Date Collected: 6/4/2015 13:06

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - MICR								
Analysis Desc: EPA RSK175			Analytical Method: EPA RSK175					
Methane	14000	ug/l	50	4.2	100	6/15/2015 14:02	SL	D1,d
Ethane	3.1	ug/l	0.20	0.0080	1	6/11/2015 16:53	SL	D1
Ethene	2.0	ug/l	0.20	0.030	1	6/11/2015 16:53	SL	



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ANALYTICAL RESULTS

Workorder: 15779 ASH LANDFILL/ 748662-03300

Lab ID: 157790004 Date Received: 6/8/2015 12:40 Matrix: Water
 Sample ID: ALBW20337 Date Collected: 6/4/2015 12:25

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - MICR								
Analysis Desc: EPA RSK175			Analytical Method: EPA RSK175					
Methane	83	ug/l	0.50	0.042	1	6/11/2015 17:05	SL	
Ethane	0.43	ug/l	0.20	0.0080	1	6/11/2015 17:05	SL	D1
Ethene	0.13J	ug/l	0.20	0.030	1	6/11/2015 17:05	SL	



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ANALYTICAL RESULTS

Workorder: 15779 ASH LANDFILL/ 748662-03300

Lab ID: 157790005 Date Received: 6/8/2015 12:40 Matrix: Water
 Sample ID: ALBW20338 Date Collected: 6/3/2015 15:40

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - MICR								
Analysis Desc: EPA RSK175			Analytical Method: EPA RSK175					
Methane	16000	ug/l	50	4.2	100	6/15/2015 14:12	SL	D1,d
Ethane	4.0	ug/l	0.20	0.0080	1	6/11/2015 17:15	SL	D1
Ethene	0.56	ug/l	0.20	0.030	1	6/11/2015 17:15	SL	



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ANALYTICAL RESULTS

Workorder: 15779 ASH LANDFILL/ 748662-03300

Lab ID: 157790006 Date Received: 6/8/2015 12:40 Matrix: Water
 Sample ID: ALBW20339 Date Collected: 6/3/2015 14:22

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - MICR								
Analysis Desc: EPA RSK175			Analytical Method: EPA RSK175					
Methane	15000	ug/l	50	4.2	100	6/17/2015 12:01	SL	d,D3,M5
Ethane	1.6	ug/l	0.20	0.0080	1	6/15/2015 15:05	SL	
Ethene	0.20	U ug/l	0.20	0.030	1	6/15/2015 15:05	SL	D1



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ANALYTICAL RESULTS

Workorder: 15779 ASH LANDFILL/ 748662-03300

Lab ID: 157790007 Date Received: 6/8/2015 12:40 Matrix: Water
 Sample ID: ALBW20339 MS Date Collected: 6/3/2015 14:22

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - MICR								
Analysis Desc: EPA RSK175			Analytical Method: EPA RSK175					
Methane	16000	ug/l	50	4.2	100	6/17/2015 17:36	SL	d,D3,M5
Ethane	85	ug/l	0.20	0.0080	1	6/15/2015 14:54	SL	
Ethene	76	ug/l	0.20	0.030	1	6/15/2015 14:54	SL	Df



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ANALYTICAL RESULTS

Workorder: 15779 ASH LANDFILL/ 748662-03300

Lab ID: 157790008 Date Received: 6/8/2015 12:40 Matrix: Water
 Sample ID: ALBW20339 MSD Date Collected: 6/3/2015 14:22

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - MICR								
Analysis Desc: EPA RSK175			Analytical Method: EPA RSK175					
Methane	17000	ug/l	50	4.2	100	6/17/2015 17:52	SL	d,D3,M5
Ethane	79	ug/l	0.20	0.0080	1	6/15/2015 15:19	SL	
Ethene	70	ug/l	0.20	0.030	1	6/15/2015 15:19	SL	D1



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ANALYTICAL RESULTS

Workorder: 15779 ASH LANDFILL/ 748662-03300

Lab ID: 157790009 Date Received: 6/8/2015 12:40 Matrix: Water
 Sample ID: ALBW20340 Date Collected: 6/3/2015 14:31

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - MICR								
Analysis Desc: EPA RSK175			Analytical Method: EPA RSK175					
Methane	14000	ug/l	50	4.2	100	6/15/2015 14:27	SL	D1,d
Ethane	1.5	ug/l	0.20	0.0080	1	6/11/2015 17:28	SL	D1
Ethene	0.20	U ug/l	0.20	0.030	1	6/11/2015 17:28	SL	



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 Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 15779 ASH LANDFILL/ 748662-03300

Lab ID: 157790010 Date Received: 6/8/2015 12:40 Matrix: Water
 Sample ID: ALBW20341 Date Collected: 6/3/2015 12:40

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - MICR								
Analysis Desc: EPA RSK175			Analytical Method: EPA RSK175					
Methane	5400	ug/l	50	4.2	100	6/15/2015 14:41	SL	D1,d
Ethane	8.3	ug/l	0.20	0.0080	1	6/11/2015 17:39	SL	D1
Ethene	27	ug/l	0.20	0.030	1	6/11/2015 17:39	SL	



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 Pittsburgh, PA 15238
 Phone: (412) 826-5245
 Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 15779 ASH LANDFILL/ 748662-03300

Lab ID: 157790011 Date Received: 6/8/2015 12:40 Matrix: Water
 Sample ID: ALBW00123 Date Collected: 6/5/2015 15:29

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - MICR								
Analysis Desc: EPA RSK175			Analytical Method: EPA RSK175					
Methane	0.12J	ug/l	0.50	0.042	1	6/15/2015 15:30	SL	D1
Ethane	0.20 U	ug/l	0.20	0.0080	1	6/15/2015 15:30	SL	
Ethene	0.20 U	ug/l	0.20	0.030	1	6/15/2015 15:30	SL	D1



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ANALYTICAL RESULTS QUALIFIERS

Workorder: 15779 ASH LANDFILL/ 748662-03300

DEFINITIONS/QUALIFIERS

Disclaimer : The Pennsylvania Department of Environmental Protection (PADEP) has decided to no longer recognize analyses that do not produce data for primary compliance, for NELAP accreditation. The methods affected by this decision are AM20GAX, AM21G, SW846 7199 and AM4.02. The laboratory shall continue to administer the NELAP/TNI standard requirements in the performance of these methods.

- MDL Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
- PQL Practical Quantitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
- ND Not detected at or above reporting limit.
- DF Dilution Factor.
- S Surrogate.
- RPD Relative Percent Difference.
- % Rec Percent Recovery.
- U Indicates the compound was analyzed for, but not detected at or above the noted concentration.
- J Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).

- D3 The matrix spike duplicate relative percent difference (RPD) exceeded laboratory control limits.
- d The analyte concentration was determined from a dilution.
- D1 The duplicate relative percent difference (RPD) exceeded laboratory control limits.
- M5 The matrix spike duplicate sample recovery was outside laboratory control limits.



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QUALITY CONTROL DATA

Workorder: 15779 ASH LANDFILL/ 748662-03300

QC Batch: DISG/4629 Analysis Method: EPA RSK175
 QC Batch Method: EPA RSK175
 Associated Lab Samples: 157790001, 157790002, 157790003, 157790004, 157790005, 157790009, 157790010

METHOD BLANK: 35432

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Methane	ug/l	0.50 U	0.50	
Ethane	ug/l	0.20 U	0.20 D1	
Ethene	ug/l	0.20 U	0.20	

LABORATORY CONTROL SAMPLE & LCSD: 35433 35434

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Methane	ug/l	44	43	42	97	95	85-115	2.1	20	
Ethane	ug/l	83	80	79	97	95	85-115	2.1	20	D1
Ethene	ug/l	78	76	75	98	97	85-115	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 35435 35436 Original: 157270004

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK											
Methane	ug/l	0.13	44	41	41	92	93	70-130	1.1	20	
Ethane	ug/l	0.0041	83	76	76	92	92	70-130	0	20	D1
Ethene	ug/l	0.0074	78	72	72	92	92	70-130	0	20	

SAMPLE DUPLICATE: 35438 Original: 157790004

Parameter	Units	Original Result	DUP Result	RPD	Max RPD	Qualifiers
RISK						
Methane	ug/l	83	86	3.7	20	
Ethane	ug/l	0.43	0.45	5.7	20	D1
Ethene	ug/l	0.13	0.12J	12	20	



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QUALITY CONTROL DATA

Workorder: 15779 ASH LANDFILL/ 748662-03300

SAMPLE DUPLICATE: 35439

Original: 157860002

Parameter	Units	Original Result	DUP Result	RPD	Max RPD	Qualifiers
RISK						
Methane	ug/l	0.09	0.086J	4	20	
Ethane	ug/l	0.005	0.20 U	35	20	D1
Ethene	ug/l	0.036	0.035J	3.7	20	



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QUALITY CONTROL DATA

Workorder: 15779 ASH LANDFILL/ 748662-03300

QC Batch: DISG/4637 Analysis Method: EPA RSK175
 QC Batch Method: EPA RSK175
 Associated Lab Samples: 157790001, 157790003, 157790005, 157790006, 157790007, 157790008, 157790009, 157790010, 157790011

METHOD BLANK: 35508

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Methane	ug/l	0.50 U	0.50	D1
Ethane	ug/l	0.20 U	0.20	
Ethene	ug/l	0.20 U	0.20	D1

LABORATORY CONTROL SAMPLE & LCSD: 35509 35510

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Methane	ug/l	44	45	45	100	101	85-115	1	20	D1
Ethane	ug/l	83	82	82	99	98	85-115	1	20	
Ethene	ug/l	78	78	78	101	100	85-115	1	20	D1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 35511 35512 Original: 157790006

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK											
Ethane	ug/l	1.6	83	85	79	100	93	70-130	7.3	20	
Ethene	ug/l	0	78	76	70	99	91	70-130	8.4	20	D1

SAMPLE DUPLICATE: 35513 Original: 157790011

Parameter	Units	Original Result	DUP Result	RPD	Max RPD	Qualifiers
RISK						
Methane	ug/l	0.12	0.080J	38	20	D1
Ethane	ug/l	0	0.20 U	0	20	
Ethene	ug/l	0.01	0.20 U	68	20	D1



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QUALITY CONTROL DATA

Workorder: 15779 ASH LANDFILL/ 748662-03300

SAMPLE DUPLICATE: 35514

Original: 157920002

Parameter	Units	Original Result	DUP Result	RPD	Max RPD	Qualifiers
RISK						
Methane	ug/l	5.9	6.4	9.6	20	D1
Ethane	ug/l	6.8	7.5	9.2	20	
Ethene	ug/l	0.89	0.99	11	20	D1



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QUALITY CONTROL DATA

Workorder: 15779 ASH LANDFILL/ 748662-03300

QC Batch: DISG/4644 Analysis Method: EPA RSK175
 QC Batch Method: EPA RSK175
 Associated Lab Samples: 157790006, 157790007, 157790008

METHOD BLANK: 35564

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK Methane	ug/l	0.50 U	0.50	D3,M5

LABORATORY CONTROL SAMPLE & LCSD: 35565 35566

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK Methane	ug/l	44	43	43	98	97	85-115	1	20	M5,D3

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 35511 35512 Original: 157790006

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK Methane	ug/l	15000	890	16000	17000	81	176	70-130	74	20	d,D3,M5

SAMPLE DUPLICATE: 35567 Original: 158140002

Parameter	Units	Original Result	DUP Result	RPD	Max RPD	Qualifiers
RISK Methane	ug/l	17	19	11	20	D3,M5

SAMPLE DUPLICATE: 35568 Original: 158340002

Parameter	Units	Original Result	DUP Result	RPD	Max RPD	Qualifiers
RISK Methane	ug/l	1.1	1.1	4.2	20	D3,M5



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QUALITY CONTROL DATA QUALIFIERS

Workorder: 15779 ASH LANDFILL/ 748662-03300

QUALITY CONTROL PARAMETER QUALIFIERS

- D1 The duplicate relative percent difference (RPD) exceeded laboratory control limits.
- D3 The matrix spike duplicate relative percent difference (RPD) exceeded laboratory control limits.
- M5 The matrix spike duplicate sample recovery was outside laboratory control limits.
- d The analyte concentration was determined from a dilution.



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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 15779 ASH LANDFILL/ 748662-03300

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
157790001	ALBW20327			EPA RSK175	DISG/4629
157790002	ALBW20331			EPA RSK175	DISG/4629
157790003	ALBW20336			EPA RSK175	DISG/4629
157790004	ALBW20337			EPA RSK175	DISG/4629
157790005	ALBW20338			EPA RSK175	DISG/4629
157790009	ALBW20340			EPA RSK175	DISG/4629
157790010	ALBW20341			EPA RSK175	DISG/4629
157790001	ALBW20327			EPA RSK175	DISG/4637
157790003	ALBW20336			EPA RSK175	DISG/4637
157790005	ALBW20338			EPA RSK175	DISG/4637
157790006	ALBW20339			EPA RSK175	DISG/4637
157790007	ALBW20339 MS			EPA RSK175	DISG/4637
157790008	ALBW20339 MSD			EPA RSK175	DISG/4637
157790009	ALBW20340			EPA RSK175	DISG/4637
157790010	ALBW20341			EPA RSK175	DISG/4637
157790011	ALBW00123			EPA RSK175	DISG/4637
157790006	ALBW20339			EPA RSK175	DISG/4644
157790007	ALBW20339 MS			EPA RSK175	DISG/4644
157790008	ALBW20339 MSD			EPA RSK175	DISG/4644



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Chain of Custody Documents

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

15779

PROJECT & CLIENT INFORMATION		Project State	Microseeps, Inc 220 William Pitt Way Pittsburgh, PA 15238 Phone 412 826 5245 Fax 412 826 3433 www.microseeps.com
PROJECT REFERENCE NAME Ash Landfill Long Term Monitoring	PROJECT NO. 748682-03300	NY	JOB/LOG #:
LAB PROJECT MANAGER Robbin Robl	P.O. NUMBER 748682-03300	CONTRACT/Quote NO.	Possible Hazards: Unknown
CLIENT (SITE) PM Beth Badik	CLIENT PHONE 617-449-1565	CLIENT FAX 617-948-9777	Sample Disposal: Lab Disposal
CLIENT NAME Parsons	CLIENT EMAIL beth.badik@parsons.com		Page 1 of 2
CLIENT ADDRESS 100 High Street, 4th Floor, Boston, MA 02110			Final Report Type (Circle at least one): ASP2000 Category B EPO Project-Specified
Samplers Signature & Initials:			Per CAP/Quote EXPEDITED REPORT (circle one) FAX EMAIL POST Other TAT/ DATE DUE or Per CAP/Project

SAMPLED ON DATE	TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	REQUIRED ANALYSES		REMARKS
							NUMBER OF CONTAINERS SUBMITTED	NUMBER OF COOLERS SUBMITTED PER SHIPMENT:	
6/5/2015	1041	ALBW20327	SA	N	GW	3	1		1. Run straight sample analysis (without dilution) for every sample. 2. Use ALBW20339 as QA/QC sample for MEE analysis.
6/5/2015	1308	ALBW20331	SA	N	GW	3			
6/4/2015	1306	ALBW20336	SA	N	GW	3			
6/4/2015	1225	ALBW20337	SA	N	GW	3			
6/3/2015	1540	ALBW20338	SA	N	GW	3			
6/3/2015	1422	ALBW20339	SA	N	GW	3			Preservative
6/3/2015	1422	ALBW20339MS	SA	N	GW	3			
6/3/2015	1422	ALBW20339MSD	SA	N	GW	3			1 trisodium phosphate
6/3/2015	1431	ALBW20340	SA	N	GW	3			
RELINQUISHED BY: (SIGNATURE)		DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME			
RECEIVED BY: (SIGNATURE)		DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME			

RECEIVED FOR LABORATORY BY: (SIGNATURE) DATE TIME CUSTODY INTACT YES NO

LABORATORY USE ONLY

LABORATORY SEAL NO. LABORATORY REMARKS:

4-80C

15779

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

PROJECT & CLIENT INFORMATION

PROJECT REFERENCE NAME: Ash Landfill Long Term Monitoring
 PROJECT NO.: 748662-03300
 LAB PROJECT MANAGER: Robbin Robi
 P.C. NUMBER: 748662-03300
 CONTRACT/QUOTE NO.:
 CLIENT (SITE) PM: Beth Badik
 CLIENT PHONE: 617-449-1565
 CLIENT FAX: 617-946-9777
 CLIENT NAME: Parsons
 CLIENT EMAIL: beth.badik@parsons.com
 CLIENT ADDRESS: 100 High Street, 4th Floor, Boston, MA 02110
 Samplers Signature & Initials:

Microseeps, Inc
 220 William Pitt Way
 Pittsburgh, PA 15238
 Phone 412 826 5245
 Fax 412 826 3433
 www.microseeps.com

JOB/LOG #: Possible
 Hazards: Unknown
 Sample Disposal: Lab Disposal
 PAGE 2 OF 2

SAMPLED ON DATE	TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	REQUIRED ANALYSES	REMARKS
6/3/2015	1240	ALBW20341	SA	RSK-175 - MEE	1. Run straight sample analysis (without dilution) for every sample. 2. Use ALBW20339 as QA/QC sample for MEE analysis.
6/5/2015	1529	ALBW00123	RB		Preservative 1 trisodium phosphate

DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)
			6/5/15	1644	
			6.8.14	0830	

RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

RECEIVED FOR LABORATORY BY: (SIGNATURE) DATE TIME CUSTODY INTACT YES NO

LABORATORY USE ONLY: CUSTODY SEAL NO. LABORATORY REMARKS: 4.8°C

Cooler Receipt Form

Client Name: Parson Project: Ash Landfill Lab Work Order: 15779

A. Shipping/Container Information (circle appropriate response)

Courier: (FedEx) UPS USPS Client Other: _____ Air bill Present: (Yes) No
 Tracking Number: 8758 0324 7869
 Custody Seal on Cooler/Box Present: (Yes) No Seals Intact: (Yes) No
 Cooler/Box Packing Material: Bubble Wrap Absorbent Foam Other: _____
 Type of Ice: (Wet) Blue None Ice Intact: (Yes) (Melted) 1/2 melted
 Cooler Temperature: 4.8°C Radiation Screened: Yes (No) Chain of Custody Present: (Yes) No
 Comments: _____

B. Laboratory Assignment/Log-in (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformance
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC		✓		
Containers intact	✓			
Were samples in separate bags	✓			
Sample container labels match COC	✓			
Sample name/date and time collected	✓			
Sufficient volume provided	✓			
PAES containers used	✓			
Are containers properly preserved for the requested testing? (as labeled)	✓			
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	

Comments: _____

Cooler contents examined/received by: LY Date: 6-8-15

Project Manager Review: RR Date: 6/9/15

Sample Tracking Record

Client Name:

Parsons Boston MA

Page 1 of 1

Client Project Number:

Ashe Landfill

Bottle Type Circle or Highlight (Sample Receiving Only)	VOA	VFA	TTC	Hydrogen
	G. Chem.	LI/VFA	Soils	
	TOC/DOC	Cations	Diss. Gas	
	Sulfide	Anions	Vapor	

Sample Receiving only to mark above dotted line

Sample Numbers	Removed from Storage			Bottle Type	Returned or Placed in Storage		
	By	Date	Time		By	Date	Time
15779/1-11	MM	06115	0900	Seaboard	CS	6.8.15	0830
15779/1-59,10	MM	06155	0900	Diss Gas	MM	06115	1800
15779/6-4,13,59,10,11	MM	06155	0900	Diss Gas	MM	06155	1800
15779/6-8	MM	06175	0900	Diss Gas	MM	06175	1800

Enter Bottle Type From List Above In Proper Column

Light Hydrocarbon Data

Sequence: WATER060915SEL
 Operator: slyon

Page 1 of 10
 Printed: 6/22/2015 10:13:18 AM

Title: WATER060915SEL
 Datasource: BIOREM13_local
 Location: DissolvedGasesRSK175
 Timebase: BIOREM13
 #Samples: 259

Created: 6/8/2015 2:51:32 PM by slyon
 Last Update: 6/22/2015 9:57:05 AM by slyon

No.	Name	Type	Program	Method	Status	Inj. Date/Time	Dil. Factor	Comment
1	Insturment Blank	Unknown	LHC081711	LHC060915	Finished	6/9/2015 9:33:44 AM	1.0000	
2	Insturment Blank	Unknown	LHC081711	LHC060915	Finished	6/9/2015 9:52:08 AM	1.0000	
3	ICAL LHC L7	Standard	LHC081711	LHC060915	Finished	6/9/2015 11:04:10 AM	1.0000	
4	ICAL LHC L6	Standard	LHC081711	LHC060915	Finished	6/9/2015 11:19:03 AM	1.0000	
5	ICAL LHC L5	Standard	LHC081711	LHC060915	Finished	6/9/2015 11:29:54 AM	1.0000	
6	ICAL LHC L4	Standard	LHC081711	LHC060915	Finished	6/9/2015 11:43:29 AM	1.0000	
7	ICAL LHC L3	Standard	LHC081711	LHC060915	Finished	6/9/2015 11:57:56 AM	1.0000	
8	ICAL LHC L2	Standard	LHC081711	LHC060915	Finished	6/9/2015 12:08:47 PM	1.0000	
9	ICAL LHC L1	Standard	LHC081711	LHC060915	Finished	6/9/2015 12:31:45 PM	1.0000	
10	ICV/CCV 060915	Unknown	LHC081711	LHC060915	Finished	6/9/2015 1:00:03 PM	1.0000	RA-13-03
11	ICB/CCB 060915	Unknown	LHC081711	LHC060915	Finished	6/9/2015 1:10:20 PM	1.0000	
12	35394-MB	Unknown	LHC081711	LHC060915	Finished	6/9/2015 2:09:20 PM	1.0000	
13	35395-LCS	Unknown	LHC081711	LHC060915	Finished	6/9/2015 3:04:28 PM	1.0000	RA-11-09 5X
14	35396-LCSD	Unknown	LHC081711	LHC060915	Finished	6/9/2015 3:32:58 PM	1.0000	RA-11-09 5X
15	156700001-2 5X DIL	Unknown	LHC081711	LHC060915	Finished	6/9/2015 4:18:50 PM	1.0000	
16	157230001-1	Unknown	LHC081711	LHC060915	Finished	6/9/2015 4:29:24 PM	1.0000	
17	157230002-1	Unknown	LHC081711	LHC060915	Finished	6/9/2015 4:39:46 PM	1.0000	
18	157230003-1	Unknown	LHC081711	LHC060915	Finished	6/9/2015 5:02:11 PM	1.0000	
19	157230004-1	Unknown	LHC081711	LHC060915	Finished	6/9/2015 5:20:03 PM	1.0000	
20	157770001-1	Unknown	LHC081711	LHC060915	Finished	6/9/2015 5:37:36 PM	1.0000	
21	157900001-1	Unknown	LHC081711	LHC060915	Finished	6/9/2015 5:48:47 PM	1.0000	
22	157230002-2 re check	Unknown	LHC081711	LHC060915	Finished	6/9/2015 6:07:25 PM	1.0000	
23	157230003-2 DUP	Unknown	LHC081711	LHC060915	Finished	6/9/2015 6:22:34 PM	1.0000	
24	35397-157230004-2 DUP	Unknown	LHC081711	LHC060915	Finished	6/9/2015 6:39:20 PM	1.0000	
25	CCV2 FID 060915	Unknown	LHC081711	LHC060915	Finished	6/9/2015 6:58:51 PM	1.0000	
26	CCB2 060915	Unknown	LHC081711	LHC060915	Finished	6/9/2015 7:14:25 PM	1.0000	
27	Insturment Blank	Unknown	LHC081711	LHC060915	Finished	6/10/2015 9:48:21 AM	1.0000	

Created: 6/8/2015 2:51:32 PM by slyon
 Last Update: 6/22/2015 9:57:05 AM by slyon

No. Name	Type	Program	Method	Status	Inj. Date/Time	Dil. Factor	Comment
28 CCV 061015	Unknown	LHCV081711	LHC060915	Finished	6/10/2015 9:59:26 AM	1.0000	RA-13-03 DIL 2X
29 CCB 061015	Unknown	LHCV081711	LHC060915	Finished	6/10/2015 10:09:38 AM	1.0000	
30 35414-LCS	Unknown	LHCV081711	LHC060915	Finished	6/10/2015 11:04:47 AM	1.0000	RA-11-09 5X
31 35415-LCSD	Unknown	LHCV081711	LHC060915	Finished	6/10/2015 11:15:11 AM	1.0000	RA-11-09 5X
32 35413-MB	Unknown	LHCV081711	LHC060915	Finished	6/10/2015 11:44:56 AM	1.0000	
33 157240001	Unknown	LHCV081711	LHC060915	Finished	6/10/2015 12:16:58 PM	1.0000	
34 157240002	Unknown	LHCV081711	LHC060915	Finished	6/10/2015 12:47:10 PM	1.0000	
35 157240003	Unknown	LHCV081711	LHC060915	Finished	6/10/2015 12:58:05 PM	1.0000	
36 157240004	Unknown	LHCV081711	LHC060915	Finished	6/10/2015 1:23:28 PM	1.0000	
37 35416-DUP	Unknown	LHCV081711	LHC060915	Finished	6/10/2015 1:37:13 PM	1.0000	
38 157240001	Unknown	LHCV081711	LHC060915	Finished	6/10/2015 1:51:54 PM	1.0000	DIL 100X
39 CCV2 FID 061015	Unknown	LHCV081711	LHC060915	Finished	6/10/2015 2:02:18 PM	1.0000	RA-13-03 DIL 5X
40 CCB2 061015	Unknown	LHCV081711	LHC060915	Finished	6/10/2015 2:12:30 PM	1.0000	
41 Instrument Blank	Unknown	LHCV081711	LHC060915	Finished	6/11/2015 9:29:16 AM	1.0000	
42 CCV FID 061115	Unknown	LHCV081711	LHC060915	Finished	6/11/2015 10:39:42 AM	1.0000	RA-13-03 2X
43 CCB 061115	Unknown	LHCV081711	LHC060915	Finished	6/11/2015 10:53:04 AM	1.0000	
44 35432-MB	Unknown	LHCV081711	LHC060915	Finished	6/11/2015 11:08:23 AM	1.0000	
45 35433-LCS	Unknown	LHCV081711	LHC060915	Finished	6/11/2015 11:19:30 AM	1.0000	RA-11-09 5X
46 35434-LCSD	Unknown	LHCV081711	LHC060915	Finished	6/11/2015 11:31:59 AM	1.0000	RA-11-09 5X
47 157110002-1	Unknown	LHCV081711	LHC060915	Finished	6/11/2015 12:24:21 PM	1.0000	
48 157270002-1	Unknown	LHCV081711	LHC060915	Finished	6/11/2015 12:36:26 PM	1.0000	
49 157270004-1 ORIG	Unknown	LHCV081711	LHC060915	Finished	6/11/2015 12:48:26 PM	1.0000	
50 35435-157270005-1 MS	Unknown	LHCV081711	LHC060915	Finished	6/11/2015 1:06:40 PM	1.0000	
51 35436-157270006-1 MSD	Unknown	LHCV081711	LHC060915	Finished	6/11/2015 1:18:16 PM	1.0000	
52 157480002-1	Unknown	LHCV081711	LHC060915	Finished	6/11/2015 1:31:04 PM	1.0000	
53 157480004-1	Unknown	LHCV081711	LHC060915	Finished	6/11/2015 1:41:33 PM	1.0000	
54 157850002-1	Unknown	LHCV081711	LHC060915	Finished	6/11/2015 1:53:38 PM	1.0000	

Created: 6/8/2015 2:51:32 PM by slyon
 Last Update: 6/22/2015 9:57:05 AM by slyon

No. Name	Type	Program	Method	Status	Inj. Date/Time	Dil. Factor	Comment
55 157860002-1	Unknown	LHC081711	LHC060915	Finished	6/11/2015 2:06:04	1.0000	
56 157860005-1	Unknown	LHC081711	LHC060915	Finished	6/11/2015 2:23:07	1.0000	
57 157480004-2 DU	Unknown	LHC081711	LHC060915	Finished	6/11/2015 2:33:44	1.0000	
58 35439-157860002-2 DU	Unknown	LHC081711	LHC060915	Finished	6/11/2015 2:44:44	1.0000	
59 CCV2 FID 061115	Unknown	LHC081711	LHC060915	Finished	6/11/2015 3:10:10	1.0000	RA-13-03 5X
60 CCB2 061115	Unknown	LHC081711	LHC060915	Finished	6/11/2015 3:21:37	1.0000	
61 157860008-1	Unknown	LHC081711	LHC060915	Finished	6/11/2015 3:35:30	1.0000	
62 157680002-1	Unknown	LHC081711	LHC060915	Finished	6/11/2015 3:49:31	1.0000	
63 157680004-1	Unknown	LHC081711	LHC060915	Finished	6/11/2015 4:05:31	1.0000	
64 157790001-1	Unknown	LHC081711	LHC060915	Finished	6/11/2015 4:24:11	1.0000	
65 157790002-1	Unknown	LHC081711	LHC060915	Finished	6/11/2015 4:35:20	1.0000	
66 157790003-1	Unknown	LHC081711	LHC060915	Finished	6/11/2015 4:53:11	1.0000	
67 157790004-1	Unknown	LHC081711	LHC060915	Finished	6/11/2015 5:05:23	1.0000	
68 157790005-1	Unknown	LHC081711	LHC060915	Finished	6/11/2015 5:15:35	1.0000	
69 157790009-1	Unknown	LHC081711	LHC060915	Finished	6/11/2015 5:28:24	1.0000	
70 157790010-1	Unknown	LHC081711	LHC060915	Finished	6/11/2015 5:39:54	1.0000	
71 35438-157790004-2 DU	Unknown	LHC081711	LHC060915	Finished	6/11/2015 5:50:45	1.0000	
72 CCV3 FID 061115	Unknown	LHC081711	LHC060915	Finished	6/11/2015 6:03:42	1.0000	RA-13-03 2X
73 CCB3 061115	Unknown	LHC081711	LHC060915	Finished	6/11/2015 6:13:50	1.0000	
74 Instrument Blank	Unknown	LHC081711	LHC060915	Finished	6/15/2015 11:03:38	1.0000	
75 CCV FID 061515	Unknown	LHC081711	LHC060915	Finished	6/15/2015 11:20:59	1.0000	RA-13-03 2X
76 CCB 061515	Unknown	LHC081711	LHC060915	Finished	6/15/2015 11:31:05	1.0000	
77 35508-MB	Unknown	LHC081711	LHC060915	Finished	6/15/2015 11:41:26	1.0000	
78 35509-LCS	Unknown	LHC081711	LHC060915	Finished	6/15/2015 12:56:37	1.0000	RA-11-09 5X
79 35510-LCSD	Unknown	LHC081711	LHC060915	Finished	6/15/2015 1:12:34	1.0000	RA-11-09 5X
80 157790001-2 100X DIL	Unknown	LHC081711	LHC060915	Finished	6/15/2015 1:45:41	1.0000	
81 157790003-2 100X DIL	Unknown	LHC081711	LHC060915	Finished	6/15/2015 2:02:16	1.0000	

Title: WATER060915SEL
 Location: BIOREM13_local
 Timebase: DissolvedGasesRSK175
 #Samples: 259
 Created: 6/8/2015 2:51:32 PM by slyon
 Last Update: 6/22/2015 9:57:05 AM by slyon

No. Name	Type	Program	Method	Status	Inj. Date/Time	Dil. Factor	Comment
82	157790005-2 100X DIL	LHC060915	LHC060915	Finished	6/15/2015 2:12:41	1.0000	
83	157790009-2 100X DIL	LHC060915	LHC060915	Finished	6/15/2015 2:27:24	1.0000	
84	157790010-2 100X DIL	LHC060915	LHC060915	Finished	6/15/2015 2:41:02	1.0000	
85	35511-155790007-1 MS	LHC060915	LHC060915	Finished	6/15/2015 2:54:51	1.0000	
86	157790006-1 ORIG	LHC060915	LHC060915	Finished	6/15/2015 3:05:56	1.0000	
87	35512-157790008-1 MS	LHC060915	LHC060915	Finished	6/15/2015 3:19:01	1.0000	
88	157790011-1	LHC060915	LHC060915	Finished	6/15/2015 3:30:21	1.0000	
89	157930001-1	LHC060915	LHC060915	Finished	6/15/2015 3:43:45	1.0000	
90	35513-157790011-2 DU	LHC060915	LHC060915	Finished	6/15/2015 3:56:38	1.0000	RA-13-03 5X
91	CCV2 FID 061515	LHC060915	LHC060915	Finished	6/15/2015 4:10:42	1.0000	
92	CCB2 061515	LHC060915	LHC060915	Finished	6/15/2015 4:21:03	1.0000	
93	157920002-1	LHC060915	LHC060915	Finished	6/15/2015 4:34:58	1.0000	
94	158160002-1	LHC060915	LHC060915	Finished	6/15/2015 4:46:46	1.0000	
95	158170001-1	LHC060915	LHC060915	Finished	6/15/2015 5:09:43	1.0000	
96	158170002-1	LHC060915	LHC060915	Finished	6/15/2015 5:20:12	1.0000	
97	158170003-1	LHC060915	LHC060915	Finished	6/15/2015 5:37:27	1.0000	
98	35514-157920002-2 DU	LHC060915	LHC060915	Finished	6/15/2015 5:47:56	1.0000	
99	Instrument Blank	LHC060915	LHC060915	Finished	6/15/2015 6:04:43	1.0000	
100	CCV3 FID 061515	LHC060915	LHC060915	Finished	6/15/2015 6:16:06	1.0000	RA-13-03 2X
101	CCB 061515	LHC060915	LHC060915	Finished	6/15/2015 6:28:04	1.0000	
102	Instrument Blank	LHC060915	LHC060915	Finished	6/17/2015 10:03:12	1.0000	
103	CCV FID 061715	LHC060915	LHC060915	Finished	6/17/2015 10:15:02	1.0000	RA-13-03 2X
104	CCB 061715	LHC060915	LHC060915	Finished	6/17/2015 10:25:09	1.0000	
105	35564-MB	LHC060915	LHC060915	Finished	6/17/2015 10:43:28	1.0000	
106	35565-LCS	LHC060915	LHC060915	Finished	6/17/2015 10:58:10	1.0000	RA-11-09 5X
107	35566-LCSD	LHC060915	LHC060915	Finished	6/17/2015 11:21:07	1.0000	RA-11-09 5X
108	157790006-2 ORIG 100	LHC060915	LHC060915	Finished	6/17/2015 12:01:09	1.0000	

Title: WATER060915SEL
 Datasource: BIOREM13_local
 Location: DissolvedGasesRSK175
 Timebase: BIOREM13
 #Samples: 259
 Created: 6/8/2015 2:51:32 PM by slyon
 Last Update: 6/22/2015 9:57:05 AM by slyon

No. Name	Type	Program	Method	Status	Inj. Date/Time	Dil. Factor	Comment
109	157790007-2 MS 100X	LHCV081711	LHC060915	Finished	6/17/2015 12:11:35	1.0000	
110	157790008-2 MSD 100X	LHCV081711	LHC060915	Finished	6/17/2015 12:21:54	1.0000	
111	157930001-2 100X DIL	LHCV081711	LHC060915	Finished	6/17/2015 12:35:42	1.0000	
112	158170002-2 100X DIL	LHCV081711	LHC060915	Finished	6/17/2015 12:45:56	1.0000	
113	158140002-1	LHCV081711	LHC060915	Finished	6/17/2015 12:56:20	1.0000	
114	158140004-1	LHCV081711	LHC060915	Finished	6/17/2015 1:06:38	1.0000	
115	158260002-1	LHCV081711	LHC060915	Finished	6/17/2015 1:27:23	1.0000	
116	Instrument Blank	LHCV081711	LHC060915	Finished	6/17/2015 1:49:28	1.0000	
117	158340001-1	LHCV081711	LHC060915	Finished	6/17/2015 1:59:54	1.0000	
118	158340002-1	LHCV081711	LHC060915	Finished	6/17/2015 2:10:17	1.0000	
119	35567-158140002-2 DU	LHCV081711	LHC060915	Finished	6/17/2015 2:23:11	1.0000	
120	35568-158340002-2 DU	LHCV081711	LHC060915	Finished	6/17/2015 2:33:29	1.0000	
121	CCV2 FID 061715	LHCV081711	LHC060915	Finished	6/17/2015 2:46:23	1.0000	RA-13-03 5X
122	CCB2 061715	LHCV081711	LHC060915	Finished	6/17/2015 2:56:32	1.0000	
123	158340003-1	LHCV081711	LHC060915	Finished	6/17/2015 3:06:54	1.0000	
124	158340004-1	LHCV081711	LHC060915	Finished	6/17/2015 3:20:30	1.0000	
125	158660001-1	LHCV081711	LHC060915	Finished	6/17/2015 3:30:49	1.0000	
126	158660002-1	LHCV081711	LHC060915	Finished	6/17/2015 3:41:11	1.0000	
127	158660003-1	LHCV081711	LHC060915	Finished	6/17/2015 3:54:35	1.0000	
128	158660004-1	LHCV081711	LHC060915	Finished	6/17/2015 4:07:04	1.0000	
129	158660005-1	LHCV081711	LHC060915	Finished	6/17/2015 4:18:10	1.0000	
130	158660006-1	LHCV081711	LHC060915	Finished	6/17/2015 4:32:28	1.0000	
131	158660007-1	LHCV081711	LHC060915	Finished	6/17/2015 4:43:14	1.0000	
132	158660008-1	LHCV081711	LHC060915	Finished	6/17/2015 5:01:56	1.0000	
133	35511-157790007-2 MS	LHCV081711	LHC060915	Finished	6/17/2015 5:36:39	1.0000	RA-10-14 2.5X
134	35512-157790008-2 MS	LHCV081711	LHC060915	Finished	6/17/2015 5:52:53	1.0000	RA-10-14 2.5X
135	CCV3 FID 061715	LHCV081711	LHC060915	Finished	6/17/2015 6:12:23	1.0000	

Title: WATER060915SEL
 Datasource: BIOREM13_local
 Location: DissolvedGasesRSK175
 Timebase: BIOREM13
 #Samples: 259

Created: 6/8/2015 2:51:32 PM by slyon
 Last Update: 6/22/2015 9:57:05 AM by slyon

No. Name	Type	Program	Method	Status	Inj. Date/Time	Dil. Factor	Comment
136	CCB3 061715	LHCV081711	LHC060915	Finished	6/17/2015 6:28:48	1.0000	
137	Instrument Blank	LHCV081711	LHC060915	Finished	6/18/2015 1:09:16	1.0000	
138	CCV FID 061815	LHCV081711	LHC060915	Finished	6/18/2015 1:28:42	1.0000	RA-13-03 2X
139	CCB 061815	LHCV081711	LHC060915	Finished	6/18/2015 1:38:49	1.0000	
140	35572-MB	LHCV081711	LHC060915	Finished	6/18/2015 1:49:17	1.0000	
141	35573-LCS	LHCV081711	LHC060915	Finished	6/18/2015 2:01:28	1.0000	RA-11-09 5X
142	35574-LCSD	LHCV081711	LHC060915	Finished	6/18/2015 2:11:54	1.0000	RA-11-09 5X
143	158660009-1	LHCV081711	LHC060915	Finished	6/18/2015 2:28:58	1.0000	
144	158660010-1	LHCV081711	LHC060915	Finished	6/18/2015 2:39:17	1.0000	
145	158660011-1	LHCV081711	LHC060915	Finished	6/18/2015 2:49:58	1.0000	
146	158660012-1	LHCV081711	LHC060915	Finished	6/18/2015 3:02:03	1.0000	
147	158660013-1	LHCV081711	LHC060915	Finished	6/18/2015 3:14:13	1.0000	
148	158660014-1	LHCV081711	LHC060915	Finished	6/18/2015 3:24:32	1.0000	
149	158660015-1	LHCV081711	LHC060915	Finished	6/18/2015 3:35:21	1.0000	
150	158660016-1	LHCV081711	LHC060915	Finished	6/18/2015 4:16:12	1.0000	
151	158660017-1	LHCV081711	LHC060915	Finished	6/18/2015 4:27:15	1.0000	
152	158660018-1	LHCV081711	LHC060915	Finished	6/18/2015 4:37:28	1.0000	
153	CCV2 FID 061815	LHCV081711	LHC060915	Finished	6/18/2015 4:50:29	1.0000	RA-13-03 5X
154	CCB2 061815	LHCV081711	LHC060915	Finished	6/18/2015 5:01:34	1.0000	
155	158660019-1	LHCV081711	LHC060915	Finished	6/18/2015 5:12:24	1.0000	
156	158660020-1	LHCV081711	LHC060915	Finished	6/18/2015 5:23:39	1.0000	
157	158660021-1	LHCV081711	LHC060915	Finished	6/18/2015 5:36:08	1.0000	
158	158660022-1	LHCV081711	LHC060915	Finished	6/18/2015 5:49:45	1.0000	
159	158660023-1	LHCV081711	LHC060915	Finished	6/18/2015 6:01:27	1.0000	
160	158660024-1	LHCV081711	LHC060915	Finished	6/18/2015 6:15:22	1.0000	
161	158660025-1	LHCV081711	LHC060915	Finished	6/18/2015 6:27:04	1.0000	
162	158440001-1	LHCV081711	LHC060915	Finished	6/18/2015 6:39:06	1.0000	

20915, SL Temp Min - 22°C Max - 25°C

ICAL RSK175 RA Sea Water 060915SEL

Stock RA-11-09 Lot# 109-26-06666

Instrument Settings: He 12 PSI
 Hz 25 PSI
 Air 30 PSI

Standard Level	Concentration (PPMV)	Standard Volume	UHP He
W/S 1	40	8 cc	192 cc
W/S 2	5	1 cc	199 cc
Level 7	0.25	2cc W/S 2	36 cc
6	0.50	5cc W/S 2	45 cc
5	2.00	25cc W/S 1	47.5 cc
4	8.00	10cc W/S 1	40 cc
3	40.00	2cc	48 cc
2	200	10 cc	40 cc
1	1000	From cylinder	—

ICV/CCV RA-13-03 From cylinder
 CCV2 RA-13-03 2X DIL
 LCS/LCSD RA-11-09 5X DIL

Samples: 15670-(1) 5X DIL, 15723-(1-4), 15777-(1)
 15790-(1)

* All samples had a PH of 10 or greater

RSK175 FID Water min: max area 06/10/15
 CCV1 RA-13-3 2X Temp 73 24
 CCV2 RA-13-3 5X
 Samples: 157240001 → 4
 PH: 157240001 at pH 8, 157240002 → 4 at pH 7.0
 Dilutions: 157240001 at 100X DIL
 LCS/LCSD: RA-11-9 5X

06115, SL	RSK 175	R9	Water	Temp	Min - 22°C	Max 24°C
CCV1 + CCV3	RA-13-03			2X		
CCV2	RA-13-03			5X		
LCS/LSD	RA-11-09			5X		
MS/MSD	RA-11-09			5X		

Samples: 15711-(2), 15727-(2,4,5,6), 15746-(2,4)
 15765-(2), 15766-(2,5,8), 15768-(2,4)
 15774-(1,5,9,10)

All samples had a pH of 10 or greater

06156, SL	RSK 175	R9	water	Temp	Min - 22°C	Max 25°C
CCV1 + CCV3	RA-13-03			2X		
CCV2	RA-13-03			5X		
LCS/LSD	RA-11-09			5X		
MS/MSD	RA-11-09			5X		

Samples: 15774-(1,3,5,9,10) DIL'S, (15774-(6,8,11) MS/MSD,
 15793-(1), 15792-(2), 15816-(2), 15815-(1-3)

All samples had a pH of 10 or greater

06175, SL	RSK 175	R9	water	Temp	Min - 22°C	Max 24°C
CCV1 + CCV3	RA-13-03			2X		
CCV2	RA-13-03			5X		
LCS/LSD	RA-11-09			5X		
MS/MSD	RA-10-14			25X		

Samples: 15774-(6,8), 15793-(1), 15817-(2), 15814-(2,4)
 15826-(2), 15834-(1,4), 15835-(1,6)

All samples had a pH of 10 or greater

SL

06175

THE LINDE GROUP



SHIPPED TO: Microseeps
220 William Pittway
Pittsburgh, PA 15238

PAGE: 1 of 1

RA-13-03

CERTIFICATE OF ANALYSIS

Sales#:	110347776	Cylinder Size:	5A (4.5" X 12")
Production#:	1256869	Cylinder # :	BC-760715
Certification Date:	May-16-2013	Cylinder Pressure:	2000 psig
P.O.# :	A130430	Cylinder Valve:	CGA 180 / Brass
Blend Type:	CERTIFIED	Cylinder Volume:	1.2 Liter
Material#:	24088895	Cylinder Material:	Aluminum
Traceability:	NIST by weight	Gas Volume:	155 Liter
Expiration Date:	May-16-2014	Blend Tolerance:	5% Relative
Do NOT use under:	150 psig	Analytical Accuracy:	2% Relative

COMPONENT	CAS NUMBER	REQUESTED CONC	CERTIFIED CONC
Methane	74-82-8	300 ppm	297 ppm
Ethylene	74-85-1	100 ppm	97.4 ppm
Ethane	74-84-0	100 ppm	98.1 ppm
Propylene	115-07-1	100 ppm	104 ppm
Propane	74-98-6	100 ppm	97.7 ppm
Isobutane	75-28-5	100 ppm	98.5 ppm
n-Butane	106-97-8	100 ppm	103 ppm
Hydrogen	1333-74-0	25.0 ppm	25.6 ppm
Helium	7440-59-7	100 ppm	102 ppm
Carbon Dioxide	124-38-9	5.00 %	5.13 %
Oxygen	7782-44-7	2.00 %	2.05 %
Nitrogen	7727-37-9	Balance	Balance

ANALYST: *Lou Lorenzetti*
Lou Lorenzetti

DATE: May-16-2013

RA-11-09

MATHESON TRI-GAS INC
 1650 Enterprise Pkwy
 Twinsburg, OH 44087
 1-215-648-4000

CERTIFICATE OF ANALYSIS

Penn Oxygen and Supply
 C/o Micoseeps Inc
 220 William Pitt Way
 Pittsburgh, Pa 15238

Ref Po# 8373

221 LITER DISPOSABLE

LOT NUMBER: 109-26-08686

COMPONENT

CONCENTRATION

Methane	999.9 PPM
Ethane	999.7 PPM
Propane	1002.6 PPM
Butane	1000.1 PPM
Ethylene	1000.2 PPM
PROPYLENE	1000.2 PPM
Isobutane	1000.1 PPM
Nitrogen	BALANCE

ITEM NUMBER: GMT2675592TD

CGA: 165

PSIG: 260 PSIG

FILL DATE: 10/30/12

EXPIRATION DATE: 10/31/14

Above are the results of the analysis you requested, as reported by our laboratory. Results are in mole percent, unless otherwise indicated. Mixture accuracy is $\pm 2\%$. NIST traceable by weights or gaseous standards.



Amanda Miller, Lab Technician

11/5/2012

DATE

W07578

Method File: LHC060915
Operator: slyon

Title: LHC RSK175
Datasource: BIOREM13_local
Location: DissolvedGasesRSK175\WATER060915SEL.SEQ
Created: 10/10/2008 3:21:33 PM by Administrator
Last Update: 6/9/2015 1:34:24 PM by slyon

Peak Table:

Use Recently Detected Retention Times: Off
Peak Retention Time Determination: Absolute
Dead time:
Delay Time of 2'nd Detector: <None>
Delay Time of 3'rd Detector: <None>

No.	Peak Name	Ret.Time	Ret.Time	Window	Standard	Int.Type	Cal.Type	Peak Type	Group	Comment
FID										
1	Methane	0.663 min	0.663 min	0.040 AG	External	Area	Quad	Auto		
2	Ethane	0.999 min	0.999 min	0.060 AG	External	Area	Quad	Auto		
3	Ethene	1.261 min	1.261 min	0.080 AG	External	Area	Quad	Auto		
4	Propane	2.114 min	2.114 min	0.150 AG	External	Area	Quad	Auto		
5	Propene	3.725 min	3.725 min	0.290 AG	External	Area	Quad	Auto		
6	iso-Butane	5.623 min	5.623 min	0.225 AG	External	Area	Quad	Auto		
7	n-Butane	6.455 min	6.455 min	0.275 AG	External	Area	Quad	Auto		

Method File: LHC060915
 Operator: slyon

Title: LHC RSK175
 Datasource: BIOREM13_local Created: 10/10/2008 3:21:33 PM by Administrator
 Location: DissolvedGasesRSK175\WATER060915SEL.SEQ Last Update: 6/9/2015 1:34:24 PM by slyon

Amount Table:

Dimension of Amounts: ug/L
 Reference volume for amounts: Use inject volume of first standard
 Number of Amount Columns: 7
 Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Ret.Time FID	Resp.Fact.	Comment	Amount ICAL LHC L7	Amount ICAL LHC L6	Amount ICAL LHC L5	Amount ICAL LHC L4
1	Methane	0.663 min	0.663 min	1.000000		0.060744	0.121488	0.485951	1.943806
2	Ethane	0.999 min	0.999 min	1.000000		0.117965	0.235929	0.943717	3.774867
3	Ethene	1.261 min	1.261 min	1.000000		0.131276	0.262553	1.050210	4.200840
4	Propane	2.114 min	2.114 min	1.000000		0.169439	0.338879	1.355515	5.422061
5	Propene	3.725 min	3.725 min	1.000000		0.190538	0.381076	1.524305	6.097219
6	iso-Butane	5.623 min	5.623 min	1.000000		0.211271	0.422542	1.690169	6.760676
7	n-Butane	6.455 min	6.455 min	1.000000		0.218522	0.437044	1.748175	6.992699

Method File: LHC060915
 Operator: slyon

Title: LHC RSK175
 Datasource: BIOREM13_local
 Location: DissolvedGasesRSK175\WATER060915SEL.SEQ
 Created: 10/10/2008 3:21:33 PM by Administrator
 Last Update: 6/9/2015 1:34:24 PM by slyon

Amount Table:

Dimension of Amounts: ug/L
 Reference volume for amounts: Use inject volume of first standard
 Number of Amount Columns: 7
 Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Amount		
			ICAL LHC L3	ICAL LHC L2	ICAL LHC L1
1	<i>Methane</i>	<i>0.663 min</i>	9.719028	48.595140	242.975700
2	Ethane	0.999 min	18.874336	94.371680	471.858400
3	Ethene	1.261 min	21.004200	105.021000	525.105000
4	Propane	2.114 min	27.110304	135.551520	677.757600
5	Propene	3.725 min	30.486095	152.430480	762.152400
6	iso-Butane	5.623 min	33.803380	169.016900	845.084500
7	n-Butane	6.455 min	34.963496	174.817480	874.087400

Method File: LHC060915
 Operator: slyon

Title: LHC RSK175
 Datasource: BIOREM13_local
 Location: DissolvedGasesRSK175\WATER060915SEL.SEQ
 Created: 10/10/2008 3:21:33 PM by Administrator
 Last Update: 6/9/2015 1:34:24 PM by slyon

Calibration:

Calibration Mode: Total
 Auto Recalibrate: On
 Curve Fitting Model: Normal
 Dual-Column Separate Calibration: Off

No.	Enabled	Name	Smp.No.	Pos.	Inj. Vol.	Weight	ISTD Amount	Dil. Factor	Inj. Date/Time
1	<input checked="" type="checkbox"/>	ICAL LHC L7	3	2	1.0	1.0000	1.0000	1.0000	6/9/2015 11:04:10 AM
2	<input checked="" type="checkbox"/>	ICAL LHC L6	4	3	1.0	1.0000	1.0000	1.0000	6/9/2015 11:19:03 AM
3	<input checked="" type="checkbox"/>	ICAL LHC L5	5	4	1.0	1.0000	1.0000	1.0000	6/9/2015 11:29:54 AM
4	<input checked="" type="checkbox"/>	ICAL LHC L4	6	5	1.0	1.0000	1.0000	1.0000	6/9/2015 11:43:29 AM
5	<input checked="" type="checkbox"/>	ICAL LHC L3	7	6	1.0	1.0000	1.0000	1.0000	6/9/2015 11:57:56 AM
6	<input checked="" type="checkbox"/>	ICAL LHC L2	8	7	1.0	1.0000	1.0000	1.0000	6/9/2015 12:08:47 PM
7	<input checked="" type="checkbox"/>	ICAL LHC L1	9	8	1.0	1.0000	1.0000	1.0000	6/9/2015 12:31:45 PM

Method File: LHC060915
Operator: slyon

Title: LHC RSK175
Datasource: BIOREM13_local
Location: DissolvedGasesRSK175WATER060915SEL.SEQ

Created: 10/10/2008 3:21:33 PM by Administrator
Last Update: 6/9/2015 1:34:24 PM by slyon

Calibration:

Calibration Mode: Total
Auto Recalibrate: On
Curve Fitting Model: Normal
Dual-Column Separate Calibration: Off

No.	Enabled	Name	Sample Comment	Calib. Comment
1	<input checked="" type="checkbox"/>	ICAL LHC L7		Ok
2	<input checked="" type="checkbox"/>	ICAL LHC L6		Ok
3	<input checked="" type="checkbox"/>	ICAL LHC L5		Ok
4	<input checked="" type="checkbox"/>	ICAL LHC L4		Ok
5	<input checked="" type="checkbox"/>	ICAL LHC L3		Ok
6	<input checked="" type="checkbox"/>	ICAL LHC L2		Ok
7	<input checked="" type="checkbox"/>	ICAL LHC L1		Ok

Dissolved Gases in Water

Method: RSK175

6/9/2015

Detection: FID

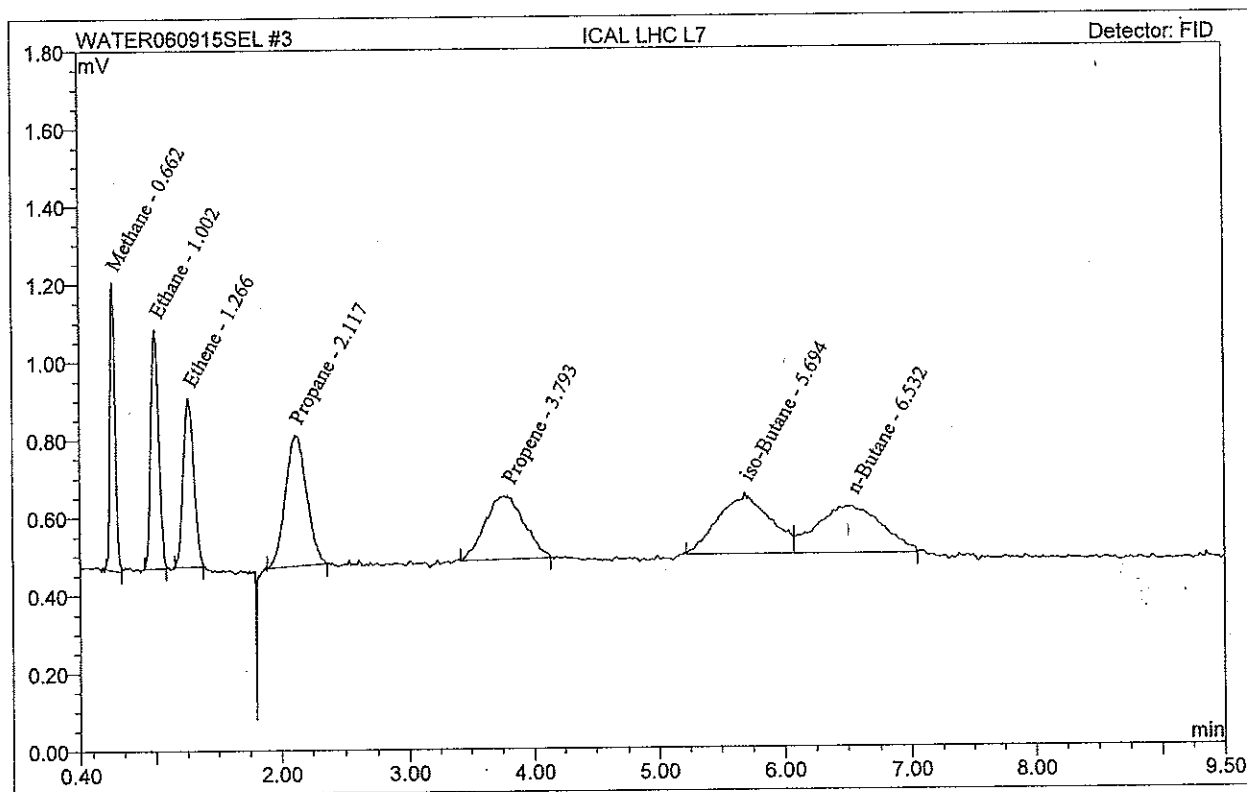
No.	Ret.Time min	Peak Name	Cal.Type	Points	Coeff.Det. %	Offset	Slope	Curve
1	0.66	Methane	Quad	7	100.0000	0.0000	0.3957	0.0001
2	1.00	Ethane	Quad	7	100.0000	0.0000	0.3922	0.0000
3	1.26	Ethene	Quad	7	100.0000	0.0000	0.3550	0.0000
4	2.12	Propane	Quad	7	100.0000	0.0000	0.3999	0.0000
5	3.70	Propene	Quad	7	99.9999	0.0000	0.3388	0.0000
6	5.62	iso-Butane	Quad	7	99.9999	0.0000	0.4027	0.0000
7	6.44	n-Butane	Quad	7	99.9999	0.0000	0.3883	0.0000

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Sample Analysis Report

Sample Name:	ICAL LHC L7	Sequence No:	3
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/9/2015 11:04	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.662	0.035	0.741	BMB	0.0874
2	Ethane	1.002	0.045	0.615	BMB	0.1145
3	Ethene	1.266	0.042	0.435	BMB	0.1196
4	Propane	2.117	0.066	0.337	BMB	0.1659
5	Propene	3.793	0.058	0.165	BMB	0.1713
6	iso-Butane	5.694	0.074	0.158	BM	0.1831
7	n-Butane	6.532	0.072	0.123	MB	0.1851

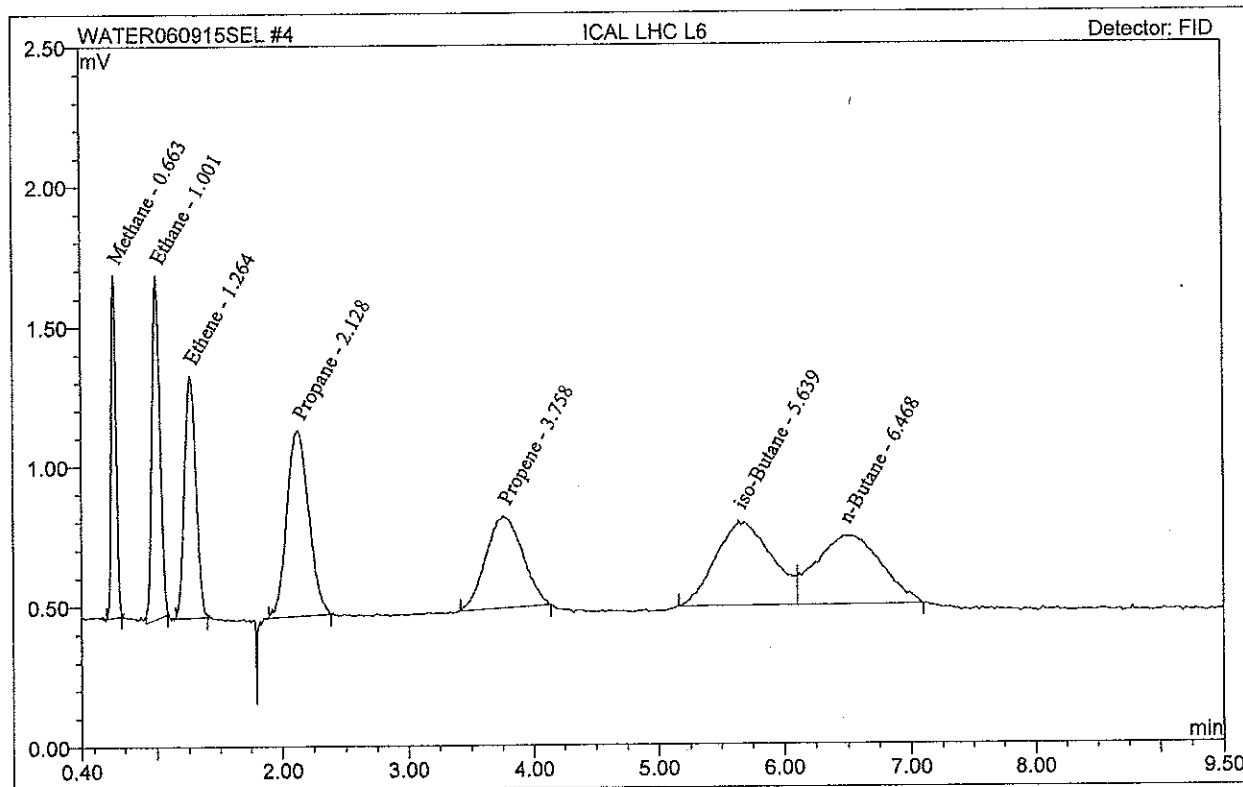


MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL LHC L6	Sequence No:	4
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/9/2015 11:19	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.663	0.057	1.224	BMB	0.1429
2	Ethane	1.001	0.089	1.226	BMB	0.2266
3	Ethene	1.264	0.088	0.868	BMB	0.2475
4	Propane	2.128	0.133	0.664	BMB	0.3321
5	Propene	3.758	0.112	0.328	BMB	0.3298
6	iso-Butane	5.639	0.155	0.302	BM	0.3855
7	n-Butane	6.468	0.143	0.245	MB	0.3694

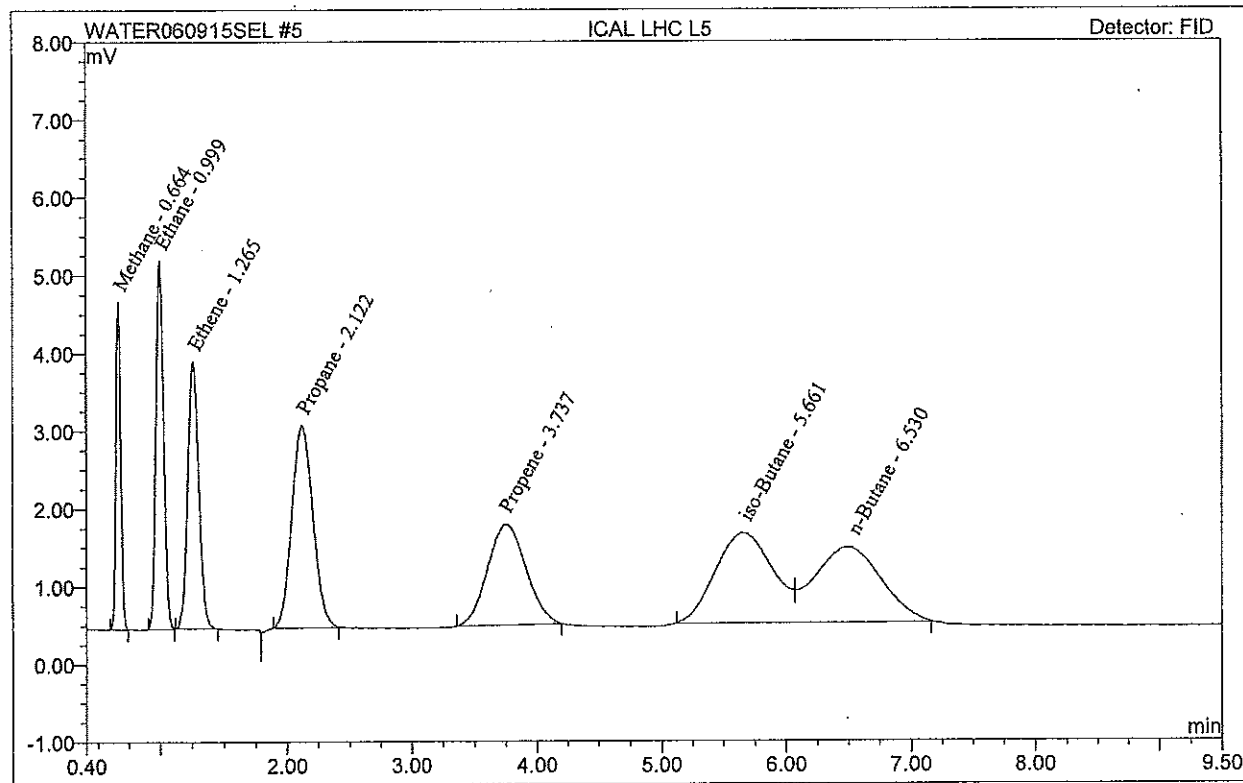


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Sample Analysis Report

Sample Name:	ICAL LHC L5	Sequence No:	5
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/9/2015 11:29	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.664	0.196	4.208	BMB	0.4944
2	Ethane	0.999	0.348	4.729	BMB	0.8883
3	Ethene	1.265	0.348	3.435	BMB	0.9807
4	Propane	2.122	0.512	2.601	BMB	1.2809
5	Propene	3.737	0.464	1.296	BMB	1.3698
6	iso-Butane	5.661	0.618	1.161	BM	1.5339
7	n-Butane	6.530	0.596	0.970	MB	1.5346

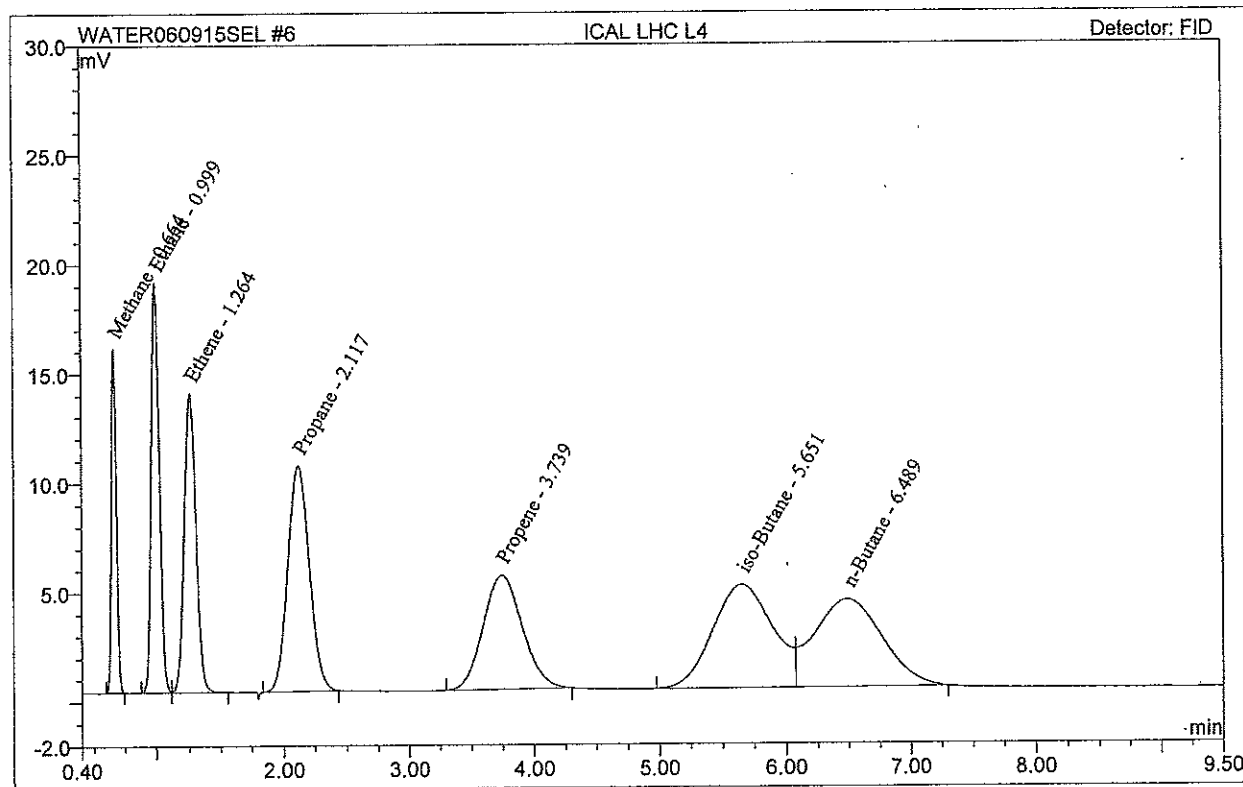


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Sample Analysis Report

Sample Name:	ICAL LHC L4	Sequence No:	6
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/9/2015 11:43	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.664	0.730	15.699	BMB	1.8440
2	Ethane	0.999	1.382	18.749	BM	3.5223
3	Ethene	1.264	1.396	13.680	MB	3.9300
4	Propane	2.117	2.049	10.315	BMB	5.1221
5	Propene	3.739	1.915	5.239	BMB	5.6479
6	iso-Butane	5.651	2.608	4.739	BM	6.4706
7	n-Butane	6.489	2.542	4.032	MB	6.5414

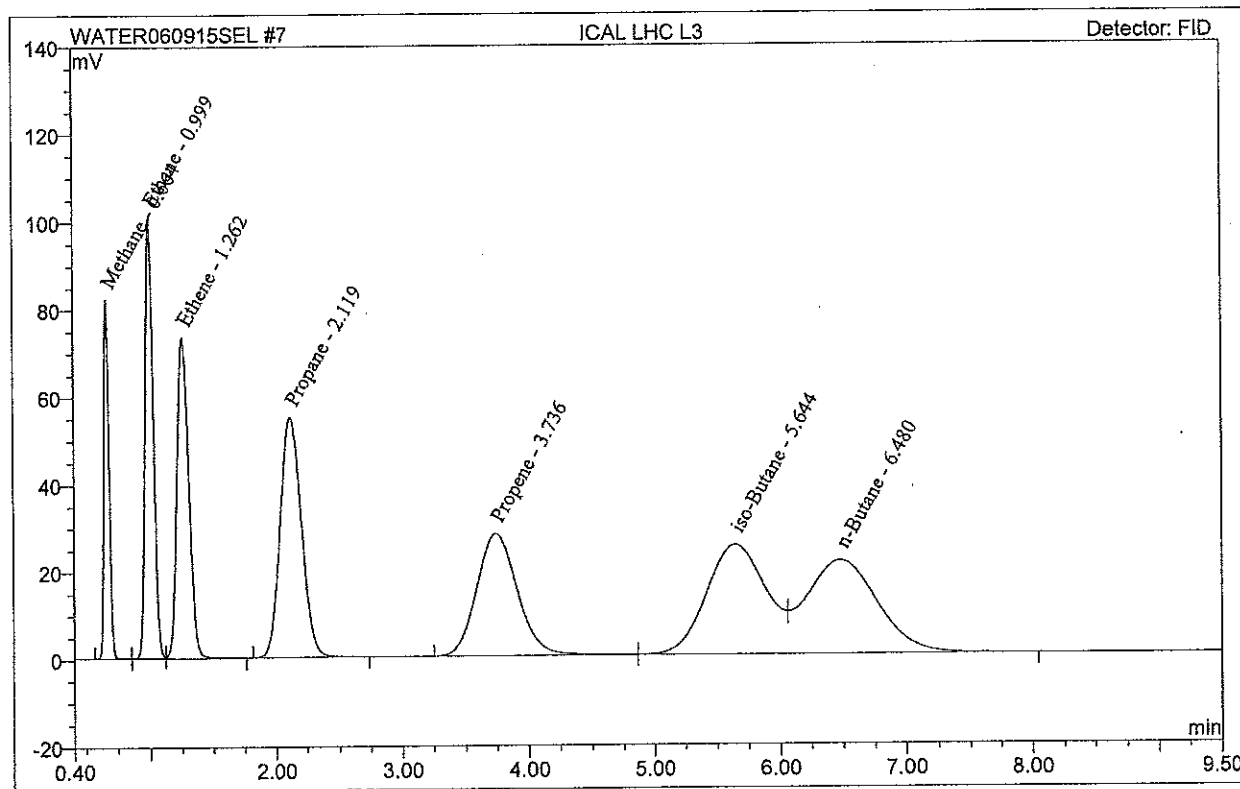


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Sample Analysis Report

Sample Name:	ICAL LHC L3	Sequence No:	7
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/9/2015 11:57	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.664	3.859	82.166	BM	9.7245
2	Ethane	0.999	7.386	100.709	M	18.8010
3	Ethene	1.262	7.517	73.428	MB	21.1324
4	Propane	2.119	10.890	54.871	BMB	27.1619
5	Propene	3.736	10.454	28.001	BM	30.7588
6	iso-Butane	5.644	13.882	25.147	M	34.3510
7	n-Butane	6.480	13.882	21.398	MB	35.6121

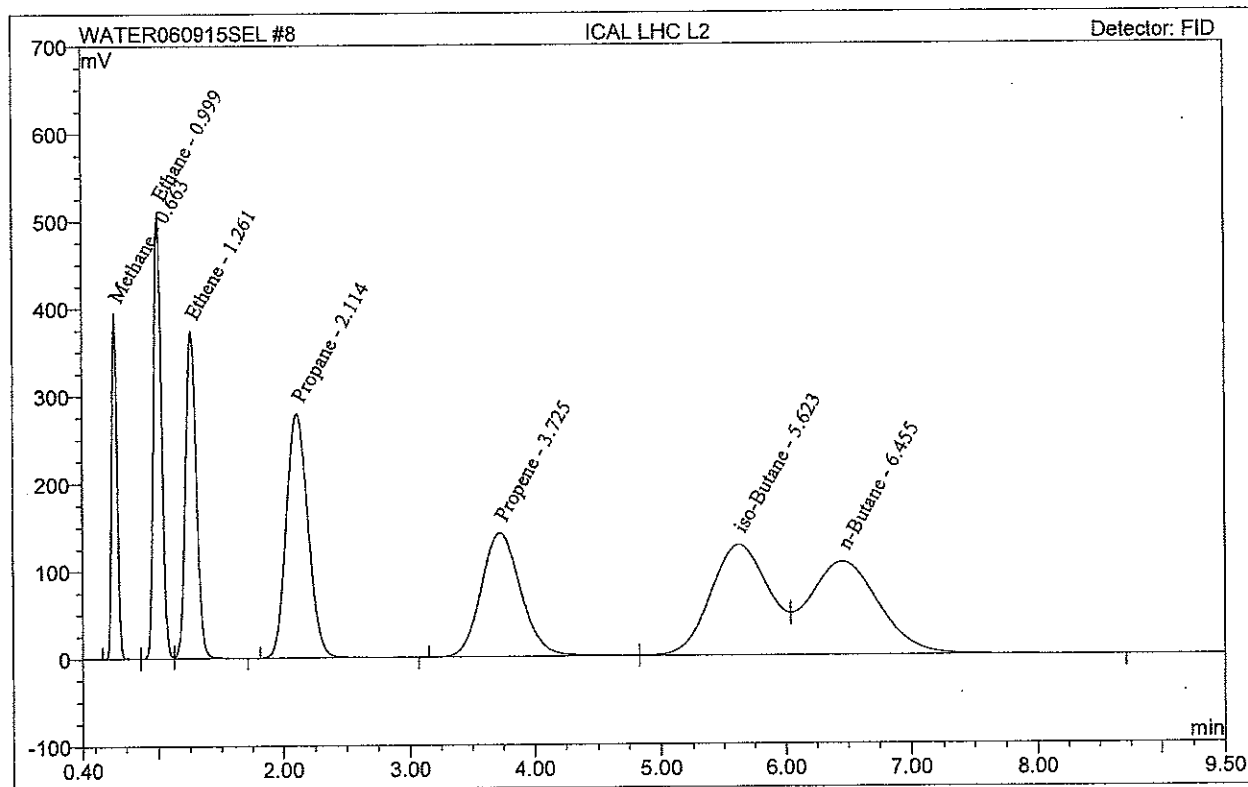


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Sample Analysis Report

Sample Name:	ICAL LHC L2	Sequence No:	8
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/9/2015 12:08	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.663	19.511	394.028	BM	48.5985
2	Ethane	0.999	37.321	509.840	M	94.4021
3	Ethene	1.261	37.642	373.812	MB	105.0048
4	Propane	2.114	54.897	278.404	BMB	135.5548
5	Propene	3.725	52.459	141.588	BM	152.3903
6	iso-Butane	5.623	69.168	126.561	M	168.9049
7	n-Butane	6.455	69.170	106.678	MB	174.6909

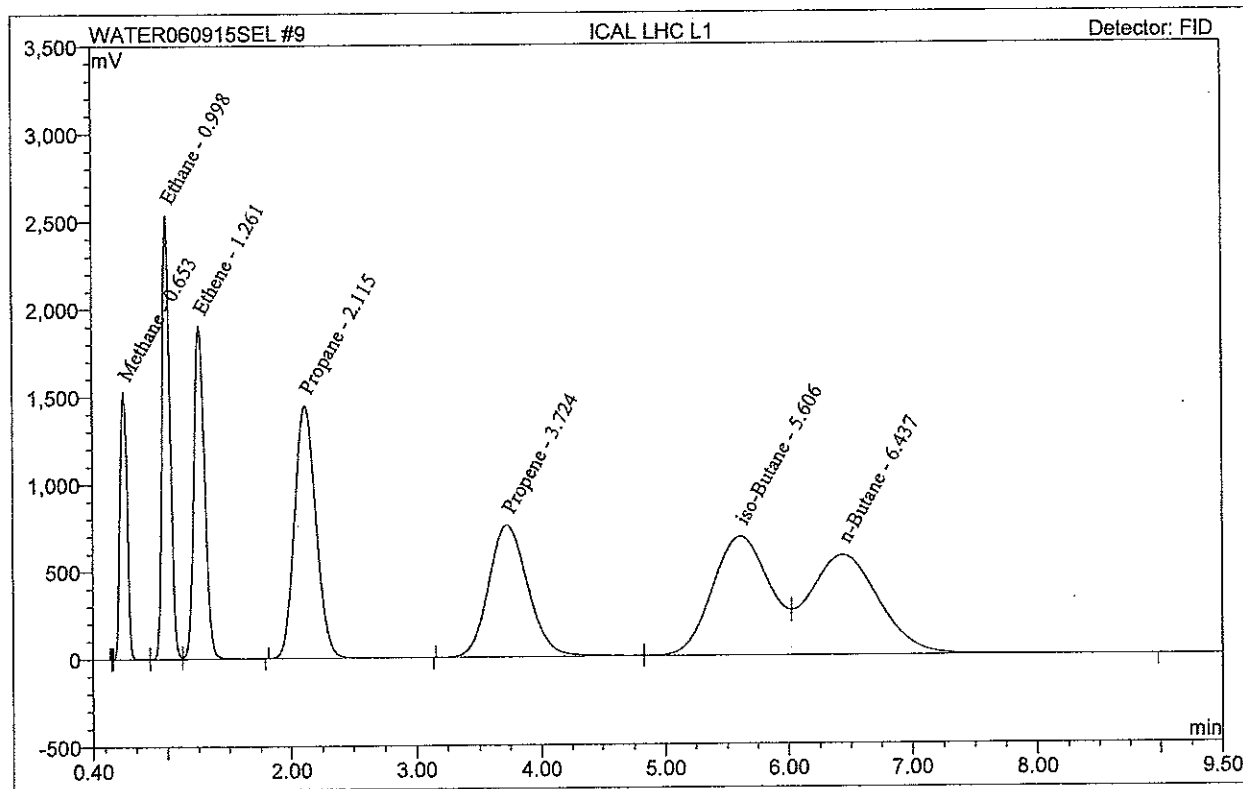


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Sample Analysis Report

Sample Name:	ICAL LHC L1	Sequence No:	9
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/9/2015 12:31	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
3	Methane	0.653	103.210	1528.201	M	242.9756
4	Ethane	0.998	192.436	2535.590	M	471.8574
5	Ethene	1.261	195.475	1906.844	MB	525.1054
6	Propane	2.115	288.150	1445.393	BMB	677.7574
7	Propene	3.724	279.022	755.115	BM	762.1535
8	iso-Butane	5.606	368.964	681.735	M	845.0877
9	n-Butane	6.437	373.051	572.846	MB	874.0909

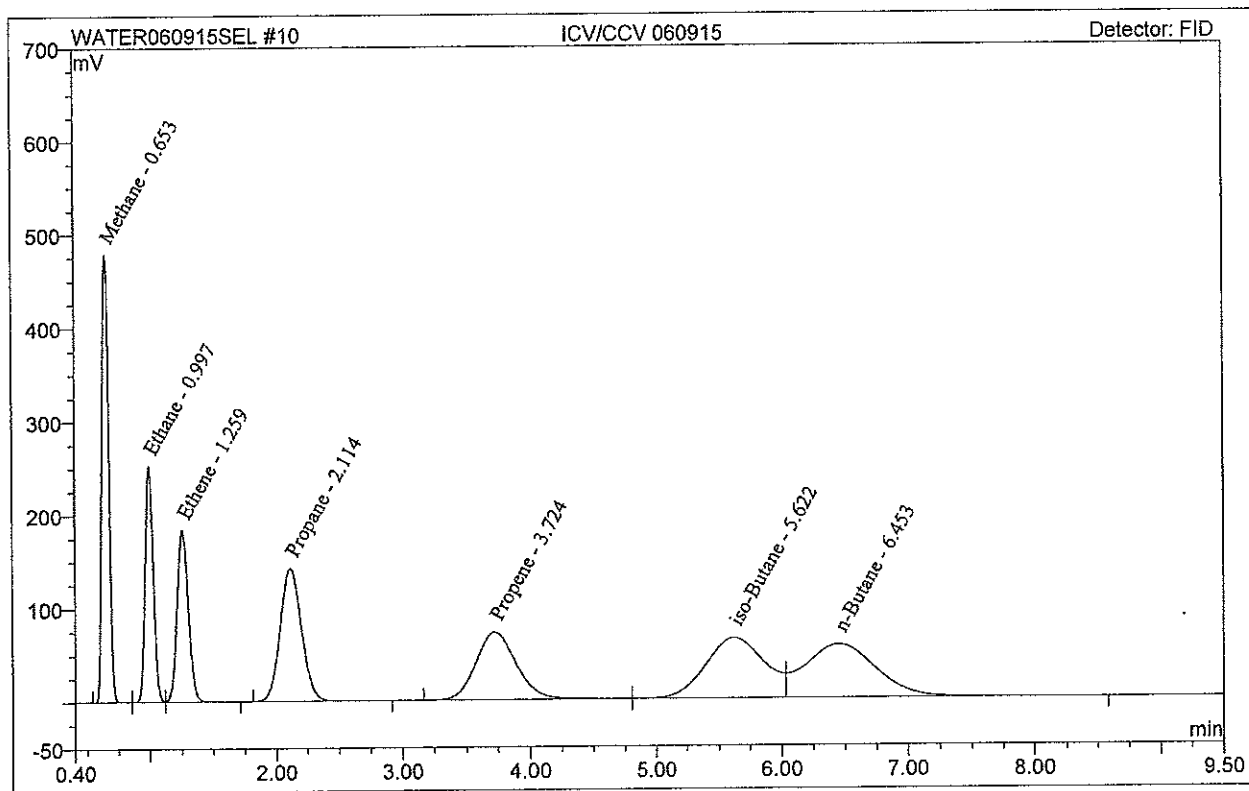


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Sample Analysis Report

Sample Name:	ICV/CCV 060915	Sequence No:	10
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/9/2015 13:00	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	RA-13-03

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	TV	Amount ug/L	% recovery
1	Methane	0.653	31.152	479.088	BM	72.171	76.9429	107
2	Ethane	0.997	18.767	252.474	M	46.303	47.6559	103
3	Ethene	1.259	18.562	183.752	MB	51.135	52.0313	102
4	Propane	2.114	28.106	142.209	BMB	66.045	69.8240	106
5	Propene	3.724	26.940	72.633	BM	71.246	78.8639	97
6	iso-Butane	5.622	35.485	64.799	M	83.233	87.3513	105
7	n-Butane	6.453	37.259	57.444	MB	90.022	94.9416	105

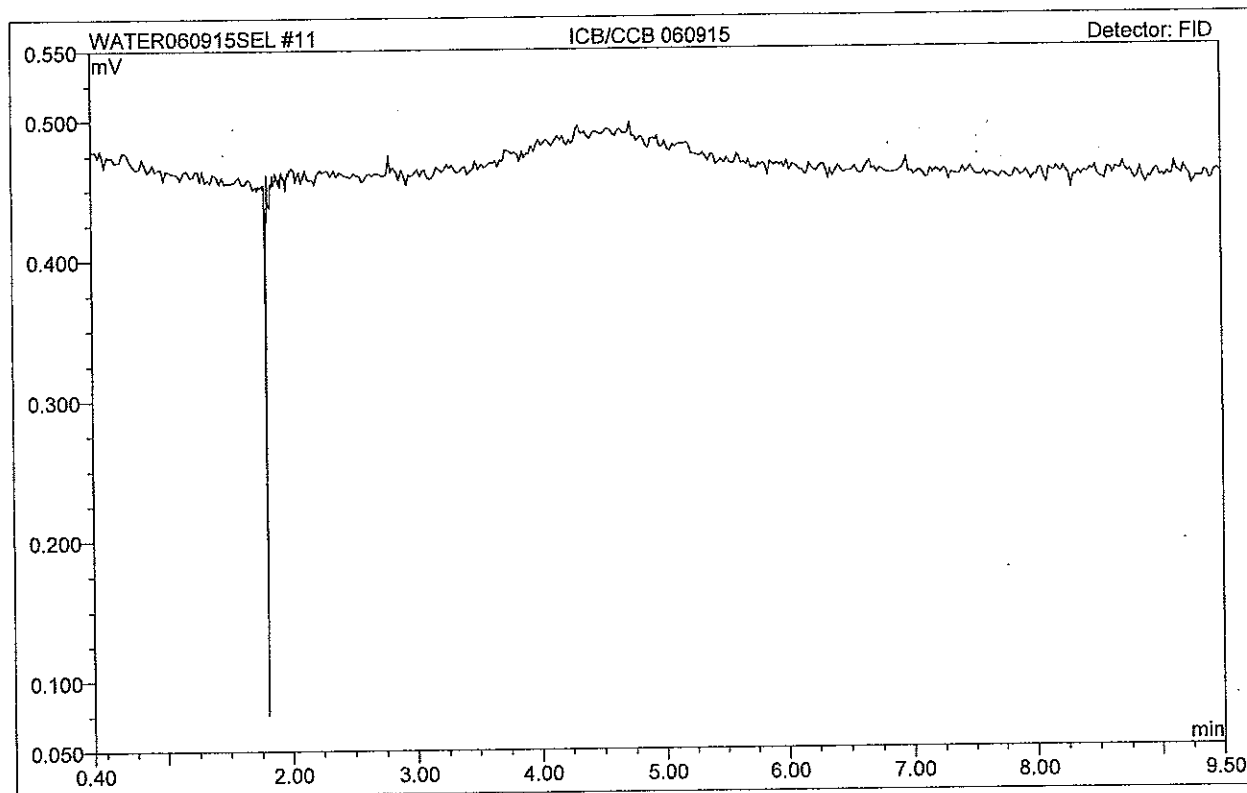


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Sample Analysis Report

Sample Name:	ICB/CCB 060915	Sequence No:	11
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/9/2015 13:10	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
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Risk Department
Case Narrative

Batch number: 4629-DISS6

Original Run Date: 06/11/15

Sample numbers:

15711-(2)
15727-(2,4,5,6)
15746-(2,4)

15765-(2)
15766-(2,5,8)
15768-(2,4)

Matrix: water
15779-(1,5,9,10)

Out of Control Event: (attach another page, if necessary)

15779-(1,3,5,9,10) Required dilutions for methane

Corrective Action Taken:

None

Result:

Report dilutions on a future batch

Observations to support use of data: (Note any occurrences of manual integration here)

Samples required manual integration to repair baseline inaccuracies

All samples had a pH of 10 or greater

Manual Integration Checklist and Approval	
• Manual Integration approved?:	Yes No
• Satisfactorily documented on this narrative?	
• Manually integrated chromatogram initialed and dated by analyst?	
_____ Signature Lead Analyst or Lab. Mgr.	_____ Date

Analyzed & Reviewed by: <u>JW</u>	Date: <u>06/21/15</u>
Manual Integration Conducted? <input checked="" type="radio"/> YES <input type="radio"/> NO	(Circle One)
Reviewed by: <u>ARK</u>	Date: <u>6/12/15</u>
Reviewed & Entered by: <u>upload</u>	Date: <u>06/21/15</u>
Reviewed by: _____	Date: _____
Corrected by: _____	Date: _____

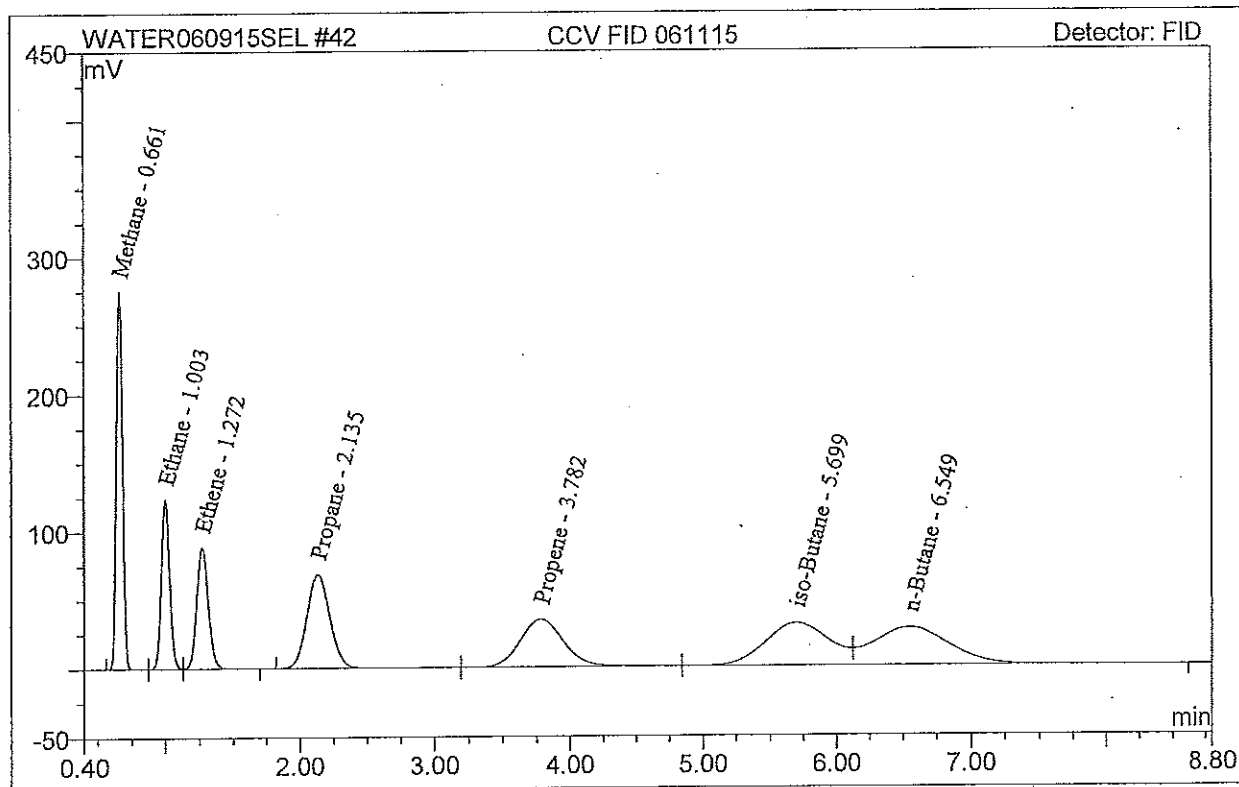
MICROSEEPS

Sample Analysis Report

Sample Name:	CCV FID 061115	Sequence No:	42
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/11/2015 10:39	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	RA-13-03 2X

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.661	15.053	275.139	BM	37.6160
2	Ethane	1.003	9.141	123.404	M	23.2602
3	Ethene	1.272	9.052	88.501	MB	25.4356
4	Propane	2.135	13.723	68.517	BM	34.2053
5	Propene	3.782	13.143	34.733	M	38.6374
6	iso-Butane	5.699	17.381	31.048	M	42.9732
7	n-Butane	6.549	18.037	27.424	MB	46.2151

TV
36.086
23.152
25.568

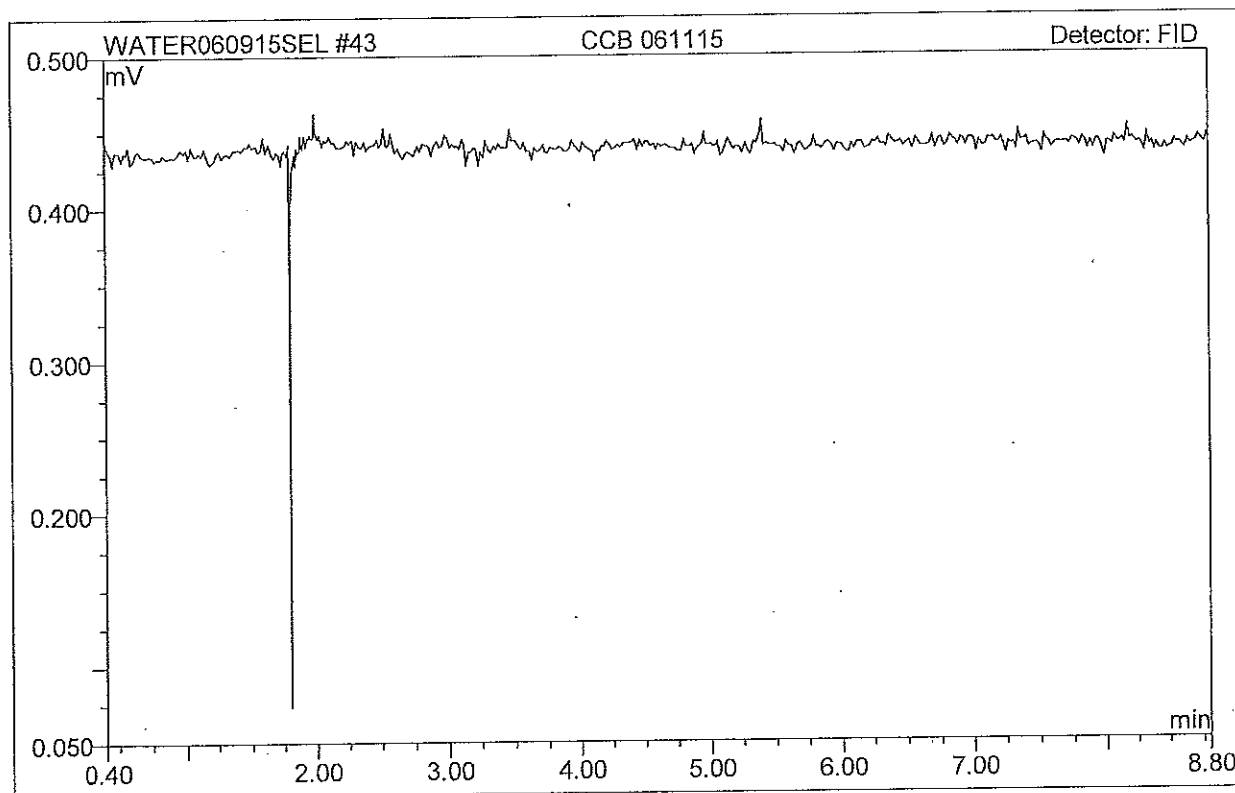


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Sample Analysis Report

Sample Name:	CCB 061115	Sequence No:	43
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/11/2015 10:53	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
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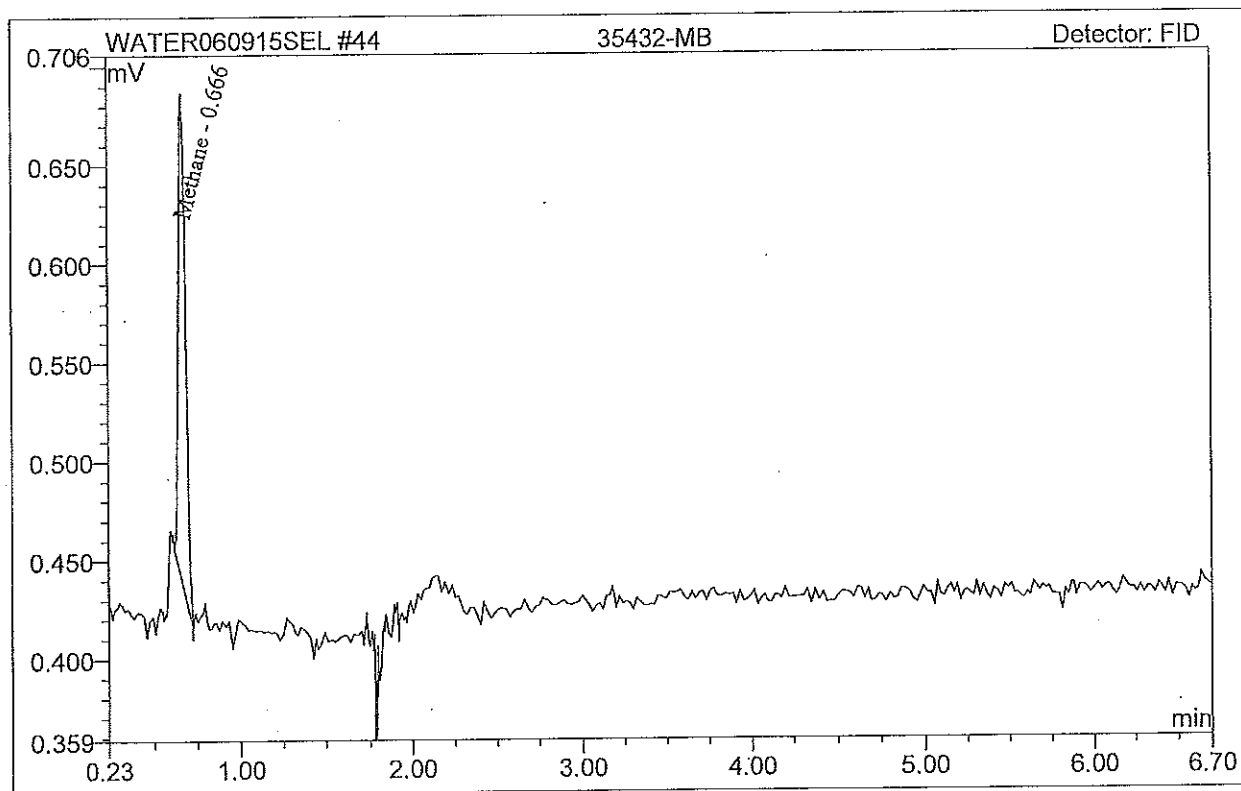


MICROSEEPS

Sample Analysis Report

Sample Name:	35432-MB	Sequence No:	44
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/11/2015 11:08	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.666	0.011	0.249	BMB	0.0282

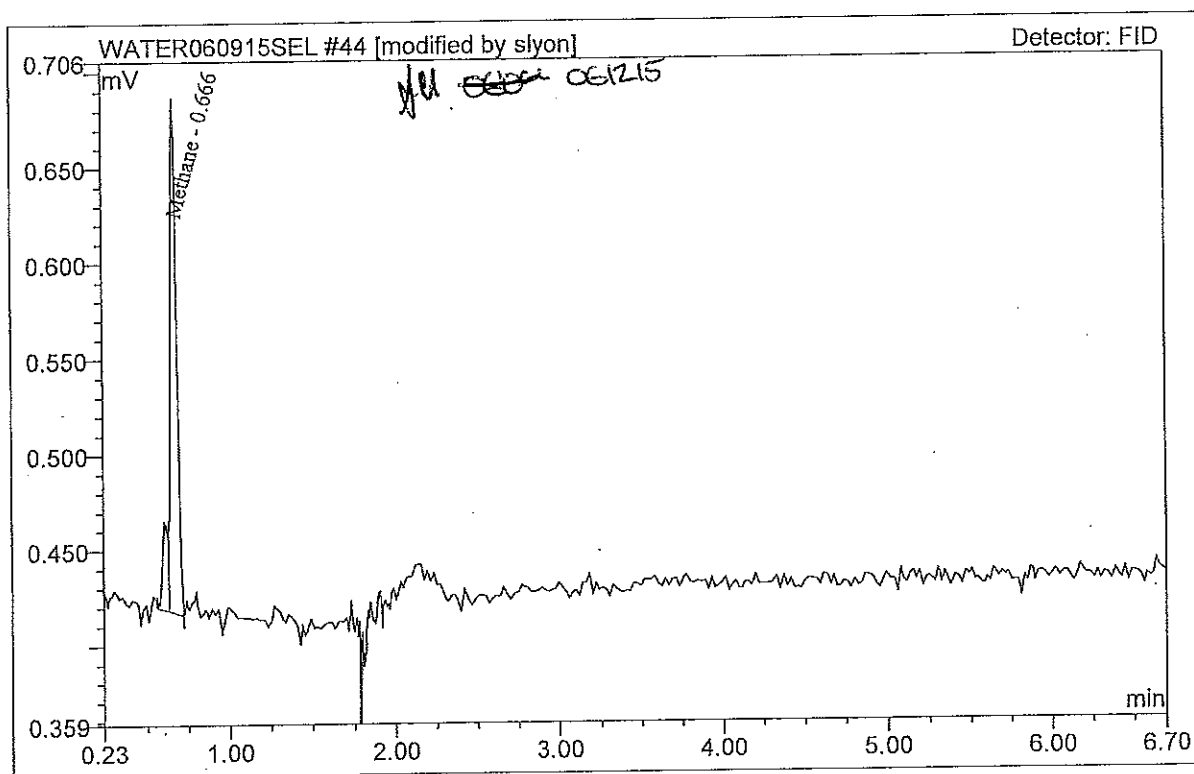


MICROSEEPS

Sample Analysis Report

Sample Name:	35432-MB	Sequence No:	44
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/11/2015 11:08	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
2	Methane	0.666	0.013	0.270	MB*	0.0326

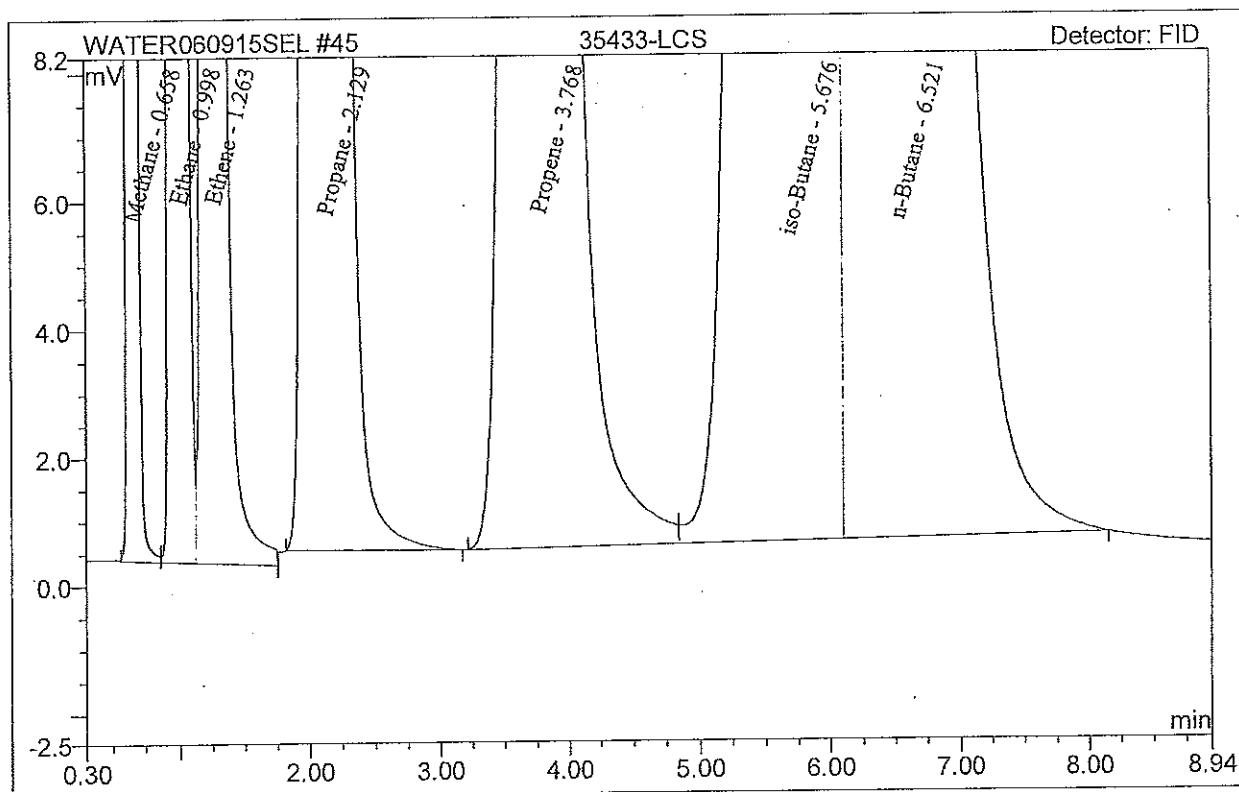


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Sample Analysis Report

Sample Name:	35433-LCS	Sequence No:	45
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/11/2015 11:19	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	RA-11-09 5X

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.658	17.240	342.837	BM	43.0133
2	Ethane	0.998	31.736	430.711	M	80.3691
3	Ethene	1.263	27.350	268.077	MB	76.4938
4	Propane	2.129	47.309	237.844	BMB	117.0180
5	Propene	3.768	35.654	95.200	BM	104.0966
6	iso-Butane	5.676	62.106	112.424	M	151.9138
7	n-Butane	6.521	58.367	89.411	MB	147.8507



MICROSEEPS

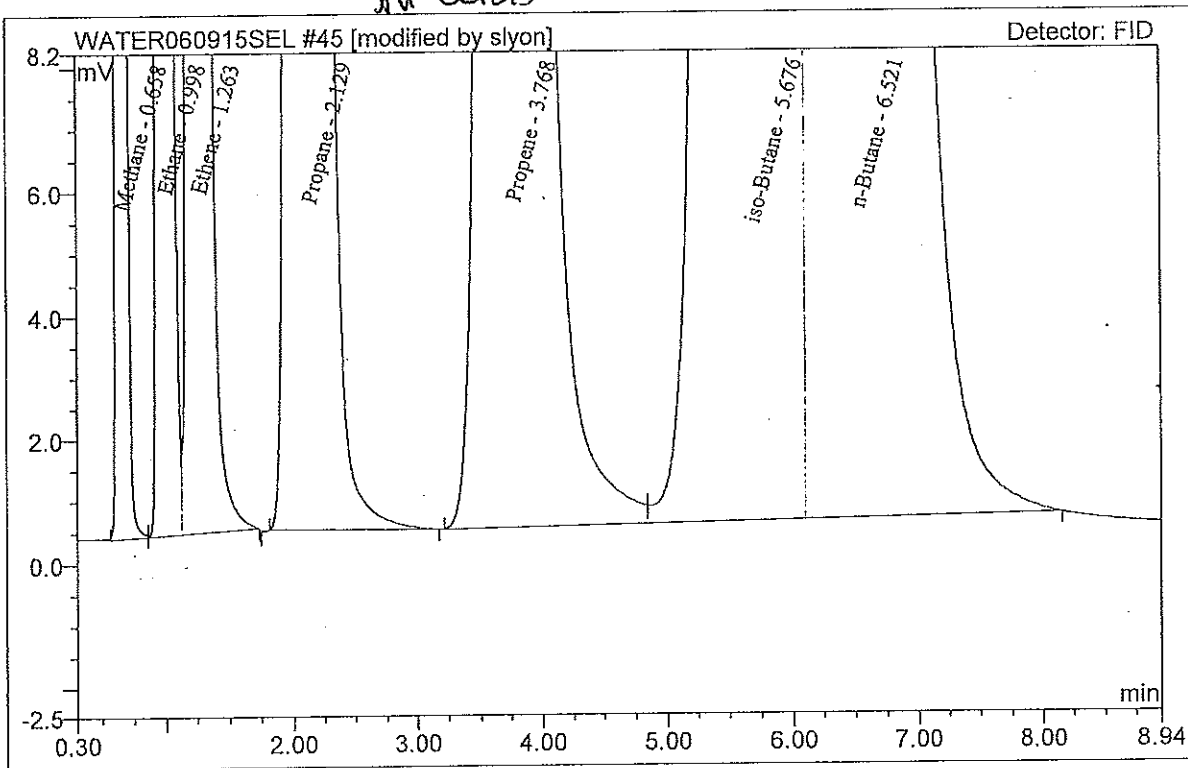
Sample Analysis Report

Sample Name:	35433-LCS	Sequence No:	45
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/11/2015 11:19	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	RA-11-09 5X

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.658	17.230	342.816	BM *	42.9890
2	Ethane	0.998	31.711	430.616	M *	80.3072
3	Ethene	1.263	27.232	267.925	MB*	76.1667
4	Propane	2.129	47.309	237.844	BMB	117.0180
5	Propene	3.768	35.654	95.200	BM	104.0966
6	iso-Butane	5.676	62.106	112.424	M	151.9138
7	n-Butane	6.521	58.367	89.411	MB	147.8507

TV
44.48
83.3
77.92

W 06/15

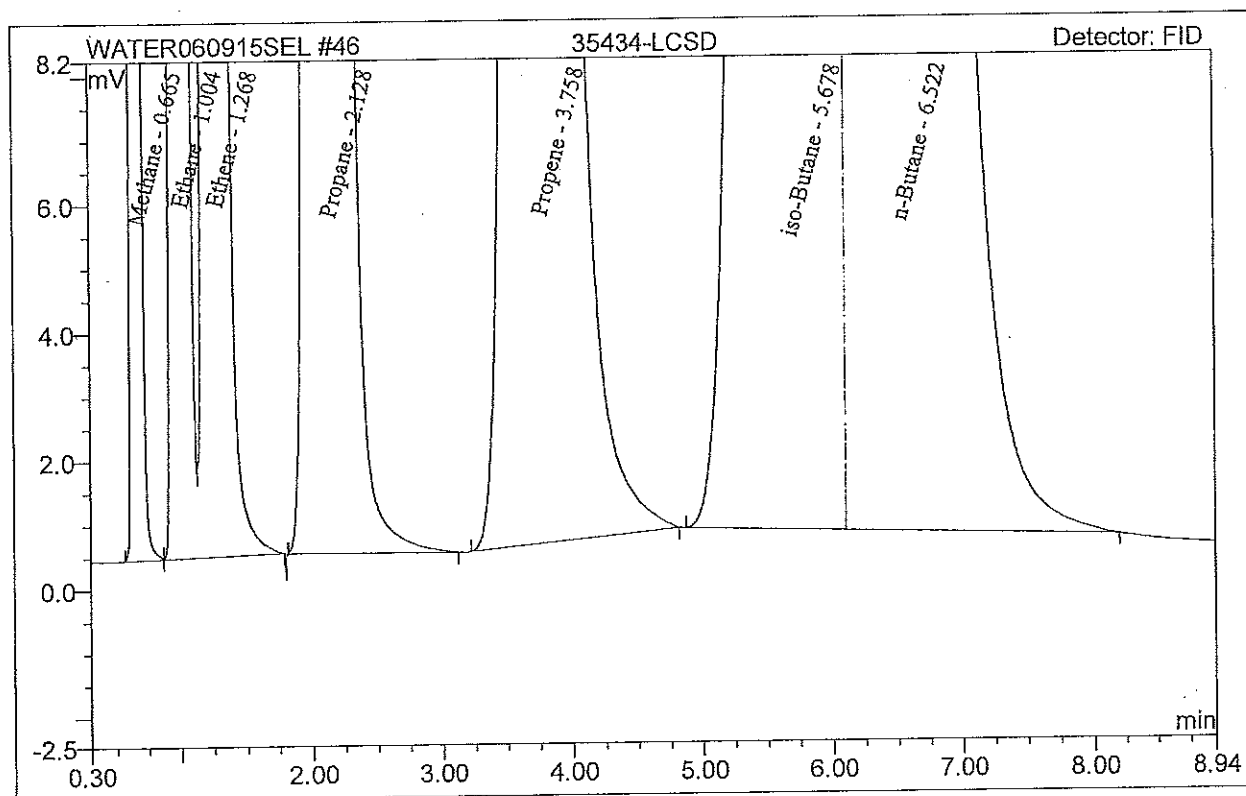


MICROSEEPS

Sample Analysis Report

Sample Name:	35434-LCSD	Sequence No:	46
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/11/2015 11:31	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	RA-11-09 5X

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.665	16.964	338.789	BM	42.3315
2	Ethane	1.004	31.183	424.143	M	78.9781
3	Ethene	1.268	26.891	265.009	MB	75.2186
4	Propane	2.128	46.360	233.232	BMB	114.6952
5	Propene	3.758	34.915	93.697	BMB	101.9620
6	iso-Butane	5.678	60.469	109.606	BM	147.9663
7	n-Butane	6.522	56.447	86.985	MB	143.0633



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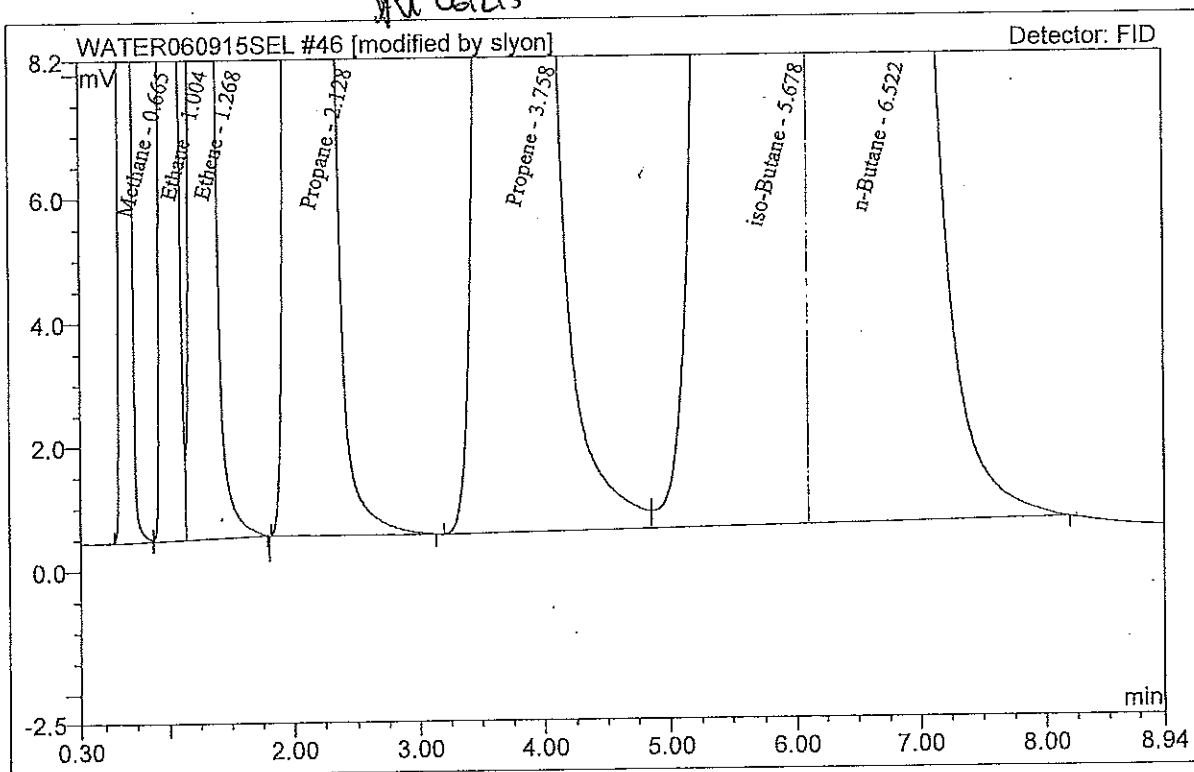
Sample Analysis Report

Sample Name:	35434-LCSD	Sequence No:	46
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/11/2015 11:31	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	RA-11-09 5X

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.665	16.964	338.789	BM	42.3315
2	Ethane	1.004	31.183	424.143	M	78.9781
3	Ethene	1.268	26.891	265.009	MB	75.2186
4	Propane	2.128	46.360	233.232	BMB	114.6952
5	Propene	3.758	35.164	93.801	BM *	102.6826
6	iso-Butane	5.678	60.756	109.820	M *	148.6590
7	n-Butane	6.522	56.633	87.127	MB*	143.5263

TV
44.48
85-3
77.92

WATER060915

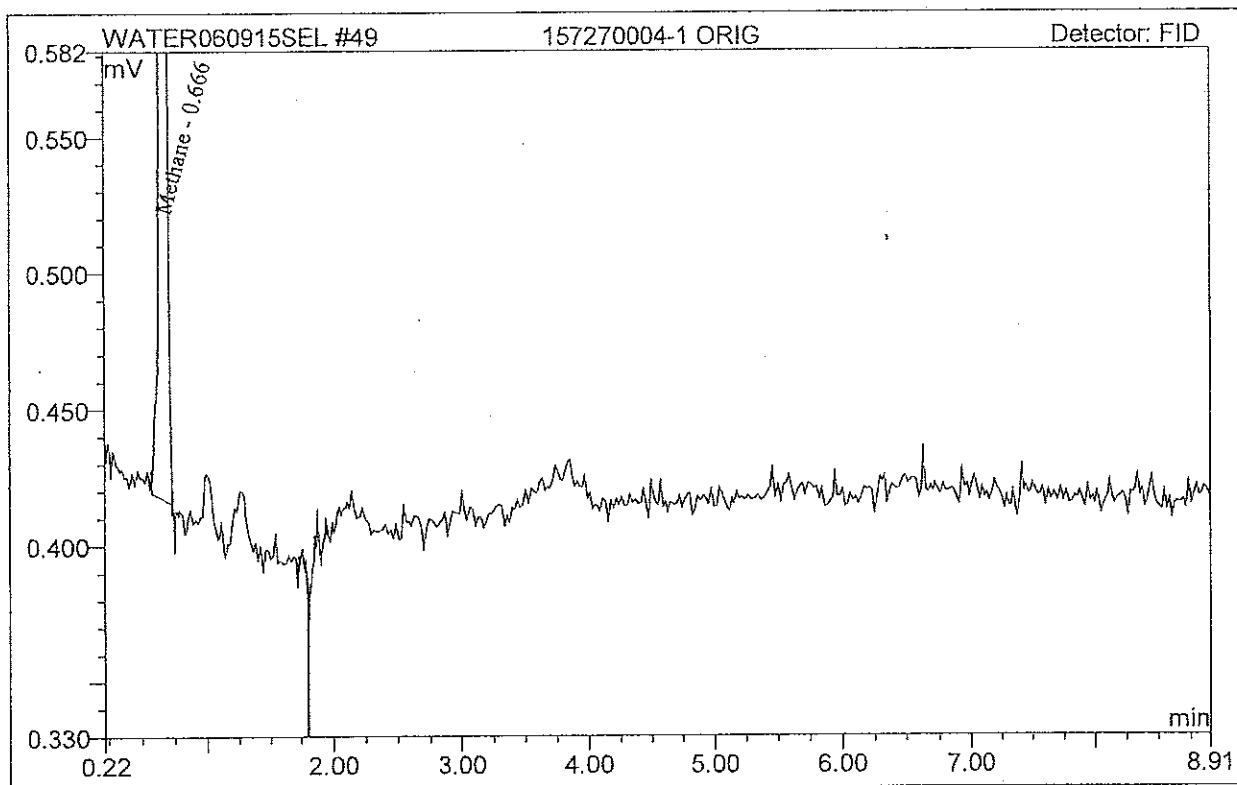


MICROSEEPS

Sample Analysis Report

Sample Name:	157270004-1 ORIG	Sequence No:	49
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/11/2015 12:48	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.666	0.052	1.068	BMB	0.1312

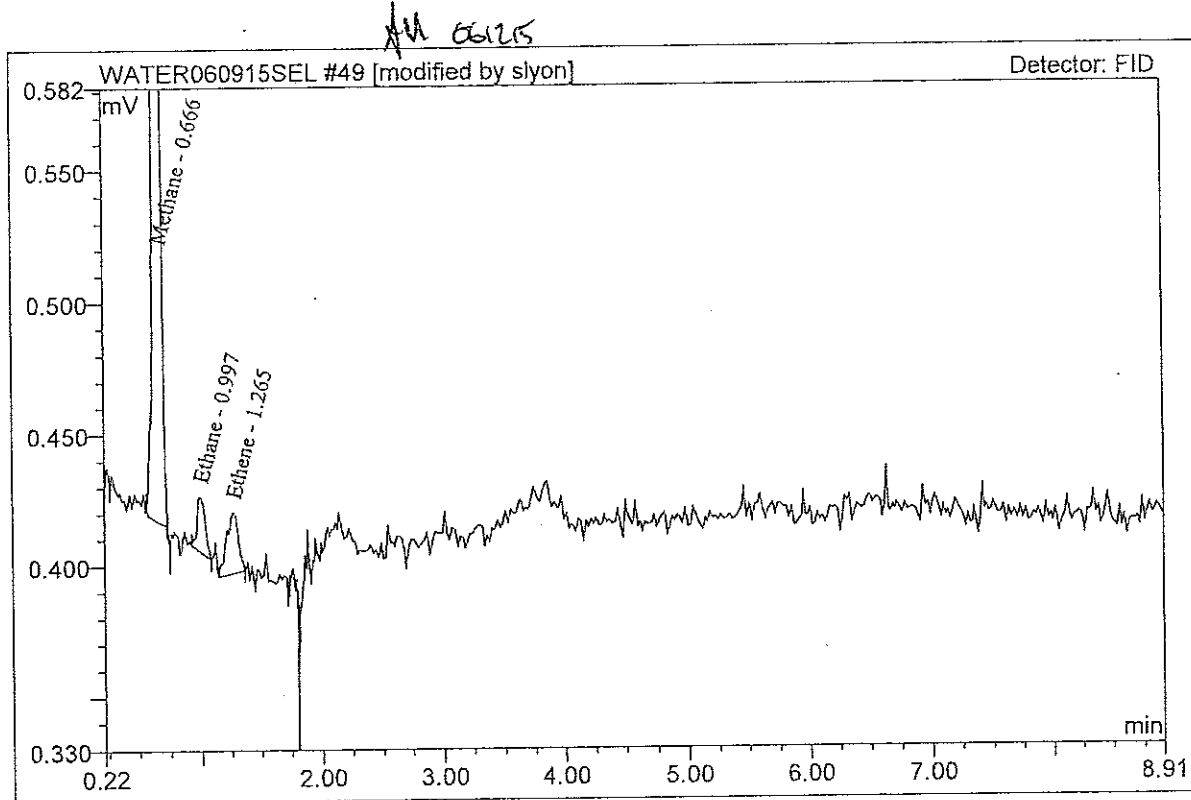


MICROSEEPS

Sample Analysis Report

Sample Name:	157270004-1 ORIG	Sequence No:	49
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/11/2015 12:48	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.666	0.052	1.068	BMB	0.1312
2	Ethane	0.997	0.002	0.021	BMB*	0.0041
3	Ethene	1.265	0.003	0.023	BMB*	0.0074

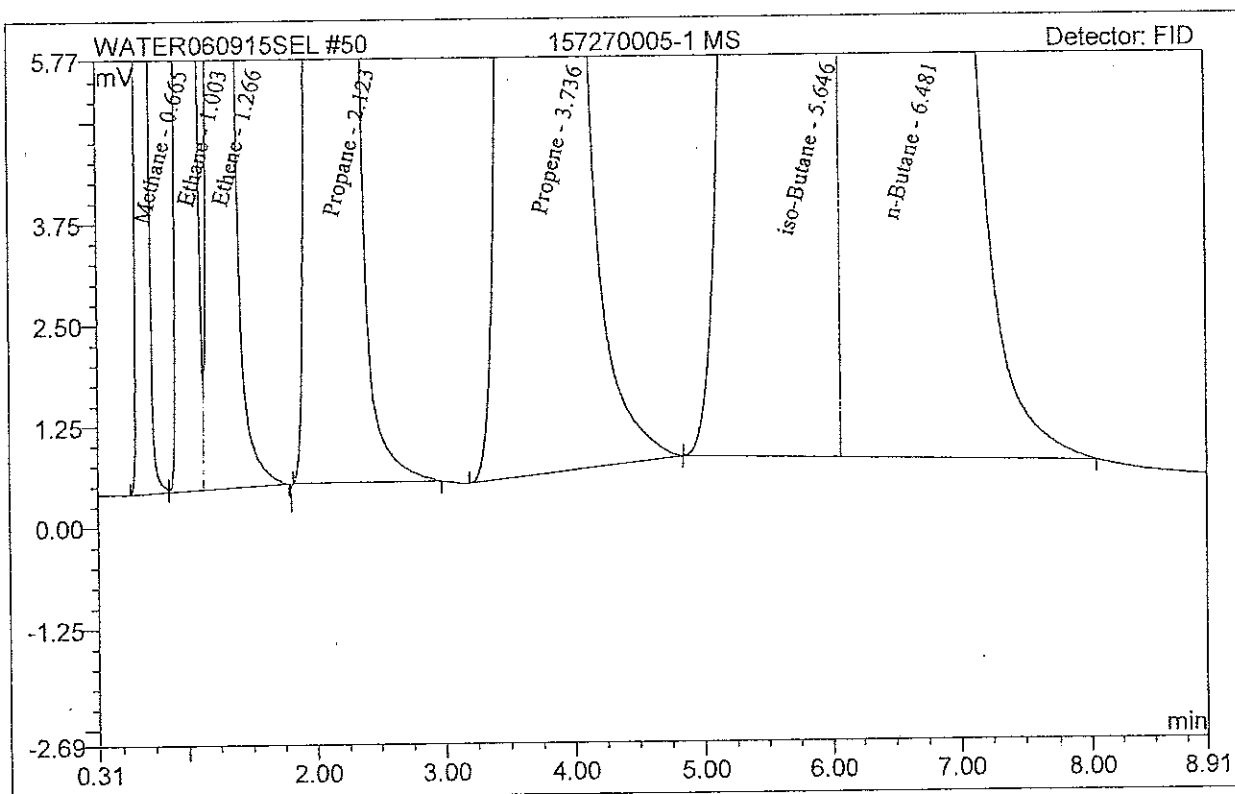


MICROSEEPS

Sample Analysis Report

Sample Name:	157270005-1 MS	Sequence No:	50
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/11/2015 13:06	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.665	16.533	329.875	BM	41.2711
2	Ethane	1.003	30.198	410.705	M	76.5003
3	Ethene	1.266	25.564	252.446	MB	71.5313
4	Propane	2.123	45.138	227.522	BMB	111.7037
5	Propene	3.736	33.025	89.174	BMB	96.4977
6	iso-Butane	5.646	59.349	108.104	BM	145.2639
7	n-Butane	6.481	55.630	86.483	MB	141.0245

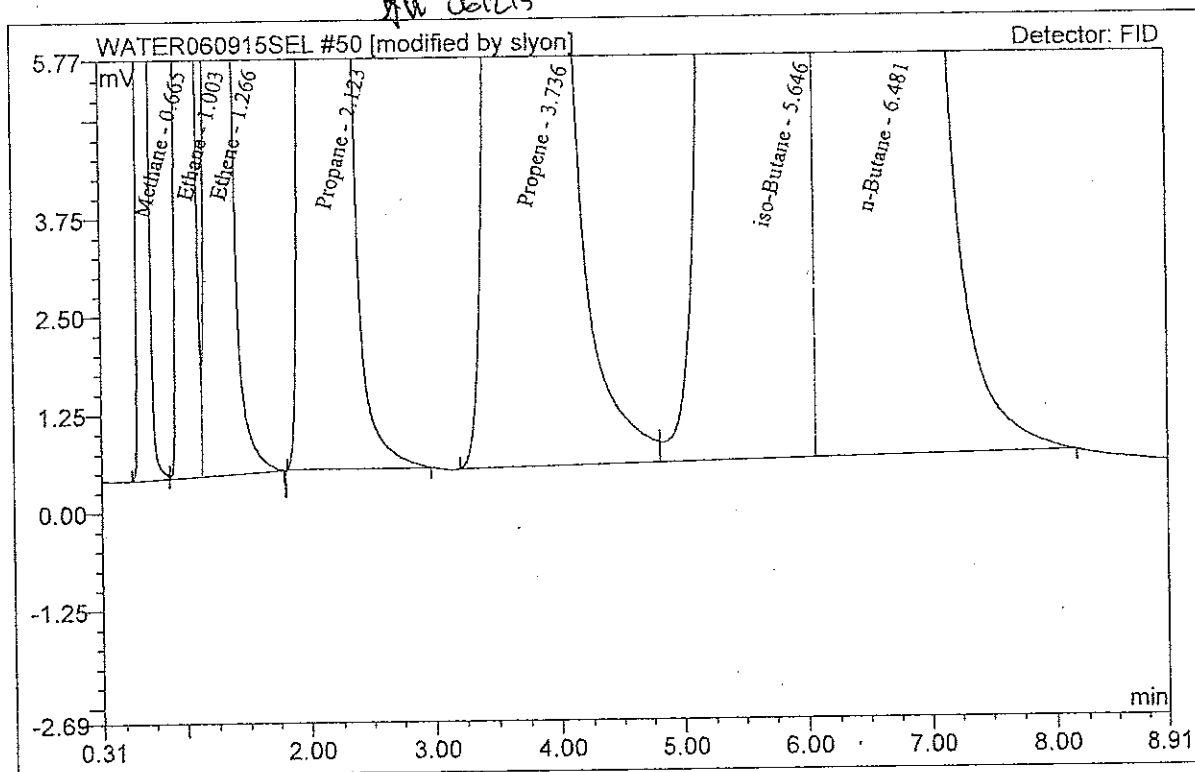


MICROSEEPS

Sample Analysis Report

Sample Name:	157270005-1 MS	Sequence No:	50
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/11/2015 13:06	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.665	16.533	329.875	BM	41.2711
2	Ethane	1.003	30.198	410.705	M	76.5003
3	Ethene	1.266	25.564	252.446	MB	71.5313
4	Propane	2.123	45.138	227.522	BMB	111.7037
5	Propene	3.736	33.213	89.248	BM *	97.0406
6	iso-Butane	5.646	59.615	108.302	M *	145.9061
7	n-Butane	6.481	55.840	86.626	MB*	141.5500

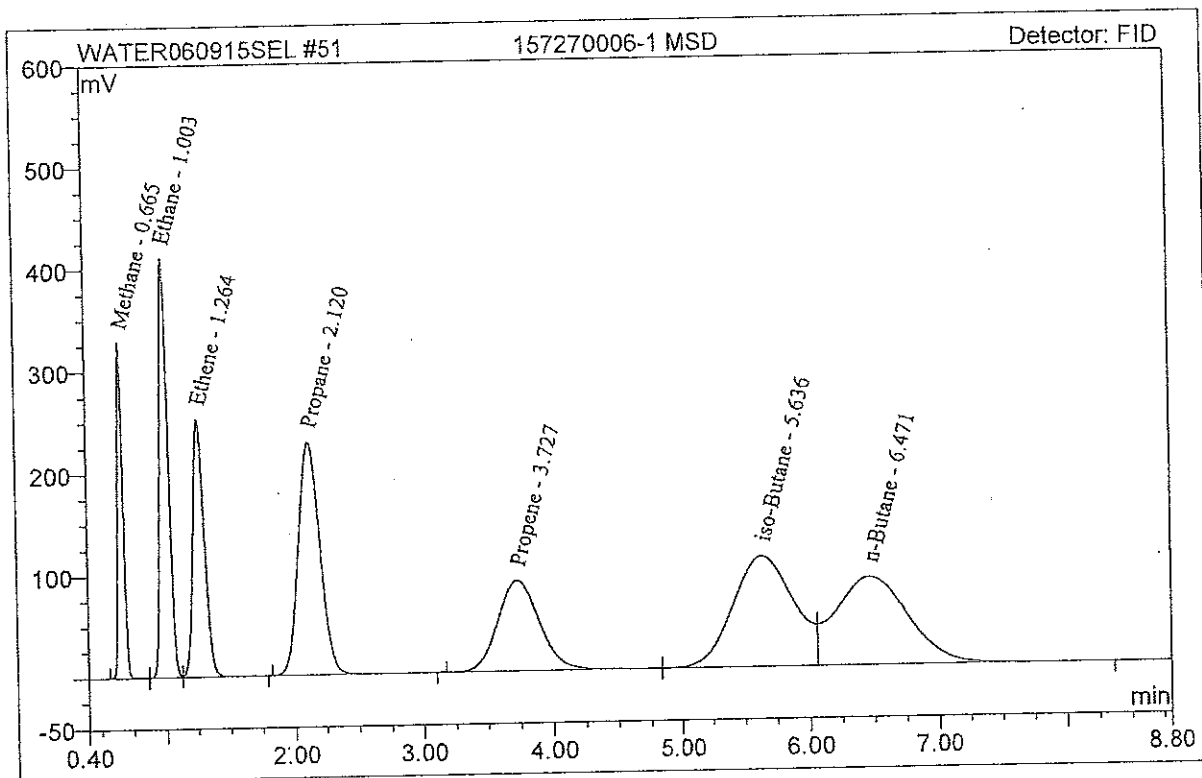


MICROSEEPS

Sample Analysis Report

Sample Name:	157270006-1 MSD	Sequence No:	51
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/11/2015 13:18	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.665	16.551	329.323	BM	41.3134
2	Ethane	1.003	30.195	410.766	M	76.4924
3	Ethene	1.264	25.557	252.654	MB	71.5136
4	Propane	2.120	45.201	228.299	BMB	111.8566
5	Propene	3.727	33.238	89.302	BM	97.1138
6	iso-Butane	5.636	59.640	108.401	M	145.9675
7	n-Butane	6.471	56.262	86.610	MB	142.6015

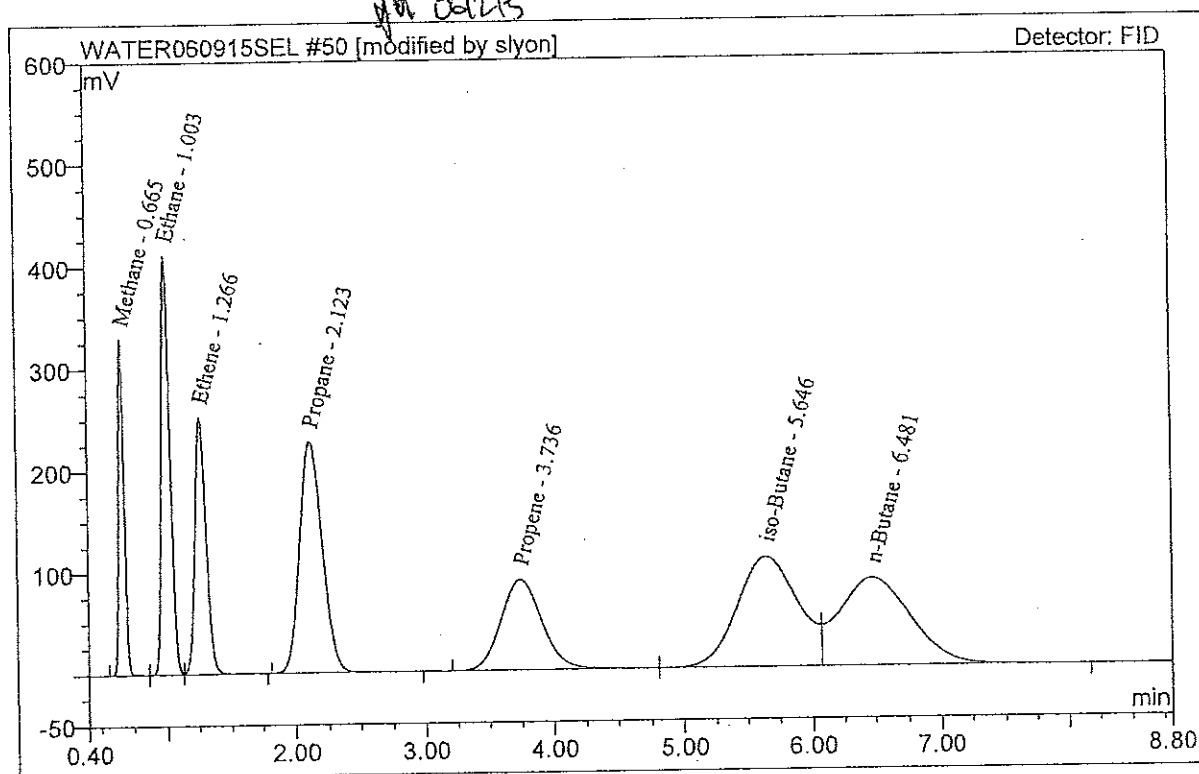


MICROSEEPS

Sample Analysis Report

Sample Name:	35435-157270005-1 MS	Sequence No:	50
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/11/2015 13:06	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.665	16.533	329.875	BM	41.2711
2	Ethane	1.003	30.198	410.705	M	76.5003
3	Ethene	1.266	25.564	252.446	MB	71.5313
4	Propane	2.123	45.138	227.522	BMB	111.7037
5	Propene	3.736	33.213	89.248	BM *	97.0406
6	iso-Butane	5.646	59.615	108.302	M *	145.9061
7	n-Butane	6.481	55.840	86.626	MB*	141.5500

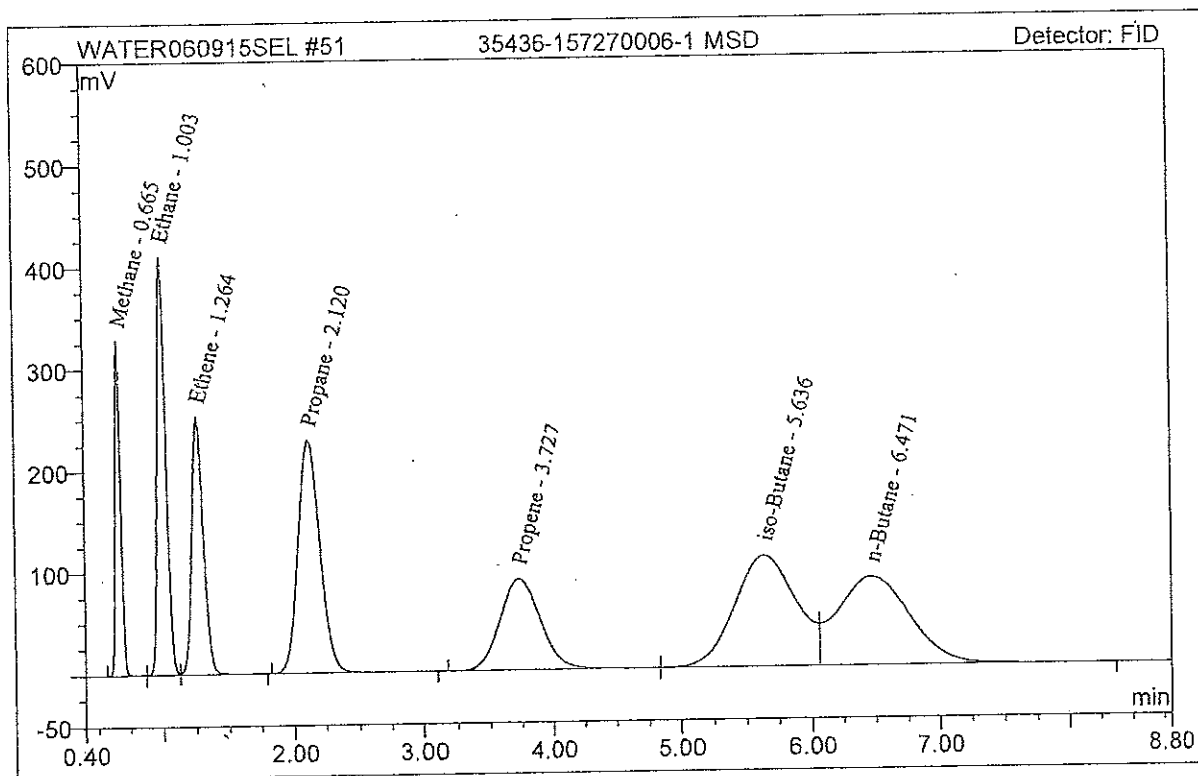


MICROSEEPS

Sample Analysis Report

Sample Name:	35436-157270006-1 MSD	Sequence No:	51
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/11/2015 13:18	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.665	16.551	329.323	BM	41.3134
2	Ethane	1.003	30.195	410.766	M	76.4924
3	Ethene	1.264	25.557	252.654	MB	71.5136
4	Propane	2.120	45.201	228.299	BMB	111.8566
5	Propene	3.727	33.238	89.302	BM	97.1138
6	iso-Butane	5.636	59.640	108.401	M	145.9675
7	n-Butane	6.471	56.262	86.610	MB	142.6015

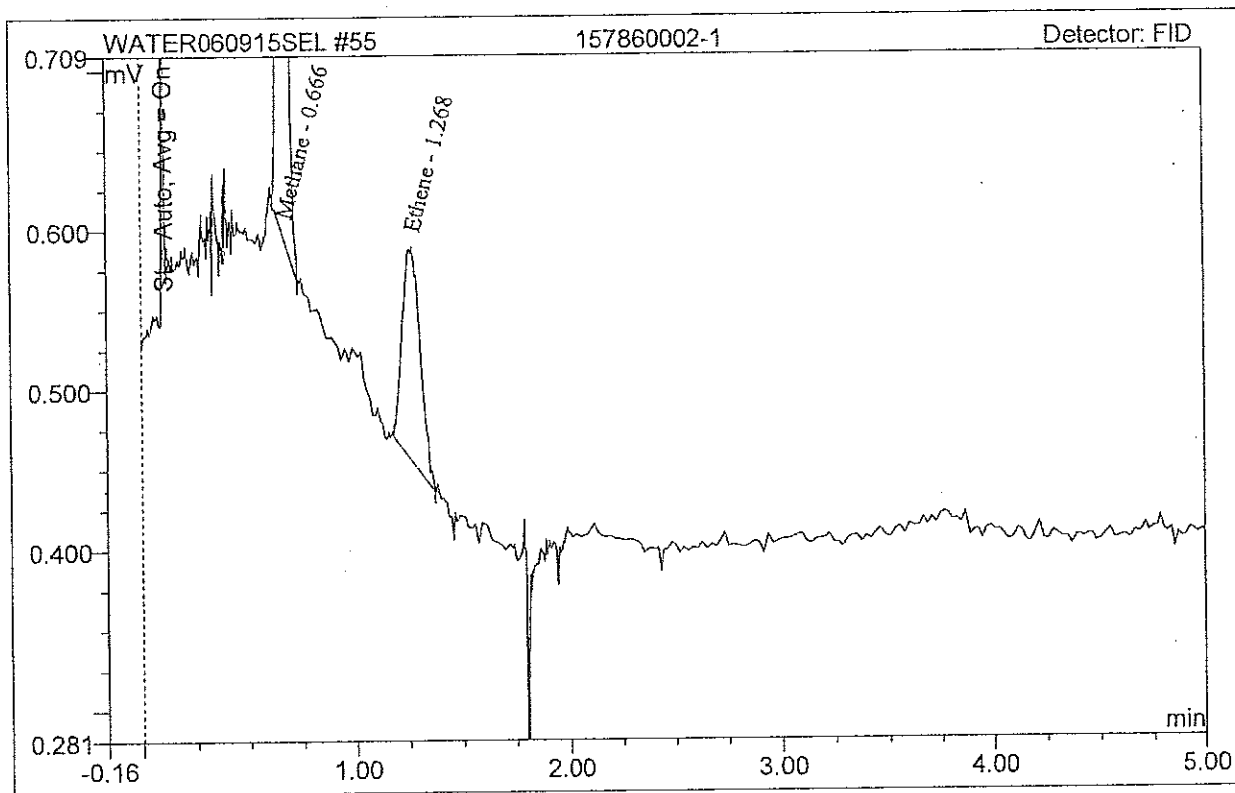


MICROSEEPS

Sample Analysis Report

Sample Name:	157860002-1	Sequence No:	55
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/11/2015 14:06	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.666	0.033	0.717	BMB	0.0844
2	Ethene	1.268	0.013	0.134	BMB	0.0362

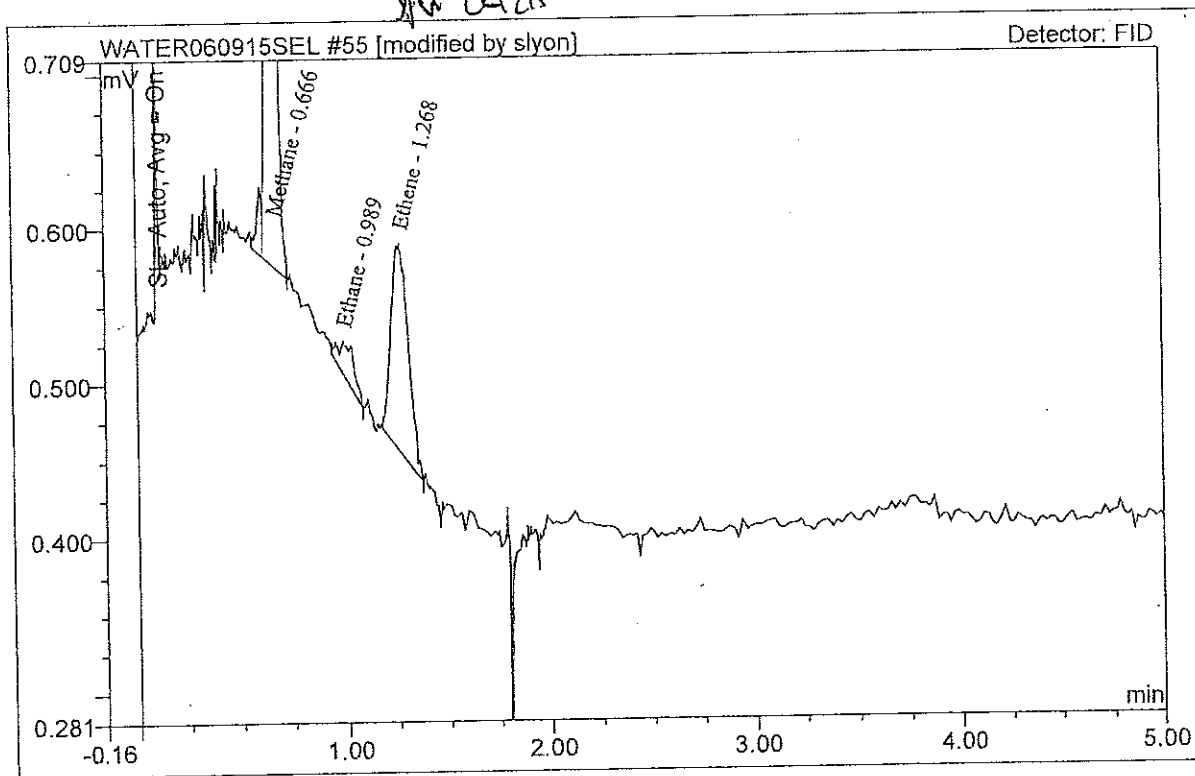


MICROSEEPS

Sample Analysis Report

Sample Name:	157860002-1	Sequence No:	55
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/11/2015 14:06	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
2	Methane	0.666	0.035	0.738	MB*	0.0895
3	Ethane	0.989	0.002	0.020	BMB*	0.0050
4	Ethene	1.268	0.013	0.134	BMB	0.0362

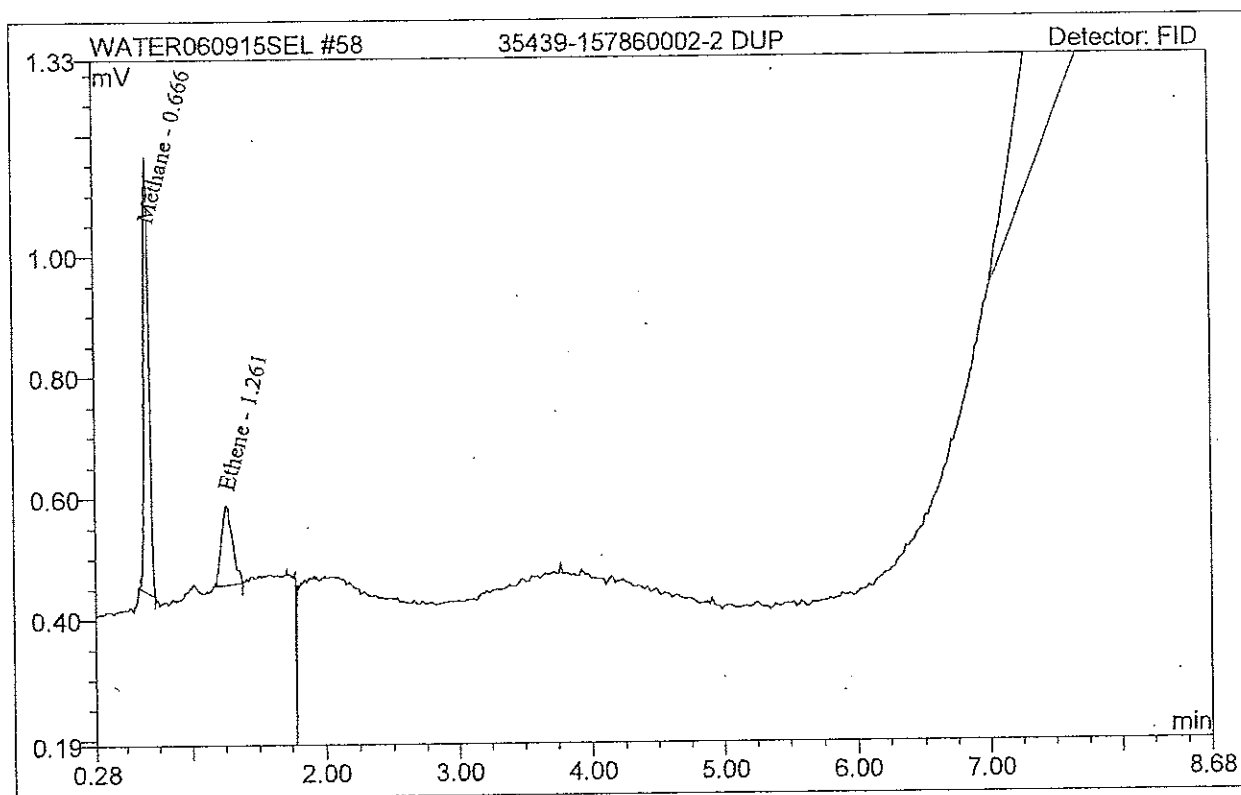


MICROSEEPS

Sample Analysis Report

Sample Name:	35439-157860002-2 DUP	Sequence No:	58
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/11/2015 14:44	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.666	0.032	0.720	BMB	0.0821
2	Ethene	1.261	0.012	0.132	BMB	0.0349



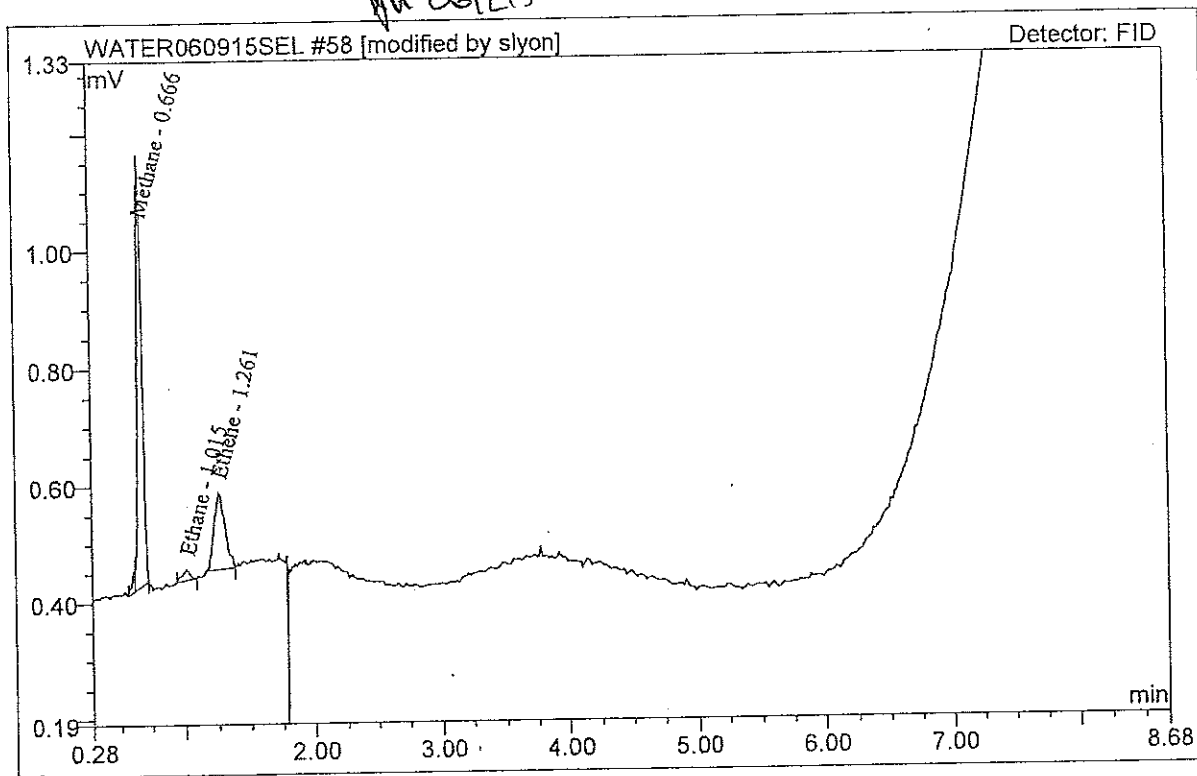
MICROSEEPS

Sample Analysis Report

Sample Name:	35439-157860002-2 DUP	Sequence No:	58
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/11/2015 14:44	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
2	Methane	0.666	0.034	0.735	MB*	0.0860
3	Ethane	1.015	0.001	0.020	BMB*	0.0035
4	Ethene	1.261	0.012	0.132	BMB	0.0349

MM 06/21/15



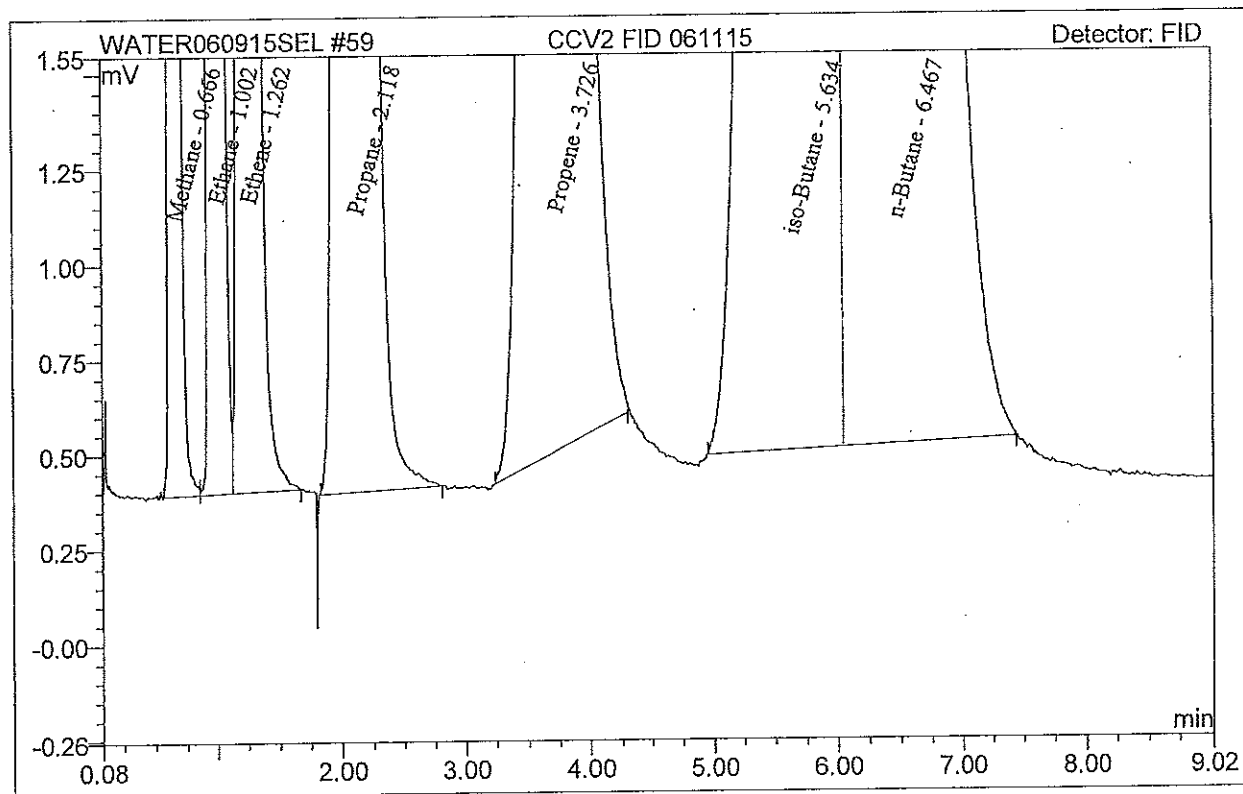
MICROSEEPS

Sample Analysis Report

Sample Name:	CCV2 FID 061115	Sequence No:	59
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/11/2015 15:10	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	RA-13-03 5X

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.666	5.677	114.469	BM	14.2866
2	Ethane	1.002	3.490	47.261	M	8.8914
3	Ethene	1.262	3.462	34.027	MB	9.7416
4	Propane	2.118	5.279	26.397	BMB	13.1827
5	Propene	3.726	4.934	13.453	BMB	14.5416
6	iso-Butane	5.634	6.586	12.077	BM	16.3270
7	n-Butane	6.467	6.819	10.626	MB	17.5292

TV
14.434
9.261
10.227



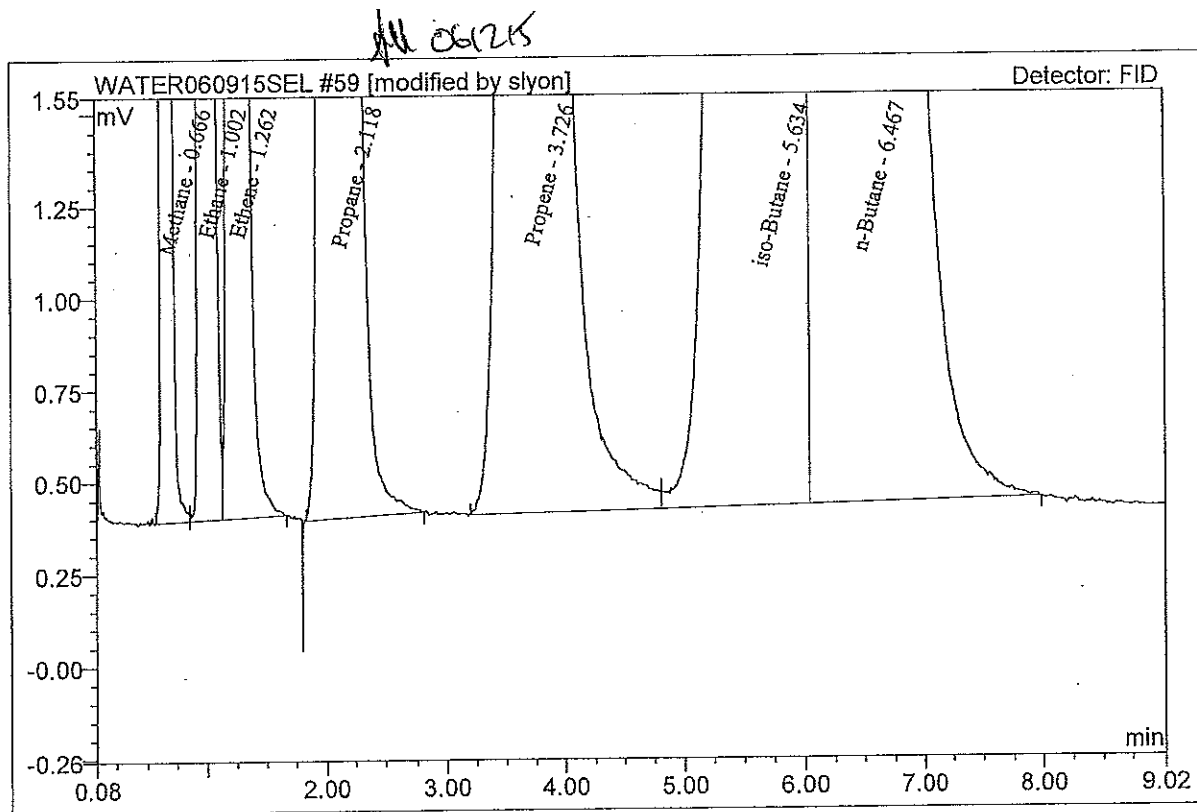
MICROSEEPS

Sample Analysis Report

Sample Name:	CCV2 FID 061115	Sequence No:	59
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/11/2015 15:10	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	RA-13-03 5X

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.666	5.677	114.469	BM	14.2866
2	Ethane	1.002	3.490	47.261	M	8.8914
3	Ethene	1.262	3.462	34.027	MB	9.7416
4	Propane	2.118	5.279	26.397	BMB	13.1827
5	Propene	3.726	5.092	13.547	BM*	15.0081
6	iso-Butane	5.634	6.677	12.154	M*	16.5508
7	n-Butane	6.467	6.961	10.711	MB*	17.8921

TV
14.434
9.261
10.227

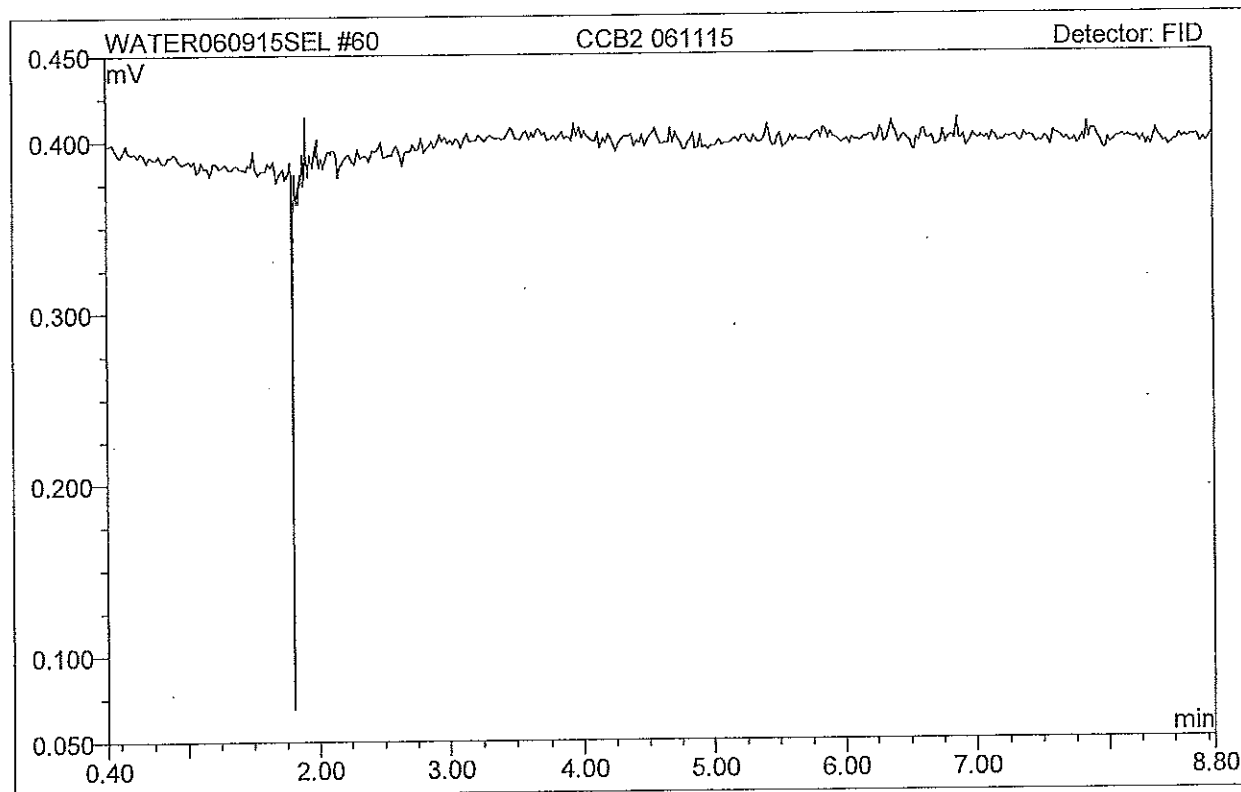


MICROSEEPS

Sample Analysis Report

Sample Name:	CCB2 061115	Sequence No:	60
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/11/2015 15:21	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
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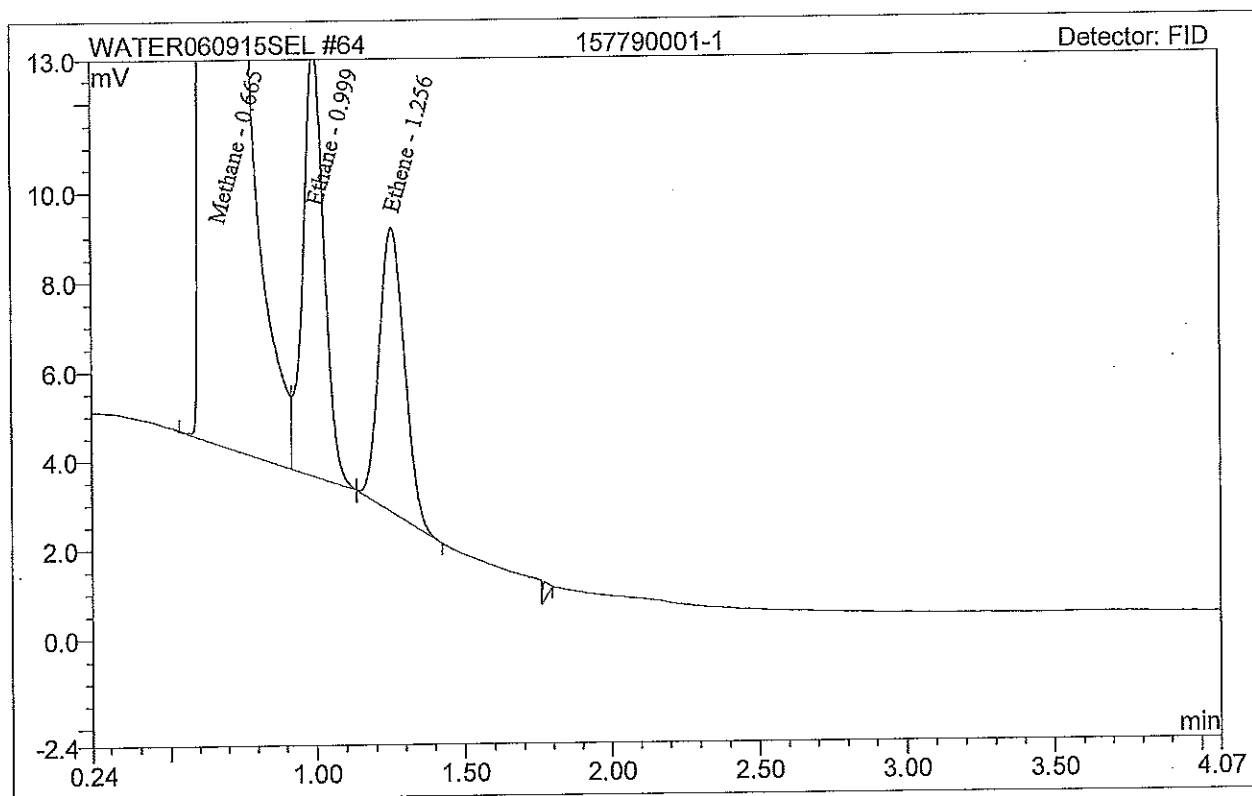


MICROSEEPS

Sample Analysis Report

Sample Name:	157790001-1	Sequence No:	64
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/11/2015 16:24	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.665	546.226	10038.155	BM	1047.9436
2	Ethane	0.999	0.777	9.589	MB	1.9797
3	Ethene	1.256	0.632	6.370	bMB	1.7791

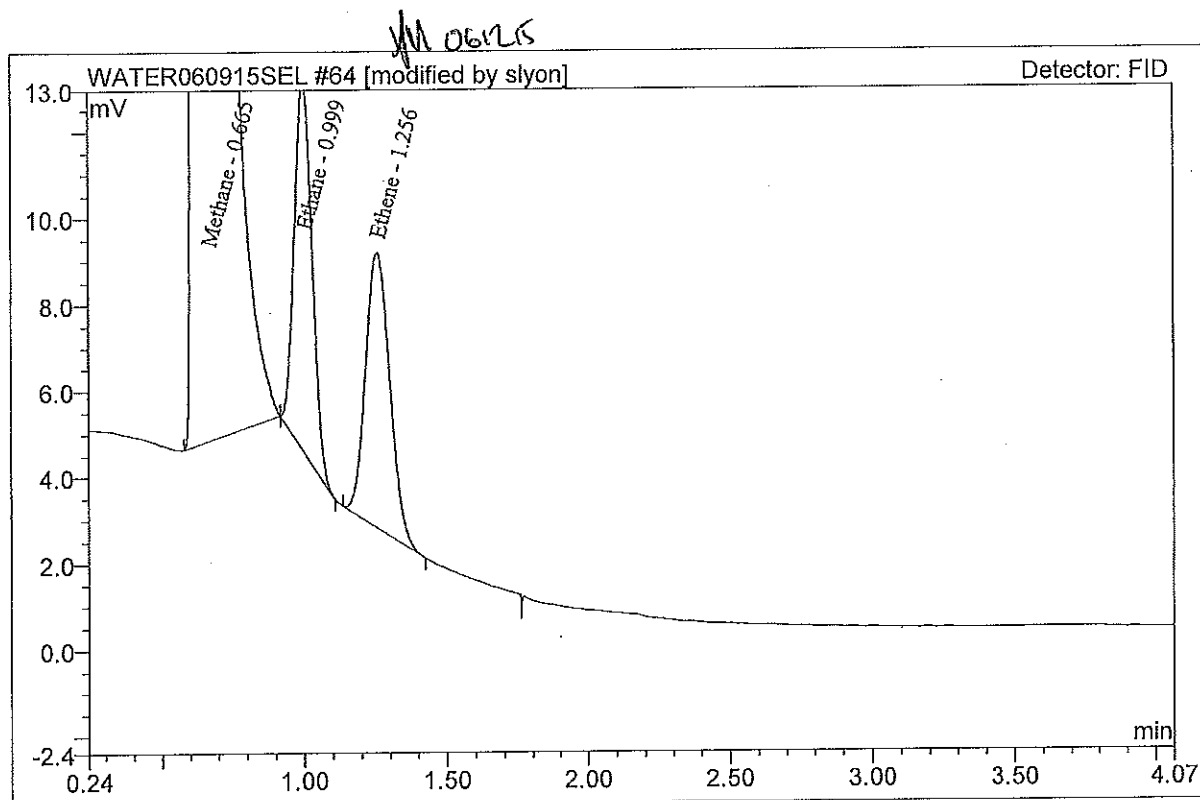


MICROSEEPS

Sample Analysis Report

Sample Name:	157790001-1	Sequence No:	64
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/11/2015 16:24	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.665	545.934	10037.688	BMB*	1047.4924
2	Ethane	0.999	0.612	8.595	bMB*	1.5596
3	Ethene	1.256	0.632	6.370	BMB*	1.7791

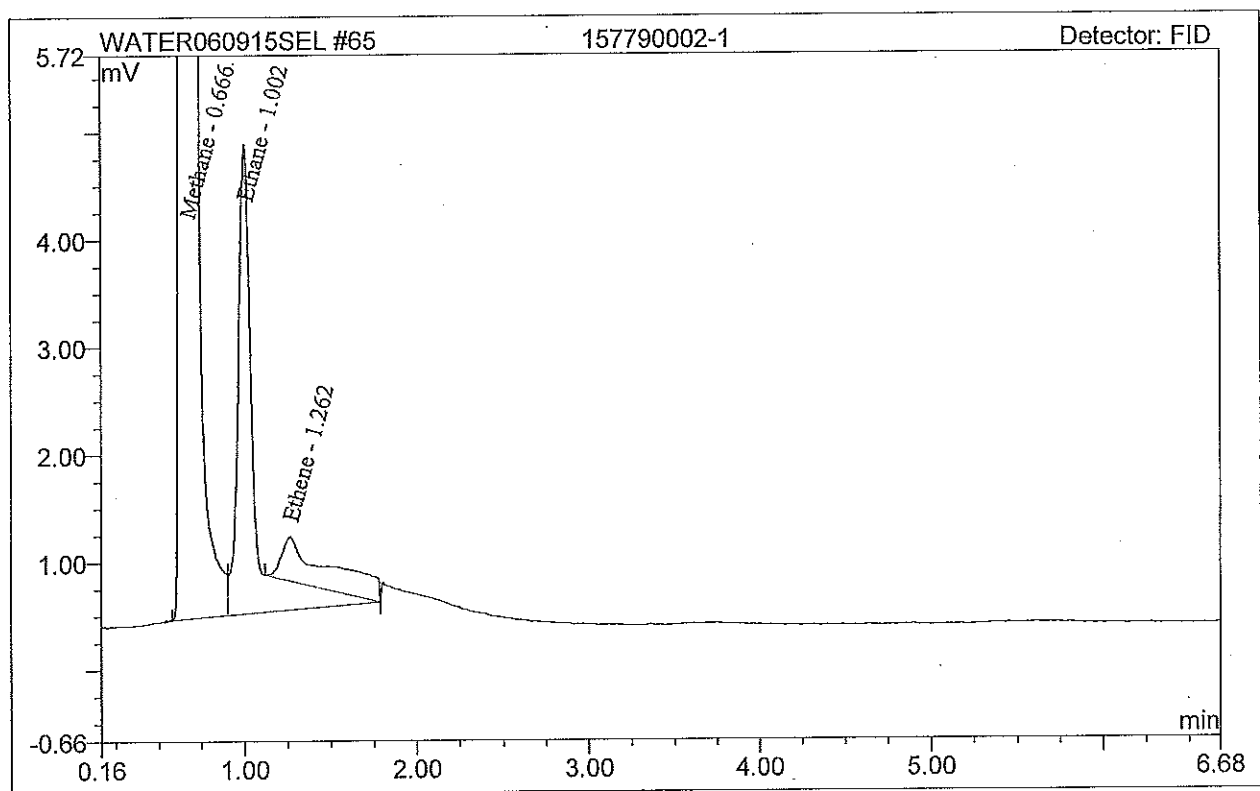


MICROSEEPS

Sample Analysis Report

Sample Name:	157790002-1	Sequence No:	65
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/11/2015 16:35	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.666	64.729	1362.162	BM	156.2070
2	Ethane	1.002	0.484	4.369	MB	1.2340
3	Ethene	1.262	0.143	0.413	Rd	0.4041



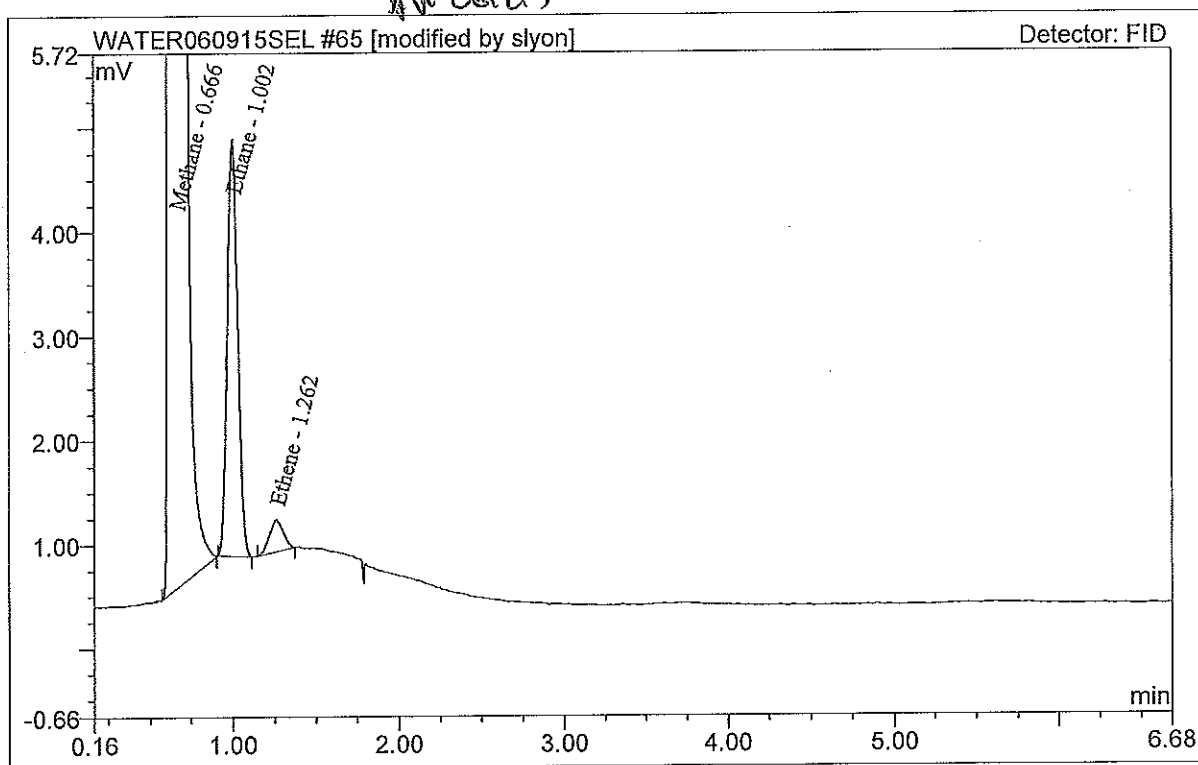
MICROSEEPS

Sample Analysis Report

Sample Name:	157790002-1	Sequence No:	65
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/11/2015 16:35	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.666	64.667	1362.058	BMB*	156.0639
2	Ethane	1.002	0.291	4.003	BMB*	0.7421
3	Ethene	1.262	0.030	0.309	BMB*	0.0839

all done

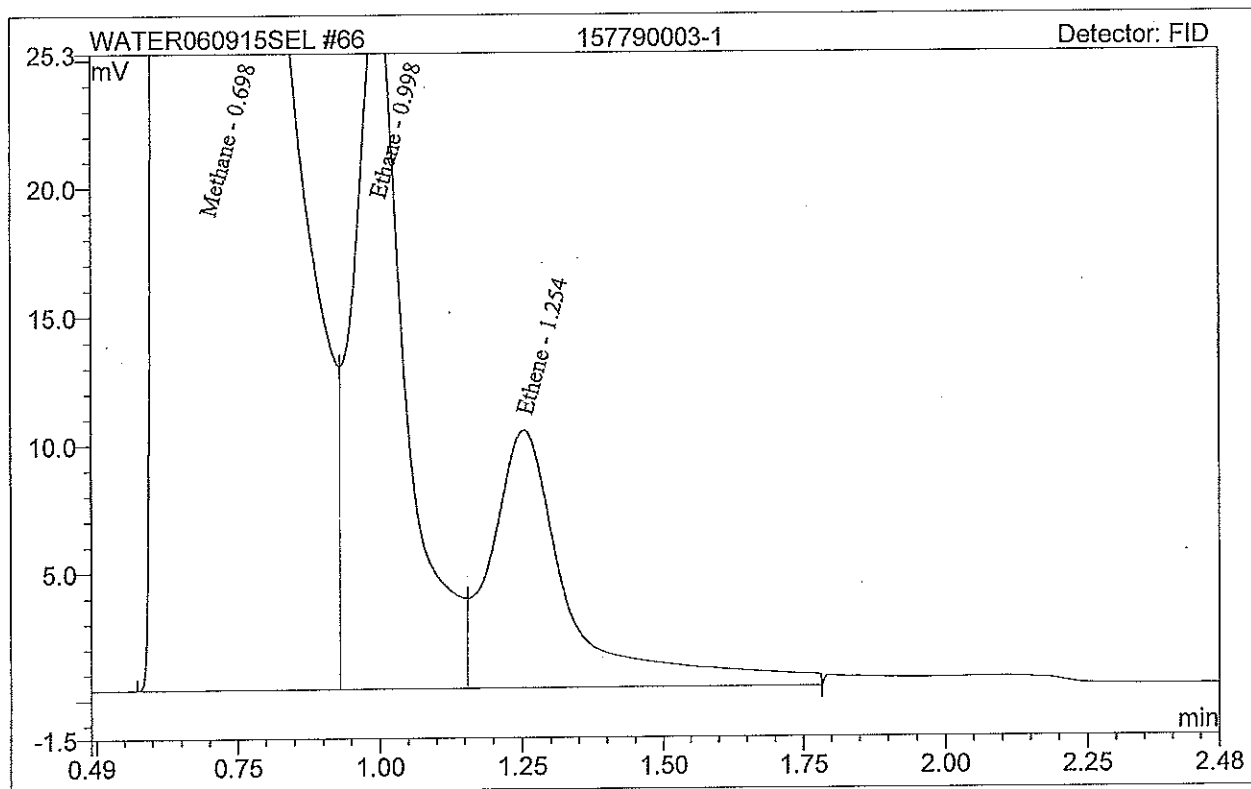


MICROSEEPS

Sample Analysis Report

Sample Name:	157790003-1	Sequence No:	66
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/11/2015 16:53	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.698	939.926	10073.510	BM	1600.1298
2	Ethane	0.998	2.885	27.326	M	7.3500
3	Ethene	1.254	1.600	10.094	MB	4.5046

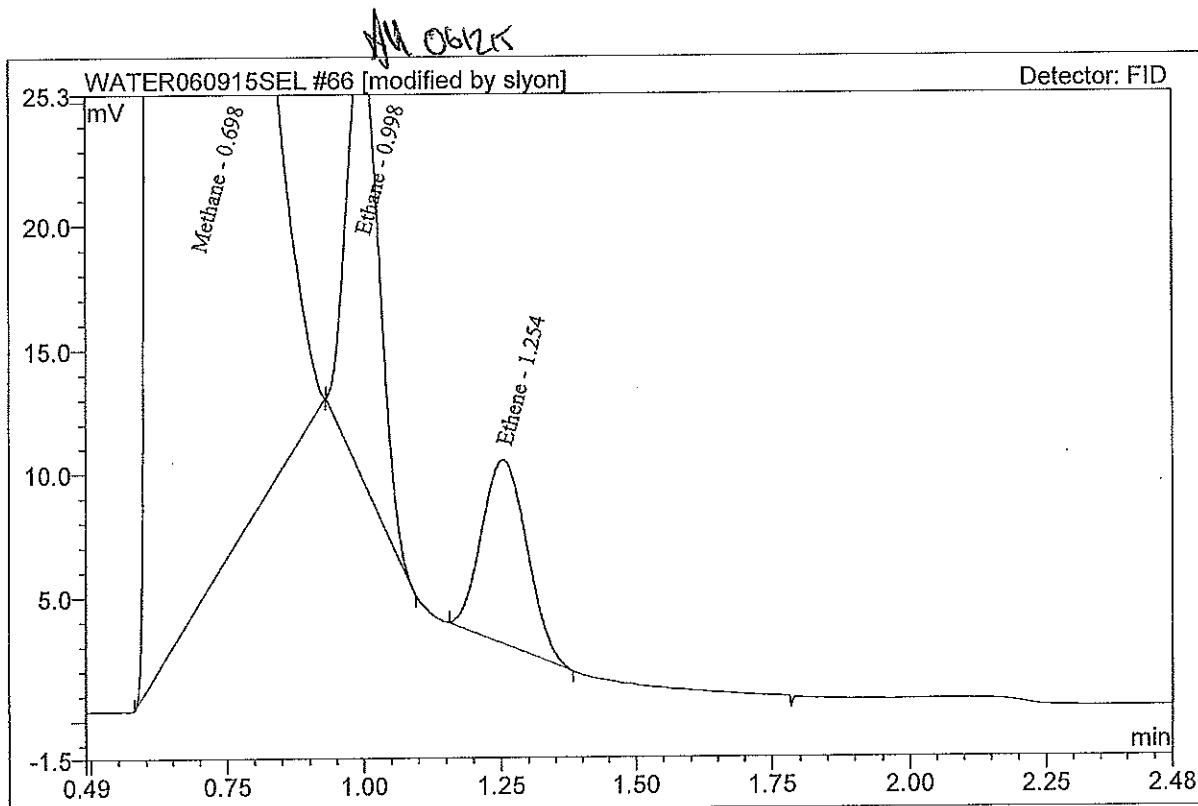


MICROSEEPS

Sample Analysis Report

Sample Name:	157790003-1	Sequence No:	66
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/11/2015 16:53	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.698	937.705	10069.217	BMB*	1597.2777
2	Ethane	0.998	1.217	17.917	BMB*	3.1026
3	Ethene	1.254	0.707	7.443	BMB*	1.9900

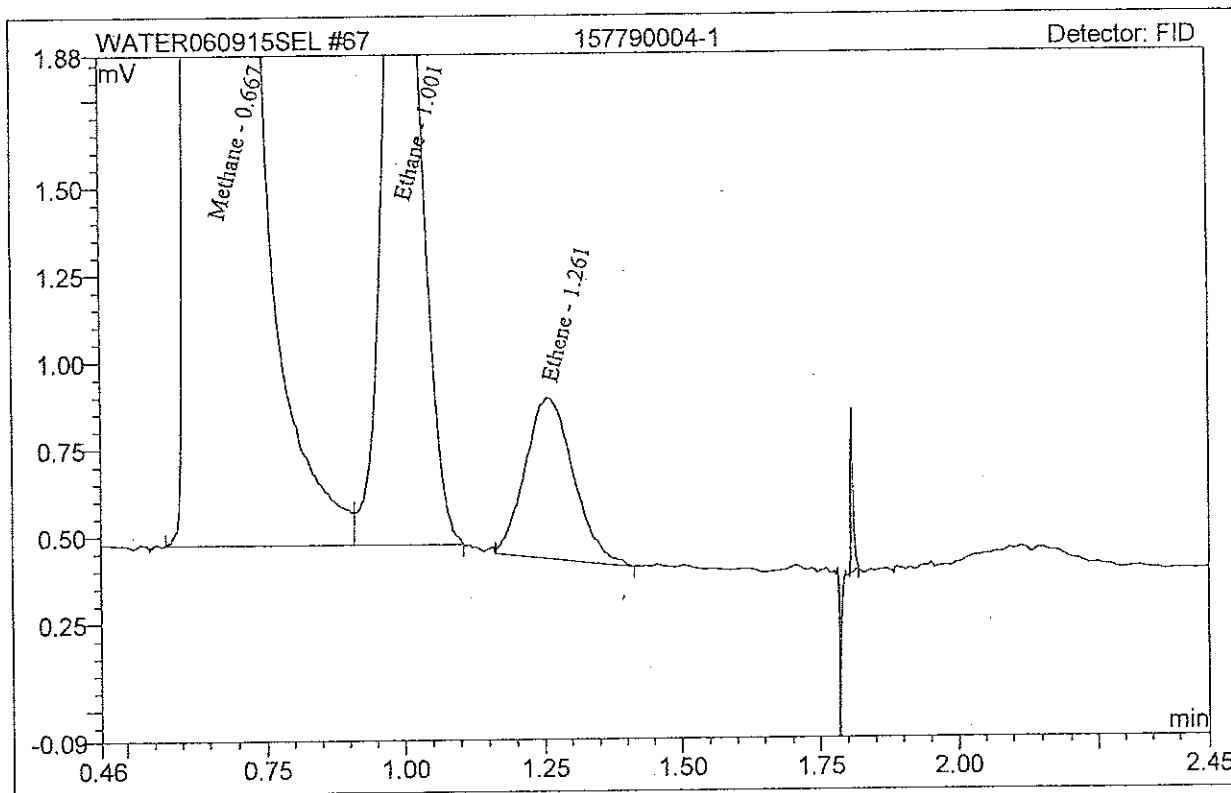


MICROSEEPS

Sample Analysis Report

Sample Name:	157790004-1	Sequence No:	67
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/11/2015 17:05	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.667	33.566	707.820	BM	82.7617
2	Ethane	1.001	0.177	2.349	MB	0.4500
3	Ethene	1.261	0.047	0.464	BMB	0.1318

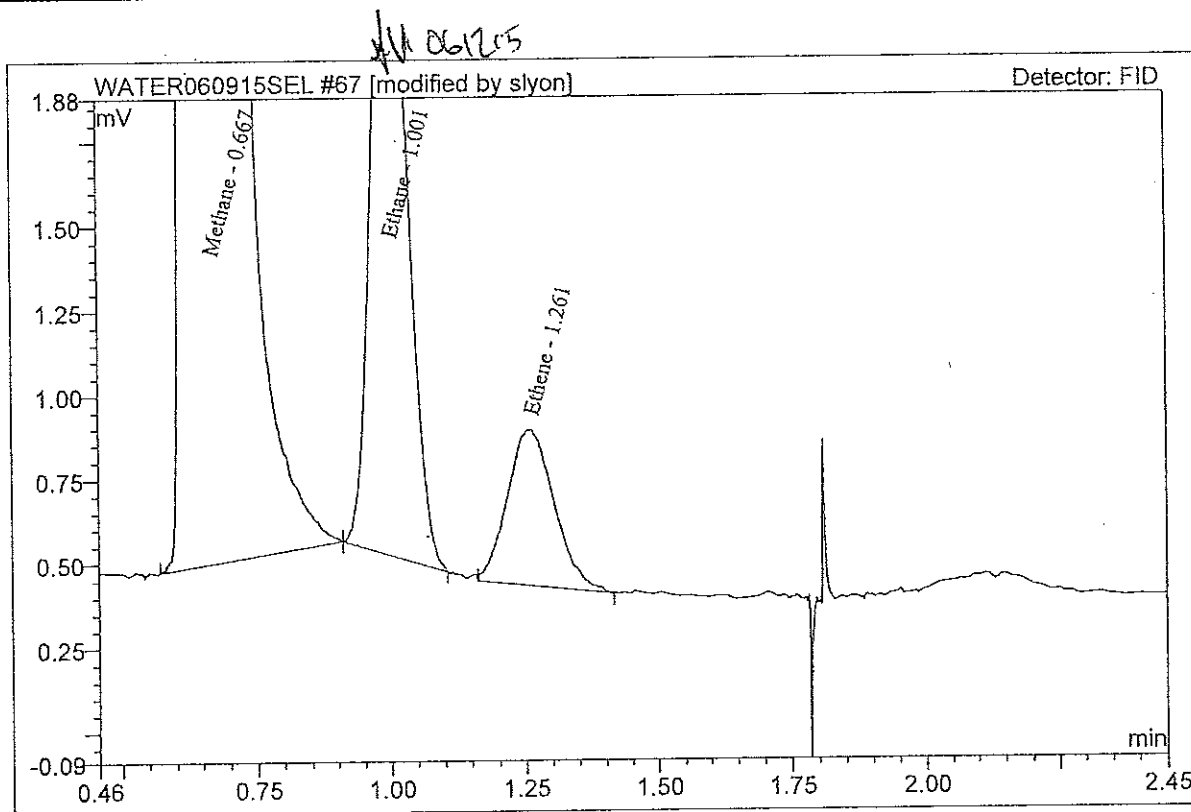


MICROSEEPS

Sample Analysis Report

Sample Name:	157790004-1	Sequence No:	67
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/11/2015 17:05	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.667	33.550	707.795	BMb*	82.7241
2	Ethane	1.001	0.167	2.300	bMB*	0.4270
3	Ethene	1.261	0.047	0.464	BMB	0.1318

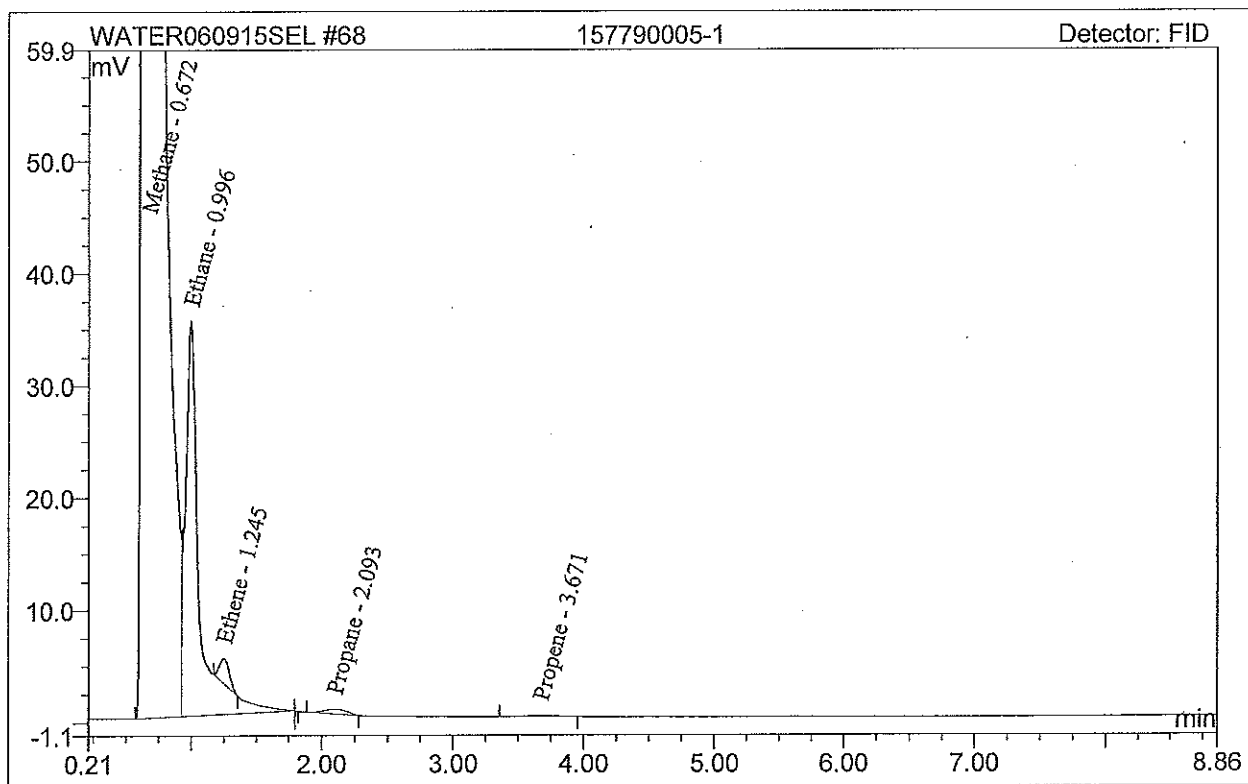


MICROSEEPS

Sample Analysis Report

Sample Name:	157790005-1	Sequence No:	68
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/11/2015 17:15	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.672	955.978	10078.334	BM	1620.6661
3	Ethane	0.996	4.385	35.144	Mb	11.1695
4	Ethene	1.245	0.193	2.167	Rd	0.5434
7	Propane	2.093	0.085	0.420	BMB	0.2131
8	Propene	3.671	0.034	0.109	BMB	0.1015

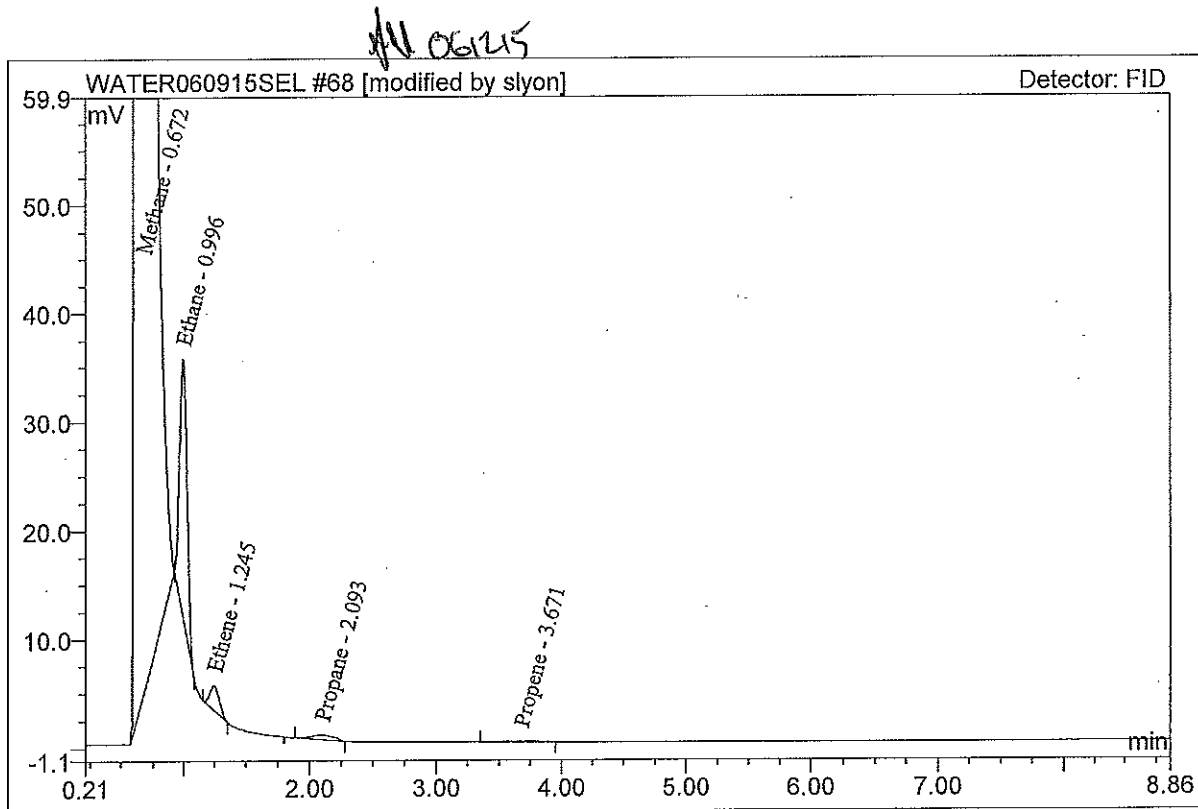


MICROSEEPS

Sample Analysis Report

Sample Name:	157790005-1	Sequence No:	68
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/11/2015 17:15	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.672	953.243	10074.120	BMB*	1617.1764
2	Ethane	0.996	1.574	23.509	BMB*	4.0118
3	Ethene	1.245	0.199	2.208	BMB*	0.5609
4	Propane	2.093	0.085	0.420	BMB	0.2131
5	Propene	3.671	0.034	0.109	BMB	0.1015

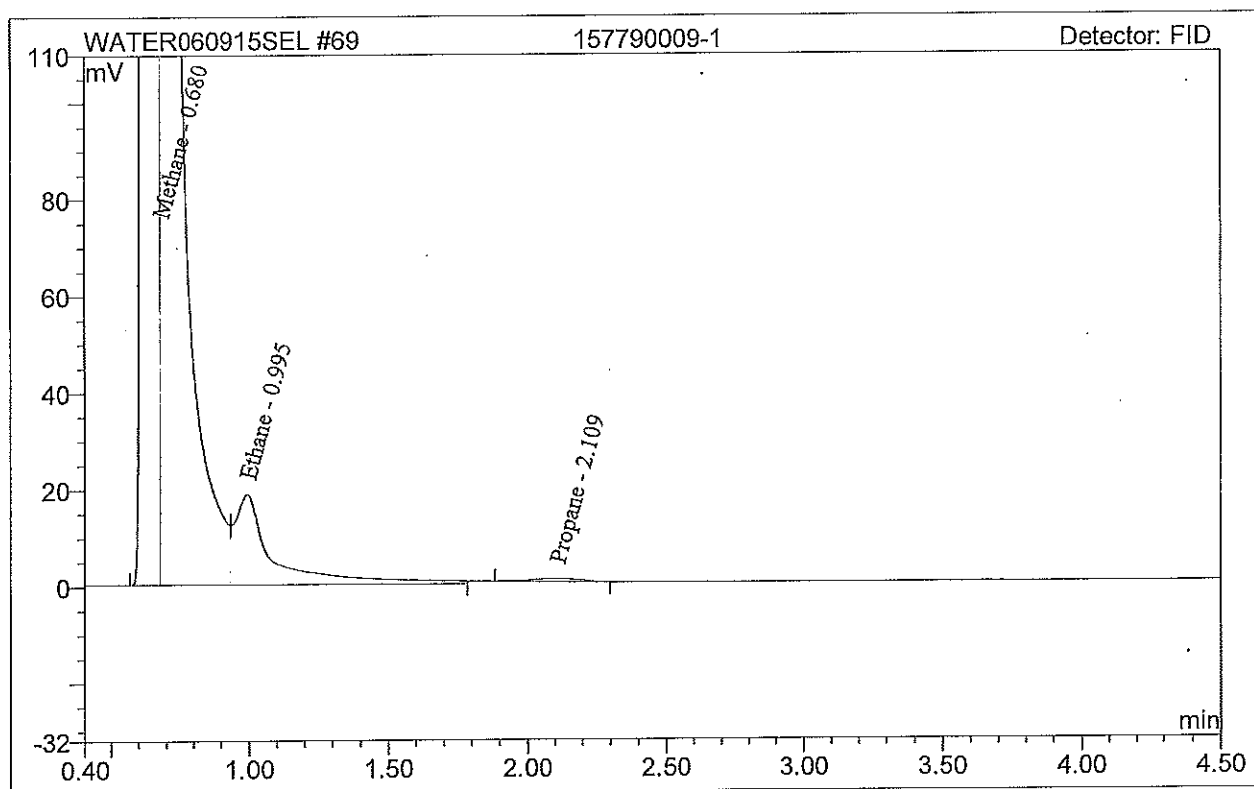


MICROSEEPS

Sample Analysis Report

Sample Name:	157790009-1	Sequence No:	69
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/11/2015 17:28	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.680	612.684	10080.540	BM	1148.8055
4	Ethane	0.995	2.994	18.659	MB	7.6296
5	Propane	2.109	0.127	0.680	BMB	0.3169

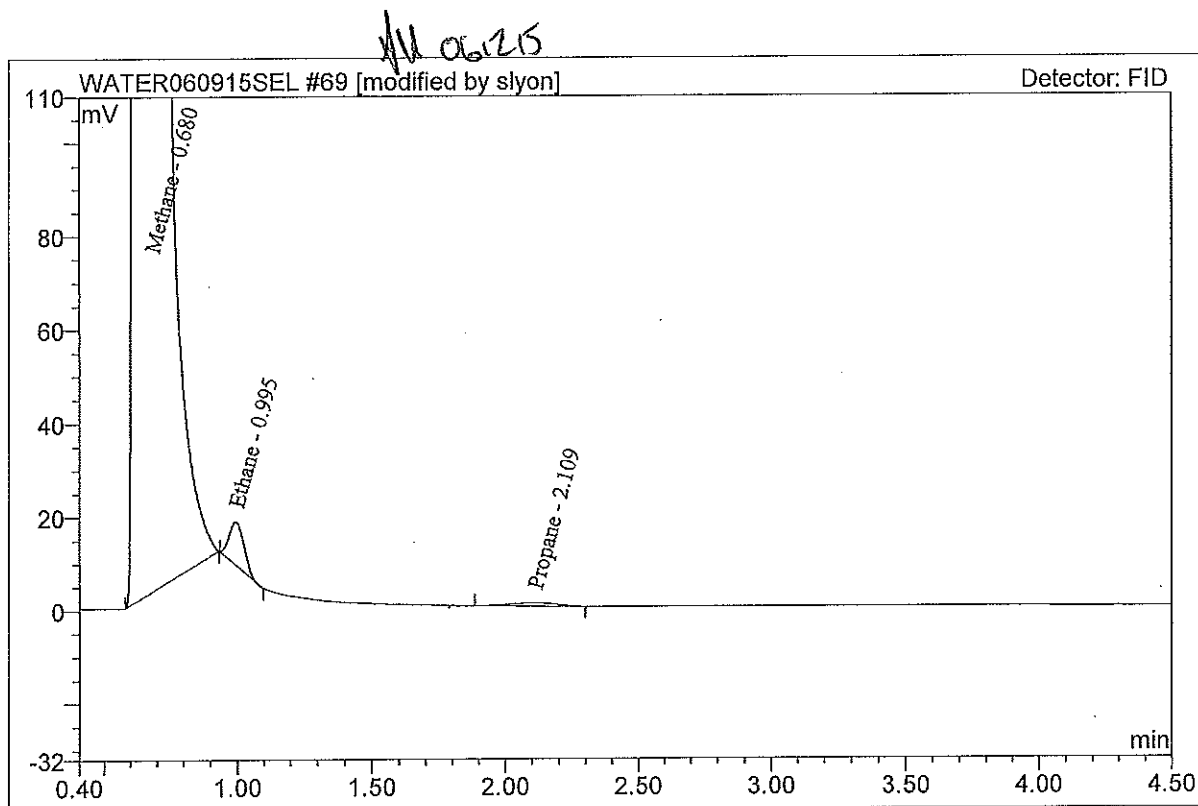


MICROSEEPS

Sample Analysis Report

Sample Name:	157790009-1	Sequence No:	69
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/11/2015 17:28	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.680	923.795	10077.006	BMB*	1579.3605
2	Ethane	0.995	0.590	9.232	BMB*	1.5036
3	Propane	2.109	0.127	0.680	BMB	0.3169

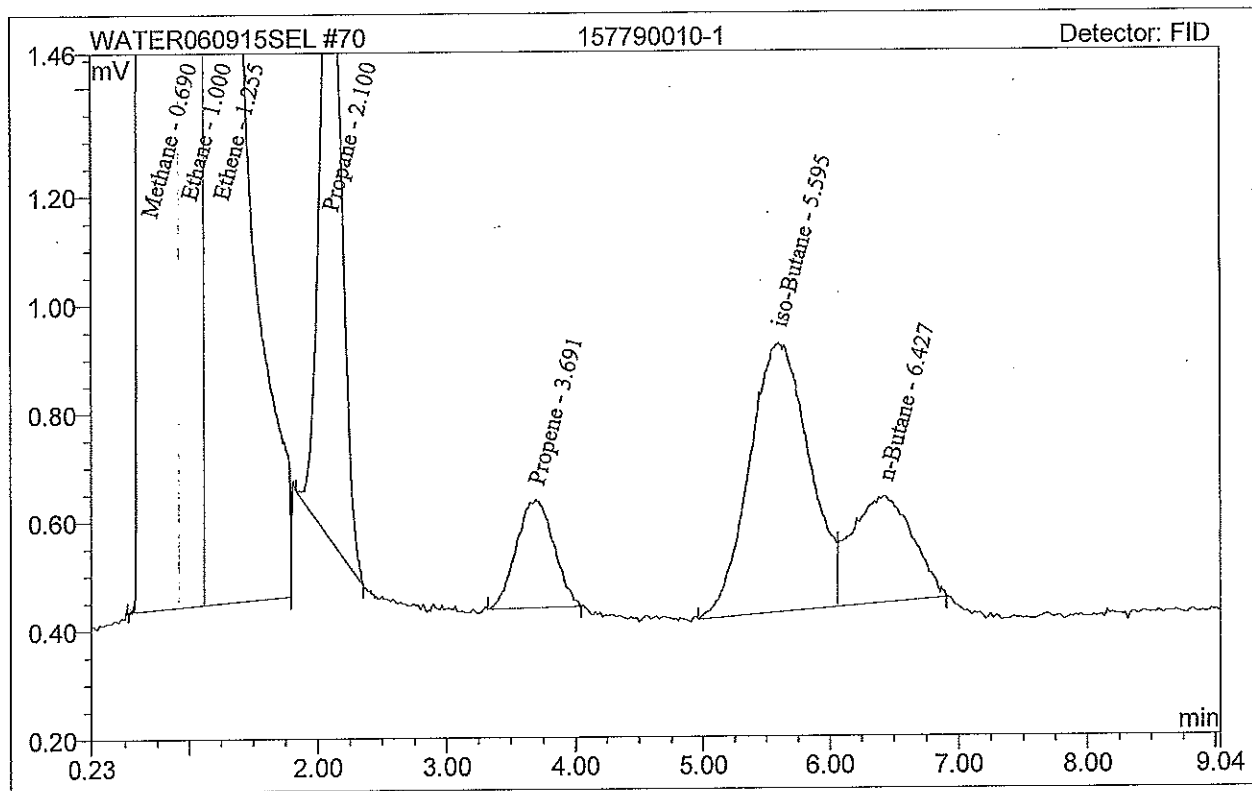


MICROSEEPS

Sample Analysis Report

Sample Name:	157790010-1	Sequence No:	70
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/11/2015 17:39	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.690	819.035	10081.259	BM	1441.0821
2	Ethane	1.000	4.173	50.660	M	10.6300
3	Ethene	1.255	10.384	99.806	MB	29.1683
4	Propane	2.100	0.236	1.203	BMB	0.5896
5	Propene	3.691	0.067	0.200	BMB	0.1975
6	iso-Butane	5.595	0.271	0.498	BM	0.6725
7	n-Butane	6.427	0.108	0.197	MB	0.2775

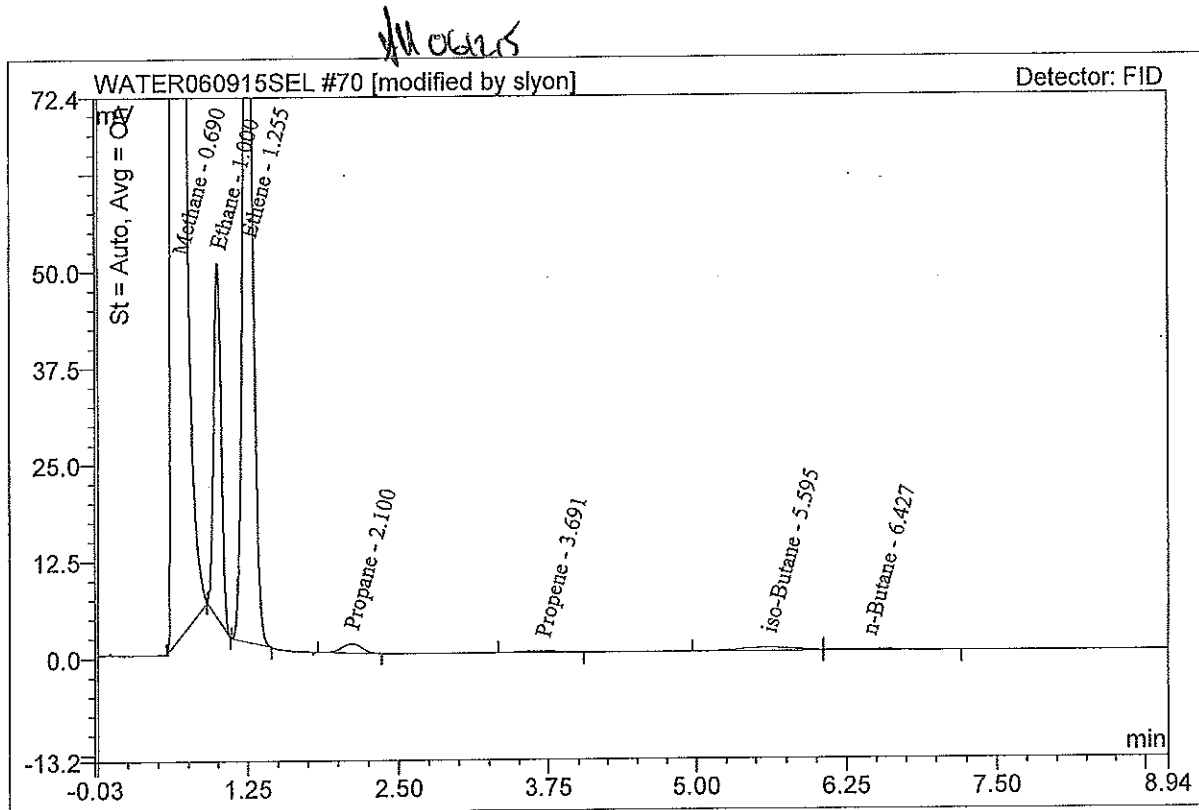


MICROSEEPS

Sample Analysis Report

Sample Name:	157790010-1	Sequence No:	70
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/11/2015 17:39	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.690	817.897	10078.992	BMB*	1439.5460
2	Ethane	1.000	3.276	45.881	BMB*	8.3457
3	Ethene	1.255	9.735	98.202	BMB*	27.3497
4	Propane	2.100	0.236	1.203	BMB	0.5896
5	Propene	3.691	0.067	0.200	BMB	0.1975
6	iso-Butane	5.595	0.283	0.511	BM *	0.7034
7	n-Butane	6.427	0.140	0.228	MB*	0.3611

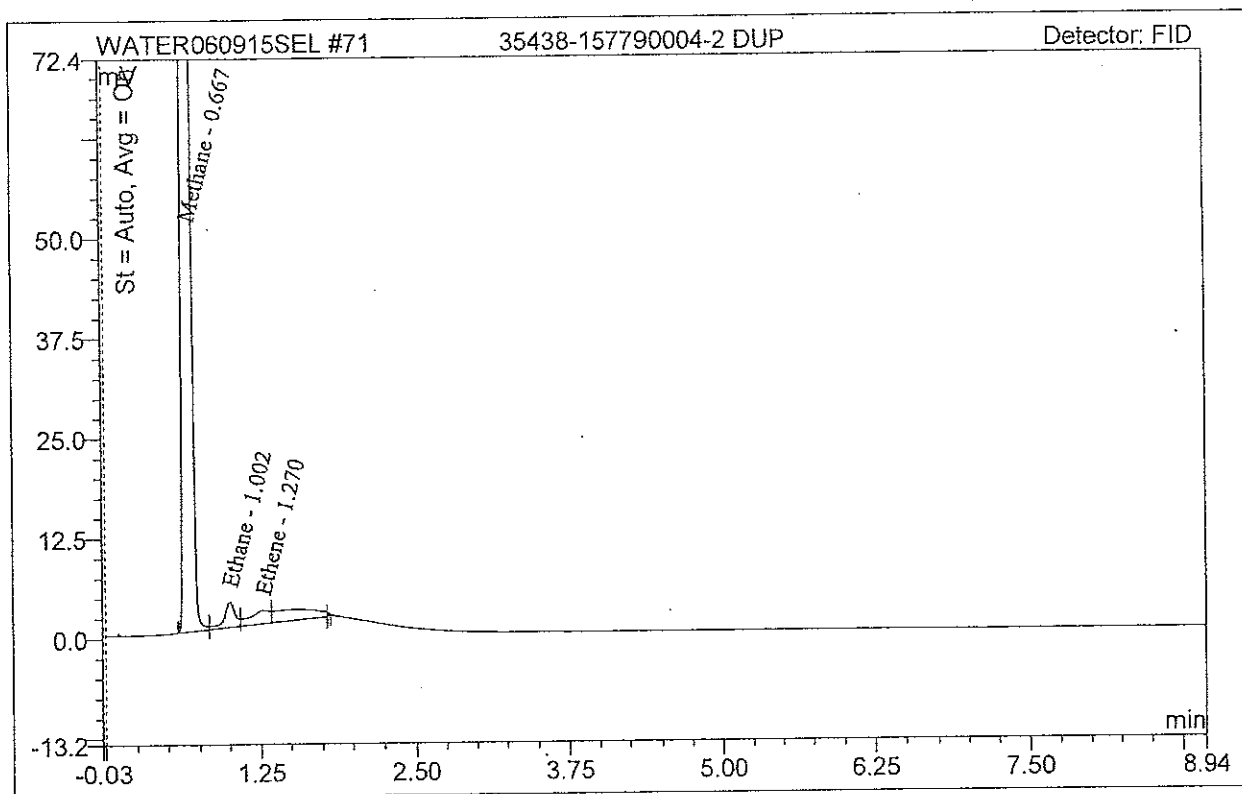


MICROSEEPS

Sample Analysis Report

Sample Name:	35438-157790004-2 DUP	Sequence No:	71
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/11/2015 17:50	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.667	34.900	738.042	BM	85.9700
2	Ethane	1.002	0.329	3.142	M	0.8377
3	Ethene	1.270	0.326	1.661	M	0.9194

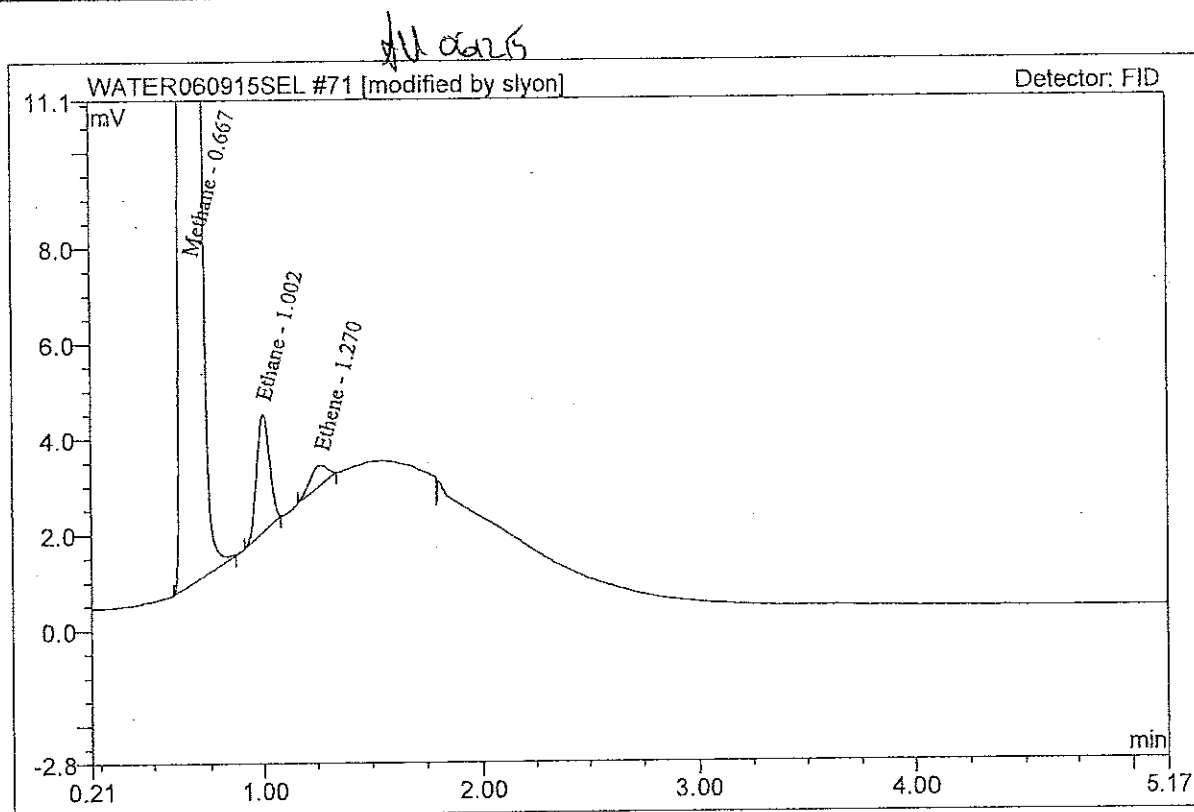


MICROSEEPS

Sample Analysis Report

Sample Name:	35438-157790004-2 DUP	Sequence No:	71
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/11/2015 17:50	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.667	34.860	737.929	BMB*	85.8731
2	Ethane	1.002	0.177	2.465	BMB*	0.4521
3	Ethene	1.270	0.041	0.419	BMB*	0.1168



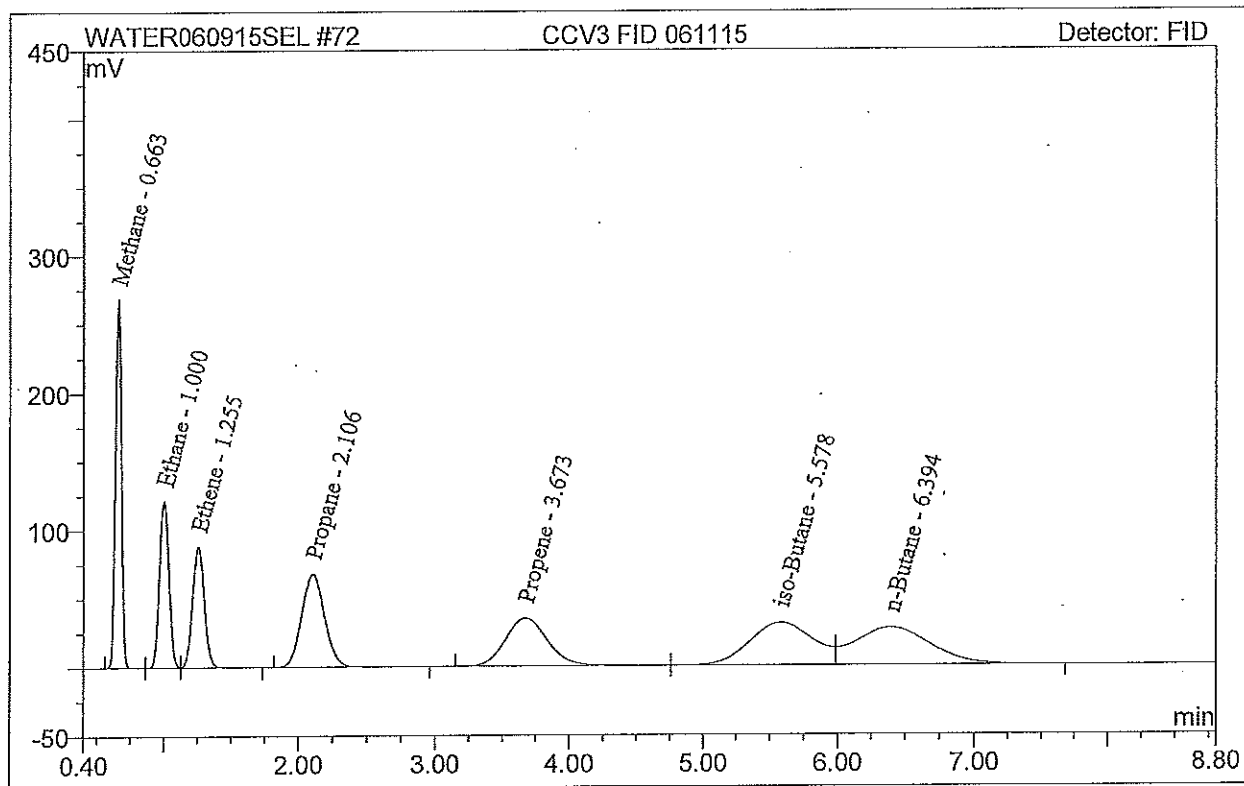
MICROSEEPS

Sample Analysis Report

Sample Name:	CCV3 FID 061115	Sequence No:	72
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/11/2015 18:03	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	RA-13-03 2X

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.663	14.732	268.177	BM	36.8225
2	Ethane	1.000	8.929	120.955	M	22.7230
3	Ethene	1.255	8.852	87.858	MB	24.8755
4	Propane	2.106	13.400	67.605	BMB	33.4018
5	Propene	3.673	12.852	34.888	BM	37.7855
6	iso-Butane	5.578	16.896	30.870	M	41.7800
7	n-Butane	6.394	17.425	27.173	MB	44.6533

TV
 36.086
 23.152
 25.566

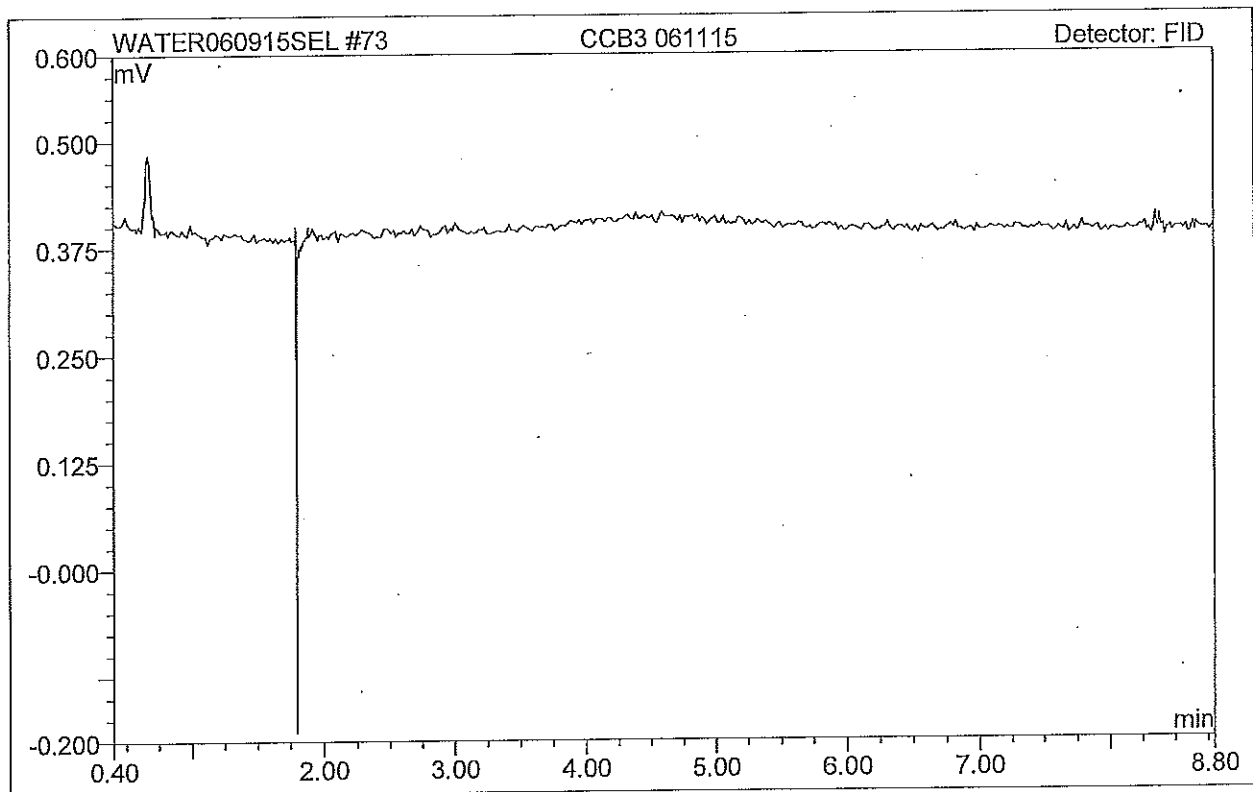


MICROSEEPS

Sample Analysis Report

Sample Name:	CCB3 061115	Sequence No:	73
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/11/2015 18:13	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
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Risk Department
Case Narrative

Batch number: 4637-DISG

Original Run Date: 06/15

Sample numbers:

5779-(1,3,5,9,10) DIL's
5779-(6-8,11) MS/MSD
5793-(1)

15792-(2)
15816-(2)
15817-(1-3)

Matrix: Water

Out of Control Event: (attach another page, if necessary)

15779-(6-8), 15793-(1), 15817-(2) Require dilutions for Methane

Corrective Action Taken:

None

Result:

Report dilutions on a future batch

Observations to support use of data: (Note any occurrences of manual integration here)

Samples required manual integration to repair baseline inaccuracies

* All samples had a pH of 10 or greater

Manual Integration Checklist and Approval

- Manual Integration approved?: Yes No
- Satisfactorily documented on this narrative?
- Manually integrated chromatogram initialed and dated by analyst?

Signature Lead Analyst or Lab. Mgr. _____ Date _____

Analyzed & Reviewed by: AM Date: 06/15
 Manual Integration Conducted? YES NO
 (Circle One)
 Reviewed by: apx Date: 6/17/15
 Reviewed & Entered by: Upland Date: 06/15
 Reviewed by: _____ Date: _____
 Corrected by: _____ Date: _____

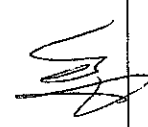
----- BIOREM-13 -----
----- QUALITY CONTROL -----
----- ANALYSIS DATE: 06/15/15 -----
----- MATRIX: WATER -----

SPIKE RECOVERY/ACCURACY DATA

MS/MSD SAMPLE: 157790006 ORIG, 35511-157790007 MS, 35512-157790008 MSD

COMPOUND	SAMPLE CONC.	SPIKE CONC.	MS CONC.	MSD CONC.	MS %R	MSD %R	%D
METHANE	N/A	44.48	N/A	N/A	N/A	N/A	N/A
ETHANE	1.6558	83.30	85.092	79.297	100.16	93.21	7.20
ETHYLENE	0.2768	77.92	76.594	70.553	97.94	90.19	8.24

Methane amount is greater than 4 times the spike conc. See dilution for MS/MSD result


Analyst _____

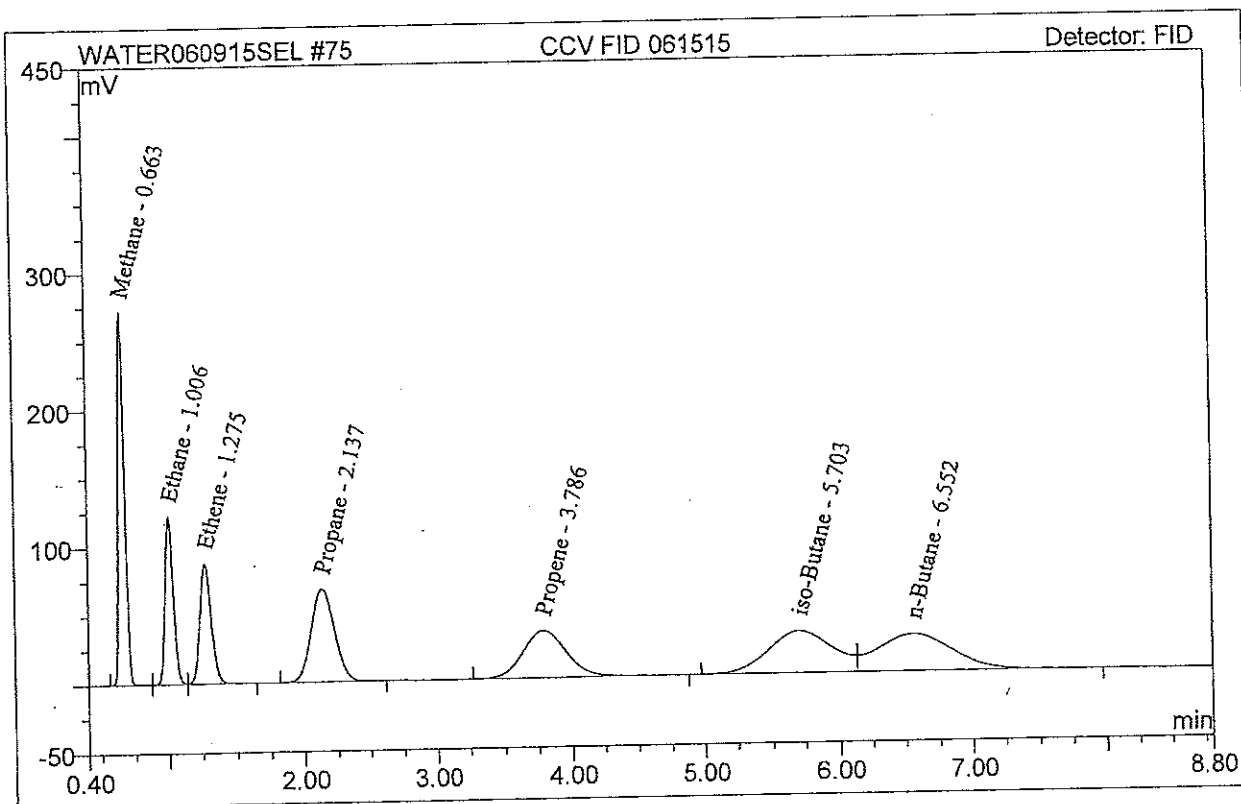
Reviewed AKK 6/17/15

MICROSEEPS

Sample Analysis Report

Sample Name:	CCV FID 061515	Sequence No:	75
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/15/2015 11:20	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	RA-13-03 2X

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L	TU
1	Methane	0.663	14.850	271.655	BM	37.1140	36.086
2	Ethane	1.006	9.025	121.753	M	22.9656	23.152
3	Ethene	1.275	8.922	87.228	MB	25.0710	25.568
4	Propane	2.137	13.499	67.645	BMB	33.6468	33.023
5	Propene	3.786	12.880	34.252	BMB	37.8672	
6	iso-Butane	5.703	16.978	30.523	BM	41.9809	41.67
7	n-Butane	6.552	17.676	26.904	MB	45.2947	45.01

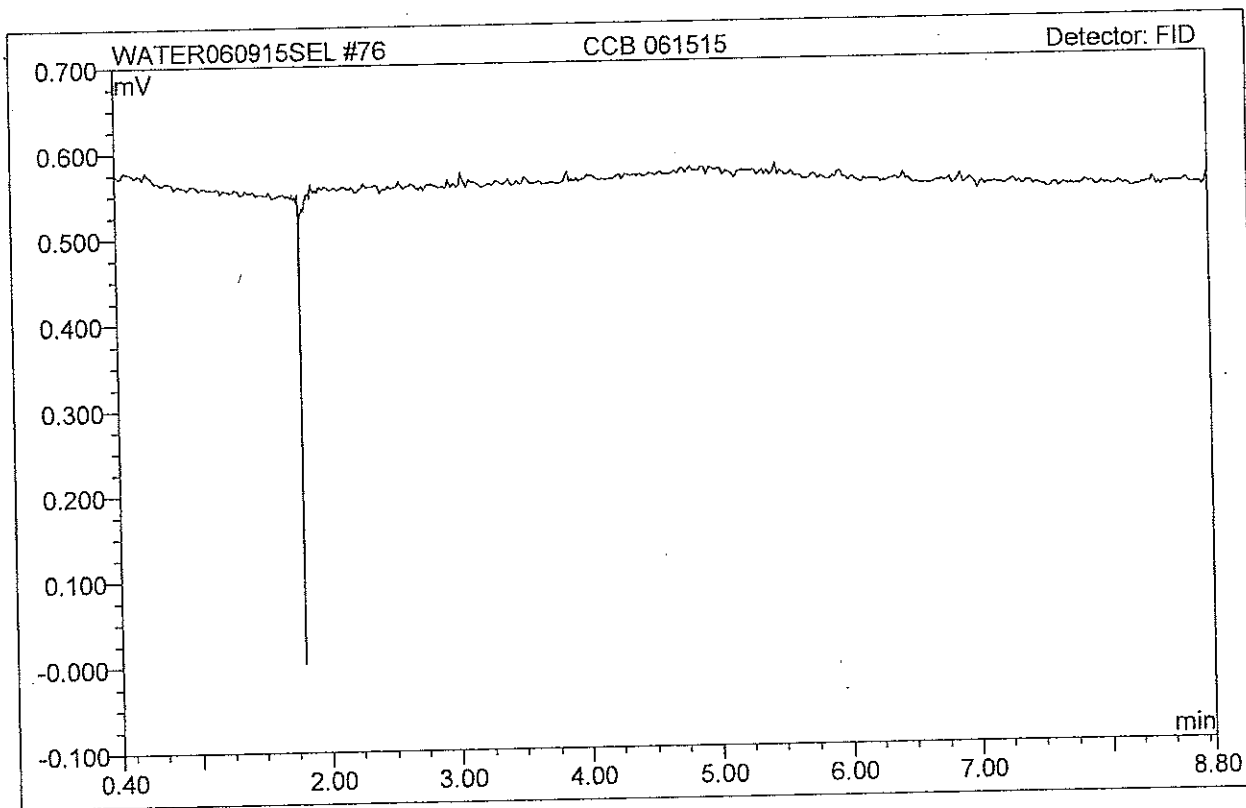


MICROSEEPS

Sample Analysis Report

Sample Name:	CCB 061515	Sequence No:	76
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/15/2015 11:31	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
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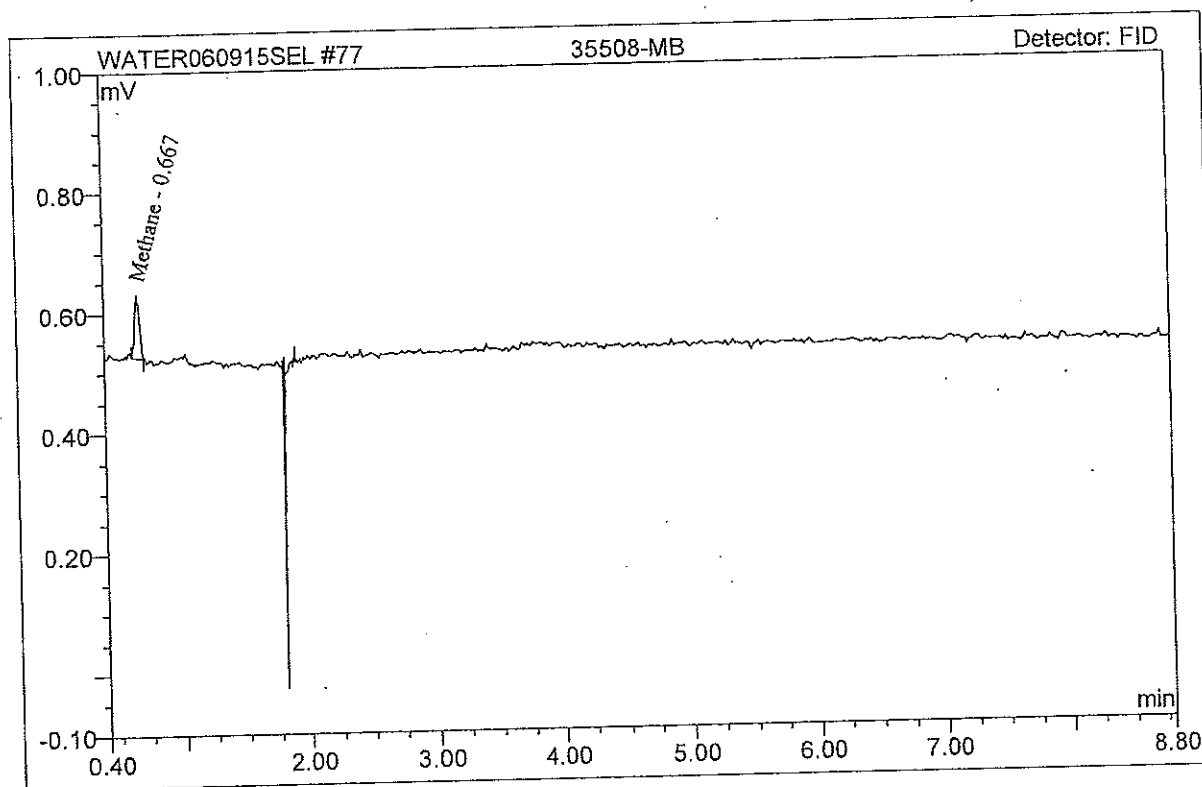


MICROSEEPS

Sample Analysis Report

Sample Name:	35508-MB	Sequence No:	77
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/15/2015 11:41	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.667	0.005	0.106	BMB	0.0118



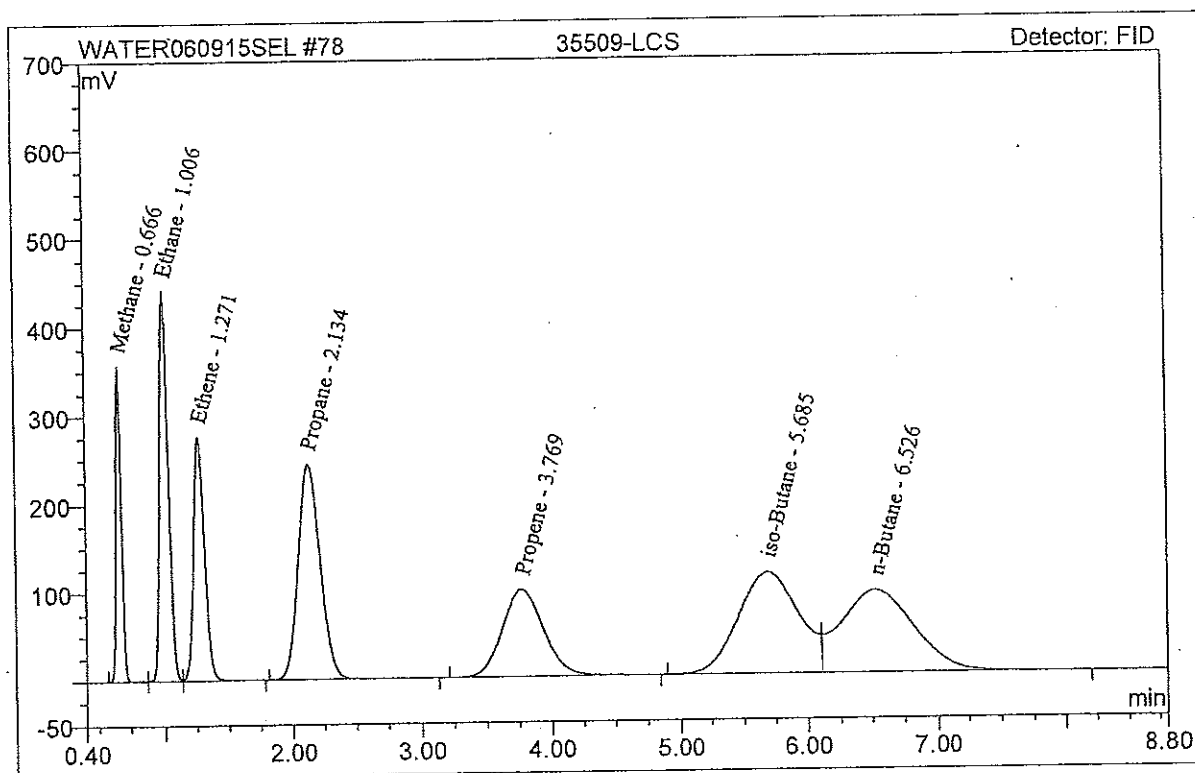
MICROSEEPS

Sample Analysis Report

Sample Name:	35509-LCS	Sequence No:	78
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/15/2015 12:56	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.666	17.906	356.912	BM	44.6528
2	Ethane	1.006	32.522	441.396	M	82.3478
3	Ethene	1.271	28.080	276.304	MB	78.5213
4	Propane	2.134	48.618	244.062	BMB	120.2202
5	Propene	3.769	36.866	98.953	BMB	107.5972
6	iso-Butane	5.685	63.234	114.911	BM	154.6320
7	n-Butane	6.526	60.591	93.297	MB	153.3889

TV
44.46
82.3
77.92
122.2
161.02
161.16



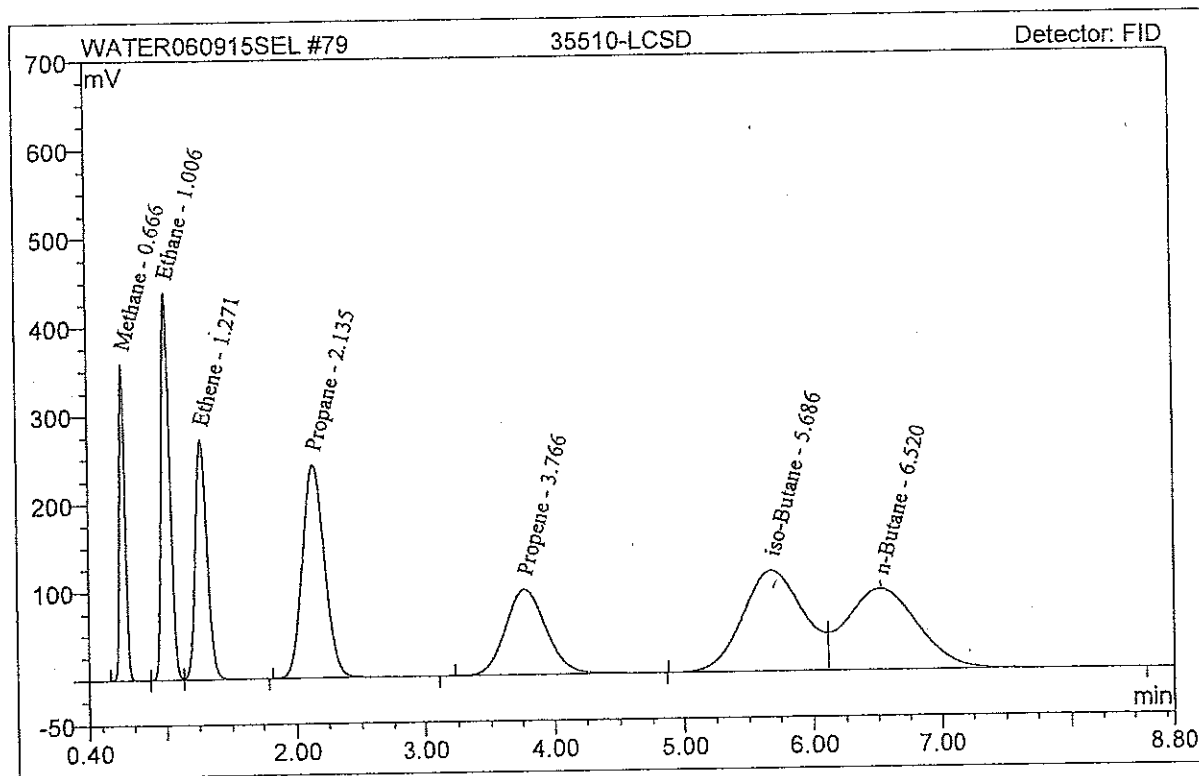
MICROSEEPS

Sample Analysis Report

Sample Name:	35510-LCSD	Sequence No:	79
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/15/2015 13:12	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.666	18.089	358.846	BM	45.1021
2	Ethane	1.006	32.319	438.298	M	81.8358
3	Ethene	1.271	27.715	272.463	MB	77.5094
4	Propane	2.135	48.259	242.016	BMB	119.3433
5	Propene	3.766	36.221	97.388	BMB	105.7332
6	iso-Butane	5.686	63.015	114.448	BM	154.1036
7	n-Butane	6.520	59.850	92.364	MB	151.5457

TV
44.45
83.3
77.92
122.2
161.02
161.16

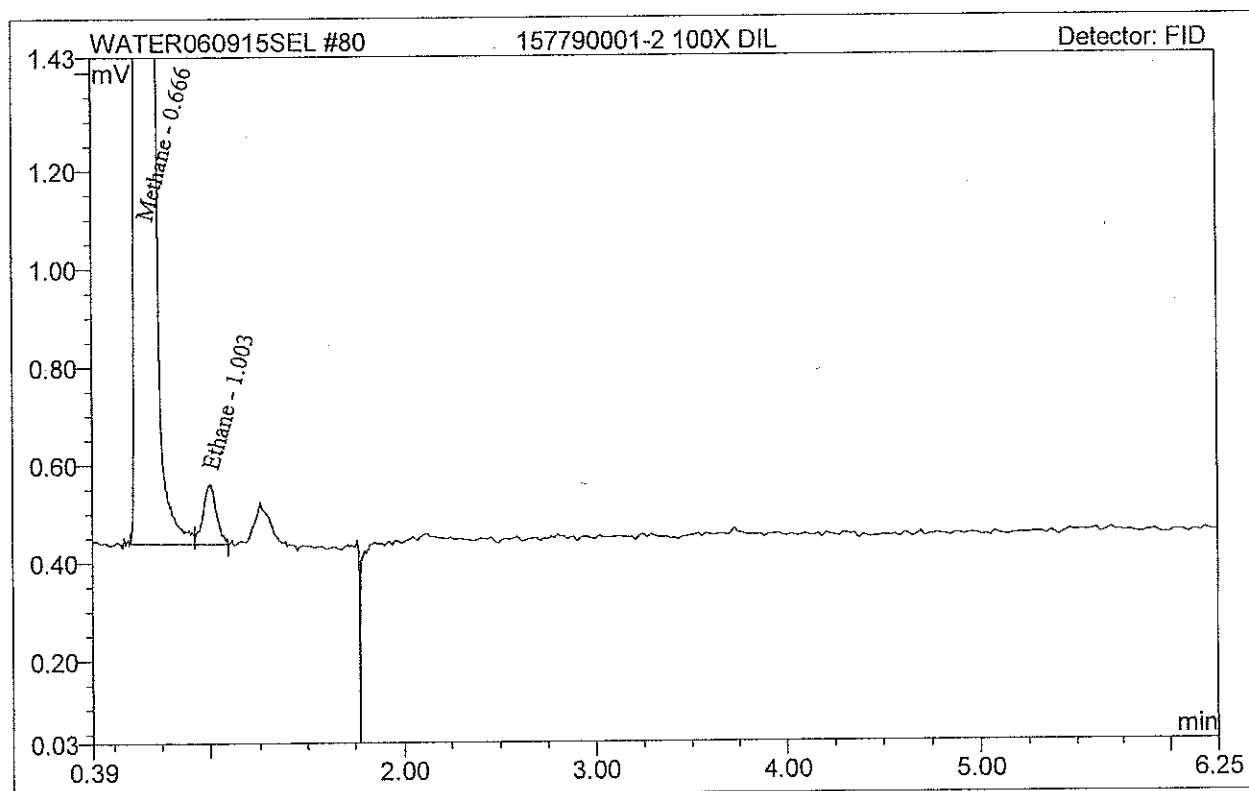


MICROSEEPS

Sample Analysis Report

Sample Name:	157790001-2 100X DIL	Sequence No:	80
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/15/2015 13:45	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.666	6.330	136.103	BM	15.9217
2	Ethane	1.003	0.010	0.122	MB	0.0245



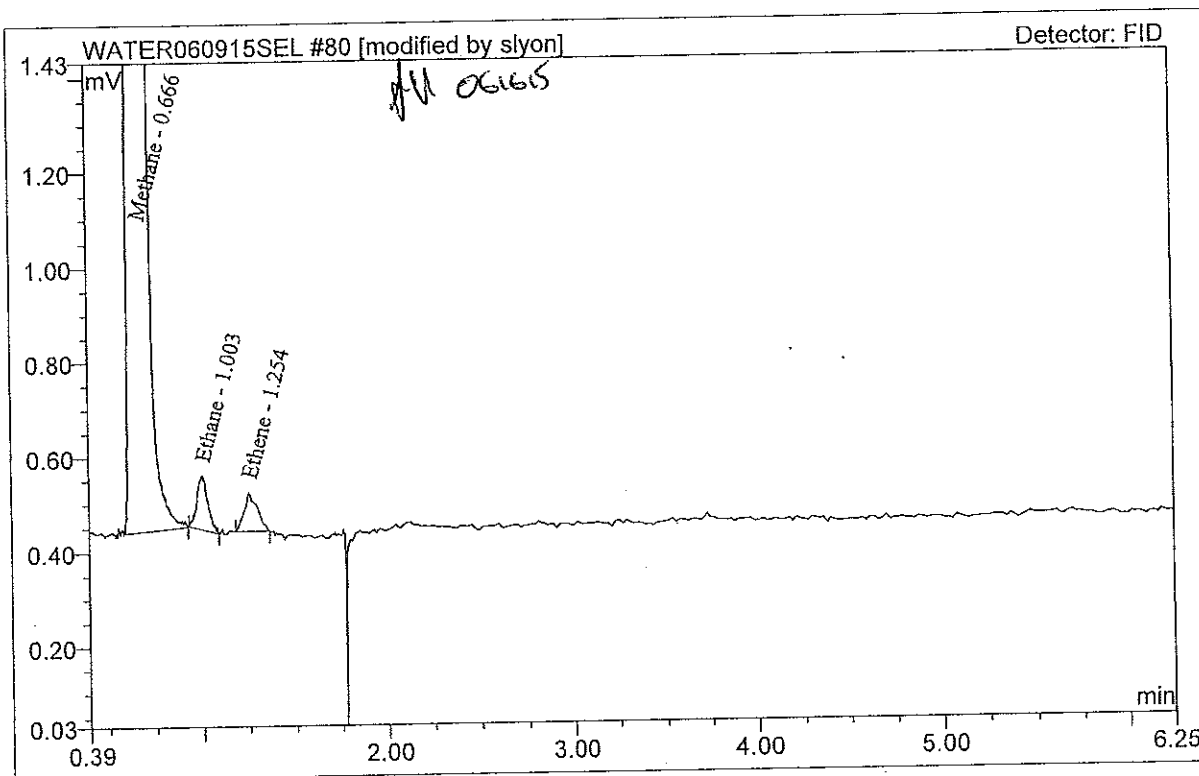
MICROSEEPS

Sample Analysis Report

Sample Name:	157790001-2 100X DIL	Sequence No:	80
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/15/2015 13:45	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.666	6.328	136.099	BMB*	15.9160
2	Ethane	1.003	0.008	0.113	BMB*	0.0209
3	Ethene	1.254	0.006	0.082	BMB*	0.0180

x 100

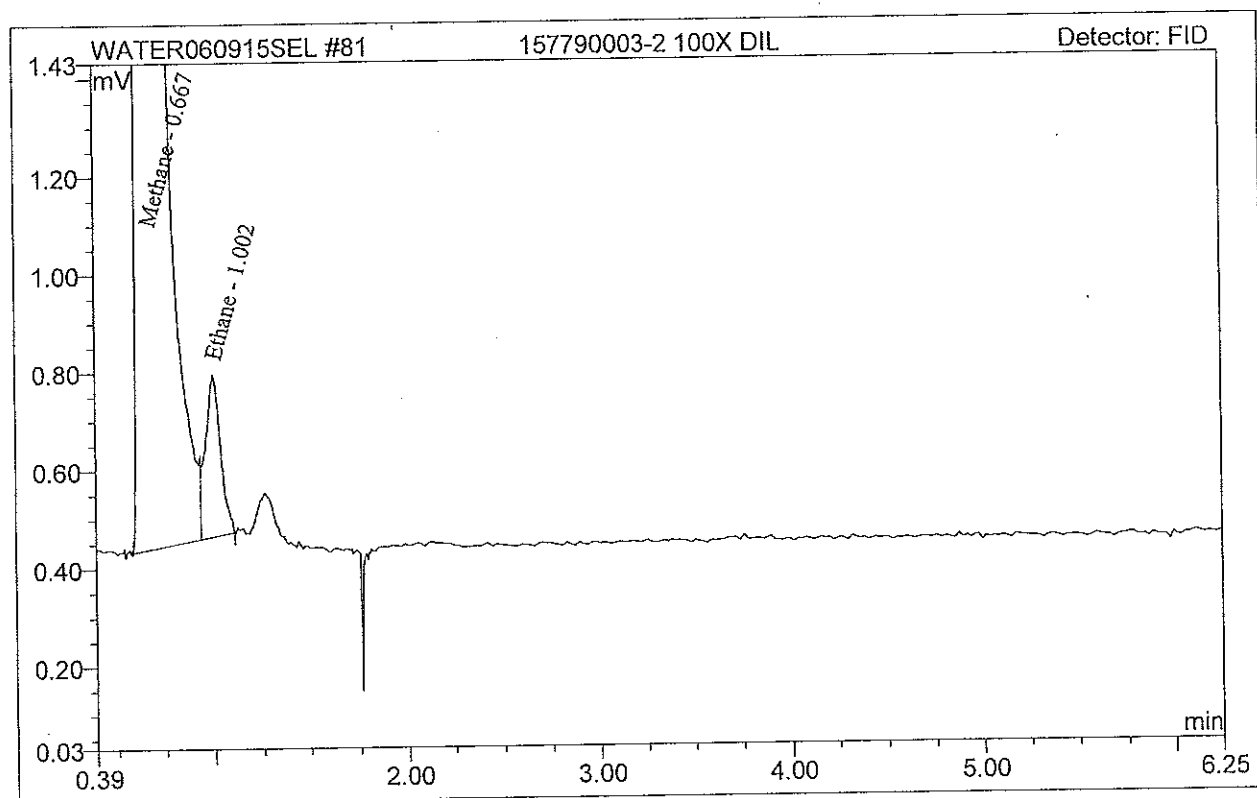


MICROSEEPS

Sample Analysis Report

Sample Name:	157790003-2 100X DIL	Sequence No:	81
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/15/2015 14:02	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.667	58.992	1260.852	BM	142.9127
2	Ethane	1.002	0.029	0.330	MB	0.0745



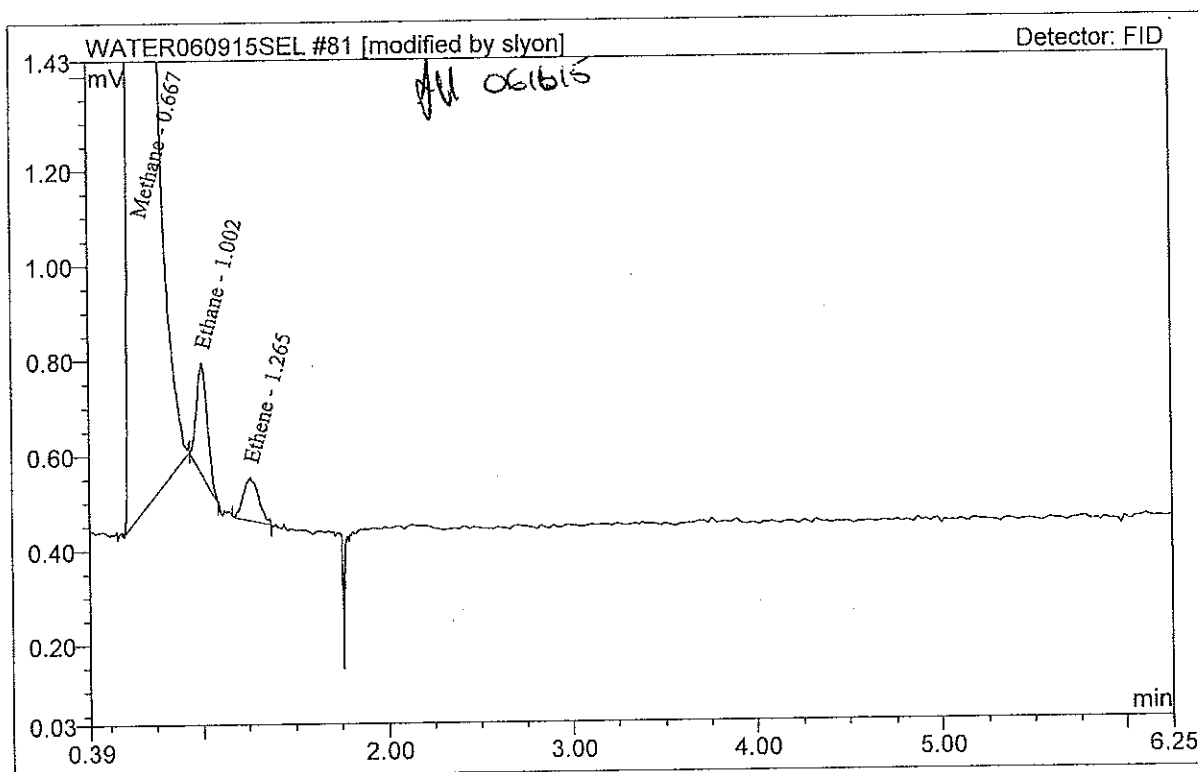
MICROSEEPS

Sample Analysis Report

Sample Name:	157790003-2 100X DIL	Sequence No:	81
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/15/2015 14:02	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.667	58.966	1260.818	BMB*	142.8525
2	Ethane	1.002	0.016	0.233	bMB*	0.0398
3	Ethene	1.265	0.009	0.092	BMB*	0.0249

x100

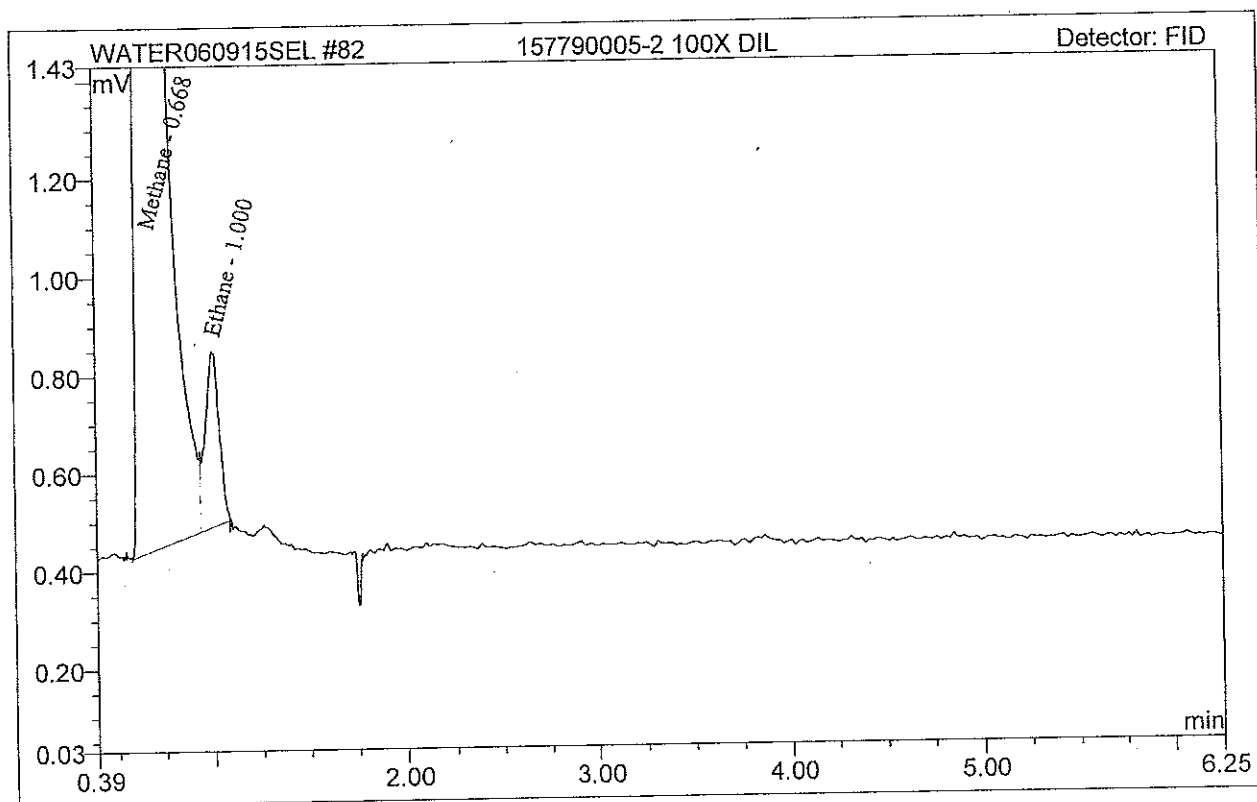


MICROSEEPS

Sample Analysis Report

Sample Name:	157790005-2 100X DIL	Sequence No:	82
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/15/2015 14:12	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.668	66.718	1425.961	BM	160.7955
2	Ethane	1.000	0.030	0.359	MB	0.0769

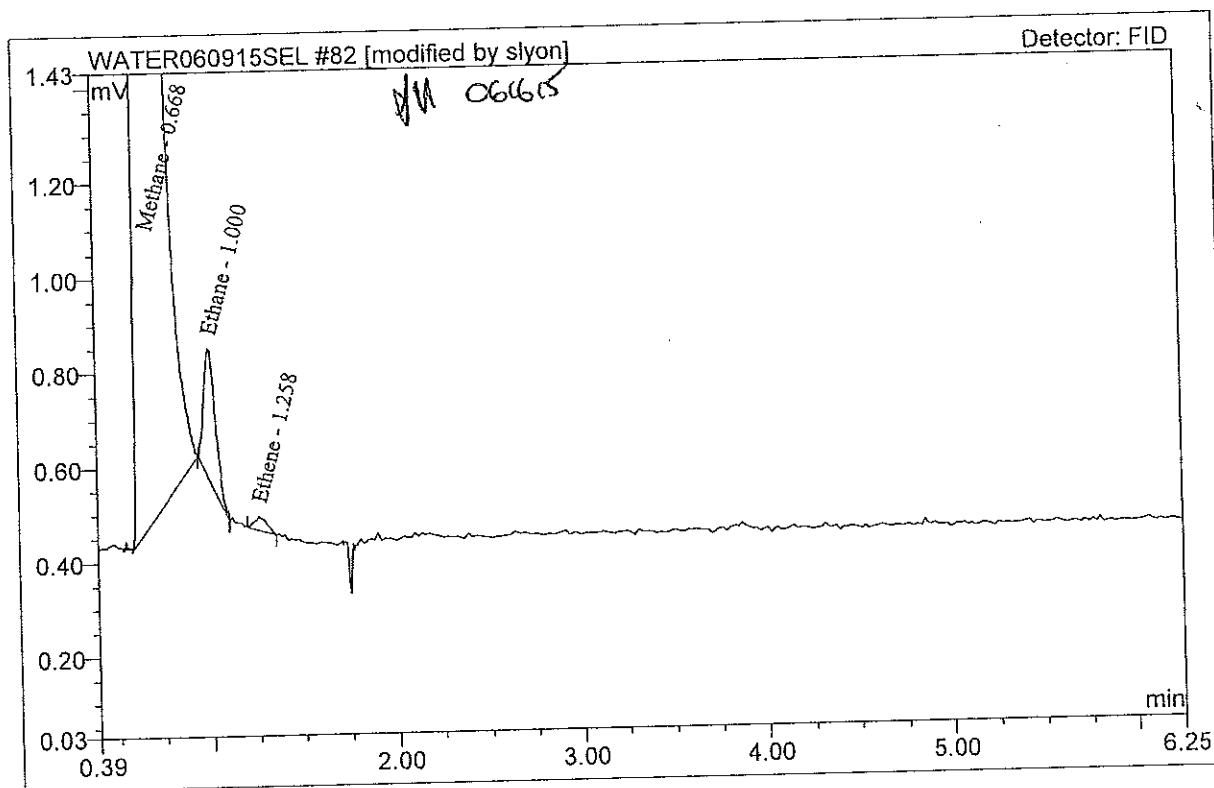


MICROSEEPS

Sample Analysis Report

Sample Name:	157790005-2 100X DIL	Sequence No:	82
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/15/2015 14:12	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.668	66.694	1425.927	BMB*	160.7387
2	Ethane	1.000	0.020	0.277	BMB*	0.0498
3	Ethene	1.258	0.002	0.029	BMB*	0.0064

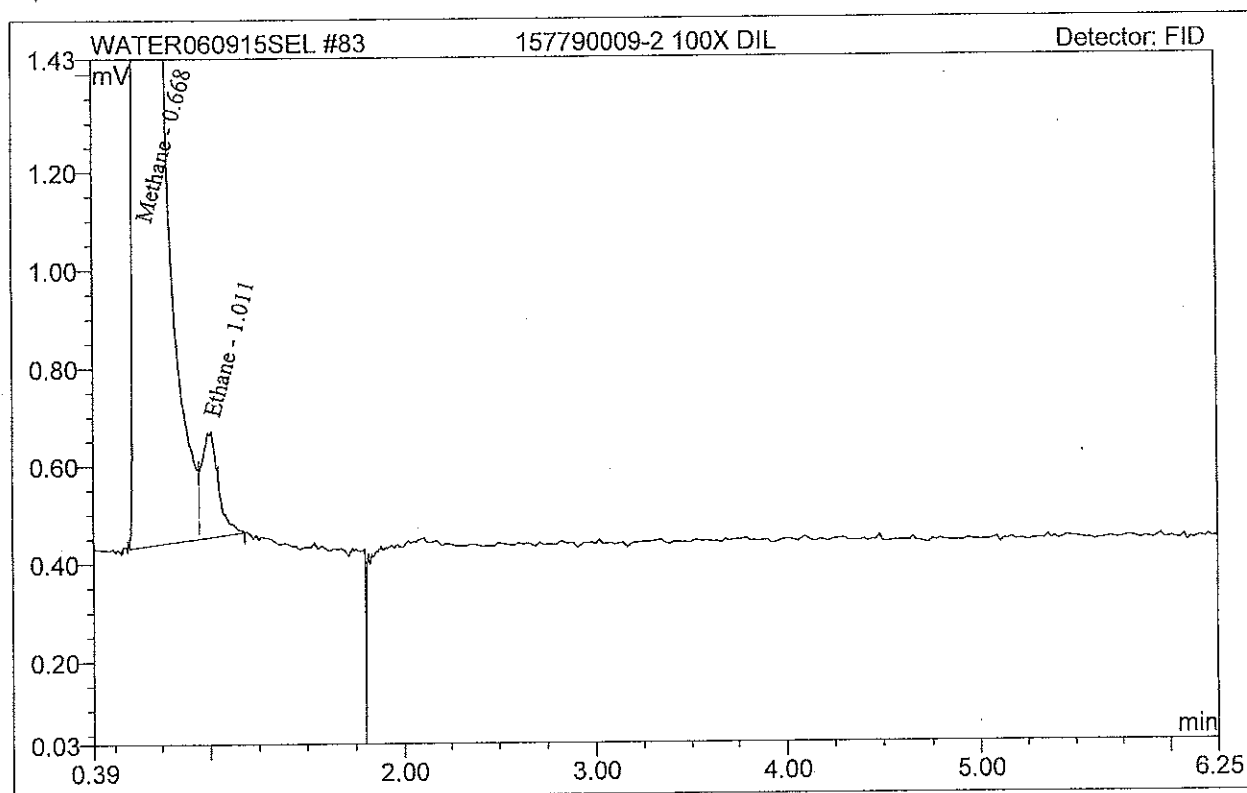


MICROSEEPS

Sample Analysis Report

Sample Name:	157790009-2 100X DIL	Sequence No:	83
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/15/2015 14:27	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.668	59.601	1273.899	BM	144.3285
2	Ethane	1.011	0.021	0.217	MB	0.0544

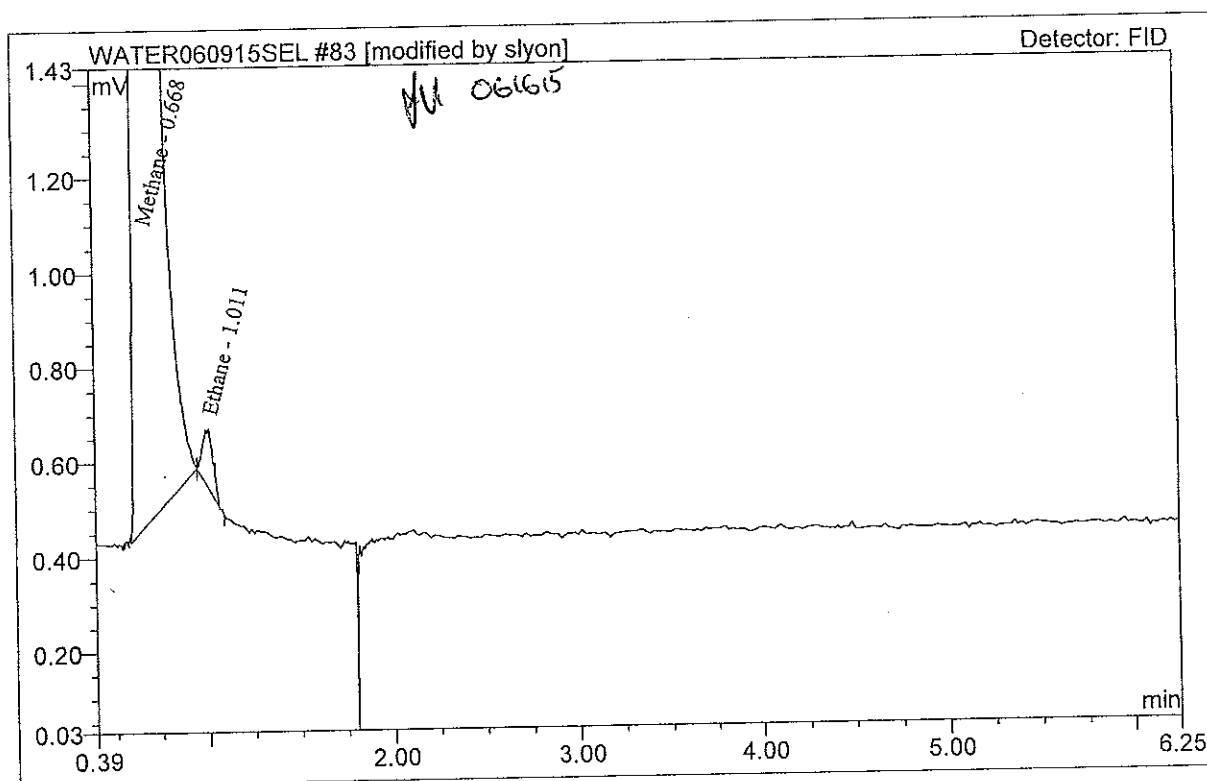


MICROSEEPS

Sample Analysis Report

Sample Name:	157790009-2 100X DIL	Sequence No:	83
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/15/2015 14:27	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.668	59.576	1273.868	BMB*	144.2712
2	Ethane	1.011	0.008	0.126	bMB*	0.0204

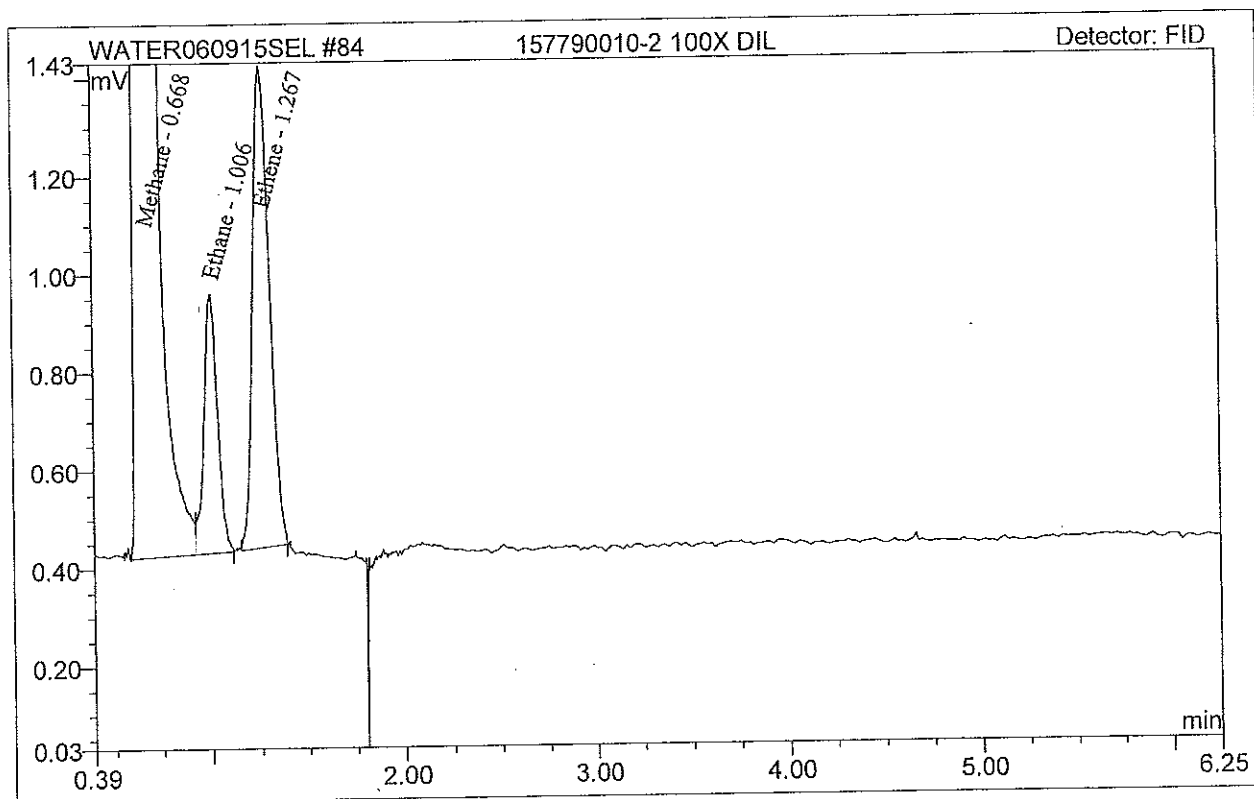


MICROSEEPS

Sample Analysis Report

Sample Name:	157790010-2 100X DIL	Sequence No:	84
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/15/2015 14:41	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.668	21.860	470.216	BM	54.3557
2	Ethane	1.006	0.042	0.528	MB	0.1077
3	Ethene	1.267	0.098	0.983	BMB	0.2746



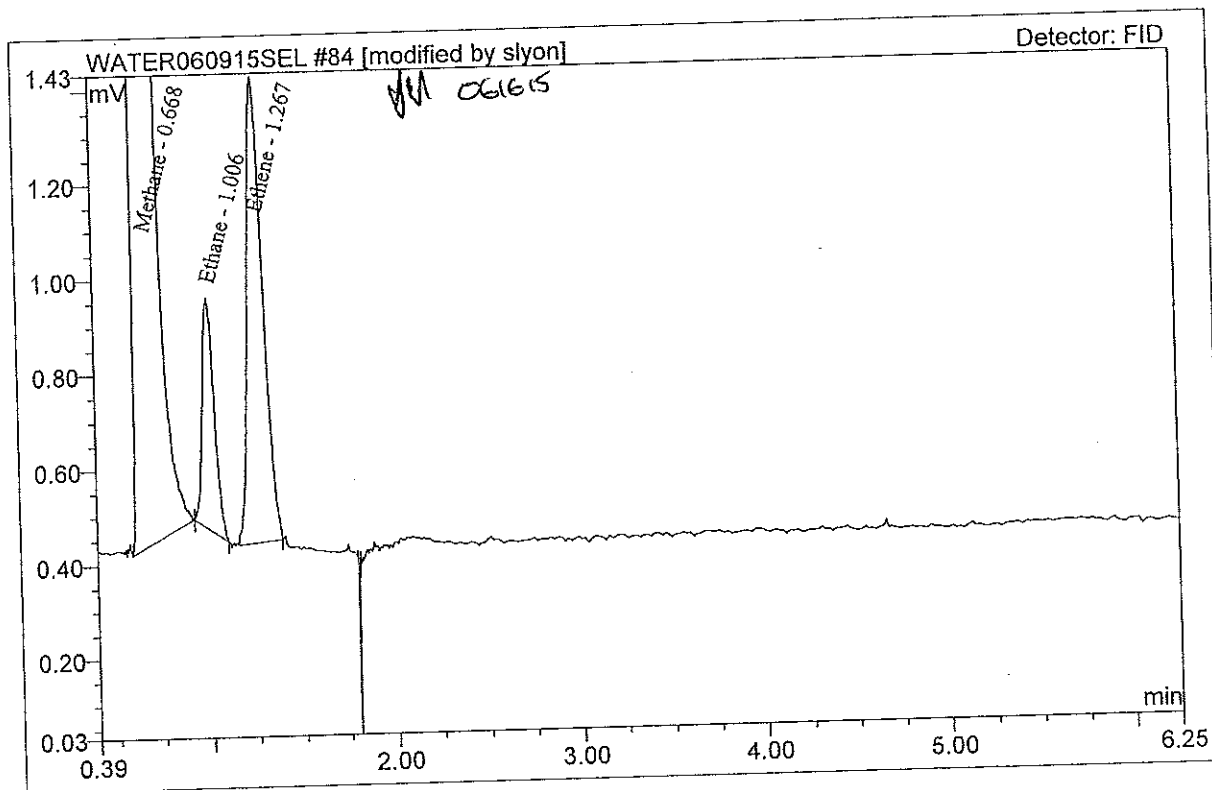
MICROSEEPS

Sample Analysis Report

Sample Name:	157790010-2 100X DIL	Sequence No:	84
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/15/2015 14:41	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.668	21.850	470.200	BMb*	54.3297
2	Ethane	1.006	0.035	0.490	bMB*	0.0903
3	Ethene	1.267	0.098	0.983	BMB	0.2746

X100

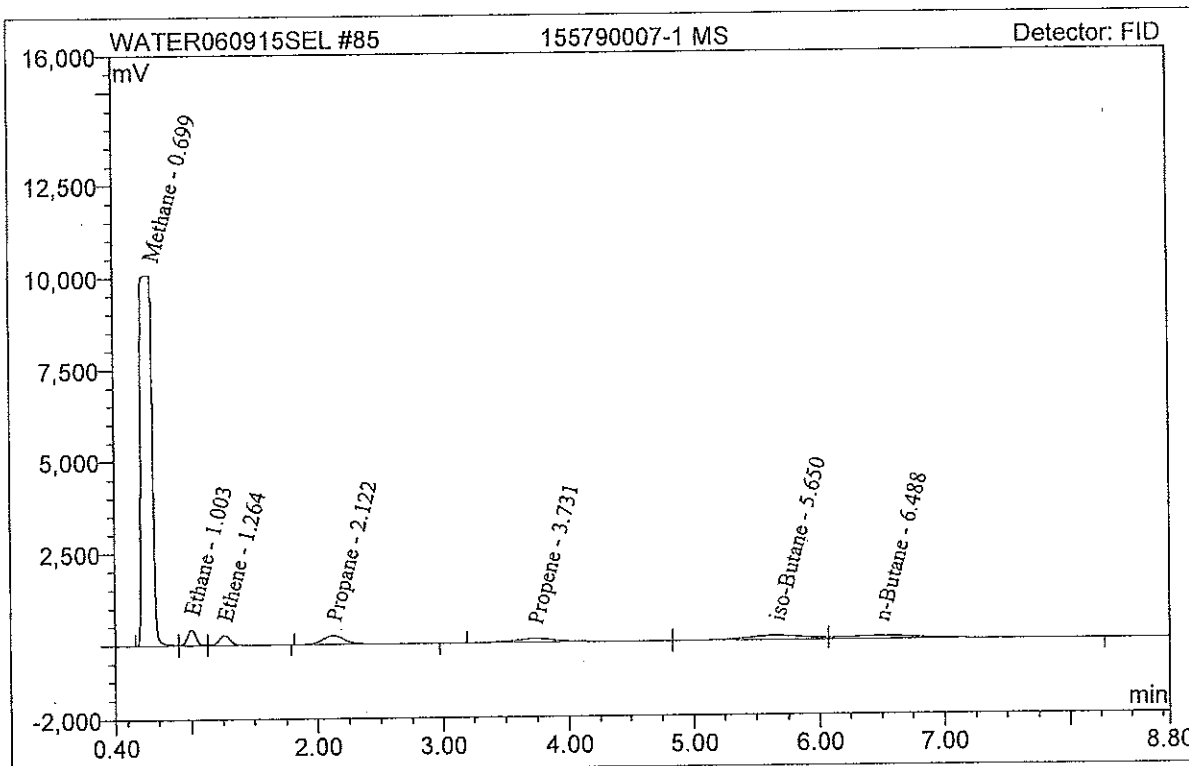


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SL 06165
Sample Analysis Report

Sample Name:	1579007 155790007-1 MS	Sequence No:	85
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/15/2015 14:54	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.699	992.260	10078.124	BM	1666.6175
2	Ethane	1.003	33.614	440.560	M	85.0916
3	Ethene	1.264	27.386	266.252	MB	76.5944
4	Propane	2.122	46.179	233.511	BMB	114.2520
5	Propene	3.731	35.195	94.608	BM	102.7710
6	iso-Butane	5.650	60.572	109.664	M	148.2156
7	n-Butane	6.488	57.628	88.814	MB	146.0091



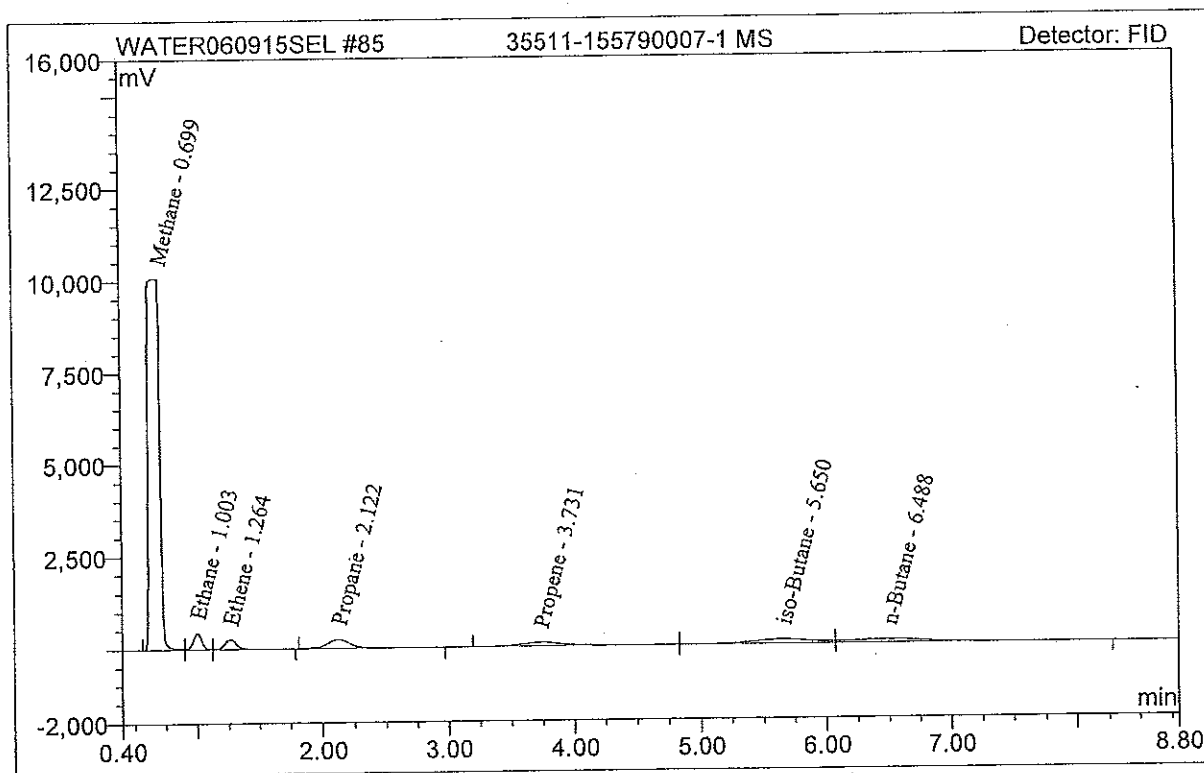
① Requires dilution

MICROSEEPS

Sample Analysis Report

Sample Name:	35511-155790007-1 MS 15779007	Sequence No:	85
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/15/2015 14:54	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.699	992.260	10078.124	BM	4666.6175
2	Ethane	1.003	33.614	440.560	M	85.0916
3	Ethene	1.264	27.386	266.252	MB	76.5944
4	Propane	2.122	46.179	233.511	BMB	114.2520
5	Propene	3.731	35.195	94.608	BM	102.7710
6	iso-Butane	5.650	60.572	109.664	M	148.2156
7	n-Butane	6.488	57.628	88.814	MB	146.0091

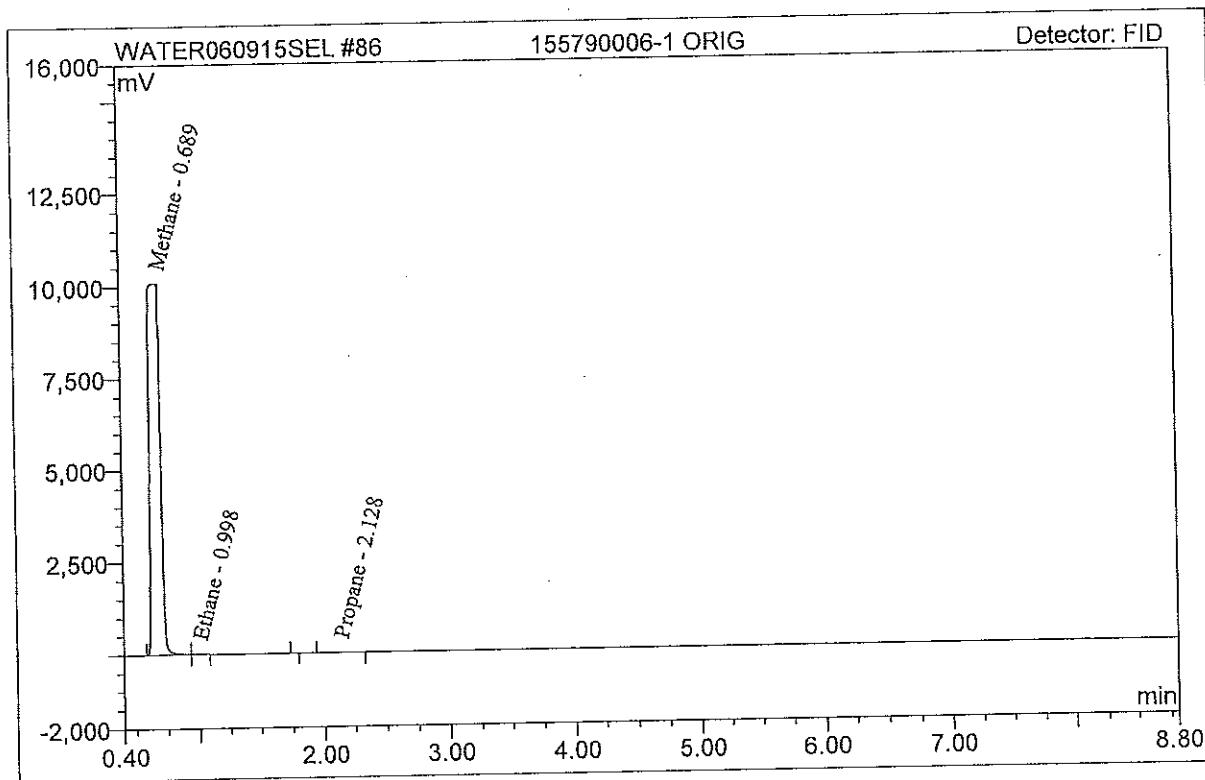


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Sample Analysis Report

Sample Name:	157790006 155790006-1 ORIG	Sequence No:	86
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/15/2015 15:05	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.689	937.598	10078.882	BMB	1597.1411
2	Ethane	0.998	0.650	9.740	bMB	1.6558
4	Propane	2.128	0.111	0.654	BMB	0.2768

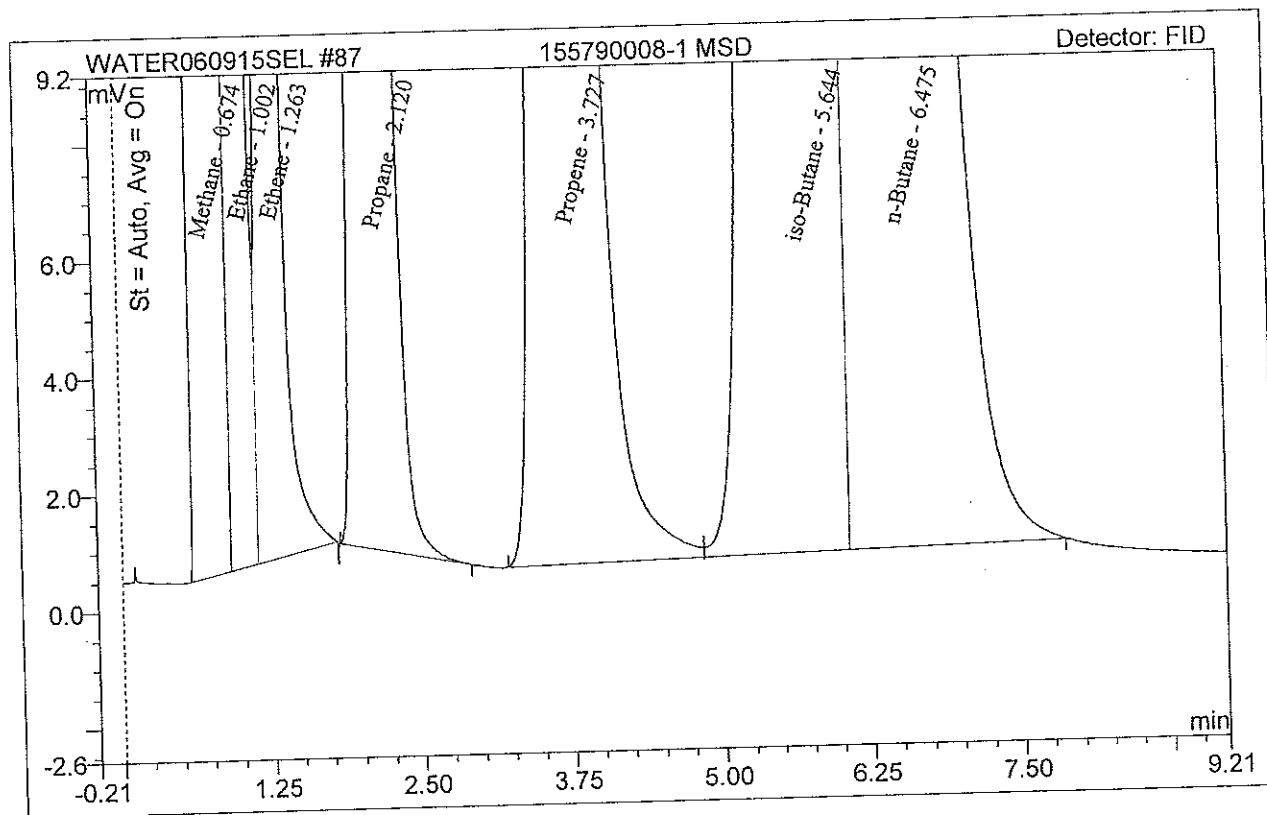


MICROSEEPS

Sample Analysis Report

Sample Name: 15790008	155790008-1 MSD	Sequence No:	87
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	siyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/15/2015 15:19	Analytical Method:	RSK175/PM01
System Operator:	siyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.674	991.509	10083.136	BM	1665.6734
4	Ethane	1.002	31.293	410.558	M	79.2559
5	Ethene	1.263	24.972	242.943	MB	69.8864
6	Propane	2.120	42.351	214.465	BMB	104.8728
7	Propene	3.727	31.442	84.675	BM	91.9165
8	iso-Butane	5.644	55.709	101.458	M	136.4724
9	n-Butane	6.475	52.135	80.916	MB	132.2945



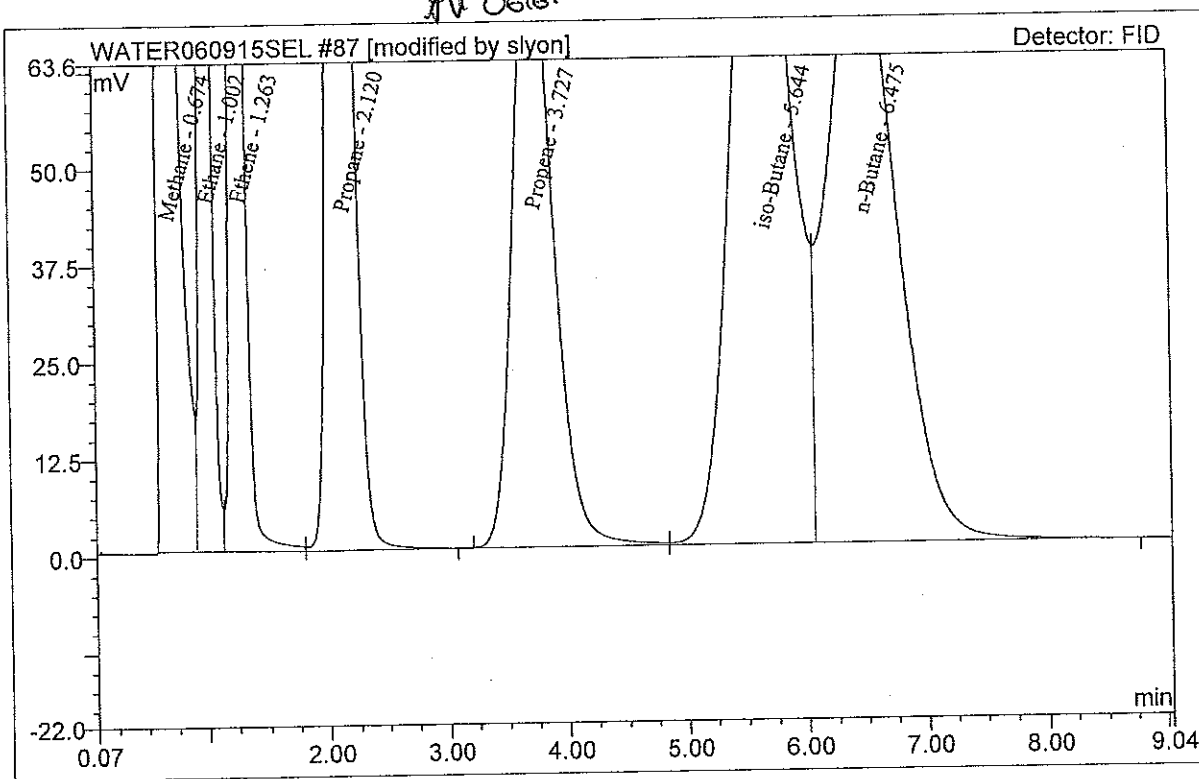
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SC Sample Analysis Report

Sample Name:	1579008 155790008-1 MSD	Sequence No:	87
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/15/2015 15:19	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.674	991.476	10082.988	BM *	1665.6316
2	Ethane	1.002	31.310	410.619	M *	79.2970
3	Ethene	1.263	25.212	243.171	M *	70.5539
4	Propane	2.120	42.692	214.870	MB*	105.7073
5	Propene	3.727	31.514	84.702	BM *	92.1240
6	iso-Butane	5.644	55.857	101.589	M *	136.8292
7	n-Butane	6.475	52.584	81.092	MB*	133.4161

NU 061615

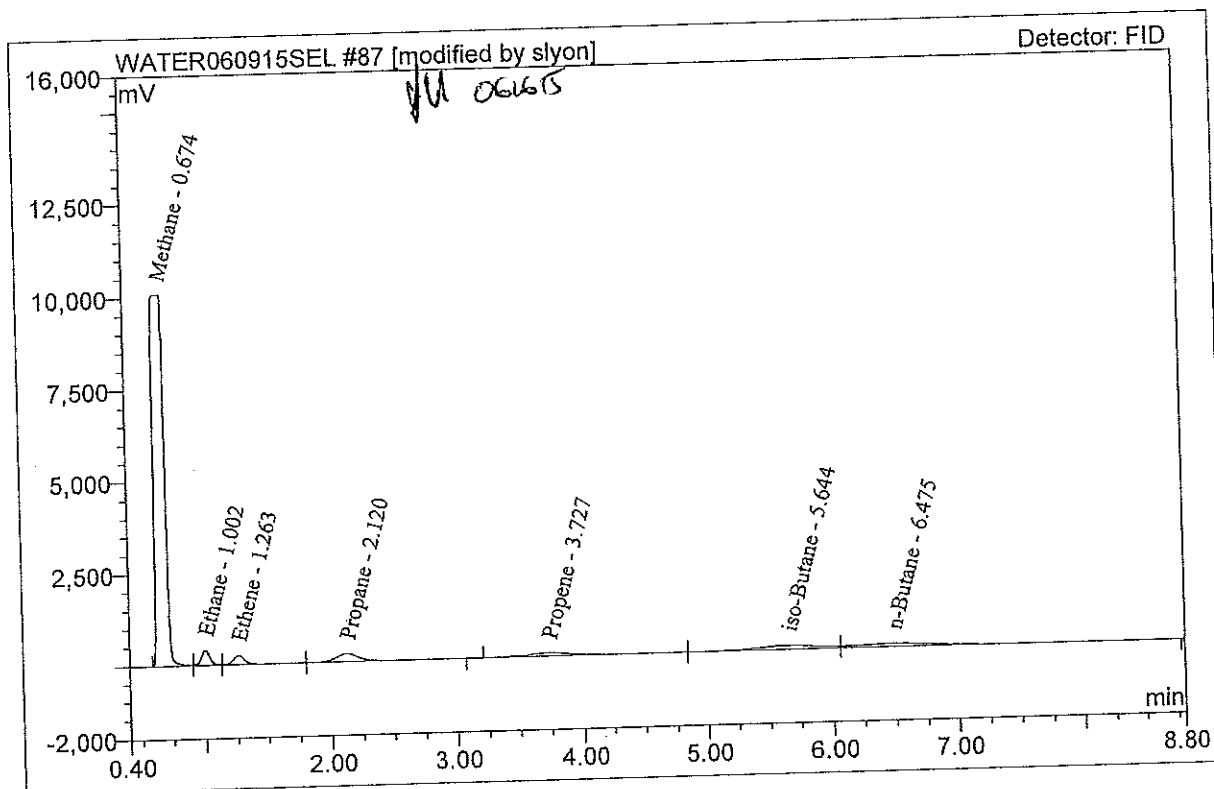


MICROSEEPS

Sample Analysis Report

Sample Name:	5790008 35512-155790008-1 MSD SC	Sequence No:	87
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/15/2015 15:19	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.674	991.476	10082.988	BM *	1665.6318
2	Ethane	1.002	31.310	410.619	M *	79.2970
3	Ethene	1.263	25.212	243.171	M *	70.5539
4	Propane	2.120	42.692	214.870	MB*	105.7073
5	Propene	3.727	31.514	84.702	BM *	92.1240
6	iso-Butane	5.644	55.857	101.589	M *	136.8292
7	n-Butane	6.475	52.584	81.092	MB*	133.4161

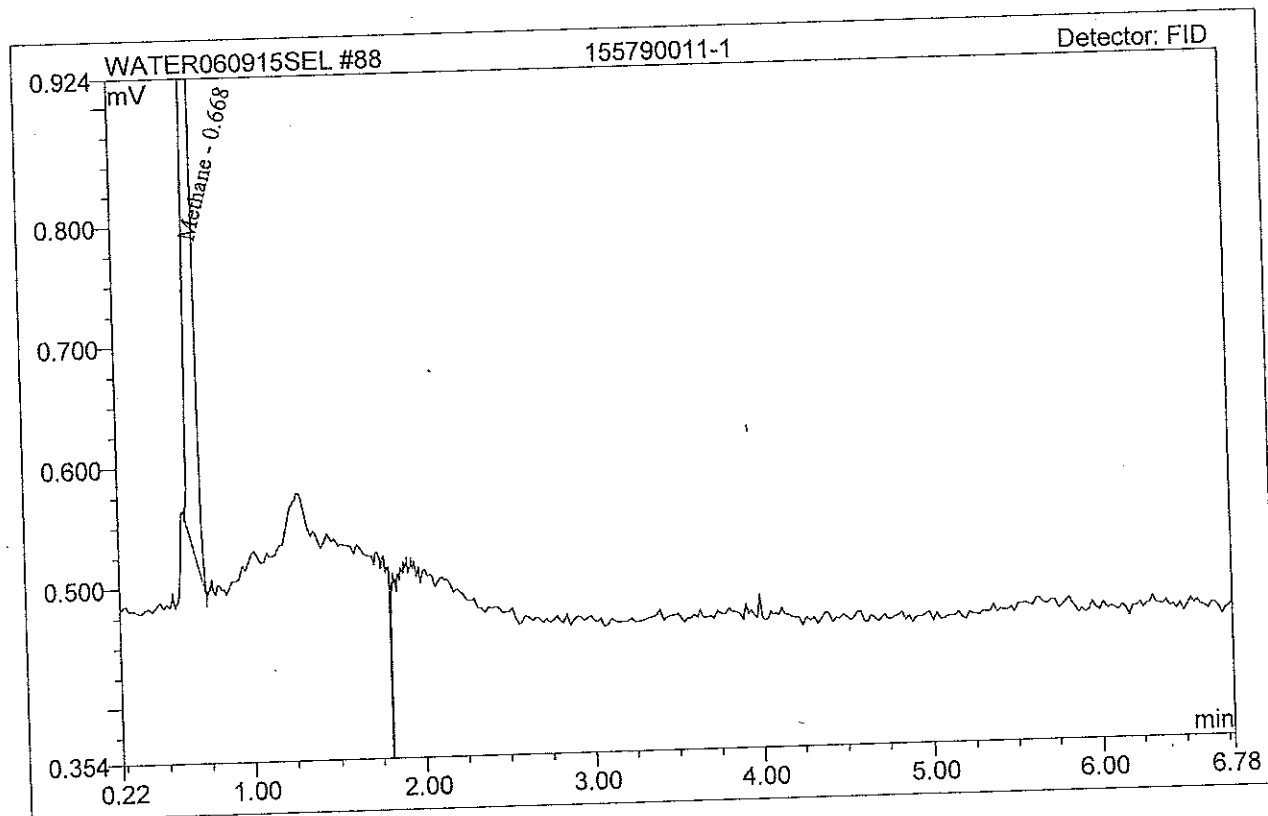


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Sample Analysis Report

Sample Name: 157790011 155790011-1	Sequence No: 88
Sequence Name: WATER060915SEL	Instrument ID: BIOREM13F
Program Method: LHCV081711	User ID: slyon
Quantitation Method: LHC060915	Dilution Factor: 1.0000
Date Time Collected: 6/15/2015 15:30	Analytical Method: RSK175/PM01
System Operator: slyon	Comment:

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.668	0.043	0.922	BMB	0.1081

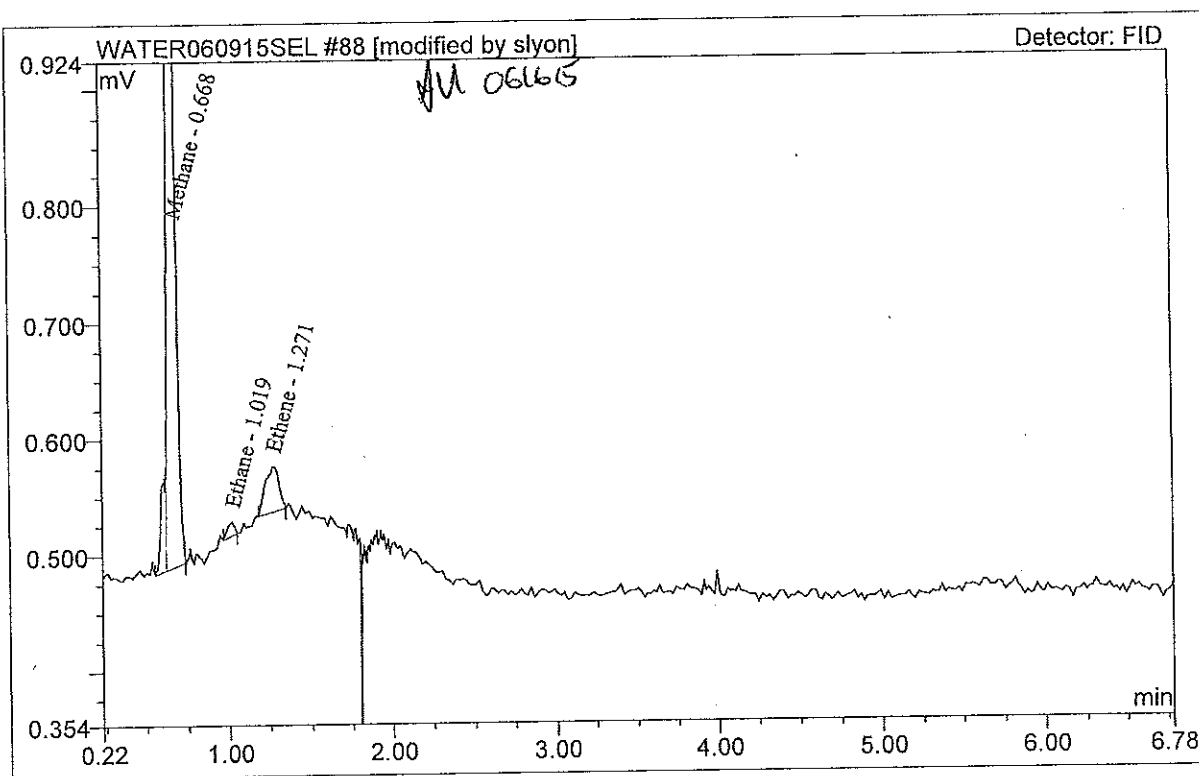


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Sample Analysis Report

Sample Name:	1579011 15570011-1	Sequence No:	88
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/15/2015 15:30	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
2	Methane	0.668	0.047	0.964	MB*	0.1181
3	Ethane	1.019	0.001	0.013	BMB*	0.0016
4	Ethene	1.271	0.004	0.039	BMB*	0.0104

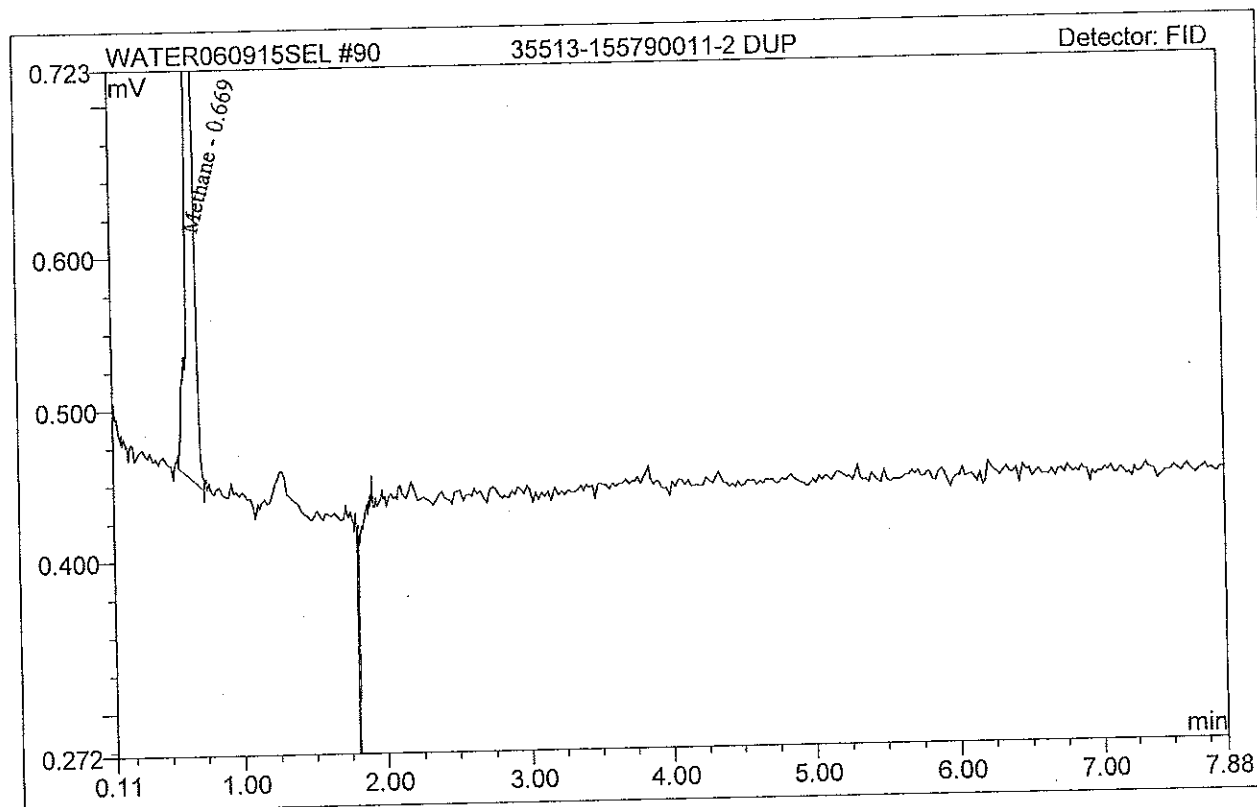


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Sample Analysis Report

Sample Name: 157790011	35513-155790011-2 DUP	Sequence No: 90
Sequence Name:	WATER060915SEL	Instrument ID: BIOREM13F
Program Method:	LHCV081711	User ID: slyon
Quantitation Method:	LHC060915	Dilution Factor: 1.0000
Date Time Collected: 6/15/2015 15:56		Analytical Method: RSK175/PM01
System Operator: slyon		Comment:

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.669	0.034	0.640	BMB	0.0860

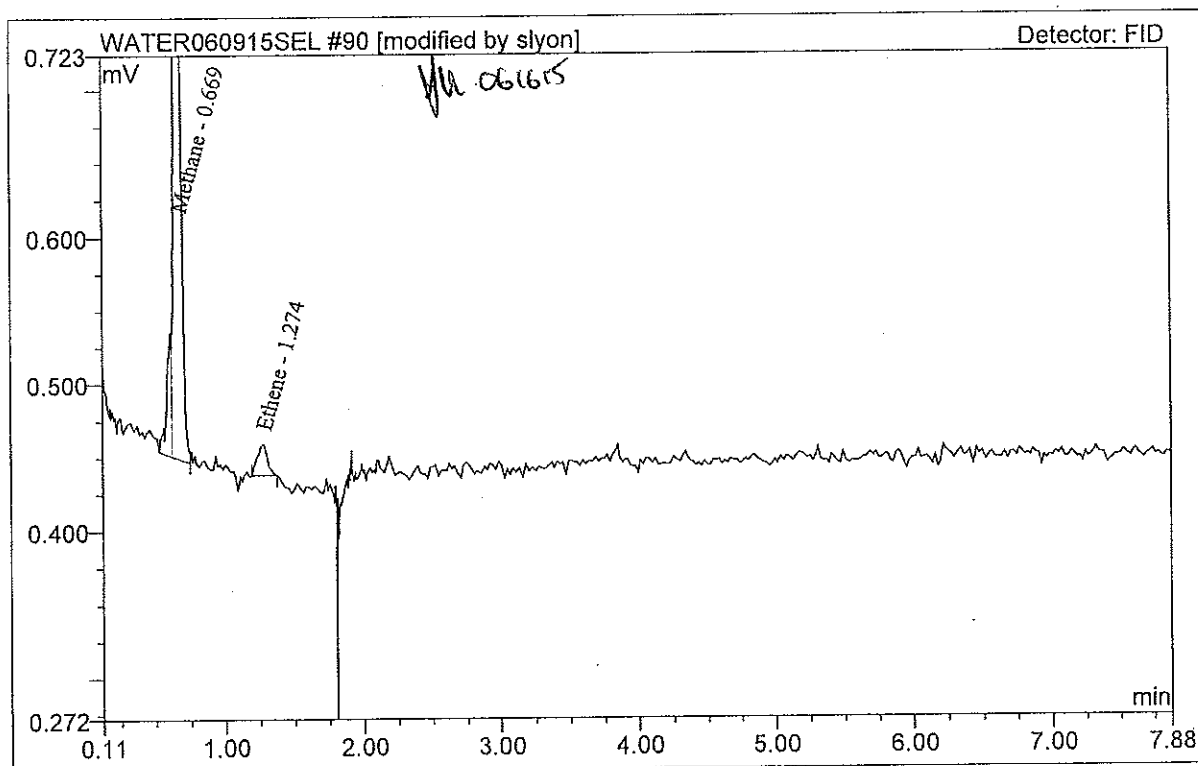


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Sample Analysis Report

Sample Name: 157A0011	35513-155790011-2 DUP SL	Sequence No: 90
Sequence Name: WATER060915SEL		Instrument ID: BIOREM13F
Program Method: LHCV081711		User ID: slyon
Quantitation Method: LHC060915		Dilution Factor: 1.0000
Date Time Collected: 6/15/2015 15:56		Analytical Method: RSK175/PM01
System Operator: slyon		Comment:

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
2	Methane	0.669	0.032	0.644	MB*	0.0804
3	Ethene	1.274	0.002	0.021	BMB*	0.0051

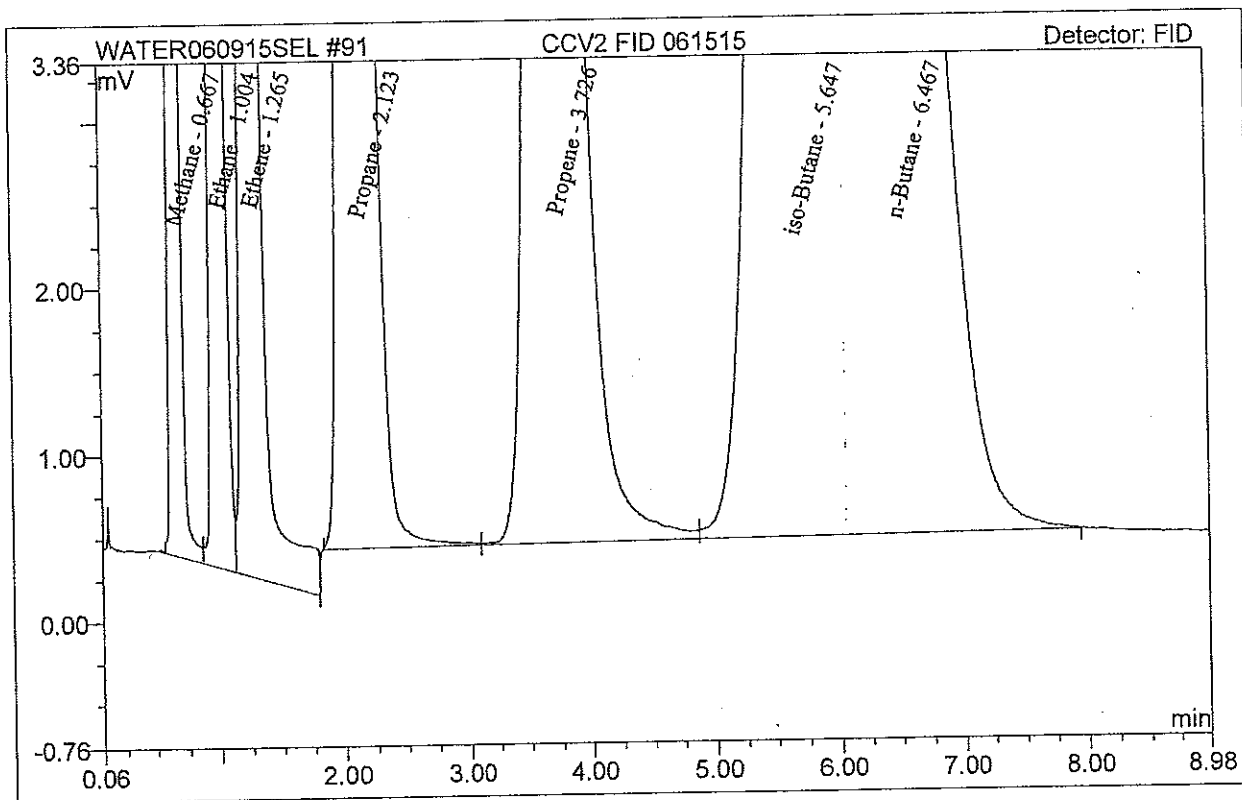


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Sample Analysis Report

Sample Name:	CCV2 FID 061515	Sequence No:	91
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/15/2015 16:10	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	RA-13-03 5X

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.667	5.868	117.726	BM	14.7656
2	Ethane	1.004	3.622	48.697	M	9.2281
3	Ethene	1.265	3.711	35.172	MB	10.4412
4	Propane	2.123	5.440	27.131	BM	13.5860
5	Propene	3.726	5.250	13.999	M	15.4721
6	iso-Butane	5.647	6.833	12.449	M	16.9373
7	n-Butane	6.467	7.154	10.938	MB	18.3875



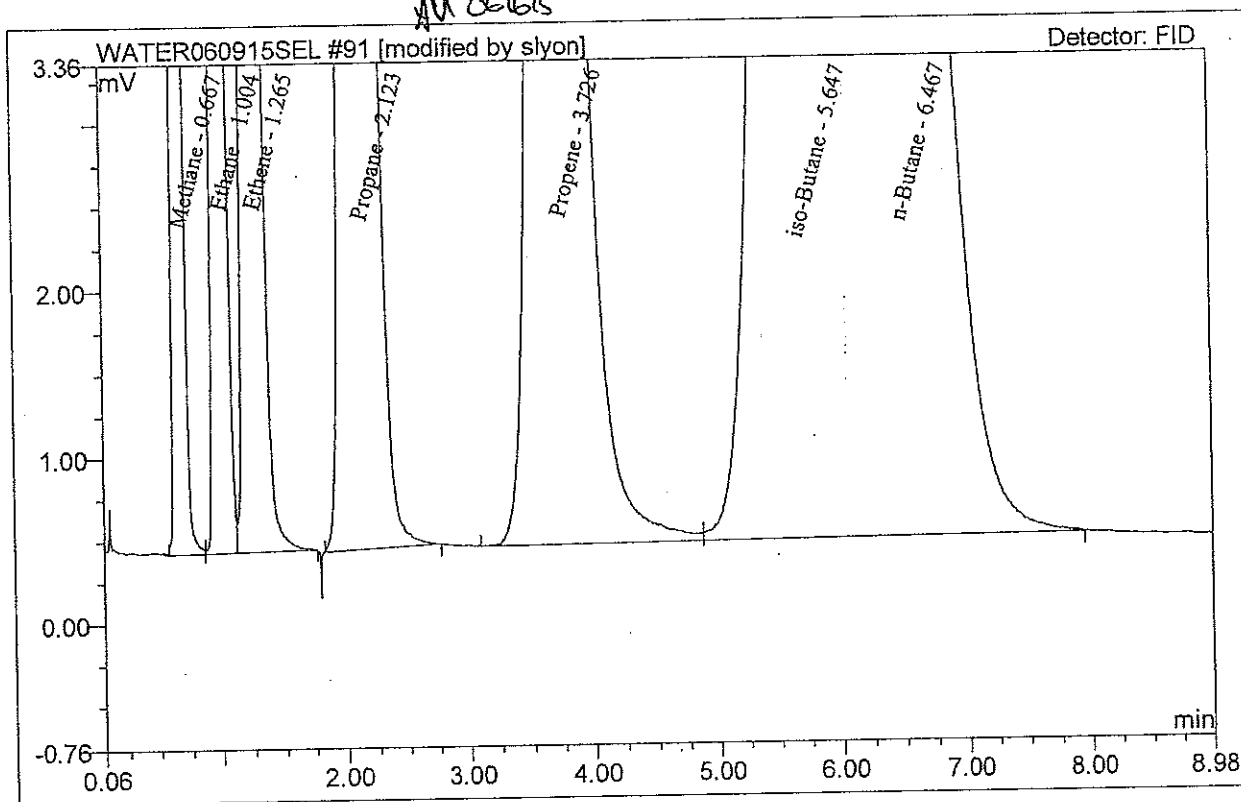
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Sample Analysis Report

Sample Name:	CCV2 FID 061515	Sequence No:	91
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/15/2015 16:10	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	RA-13-03 5X

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.667	5.858	117.703	BM*	14.7394
2	Ethane	1.004	3.596	48.595	M*	9.1617
3	Ethene	1.265	3.571	35.008	MB*	10.0500
4	Propane	2.123	5.421	27.122	BMB*	13.5376
5	Propene	3.726	5.239	13.992	BM*	15.4403
6	iso-Butane	5.647	6.828	12.446	M*	16.9262
7	n-Butane	6.467	7.151	10.935	MB*	18.3803

TV
 14.434
 9.261
 10.227
 13.209
 16.847
 18.004

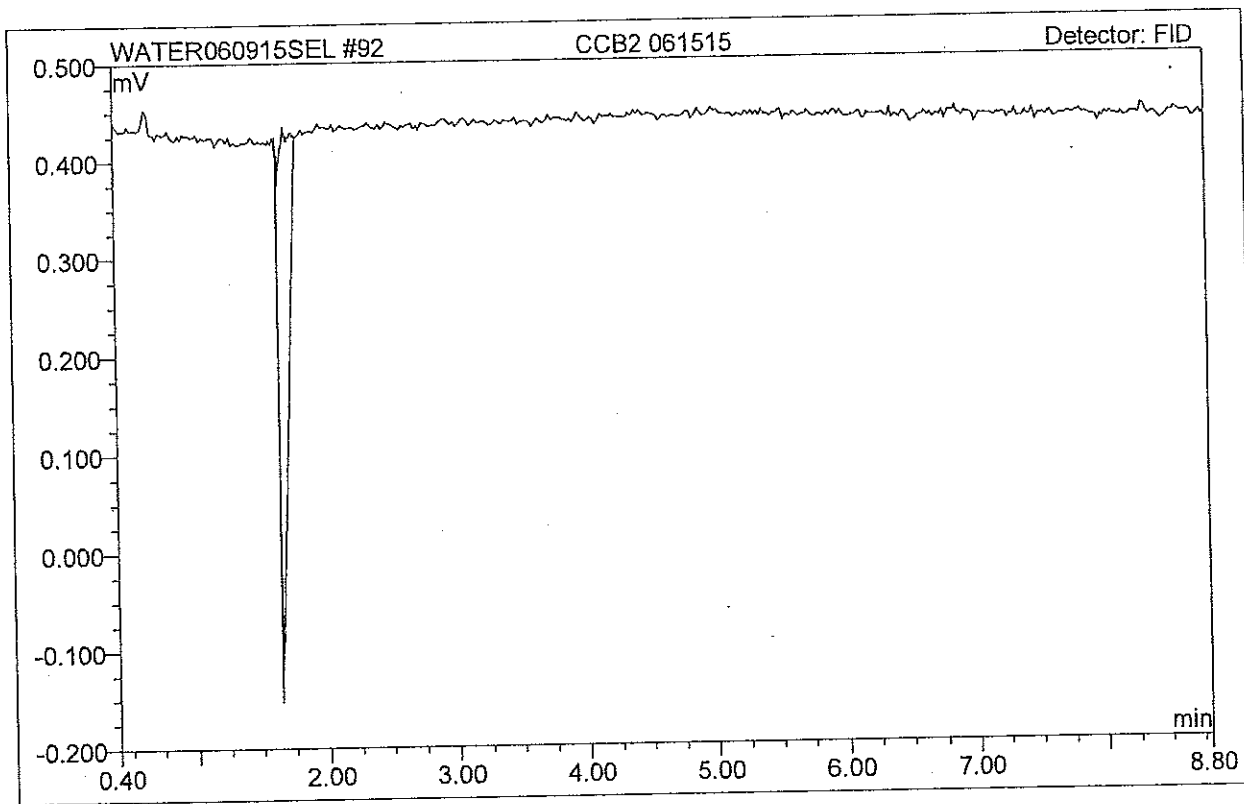


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Sample Analysis Report

Sample Name:	CCB2 061515	Sequence No:	92
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/15/2015 16:21	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
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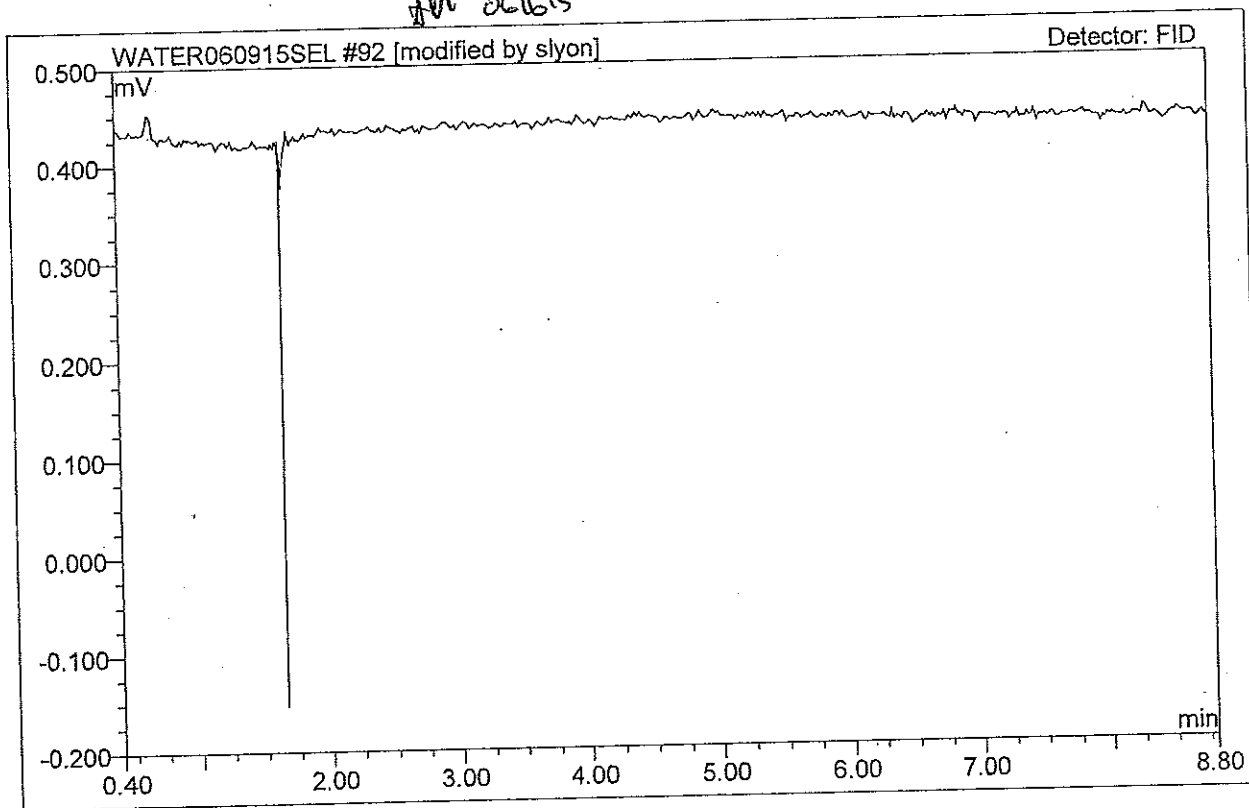
MICROSEEPS

Sample Analysis Report

Sample Name:	CCB2 061515	Sequence No:	92
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/15/2015 16:21	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
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JA 0615

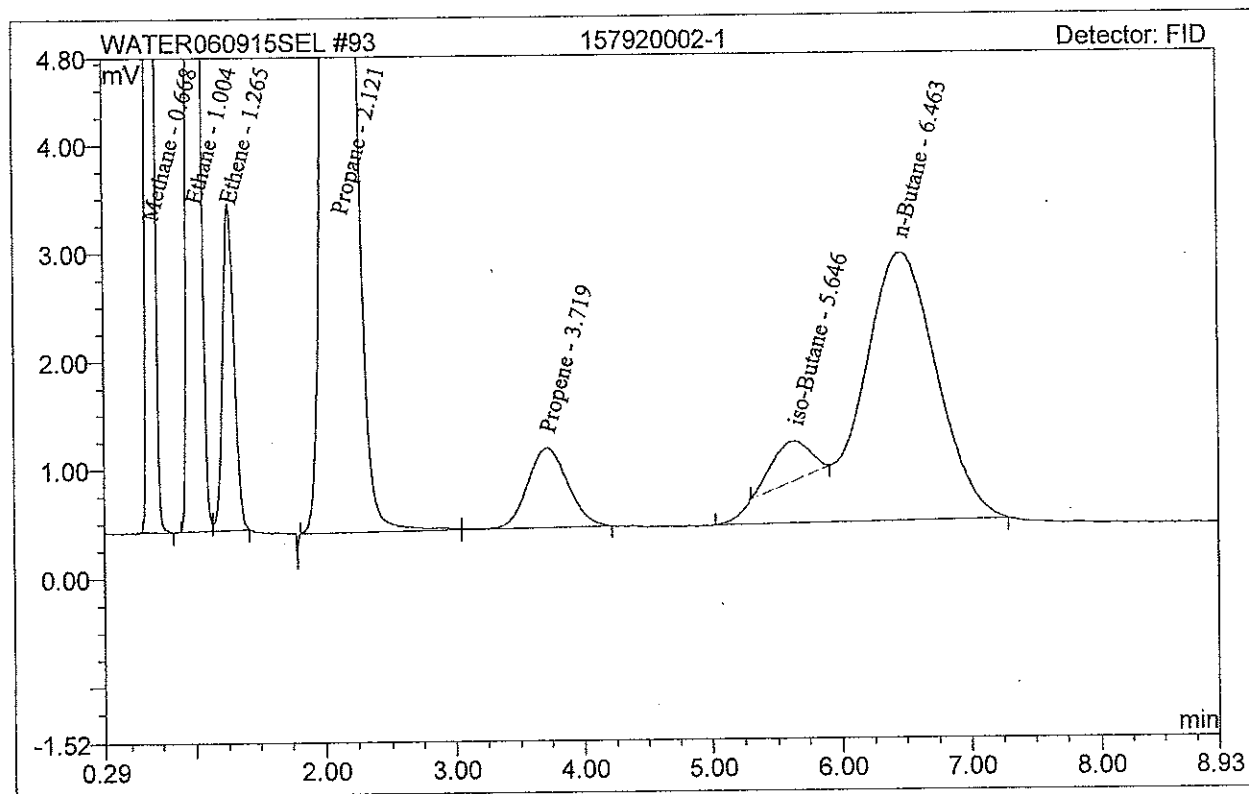


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Sample Analysis Report

Sample Name:	157920002-1	Sequence No:	93
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/15/2015 16:34	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.668	2.321	48.910	BMB	5.8552
2	Ethane	1.004	2.670	36.211	BM	6.8044
3	Ethene	1.265	0.304	3.013	MB	0.8574
4	Propane	2.121	4.123	20.577	BM	10.2987
5	Propene	3.719	0.269	0.738	MB	0.7932
6	iso-Butane	5.646	0.128	0.364	Ru	0.3181
7	n-Butane	6.463	1.865	2.475	BMB	4.8004

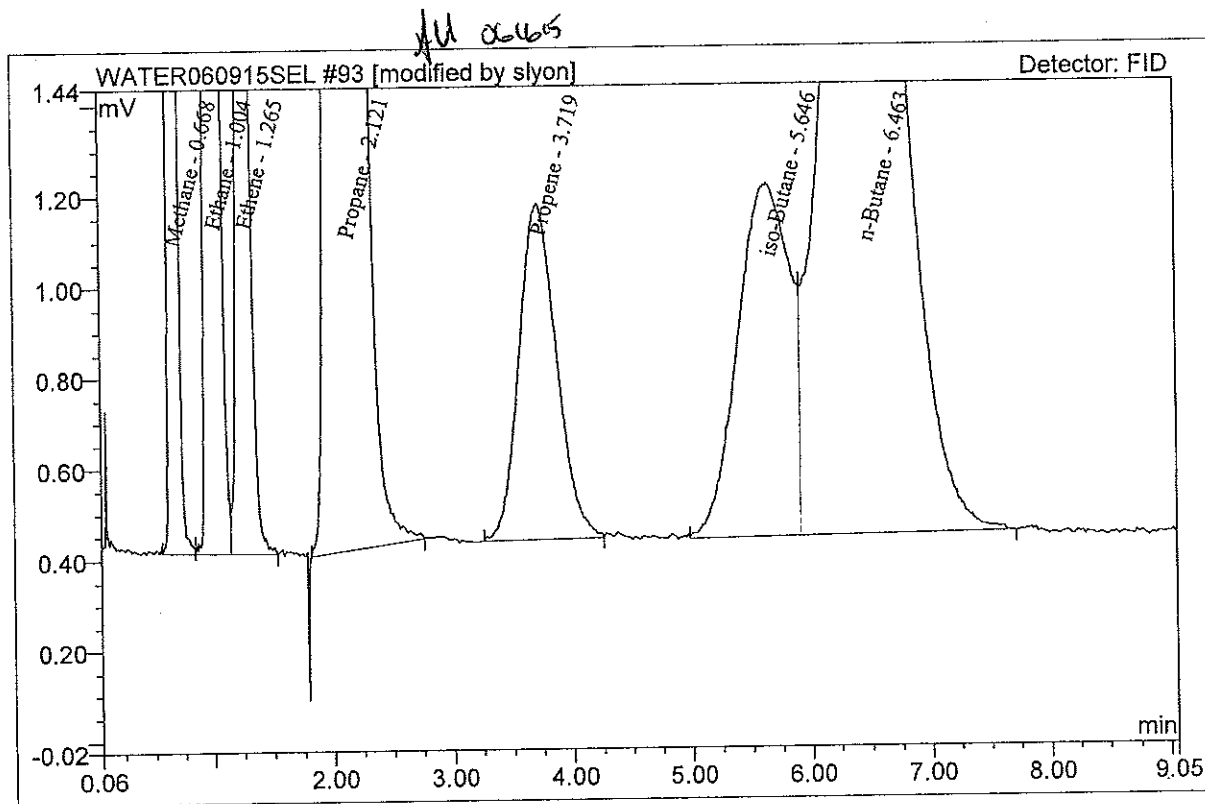


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Sample Analysis Report

Sample Name:	157920002-1	Sequence No:	93
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/15/2015 16:34	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.668	2.324	48.923	BM *	5.8633
2	Ethane	1.004	2.676	36.230	M *	6.8187
3	Ethene	1.265	0.315	3.042	MB*	0.8865
4	Propane	2.121	4.109	20.571	BMB*	10.2635
5	Propene	3.719	0.271	0.741	BMB*	0.8001
6	iso-Butane	5.646	0.392	0.779	BM *	0.9721
7	n-Butane	6.463	1.671	2.507	MB*	4.3019

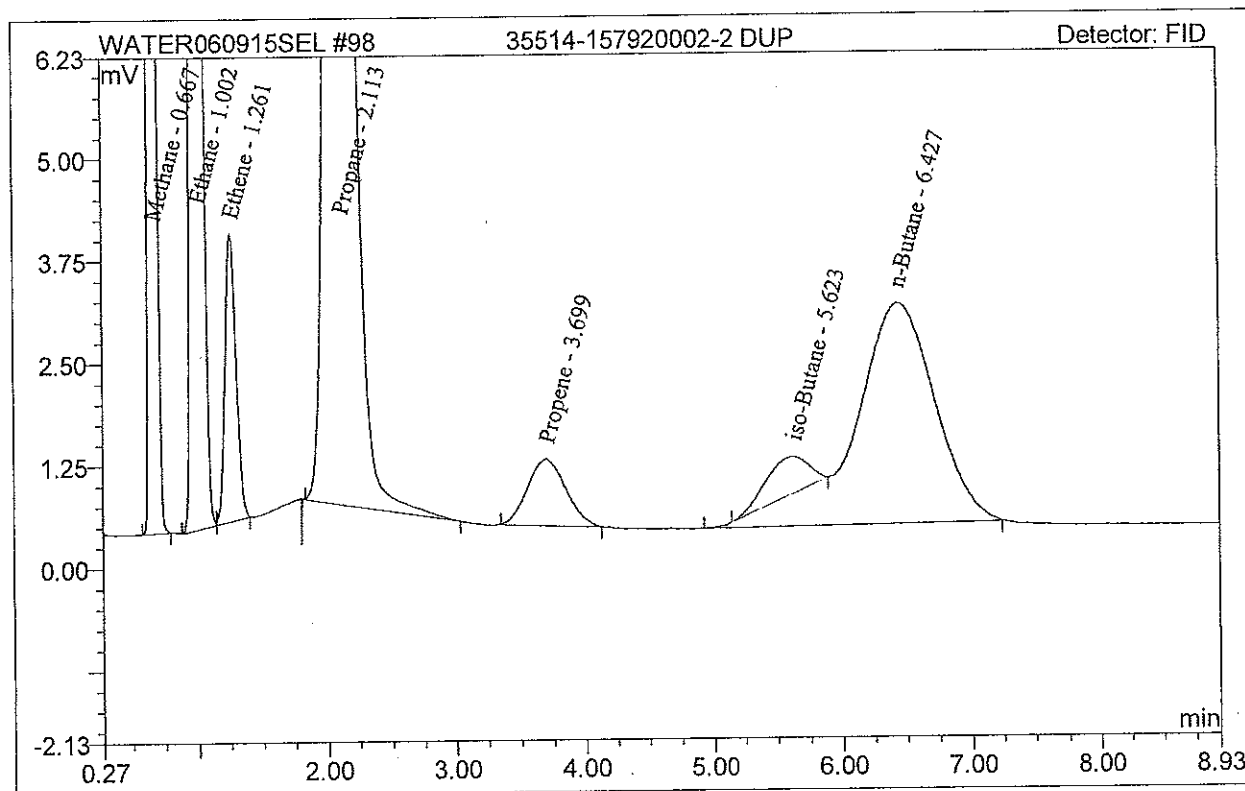


MICROSEEPS

Sample Analysis Report

Sample Name:	35514-157920002-2 DUP	Sequence No:	98
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/15/2015 17:47	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.667	2.560	54.011	BMB	6.4565
2	Ethane	1.002	2.934	39.900	BM	7.4765
3	Ethene	1.261	0.351	3.512	MB	0.9872
4	Propane	2.113	4.610	22.737	BMB	11.5137
5	Propene	3.699	0.281	0.820	BMB	0.8285
6	iso-Butane	5.623	0.178	0.456	Ru	0.4421
7	n-Butane	6.427	1.994	2.690	BMB	5.1321

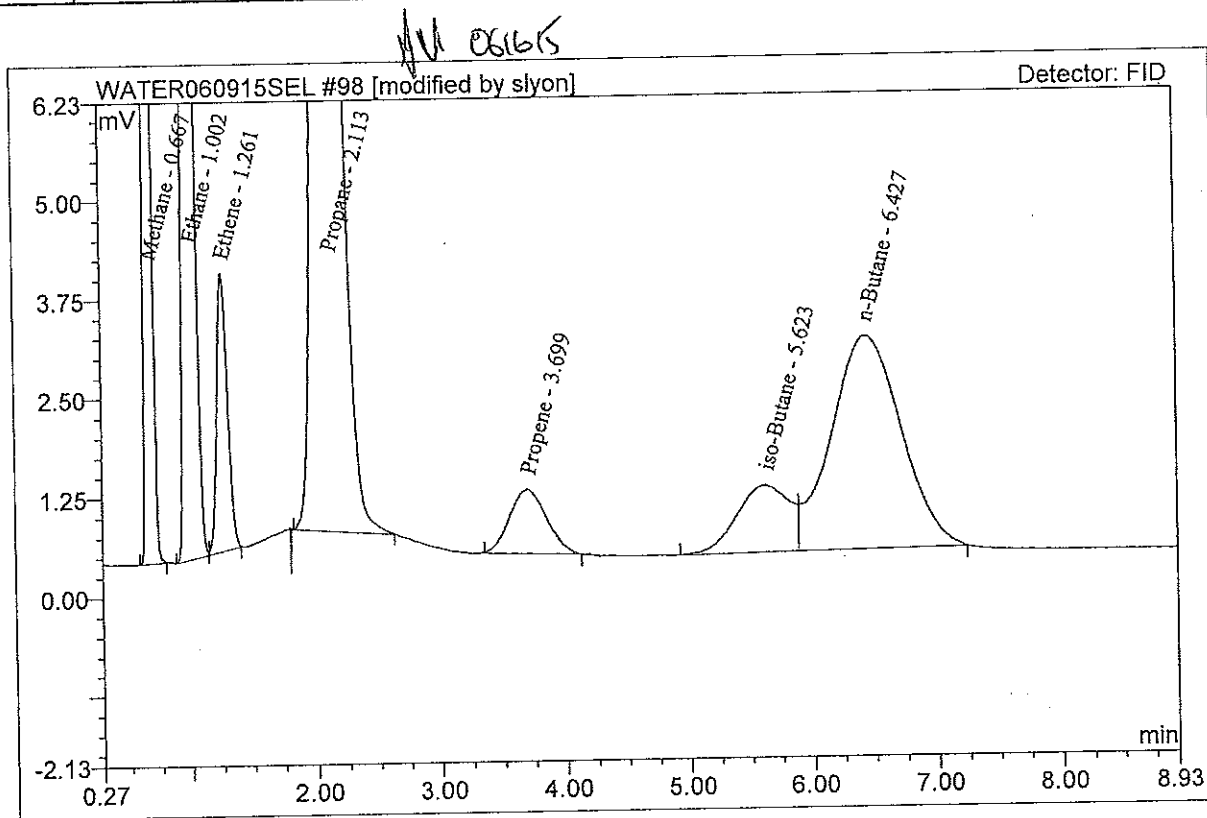


MICROSEEPS

Sample Analysis Report

Sample Name:	35514-157920002-2 DUP	Sequence No:	98
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/15/2015 17:47	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.667	2.560	54.011	BMB	6.4565
2	Ethane	1.002	2.934	39.900	BM	7.4765
3	Ethene	1.261	0.351	3.512	MB	0.9872
4	Propane	2.113	4.544	22.696	BMB*	11.3507
5	Propene	3.699	0.281	0.820	BMB	0.8285
6	iso-Butane	5.623	0.427	0.851	BM *	1.0600
7	n-Butane	6.427	1.745	2.690	MB*	4.4917



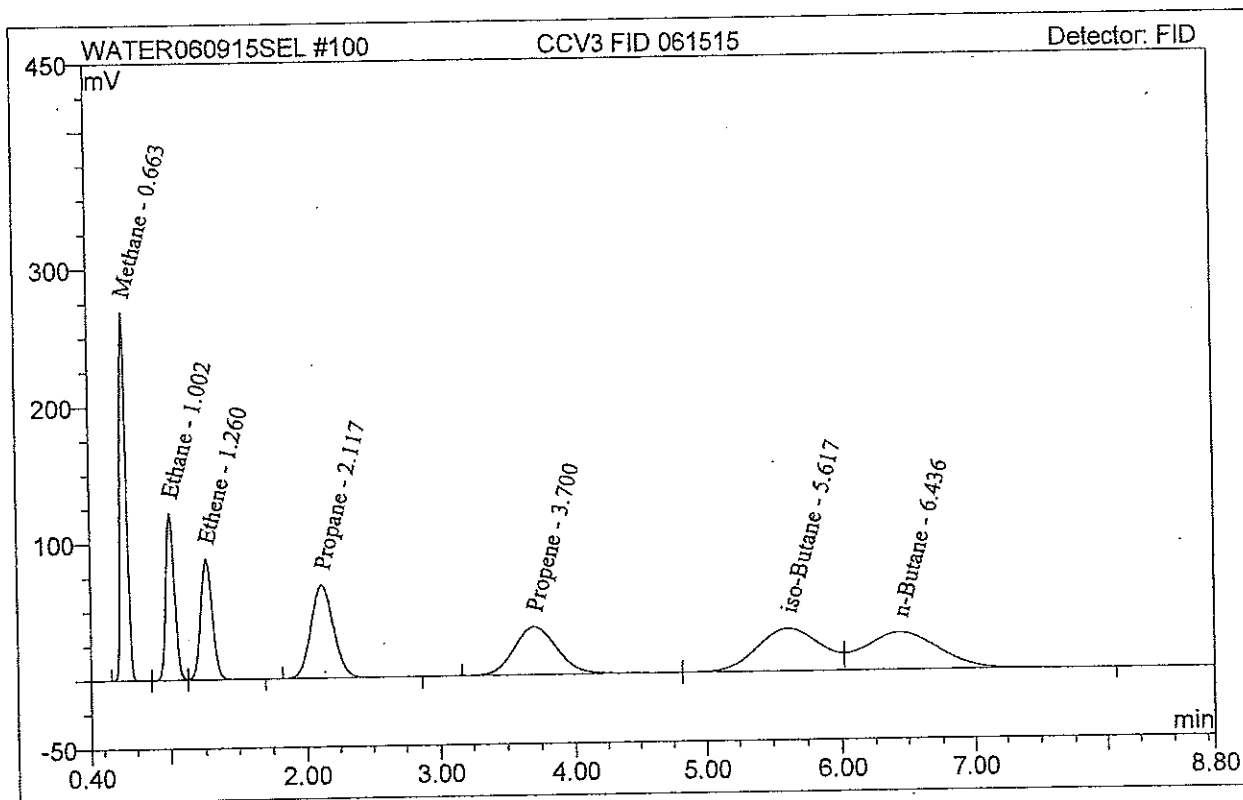
MICROSEEPS

Sample Analysis Report

Sample Name:	CCV3 FID 061515	Sequence No:	100
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/15/2015 18:16	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	RA-13-03 2X

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.663	14.769	268.829	BM	36.9161
2	Ethane	1.002	9.020	121.918	M	22.9527
3	Ethene	1.260	8.928	88.294	MB	25.0902
4	Propane	2.117	13.535	68.035	BMB	33.7380
5	Propene	3.700	12.996	35.067	BM	38.2080
6	iso-Butane	5.617	17.110	31.102	M	42.3060
7	n-Butane	6.436	17.600	27.211	MB	45.0999

TU
 36.086
 23.152
 25.568
 33.023
 41.617
 45.01

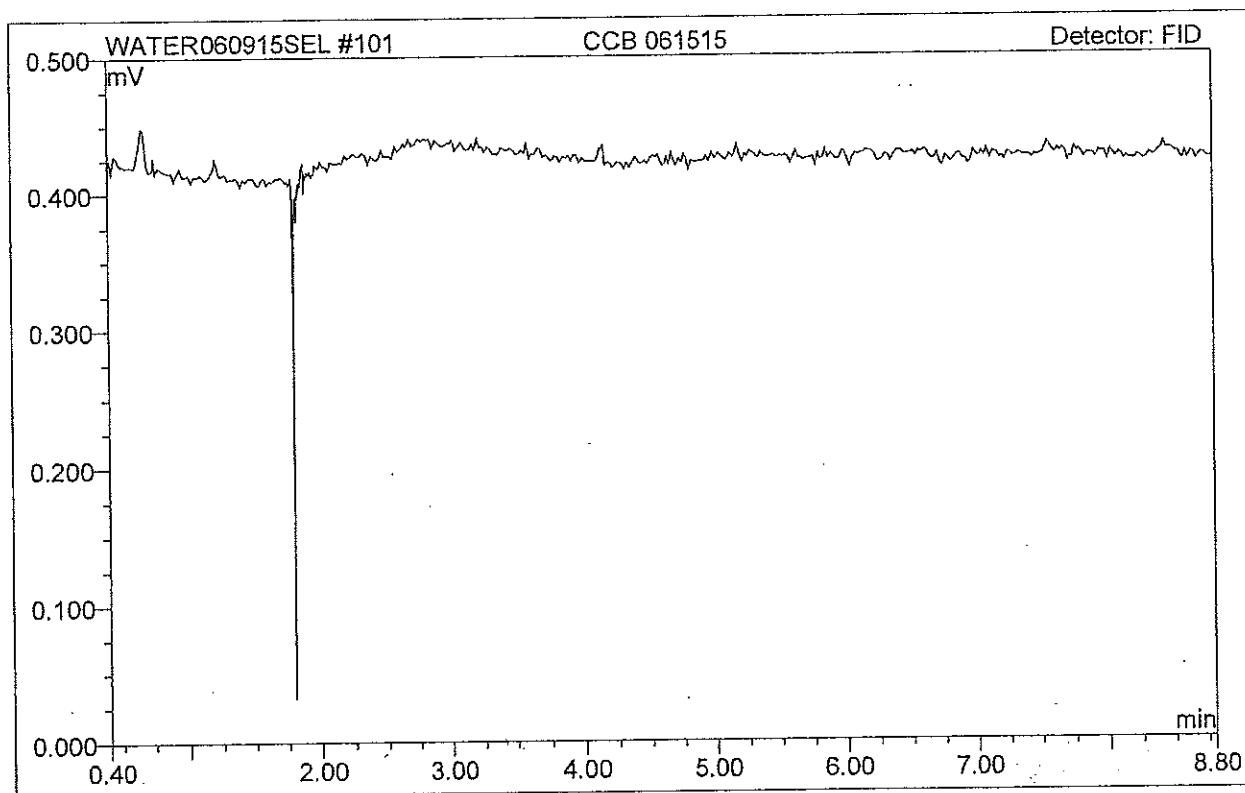


MICROSEEPS

Sample Analysis Report

Sample Name:	CCB 061515	Sequence No:	101
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/15/2015 18:28	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
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Risk Department
Case Narrative

Batch number: 4644 - DISG

Original Run Date: 06/17/15

Sample numbers:

15779-(6-8) DIL
15793-(1) DIL
15817-(2) DIL

15814-(2,4)
15826-(2)
15834-(1-4)

Matrix: Water

15866-(1-8)

Out of Control Event: (attach another page, if necessary)

- ① 15826-(2), 15834-(4), 15866-(1-8) Require dilutions for methane
- ② 15779-(7ms, 8msd) Failed

Corrective Action Taken:

Note

Result:

- ① Report dilutions on a future batch
- ② Reported

Observations to support use of data: (Note any occurrences of manual integration here)

Samples required manual integration to repair baseline inaccuracies

All samples had a PH of approximately 10

Manual Integration Checklist and Approval	
• Manual Integration approved?:	Yes No
• Satisfactorily documented on this narrative?	
• Manually integrated chromatogram initialed and dated by analyst?	
_____ Signature Lead Analyst or Lab. Mgr.	_____ Date

Analyzed & Reviewed by: <u>AK</u>	Date: <u>06/17/15</u>
Manual Integration Conducted? <input checked="" type="radio"/> YES <input type="radio"/> NO	(Circle One)
Reviewed by: <u>AK</u>	Date: <u>06/20/15</u>
Reviewed & Entered by: <u>Upload</u>	Date: <u>06/19/15</u>
Reviewed by: _____	Date: _____
Corrected by: _____	Date: _____

----- BIOREM-13 -----
 ----- QUALITY CONTROL -----
 ----- ANALYSIS DATE: 06/17/15 -----
 ----- MATRIX: WATER -----

SPIKE RECOVERY/ACCURACY DATA

MS/MSD SAMPLE: 157790006 ORIG, 35511-157790007 MS, 35512-157790008 MSD

COMPOUND	SAMPLE CONC.	SPIKE CONC.	MS CONC.	MSD CONC.	MS %R	MSD %R	%D
METHANE	15042.1600	890.00	15767.600	16611.290	81.51	176.31	73.54

Reviewed GAK O6/20/15

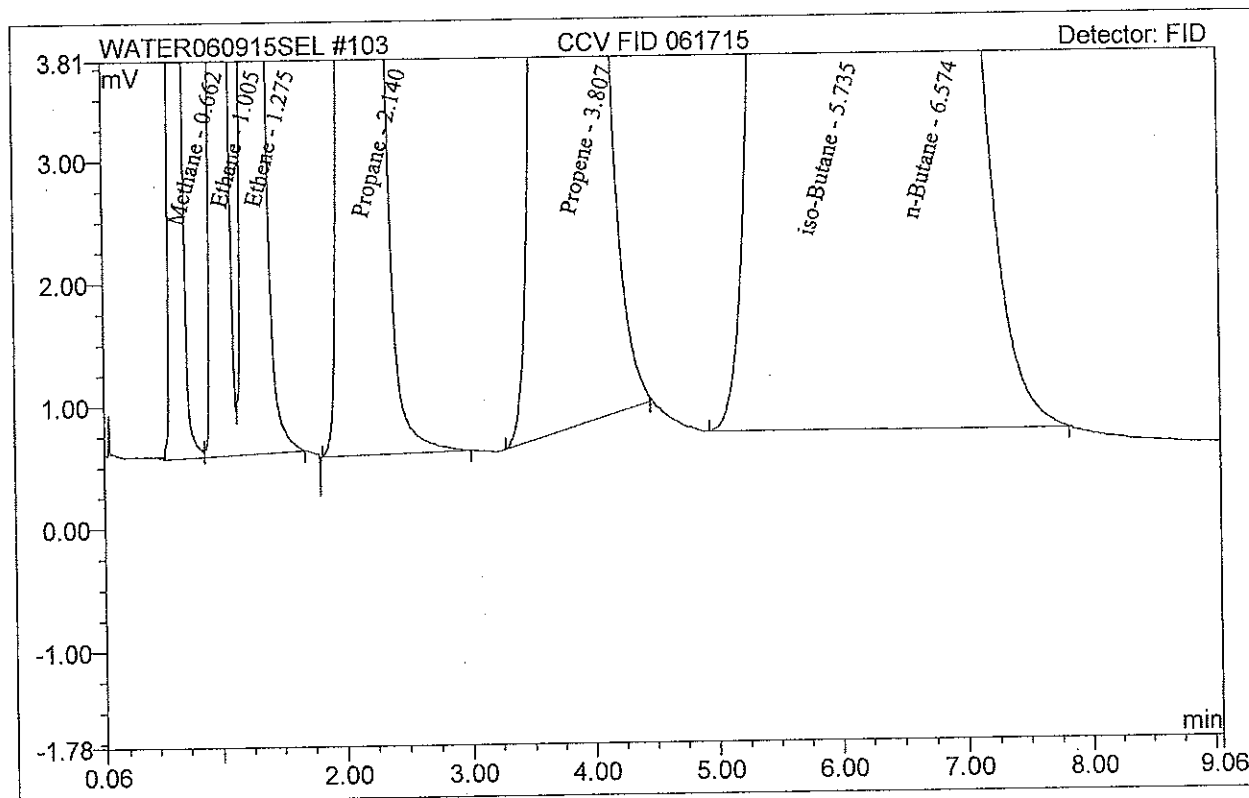
Analyst MM

MICROSEEPS

Sample Analysis Report

Sample Name:	CCV FID 061715	Sequence No:	103
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/17/2015 10:15	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	RA-13-03 2X

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.662	14.854	272.015	BM	37.1252
2	Ethane	1.005	9.070	122.413	M	23.0793
3	Ethene	1.275	8.974	87.607	MB	25.2182
4	Propane	2.140	13.554	67.500	BMB	33.7847
5	Propene	3.807	12.650	33.879	BMB	37.1940
6	iso-Butane	5.735	16.945	30.400	BM	41.9006
7	n-Butane	6.574	17.453	26.676	MB	44.7249



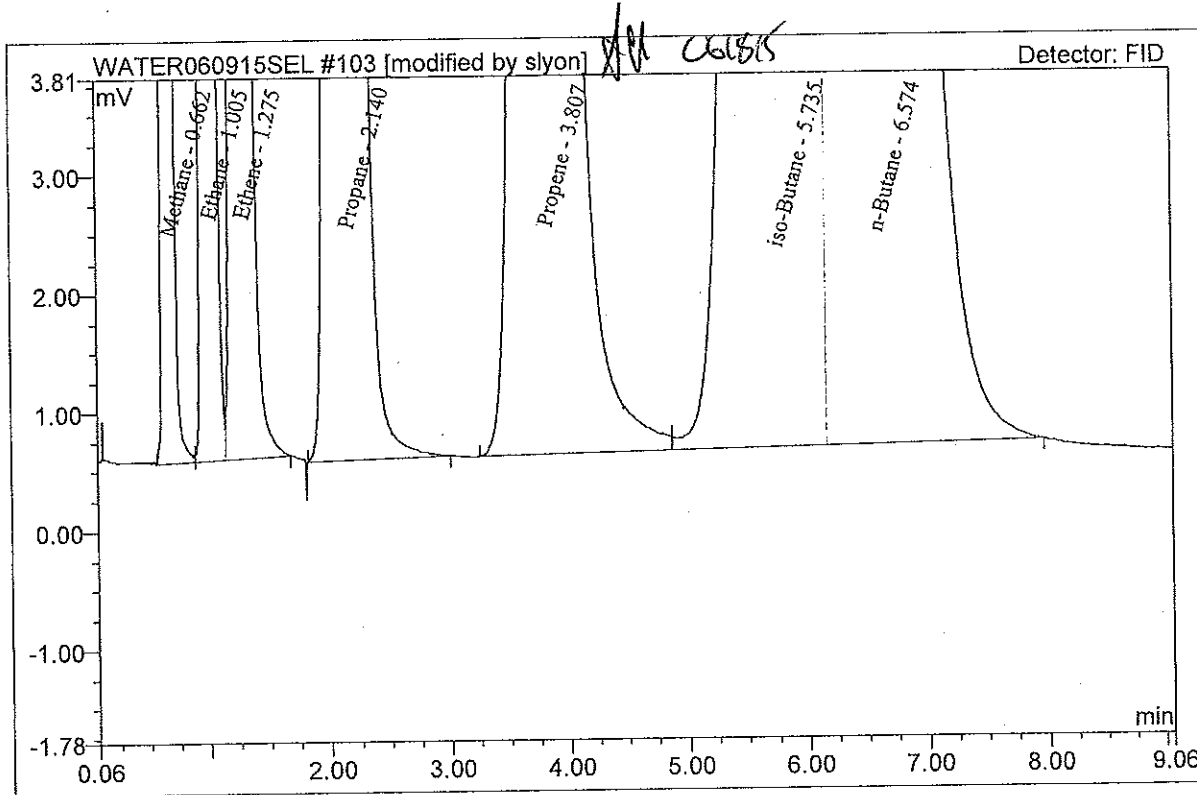
MICROSEEPS

Sample Analysis Report

Sample Name:	CCV FID 061715	Sequence No:	103
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/17/2015 10:15	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	RA-13-03 2X

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.662	14.854	272.015	BM	37.1252
2	Ethane	1.005	9.070	122.413	M	23.0793
3	Ethene	1.275	8.974	87.607	MB	25.2182
4	Propane	2.140	13.554	67.500	BMB	33.7847
5	Propene	3.807	12.959	34.046	BM *	38.0980
6	iso-Butane	5.735	17.059	30.484	M *	42.1803
7	n-Butane	6.574	17.551	26.742	MB*	44.9765

TV
36.084
23.152
25.568

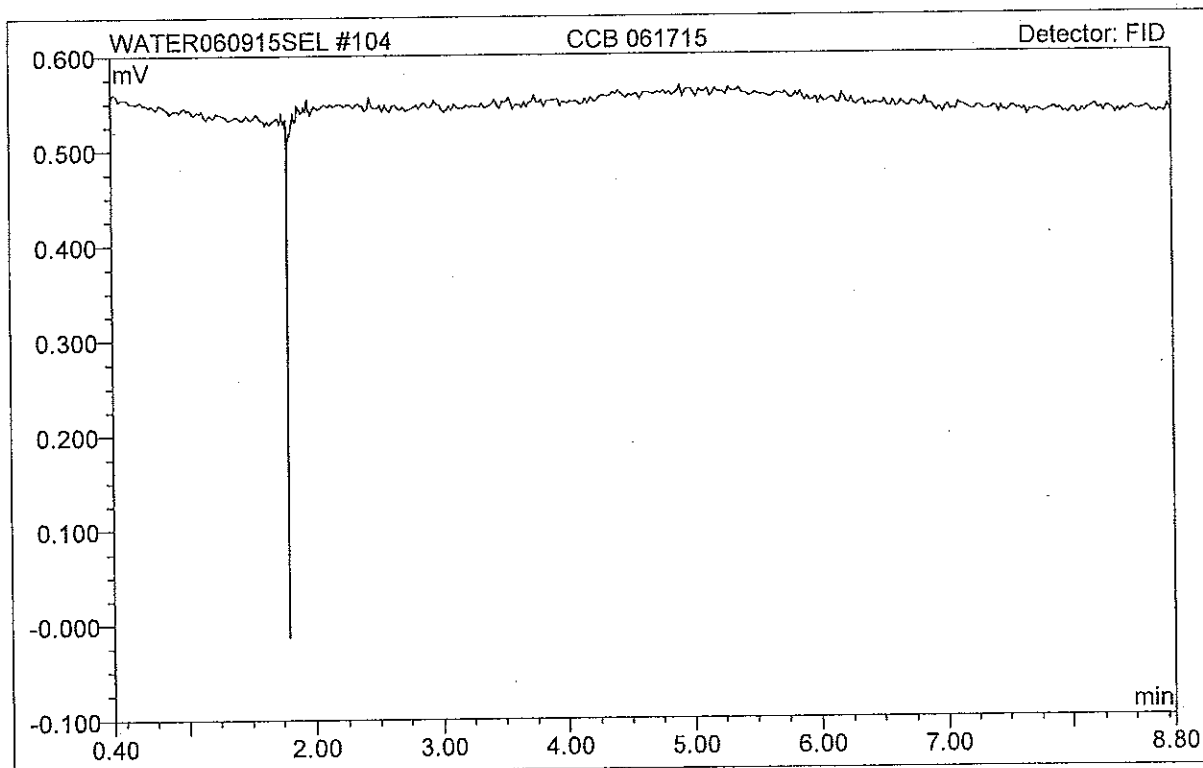


MICROSEEPS

Sample Analysis Report

Sample Name:	CCB 061715	Sequence No:	104
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/17/2015 10:25	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
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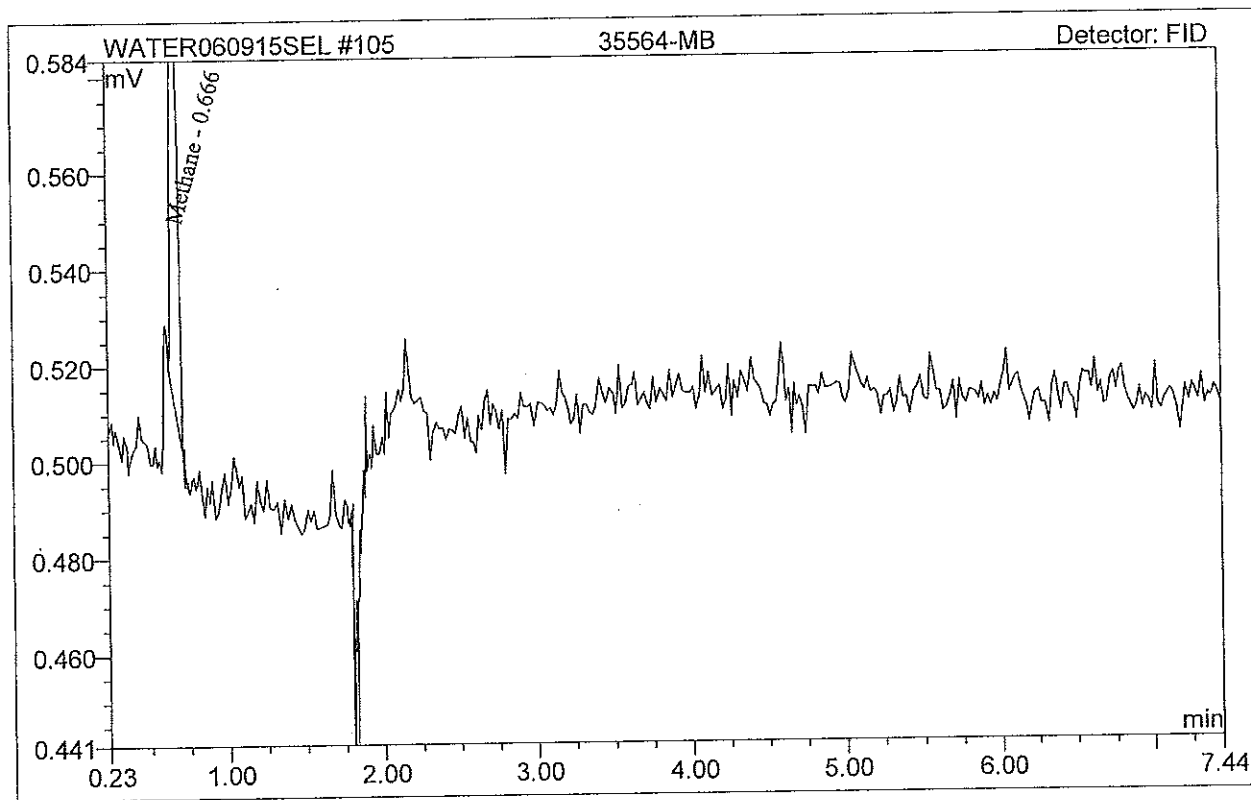


MICROSEEPS

Sample Analysis Report

Sample Name:	35564-MB	Sequence No:	105
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/17/2015 10:43	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.666	0.006	0.136	BMB	0.0149

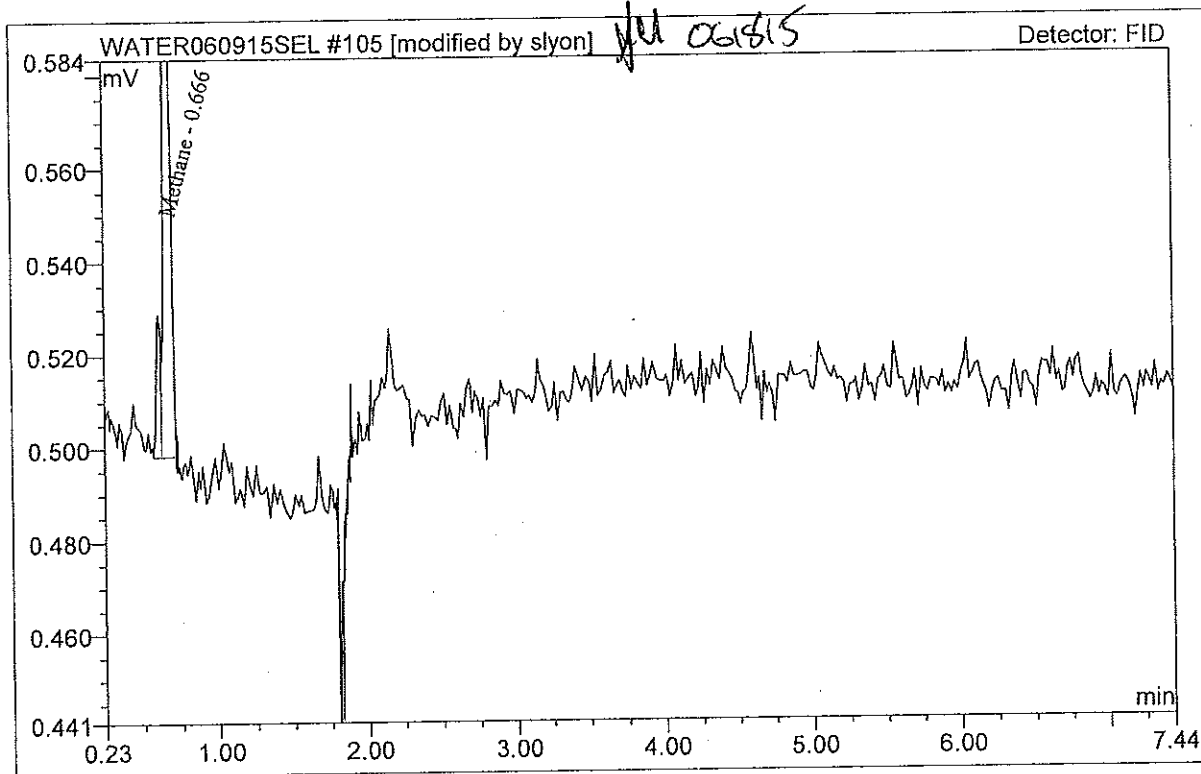


MICROSEEPS

Sample Analysis Report

Sample Name:	35564-MB	Sequence No:	105
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/17/2015 10:43	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
2	Methane	0.666	0.007	0.149	MB*	0.0179

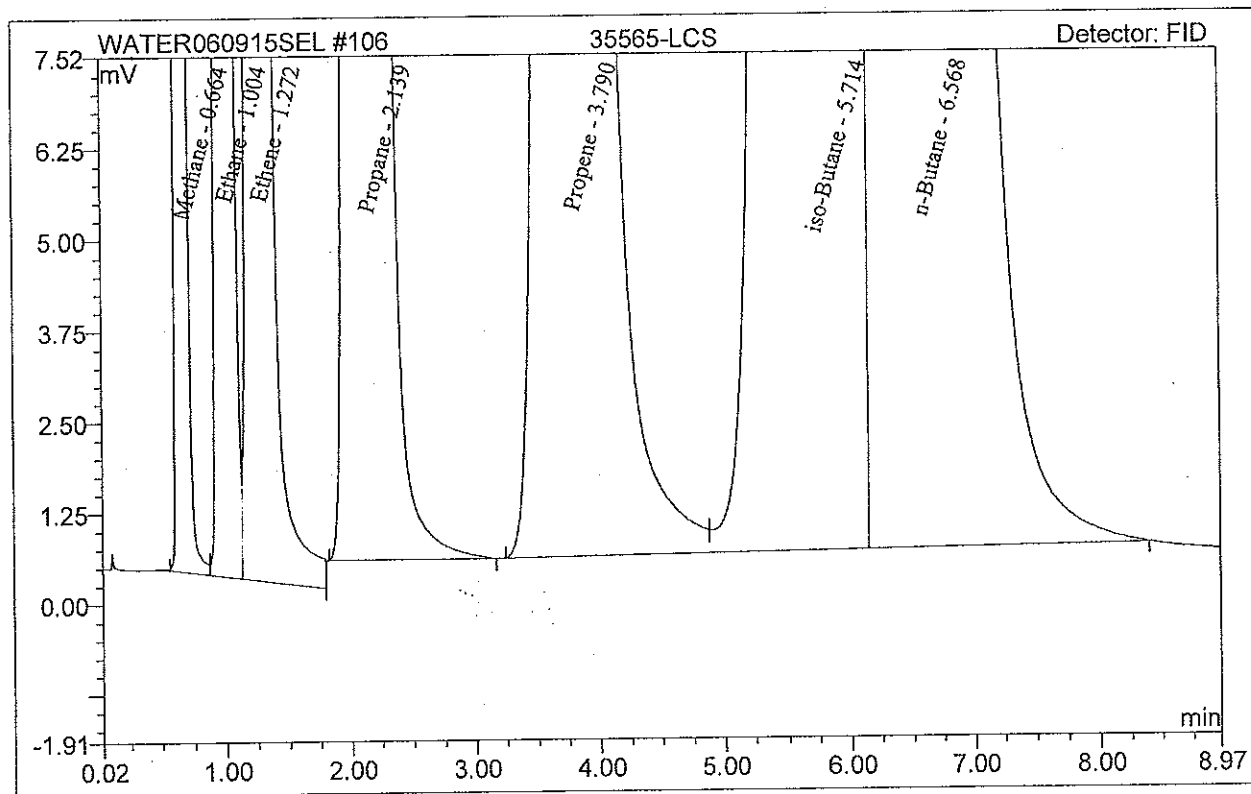


MICROSEEPS

Sample Analysis Report

Sample Name:	35565-LCS	Sequence No:	106
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/17/2015 10:58	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	RA-11-09 5X

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.664	17.414	346.784	BM	43.4417
2	Ethane	1.004	32.196	436.507	M	81.5275
3	Ethene	1.272	28.016	273.102	MB	78.3431
4	Propane	2.139	47.801	239.621	BMB	118.2226
5	Propene	3.790	36.356	96.241	BM	106.1231
6	iso-Butane	5.714	62.623	112.709	M	153.1604
7	n-Butane	6.568	59.358	90.463	MB	150.3184



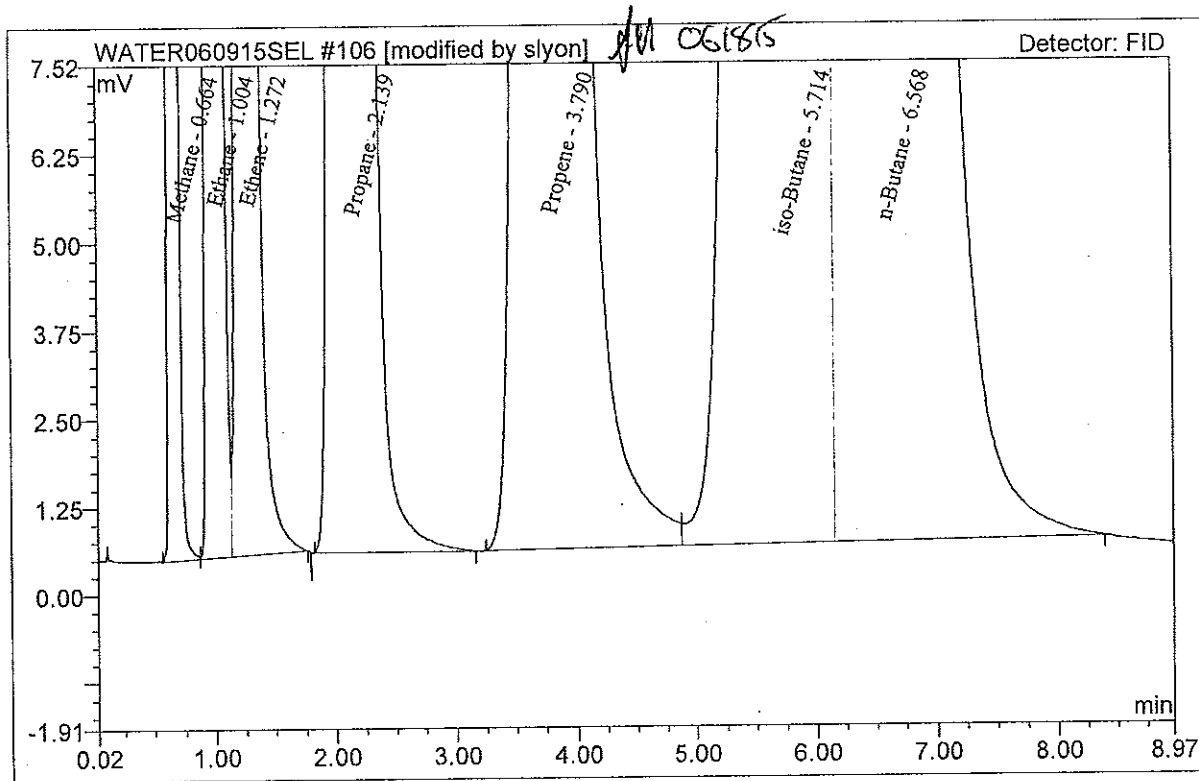
MICROSEEPS

Sample Analysis Report

Sample Name:	35565-LCS	Sequence No:	106
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/17/2015 10:58	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	RA-11-09 5X

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.664	17.398	346.749	BM *	43.4006
2	Ethane	1.004	32.158	436.357	M *	81.4306
3	Ethene	1.272	27.814	272.862	MB*	77.7844
4	Propane	2.139	47.801	239.621	BMB	118.2226
5	Propene	3.790	36.356	96.241	BM	106.1231
6	iso-Butane	5.714	62.623	112.709	M	153.1604
7	n-Butane	6.568	59.358	90.463	MB	150.3184

TV
44.48
83.3
77.92

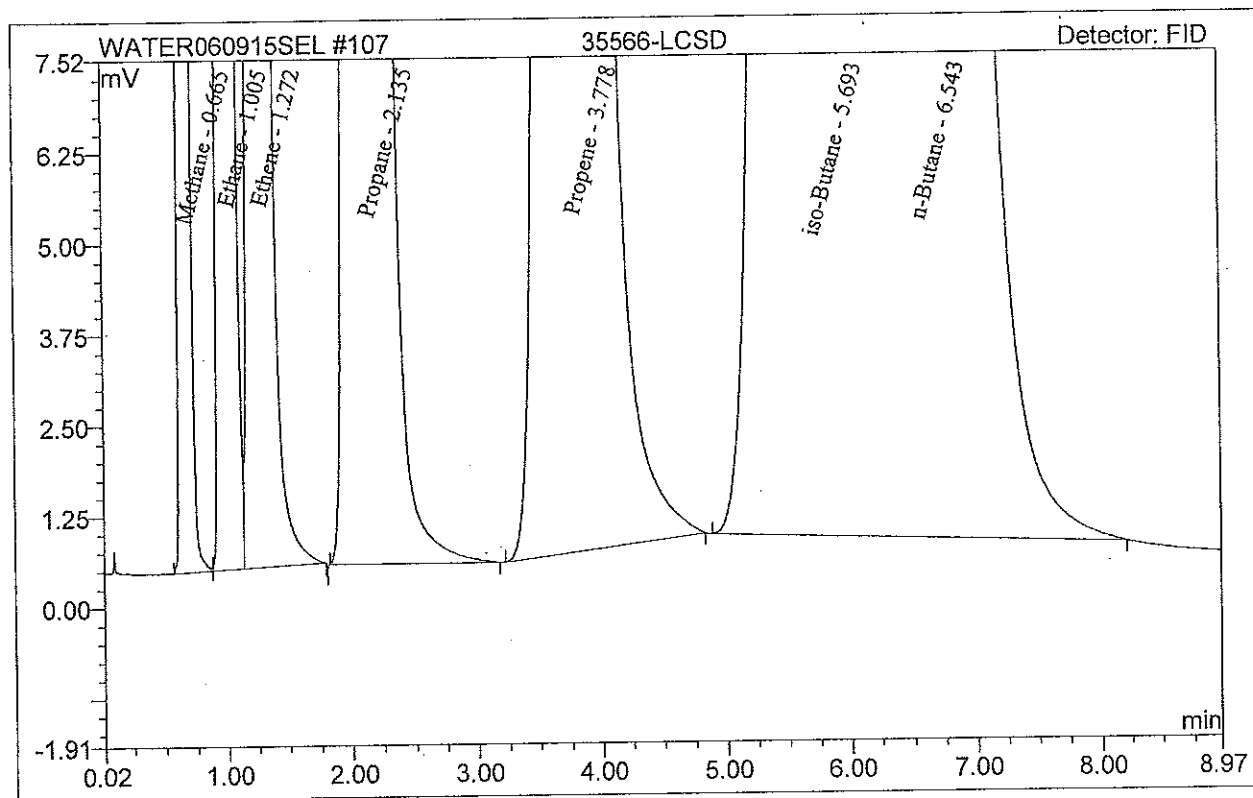


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Sample Analysis Report

Sample Name:	35566-LCSD	Sequence No:	107
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/17/2015 11:21	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	RA-11-09 5X

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.665	17.321	343.344	BM	43.2120
2	Ethane	1.005	31.872	432.075	M	80.7112
3	Ethene	1.272	27.397	268.929	MB	76.6241
4	Propane	2.135	47.272	236.989	BMB	116.9285
5	Propene	3.778	35.350	94.674	BMB	103.2191
6	iso-Butane	5.693	61.876	111.775	BM	151.3589
7	n-Butane	6.543	57.687	88.560	MB	146.1558



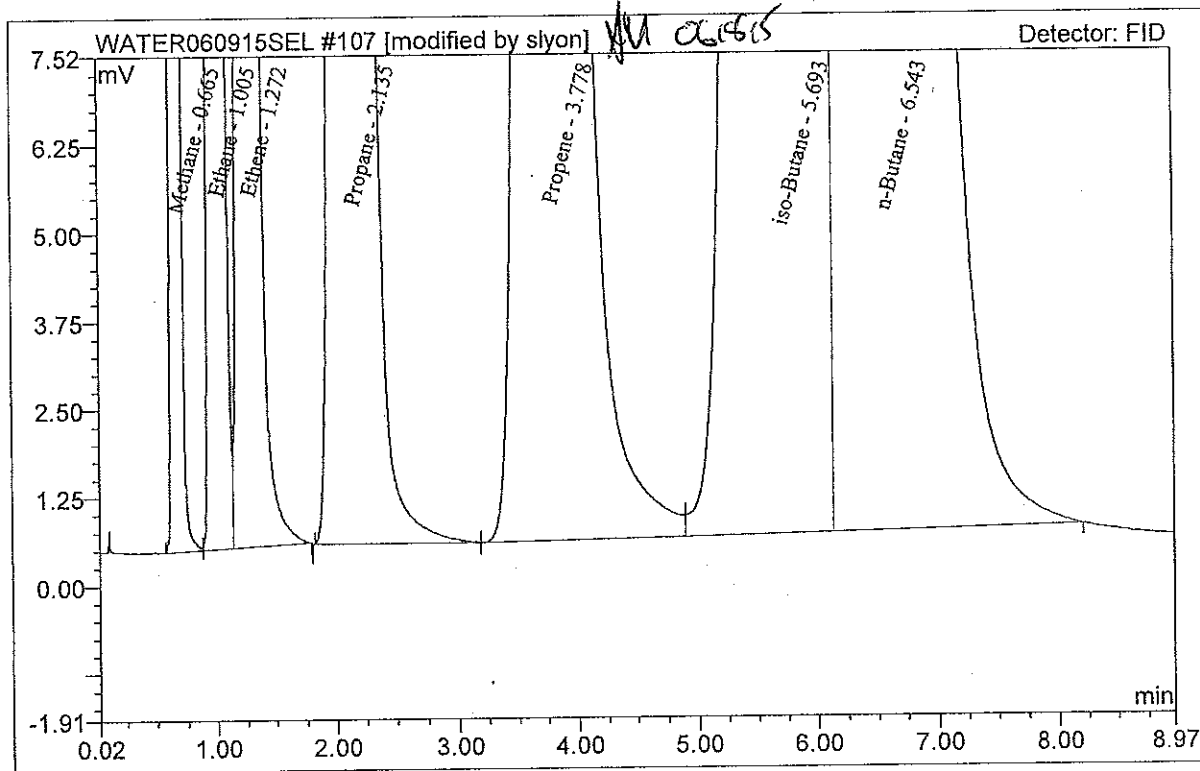
MICROSEEPS

Sample Analysis Report

Sample Name:	35566-LCSD	Sequence No:	107
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/17/2015 11:21	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	RA-11-09 5X

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.665	17.321	343.344	BM	43.2120
2	Ethane	1.005	31.872	432.075	M	80.7112
3	Ethene	1.272	27.397	268.929	MB	76.6241
4	Propane	2.135	47.272	236.989	BMb*	116.9285
5	Propene	3.778	35.617	94.780	bM*	103.9889
6	iso-Butane	5.693	62.166	111.995	M*	152.0583
7	n-Butane	6.543	57.876	88.705	MB*	146.6277

TV
44.48
83.3
77.92

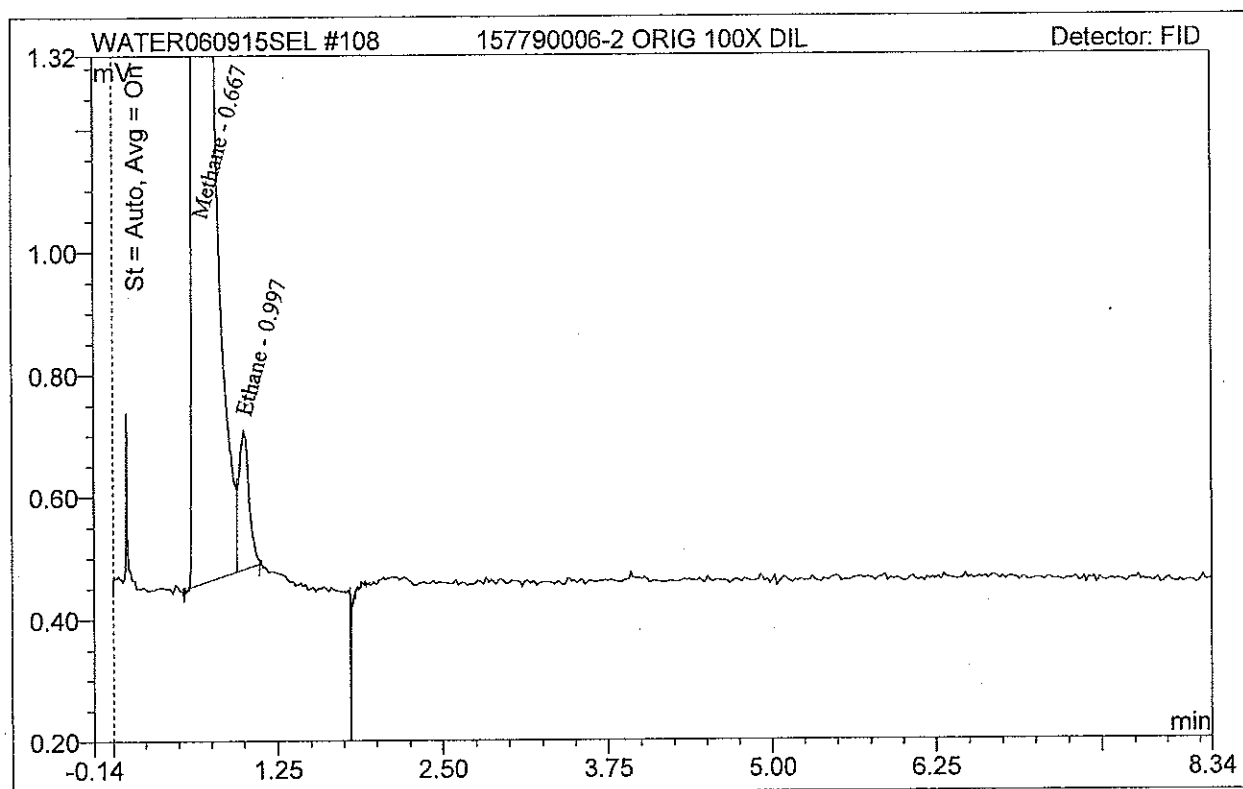


MICROSEEPS

Sample Analysis Report

Sample Name:	157790006-2 ORIG 100X DIL	Sequence No:	108
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/17/2015 12:01	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.667	62.251	1333.549	BM	150.4774
2	Ethane	0.997	0.020	0.227	MB	0.0521



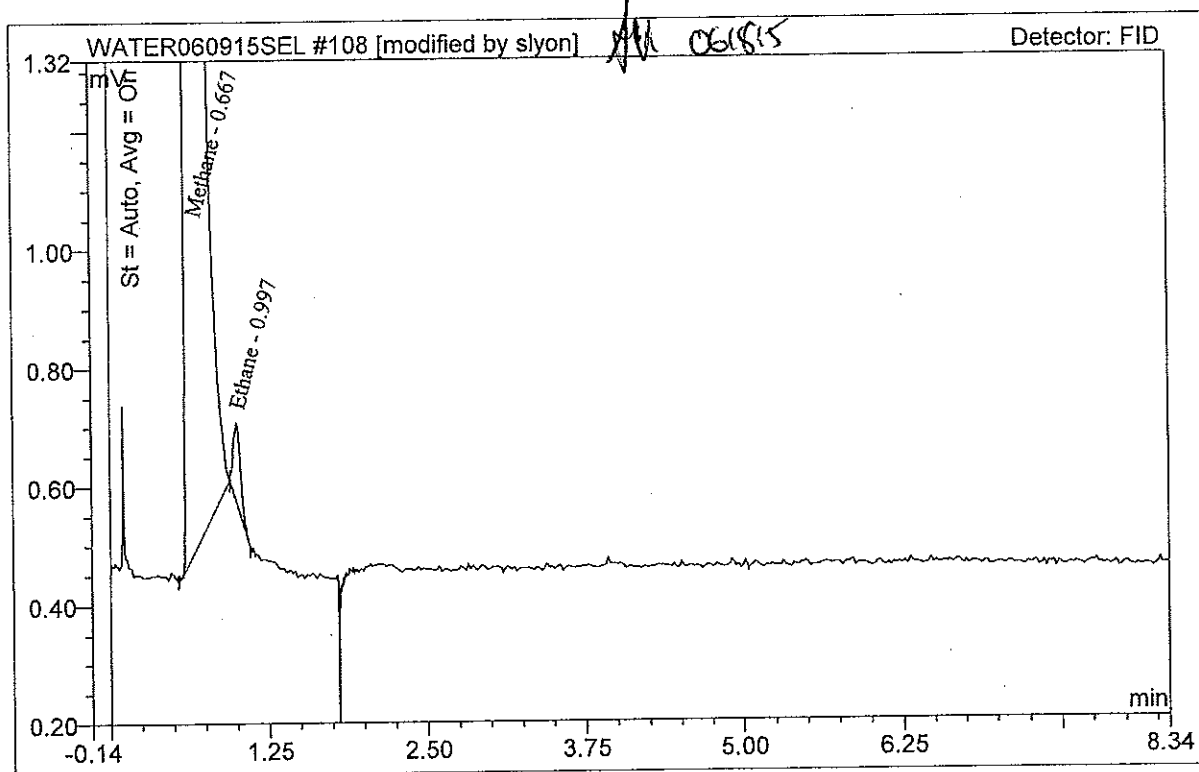
MICROSEEPS

Sample Analysis Report

Sample Name:	157790006-2 ORIG 100X DIL	Sequence No:	108
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/17/2015 12:01	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.667	62.227	1333.519	BMB*	150.4216
2	Ethane	0.997	0.009	0.134	bMB*	0.0225

x100

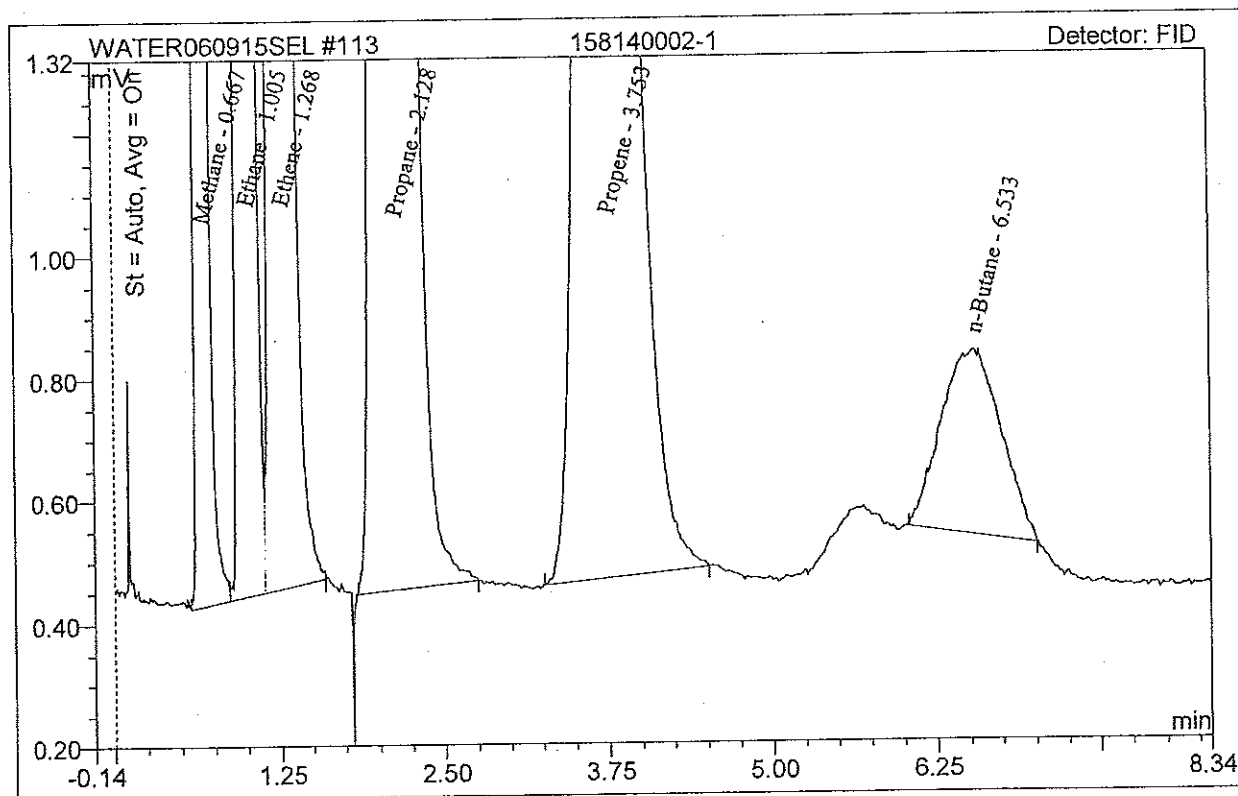


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Sample Analysis Report

Sample Name:	158140002-1	Sequence No:	113
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/17/2015 12:56	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.667	6.684	141.818	BM	16.8077
2	Ethane	1.005	4.126	55.898	M	10.5101
3	Ethene	1.268	3.432	33.578	MB	9.6575
4	Propane	2.128	3.926	19.565	BMB	9.8067
5	Propene	3.753	1.531	4.111	BMB	4.5184
6	n-Butane	6.533	0.158	0.303	BMB	0.4080

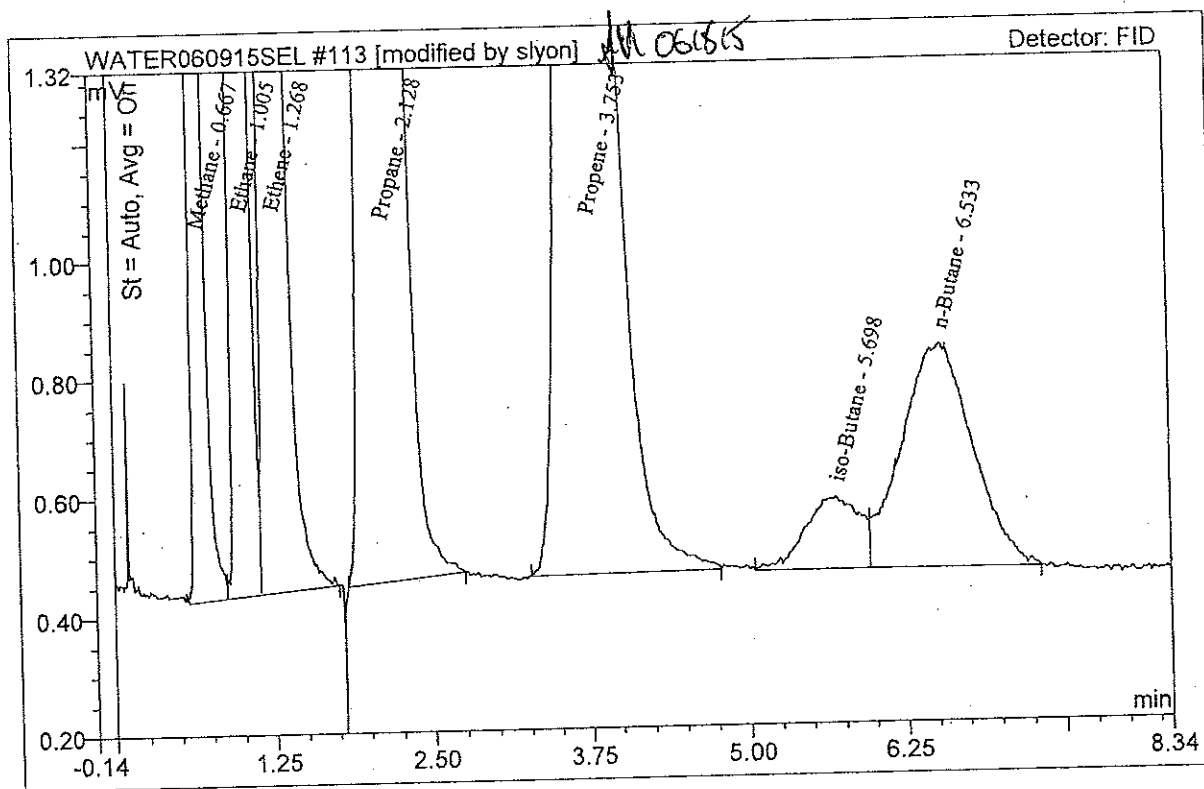


MICROSEEPS

Sample Analysis Report

Sample Name:	158140002-1	Sequence No:	113
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/17/2015 12:56	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.667	6.685	141.821	BM *	16.8104
2	Ethane	1.005	4.129	55.909	M *	10.5174
3	Ethene	1.268	3.443	33.595	MB*	9.6897
4	Propane	2.128	3.926	19.565	BMB	9.8067
5	Propene	3.753	1.551	4.121	BMB*	4.5758
6	iso-Butane	5.698	0.061	0.123	BM *	0.1519
7	n-Butane	6.533	0.246	0.377	MB*	0.6325

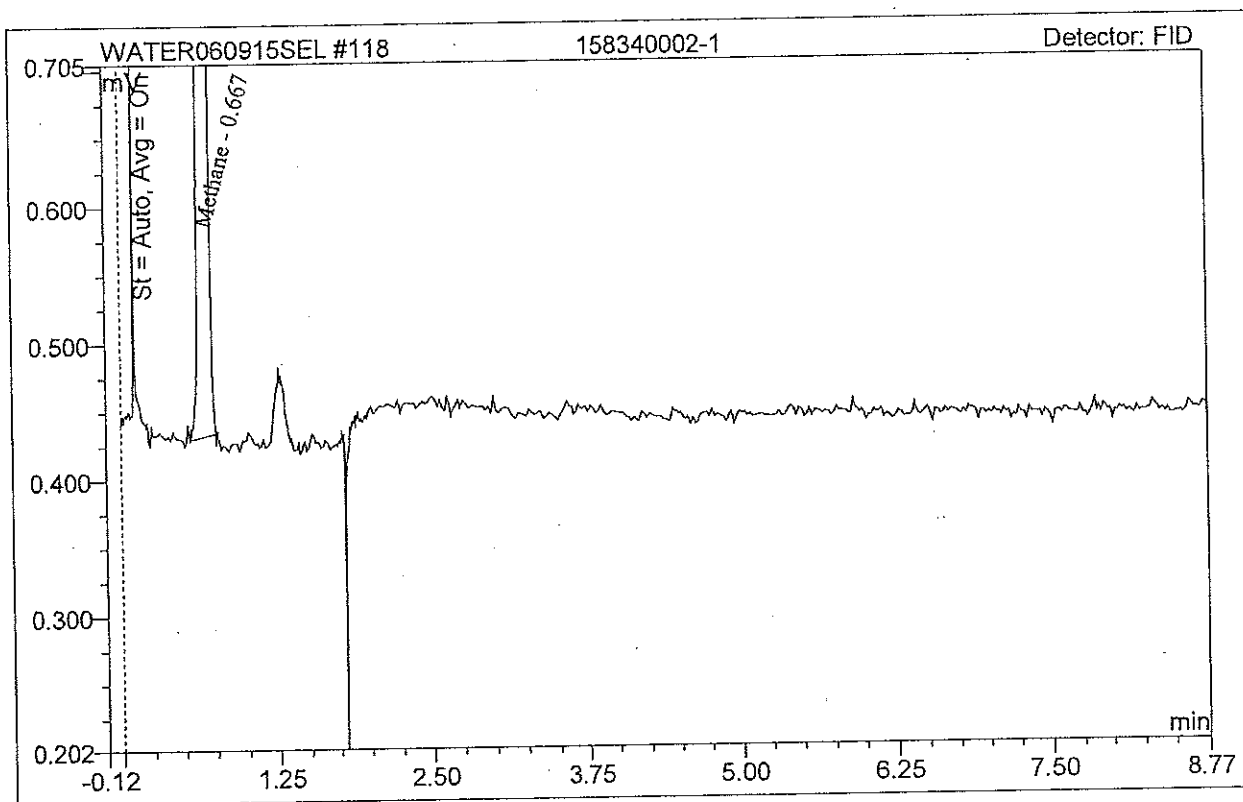


MICROSEEPS

Sample Analysis Report

Sample Name:	158340002-1	Sequence No:	118
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/17/2015 14:10	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.667	0.428	8.963	BMB	1.0815

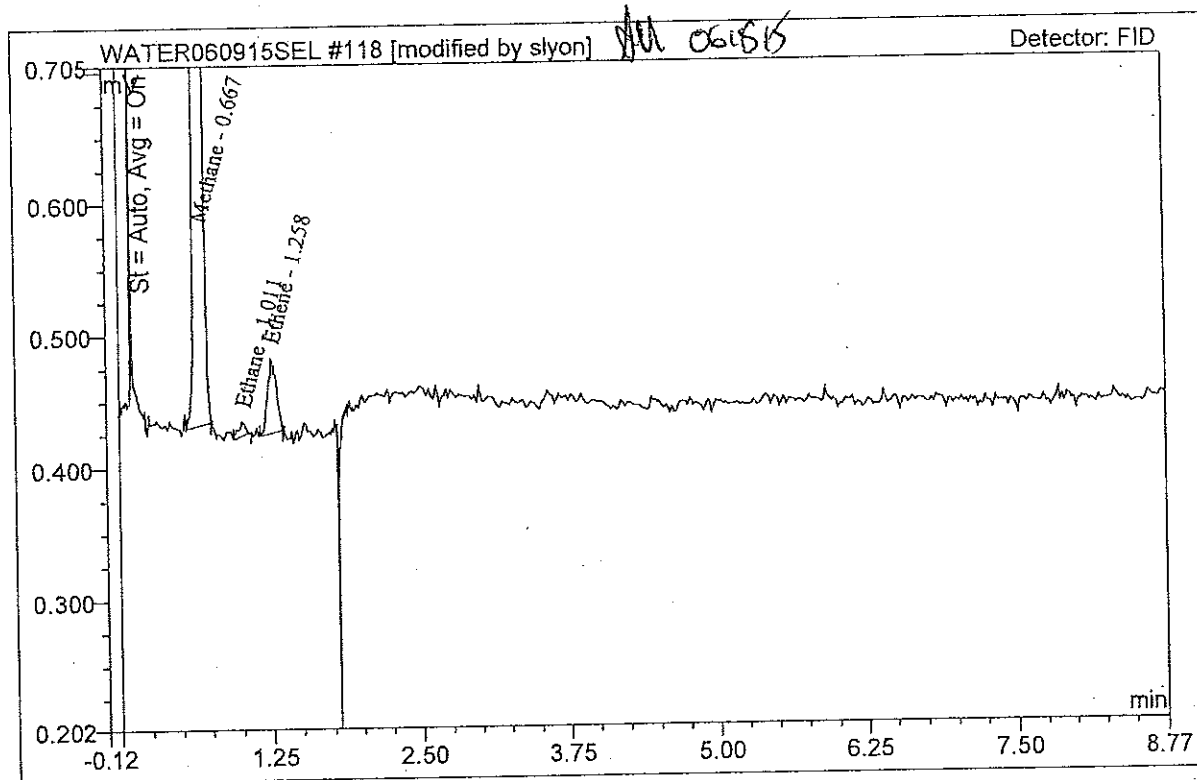


MICROSEEPS

Sample Analysis Report

Sample Name:	158340002-1	Sequence No:	118
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/17/2015 14:10	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.667	0.428	8.963	BMB	1.0815
2	Ethane	1.011	0.001	0.011	BMB*	0.0018
3	Ethene	1.258	0.005	0.057	BMB*	0.0133

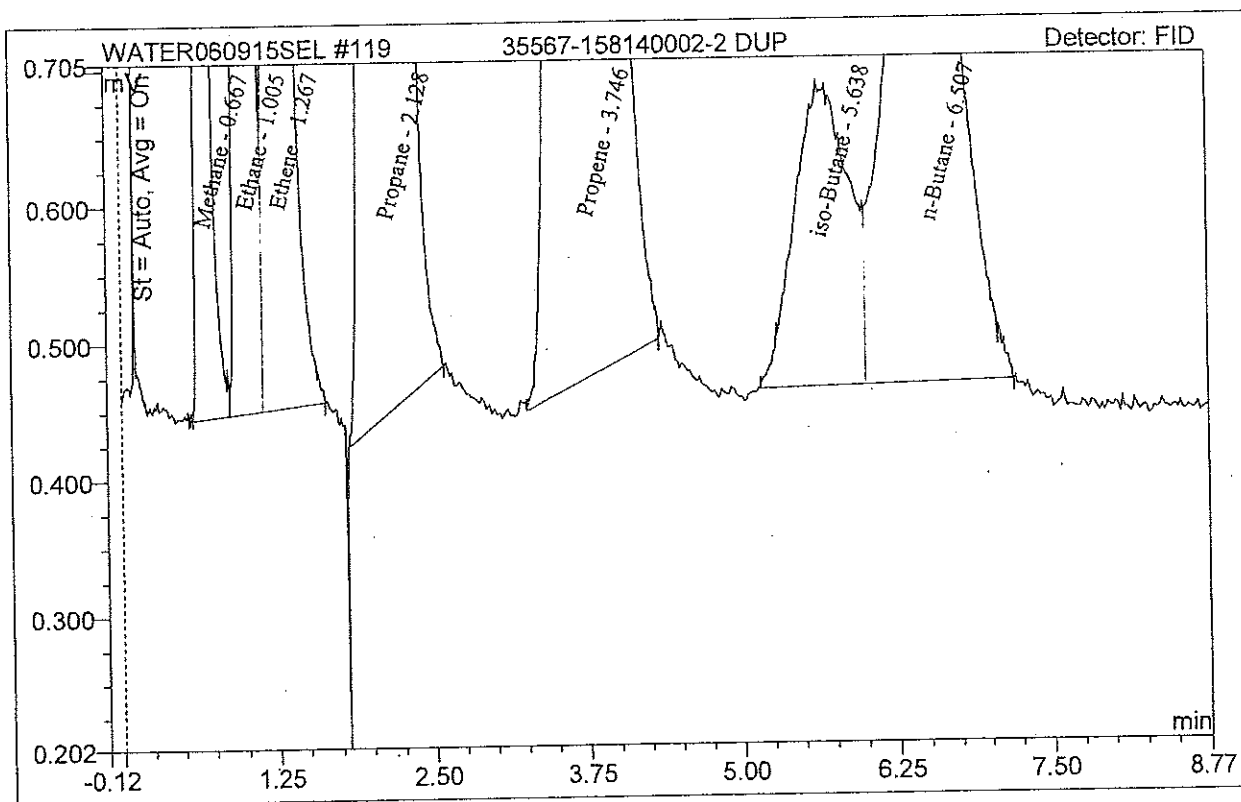


MICROSEEPS

Sample Analysis Report

Sample Name:	35567-158140002-2 DUP	Sequence No:	119
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/17/2015 14:23	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.667	7.458	158.146	BM	18.7426
2	Ethane	1.005	4.743	64.313	M	12.0813
3	Ethene	1.267	3.665	35.899	MB	10.3124
4	Propane	2.128	4.567	22.837	BMB	11.4081
5	Propene	3.746	1.640	4.440	BMB	4.8382
6	iso-Butane	5.638	0.112	0.224	BM	0.2774
7	n-Butane	6.507	0.304	0.489	MB	0.7835

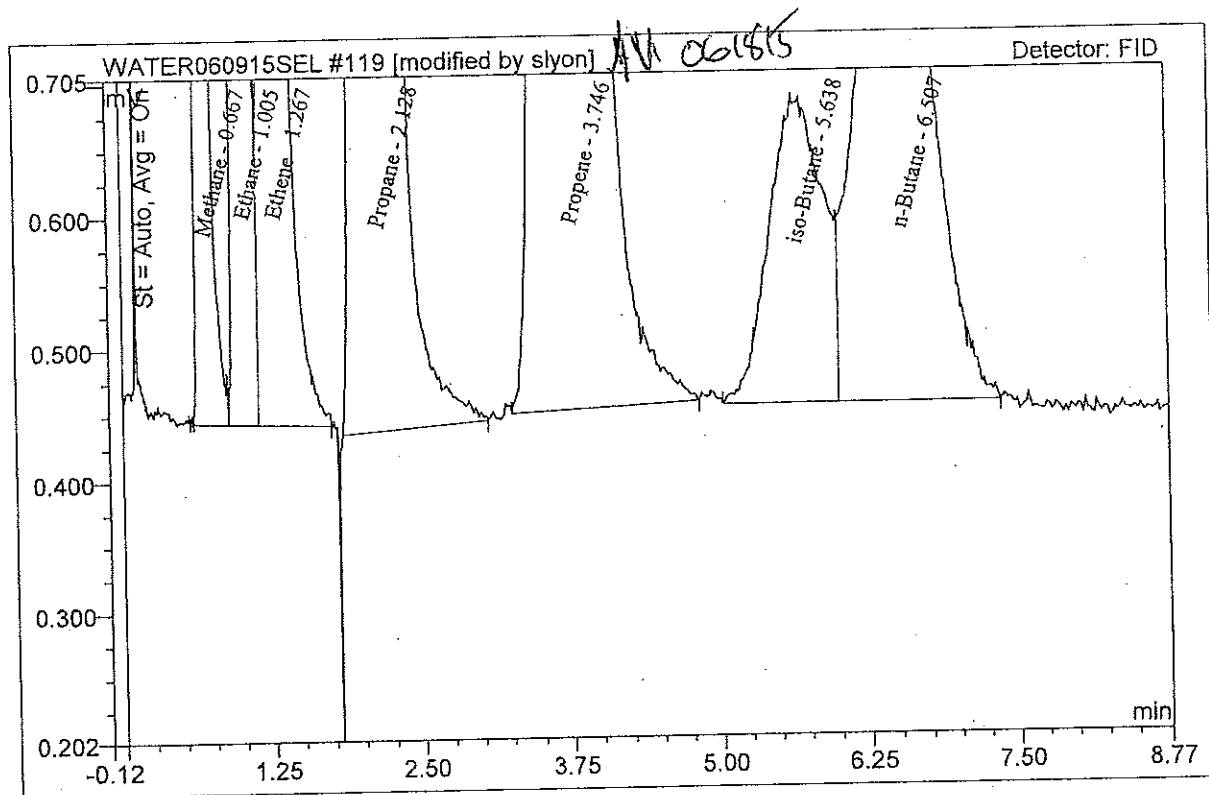


MICROSEEPS

Sample Analysis Report

Sample Name:	35567-158140002-2 DUP	Sequence No:	119
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/17/2015 14:23	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.667	7.458	158.147	BM *	18.7442
2	Ethane	1.005	4.745	64.319	M *	12.0851
3	Ethene	1.267	3.672	35.909	MB*	10.3316
4	Propane	2.128	4.589	22.847	BMB*	11.4611
5	Propene	3.746	1.676	4.461	BMB*	4.9448
6	iso-Butane	5.638	0.121	0.234	BM *	0.3008
7	n-Butane	6.507	0.320	0.501	MB*	0.8253

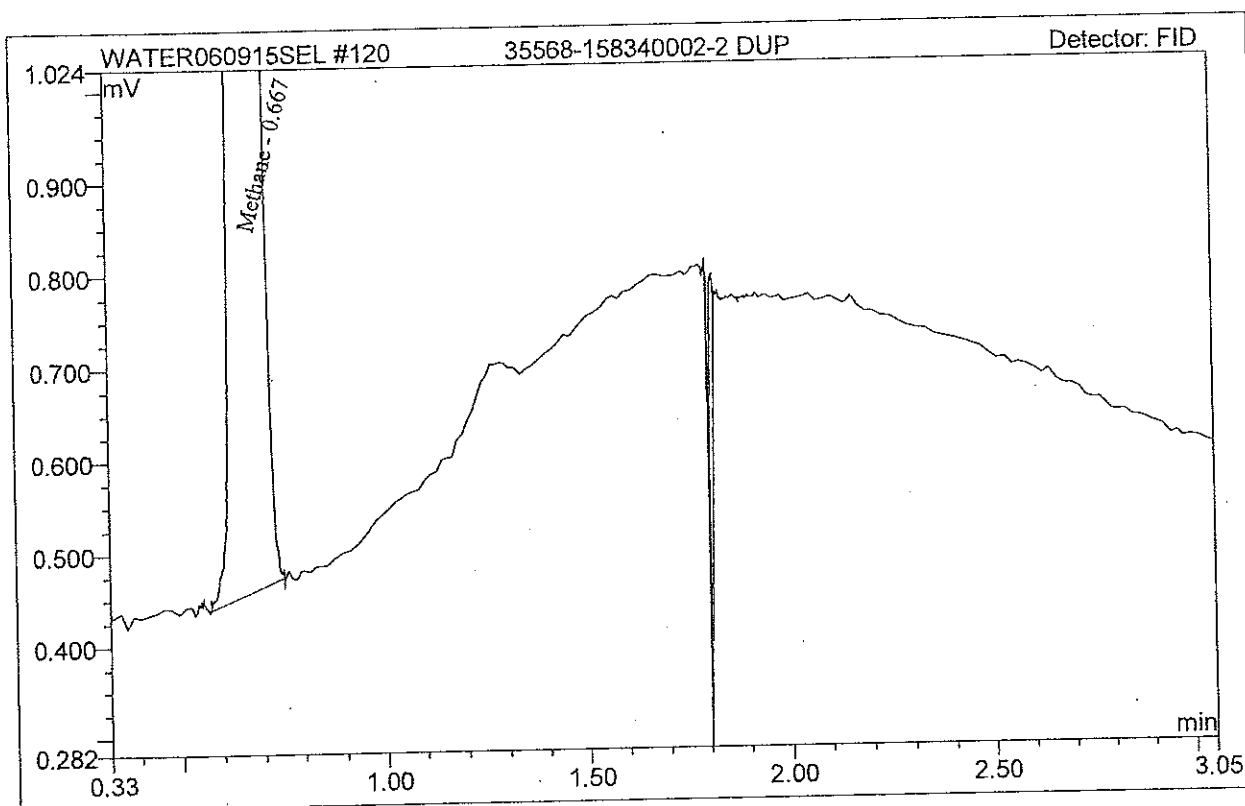


MICROSEEPS

Sample Analysis Report

Sample Name:	35568-158340002-2 DUP	Sequence No:	120
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/17/2015 14:33	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.667	0.446	9.397	BMB	1.1276

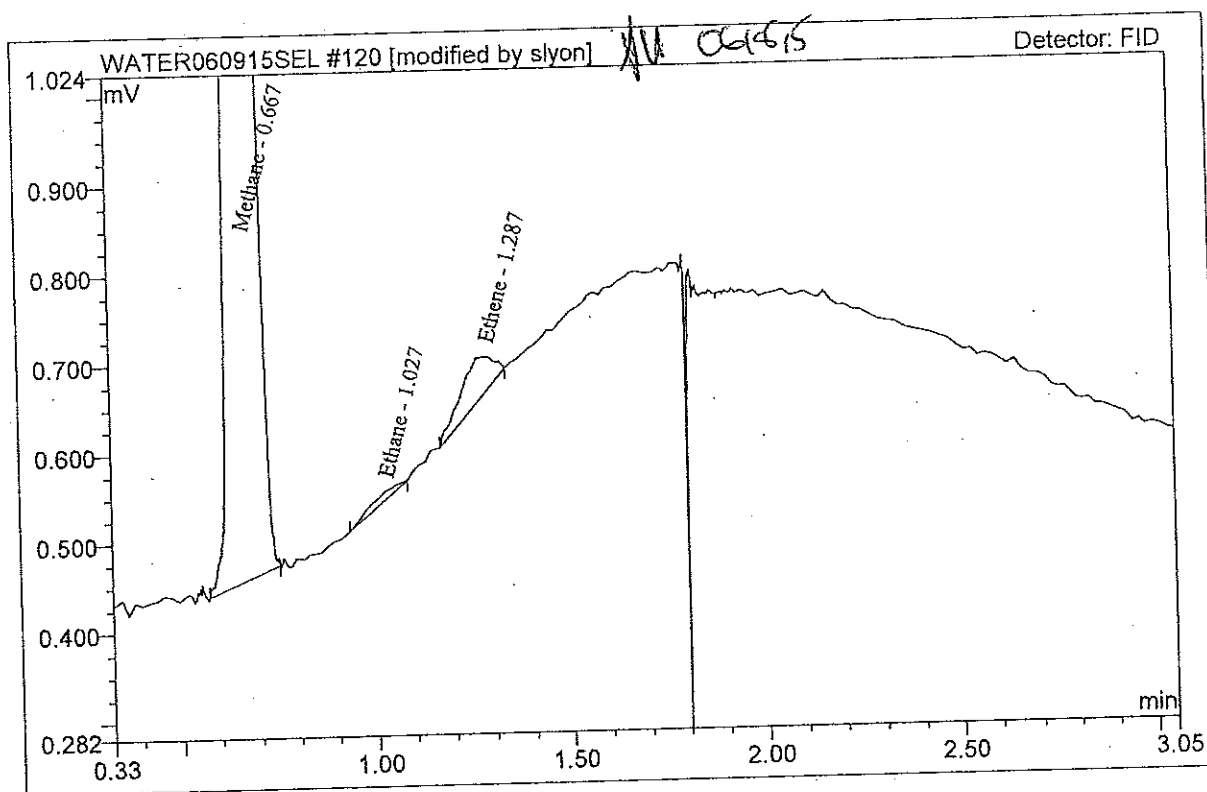


MICROSEEPS

Sample Analysis Report

Sample Name:	35568-158340002-2 DUP	Sequence No:	120
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/17/2015 14:33	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.667	0.446	9.397	BMB	1.1276
2	Ethane	1.027	0.001	0.010	BMB*	0.0024
3	Ethene	1.287	0.005	0.039	BMB*	0.0130

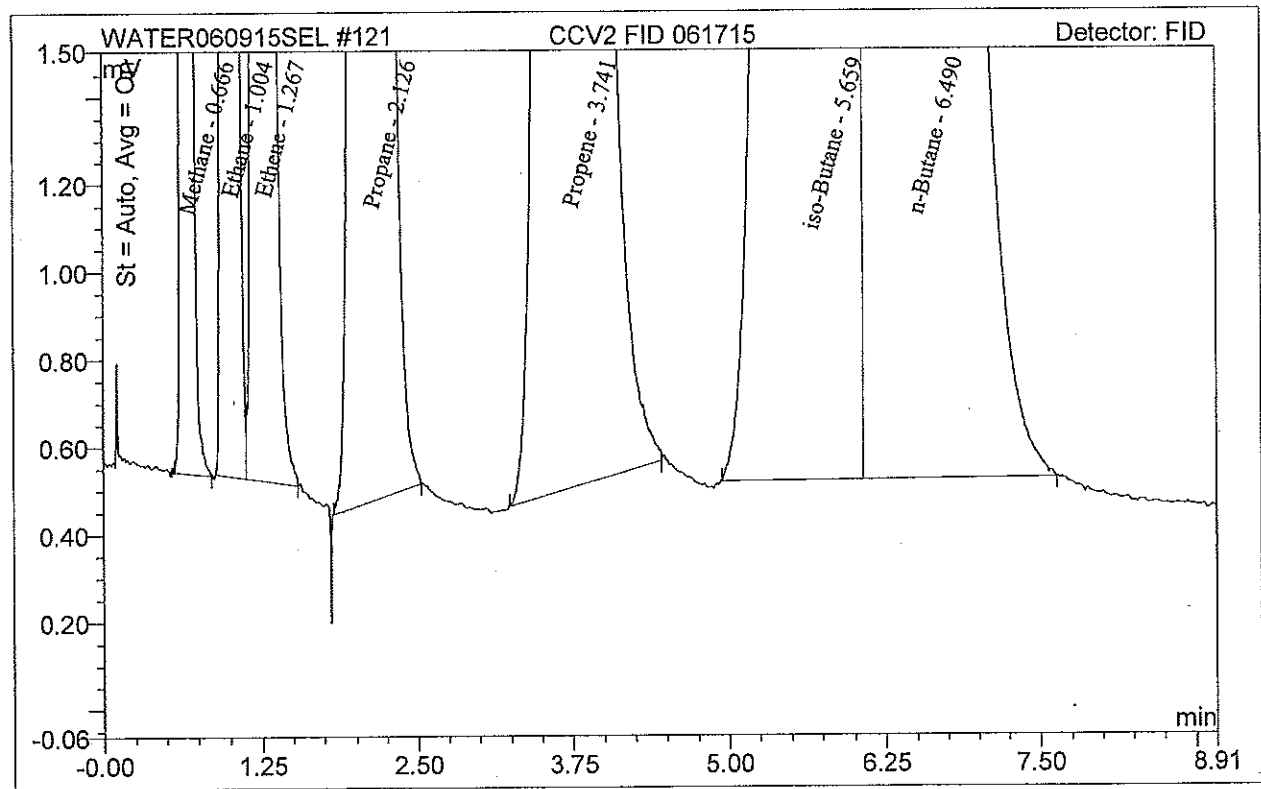


MICROSEEPS

Sample Analysis Report

Sample Name:	CCV2 FID 061715	Sequence No:	121
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/17/2015 14:46	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	RA-13-03 5X

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.666	5.901	119.175	BMB	14.8485
2	Ethane	1.004	3.632	49.220	BM	9.2535
3	Ethene	1.267	3.598	35.384	MB	10.1235
4	Propane	2.126	5.454	27.333	BMB	13.6194
5	Propene	3.741	5.189	14.045	BMB	15.2934
6	iso-Butane	5.659	6.876	12.481	BM	17.0443
7	n-Butane	6.490	7.081	10.929	MB	18.1993



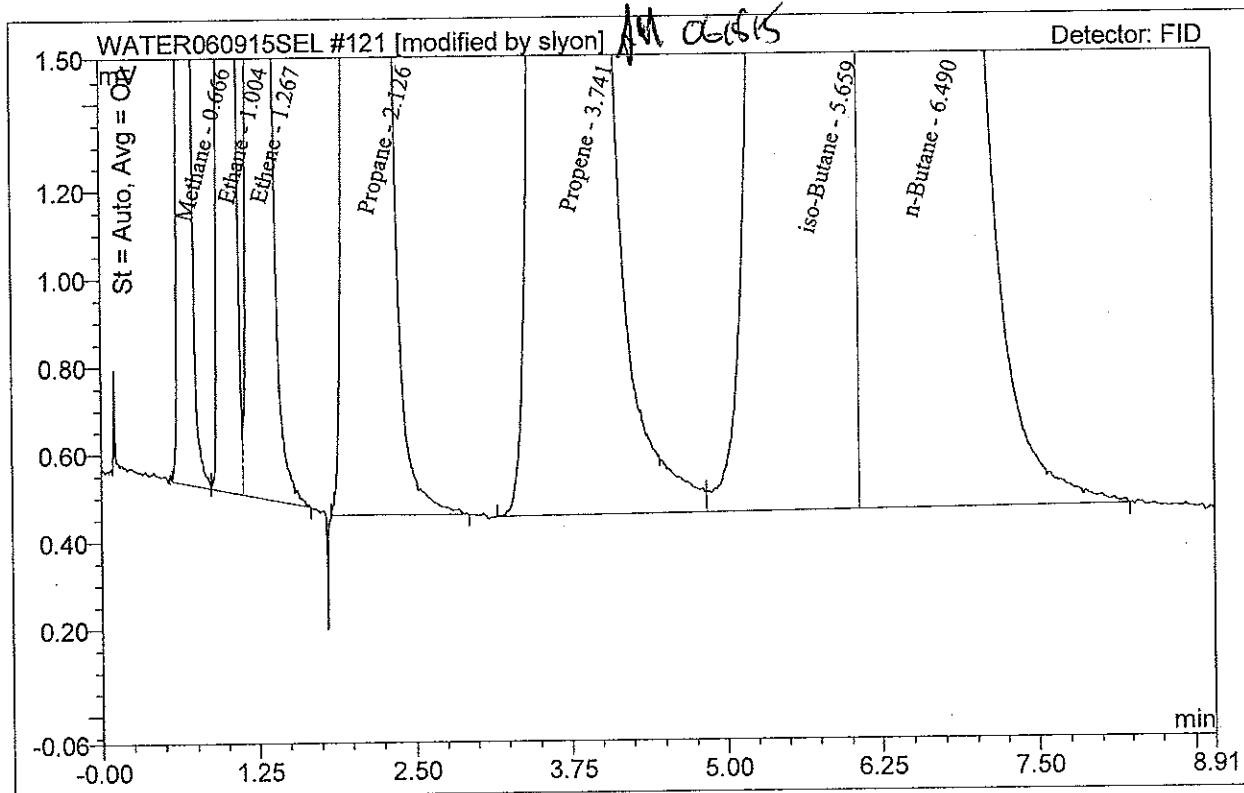
MICROSEEPS

Sample Analysis Report

Sample Name:	CCV2 FID 061715	Sequence No:	121
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/17/2015 14:46	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	RA-13-03 5X

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.666	5.904	119.182	BM *	14.8549
2	Ethane	1.004	3.637	49.238	M *	9.2653
3	Ethene	1.267	3.609	35.406	MB*	10.1566
4	Propane	2.126	5.478	27.350	BMB*	13.6799
5	Propene	3.741	5.291	14.095	BM *	15.5910
6	iso-Butane	5.659	6.948	12.540	M *	17.2223
7	n-Butane	6.490	7.188	10.987	MB*	18.4749

TV
 14.434
 9.261
 10.227

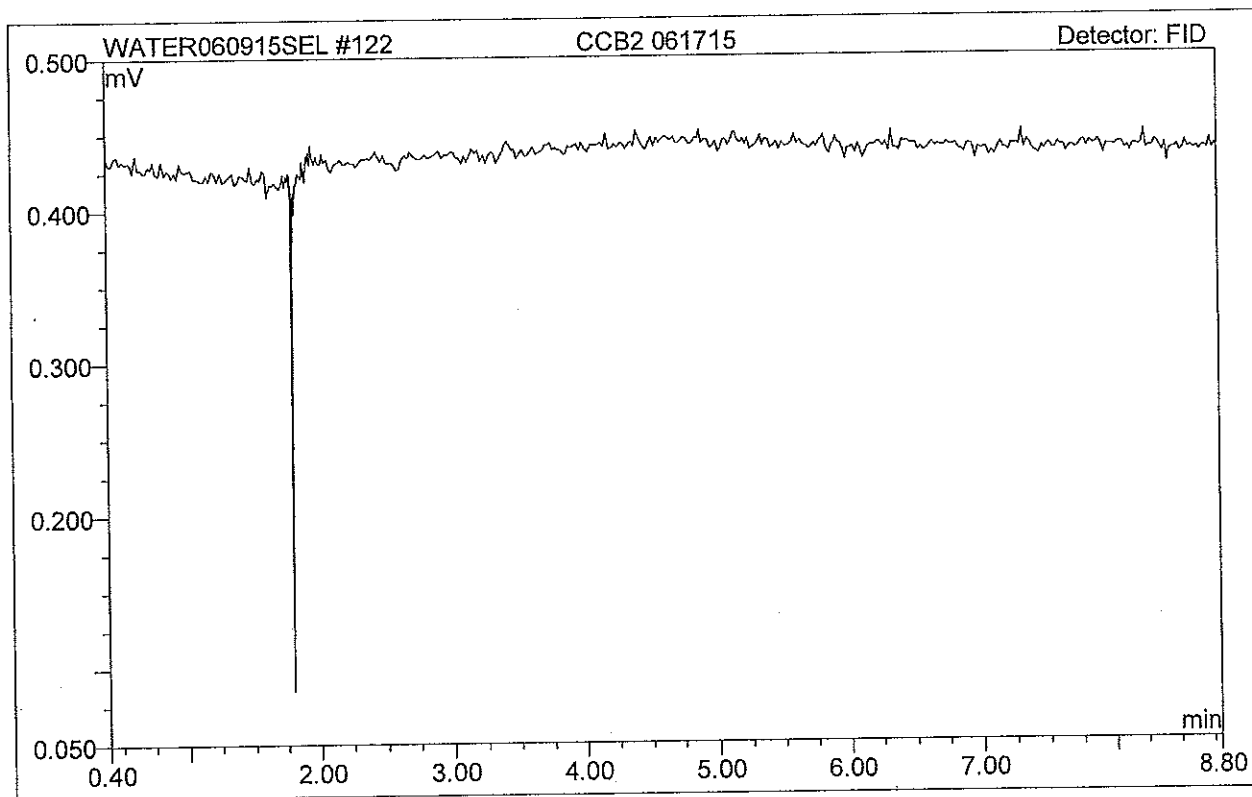


MICROSEEPS

Sample Analysis Report

Sample Name:	CCB2 061715	Sequence No:	122
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/17/2015 14:56	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
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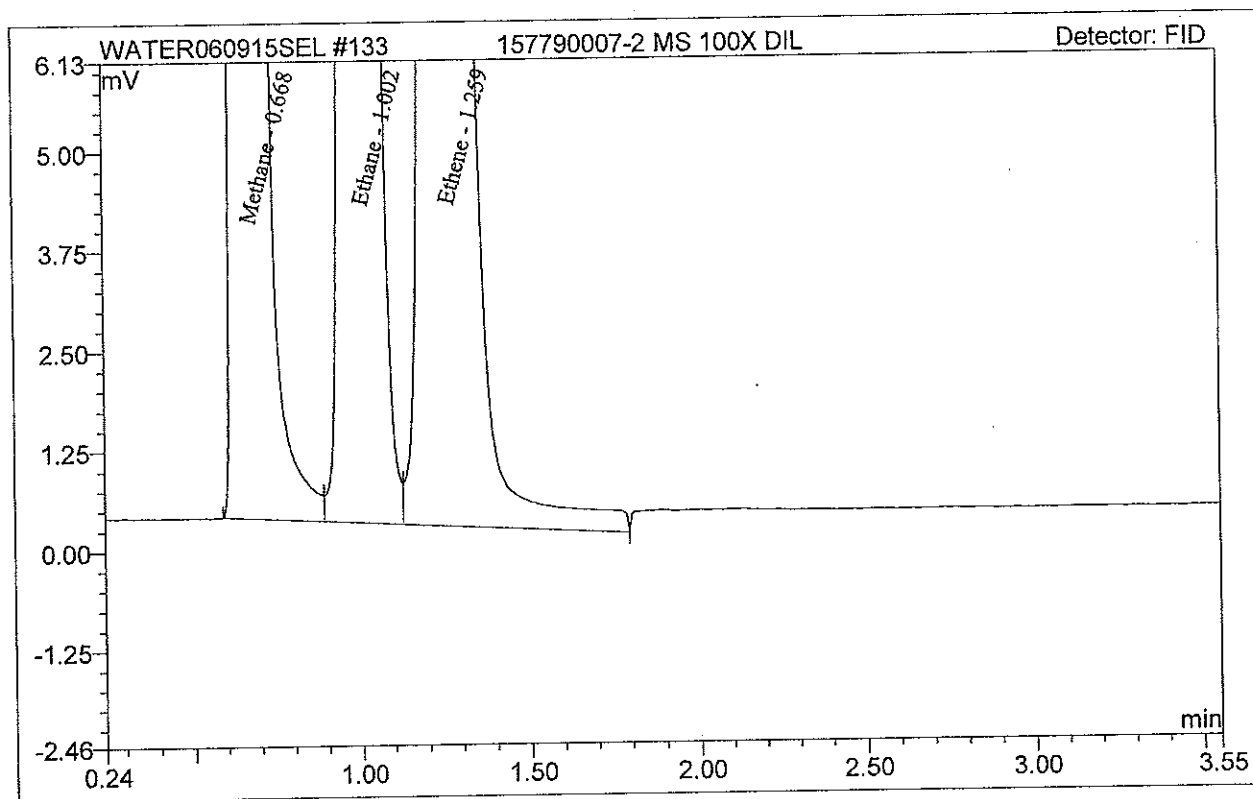


MICROSEEPS

Sample Analysis Report

Sample Name:	157790007-2 MS 100X DIL	Sequence No:	133
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/17/2015 17:36	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	RA-10-14 2.5X

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.668	65.414	1396.901	BM	157.7888
2	Ethane	1.002	6.703	90.808	M	17.0658
3	Ethene	1.259	5.867	56.706	MB	16.5013



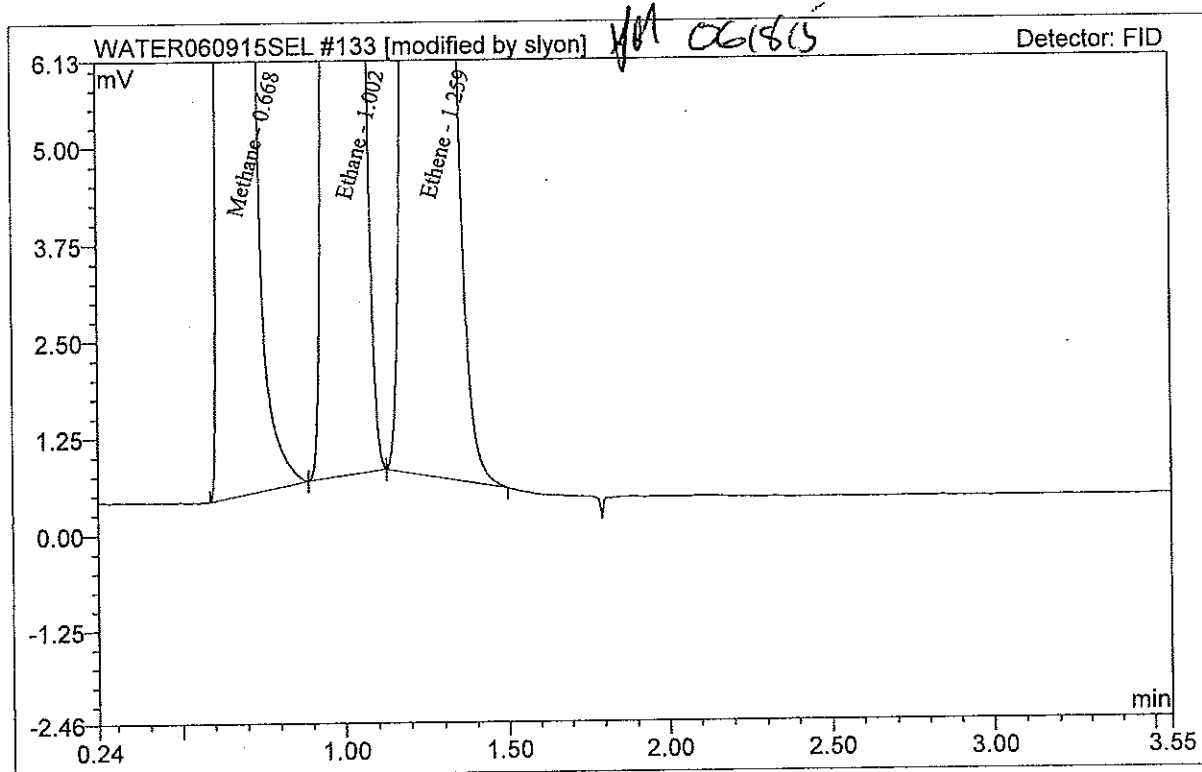
MICROSEEPS

Sample Analysis Report

Sample Name:	157790007-2 MS 100X DIL	Sequence No:	133
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/17/2015 17:36	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	RA-10-14 2.5X

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.668	65.365	1396.816	BMB*	157.6760
2	Ethane	1.002	6.604	90.393	bMB*	16.8126
3	Ethene	1.259	5.626	56.249	bMB*	15.8223

X100



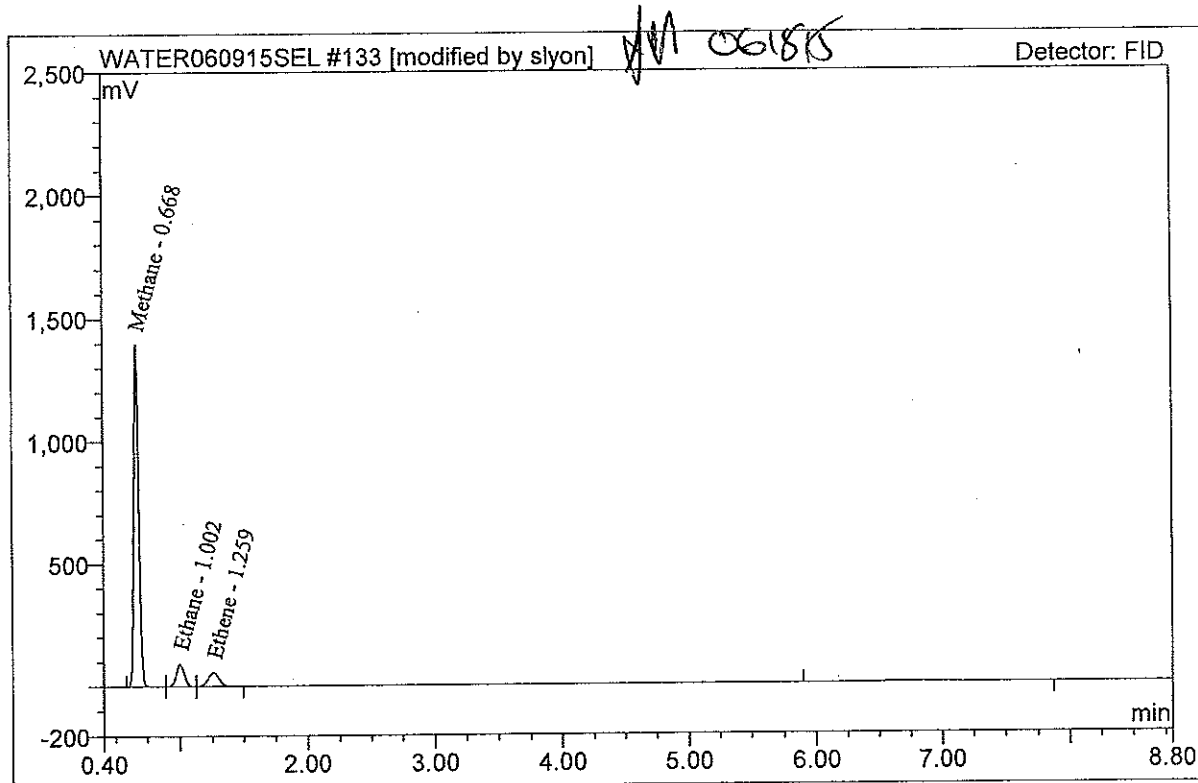
MICROSEEPS

Sample Analysis Report

Sample Name:	35511-157790007-2 MS 100X DIL	uence No:	133
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/17/2015 17:36	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	RA-10-14 2.5X

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.668	65.365	1396.816	BMb*	157.6760
2	Ethane	1.002	6.604	90.393	bMb*	16.8126
3	Ethene	1.259	5.626	56.249	bMB*	15.8223

X100

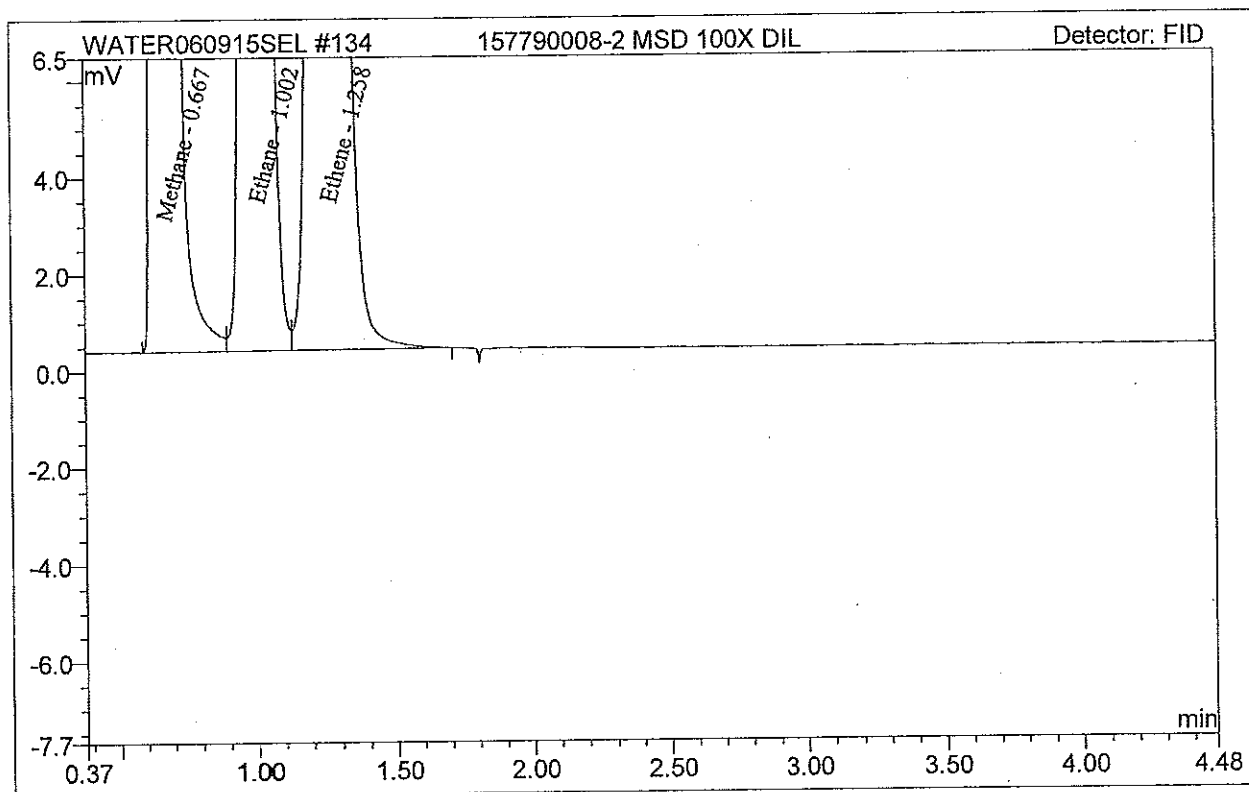


MICROSEEPS

Sample Analysis Report

Sample Name:	157790008-2 MSD 100X DIL	Sequence No:	134
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/17/2015 17:52	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	RA-10-14 2.5X

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.667	69.073	1476.429	BM	166.2102
2	Ethane	1.002	6.746	91.688	M	17.1741
3	Ethene	1.258	5.740	56.665	MB	16.1443

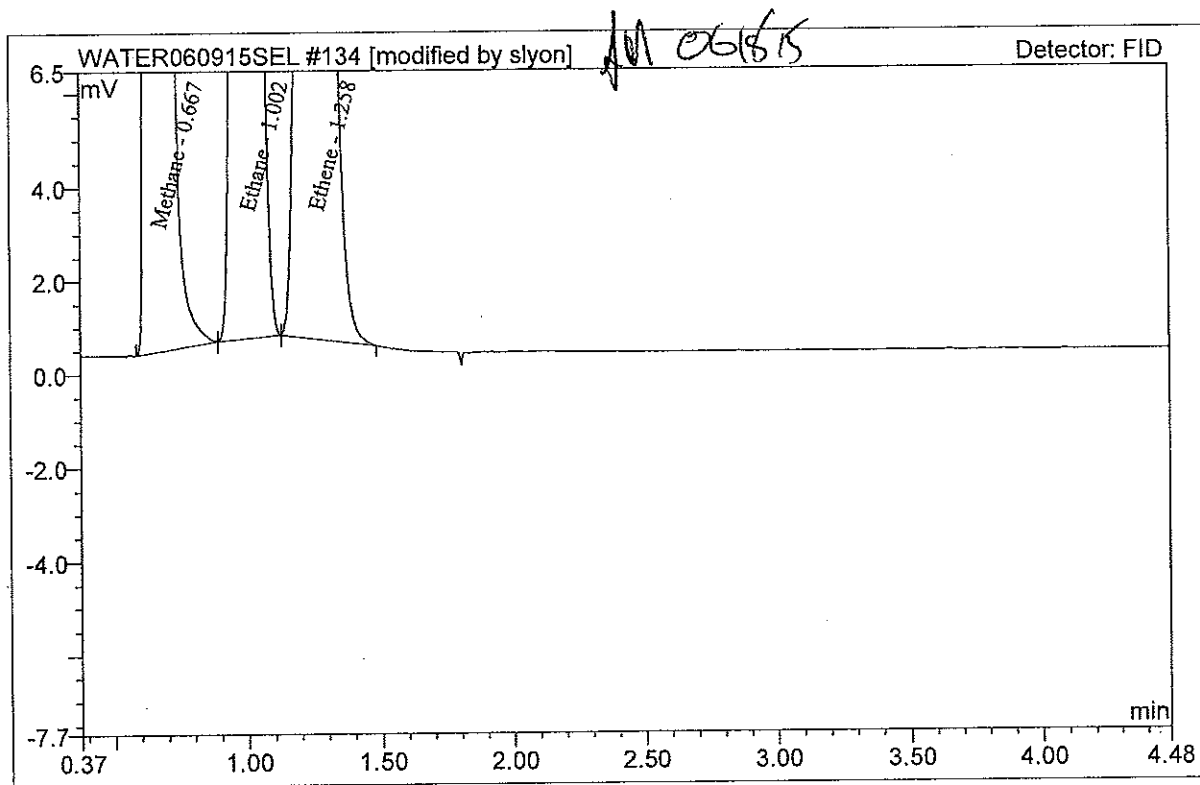


MICROSEEPS

Sample Analysis Report

Sample Name:	157790008-2 MSD 100X DIL	Sequence No:	134
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/17/2015 17:52	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	RA-10-14 2.5X

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.667	69.030	1476.355	BMB*	166.1129
2	Ethane	1.002	6.667	91.357	bMb*	16.9738
3	Ethene	1.258	5.631	56.357	bMB*	15.8361



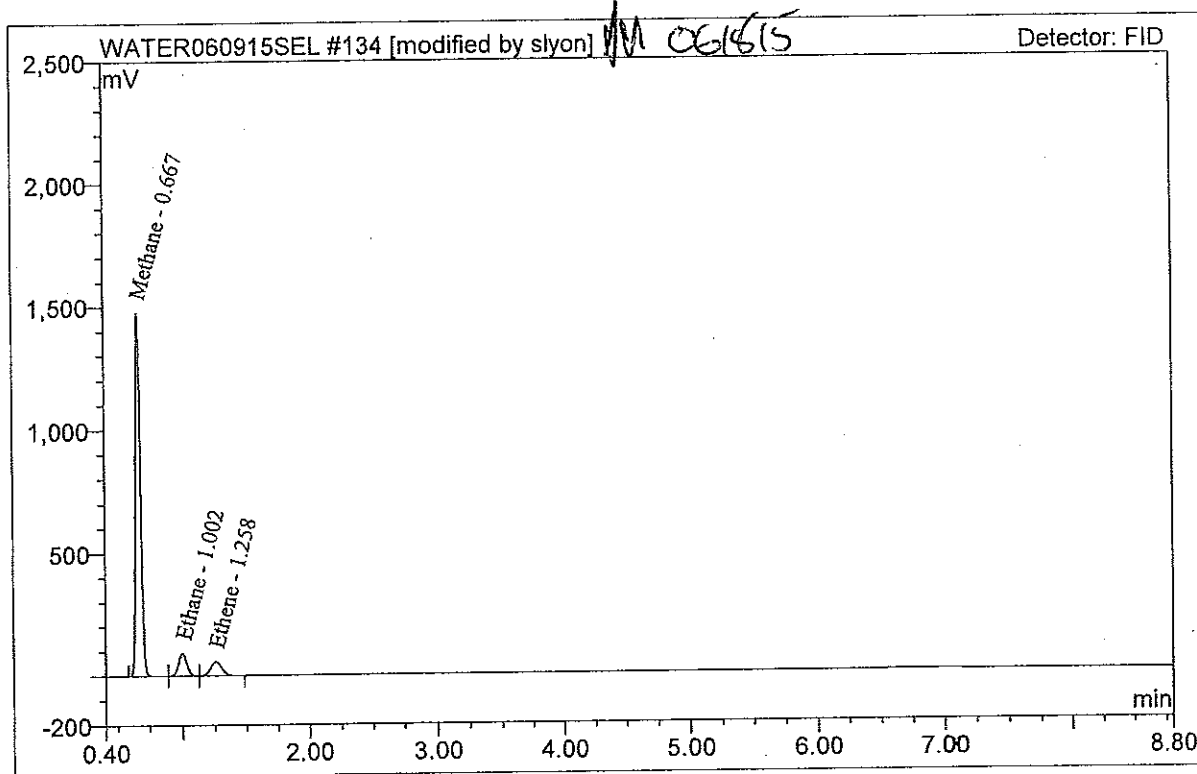
MICROSEEPS

Sample Analysis Report

Sample Name:	35512-157790008-2 MSD 100X DIL	uence No:	134
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/17/2015 17:52	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	RA-10-14 2.5X

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.667	69.030	1476.355	BMb*	166.1129
2	Ethane	1.002	6.667	91.357	bMb*	16.9738
3	Ethene	1.258	5.631	56.357	bMB*	15.8361

X100

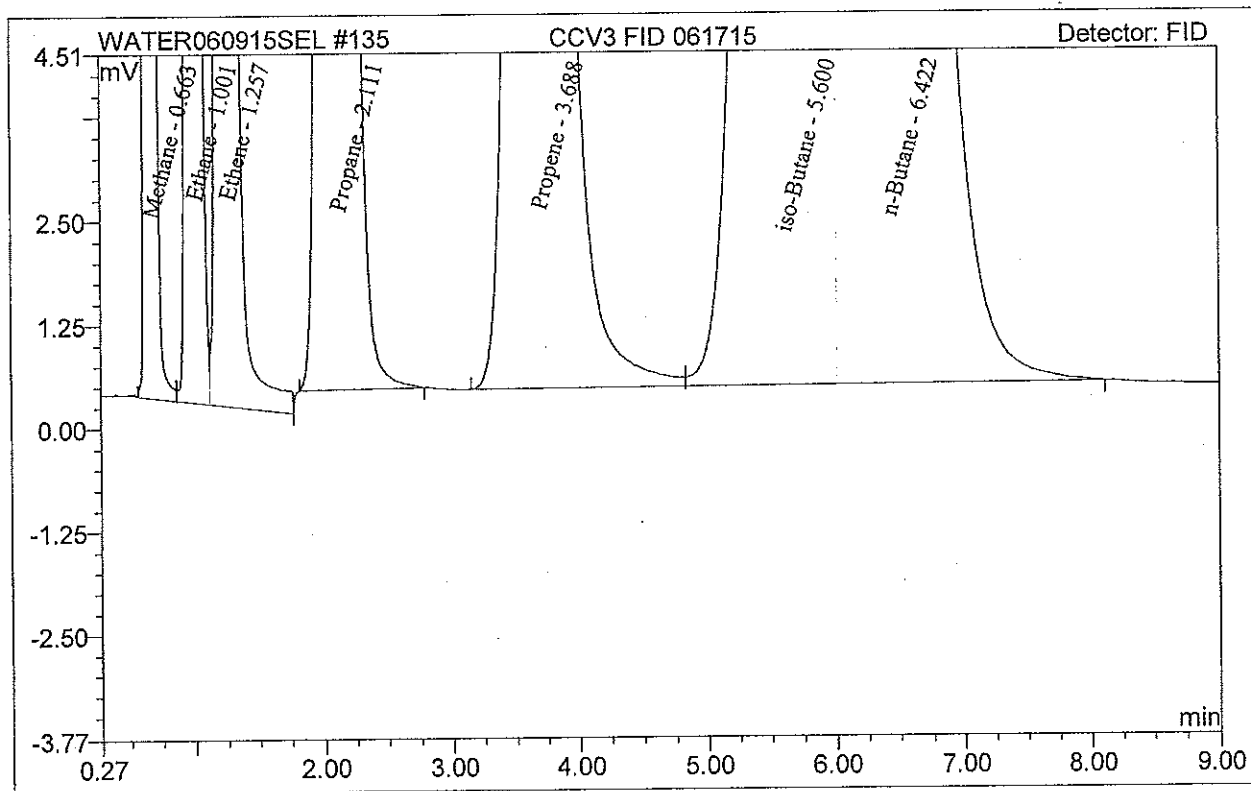


MICROSEEPS

Sample Analysis Report

Sample Name:	CCV3 FID 061715	Sequence No:	135
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/17/2015 18:12	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.663	15.100	274.412	BM	37.7342
2	Ethane	1.001	9.188	124.216	M	23.3798
3	Ethene	1.257	9.225	90.318	MB	25.9213
4	Propane	2.111	13.681	69.196	BMB	34.1003
5	Propene	3.688	13.179	35.556	BM	38.7439
6	iso-Butane	5.600	17.345	31.475	M	42.8852
7	n-Butane	6.422	17.872	27.703	MB	45.7928



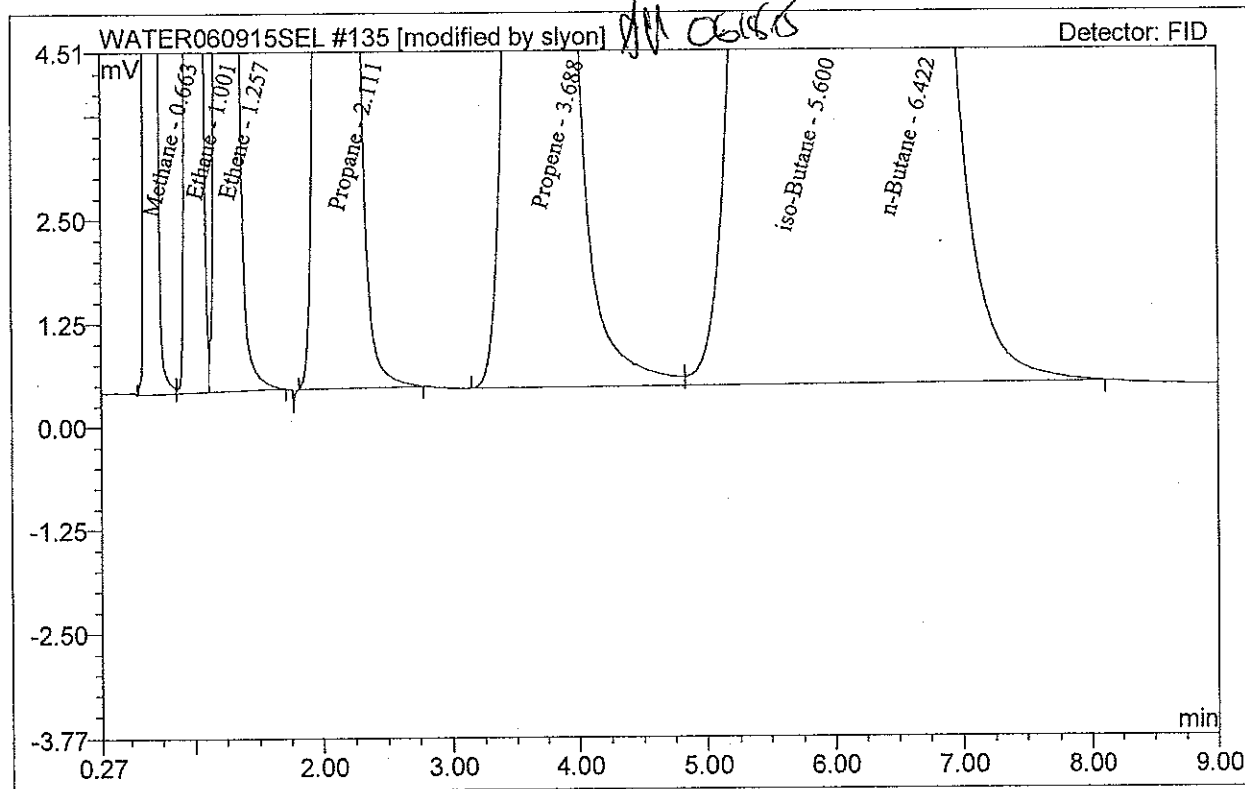
MICROSEEPS

Sample Analysis Report

Sample Name:	CCV3 FID 061715	Sequence No:	135
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/17/2015 18:12	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.663	15.089	274.387	BM *	37.7068
2	Ethane	1.001	9.161	124.110	M *	23.3116
3	Ethene	1.257	9.088	90.151	MB*	25.5368
4	Propane	2.111	13.681	69.196	BMB	34.1003
5	Propene	3.688	13.179	35.556	BM	38.7439
6	iso-Butane	5.600	17.345	31.475	M	42.8852
7	n-Butane	6.422	17.872	27.703	MB	45.7928

TV
36.086
23.152
25.568

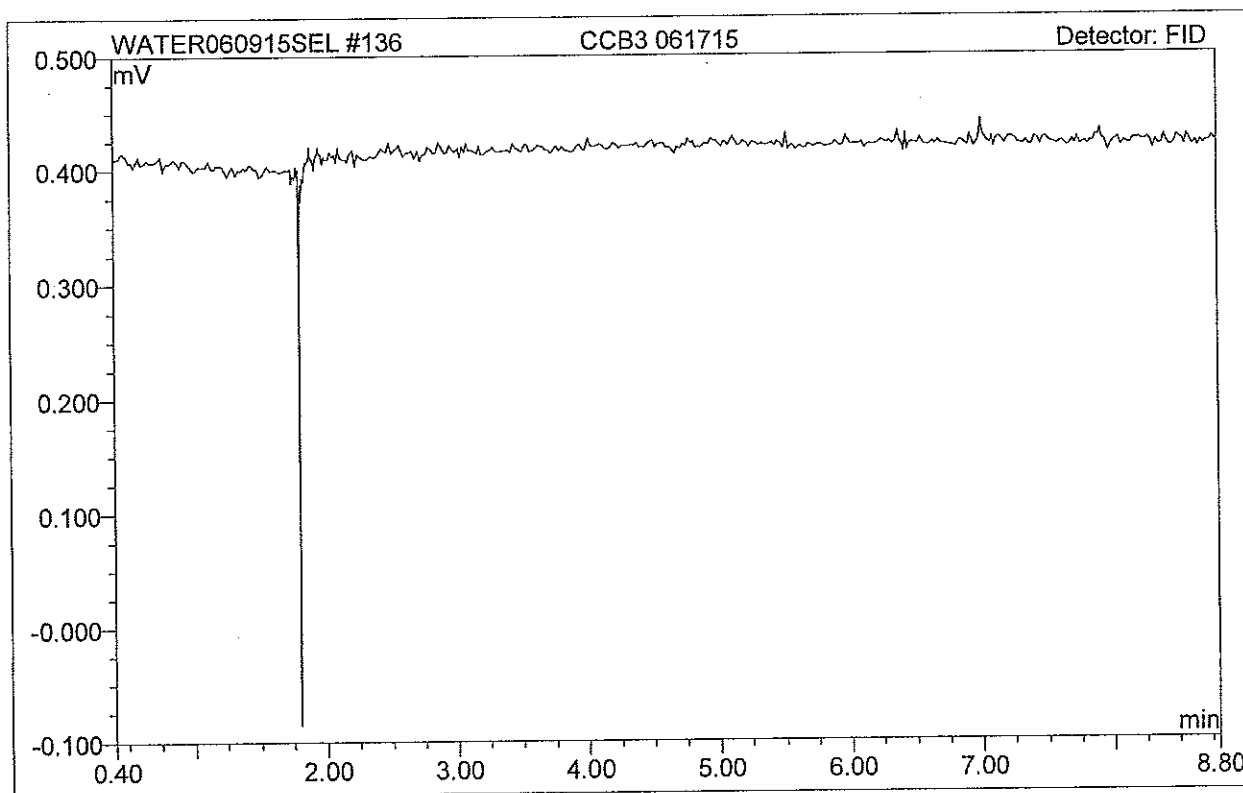


MICROSEEPS

Sample Analysis Report

Sample Name:	CCB3 061715	Sequence No:	136
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/17/2015 18:28	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Savannah

5102 LaRoche Avenue

Savannah, GA 31404

Tel: (912)354-7858

TestAmerica Job ID: 680-120227-1

Client Project/Site: Seneca Army Depot: Ash Landfill

For:

Parsons Corporation

100 High Street

4th Floor

Boston, Massachusetts 02110-1713

Attn: Cris Grill

Kathryn Smith

Authorized for release by:

1/12/2016 9:14:13 AM

Kathryn Smith, Project Manager II

(912)354-7858

kathy.smith@testamericainc.com

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Table of Contents

Cover Page	1
Table of Contents	2
Case Narrative	3
Sample Summary	5
Method Summary	6
Definitions	7
Detection Summary	8
Client Sample Results	11
Surrogate Summary	35
QC Sample Results	36
QC Association	48
Chronicle	50
Chain of Custody	55
Receipt Checklists	61
Certification Summary	65

Case Narrative

Client: Parsons Corporation
Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Job ID: 680-120227-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE
Client: Parsons Corporation
Project: Seneca Army Depot: Ash Landfill
Report Number: 680-120227-1

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

RECEIPT

The samples were received on 12/18/2015 and 12/22/2015; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 1.6 and 3.6 C.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples ALBW20343 (680-120227-1), ALBW20344 (680-120339-1), ALBW20347 (680-120227-2), ALBW20345 (680-120339-2), ALBW20352 (680-120227-3), ALBW20346 (680-120339-3), ALBW20353 (680-120227-4), ALBW20348 (680-120339-4), ALBW20354 (680-120227-5), ALBW20349 (680-120339-5), ALBW20355 (680-120227-6), ALBW20350 (680-120339-6), ALBW20356 (680-120227-7), ALBW20351 (680-120339-7), ALBW20357 (680-120227-8), ALBW00124 (680-120339-8), ALBW00045 (680-120227-9) and ALBW00046 (680-120339-9) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 12/29/2015 and 12/30/2015.

Chloromethane recovered high for LCSD 680-416359/5.

Carbon disulfide, Chloromethane, Methylene Chloride and Vinyl chloride recovered high for the MS of sample ALBW20352MS (680-120227-3) in batch 680-416359.

Chloromethane recovered high for the MSD of sample ALBW20352MSDMSD (680-120227-3) in batch 680-416359.

Sample ALBW20347 (680-120227-2)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

ANIONS BY ION CHROMATOGRAPHY (28 DAY)

Samples ALBW20343 (680-120227-1), ALBW20347 (680-120227-2), ALBW20352 (680-120227-3), ALBW20353 (680-120227-4), ALBW20354 (680-120227-5), ALBW20355 (680-120227-6), ALBW20356 (680-120227-7), ALBW20357 (680-120227-8) and ALBW00124 (680-120339-8) were analyzed for Anions by Ion Chromatography (28 Day) in accordance with EPA Method 300.0. The samples were analyzed on 01/03/2016 and 01/04/2016.

Samples ALBW20354 (680-120227-5)[25X] and ALBW20357 (680-120227-8)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

TOTAL ORGANIC CARBON

Samples ALBW20343 (680-120227-1), ALBW20347 (680-120227-2), ALBW20352 (680-120227-3), ALBW20353 (680-120227-4), ALBW20354 (680-120227-5), ALBW20355 (680-120227-6), ALBW20356 (680-120227-7), ALBW20357 (680-120227-8) and ALBW00124 (680-120339-8) were analyzed for total organic carbon in accordance with EPA SW-846 Method 9060A. The samples were analyzed on 01/04/2016 and 01/05/2016.

Total Organic Carbon was detected in method blank MB 480-282258/4 at a level that was above the method detection limit but below the

Case Narrative

Client: Parsons Corporation
Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Job ID: 680-120227-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

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

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Sample Summary

Client: Parsons Corporation
Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-120227-1	ALBW20343	Water	12/17/15 14:02	12/18/15 08:35
680-120227-2	ALBW20347	Water	12/17/15 13:55	12/18/15 08:35
680-120227-3	ALBW20352	Water	12/16/15 11:02	12/18/15 08:35
680-120227-4	ALBW20353	Water	12/16/15 11:12	12/18/15 08:35
680-120227-5	ALBW20354	Water	12/16/15 14:00	12/18/15 08:35
680-120227-6	ALBW20355	Water	12/16/15 14:00	12/18/15 08:35
680-120227-7	ALBW20356	Water	12/17/15 11:50	12/18/15 08:35
680-120227-8	ALBW20357	Water	12/17/15 12:10	12/18/15 08:35
680-120227-9	ALBW00045	Water	12/17/15 15:05	12/18/15 08:35
680-120339-1	ALBW20344	Water	12/18/15 14:01	12/22/15 10:25
680-120339-2	ALBW20345	Water	12/18/15 11:45	12/22/15 10:25
680-120339-3	ALBW20346	Water	12/18/15 10:16	12/22/15 10:25
680-120339-4	ALBW20348	Water	12/18/15 12:28	12/22/15 10:25
680-120339-5	ALBW20349	Water	12/18/15 09:40	12/22/15 10:25
680-120339-6	ALBW20350	Water	12/18/15 14:10	12/22/15 10:25
680-120339-7	ALBW20351	Water	12/19/15 09:10	12/22/15 10:25
680-120339-8	ALBW00124	Water	12/18/15 15:00	12/22/15 10:25
680-120339-9	ALBW00046	Water	12/21/15 11:25	12/22/15 10:25

Method Summary

Client: Parsons Corporation
Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
300.0	Anions, Ion Chromatography	MCAWW	TAL SAV
9060A	Organic Carbon, Total (TOC)	SW846	TAL BUF

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600
TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858



Definitions/Glossary

Client: Parsons Corporation
Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
*	RPD of the LCS and LCSD exceeds the control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F1	MS and/or MSD Recovery is outside acceptance limits.

General Chemistry

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

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

Detection Summary

Client: Parsons Corporation
Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Client Sample ID: ALBW20343

Lab Sample ID: 680-120227-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	27		1.0	0.41	ug/L	1		8260B	Total/NA
trans-1,2-Dichloroethene	4.4		1.0	0.37	ug/L	1		8260B	Total/NA
Trichloroethene	13		1.0	0.48	ug/L	1		8260B	Total/NA
Sulfate	42		1.0	0.40	mg/L	1		300.0	Total/NA
Total Organic Carbon	1.7	B	1.0	0.43	mg/L	1		9060A	Total/NA

Client Sample ID: ALBW20347

Lab Sample ID: 680-120227-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	150		1.0	0.41	ug/L	1		8260B	Total/NA
trans-1,2-Dichloroethene	0.90	J	1.0	0.37	ug/L	1		8260B	Total/NA
Vinyl chloride	11		1.0	0.50	ug/L	1		8260B	Total/NA
Trichloroethene - DL	170		2.0	0.96	ug/L	2		8260B	Total/NA
Sulfate	22		1.0	0.40	mg/L	1		300.0	Total/NA
Total Organic Carbon	1.8	B	1.0	0.43	mg/L	1		9060A	Total/NA

Client Sample ID: ALBW20352

Lab Sample ID: 680-120227-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	3.9		1.0	0.41	ug/L	1		8260B	Total/NA
trans-1,2-Dichloroethene	0.39	J	1.0	0.37	ug/L	1		8260B	Total/NA
Vinyl chloride	3.8		1.0	0.50	ug/L	1		8260B	Total/NA
Sulfate	9.5		1.0	0.40	mg/L	1		300.0	Total/NA
Total Organic Carbon	4.8	B	1.0	0.43	mg/L	1		9060A	Total/NA

Client Sample ID: ALBW20353

Lab Sample ID: 680-120227-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	3.7		1.0	0.41	ug/L	1		8260B	Total/NA
Vinyl chloride	2.9		1.0	0.50	ug/L	1		8260B	Total/NA
Sulfate	9.6		1.0	0.40	mg/L	1		300.0	Total/NA
Total Organic Carbon	4.7	B	1.0	0.43	mg/L	1		9060A	Total/NA

Client Sample ID: ALBW20354

Lab Sample ID: 680-120227-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	8.4		1.0	0.41	ug/L	1		8260B	Total/NA
Trichloroethene	1.6		1.0	0.48	ug/L	1		8260B	Total/NA
Sulfate	640		25	10	mg/L	25		300.0	Total/NA
Total Organic Carbon	5.9	B	1.0	0.43	mg/L	1		9060A	Total/NA

Client Sample ID: ALBW20355

Lab Sample ID: 680-120227-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	26		10	7.0	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	0.87	J	1.0	0.41	ug/L	1		8260B	Total/NA
Sulfate	7.9		1.0	0.40	mg/L	1		300.0	Total/NA
Total Organic Carbon	28	B	1.0	0.43	mg/L	1		9060A	Total/NA

Client Sample ID: ALBW20356

Lab Sample ID: 680-120227-7

This Detection Summary does not include radiochemical test results.

TestAmerica Savannah

Detection Summary

Client: Parsons Corporation
Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Client Sample ID: ALBW20356 (Continued)

Lab Sample ID: 680-120227-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon	19	B	1.0	0.43	mg/L	1		9060A	Total/NA

Client Sample ID: ALBW20357

Lab Sample ID: 680-120227-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	35		1.0	0.41	ug/L	1		8260B	Total/NA
trans-1,2-Dichloroethene	0.43	J	1.0	0.37	ug/L	1		8260B	Total/NA
Trichloroethene	2.0		1.0	0.48	ug/L	1		8260B	Total/NA
Vinyl chloride	45		1.0	0.50	ug/L	1		8260B	Total/NA
Sulfate	180		10	4.0	mg/L	10		300.0	Total/NA
Total Organic Carbon	6.1	B	1.0	0.43	mg/L	1		9060A	Total/NA

Client Sample ID: ALBW00045

Lab Sample ID: 680-120227-9

No Detections.

Client Sample ID: ALBW20344

Lab Sample ID: 680-120339-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloroform	1.5		1.0	0.50	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	31		1.0	0.41	ug/L	1		8260B	Total/NA
Trichloroethene	160		1.0	0.48	ug/L	1		8260B	Total/NA

Client Sample ID: ALBW20345

Lab Sample ID: 680-120339-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2-Dichloroethane	2.3		1.0	0.50	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	36		1.0	0.41	ug/L	1		8260B	Total/NA
Trichloroethene	31		1.0	0.48	ug/L	1		8260B	Total/NA

Client Sample ID: ALBW20346

Lab Sample ID: 680-120339-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	18		1.0	0.41	ug/L	1		8260B	Total/NA
trans-1,2-Dichloroethene	0.75	J	1.0	0.37	ug/L	1		8260B	Total/NA
Trichloroethene	0.74	J	1.0	0.48	ug/L	1		8260B	Total/NA
Vinyl chloride	1.2		1.0	0.50	ug/L	1		8260B	Total/NA

Client Sample ID: ALBW20348

Lab Sample ID: 680-120339-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	78		1.0	0.41	ug/L	1		8260B	Total/NA
trans-1,2-Dichloroethene	6.0		1.0	0.37	ug/L	1		8260B	Total/NA
Trichloroethene	0.63	J	1.0	0.48	ug/L	1		8260B	Total/NA
Vinyl chloride	91		1.0	0.50	ug/L	1		8260B	Total/NA

Client Sample ID: ALBW20349

Lab Sample ID: 680-120339-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	0.62	J	1.0	0.38	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	18		1.0	0.41	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Savannah

Detection Summary

Client: Parsons Corporation
Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Client Sample ID: ALBW20349 (Continued)

Lab Sample ID: 680-120339-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
trans-1,2-Dichloroethene	1.1		1.0	0.37	ug/L	1		8260B	Total/NA
Trichloroethene	3.0		1.0	0.48	ug/L	1		8260B	Total/NA
Vinyl chloride	2.4		1.0	0.50	ug/L	1		8260B	Total/NA

Client Sample ID: ALBW20350

Lab Sample ID: 680-120339-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1.7		1.0	0.41	ug/L	1		8260B	Total/NA
Trichloroethene	2.6		1.0	0.48	ug/L	1		8260B	Total/NA

Client Sample ID: ALBW20351

Lab Sample ID: 680-120339-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1.4		1.0	0.41	ug/L	1		8260B	Total/NA

Client Sample ID: ALBW00124

Lab Sample ID: 680-120339-8

No Detections.

Client Sample ID: ALBW00046

Lab Sample ID: 680-120339-9

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Savannah

Client Sample Results

Client: Parsons Corporation
 Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Client Sample ID: ALBW20343

Lab Sample ID: 680-120227-1

Date Collected: 12/17/15 14:02

Matrix: Water

Date Received: 12/18/15 08:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.37	ug/L			12/29/15 13:20	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.62	ug/L			12/29/15 13:20	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.36	ug/L			12/29/15 13:20	1
1,1,2-Trichloroethane	ND		1.0	0.33	ug/L			12/29/15 13:20	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			12/29/15 13:20	1
1,1-Dichloroethene	ND		1.0	0.36	ug/L			12/29/15 13:20	1
1,2,4-Trichlorobenzene	ND		5.0	2.5	ug/L			12/29/15 13:20	1
1,2-Dibromo-3-Chloropropane	ND		5.0	1.1	ug/L			12/29/15 13:20	1
1,2-Dibromoethane	ND		1.0	0.44	ug/L			12/29/15 13:20	1
1,2-Dichlorobenzene	ND		1.0	0.37	ug/L			12/29/15 13:20	1
1,2-Dichloroethane	ND		1.0	0.50	ug/L			12/29/15 13:20	1
1,2-Dichloropropane	ND		1.0	0.67	ug/L			12/29/15 13:20	1
1,3-Dichlorobenzene	ND		1.0	0.43	ug/L			12/29/15 13:20	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			12/29/15 13:20	1
2-Butanone	ND		10	3.4	ug/L			12/29/15 13:20	1
2-Hexanone	ND		10	2.0	ug/L			12/29/15 13:20	1
4-Methyl-2-pentanone	ND		10	2.1	ug/L			12/29/15 13:20	1
Acetone	ND		10	7.0	ug/L			12/29/15 13:20	1
Benzene	ND		1.0	0.43	ug/L			12/29/15 13:20	1
Bromodichloromethane	ND		1.0	0.44	ug/L			12/29/15 13:20	1
Bromoform	ND		1.0	0.43	ug/L			12/29/15 13:20	1
Bromomethane	ND		5.0	2.5	ug/L			12/29/15 13:20	1
Carbon disulfide	ND		2.0	1.0	ug/L			12/29/15 13:20	1
Carbon tetrachloride	ND		1.0	0.33	ug/L			12/29/15 13:20	1
Chlorobenzene	ND		1.0	0.26	ug/L			12/29/15 13:20	1
Chloroethane	ND		5.0	2.5	ug/L			12/29/15 13:20	1
Chloroform	ND		1.0	0.50	ug/L			12/29/15 13:20	1
Chloromethane	ND	*	1.0	0.40	ug/L			12/29/15 13:20	1
cis-1,2-Dichloroethene	27		1.0	0.41	ug/L			12/29/15 13:20	1
cis-1,3-Dichloropropene	ND		1.0	0.40	ug/L			12/29/15 13:20	1
Cyclohexane	ND		1.0	0.39	ug/L			12/29/15 13:20	1
Dibromochloromethane	ND		1.0	0.32	ug/L			12/29/15 13:20	1
Dichlorodifluoromethane	ND		1.0	0.60	ug/L			12/29/15 13:20	1
Ethylbenzene	ND		1.0	0.33	ug/L			12/29/15 13:20	1
Isopropylbenzene	ND		1.0	0.35	ug/L			12/29/15 13:20	1
Methyl acetate	ND		5.0	1.8	ug/L			12/29/15 13:20	1
Methyl tert-butyl ether	ND		10	0.30	ug/L			12/29/15 13:20	1
Methylcyclohexane	ND		1.0	0.43	ug/L			12/29/15 13:20	1
Methylene Chloride	ND		5.0	2.5	ug/L			12/29/15 13:20	1
Styrene	ND		1.0	0.27	ug/L			12/29/15 13:20	1
Tetrachloroethene	ND		1.0	0.74	ug/L			12/29/15 13:20	1
Toluene	ND		1.0	0.48	ug/L			12/29/15 13:20	1
trans-1,2-Dichloroethene	4.4		1.0	0.37	ug/L			12/29/15 13:20	1
trans-1,3-Dichloropropene	ND		1.0	0.42	ug/L			12/29/15 13:20	1
Trichloroethene	13		1.0	0.48	ug/L			12/29/15 13:20	1
Trichlorofluoromethane	ND		1.0	0.42	ug/L			12/29/15 13:20	1
Vinyl chloride	ND		1.0	0.50	ug/L			12/29/15 13:20	1
Xylenes, Total	ND		1.0	0.23	ug/L			12/29/15 13:20	1

TestAmerica Savannah

Client Sample Results

Client: Parsons Corporation
 Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Client Sample ID: ALBW20343

Lab Sample ID: 680-120227-1

Date Collected: 12/17/15 14:02

Matrix: Water

Date Received: 12/18/15 08:35

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		70 - 130		12/29/15 13:20	1
1,2-Dichloroethane-d4 (Surr)	103		70 - 130		12/29/15 13:20	1
Dibromofluoromethane (Surr)	101		70 - 130		12/29/15 13:20	1
4-Bromofluorobenzene (Surr)	97		70 - 130		12/29/15 13:20	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	42		1.0	0.40	mg/L			01/03/16 00:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.7	B	1.0	0.43	mg/L			01/04/16 18:45	1

Client Sample ID: ALBW20347

Lab Sample ID: 680-120227-2

Date Collected: 12/17/15 13:55

Matrix: Water

Date Received: 12/18/15 08:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.37	ug/L			12/29/15 13:40	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.62	ug/L			12/29/15 13:40	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.36	ug/L			12/29/15 13:40	1
1,1,2-Trichloroethane	ND		1.0	0.33	ug/L			12/29/15 13:40	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			12/29/15 13:40	1
1,1-Dichloroethene	ND		1.0	0.36	ug/L			12/29/15 13:40	1
1,2,4-Trichlorobenzene	ND		5.0	2.5	ug/L			12/29/15 13:40	1
1,2-Dibromo-3-Chloropropane	ND		5.0	1.1	ug/L			12/29/15 13:40	1
1,2-Dibromoethane	ND		1.0	0.44	ug/L			12/29/15 13:40	1
1,2-Dichlorobenzene	ND		1.0	0.37	ug/L			12/29/15 13:40	1
1,2-Dichloroethane	ND		1.0	0.50	ug/L			12/29/15 13:40	1
1,2-Dichloropropane	ND		1.0	0.67	ug/L			12/29/15 13:40	1
1,3-Dichlorobenzene	ND		1.0	0.43	ug/L			12/29/15 13:40	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			12/29/15 13:40	1
2-Butanone	ND		10	3.4	ug/L			12/29/15 13:40	1
2-Hexanone	ND		10	2.0	ug/L			12/29/15 13:40	1
4-Methyl-2-pentanone	ND		10	2.1	ug/L			12/29/15 13:40	1
Acetone	ND		10	7.0	ug/L			12/29/15 13:40	1
Benzene	ND		1.0	0.43	ug/L			12/29/15 13:40	1
Bromodichloromethane	ND		1.0	0.44	ug/L			12/29/15 13:40	1
Bromoform	ND		1.0	0.43	ug/L			12/29/15 13:40	1
Bromomethane	ND		5.0	2.5	ug/L			12/29/15 13:40	1
Carbon disulfide	ND		2.0	1.0	ug/L			12/29/15 13:40	1
Carbon tetrachloride	ND		1.0	0.33	ug/L			12/29/15 13:40	1
Chlorobenzene	ND		1.0	0.26	ug/L			12/29/15 13:40	1
Chloroethane	ND		5.0	2.5	ug/L			12/29/15 13:40	1
Chloroform	ND		1.0	0.50	ug/L			12/29/15 13:40	1
Chloromethane	ND	*	1.0	0.40	ug/L			12/29/15 13:40	1
cis-1,2-Dichloroethene	150		1.0	0.41	ug/L			12/29/15 13:40	1
cis-1,3-Dichloropropene	ND		1.0	0.40	ug/L			12/29/15 13:40	1
Cyclohexane	ND		1.0	0.39	ug/L			12/29/15 13:40	1
Dibromochloromethane	ND		1.0	0.32	ug/L			12/29/15 13:40	1

TestAmerica Savannah

Client Sample Results

Client: Parsons Corporation
Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Client Sample ID: ALBW20347

Lab Sample ID: 680-120227-2

Date Collected: 12/17/15 13:55

Matrix: Water

Date Received: 12/18/15 08:35

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		1.0	0.60	ug/L			12/29/15 13:40	1
Ethylbenzene	ND		1.0	0.33	ug/L			12/29/15 13:40	1
Isopropylbenzene	ND		1.0	0.35	ug/L			12/29/15 13:40	1
Methyl acetate	ND		5.0	1.8	ug/L			12/29/15 13:40	1
Methyl tert-butyl ether	ND		10	0.30	ug/L			12/29/15 13:40	1
Methylcyclohexane	ND		1.0	0.43	ug/L			12/29/15 13:40	1
Methylene Chloride	ND		5.0	2.5	ug/L			12/29/15 13:40	1
Styrene	ND		1.0	0.27	ug/L			12/29/15 13:40	1
Tetrachloroethene	ND		1.0	0.74	ug/L			12/29/15 13:40	1
Toluene	ND		1.0	0.48	ug/L			12/29/15 13:40	1
trans-1,2-Dichloroethene	0.90	J	1.0	0.37	ug/L			12/29/15 13:40	1
trans-1,3-Dichloropropene	ND		1.0	0.42	ug/L			12/29/15 13:40	1
Trichlorofluoromethane	ND		1.0	0.42	ug/L			12/29/15 13:40	1
Vinyl chloride	11		1.0	0.50	ug/L			12/29/15 13:40	1
Xylenes, Total	ND		1.0	0.23	ug/L			12/29/15 13:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		70 - 130		12/29/15 13:40	1
1,2-Dichloroethane-d4 (Surr)	103		70 - 130		12/29/15 13:40	1
Dibromofluoromethane (Surr)	101		70 - 130		12/29/15 13:40	1
4-Bromofluorobenzene (Surr)	95		70 - 130		12/29/15 13:40	1

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	170		2.0	0.96	ug/L			12/29/15 17:25	2

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		70 - 130		12/29/15 17:25	2
1,2-Dichloroethane-d4 (Surr)	103		70 - 130		12/29/15 17:25	2
Dibromofluoromethane (Surr)	102		70 - 130		12/29/15 17:25	2
4-Bromofluorobenzene (Surr)	99		70 - 130		12/29/15 17:25	2

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	22		1.0	0.40	mg/L			01/03/16 02:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.8	B	1.0	0.43	mg/L			01/04/16 20:06	1

Client Sample ID: ALBW20352

Lab Sample ID: 680-120227-3

Date Collected: 12/16/15 11:02

Matrix: Water

Date Received: 12/18/15 08:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.37	ug/L			12/29/15 14:00	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.62	ug/L			12/29/15 14:00	1
1,1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.36	ug/L			12/29/15 14:00	1
1,1,1,2-Trichloroethane	ND		1.0	0.33	ug/L			12/29/15 14:00	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			12/29/15 14:00	1

TestAmerica Savannah

Client Sample Results

Client: Parsons Corporation
 Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Client Sample ID: ALBW20352

Lab Sample ID: 680-120227-3

Date Collected: 12/16/15 11:02

Matrix: Water

Date Received: 12/18/15 08:35

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		1.0	0.36	ug/L			12/29/15 14:00	1
1,2,4-Trichlorobenzene	ND		5.0	2.5	ug/L			12/29/15 14:00	1
1,2-Dibromo-3-Chloropropane	ND		5.0	1.1	ug/L			12/29/15 14:00	1
1,2-Dibromoethane	ND		1.0	0.44	ug/L			12/29/15 14:00	1
1,2-Dichlorobenzene	ND		1.0	0.37	ug/L			12/29/15 14:00	1
1,2-Dichloroethane	ND		1.0	0.50	ug/L			12/29/15 14:00	1
1,2-Dichloropropane	ND		1.0	0.67	ug/L			12/29/15 14:00	1
1,3-Dichlorobenzene	ND		1.0	0.43	ug/L			12/29/15 14:00	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			12/29/15 14:00	1
2-Butanone	ND		10	3.4	ug/L			12/29/15 14:00	1
2-Hexanone	ND		10	2.0	ug/L			12/29/15 14:00	1
4-Methyl-2-pentanone	ND		10	2.1	ug/L			12/29/15 14:00	1
Acetone	ND		10	7.0	ug/L			12/29/15 14:00	1
Benzene	ND		1.0	0.43	ug/L			12/29/15 14:00	1
Bromodichloromethane	ND		1.0	0.44	ug/L			12/29/15 14:00	1
Bromoform	ND		1.0	0.43	ug/L			12/29/15 14:00	1
Bromomethane	ND		5.0	2.5	ug/L			12/29/15 14:00	1
Carbon disulfide	ND		2.0	1.0	ug/L			12/29/15 14:00	1
Carbon tetrachloride	ND		1.0	0.33	ug/L			12/29/15 14:00	1
Chlorobenzene	ND		1.0	0.26	ug/L			12/29/15 14:00	1
Chloroethane	ND		5.0	2.5	ug/L			12/29/15 14:00	1
Chloroform	ND		1.0	0.50	ug/L			12/29/15 14:00	1
Chloromethane	ND	*	1.0	0.40	ug/L			12/29/15 14:00	1
cis-1,2-Dichloroethene	3.9		1.0	0.41	ug/L			12/29/15 14:00	1
cis-1,3-Dichloropropene	ND		1.0	0.40	ug/L			12/29/15 14:00	1
Cyclohexane	ND		1.0	0.39	ug/L			12/29/15 14:00	1
Dibromochloromethane	ND		1.0	0.32	ug/L			12/29/15 14:00	1
Dichlorodifluoromethane	ND		1.0	0.60	ug/L			12/29/15 14:00	1
Ethylbenzene	ND		1.0	0.33	ug/L			12/29/15 14:00	1
Isopropylbenzene	ND		1.0	0.35	ug/L			12/29/15 14:00	1
Methyl acetate	ND		5.0	1.8	ug/L			12/29/15 14:00	1
Methyl tert-butyl ether	ND		10	0.30	ug/L			12/29/15 14:00	1
Methylcyclohexane	ND		1.0	0.43	ug/L			12/29/15 14:00	1
Methylene Chloride	ND		5.0	2.5	ug/L			12/29/15 14:00	1
Styrene	ND		1.0	0.27	ug/L			12/29/15 14:00	1
Tetrachloroethene	ND		1.0	0.74	ug/L			12/29/15 14:00	1
Toluene	ND		1.0	0.48	ug/L			12/29/15 14:00	1
trans-1,2-Dichloroethene	0.39	J	1.0	0.37	ug/L			12/29/15 14:00	1
trans-1,3-Dichloropropene	ND		1.0	0.42	ug/L			12/29/15 14:00	1
Trichloroethene	ND		1.0	0.48	ug/L			12/29/15 14:00	1
Trichlorofluoromethane	ND		1.0	0.42	ug/L			12/29/15 14:00	1
Vinyl chloride	3.8		1.0	0.50	ug/L			12/29/15 14:00	1
Xylenes, Total	ND		1.0	0.23	ug/L			12/29/15 14:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		70 - 130		12/29/15 14:00	1
1,2-Dichloroethane-d4 (Surr)	103		70 - 130		12/29/15 14:00	1
Dibromofluoromethane (Surr)	101		70 - 130		12/29/15 14:00	1
4-Bromofluorobenzene (Surr)	96		70 - 130		12/29/15 14:00	1

TestAmerica Savannah

Client Sample Results

Client: Parsons Corporation
 Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Client Sample ID: ALBW20352

Lab Sample ID: 680-120227-3

Date Collected: 12/16/15 11:02

Matrix: Water

Date Received: 12/18/15 08:35

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	9.5		1.0	0.40	mg/L			01/03/16 02:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	4.8	B	1.0	0.43	mg/L			01/04/16 20:32	1

Client Sample ID: ALBW20353

Lab Sample ID: 680-120227-4

Date Collected: 12/16/15 11:12

Matrix: Water

Date Received: 12/18/15 08:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.37	ug/L			12/29/15 14:21	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.62	ug/L			12/29/15 14:21	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.36	ug/L			12/29/15 14:21	1
1,1,2-Trichloroethane	ND		1.0	0.33	ug/L			12/29/15 14:21	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			12/29/15 14:21	1
1,1-Dichloroethene	ND		1.0	0.36	ug/L			12/29/15 14:21	1
1,2,4-Trichlorobenzene	ND		5.0	2.5	ug/L			12/29/15 14:21	1
1,2-Dibromo-3-Chloropropane	ND		5.0	1.1	ug/L			12/29/15 14:21	1
1,2-Dibromoethane	ND		1.0	0.44	ug/L			12/29/15 14:21	1
1,2-Dichlorobenzene	ND		1.0	0.37	ug/L			12/29/15 14:21	1
1,2-Dichloroethane	ND		1.0	0.50	ug/L			12/29/15 14:21	1
1,2-Dichloropropane	ND		1.0	0.67	ug/L			12/29/15 14:21	1
1,3-Dichlorobenzene	ND		1.0	0.43	ug/L			12/29/15 14:21	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			12/29/15 14:21	1
2-Butanone	ND		10	3.4	ug/L			12/29/15 14:21	1
2-Hexanone	ND		10	2.0	ug/L			12/29/15 14:21	1
4-Methyl-2-pentanone	ND		10	2.1	ug/L			12/29/15 14:21	1
Acetone	ND		10	7.0	ug/L			12/29/15 14:21	1
Benzene	ND		1.0	0.43	ug/L			12/29/15 14:21	1
Bromodichloromethane	ND		1.0	0.44	ug/L			12/29/15 14:21	1
Bromoform	ND		1.0	0.43	ug/L			12/29/15 14:21	1
Bromomethane	ND		5.0	2.5	ug/L			12/29/15 14:21	1
Carbon disulfide	ND		2.0	1.0	ug/L			12/29/15 14:21	1
Carbon tetrachloride	ND		1.0	0.33	ug/L			12/29/15 14:21	1
Chlorobenzene	ND		1.0	0.26	ug/L			12/29/15 14:21	1
Chloroethane	ND		5.0	2.5	ug/L			12/29/15 14:21	1
Chloroform	ND		1.0	0.50	ug/L			12/29/15 14:21	1
Chloromethane	ND	*	1.0	0.40	ug/L			12/29/15 14:21	1
cis-1,2-Dichloroethene	3.7		1.0	0.41	ug/L			12/29/15 14:21	1
cis-1,3-Dichloropropene	ND		1.0	0.40	ug/L			12/29/15 14:21	1
Cyclohexane	ND		1.0	0.39	ug/L			12/29/15 14:21	1
Dibromochloromethane	ND		1.0	0.32	ug/L			12/29/15 14:21	1
Dichlorodifluoromethane	ND		1.0	0.60	ug/L			12/29/15 14:21	1
Ethylbenzene	ND		1.0	0.33	ug/L			12/29/15 14:21	1
Isopropylbenzene	ND		1.0	0.35	ug/L			12/29/15 14:21	1
Methyl acetate	ND		5.0	1.8	ug/L			12/29/15 14:21	1
Methyl tert-butyl ether	ND		10	0.30	ug/L			12/29/15 14:21	1
Methylcyclohexane	ND		1.0	0.43	ug/L			12/29/15 14:21	1

TestAmerica Savannah

Client Sample Results

Client: Parsons Corporation
Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Client Sample ID: ALBW20353

Lab Sample ID: 680-120227-4

Date Collected: 12/16/15 11:12

Matrix: Water

Date Received: 12/18/15 08:35

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	ND		5.0	2.5	ug/L			12/29/15 14:21	1
Styrene	ND		1.0	0.27	ug/L			12/29/15 14:21	1
Tetrachloroethene	ND		1.0	0.74	ug/L			12/29/15 14:21	1
Toluene	ND		1.0	0.48	ug/L			12/29/15 14:21	1
trans-1,2-Dichloroethene	ND		1.0	0.37	ug/L			12/29/15 14:21	1
trans-1,3-Dichloropropene	ND		1.0	0.42	ug/L			12/29/15 14:21	1
Trichloroethene	ND		1.0	0.48	ug/L			12/29/15 14:21	1
Trichlorofluoromethane	ND		1.0	0.42	ug/L			12/29/15 14:21	1
Vinyl chloride	2.9		1.0	0.50	ug/L			12/29/15 14:21	1
Xylenes, Total	ND		1.0	0.23	ug/L			12/29/15 14:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		70 - 130		12/29/15 14:21	1
1,2-Dichloroethane-d4 (Surr)	102		70 - 130		12/29/15 14:21	1
Dibromofluoromethane (Surr)	101		70 - 130		12/29/15 14:21	1
4-Bromofluorobenzene (Surr)	97		70 - 130		12/29/15 14:21	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	9.6		1.0	0.40	mg/L			01/03/16 03:14	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	4.7	B	1.0	0.43	mg/L			01/04/16 21:51	1

Client Sample ID: ALBW20354

Lab Sample ID: 680-120227-5

Date Collected: 12/16/15 14:00

Matrix: Water

Date Received: 12/18/15 08:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.37	ug/L			12/29/15 14:41	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.62	ug/L			12/29/15 14:41	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.36	ug/L			12/29/15 14:41	1
1,1,2-Trichloroethane	ND		1.0	0.33	ug/L			12/29/15 14:41	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			12/29/15 14:41	1
1,1-Dichloroethene	ND		1.0	0.36	ug/L			12/29/15 14:41	1
1,2,4-Trichlorobenzene	ND		5.0	2.5	ug/L			12/29/15 14:41	1
1,2-Dibromo-3-Chloropropane	ND		5.0	1.1	ug/L			12/29/15 14:41	1
1,2-Dibromoethane	ND		1.0	0.44	ug/L			12/29/15 14:41	1
1,2-Dichlorobenzene	ND		1.0	0.37	ug/L			12/29/15 14:41	1
1,2-Dichloroethane	ND		1.0	0.50	ug/L			12/29/15 14:41	1
1,2-Dichloropropane	ND		1.0	0.67	ug/L			12/29/15 14:41	1
1,3-Dichlorobenzene	ND		1.0	0.43	ug/L			12/29/15 14:41	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			12/29/15 14:41	1
2-Butanone	ND		10	3.4	ug/L			12/29/15 14:41	1
2-Hexanone	ND		10	2.0	ug/L			12/29/15 14:41	1
4-Methyl-2-pentanone	ND		10	2.1	ug/L			12/29/15 14:41	1
Acetone	ND		10	7.0	ug/L			12/29/15 14:41	1
Benzene	ND		1.0	0.43	ug/L			12/29/15 14:41	1

TestAmerica Savannah

Client Sample Results

Client: Parsons Corporation
 Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Client Sample ID: ALBW20354

Lab Sample ID: 680-120227-5

Date Collected: 12/16/15 14:00

Matrix: Water

Date Received: 12/18/15 08:35

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	ND		1.0	0.44	ug/L			12/29/15 14:41	1
Bromoform	ND		1.0	0.43	ug/L			12/29/15 14:41	1
Bromomethane	ND		5.0	2.5	ug/L			12/29/15 14:41	1
Carbon disulfide	ND		2.0	1.0	ug/L			12/29/15 14:41	1
Carbon tetrachloride	ND		1.0	0.33	ug/L			12/29/15 14:41	1
Chlorobenzene	ND		1.0	0.26	ug/L			12/29/15 14:41	1
Chloroethane	ND		5.0	2.5	ug/L			12/29/15 14:41	1
Chloroform	ND		1.0	0.50	ug/L			12/29/15 14:41	1
Chloromethane	ND	*	1.0	0.40	ug/L			12/29/15 14:41	1
cis-1,2-Dichloroethene	8.4		1.0	0.41	ug/L			12/29/15 14:41	1
cis-1,3-Dichloropropene	ND		1.0	0.40	ug/L			12/29/15 14:41	1
Cyclohexane	ND		1.0	0.39	ug/L			12/29/15 14:41	1
Dibromochloromethane	ND		1.0	0.32	ug/L			12/29/15 14:41	1
Dichlorodifluoromethane	ND		1.0	0.60	ug/L			12/29/15 14:41	1
Ethylbenzene	ND		1.0	0.33	ug/L			12/29/15 14:41	1
Isopropylbenzene	ND		1.0	0.35	ug/L			12/29/15 14:41	1
Methyl acetate	ND		5.0	1.8	ug/L			12/29/15 14:41	1
Methyl tert-butyl ether	ND		10	0.30	ug/L			12/29/15 14:41	1
Methylcyclohexane	ND		1.0	0.43	ug/L			12/29/15 14:41	1
Methylene Chloride	ND		5.0	2.5	ug/L			12/29/15 14:41	1
Styrene	ND		1.0	0.27	ug/L			12/29/15 14:41	1
Tetrachloroethene	ND		1.0	0.74	ug/L			12/29/15 14:41	1
Toluene	ND		1.0	0.48	ug/L			12/29/15 14:41	1
trans-1,2-Dichloroethene	ND		1.0	0.37	ug/L			12/29/15 14:41	1
trans-1,3-Dichloropropene	ND		1.0	0.42	ug/L			12/29/15 14:41	1
Trichloroethene	1.6		1.0	0.48	ug/L			12/29/15 14:41	1
Trichlorofluoromethane	ND		1.0	0.42	ug/L			12/29/15 14:41	1
Vinyl chloride	ND		1.0	0.50	ug/L			12/29/15 14:41	1
Xylenes, Total	ND		1.0	0.23	ug/L			12/29/15 14:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		70 - 130		12/29/15 14:41	1
1,2-Dichloroethane-d4 (Surr)	101		70 - 130		12/29/15 14:41	1
Dibromofluoromethane (Surr)	102		70 - 130		12/29/15 14:41	1
4-Bromofluorobenzene (Surr)	95		70 - 130		12/29/15 14:41	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	640		25	10	mg/L			01/04/16 14:53	25

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	5.9	B	1.0	0.43	mg/L			01/04/16 22:17	1

Client Sample Results

Client: Parsons Corporation
 Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Client Sample ID: ALBW20355

Lab Sample ID: 680-120227-6

Date Collected: 12/16/15 14:00

Matrix: Water

Date Received: 12/18/15 08:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.37	ug/L			12/29/15 15:22	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.62	ug/L			12/29/15 15:22	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.36	ug/L			12/29/15 15:22	1
1,1,2-Trichloroethane	ND		1.0	0.33	ug/L			12/29/15 15:22	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			12/29/15 15:22	1
1,1-Dichloroethene	ND		1.0	0.36	ug/L			12/29/15 15:22	1
1,2,4-Trichlorobenzene	ND		5.0	2.5	ug/L			12/29/15 15:22	1
1,2-Dibromo-3-Chloropropane	ND		5.0	1.1	ug/L			12/29/15 15:22	1
1,2-Dibromoethane	ND		1.0	0.44	ug/L			12/29/15 15:22	1
1,2-Dichlorobenzene	ND		1.0	0.37	ug/L			12/29/15 15:22	1
1,2-Dichloroethane	ND		1.0	0.50	ug/L			12/29/15 15:22	1
1,2-Dichloropropane	ND		1.0	0.67	ug/L			12/29/15 15:22	1
1,3-Dichlorobenzene	ND		1.0	0.43	ug/L			12/29/15 15:22	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			12/29/15 15:22	1
2-Butanone	ND		10	3.4	ug/L			12/29/15 15:22	1
2-Hexanone	ND		10	2.0	ug/L			12/29/15 15:22	1
4-Methyl-2-pentanone	ND		10	2.1	ug/L			12/29/15 15:22	1
Acetone	26		10	7.0	ug/L			12/29/15 15:22	1
Benzene	ND		1.0	0.43	ug/L			12/29/15 15:22	1
Bromodichloromethane	ND		1.0	0.44	ug/L			12/29/15 15:22	1
Bromoform	ND		1.0	0.43	ug/L			12/29/15 15:22	1
Bromomethane	ND		5.0	2.5	ug/L			12/29/15 15:22	1
Carbon disulfide	ND		2.0	1.0	ug/L			12/29/15 15:22	1
Carbon tetrachloride	ND		1.0	0.33	ug/L			12/29/15 15:22	1
Chlorobenzene	ND		1.0	0.26	ug/L			12/29/15 15:22	1
Chloroethane	ND		5.0	2.5	ug/L			12/29/15 15:22	1
Chloroform	ND		1.0	0.50	ug/L			12/29/15 15:22	1
Chloromethane	ND	*	1.0	0.40	ug/L			12/29/15 15:22	1
cis-1,2-Dichloroethene	0.87	J	1.0	0.41	ug/L			12/29/15 15:22	1
cis-1,3-Dichloropropene	ND		1.0	0.40	ug/L			12/29/15 15:22	1
Cyclohexane	ND		1.0	0.39	ug/L			12/29/15 15:22	1
Dibromochloromethane	ND		1.0	0.32	ug/L			12/29/15 15:22	1
Dichlorodifluoromethane	ND		1.0	0.60	ug/L			12/29/15 15:22	1
Ethylbenzene	ND		1.0	0.33	ug/L			12/29/15 15:22	1
Isopropylbenzene	ND		1.0	0.35	ug/L			12/29/15 15:22	1
Methyl acetate	ND		5.0	1.8	ug/L			12/29/15 15:22	1
Methyl tert-butyl ether	ND		10	0.30	ug/L			12/29/15 15:22	1
Methylcyclohexane	ND		1.0	0.43	ug/L			12/29/15 15:22	1
Methylene Chloride	ND		5.0	2.5	ug/L			12/29/15 15:22	1
Styrene	ND		1.0	0.27	ug/L			12/29/15 15:22	1
Tetrachloroethene	ND		1.0	0.74	ug/L			12/29/15 15:22	1
Toluene	ND		1.0	0.48	ug/L			12/29/15 15:22	1
trans-1,2-Dichloroethene	ND		1.0	0.37	ug/L			12/29/15 15:22	1
trans-1,3-Dichloropropene	ND		1.0	0.42	ug/L			12/29/15 15:22	1
Trichloroethene	ND		1.0	0.48	ug/L			12/29/15 15:22	1
Trichlorofluoromethane	ND		1.0	0.42	ug/L			12/29/15 15:22	1
Vinyl chloride	ND		1.0	0.50	ug/L			12/29/15 15:22	1
Xylenes, Total	ND		1.0	0.23	ug/L			12/29/15 15:22	1

Client Sample Results

Client: Parsons Corporation
 Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Client Sample ID: ALBW20355

Lab Sample ID: 680-120227-6

Date Collected: 12/16/15 14:00

Matrix: Water

Date Received: 12/18/15 08:35

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		70 - 130		12/29/15 15:22	1
1,2-Dichloroethane-d4 (Surr)	102		70 - 130		12/29/15 15:22	1
Dibromofluoromethane (Surr)	101		70 - 130		12/29/15 15:22	1
4-Bromofluorobenzene (Surr)	97		70 - 130		12/29/15 15:22	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	7.9		1.0	0.40	mg/L			01/03/16 03:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	28	B	1.0	0.43	mg/L			01/04/16 22:44	1

Client Sample ID: ALBW20356

Lab Sample ID: 680-120227-7

Date Collected: 12/17/15 11:50

Matrix: Water

Date Received: 12/18/15 08:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.37	ug/L			12/29/15 15:02	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.62	ug/L			12/29/15 15:02	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.36	ug/L			12/29/15 15:02	1
1,1,2-Trichloroethane	ND		1.0	0.33	ug/L			12/29/15 15:02	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			12/29/15 15:02	1
1,1-Dichloroethene	ND		1.0	0.36	ug/L			12/29/15 15:02	1
1,2,4-Trichlorobenzene	ND		5.0	2.5	ug/L			12/29/15 15:02	1
1,2-Dibromo-3-Chloropropane	ND		5.0	1.1	ug/L			12/29/15 15:02	1
1,2-Dibromoethane	ND		1.0	0.44	ug/L			12/29/15 15:02	1
1,2-Dichlorobenzene	ND		1.0	0.37	ug/L			12/29/15 15:02	1
1,2-Dichloroethane	ND		1.0	0.50	ug/L			12/29/15 15:02	1
1,2-Dichloropropane	ND		1.0	0.67	ug/L			12/29/15 15:02	1
1,3-Dichlorobenzene	ND		1.0	0.43	ug/L			12/29/15 15:02	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			12/29/15 15:02	1
2-Butanone	ND		10	3.4	ug/L			12/29/15 15:02	1
2-Hexanone	ND		10	2.0	ug/L			12/29/15 15:02	1
4-Methyl-2-pentanone	ND		10	2.1	ug/L			12/29/15 15:02	1
Acetone	ND		10	7.0	ug/L			12/29/15 15:02	1
Benzene	ND		1.0	0.43	ug/L			12/29/15 15:02	1
Bromodichloromethane	ND		1.0	0.44	ug/L			12/29/15 15:02	1
Bromoform	ND		1.0	0.43	ug/L			12/29/15 15:02	1
Bromomethane	ND		5.0	2.5	ug/L			12/29/15 15:02	1
Carbon disulfide	ND		2.0	1.0	ug/L			12/29/15 15:02	1
Carbon tetrachloride	ND		1.0	0.33	ug/L			12/29/15 15:02	1
Chlorobenzene	ND		1.0	0.26	ug/L			12/29/15 15:02	1
Chloroethane	ND		5.0	2.5	ug/L			12/29/15 15:02	1
Chloroform	ND		1.0	0.50	ug/L			12/29/15 15:02	1
Chloromethane	ND	*	1.0	0.40	ug/L			12/29/15 15:02	1
cis-1,2-Dichloroethene	ND		1.0	0.41	ug/L			12/29/15 15:02	1
cis-1,3-Dichloropropene	ND		1.0	0.40	ug/L			12/29/15 15:02	1
Cyclohexane	ND		1.0	0.39	ug/L			12/29/15 15:02	1
Dibromochloromethane	ND		1.0	0.32	ug/L			12/29/15 15:02	1

TestAmerica Savannah

Client Sample Results

Client: Parsons Corporation
Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Client Sample ID: ALBW20356

Lab Sample ID: 680-120227-7

Date Collected: 12/17/15 11:50

Matrix: Water

Date Received: 12/18/15 08:35

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		1.0	0.60	ug/L			12/29/15 15:02	1
Ethylbenzene	ND		1.0	0.33	ug/L			12/29/15 15:02	1
Isopropylbenzene	ND		1.0	0.35	ug/L			12/29/15 15:02	1
Methyl acetate	ND		5.0	1.8	ug/L			12/29/15 15:02	1
Methyl tert-butyl ether	ND		10	0.30	ug/L			12/29/15 15:02	1
Methylcyclohexane	ND		1.0	0.43	ug/L			12/29/15 15:02	1
Methylene Chloride	ND		5.0	2.5	ug/L			12/29/15 15:02	1
Styrene	ND		1.0	0.27	ug/L			12/29/15 15:02	1
Tetrachloroethene	ND		1.0	0.74	ug/L			12/29/15 15:02	1
Toluene	ND		1.0	0.48	ug/L			12/29/15 15:02	1
trans-1,2-Dichloroethene	ND		1.0	0.37	ug/L			12/29/15 15:02	1
trans-1,3-Dichloropropene	ND		1.0	0.42	ug/L			12/29/15 15:02	1
Trichloroethene	ND		1.0	0.48	ug/L			12/29/15 15:02	1
Trichlorofluoromethane	ND		1.0	0.42	ug/L			12/29/15 15:02	1
Vinyl chloride	ND		1.0	0.50	ug/L			12/29/15 15:02	1
Xylenes, Total	ND		1.0	0.23	ug/L			12/29/15 15:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		70 - 130		12/29/15 15:02	1
1,2-Dichloroethane-d4 (Surr)	101		70 - 130		12/29/15 15:02	1
Dibromofluoromethane (Surr)	99		70 - 130		12/29/15 15:02	1
4-Bromofluorobenzene (Surr)	95		70 - 130		12/29/15 15:02	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.40	mg/L			01/03/16 03:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	19	B	1.0	0.43	mg/L			01/04/16 23:10	1

Client Sample ID: ALBW20357

Lab Sample ID: 680-120227-8

Date Collected: 12/17/15 12:10

Matrix: Water

Date Received: 12/18/15 08:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.37	ug/L			12/29/15 15:43	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.62	ug/L			12/29/15 15:43	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.36	ug/L			12/29/15 15:43	1
1,1,2-Trichloroethane	ND		1.0	0.33	ug/L			12/29/15 15:43	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			12/29/15 15:43	1
1,1-Dichloroethene	ND		1.0	0.36	ug/L			12/29/15 15:43	1
1,2,4-Trichlorobenzene	ND		5.0	2.5	ug/L			12/29/15 15:43	1
1,2-Dibromo-3-Chloropropane	ND		5.0	1.1	ug/L			12/29/15 15:43	1
1,2-Dibromoethane	ND		1.0	0.44	ug/L			12/29/15 15:43	1
1,2-Dichlorobenzene	ND		1.0	0.37	ug/L			12/29/15 15:43	1
1,2-Dichloroethane	ND		1.0	0.50	ug/L			12/29/15 15:43	1
1,2-Dichloropropane	ND		1.0	0.67	ug/L			12/29/15 15:43	1
1,3-Dichlorobenzene	ND		1.0	0.43	ug/L			12/29/15 15:43	1

TestAmerica Savannah

Client Sample Results

Client: Parsons Corporation
Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Client Sample ID: ALBW20357

Lab Sample ID: 680-120227-8

Date Collected: 12/17/15 12:10

Matrix: Water

Date Received: 12/18/15 08:35

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			12/29/15 15:43	1
2-Butanone	ND		10	3.4	ug/L			12/29/15 15:43	1
2-Hexanone	ND		10	2.0	ug/L			12/29/15 15:43	1
4-Methyl-2-pentanone	ND		10	2.1	ug/L			12/29/15 15:43	1
Acetone	ND		10	7.0	ug/L			12/29/15 15:43	1
Benzene	ND		1.0	0.43	ug/L			12/29/15 15:43	1
Bromodichloromethane	ND		1.0	0.44	ug/L			12/29/15 15:43	1
Bromoform	ND		1.0	0.43	ug/L			12/29/15 15:43	1
Bromomethane	ND		5.0	2.5	ug/L			12/29/15 15:43	1
Carbon disulfide	ND		2.0	1.0	ug/L			12/29/15 15:43	1
Carbon tetrachloride	ND		1.0	0.33	ug/L			12/29/15 15:43	1
Chlorobenzene	ND		1.0	0.26	ug/L			12/29/15 15:43	1
Chloroethane	ND		5.0	2.5	ug/L			12/29/15 15:43	1
Chloroform	ND		1.0	0.50	ug/L			12/29/15 15:43	1
Chloromethane	ND	*	1.0	0.40	ug/L			12/29/15 15:43	1
cis-1,2-Dichloroethene	35		1.0	0.41	ug/L			12/29/15 15:43	1
cis-1,3-Dichloropropene	ND		1.0	0.40	ug/L			12/29/15 15:43	1
Cyclohexane	ND		1.0	0.39	ug/L			12/29/15 15:43	1
Dibromochloromethane	ND		1.0	0.32	ug/L			12/29/15 15:43	1
Dichlorodifluoromethane	ND		1.0	0.60	ug/L			12/29/15 15:43	1
Ethylbenzene	ND		1.0	0.33	ug/L			12/29/15 15:43	1
Isopropylbenzene	ND		1.0	0.35	ug/L			12/29/15 15:43	1
Methyl acetate	ND		5.0	1.8	ug/L			12/29/15 15:43	1
Methyl tert-butyl ether	ND		10	0.30	ug/L			12/29/15 15:43	1
Methylcyclohexane	ND		1.0	0.43	ug/L			12/29/15 15:43	1
Methylene Chloride	ND		5.0	2.5	ug/L			12/29/15 15:43	1
Styrene	ND		1.0	0.27	ug/L			12/29/15 15:43	1
Tetrachloroethene	ND		1.0	0.74	ug/L			12/29/15 15:43	1
Toluene	ND		1.0	0.48	ug/L			12/29/15 15:43	1
trans-1,2-Dichloroethene	0.43	J	1.0	0.37	ug/L			12/29/15 15:43	1
trans-1,3-Dichloropropene	ND		1.0	0.42	ug/L			12/29/15 15:43	1
Trichloroethene	2.0		1.0	0.48	ug/L			12/29/15 15:43	1
Trichlorofluoromethane	ND		1.0	0.42	ug/L			12/29/15 15:43	1
Vinyl chloride	45		1.0	0.50	ug/L			12/29/15 15:43	1
Xylenes, Total	ND		1.0	0.23	ug/L			12/29/15 15:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		70 - 130		12/29/15 15:43	1
1,2-Dichloroethane-d4 (Surr)	104		70 - 130		12/29/15 15:43	1
Dibromofluoromethane (Surr)	102		70 - 130		12/29/15 15:43	1
4-Bromofluorobenzene (Surr)	94		70 - 130		12/29/15 15:43	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	180		10	4.0	mg/L			01/04/16 15:08	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	6.1	B	1.0	0.43	mg/L			01/04/16 23:36	1

TestAmerica Savannah

Client Sample Results

Client: Parsons Corporation
 Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Client Sample ID: ALBW00045

Lab Sample ID: 680-120227-9

Date Collected: 12/17/15 15:05

Matrix: Water

Date Received: 12/18/15 08:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.37	ug/L			12/29/15 16:03	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.62	ug/L			12/29/15 16:03	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.36	ug/L			12/29/15 16:03	1
1,1,2-Trichloroethane	ND		1.0	0.33	ug/L			12/29/15 16:03	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			12/29/15 16:03	1
1,1-Dichloroethene	ND		1.0	0.36	ug/L			12/29/15 16:03	1
1,2,4-Trichlorobenzene	ND		5.0	2.5	ug/L			12/29/15 16:03	1
1,2-Dibromo-3-Chloropropane	ND		5.0	1.1	ug/L			12/29/15 16:03	1
1,2-Dibromoethane	ND		1.0	0.44	ug/L			12/29/15 16:03	1
1,2-Dichlorobenzene	ND		1.0	0.37	ug/L			12/29/15 16:03	1
1,2-Dichloroethane	ND		1.0	0.50	ug/L			12/29/15 16:03	1
1,2-Dichloropropane	ND		1.0	0.67	ug/L			12/29/15 16:03	1
1,3-Dichlorobenzene	ND		1.0	0.43	ug/L			12/29/15 16:03	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			12/29/15 16:03	1
2-Butanone	ND		10	3.4	ug/L			12/29/15 16:03	1
2-Hexanone	ND		10	2.0	ug/L			12/29/15 16:03	1
4-Methyl-2-pentanone	ND		10	2.1	ug/L			12/29/15 16:03	1
Acetone	ND		10	7.0	ug/L			12/29/15 16:03	1
Benzene	ND		1.0	0.43	ug/L			12/29/15 16:03	1
Bromodichloromethane	ND		1.0	0.44	ug/L			12/29/15 16:03	1
Bromoform	ND		1.0	0.43	ug/L			12/29/15 16:03	1
Bromomethane	ND		5.0	2.5	ug/L			12/29/15 16:03	1
Carbon disulfide	ND		2.0	1.0	ug/L			12/29/15 16:03	1
Carbon tetrachloride	ND		1.0	0.33	ug/L			12/29/15 16:03	1
Chlorobenzene	ND		1.0	0.26	ug/L			12/29/15 16:03	1
Chloroethane	ND		5.0	2.5	ug/L			12/29/15 16:03	1
Chloroform	ND		1.0	0.50	ug/L			12/29/15 16:03	1
Chloromethane	ND *		1.0	0.40	ug/L			12/29/15 16:03	1
cis-1,2-Dichloroethene	ND		1.0	0.41	ug/L			12/29/15 16:03	1
cis-1,3-Dichloropropene	ND		1.0	0.40	ug/L			12/29/15 16:03	1
Cyclohexane	ND		1.0	0.39	ug/L			12/29/15 16:03	1
Dibromochloromethane	ND		1.0	0.32	ug/L			12/29/15 16:03	1
Dichlorodifluoromethane	ND		1.0	0.60	ug/L			12/29/15 16:03	1
Ethylbenzene	ND		1.0	0.33	ug/L			12/29/15 16:03	1
Isopropylbenzene	ND		1.0	0.35	ug/L			12/29/15 16:03	1
Methyl acetate	ND		5.0	1.8	ug/L			12/29/15 16:03	1
Methyl tert-butyl ether	ND		10	0.30	ug/L			12/29/15 16:03	1
Methylcyclohexane	ND		1.0	0.43	ug/L			12/29/15 16:03	1
Methylene Chloride	ND		5.0	2.5	ug/L			12/29/15 16:03	1
Styrene	ND		1.0	0.27	ug/L			12/29/15 16:03	1
Tetrachloroethene	ND		1.0	0.74	ug/L			12/29/15 16:03	1
Toluene	ND		1.0	0.48	ug/L			12/29/15 16:03	1
trans-1,2-Dichloroethene	ND		1.0	0.37	ug/L			12/29/15 16:03	1
trans-1,3-Dichloropropene	ND		1.0	0.42	ug/L			12/29/15 16:03	1
Trichloroethene	ND		1.0	0.48	ug/L			12/29/15 16:03	1
Trichlorofluoromethane	ND		1.0	0.42	ug/L			12/29/15 16:03	1
Vinyl chloride	ND		1.0	0.50	ug/L			12/29/15 16:03	1
Xylenes, Total	ND		1.0	0.23	ug/L			12/29/15 16:03	1

TestAmerica Savannah

Client Sample Results

Client: Parsons Corporation
 Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Client Sample ID: ALBW00045

Lab Sample ID: 680-120227-9

Date Collected: 12/17/15 15:05

Matrix: Water

Date Received: 12/18/15 08:35

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		70 - 130		12/29/15 16:03	1
1,2-Dichloroethane-d4 (Surr)	102		70 - 130		12/29/15 16:03	1
Dibromofluoromethane (Surr)	104		70 - 130		12/29/15 16:03	1
4-Bromofluorobenzene (Surr)	96		70 - 130		12/29/15 16:03	1

Client Sample ID: ALBW20344

Lab Sample ID: 680-120339-1

Date Collected: 12/18/15 14:01

Matrix: Water

Date Received: 12/22/15 10:25

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.37	ug/L			12/30/15 16:15	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.62	ug/L			12/30/15 16:15	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.36	ug/L			12/30/15 16:15	1
1,1,2-Trichloroethane	ND		1.0	0.33	ug/L			12/30/15 16:15	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			12/30/15 16:15	1
1,1-Dichloroethene	ND		1.0	0.36	ug/L			12/30/15 16:15	1
1,2,4-Trichlorobenzene	ND		5.0	2.5	ug/L			12/30/15 16:15	1
1,2-Dibromo-3-Chloropropane	ND		5.0	1.1	ug/L			12/30/15 16:15	1
1,2-Dibromoethane	ND		1.0	0.44	ug/L			12/30/15 16:15	1
1,2-Dichlorobenzene	ND		1.0	0.37	ug/L			12/30/15 16:15	1
1,2-Dichloroethane	ND		1.0	0.50	ug/L			12/30/15 16:15	1
1,2-Dichloropropane	ND		1.0	0.67	ug/L			12/30/15 16:15	1
1,3-Dichlorobenzene	ND		1.0	0.43	ug/L			12/30/15 16:15	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			12/30/15 16:15	1
2-Butanone	ND		10	3.4	ug/L			12/30/15 16:15	1
2-Hexanone	ND		10	2.0	ug/L			12/30/15 16:15	1
4-Methyl-2-pentanone	ND		10	2.1	ug/L			12/30/15 16:15	1
Acetone	ND		10	7.0	ug/L			12/30/15 16:15	1
Benzene	ND		1.0	0.43	ug/L			12/30/15 16:15	1
Bromodichloromethane	ND		1.0	0.44	ug/L			12/30/15 16:15	1
Bromoform	ND		1.0	0.43	ug/L			12/30/15 16:15	1
Bromomethane	ND		5.0	2.5	ug/L			12/30/15 16:15	1
Carbon disulfide	ND		2.0	1.0	ug/L			12/30/15 16:15	1
Carbon tetrachloride	ND		1.0	0.33	ug/L			12/30/15 16:15	1
Chlorobenzene	ND		1.0	0.26	ug/L			12/30/15 16:15	1
Chloroethane	ND		5.0	2.5	ug/L			12/30/15 16:15	1
Chloroform	1.5		1.0	0.50	ug/L			12/30/15 16:15	1
Chloromethane	ND		1.0	0.40	ug/L			12/30/15 16:15	1
cis-1,2-Dichloroethene	31		1.0	0.41	ug/L			12/30/15 16:15	1
cis-1,3-Dichloropropene	ND		1.0	0.40	ug/L			12/30/15 16:15	1
Cyclohexane	ND		1.0	0.39	ug/L			12/30/15 16:15	1
Dibromochloromethane	ND		1.0	0.32	ug/L			12/30/15 16:15	1
Dichlorodifluoromethane	ND		1.0	0.60	ug/L			12/30/15 16:15	1
Ethylbenzene	ND		1.0	0.33	ug/L			12/30/15 16:15	1
Isopropylbenzene	ND		1.0	0.35	ug/L			12/30/15 16:15	1
Methyl acetate	ND		5.0	1.8	ug/L			12/30/15 16:15	1
Methyl tert-butyl ether	ND		10	0.30	ug/L			12/30/15 16:15	1
Methylcyclohexane	ND		1.0	0.43	ug/L			12/30/15 16:15	1
Methylene Chloride	ND		5.0	2.5	ug/L			12/30/15 16:15	1

TestAmerica Savannah

Client Sample Results

Client: Parsons Corporation
 Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Client Sample ID: ALBW20344

Lab Sample ID: 680-120339-1

Date Collected: 12/18/15 14:01

Matrix: Water

Date Received: 12/22/15 10:25

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Styrene	ND		1.0	0.27	ug/L			12/30/15 16:15	1
Tetrachloroethene	ND		1.0	0.74	ug/L			12/30/15 16:15	1
Toluene	ND		1.0	0.48	ug/L			12/30/15 16:15	1
trans-1,2-Dichloroethene	ND		1.0	0.37	ug/L			12/30/15 16:15	1
trans-1,3-Dichloropropene	ND		1.0	0.42	ug/L			12/30/15 16:15	1
Trichloroethene	160		1.0	0.48	ug/L			12/30/15 16:15	1
Trichlorofluoromethane	ND		1.0	0.42	ug/L			12/30/15 16:15	1
Vinyl chloride	ND		1.0	0.50	ug/L			12/30/15 16:15	1
Xylenes, Total	ND		1.0	0.23	ug/L			12/30/15 16:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	101		70 - 130					12/30/15 16:15	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	91		70 - 130					12/30/15 16:15	1
<i>Dibromofluoromethane (Surr)</i>	93		70 - 130					12/30/15 16:15	1
<i>4-Bromofluorobenzene (Surr)</i>	92		70 - 130					12/30/15 16:15	1

Client Sample ID: ALBW20345

Lab Sample ID: 680-120339-2

Date Collected: 12/18/15 11:45

Matrix: Water

Date Received: 12/22/15 10:25

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.37	ug/L			12/30/15 12:51	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.62	ug/L			12/30/15 12:51	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.36	ug/L			12/30/15 12:51	1
1,1,2-Trichloroethane	ND		1.0	0.33	ug/L			12/30/15 12:51	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			12/30/15 12:51	1
1,1-Dichloroethene	ND		1.0	0.36	ug/L			12/30/15 12:51	1
1,2,4-Trichlorobenzene	ND		5.0	2.5	ug/L			12/30/15 12:51	1
1,2-Dibromo-3-Chloropropane	ND		5.0	1.1	ug/L			12/30/15 12:51	1
1,2-Dibromoethane	ND		1.0	0.44	ug/L			12/30/15 12:51	1
1,2-Dichlorobenzene	ND		1.0	0.37	ug/L			12/30/15 12:51	1
1,2-Dichloroethane	2.3		1.0	0.50	ug/L			12/30/15 12:51	1
1,2-Dichloropropane	ND		1.0	0.67	ug/L			12/30/15 12:51	1
1,3-Dichlorobenzene	ND		1.0	0.43	ug/L			12/30/15 12:51	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			12/30/15 12:51	1
2-Butanone	ND		10	3.4	ug/L			12/30/15 12:51	1
2-Hexanone	ND		10	2.0	ug/L			12/30/15 12:51	1
4-Methyl-2-pentanone	ND		10	2.1	ug/L			12/30/15 12:51	1
Acetone	ND		10	7.0	ug/L			12/30/15 12:51	1
Benzene	ND		1.0	0.43	ug/L			12/30/15 12:51	1
Bromodichloromethane	ND		1.0	0.44	ug/L			12/30/15 12:51	1
Bromoform	ND		1.0	0.43	ug/L			12/30/15 12:51	1
Bromomethane	ND		5.0	2.5	ug/L			12/30/15 12:51	1
Carbon disulfide	ND		2.0	1.0	ug/L			12/30/15 12:51	1
Carbon tetrachloride	ND		1.0	0.33	ug/L			12/30/15 12:51	1
Chlorobenzene	ND		1.0	0.26	ug/L			12/30/15 12:51	1
Chloroethane	ND		5.0	2.5	ug/L			12/30/15 12:51	1
Chloroform	ND		1.0	0.50	ug/L			12/30/15 12:51	1
Chloromethane	ND		1.0	0.40	ug/L			12/30/15 12:51	1

TestAmerica Savannah

Client Sample Results

Client: Parsons Corporation
 Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Client Sample ID: ALBW20345

Lab Sample ID: 680-120339-2

Date Collected: 12/18/15 11:45

Matrix: Water

Date Received: 12/22/15 10:25

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	36		1.0	0.41	ug/L			12/30/15 12:51	1
cis-1,3-Dichloropropene	ND		1.0	0.40	ug/L			12/30/15 12:51	1
Cyclohexane	ND		1.0	0.39	ug/L			12/30/15 12:51	1
Dibromochloromethane	ND		1.0	0.32	ug/L			12/30/15 12:51	1
Dichlorodifluoromethane	ND		1.0	0.60	ug/L			12/30/15 12:51	1
Ethylbenzene	ND		1.0	0.33	ug/L			12/30/15 12:51	1
Isopropylbenzene	ND		1.0	0.35	ug/L			12/30/15 12:51	1
Methyl acetate	ND		5.0	1.8	ug/L			12/30/15 12:51	1
Methyl tert-butyl ether	ND		10	0.30	ug/L			12/30/15 12:51	1
Methylcyclohexane	ND		1.0	0.43	ug/L			12/30/15 12:51	1
Methylene Chloride	ND		5.0	2.5	ug/L			12/30/15 12:51	1
Styrene	ND		1.0	0.27	ug/L			12/30/15 12:51	1
Tetrachloroethene	ND		1.0	0.74	ug/L			12/30/15 12:51	1
Toluene	ND		1.0	0.48	ug/L			12/30/15 12:51	1
trans-1,2-Dichloroethene	ND		1.0	0.37	ug/L			12/30/15 12:51	1
trans-1,3-Dichloropropene	ND		1.0	0.42	ug/L			12/30/15 12:51	1
Trichloroethene	31		1.0	0.48	ug/L			12/30/15 12:51	1
Trichlorofluoromethane	ND		1.0	0.42	ug/L			12/30/15 12:51	1
Vinyl chloride	ND		1.0	0.50	ug/L			12/30/15 12:51	1
Xylenes, Total	ND		1.0	0.23	ug/L			12/30/15 12:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	100		70 - 130		12/30/15 12:51	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	92		70 - 130		12/30/15 12:51	1
<i>Dibromofluoromethane (Surr)</i>	94		70 - 130		12/30/15 12:51	1
<i>4-Bromofluorobenzene (Surr)</i>	93		70 - 130		12/30/15 12:51	1

Client Sample ID: ALBW20346

Lab Sample ID: 680-120339-3

Date Collected: 12/18/15 10:16

Matrix: Water

Date Received: 12/22/15 10:25

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.37	ug/L			12/30/15 13:13	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.62	ug/L			12/30/15 13:13	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.36	ug/L			12/30/15 13:13	1
1,1,2-Trichloroethane	ND		1.0	0.33	ug/L			12/30/15 13:13	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			12/30/15 13:13	1
1,1-Dichloroethene	ND		1.0	0.36	ug/L			12/30/15 13:13	1
1,2,4-Trichlorobenzene	ND		5.0	2.5	ug/L			12/30/15 13:13	1
1,2-Dibromo-3-Chloropropane	ND		5.0	1.1	ug/L			12/30/15 13:13	1
1,2-Dibromoethane	ND		1.0	0.44	ug/L			12/30/15 13:13	1
1,2-Dichlorobenzene	ND		1.0	0.37	ug/L			12/30/15 13:13	1
1,2-Dichloroethane	ND		1.0	0.50	ug/L			12/30/15 13:13	1
1,2-Dichloropropane	ND		1.0	0.67	ug/L			12/30/15 13:13	1
1,3-Dichlorobenzene	ND		1.0	0.43	ug/L			12/30/15 13:13	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			12/30/15 13:13	1
2-Butanone	ND		10	3.4	ug/L			12/30/15 13:13	1
2-Hexanone	ND		10	2.0	ug/L			12/30/15 13:13	1
4-Methyl-2-pentanone	ND		10	2.1	ug/L			12/30/15 13:13	1

TestAmerica Savannah

Client Sample Results

Client: Parsons Corporation
 Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Client Sample ID: ALBW20346

Lab Sample ID: 680-120339-3

Date Collected: 12/18/15 10:16

Matrix: Water

Date Received: 12/22/15 10:25

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		10	7.0	ug/L			12/30/15 13:13	1
Benzene	ND		1.0	0.43	ug/L			12/30/15 13:13	1
Bromodichloromethane	ND		1.0	0.44	ug/L			12/30/15 13:13	1
Bromoform	ND		1.0	0.43	ug/L			12/30/15 13:13	1
Bromomethane	ND		5.0	2.5	ug/L			12/30/15 13:13	1
Carbon disulfide	ND		2.0	1.0	ug/L			12/30/15 13:13	1
Carbon tetrachloride	ND		1.0	0.33	ug/L			12/30/15 13:13	1
Chlorobenzene	ND		1.0	0.26	ug/L			12/30/15 13:13	1
Chloroethane	ND		5.0	2.5	ug/L			12/30/15 13:13	1
Chloroform	ND		1.0	0.50	ug/L			12/30/15 13:13	1
Chloromethane	ND		1.0	0.40	ug/L			12/30/15 13:13	1
cis-1,2-Dichloroethene	18		1.0	0.41	ug/L			12/30/15 13:13	1
cis-1,3-Dichloropropene	ND		1.0	0.40	ug/L			12/30/15 13:13	1
Cyclohexane	ND		1.0	0.39	ug/L			12/30/15 13:13	1
Dibromochloromethane	ND		1.0	0.32	ug/L			12/30/15 13:13	1
Dichlorodifluoromethane	ND		1.0	0.60	ug/L			12/30/15 13:13	1
Ethylbenzene	ND		1.0	0.33	ug/L			12/30/15 13:13	1
Isopropylbenzene	ND		1.0	0.35	ug/L			12/30/15 13:13	1
Methyl acetate	ND		5.0	1.8	ug/L			12/30/15 13:13	1
Methyl tert-butyl ether	ND		10	0.30	ug/L			12/30/15 13:13	1
Methylcyclohexane	ND		1.0	0.43	ug/L			12/30/15 13:13	1
Methylene Chloride	ND		5.0	2.5	ug/L			12/30/15 13:13	1
Styrene	ND		1.0	0.27	ug/L			12/30/15 13:13	1
Tetrachloroethene	ND		1.0	0.74	ug/L			12/30/15 13:13	1
Toluene	ND		1.0	0.48	ug/L			12/30/15 13:13	1
trans-1,2-Dichloroethene	0.75 J		1.0	0.37	ug/L			12/30/15 13:13	1
trans-1,3-Dichloropropene	ND		1.0	0.42	ug/L			12/30/15 13:13	1
Trichloroethene	0.74 J		1.0	0.48	ug/L			12/30/15 13:13	1
Trichlorofluoromethane	ND		1.0	0.42	ug/L			12/30/15 13:13	1
Vinyl chloride	1.2		1.0	0.50	ug/L			12/30/15 13:13	1
Xylenes, Total	ND		1.0	0.23	ug/L			12/30/15 13:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		70 - 130		12/30/15 13:13	1
1,2-Dichloroethane-d4 (Surr)	92		70 - 130		12/30/15 13:13	1
Dibromofluoromethane (Surr)	94		70 - 130		12/30/15 13:13	1
4-Bromofluorobenzene (Surr)	90		70 - 130		12/30/15 13:13	1

Client Sample ID: ALBW20348

Lab Sample ID: 680-120339-4

Date Collected: 12/18/15 12:28

Matrix: Water

Date Received: 12/22/15 10:25

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.37	ug/L			12/30/15 13:36	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.62	ug/L			12/30/15 13:36	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.36	ug/L			12/30/15 13:36	1
1,1,2-Trichloroethane	ND		1.0	0.33	ug/L			12/30/15 13:36	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			12/30/15 13:36	1
1,1-Dichloroethene	ND		1.0	0.36	ug/L			12/30/15 13:36	1

TestAmerica Savannah

Client Sample Results

Client: Parsons Corporation
 Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Client Sample ID: ALBW20348

Lab Sample ID: 680-120339-4

Date Collected: 12/18/15 12:28

Matrix: Water

Date Received: 12/22/15 10:25

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		5.0	2.5	ug/L			12/30/15 13:36	1
1,2-Dibromo-3-Chloropropane	ND		5.0	1.1	ug/L			12/30/15 13:36	1
1,2-Dibromoethane	ND		1.0	0.44	ug/L			12/30/15 13:36	1
1,2-Dichlorobenzene	ND		1.0	0.37	ug/L			12/30/15 13:36	1
1,2-Dichloroethane	ND		1.0	0.50	ug/L			12/30/15 13:36	1
1,2-Dichloropropane	ND		1.0	0.67	ug/L			12/30/15 13:36	1
1,3-Dichlorobenzene	ND		1.0	0.43	ug/L			12/30/15 13:36	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			12/30/15 13:36	1
2-Butanone	ND		10	3.4	ug/L			12/30/15 13:36	1
2-Hexanone	ND		10	2.0	ug/L			12/30/15 13:36	1
4-Methyl-2-pentanone	ND		10	2.1	ug/L			12/30/15 13:36	1
Acetone	ND		10	7.0	ug/L			12/30/15 13:36	1
Benzene	ND		1.0	0.43	ug/L			12/30/15 13:36	1
Bromodichloromethane	ND		1.0	0.44	ug/L			12/30/15 13:36	1
Bromoform	ND		1.0	0.43	ug/L			12/30/15 13:36	1
Bromomethane	ND		5.0	2.5	ug/L			12/30/15 13:36	1
Carbon disulfide	ND		2.0	1.0	ug/L			12/30/15 13:36	1
Carbon tetrachloride	ND		1.0	0.33	ug/L			12/30/15 13:36	1
Chlorobenzene	ND		1.0	0.26	ug/L			12/30/15 13:36	1
Chloroethane	ND		5.0	2.5	ug/L			12/30/15 13:36	1
Chloroform	ND		1.0	0.50	ug/L			12/30/15 13:36	1
Chloromethane	ND		1.0	0.40	ug/L			12/30/15 13:36	1
cis-1,2-Dichloroethene	78		1.0	0.41	ug/L			12/30/15 13:36	1
cis-1,3-Dichloropropene	ND		1.0	0.40	ug/L			12/30/15 13:36	1
Cyclohexane	ND		1.0	0.39	ug/L			12/30/15 13:36	1
Dibromochloromethane	ND		1.0	0.32	ug/L			12/30/15 13:36	1
Dichlorodifluoromethane	ND		1.0	0.60	ug/L			12/30/15 13:36	1
Ethylbenzene	ND		1.0	0.33	ug/L			12/30/15 13:36	1
Isopropylbenzene	ND		1.0	0.35	ug/L			12/30/15 13:36	1
Methyl acetate	ND		5.0	1.8	ug/L			12/30/15 13:36	1
Methyl tert-butyl ether	ND		10	0.30	ug/L			12/30/15 13:36	1
Methylcyclohexane	ND		1.0	0.43	ug/L			12/30/15 13:36	1
Methylene Chloride	ND		5.0	2.5	ug/L			12/30/15 13:36	1
Styrene	ND		1.0	0.27	ug/L			12/30/15 13:36	1
Tetrachloroethene	ND		1.0	0.74	ug/L			12/30/15 13:36	1
Toluene	ND		1.0	0.48	ug/L			12/30/15 13:36	1
trans-1,2-Dichloroethene	6.0		1.0	0.37	ug/L			12/30/15 13:36	1
trans-1,3-Dichloropropene	ND		1.0	0.42	ug/L			12/30/15 13:36	1
Trichloroethene	0.63 J		1.0	0.48	ug/L			12/30/15 13:36	1
Trichlorofluoromethane	ND		1.0	0.42	ug/L			12/30/15 13:36	1
Vinyl chloride	91		1.0	0.50	ug/L			12/30/15 13:36	1
Xylenes, Total	ND		1.0	0.23	ug/L			12/30/15 13:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		70 - 130		12/30/15 13:36	1
1,2-Dichloroethane-d4 (Surr)	91		70 - 130		12/30/15 13:36	1
Dibromofluoromethane (Surr)	94		70 - 130		12/30/15 13:36	1
4-Bromofluorobenzene (Surr)	92		70 - 130		12/30/15 13:36	1

TestAmerica Savannah

Client Sample Results

Client: Parsons Corporation
 Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Client Sample ID: ALBW20349

Lab Sample ID: 680-120339-5

Date Collected: 12/18/15 09:40

Matrix: Water

Date Received: 12/22/15 10:25

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.37	ug/L			12/30/15 13:59	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.62	ug/L			12/30/15 13:59	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.36	ug/L			12/30/15 13:59	1
1,1,2-Trichloroethane	ND		1.0	0.33	ug/L			12/30/15 13:59	1
1,1-Dichloroethane	0.62	J	1.0	0.38	ug/L			12/30/15 13:59	1
1,1-Dichloroethene	ND		1.0	0.36	ug/L			12/30/15 13:59	1
1,2,4-Trichlorobenzene	ND		5.0	2.5	ug/L			12/30/15 13:59	1
1,2-Dibromo-3-Chloropropane	ND		5.0	1.1	ug/L			12/30/15 13:59	1
1,2-Dibromoethane	ND		1.0	0.44	ug/L			12/30/15 13:59	1
1,2-Dichlorobenzene	ND		1.0	0.37	ug/L			12/30/15 13:59	1
1,2-Dichloroethane	ND		1.0	0.50	ug/L			12/30/15 13:59	1
1,2-Dichloropropane	ND		1.0	0.67	ug/L			12/30/15 13:59	1
1,3-Dichlorobenzene	ND		1.0	0.43	ug/L			12/30/15 13:59	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			12/30/15 13:59	1
2-Butanone	ND		10	3.4	ug/L			12/30/15 13:59	1
2-Hexanone	ND		10	2.0	ug/L			12/30/15 13:59	1
4-Methyl-2-pentanone	ND		10	2.1	ug/L			12/30/15 13:59	1
Acetone	ND		10	7.0	ug/L			12/30/15 13:59	1
Benzene	ND		1.0	0.43	ug/L			12/30/15 13:59	1
Bromodichloromethane	ND		1.0	0.44	ug/L			12/30/15 13:59	1
Bromoform	ND		1.0	0.43	ug/L			12/30/15 13:59	1
Bromomethane	ND		5.0	2.5	ug/L			12/30/15 13:59	1
Carbon disulfide	ND		2.0	1.0	ug/L			12/30/15 13:59	1
Carbon tetrachloride	ND		1.0	0.33	ug/L			12/30/15 13:59	1
Chlorobenzene	ND		1.0	0.26	ug/L			12/30/15 13:59	1
Chloroethane	ND		5.0	2.5	ug/L			12/30/15 13:59	1
Chloroform	ND		1.0	0.50	ug/L			12/30/15 13:59	1
Chloromethane	ND		1.0	0.40	ug/L			12/30/15 13:59	1
cis-1,2-Dichloroethene	18		1.0	0.41	ug/L			12/30/15 13:59	1
cis-1,3-Dichloropropene	ND		1.0	0.40	ug/L			12/30/15 13:59	1
Cyclohexane	ND		1.0	0.39	ug/L			12/30/15 13:59	1
Dibromochloromethane	ND		1.0	0.32	ug/L			12/30/15 13:59	1
Dichlorodifluoromethane	ND		1.0	0.60	ug/L			12/30/15 13:59	1
Ethylbenzene	ND		1.0	0.33	ug/L			12/30/15 13:59	1
Isopropylbenzene	ND		1.0	0.35	ug/L			12/30/15 13:59	1
Methyl acetate	ND		5.0	1.8	ug/L			12/30/15 13:59	1
Methyl tert-butyl ether	ND		10	0.30	ug/L			12/30/15 13:59	1
Methylcyclohexane	ND		1.0	0.43	ug/L			12/30/15 13:59	1
Methylene Chloride	ND		5.0	2.5	ug/L			12/30/15 13:59	1
Styrene	ND		1.0	0.27	ug/L			12/30/15 13:59	1
Tetrachloroethene	ND		1.0	0.74	ug/L			12/30/15 13:59	1
Toluene	ND		1.0	0.48	ug/L			12/30/15 13:59	1
trans-1,2-Dichloroethene	1.1		1.0	0.37	ug/L			12/30/15 13:59	1
trans-1,3-Dichloropropene	ND		1.0	0.42	ug/L			12/30/15 13:59	1
Trichloroethene	3.0		1.0	0.48	ug/L			12/30/15 13:59	1
Trichlorofluoromethane	ND		1.0	0.42	ug/L			12/30/15 13:59	1
Vinyl chloride	2.4		1.0	0.50	ug/L			12/30/15 13:59	1
Xylenes, Total	ND		1.0	0.23	ug/L			12/30/15 13:59	1

TestAmerica Savannah

Client Sample Results

Client: Parsons Corporation
 Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Client Sample ID: ALBW20349

Lab Sample ID: 680-120339-5

Date Collected: 12/18/15 09:40

Matrix: Water

Date Received: 12/22/15 10:25

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		70 - 130		12/30/15 13:59	1
1,2-Dichloroethane-d4 (Surr)	90		70 - 130		12/30/15 13:59	1
Dibromofluoromethane (Surr)	94		70 - 130		12/30/15 13:59	1
4-Bromofluorobenzene (Surr)	91		70 - 130		12/30/15 13:59	1

Client Sample ID: ALBW20350

Lab Sample ID: 680-120339-6

Date Collected: 12/18/15 14:10

Matrix: Water

Date Received: 12/22/15 10:25

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.37	ug/L			12/30/15 14:21	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.62	ug/L			12/30/15 14:21	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.36	ug/L			12/30/15 14:21	1
1,1,2-Trichloroethane	ND		1.0	0.33	ug/L			12/30/15 14:21	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			12/30/15 14:21	1
1,1-Dichloroethene	ND		1.0	0.36	ug/L			12/30/15 14:21	1
1,2,4-Trichlorobenzene	ND		5.0	2.5	ug/L			12/30/15 14:21	1
1,2-Dibromo-3-Chloropropane	ND		5.0	1.1	ug/L			12/30/15 14:21	1
1,2-Dibromoethane	ND		1.0	0.44	ug/L			12/30/15 14:21	1
1,2-Dichlorobenzene	ND		1.0	0.37	ug/L			12/30/15 14:21	1
1,2-Dichloroethane	ND		1.0	0.50	ug/L			12/30/15 14:21	1
1,2-Dichloropropane	ND		1.0	0.67	ug/L			12/30/15 14:21	1
1,3-Dichlorobenzene	ND		1.0	0.43	ug/L			12/30/15 14:21	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			12/30/15 14:21	1
2-Butanone	ND		10	3.4	ug/L			12/30/15 14:21	1
2-Hexanone	ND		10	2.0	ug/L			12/30/15 14:21	1
4-Methyl-2-pentanone	ND		10	2.1	ug/L			12/30/15 14:21	1
Acetone	ND		10	7.0	ug/L			12/30/15 14:21	1
Benzene	ND		1.0	0.43	ug/L			12/30/15 14:21	1
Bromodichloromethane	ND		1.0	0.44	ug/L			12/30/15 14:21	1
Bromoform	ND		1.0	0.43	ug/L			12/30/15 14:21	1
Bromomethane	ND		5.0	2.5	ug/L			12/30/15 14:21	1
Carbon disulfide	ND		2.0	1.0	ug/L			12/30/15 14:21	1
Carbon tetrachloride	ND		1.0	0.33	ug/L			12/30/15 14:21	1
Chlorobenzene	ND		1.0	0.26	ug/L			12/30/15 14:21	1
Chloroethane	ND		5.0	2.5	ug/L			12/30/15 14:21	1
Chloroform	ND		1.0	0.50	ug/L			12/30/15 14:21	1
Chloromethane	ND		1.0	0.40	ug/L			12/30/15 14:21	1
cis-1,2-Dichloroethene	1.7		1.0	0.41	ug/L			12/30/15 14:21	1
cis-1,3-Dichloropropene	ND		1.0	0.40	ug/L			12/30/15 14:21	1
Cyclohexane	ND		1.0	0.39	ug/L			12/30/15 14:21	1
Dibromochloromethane	ND		1.0	0.32	ug/L			12/30/15 14:21	1
Dichlorodifluoromethane	ND		1.0	0.60	ug/L			12/30/15 14:21	1
Ethylbenzene	ND		1.0	0.33	ug/L			12/30/15 14:21	1
Isopropylbenzene	ND		1.0	0.35	ug/L			12/30/15 14:21	1
Methyl acetate	ND		5.0	1.8	ug/L			12/30/15 14:21	1
Methyl tert-butyl ether	ND		10	0.30	ug/L			12/30/15 14:21	1
Methylcyclohexane	ND		1.0	0.43	ug/L			12/30/15 14:21	1
Methylene Chloride	ND		5.0	2.5	ug/L			12/30/15 14:21	1

TestAmerica Savannah

Client Sample Results

Client: Parsons Corporation
 Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Client Sample ID: ALBW20350

Lab Sample ID: 680-120339-6

Date Collected: 12/18/15 14:10

Matrix: Water

Date Received: 12/22/15 10:25

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Styrene	ND		1.0	0.27	ug/L			12/30/15 14:21	1
Tetrachloroethene	ND		1.0	0.74	ug/L			12/30/15 14:21	1
Toluene	ND		1.0	0.48	ug/L			12/30/15 14:21	1
trans-1,2-Dichloroethene	ND		1.0	0.37	ug/L			12/30/15 14:21	1
trans-1,3-Dichloropropene	ND		1.0	0.42	ug/L			12/30/15 14:21	1
Trichloroethene	2.6		1.0	0.48	ug/L			12/30/15 14:21	1
Trichlorofluoromethane	ND		1.0	0.42	ug/L			12/30/15 14:21	1
Vinyl chloride	ND		1.0	0.50	ug/L			12/30/15 14:21	1
Xylenes, Total	ND		1.0	0.23	ug/L			12/30/15 14:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	100		70 - 130					12/30/15 14:21	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	93		70 - 130					12/30/15 14:21	1
<i>Dibromofluoromethane (Surr)</i>	94		70 - 130					12/30/15 14:21	1
<i>4-Bromofluorobenzene (Surr)</i>	91		70 - 130					12/30/15 14:21	1

Client Sample ID: ALBW20351

Lab Sample ID: 680-120339-7

Date Collected: 12/19/15 09:10

Matrix: Water

Date Received: 12/22/15 10:25

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.37	ug/L			12/30/15 14:44	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.62	ug/L			12/30/15 14:44	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.36	ug/L			12/30/15 14:44	1
1,1,2-Trichloroethane	ND		1.0	0.33	ug/L			12/30/15 14:44	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			12/30/15 14:44	1
1,1-Dichloroethene	ND		1.0	0.36	ug/L			12/30/15 14:44	1
1,2,4-Trichlorobenzene	ND		5.0	2.5	ug/L			12/30/15 14:44	1
1,2-Dibromo-3-Chloropropane	ND		5.0	1.1	ug/L			12/30/15 14:44	1
1,2-Dibromoethane	ND		1.0	0.44	ug/L			12/30/15 14:44	1
1,2-Dichlorobenzene	ND		1.0	0.37	ug/L			12/30/15 14:44	1
1,2-Dichloroethane	ND		1.0	0.50	ug/L			12/30/15 14:44	1
1,2-Dichloropropane	ND		1.0	0.67	ug/L			12/30/15 14:44	1
1,3-Dichlorobenzene	ND		1.0	0.43	ug/L			12/30/15 14:44	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			12/30/15 14:44	1
2-Butanone	ND		10	3.4	ug/L			12/30/15 14:44	1
2-Hexanone	ND		10	2.0	ug/L			12/30/15 14:44	1
4-Methyl-2-pentanone	ND		10	2.1	ug/L			12/30/15 14:44	1
Acetone	ND		10	7.0	ug/L			12/30/15 14:44	1
Benzene	ND		1.0	0.43	ug/L			12/30/15 14:44	1
Bromodichloromethane	ND		1.0	0.44	ug/L			12/30/15 14:44	1
Bromoform	ND		1.0	0.43	ug/L			12/30/15 14:44	1
Bromomethane	ND		5.0	2.5	ug/L			12/30/15 14:44	1
Carbon disulfide	ND		2.0	1.0	ug/L			12/30/15 14:44	1
Carbon tetrachloride	ND		1.0	0.33	ug/L			12/30/15 14:44	1
Chlorobenzene	ND		1.0	0.26	ug/L			12/30/15 14:44	1
Chloroethane	ND		5.0	2.5	ug/L			12/30/15 14:44	1
Chloroform	ND		1.0	0.50	ug/L			12/30/15 14:44	1
Chloromethane	ND		1.0	0.40	ug/L			12/30/15 14:44	1

TestAmerica Savannah

Client Sample Results

Client: Parsons Corporation
Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Client Sample ID: ALBW20351

Lab Sample ID: 680-120339-7

Date Collected: 12/19/15 09:10

Matrix: Water

Date Received: 12/22/15 10:25

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	1.4		1.0	0.41	ug/L			12/30/15 14:44	1
cis-1,3-Dichloropropene	ND		1.0	0.40	ug/L			12/30/15 14:44	1
Cyclohexane	ND		1.0	0.39	ug/L			12/30/15 14:44	1
Dibromochloromethane	ND		1.0	0.32	ug/L			12/30/15 14:44	1
Dichlorodifluoromethane	ND		1.0	0.60	ug/L			12/30/15 14:44	1
Ethylbenzene	ND		1.0	0.33	ug/L			12/30/15 14:44	1
Isopropylbenzene	ND		1.0	0.35	ug/L			12/30/15 14:44	1
Methyl acetate	ND		5.0	1.8	ug/L			12/30/15 14:44	1
Methyl tert-butyl ether	ND		10	0.30	ug/L			12/30/15 14:44	1
Methylcyclohexane	ND		1.0	0.43	ug/L			12/30/15 14:44	1
Methylene Chloride	ND		5.0	2.5	ug/L			12/30/15 14:44	1
Styrene	ND		1.0	0.27	ug/L			12/30/15 14:44	1
Tetrachloroethene	ND		1.0	0.74	ug/L			12/30/15 14:44	1
Toluene	ND		1.0	0.48	ug/L			12/30/15 14:44	1
trans-1,2-Dichloroethene	ND		1.0	0.37	ug/L			12/30/15 14:44	1
trans-1,3-Dichloropropene	ND		1.0	0.42	ug/L			12/30/15 14:44	1
Trichloroethene	ND		1.0	0.48	ug/L			12/30/15 14:44	1
Trichlorofluoromethane	ND		1.0	0.42	ug/L			12/30/15 14:44	1
Vinyl chloride	ND		1.0	0.50	ug/L			12/30/15 14:44	1
Xylenes, Total	ND		1.0	0.23	ug/L			12/30/15 14:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	100		70 - 130		12/30/15 14:44	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	94		70 - 130		12/30/15 14:44	1
<i>Dibromofluoromethane (Surr)</i>	95		70 - 130		12/30/15 14:44	1
<i>4-Bromofluorobenzene (Surr)</i>	92		70 - 130		12/30/15 14:44	1

Client Sample ID: ALBW00124

Lab Sample ID: 680-120339-8

Date Collected: 12/18/15 15:00

Matrix: Water

Date Received: 12/22/15 10:25

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.37	ug/L			12/30/15 15:07	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.62	ug/L			12/30/15 15:07	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.36	ug/L			12/30/15 15:07	1
1,1,2-Trichloroethane	ND		1.0	0.33	ug/L			12/30/15 15:07	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			12/30/15 15:07	1
1,1-Dichloroethene	ND		1.0	0.36	ug/L			12/30/15 15:07	1
1,2,4-Trichlorobenzene	ND		5.0	2.5	ug/L			12/30/15 15:07	1
1,2-Dibromo-3-Chloropropane	ND		5.0	1.1	ug/L			12/30/15 15:07	1
1,2-Dibromoethane	ND		1.0	0.44	ug/L			12/30/15 15:07	1
1,2-Dichlorobenzene	ND		1.0	0.37	ug/L			12/30/15 15:07	1
1,2-Dichloroethane	ND		1.0	0.50	ug/L			12/30/15 15:07	1
1,2-Dichloropropane	ND		1.0	0.67	ug/L			12/30/15 15:07	1
1,3-Dichlorobenzene	ND		1.0	0.43	ug/L			12/30/15 15:07	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			12/30/15 15:07	1
2-Butanone	ND		10	3.4	ug/L			12/30/15 15:07	1
2-Hexanone	ND		10	2.0	ug/L			12/30/15 15:07	1
4-Methyl-2-pentanone	ND		10	2.1	ug/L			12/30/15 15:07	1

TestAmerica Savannah

Client Sample Results

Client: Parsons Corporation
 Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Client Sample ID: ALBW00124

Lab Sample ID: 680-120339-8

Date Collected: 12/18/15 15:00

Matrix: Water

Date Received: 12/22/15 10:25

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		10	7.0	ug/L			12/30/15 15:07	1
Benzene	ND		1.0	0.43	ug/L			12/30/15 15:07	1
Bromodichloromethane	ND		1.0	0.44	ug/L			12/30/15 15:07	1
Bromoform	ND		1.0	0.43	ug/L			12/30/15 15:07	1
Bromomethane	ND		5.0	2.5	ug/L			12/30/15 15:07	1
Carbon disulfide	ND		2.0	1.0	ug/L			12/30/15 15:07	1
Carbon tetrachloride	ND		1.0	0.33	ug/L			12/30/15 15:07	1
Chlorobenzene	ND		1.0	0.26	ug/L			12/30/15 15:07	1
Chloroethane	ND		5.0	2.5	ug/L			12/30/15 15:07	1
Chloroform	ND		1.0	0.50	ug/L			12/30/15 15:07	1
Chloromethane	ND		1.0	0.40	ug/L			12/30/15 15:07	1
cis-1,2-Dichloroethene	ND		1.0	0.41	ug/L			12/30/15 15:07	1
cis-1,3-Dichloropropene	ND		1.0	0.40	ug/L			12/30/15 15:07	1
Cyclohexane	ND		1.0	0.39	ug/L			12/30/15 15:07	1
Dibromochloromethane	ND		1.0	0.32	ug/L			12/30/15 15:07	1
Dichlorodifluoromethane	ND		1.0	0.60	ug/L			12/30/15 15:07	1
Ethylbenzene	ND		1.0	0.33	ug/L			12/30/15 15:07	1
Isopropylbenzene	ND		1.0	0.35	ug/L			12/30/15 15:07	1
Methyl acetate	ND		5.0	1.8	ug/L			12/30/15 15:07	1
Methyl tert-butyl ether	ND		10	0.30	ug/L			12/30/15 15:07	1
Methylcyclohexane	ND		1.0	0.43	ug/L			12/30/15 15:07	1
Methylene Chloride	ND		5.0	2.5	ug/L			12/30/15 15:07	1
Styrene	ND		1.0	0.27	ug/L			12/30/15 15:07	1
Tetrachloroethene	ND		1.0	0.74	ug/L			12/30/15 15:07	1
Toluene	ND		1.0	0.48	ug/L			12/30/15 15:07	1
trans-1,2-Dichloroethene	ND		1.0	0.37	ug/L			12/30/15 15:07	1
trans-1,3-Dichloropropene	ND		1.0	0.42	ug/L			12/30/15 15:07	1
Trichloroethene	ND		1.0	0.48	ug/L			12/30/15 15:07	1
Trichlorofluoromethane	ND		1.0	0.42	ug/L			12/30/15 15:07	1
Vinyl chloride	ND		1.0	0.50	ug/L			12/30/15 15:07	1
Xylenes, Total	ND		1.0	0.23	ug/L			12/30/15 15:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		70 - 130		12/30/15 15:07	1
1,2-Dichloroethane-d4 (Surr)	93		70 - 130		12/30/15 15:07	1
Dibromofluoromethane (Surr)	94		70 - 130		12/30/15 15:07	1
4-Bromofluorobenzene (Surr)	93		70 - 130		12/30/15 15:07	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.40	mg/L			01/04/16 13:36	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0	0.43	mg/L			01/05/16 00:03	1

Client Sample Results

Client: Parsons Corporation
 Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Client Sample ID: ALBW00046

Lab Sample ID: 680-120339-9

Date Collected: 12/21/15 11:25

Matrix: Water

Date Received: 12/22/15 10:25

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.37	ug/L			12/30/15 12:06	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.62	ug/L			12/30/15 12:06	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.36	ug/L			12/30/15 12:06	1
1,1,2-Trichloroethane	ND		1.0	0.33	ug/L			12/30/15 12:06	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			12/30/15 12:06	1
1,1-Dichloroethene	ND		1.0	0.36	ug/L			12/30/15 12:06	1
1,2,4-Trichlorobenzene	ND		5.0	2.5	ug/L			12/30/15 12:06	1
1,2-Dibromo-3-Chloropropane	ND		5.0	1.1	ug/L			12/30/15 12:06	1
1,2-Dibromoethane	ND		1.0	0.44	ug/L			12/30/15 12:06	1
1,2-Dichlorobenzene	ND		1.0	0.37	ug/L			12/30/15 12:06	1
1,2-Dichloroethane	ND		1.0	0.50	ug/L			12/30/15 12:06	1
1,2-Dichloropropane	ND		1.0	0.67	ug/L			12/30/15 12:06	1
1,3-Dichlorobenzene	ND		1.0	0.43	ug/L			12/30/15 12:06	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			12/30/15 12:06	1
2-Butanone	ND		10	3.4	ug/L			12/30/15 12:06	1
2-Hexanone	ND		10	2.0	ug/L			12/30/15 12:06	1
4-Methyl-2-pentanone	ND		10	2.1	ug/L			12/30/15 12:06	1
Acetone	ND		10	7.0	ug/L			12/30/15 12:06	1
Benzene	ND		1.0	0.43	ug/L			12/30/15 12:06	1
Bromodichloromethane	ND		1.0	0.44	ug/L			12/30/15 12:06	1
Bromoform	ND		1.0	0.43	ug/L			12/30/15 12:06	1
Bromomethane	ND		5.0	2.5	ug/L			12/30/15 12:06	1
Carbon disulfide	ND		2.0	1.0	ug/L			12/30/15 12:06	1
Carbon tetrachloride	ND		1.0	0.33	ug/L			12/30/15 12:06	1
Chlorobenzene	ND		1.0	0.26	ug/L			12/30/15 12:06	1
Chloroethane	ND		5.0	2.5	ug/L			12/30/15 12:06	1
Chloroform	ND		1.0	0.50	ug/L			12/30/15 12:06	1
Chloromethane	ND		1.0	0.40	ug/L			12/30/15 12:06	1
cis-1,2-Dichloroethene	ND		1.0	0.41	ug/L			12/30/15 12:06	1
cis-1,3-Dichloropropene	ND		1.0	0.40	ug/L			12/30/15 12:06	1
Cyclohexane	ND		1.0	0.39	ug/L			12/30/15 12:06	1
Dibromochloromethane	ND		1.0	0.32	ug/L			12/30/15 12:06	1
Dichlorodifluoromethane	ND		1.0	0.60	ug/L			12/30/15 12:06	1
Ethylbenzene	ND		1.0	0.33	ug/L			12/30/15 12:06	1
Isopropylbenzene	ND		1.0	0.35	ug/L			12/30/15 12:06	1
Methyl acetate	ND		5.0	1.8	ug/L			12/30/15 12:06	1
Methyl tert-butyl ether	ND		10	0.30	ug/L			12/30/15 12:06	1
Methylcyclohexane	ND		1.0	0.43	ug/L			12/30/15 12:06	1
Methylene Chloride	ND		5.0	2.5	ug/L			12/30/15 12:06	1
Styrene	ND		1.0	0.27	ug/L			12/30/15 12:06	1
Tetrachloroethene	ND		1.0	0.74	ug/L			12/30/15 12:06	1
Toluene	ND		1.0	0.48	ug/L			12/30/15 12:06	1
trans-1,2-Dichloroethene	ND		1.0	0.37	ug/L			12/30/15 12:06	1
trans-1,3-Dichloropropene	ND		1.0	0.42	ug/L			12/30/15 12:06	1
Trichloroethene	ND		1.0	0.48	ug/L			12/30/15 12:06	1
Trichlorofluoromethane	ND		1.0	0.42	ug/L			12/30/15 12:06	1
Vinyl chloride	ND		1.0	0.50	ug/L			12/30/15 12:06	1
Xylenes, Total	ND		1.0	0.23	ug/L			12/30/15 12:06	1

TestAmerica Savannah

Client Sample Results

Client: Parsons Corporation
Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Client Sample ID: ALBW00046

Lab Sample ID: 680-120339-9

Date Collected: 12/21/15 11:25

Matrix: Water

Date Received: 12/22/15 10:25

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>Toluene-d8 (Surr)</i>	99		70 - 130		12/30/15 12:06	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	92		70 - 130		12/30/15 12:06	1
<i>Dibromofluoromethane (Surr)</i>	94		70 - 130		12/30/15 12:06	1
<i>4-Bromofluorobenzene (Surr)</i>	92		70 - 130		12/30/15 12:06	1

Surrogate Summary

Client: Parsons Corporation
 Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (70-130)	12DCE (70-130)	DBFM (70-130)	BFB (70-130)
680-120227-1	ALBW20343	102	103	101	97
680-120227-2	ALBW20347	101	103	101	95
680-120227-2 - DL	ALBW20347	99	103	102	99
680-120227-3	ALBW20352	102	103	101	96
680-120227-3 MS	ALBW20352MS	115	113	110	102
680-120227-3 MSD	ALBW20352MSD	104	102	100	94
680-120227-4	ALBW20353	102	102	101	97
680-120227-5	ALBW20354	101	101	102	95
680-120227-6	ALBW20355	101	102	101	97
680-120227-7	ALBW20356	100	101	99	95
680-120227-8	ALBW20357	100	104	102	94
680-120227-9	ALBW00045	102	102	104	96
680-120339-1	ALBW20344	101	91	93	92
680-120339-2	ALBW20345	100	92	94	93
680-120339-3	ALBW20346	99	92	94	90
680-120339-4	ALBW20348	100	91	94	92
680-120339-5	ALBW20349	101	90	94	91
680-120339-6	ALBW20350	100	93	94	91
680-120339-7	ALBW20351	100	94	95	92
680-120339-8	ALBW00124	99	93	94	93
680-120339-9	ALBW00046	99	92	94	92
LCS 680-416359/4	Lab Control Sample	107	105	104	96
LCS 680-416549/4	Lab Control Sample	100	108	107	102
LCSD 680-416359/5	Lab Control Sample Dup	106	107	104	98
LCSD 680-416549/5	Lab Control Sample Dup	91	101	99	96
MB 680-416359/9	Method Blank	102	99	98	98
MB 680-416549/9	Method Blank	99	91	95	92

Surrogate Legend

TOL = Toluene-d8 (Surr)

12DCE = 1,2-Dichloroethane-d4 (Surr)

DBFM = Dibromofluoromethane (Surr)

BFB = 4-Bromofluorobenzene (Surr)

QC Sample Results

Client: Parsons Corporation
 Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-416359/9
Matrix: Water
Analysis Batch: 416359

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.37	ug/L			12/29/15 10:43	1
1,1,1,2,2-Tetrachloroethane	ND		1.0	0.62	ug/L			12/29/15 10:43	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.36	ug/L			12/29/15 10:43	1
1,1,2-Trichloroethane	ND		1.0	0.33	ug/L			12/29/15 10:43	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			12/29/15 10:43	1
1,1-Dichloroethene	ND		1.0	0.36	ug/L			12/29/15 10:43	1
1,2,4-Trichlorobenzene	ND		5.0	2.5	ug/L			12/29/15 10:43	1
1,2-Dibromo-3-Chloropropane	ND		5.0	1.1	ug/L			12/29/15 10:43	1
1,2-Dibromoethane	ND		1.0	0.44	ug/L			12/29/15 10:43	1
1,2-Dichlorobenzene	ND		1.0	0.37	ug/L			12/29/15 10:43	1
1,2-Dichloroethane	ND		1.0	0.50	ug/L			12/29/15 10:43	1
1,2-Dichloropropane	ND		1.0	0.67	ug/L			12/29/15 10:43	1
1,3-Dichlorobenzene	ND		1.0	0.43	ug/L			12/29/15 10:43	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			12/29/15 10:43	1
2-Butanone	ND		10	3.4	ug/L			12/29/15 10:43	1
2-Hexanone	ND		10	2.0	ug/L			12/29/15 10:43	1
4-Methyl-2-pentanone	ND		10	2.1	ug/L			12/29/15 10:43	1
Acetone	ND		10	7.0	ug/L			12/29/15 10:43	1
Benzene	ND		1.0	0.43	ug/L			12/29/15 10:43	1
Bromodichloromethane	ND		1.0	0.44	ug/L			12/29/15 10:43	1
Bromoform	ND		1.0	0.43	ug/L			12/29/15 10:43	1
Bromomethane	ND		5.0	2.5	ug/L			12/29/15 10:43	1
Carbon disulfide	ND		2.0	1.0	ug/L			12/29/15 10:43	1
Carbon tetrachloride	ND		1.0	0.33	ug/L			12/29/15 10:43	1
Chlorobenzene	ND		1.0	0.26	ug/L			12/29/15 10:43	1
Chloroethane	ND		5.0	2.5	ug/L			12/29/15 10:43	1
Chloroform	ND		1.0	0.50	ug/L			12/29/15 10:43	1
Chloromethane	ND		1.0	0.40	ug/L			12/29/15 10:43	1
cis-1,2-Dichloroethene	ND		1.0	0.41	ug/L			12/29/15 10:43	1
cis-1,3-Dichloropropene	ND		1.0	0.40	ug/L			12/29/15 10:43	1
Cyclohexane	ND		1.0	0.39	ug/L			12/29/15 10:43	1
Dibromochloromethane	ND		1.0	0.32	ug/L			12/29/15 10:43	1
Dichlorodifluoromethane	ND		1.0	0.60	ug/L			12/29/15 10:43	1
Ethylbenzene	ND		1.0	0.33	ug/L			12/29/15 10:43	1
Isopropylbenzene	ND		1.0	0.35	ug/L			12/29/15 10:43	1
Methyl acetate	ND		5.0	1.8	ug/L			12/29/15 10:43	1
Methyl tert-butyl ether	ND		10	0.30	ug/L			12/29/15 10:43	1
Methylcyclohexane	ND		1.0	0.43	ug/L			12/29/15 10:43	1
Methylene Chloride	ND		5.0	2.5	ug/L			12/29/15 10:43	1
Styrene	ND		1.0	0.27	ug/L			12/29/15 10:43	1
Tetrachloroethene	ND		1.0	0.74	ug/L			12/29/15 10:43	1
Toluene	ND		1.0	0.48	ug/L			12/29/15 10:43	1
trans-1,2-Dichloroethene	ND		1.0	0.37	ug/L			12/29/15 10:43	1
trans-1,3-Dichloropropene	ND		1.0	0.42	ug/L			12/29/15 10:43	1
Trichloroethene	ND		1.0	0.48	ug/L			12/29/15 10:43	1
Trichlorofluoromethane	ND		1.0	0.42	ug/L			12/29/15 10:43	1
Vinyl chloride	ND		1.0	0.50	ug/L			12/29/15 10:43	1
Xylenes, Total	ND		1.0	0.23	ug/L			12/29/15 10:43	1

TestAmerica Savannah

QC Sample Results

Client: Parsons Corporation
 Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	102		70 - 130		12/29/15 10:43	1
1,2-Dichloroethane-d4 (Surr)	99		70 - 130		12/29/15 10:43	1
Dibromofluoromethane (Surr)	98		70 - 130		12/29/15 10:43	1
4-Bromofluorobenzene (Surr)	98		70 - 130		12/29/15 10:43	1

Lab Sample ID: LCS 680-416359/4
Matrix: Water
Analysis Batch: 416359

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.
							Limits
1,1,1-Trichloroethane	50.0	50.1		ug/L		100	74 - 128
1,1,2,2-Tetrachloroethane	50.0	51.8		ug/L		104	72 - 128
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	49.7		ug/L		99	65 - 131
1,1,2-Trichloroethane	50.0	55.4		ug/L		111	79 - 125
1,1-Dichloroethane	50.0	45.6		ug/L		91	80 - 120
1,1-Dichloroethene	50.0	49.3		ug/L		99	74 - 125
1,2,4-Trichlorobenzene	50.0	41.5		ug/L		83	77 - 131
1,2-Dibromo-3-Chloropropane	50.0	44.2		ug/L		88	59 - 141
1,2-Dibromoethane	50.0	57.0		ug/L		114	77 - 131
1,2-Dichlorobenzene	50.0	49.7		ug/L		99	80 - 120
1,2-Dichloroethane	50.0	54.1		ug/L		108	75 - 130
1,2-Dichloropropane	50.0	51.8		ug/L		104	80 - 123
1,3-Dichlorobenzene	50.0	47.8		ug/L		96	80 - 120
1,4-Dichlorobenzene	50.0	47.7		ug/L		95	80 - 120
2-Butanone	250	299		ug/L		120	75 - 133
2-Hexanone	250	312		ug/L		125	70 - 141
4-Methyl-2-pentanone	250	310		ug/L		124	75 - 135
Benzene	50.0	49.4		ug/L		99	73 - 131
Bromodichloromethane	50.0	54.3		ug/L		109	77 - 129
Bromoform	50.0	45.4		ug/L		91	69 - 135
Bromomethane	50.0	47.5		ug/L		95	20 - 180
Carbon disulfide	50.0	57.5		ug/L		115	73 - 127
Carbon tetrachloride	50.0	53.1		ug/L		106	75 - 130
Chlorobenzene	50.0	45.4		ug/L		91	80 - 120
Chloroethane	50.0	46.7		ug/L		93	50 - 151
Chloroform	50.0	50.1		ug/L		100	79 - 122
Chloromethane	50.0	61.9		ug/L		124	63 - 126
cis-1,2-Dichloroethene	50.0	51.7		ug/L		103	80 - 122
cis-1,3-Dichloropropene	50.0	56.0		ug/L		112	80 - 133
Cyclohexane	50.0	50.3		ug/L		101	69 - 130
Dibromochloromethane	50.0	48.2		ug/L		96	71 - 136
Dichlorodifluoromethane	50.0	62.6		ug/L		125	51 - 140
Ethylbenzene	50.0	46.5		ug/L		93	80 - 120
Isopropylbenzene	50.0	50.1		ug/L		100	80 - 120
Methyl acetate	250	284		ug/L		114	66 - 134
Methyl tert-butyl ether	50.0	55.2		ug/L		110	74 - 135
Methylcyclohexane	50.0	53.5		ug/L		107	75 - 127
Methylene Chloride	50.0	63.5		ug/L		127	76 - 129
Styrene	50.0	50.5		ug/L		101	80 - 122
Tetrachloroethene	50.0	51.5		ug/L		103	77 - 123
Toluene	50.0	52.5		ug/L		105	80 - 122
trans-1,2-Dichloroethene	50.0	52.3		ug/L		105	78 - 123
trans-1,3-Dichloropropene	50.0	57.4		ug/L		115	74 - 140

TestAmerica Savannah

QC Sample Results

Client: Parsons Corporation
 Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-416359/4
Matrix: Water
Analysis Batch: 416359

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichloroethene	50.0	49.7		ug/L		99	80 - 123
Trichlorofluoromethane	50.0	52.5		ug/L		105	58 - 145
Vinyl chloride	50.0	42.4		ug/L		85	68 - 132
Xylenes, Total	100	97.2		ug/L		97	80 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	107		70 - 130
1,2-Dichloroethane-d4 (Surr)	105		70 - 130
Dibromofluoromethane (Surr)	104		70 - 130
4-Bromofluorobenzene (Surr)	96		70 - 130

Lab Sample ID: LCSD 680-416359/5
Matrix: Water
Analysis Batch: 416359

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	50.0	49.3		ug/L		99	74 - 128	2	20
1,1,1,2-Tetrachloroethane	50.0	53.4		ug/L		107	72 - 128	3	20
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	48.0		ug/L		96	65 - 131	3	30
1,1,2-Trichloroethane	50.0	55.9		ug/L		112	79 - 125	1	20
1,1-Dichloroethane	50.0	44.5		ug/L		89	80 - 120	2	20
1,1-Dichloroethene	50.0	47.2		ug/L		94	74 - 125	4	20
1,2,4-Trichlorobenzene	50.0	41.5		ug/L		83	77 - 131	0	20
1,2-Dibromo-3-Chloropropane	50.0	45.5		ug/L		91	59 - 141	3	30
1,2-Dibromoethane	50.0	57.7		ug/L		115	77 - 131	1	30
1,2-Dichlorobenzene	50.0	50.3		ug/L		101	80 - 120	1	20
1,2-Dichloroethane	50.0	53.9		ug/L		108	75 - 130	0	20
1,2-Dichloropropane	50.0	52.2		ug/L		104	80 - 123	1	20
1,3-Dichlorobenzene	50.0	48.1		ug/L		96	80 - 120	1	20
1,4-Dichlorobenzene	50.0	48.0		ug/L		96	80 - 120	1	20
2-Butanone	250	305		ug/L		122	75 - 133	2	30
2-Hexanone	250	315		ug/L		126	70 - 141	1	40
4-Methyl-2-pentanone	250	316		ug/L		126	75 - 135	2	30
Benzene	50.0	49.3		ug/L		99	73 - 131	0	30
Bromodichloromethane	50.0	53.7		ug/L		107	77 - 129	1	20
Bromoform	50.0	45.9		ug/L		92	69 - 135	1	20
Bromomethane	50.0	48.8		ug/L		98	20 - 180	3	40
Carbon disulfide	50.0	57.7		ug/L		115	73 - 127	0	20
Carbon tetrachloride	50.0	51.4		ug/L		103	75 - 130	3	20
Chlorobenzene	50.0	46.0		ug/L		92	80 - 120	1	20
Chloroethane	50.0	48.4		ug/L		97	50 - 151	4	30
Chloroform	50.0	50.6		ug/L		101	79 - 122	1	20
Chloromethane	50.0	64.9	*	ug/L		130	63 - 126	5	30
cis-1,2-Dichloroethene	50.0	52.0		ug/L		104	80 - 122	1	20
cis-1,3-Dichloropropene	50.0	56.1		ug/L		112	80 - 133	0	20
Cyclohexane	50.0	48.4		ug/L		97	69 - 130	4	30
Dibromochloromethane	50.0	48.3		ug/L		97	71 - 136	0	20

TestAmerica Savannah

QC Sample Results

Client: Parsons Corporation
 Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 680-416359/5
Matrix: Water
Analysis Batch: 416359

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dichlorodifluoromethane	50.0	58.2		ug/L		116	51 - 140	7	40
Ethylbenzene	50.0	46.4		ug/L		93	80 - 120	0	20
Isopropylbenzene	50.0	49.1		ug/L		98	80 - 120	2	20
Methyl acetate	250	288		ug/L		115	66 - 134	1	30
Methyl tert-butyl ether	50.0	56.0		ug/L		112	74 - 135	2	20
Methylcyclohexane	50.0	51.0		ug/L		102	75 - 127	5	30
Methylene Chloride	50.0	61.7		ug/L		123	76 - 129	3	20
Styrene	50.0	50.9		ug/L		102	80 - 122	1	20
Tetrachloroethene	50.0	50.4		ug/L		101	77 - 123	2	20
Toluene	50.0	51.9		ug/L		104	80 - 122	1	20
trans-1,2-Dichloroethene	50.0	51.2		ug/L		102	78 - 123	2	20
trans-1,3-Dichloropropene	50.0	57.8		ug/L		116	74 - 140	1	20
Trichloroethene	50.0	48.9		ug/L		98	80 - 123	2	20
Trichlorofluoromethane	50.0	49.5		ug/L		99	58 - 145	6	30
Vinyl chloride	50.0	41.1		ug/L		82	68 - 132	3	30
Xylenes, Total	100	96.8		ug/L		97	80 - 120	0	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	106		70 - 130
1,2-Dichloroethane-d4 (Surr)	107		70 - 130
Dibromofluoromethane (Surr)	104		70 - 130
4-Bromofluorobenzene (Surr)	98		70 - 130

Lab Sample ID: 680-120227-3 MS
Matrix: Water
Analysis Batch: 416359

Client Sample ID: ALBW20352MS
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	ND		50.0	57.7		ug/L		115	74 - 128
1,1,2,2-Tetrachloroethane	ND		50.0	59.1		ug/L		118	72 - 128
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		50.0	57.9		ug/L		116	65 - 131
1,1,2-Trichloroethane	ND		50.0	57.0		ug/L		114	79 - 125
1,1-Dichloroethane	ND		50.0	60.1		ug/L		120	80 - 120
1,1-Dichloroethene	ND		50.0	56.1		ug/L		112	74 - 125
1,2,4-Trichlorobenzene	ND		50.0	41.2		ug/L		82	77 - 131
1,2-Dibromo-3-Chloropropane	ND		50.0	40.9		ug/L		82	59 - 141
1,2-Dibromoethane	ND		50.0	56.4		ug/L		113	77 - 131
1,2-Dichlorobenzene	ND		50.0	53.2		ug/L		106	80 - 120
1,2-Dichloroethane	ND		50.0	58.1		ug/L		116	75 - 130
1,2-Dichloropropane	ND		50.0	53.6		ug/L		107	80 - 123
1,3-Dichlorobenzene	ND		50.0	51.9		ug/L		104	80 - 120
1,4-Dichlorobenzene	ND		50.0	51.0		ug/L		102	80 - 120
2-Butanone	ND		250	280		ug/L		112	75 - 133
2-Hexanone	ND		250	316		ug/L		126	70 - 141
4-Methyl-2-pentanone	ND		250	320		ug/L		128	75 - 135
Benzene	ND		50.0	54.2		ug/L		108	73 - 131
Bromodichloromethane	ND		50.0	56.6		ug/L		113	77 - 129

TestAmerica Savannah

QC Sample Results

Client: Parsons Corporation
 Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 680-120227-3 MS

Matrix: Water

Analysis Batch: 416359

Client Sample ID: ALBW20352MS

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromoform	ND		50.0	46.4		ug/L		93	69 - 135
Bromomethane	ND		50.0	48.1		ug/L		96	20 - 180
Carbon disulfide	ND		50.0	66.9	F1	ug/L		134	73 - 127
Carbon tetrachloride	ND		50.0	59.2		ug/L		118	75 - 130
Chlorobenzene	ND		50.0	53.5		ug/L		107	80 - 120
Chloroethane	ND		50.0	60.6		ug/L		121	50 - 151
Chloroform	ND		50.0	54.1		ug/L		108	79 - 122
Chloromethane	ND	*	50.0	77.0	F1	ug/L		154	63 - 126
cis-1,2-Dichloroethene	3.9		50.0	60.8		ug/L		114	80 - 122
cis-1,3-Dichloropropene	ND		50.0	56.3		ug/L		113	80 - 133
Cyclohexane	ND		50.0	58.1		ug/L		116	69 - 130
Dibromochloromethane	ND		50.0	49.6		ug/L		99	71 - 136
Dichlorodifluoromethane	ND		50.0	66.3		ug/L		133	51 - 140
Ethylbenzene	ND		50.0	56.1		ug/L		112	80 - 120
Isopropylbenzene	ND		50.0	59.6		ug/L		119	80 - 120
Methyl acetate	ND		250	279		ug/L		112	66 - 134
Methyl tert-butyl ether	ND		50.0	56.4		ug/L		113	74 - 135
Methylcyclohexane	ND		50.0	59.4		ug/L		119	75 - 127
Methylene Chloride	ND		50.0	67.5	F1	ug/L		135	76 - 129
Styrene	ND		50.0	58.4		ug/L		117	80 - 122
Tetrachloroethene	ND		50.0	56.8		ug/L		114	77 - 123
Toluene	ND		50.0	55.2		ug/L		110	80 - 122
trans-1,2-Dichloroethene	0.39	J	50.0	56.3		ug/L		112	78 - 123
trans-1,3-Dichloropropene	ND		50.0	60.1		ug/L		120	74 - 140
Trichloroethene	ND		50.0	53.6		ug/L		107	80 - 123
Trichlorofluoromethane	ND		50.0	64.1		ug/L		128	58 - 145
Vinyl chloride	3.8		50.0	70.5	F1	ug/L		133	68 - 132
Xylenes, Total	ND		100	117		ug/L		117	80 - 120

Surrogate	MS %Recovery	MS Qualifier	Limits
Toluene-d8 (Surr)	115		70 - 130
1,2-Dichloroethane-d4 (Surr)	113		70 - 130
Dibromofluoromethane (Surr)	110		70 - 130
4-Bromofluorobenzene (Surr)	102		70 - 130

Lab Sample ID: 680-120227-3 MSD

Matrix: Water

Analysis Batch: 416359

Client Sample ID: ALBW20352MSD

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	ND		50.0	52.1		ug/L		104	74 - 128	10	20
1,1,2,2-Tetrachloroethane	ND		50.0	54.7		ug/L		109	72 - 128	8	20
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		50.0	52.3		ug/L		105	65 - 131	10	30
1,1,2-Trichloroethane	ND		50.0	52.1		ug/L		104	79 - 125	9	20
1,1-Dichloroethane	ND		50.0	54.0		ug/L		108	80 - 120	11	20
1,1-Dichloroethene	ND		50.0	50.9		ug/L		102	74 - 125	10	20
1,2,4-Trichlorobenzene	ND		50.0	40.0		ug/L		80	77 - 131	3	20

TestAmerica Savannah

QC Sample Results

Client: Parsons Corporation
 Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 680-120227-3 MSD

Client Sample ID: ALBW20352MSD

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 416359

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dibromo-3-Chloropropane	ND		50.0	39.3		ug/L		79	59 - 141	4	30
1,2-Dibromoethane	ND		50.0	51.7		ug/L		103	77 - 131	9	30
1,2-Dichlorobenzene	ND		50.0	48.8		ug/L		98	80 - 120	9	20
1,2-Dichloroethane	ND		50.0	52.2		ug/L		104	75 - 130	11	20
1,2-Dichloropropane	ND		50.0	49.1		ug/L		98	80 - 123	9	20
1,3-Dichlorobenzene	ND		50.0	47.6		ug/L		95	80 - 120	9	20
1,4-Dichlorobenzene	ND		50.0	46.6		ug/L		93	80 - 120	9	20
2-Butanone	ND		250	269		ug/L		108	75 - 133	4	30
2-Hexanone	ND		250	300		ug/L		120	70 - 141	5	40
4-Methyl-2-pentanone	ND		250	297		ug/L		119	75 - 135	7	30
Benzene	ND		50.0	49.3		ug/L		99	73 - 131	9	30
Bromodichloromethane	ND		50.0	51.1		ug/L		102	77 - 129	10	20
Bromoform	ND		50.0	42.8		ug/L		86	69 - 135	8	20
Bromomethane	ND		50.0	47.7		ug/L		95	20 - 180	1	40
Carbon disulfide	ND		50.0	61.9		ug/L		124	73 - 127	8	20
Carbon tetrachloride	ND		50.0	53.9		ug/L		108	75 - 130	9	20
Chlorobenzene	ND		50.0	49.0		ug/L		98	80 - 120	9	20
Chloroethane	ND		50.0	54.7		ug/L		109	50 - 151	10	30
Chloroform	ND		50.0	49.4		ug/L		99	79 - 122	9	20
Chloromethane	ND	*	50.0	71.4	F1	ug/L		143	63 - 126	8	30
cis-1,2-Dichloroethene	3.9		50.0	55.2		ug/L		103	80 - 122	10	20
cis-1,3-Dichloropropene	ND		50.0	51.3		ug/L		103	80 - 133	9	20
Cyclohexane	ND		50.0	53.3		ug/L		107	69 - 130	9	30
Dibromochloromethane	ND		50.0	45.1		ug/L		90	71 - 136	9	20
Dichlorodifluoromethane	ND		50.0	59.3		ug/L		119	51 - 140	11	40
Ethylbenzene	ND		50.0	51.9		ug/L		104	80 - 120	8	20
Isopropylbenzene	ND		50.0	55.7		ug/L		111	80 - 120	7	20
Methyl acetate	ND		250	260		ug/L		104	66 - 134	7	30
Methyl tert-butyl ether	ND		50.0	51.7		ug/L		103	74 - 135	9	20
Methylcyclohexane	ND		50.0	55.7		ug/L		111	75 - 127	6	30
Methylene Chloride	ND		50.0	60.2		ug/L		120	76 - 129	11	20
Styrene	ND		50.0	53.2		ug/L		106	80 - 122	9	20
Tetrachloroethene	ND		50.0	51.8		ug/L		104	77 - 123	9	20
Toluene	ND		50.0	51.6		ug/L		103	80 - 122	7	20
trans-1,2-Dichloroethene	0.39	J	50.0	51.8		ug/L		103	78 - 123	8	20
trans-1,3-Dichloropropene	ND		50.0	54.7		ug/L		109	74 - 140	9	20
Trichloroethene	ND		50.0	48.3		ug/L		97	80 - 123	10	20
Trichlorofluoromethane	ND		50.0	57.3		ug/L		115	58 - 145	11	30
Vinyl chloride	3.8		50.0	63.4		ug/L		119	68 - 132	11	30
Xylenes, Total	ND		100	107		ug/L		107	80 - 120	9	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Toluene-d8 (Surr)	104		70 - 130
1,2-Dichloroethane-d4 (Surr)	102		70 - 130
Dibromofluoromethane (Surr)	100		70 - 130
4-Bromofluorobenzene (Surr)	94		70 - 130

TestAmerica Savannah

QC Sample Results

Client: Parsons Corporation
 Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-416549/9
Matrix: Water
Analysis Batch: 416549

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.37	ug/L			12/30/15 10:35	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.62	ug/L			12/30/15 10:35	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.36	ug/L			12/30/15 10:35	1
1,1,2-Trichloroethane	ND		1.0	0.33	ug/L			12/30/15 10:35	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			12/30/15 10:35	1
1,1-Dichloroethene	ND		1.0	0.36	ug/L			12/30/15 10:35	1
1,2,4-Trichlorobenzene	ND		5.0	2.5	ug/L			12/30/15 10:35	1
1,2-Dibromo-3-Chloropropane	ND		5.0	1.1	ug/L			12/30/15 10:35	1
1,2-Dibromoethane	ND		1.0	0.44	ug/L			12/30/15 10:35	1
1,2-Dichlorobenzene	ND		1.0	0.37	ug/L			12/30/15 10:35	1
1,2-Dichloroethane	ND		1.0	0.50	ug/L			12/30/15 10:35	1
1,2-Dichloropropane	ND		1.0	0.67	ug/L			12/30/15 10:35	1
1,3-Dichlorobenzene	ND		1.0	0.43	ug/L			12/30/15 10:35	1
1,4-Dichlorobenzene	ND		1.0	0.46	ug/L			12/30/15 10:35	1
2-Butanone	ND		10	3.4	ug/L			12/30/15 10:35	1
2-Hexanone	ND		10	2.0	ug/L			12/30/15 10:35	1
4-Methyl-2-pentanone	ND		10	2.1	ug/L			12/30/15 10:35	1
Acetone	ND		10	7.0	ug/L			12/30/15 10:35	1
Benzene	ND		1.0	0.43	ug/L			12/30/15 10:35	1
Bromodichloromethane	ND		1.0	0.44	ug/L			12/30/15 10:35	1
Bromoform	ND		1.0	0.43	ug/L			12/30/15 10:35	1
Bromomethane	ND		5.0	2.5	ug/L			12/30/15 10:35	1
Carbon disulfide	ND		2.0	1.0	ug/L			12/30/15 10:35	1
Carbon tetrachloride	ND		1.0	0.33	ug/L			12/30/15 10:35	1
Chlorobenzene	ND		1.0	0.26	ug/L			12/30/15 10:35	1
Chloroethane	ND		5.0	2.5	ug/L			12/30/15 10:35	1
Chloroform	ND		1.0	0.50	ug/L			12/30/15 10:35	1
Chloromethane	ND		1.0	0.40	ug/L			12/30/15 10:35	1
cis-1,2-Dichloroethene	ND		1.0	0.41	ug/L			12/30/15 10:35	1
cis-1,3-Dichloropropene	ND		1.0	0.40	ug/L			12/30/15 10:35	1
Cyclohexane	ND		1.0	0.39	ug/L			12/30/15 10:35	1
Dibromochloromethane	ND		1.0	0.32	ug/L			12/30/15 10:35	1
Dichlorodifluoromethane	ND		1.0	0.60	ug/L			12/30/15 10:35	1
Ethylbenzene	ND		1.0	0.33	ug/L			12/30/15 10:35	1
Isopropylbenzene	ND		1.0	0.35	ug/L			12/30/15 10:35	1
Methyl acetate	ND		5.0	1.8	ug/L			12/30/15 10:35	1
Methyl tert-butyl ether	ND		10	0.30	ug/L			12/30/15 10:35	1
Methylcyclohexane	ND		1.0	0.43	ug/L			12/30/15 10:35	1
Methylene Chloride	ND		5.0	2.5	ug/L			12/30/15 10:35	1
Styrene	ND		1.0	0.27	ug/L			12/30/15 10:35	1
Tetrachloroethene	ND		1.0	0.74	ug/L			12/30/15 10:35	1
Toluene	ND		1.0	0.48	ug/L			12/30/15 10:35	1
trans-1,2-Dichloroethene	ND		1.0	0.37	ug/L			12/30/15 10:35	1
trans-1,3-Dichloropropene	ND		1.0	0.42	ug/L			12/30/15 10:35	1
Trichloroethene	ND		1.0	0.48	ug/L			12/30/15 10:35	1
Trichlorofluoromethane	ND		1.0	0.42	ug/L			12/30/15 10:35	1
Vinyl chloride	ND		1.0	0.50	ug/L			12/30/15 10:35	1
Xylenes, Total	ND		1.0	0.23	ug/L			12/30/15 10:35	1

TestAmerica Savannah

QC Sample Results

Client: Parsons Corporation
 Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	99		70 - 130		12/30/15 10:35	1
1,2-Dichloroethane-d4 (Surr)	91		70 - 130		12/30/15 10:35	1
Dibromofluoromethane (Surr)	95		70 - 130		12/30/15 10:35	1
4-Bromofluorobenzene (Surr)	92		70 - 130		12/30/15 10:35	1

Lab Sample ID: LCS 680-416549/4
Matrix: Water
Analysis Batch: 416549

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	50.0	58.3		ug/L		117	74 - 128
1,1,2,2-Tetrachloroethane	50.0	53.4		ug/L		107	72 - 128
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	53.8		ug/L		108	65 - 131
1,1,2-Trichloroethane	50.0	55.9		ug/L		112	79 - 125
1,1-Dichloroethane	50.0	52.4		ug/L		105	80 - 120
1,1-Dichloroethene	50.0	52.0		ug/L		104	74 - 125
1,2,4-Trichlorobenzene	50.0	59.0		ug/L		118	77 - 131
1,2-Dibromo-3-Chloropropane	50.0	51.8		ug/L		104	59 - 141
1,2-Dibromoethane	50.0	61.5		ug/L		123	77 - 131
1,2-Dichlorobenzene	50.0	53.5		ug/L		107	80 - 120
1,2-Dichloroethane	50.0	55.2		ug/L		110	75 - 130
1,2-Dichloropropane	50.0	54.6		ug/L		109	80 - 123
1,3-Dichlorobenzene	50.0	51.8		ug/L		104	80 - 120
1,4-Dichlorobenzene	50.0	51.9		ug/L		104	80 - 120
2-Butanone	250	251		ug/L		100	75 - 133
2-Hexanone	250	275		ug/L		110	70 - 141
4-Methyl-2-pentanone	250	277		ug/L		111	75 - 135
Benzene	50.0	53.0		ug/L		106	73 - 131
Bromodichloromethane	50.0	58.6		ug/L		117	77 - 129
Bromoform	50.0	48.3		ug/L		97	69 - 135
Bromomethane	50.0	44.0		ug/L		88	20 - 180
Carbon disulfide	50.0	48.6		ug/L		97	73 - 127
Carbon tetrachloride	50.0	52.3		ug/L		105	75 - 130
Chlorobenzene	50.0	51.8		ug/L		104	80 - 120
Chloroethane	50.0	46.8		ug/L		94	50 - 151
Chloroform	50.0	55.6		ug/L		111	79 - 122
Chloromethane	50.0	39.5		ug/L		79	63 - 126
cis-1,2-Dichloroethene	50.0	55.0		ug/L		110	80 - 122
cis-1,3-Dichloropropene	50.0	62.2		ug/L		124	80 - 133
Cyclohexane	50.0	52.5		ug/L		105	69 - 130
Dibromochloromethane	50.0	60.9		ug/L		122	71 - 136
Dichlorodifluoromethane	50.0	49.0		ug/L		98	51 - 140
Ethylbenzene	50.0	51.6		ug/L		103	80 - 120
Isopropylbenzene	50.0	55.2		ug/L		110	80 - 120
Methyl acetate	250	241		ug/L		96	66 - 134
Methyl tert-butyl ether	50.0	54.5		ug/L		109	74 - 135
Methylcyclohexane	50.0	54.2		ug/L		108	75 - 127
Methylene Chloride	50.0	49.9		ug/L		100	76 - 129
Styrene	50.0	54.8		ug/L		110	80 - 122
Tetrachloroethene	50.0	57.4		ug/L		115	77 - 123
Toluene	50.0	56.4		ug/L		113	80 - 122
trans-1,2-Dichloroethene	50.0	53.8		ug/L		108	78 - 123
trans-1,3-Dichloropropene	50.0	48.6		ug/L		97	74 - 140

TestAmerica Savannah

QC Sample Results

Client: Parsons Corporation
 Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-416549/4
Matrix: Water
Analysis Batch: 416549

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichloroethene	50.0	58.5		ug/L		117	80 - 123
Trichlorofluoromethane	50.0	51.7		ug/L		103	58 - 145
Vinyl chloride	50.0	41.8		ug/L		84	68 - 132
Xylenes, Total	100	105		ug/L		105	80 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	100		70 - 130
1,2-Dichloroethane-d4 (Surr)	108		70 - 130
Dibromofluoromethane (Surr)	107		70 - 130
4-Bromofluorobenzene (Surr)	102		70 - 130

Lab Sample ID: LCSD 680-416549/5
Matrix: Water
Analysis Batch: 416549

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	50.0	52.9		ug/L		106	74 - 128	10	20
1,1,1,2-Tetrachloroethane	50.0	48.4		ug/L		97	72 - 128	10	20
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	48.1		ug/L		96	65 - 131	11	30
1,1,2-Trichloroethane	50.0	53.4		ug/L		107	79 - 125	5	20
1,1-Dichloroethane	50.0	48.2		ug/L		96	80 - 120	8	20
1,1-Dichloroethene	50.0	46.7		ug/L		93	74 - 125	11	20
1,2,4-Trichlorobenzene	50.0	56.8		ug/L		114	77 - 131	4	20
1,2-Dibromo-3-Chloropropane	50.0	47.1		ug/L		94	59 - 141	10	30
1,2-Dibromoethane	50.0	57.1		ug/L		114	77 - 131	7	30
1,2-Dichlorobenzene	50.0	49.9		ug/L		100	80 - 120	7	20
1,2-Dichloroethane	50.0	50.9		ug/L		102	75 - 130	8	20
1,2-Dichloropropane	50.0	50.3		ug/L		101	80 - 123	8	20
1,3-Dichlorobenzene	50.0	48.4		ug/L		97	80 - 120	7	20
1,4-Dichlorobenzene	50.0	49.0		ug/L		98	80 - 120	6	20
2-Butanone	250	231		ug/L		92	75 - 133	9	30
2-Hexanone	250	262		ug/L		105	70 - 141	5	40
4-Methyl-2-pentanone	250	260		ug/L		104	75 - 135	6	30
Benzene	50.0	48.7		ug/L		97	73 - 131	9	30
Bromodichloromethane	50.0	54.4		ug/L		109	77 - 129	7	20
Bromoform	50.0	44.6		ug/L		89	69 - 135	8	20
Bromomethane	50.0	42.9		ug/L		86	20 - 180	2	40
Carbon disulfide	50.0	44.3		ug/L		89	73 - 127	9	20
Carbon tetrachloride	50.0	48.5		ug/L		97	75 - 130	8	20
Chlorobenzene	50.0	47.5		ug/L		95	80 - 120	9	20
Chloroethane	50.0	43.3		ug/L		87	50 - 151	8	30
Chloroform	50.0	51.4		ug/L		103	79 - 122	8	20
Chloromethane	50.0	36.0		ug/L		72	63 - 126	9	30
cis-1,2-Dichloroethene	50.0	50.8		ug/L		102	80 - 122	8	20
cis-1,3-Dichloropropene	50.0	58.7		ug/L		117	80 - 133	6	20
Cyclohexane	50.0	48.7		ug/L		97	69 - 130	7	30
Dibromochloromethane	50.0	57.5		ug/L		115	71 - 136	6	20

TestAmerica Savannah

QC Sample Results

Client: Parsons Corporation
 Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 680-416549/5
Matrix: Water
Analysis Batch: 416549

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dichlorodifluoromethane	50.0	44.3		ug/L		89	51 - 140	10	40
Ethylbenzene	50.0	47.0		ug/L		94	80 - 120	9	20
Isopropylbenzene	50.0	50.5		ug/L		101	80 - 120	9	20
Methyl acetate	250	227		ug/L		91	66 - 134	6	30
Methyl tert-butyl ether	50.0	50.8		ug/L		102	74 - 135	7	20
Methylcyclohexane	50.0	49.2		ug/L		98	75 - 127	10	30
Methylene Chloride	50.0	47.2		ug/L		94	76 - 129	6	20
Styrene	50.0	50.4		ug/L		101	80 - 122	8	20
Tetrachloroethene	50.0	53.0		ug/L		106	77 - 123	8	20
Toluene	50.0	52.5		ug/L		105	80 - 122	7	20
trans-1,2-Dichloroethene	50.0	48.7		ug/L		97	78 - 123	10	20
trans-1,3-Dichloropropene	50.0	46.7		ug/L		93	74 - 140	4	20
Trichloroethene	50.0	52.8		ug/L		106	80 - 123	10	20
Trichlorofluoromethane	50.0	46.1		ug/L		92	58 - 145	11	30
Vinyl chloride	50.0	38.0		ug/L		76	68 - 132	10	30
Xylenes, Total	100	95.9		ug/L		96	80 - 120	9	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	91		70 - 130
1,2-Dichloroethane-d4 (Surr)	101		70 - 130
Dibromofluoromethane (Surr)	99		70 - 130
4-Bromofluorobenzene (Surr)	96		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 680-416951/2
Matrix: Water
Analysis Batch: 416951

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.40	mg/L			01/02/16 17:19	1

Lab Sample ID: LCS 680-416951/3
Matrix: Water
Analysis Batch: 416951

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	10.0	10.2		mg/L		102	90 - 110

Lab Sample ID: LCSD 680-416951/4
Matrix: Water
Analysis Batch: 416951

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	10.0	10.2		mg/L		102	90 - 110	0	30

TestAmerica Savannah

QC Sample Results

Client: Parsons Corporation
 Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 680-416952/36
Matrix: Water
Analysis Batch: 416952

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.40	mg/L			01/03/16 01:32	1

Lab Sample ID: LCS 680-416952/37
Matrix: Water
Analysis Batch: 416952

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	10.0	9.80		mg/L		98	90 - 110

Lab Sample ID: LCSD 680-416952/38
Matrix: Water
Analysis Batch: 416952

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	10.0	9.85		mg/L		99	90 - 110	1	30

Lab Sample ID: 680-120227-3 MS
Matrix: Water
Analysis Batch: 416952

Client Sample ID: ALBW20352MS
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	9.5		10.0	19.2		mg/L		97	80 - 120

Lab Sample ID: 680-120227-3 MSD
Matrix: Water
Analysis Batch: 416952

Client Sample ID: ALBW20352MSD
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	9.5		10.0	19.1		mg/L		97	80 - 120	0	30

Lab Sample ID: MB 680-417107/2
Matrix: Water
Analysis Batch: 417107

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.40	mg/L			01/04/16 12:34	1

Lab Sample ID: LCS 680-417107/3
Matrix: Water
Analysis Batch: 417107

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	10.0	10.9		mg/L		109	90 - 110

Lab Sample ID: LCSD 680-417107/4
Matrix: Water
Analysis Batch: 417107

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	10.0	11.0		mg/L		110	90 - 110	0	30

TestAmerica Savannah

QC Sample Results

Client: Parsons Corporation
 Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Lab Sample ID: 680-120339-8 MS
Matrix: Water
Analysis Batch: 417107

Client Sample ID: ALBW00124
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	ND		10.0	9.45		mg/L		95	80 - 120

Lab Sample ID: 680-120339-8 MSD
Matrix: Water
Analysis Batch: 417107

Client Sample ID: ALBW00124
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	ND		10.0	9.68		mg/L		97	80 - 120	2	30

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 480-282258/4
Matrix: Water
Analysis Batch: 282258

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	0.583	J	1.0	0.43	mg/L			01/04/16 14:43	1

Lab Sample ID: LCS 480-282258/5
Matrix: Water
Analysis Batch: 282258

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	60.0	58.5		mg/L		98	90 - 110

Lab Sample ID: LCSD 480-282258/6
Matrix: Water
Analysis Batch: 282258

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	60.0	58.5		mg/L		98	90 - 110	0	20

Lab Sample ID: 680-120227-3 MS
Matrix: Water
Analysis Batch: 282258

Client Sample ID: ALBW20352MS
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	4.8	B	20.0	24.1		mg/L		96	54 - 131

Lab Sample ID: 680-120227-3 MSD
Matrix: Water
Analysis Batch: 282258

Client Sample ID: ALBW20352MSD
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	4.8	B	20.0	23.9		mg/L		96	54 - 131	1	20

TestAmerica Savannah

QC Association Summary

Client: Parsons Corporation
 Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

GC/MS VOA

Analysis Batch: 416359

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-120227-1	ALBW20343	Total/NA	Water	8260B	
680-120227-2	ALBW20347	Total/NA	Water	8260B	
680-120227-2 - DL	ALBW20347	Total/NA	Water	8260B	
680-120227-3	ALBW20352	Total/NA	Water	8260B	
680-120227-3 MS	ALBW20352MS	Total/NA	Water	8260B	
680-120227-3 MSD	ALBW20352MSD	Total/NA	Water	8260B	
680-120227-4	ALBW20353	Total/NA	Water	8260B	
680-120227-5	ALBW20354	Total/NA	Water	8260B	
680-120227-6	ALBW20355	Total/NA	Water	8260B	
680-120227-7	ALBW20356	Total/NA	Water	8260B	
680-120227-8	ALBW20357	Total/NA	Water	8260B	
680-120227-9	ALBW00045	Total/NA	Water	8260B	
LCS 680-416359/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-416359/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-416359/9	Method Blank	Total/NA	Water	8260B	

Analysis Batch: 416549

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-120339-1	ALBW20344	Total/NA	Water	8260B	
680-120339-2	ALBW20345	Total/NA	Water	8260B	
680-120339-3	ALBW20346	Total/NA	Water	8260B	
680-120339-4	ALBW20348	Total/NA	Water	8260B	
680-120339-5	ALBW20349	Total/NA	Water	8260B	
680-120339-6	ALBW20350	Total/NA	Water	8260B	
680-120339-7	ALBW20351	Total/NA	Water	8260B	
680-120339-8	ALBW00124	Total/NA	Water	8260B	
680-120339-9	ALBW00046	Total/NA	Water	8260B	
LCS 680-416549/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-416549/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-416549/9	Method Blank	Total/NA	Water	8260B	

HPLC/IC

Analysis Batch: 416951

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-120227-1	ALBW20343	Total/NA	Water	300.0	
LCS 680-416951/3	Lab Control Sample	Total/NA	Water	300.0	
LCSD 680-416951/4	Lab Control Sample Dup	Total/NA	Water	300.0	
MB 680-416951/2	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 416952

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-120227-2	ALBW20347	Total/NA	Water	300.0	
680-120227-3	ALBW20352	Total/NA	Water	300.0	
680-120227-3 MS	ALBW20352MS	Total/NA	Water	300.0	
680-120227-3 MSD	ALBW20352MSD	Total/NA	Water	300.0	
680-120227-4	ALBW20353	Total/NA	Water	300.0	
680-120227-6	ALBW20355	Total/NA	Water	300.0	
680-120227-7	ALBW20356	Total/NA	Water	300.0	
LCS 680-416952/37	Lab Control Sample	Total/NA	Water	300.0	

TestAmerica Savannah

QC Association Summary

Client: Parsons Corporation
 Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

HPLC/IC (Continued)

Analysis Batch: 416952 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 680-416952/38	Lab Control Sample Dup	Total/NA	Water	300.0	
MB 680-416952/36	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 417107

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-120227-5	ALBW20354	Total/NA	Water	300.0	
680-120227-8	ALBW20357	Total/NA	Water	300.0	
680-120339-8	ALBW00124	Total/NA	Water	300.0	
680-120339-8 MS	ALBW00124	Total/NA	Water	300.0	
680-120339-8 MSD	ALBW00124	Total/NA	Water	300.0	
LCS 680-417107/3	Lab Control Sample	Total/NA	Water	300.0	
LCSD 680-417107/4	Lab Control Sample Dup	Total/NA	Water	300.0	
MB 680-417107/2	Method Blank	Total/NA	Water	300.0	

General Chemistry

Analysis Batch: 282258

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-120227-1	ALBW20343	Total/NA	Water	9060A	
680-120227-2	ALBW20347	Total/NA	Water	9060A	
680-120227-3	ALBW20352	Total/NA	Water	9060A	
680-120227-3 MS	ALBW20352MS	Total/NA	Water	9060A	
680-120227-3 MSD	ALBW20352MSD	Total/NA	Water	9060A	
680-120227-4	ALBW20353	Total/NA	Water	9060A	
680-120227-5	ALBW20354	Total/NA	Water	9060A	
680-120227-6	ALBW20355	Total/NA	Water	9060A	
680-120227-7	ALBW20356	Total/NA	Water	9060A	
680-120227-8	ALBW20357	Total/NA	Water	9060A	
680-120339-8	ALBW00124	Total/NA	Water	9060A	
LCS 480-282258/5	Lab Control Sample	Total/NA	Water	9060A	
LCSD 480-282258/6	Lab Control Sample Dup	Total/NA	Water	9060A	
MB 480-282258/4	Method Blank	Total/NA	Water	9060A	

Lab Chronicle

Client: Parsons Corporation
 Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Client Sample ID: ALBW20343

Date Collected: 12/17/15 14:02

Date Received: 12/18/15 08:35

Lab Sample ID: 680-120227-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B Instrument ID: CMSA2		1	5 mL	5 mL	416359	12/29/15 13:20	CEJ	TAL SAV
Total/NA	Analysis	300.0 Instrument ID: CICL		1	5 mL	5 mL	416951	01/03/16 00:49	JRJ	TAL SAV
Total/NA	Analysis	9060A Instrument ID: TOC10301		1			282258	01/04/16 18:45	DLG	TAL BUF

Client Sample ID: ALBW20347

Date Collected: 12/17/15 13:55

Date Received: 12/18/15 08:35

Lab Sample ID: 680-120227-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B Instrument ID: CMSA2		1	5 mL	5 mL	416359	12/29/15 13:40	CEJ	TAL SAV
Total/NA	Analysis	8260B Instrument ID: CMSA2	DL	2	5 mL	5 mL	416359	12/29/15 17:25	CEJ	TAL SAV
Total/NA	Analysis	300.0 Instrument ID: CICL		1	5 mL	5 mL	416952	01/03/16 02:16	JRJ	TAL SAV
Total/NA	Analysis	9060A Instrument ID: TOC10301		1			282258	01/04/16 20:06	DLG	TAL BUF

Client Sample ID: ALBW20352

Date Collected: 12/16/15 11:02

Date Received: 12/18/15 08:35

Lab Sample ID: 680-120227-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B Instrument ID: CMSA2		1	5 mL	5 mL	416359	12/29/15 14:00	CEJ	TAL SAV
Total/NA	Analysis	300.0 Instrument ID: CICL		1	5 mL	5 mL	416952	01/03/16 02:30	JRJ	TAL SAV
Total/NA	Analysis	9060A Instrument ID: TOC10301		1			282258	01/04/16 20:32	DLG	TAL BUF

Client Sample ID: ALBW20353

Date Collected: 12/16/15 11:12

Date Received: 12/18/15 08:35

Lab Sample ID: 680-120227-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B Instrument ID: CMSA2		1	5 mL	5 mL	416359	12/29/15 14:21	CEJ	TAL SAV
Total/NA	Analysis	300.0 Instrument ID: CICL		1	5 mL	5 mL	416952	01/03/16 03:14	JRJ	TAL SAV

TestAmerica Savannah

Lab Chronicle

Client: Parsons Corporation
 Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Client Sample ID: ALBW20353

Lab Sample ID: 680-120227-4

Date Collected: 12/16/15 11:12

Matrix: Water

Date Received: 12/18/15 08:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060A		1			282258	01/04/16 21:51	DLG	TAL BUF
Instrument ID: TOC10301										

Client Sample ID: ALBW20354

Lab Sample ID: 680-120227-5

Date Collected: 12/16/15 14:00

Matrix: Water

Date Received: 12/18/15 08:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	416359	12/29/15 14:41	CEJ	TAL SAV
Instrument ID: CMSA2										
Total/NA	Analysis	300.0		25	5 mL	5 mL	417107	01/04/16 14:53	AJO	TAL SAV
Instrument ID: CICK										
Total/NA	Analysis	9060A		1			282258	01/04/16 22:17	DLG	TAL BUF
Instrument ID: TOC10301										

Client Sample ID: ALBW20355

Lab Sample ID: 680-120227-6

Date Collected: 12/16/15 14:00

Matrix: Water

Date Received: 12/18/15 08:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	416359	12/29/15 15:22	CEJ	TAL SAV
Instrument ID: CMSA2										
Total/NA	Analysis	300.0		1	5 mL	5 mL	416952	01/03/16 03:43	JRJ	TAL SAV
Instrument ID: CICL										
Total/NA	Analysis	9060A		1			282258	01/04/16 22:44	DLG	TAL BUF
Instrument ID: TOC10301										

Client Sample ID: ALBW20356

Lab Sample ID: 680-120227-7

Date Collected: 12/17/15 11:50

Matrix: Water

Date Received: 12/18/15 08:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	416359	12/29/15 15:02	CEJ	TAL SAV
Instrument ID: CMSA2										
Total/NA	Analysis	300.0		1	5 mL	5 mL	416952	01/03/16 03:57	JRJ	TAL SAV
Instrument ID: CICL										
Total/NA	Analysis	9060A		1			282258	01/04/16 23:10	DLG	TAL BUF
Instrument ID: TOC10301										

Lab Chronicle

Client: Parsons Corporation
 Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Client Sample ID: ALBW20357

Lab Sample ID: 680-120227-8

Date Collected: 12/17/15 12:10

Matrix: Water

Date Received: 12/18/15 08:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	416359	12/29/15 15:43	CEJ	TAL SAV
Instrument ID: CMSA2										
Total/NA	Analysis	300.0		10	5 mL	5 mL	417107	01/04/16 15:08	AJO	TAL SAV
Instrument ID: CICK										
Total/NA	Analysis	9060A		1			282258	01/04/16 23:36	DLG	TAL BUF
Instrument ID: TOC10301										

Client Sample ID: ALBW00045

Lab Sample ID: 680-120227-9

Date Collected: 12/17/15 15:05

Matrix: Water

Date Received: 12/18/15 08:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	416359	12/29/15 16:03	CEJ	TAL SAV
Instrument ID: CMSA2										

Client Sample ID: ALBW20344

Lab Sample ID: 680-120339-1

Date Collected: 12/18/15 14:01

Matrix: Water

Date Received: 12/22/15 10:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	416549	12/30/15 16:15	DAS	TAL SAV
Instrument ID: CMSS										

Client Sample ID: ALBW20345

Lab Sample ID: 680-120339-2

Date Collected: 12/18/15 11:45

Matrix: Water

Date Received: 12/22/15 10:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	416549	12/30/15 12:51	DAS	TAL SAV
Instrument ID: CMSS										

Client Sample ID: ALBW20346

Lab Sample ID: 680-120339-3

Date Collected: 12/18/15 10:16

Matrix: Water

Date Received: 12/22/15 10:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	416549	12/30/15 13:13	DAS	TAL SAV
Instrument ID: CMSS										

TestAmerica Savannah

Lab Chronicle

Client: Parsons Corporation
 Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Client Sample ID: ALBW20348

Lab Sample ID: 680-120339-4

Date Collected: 12/18/15 12:28

Matrix: Water

Date Received: 12/22/15 10:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	416549	12/30/15 13:36	DAS	TAL SAV
Instrument ID: CMSS										

Client Sample ID: ALBW20349

Lab Sample ID: 680-120339-5

Date Collected: 12/18/15 09:40

Matrix: Water

Date Received: 12/22/15 10:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	416549	12/30/15 13:59	DAS	TAL SAV
Instrument ID: CMSS										

Client Sample ID: ALBW20350

Lab Sample ID: 680-120339-6

Date Collected: 12/18/15 14:10

Matrix: Water

Date Received: 12/22/15 10:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	416549	12/30/15 14:21	DAS	TAL SAV
Instrument ID: CMSS										

Client Sample ID: ALBW20351

Lab Sample ID: 680-120339-7

Date Collected: 12/19/15 09:10

Matrix: Water

Date Received: 12/22/15 10:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	416549	12/30/15 14:44	DAS	TAL SAV
Instrument ID: CMSS										

Client Sample ID: ALBW00124

Lab Sample ID: 680-120339-8

Date Collected: 12/18/15 15:00

Matrix: Water

Date Received: 12/22/15 10:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	416549	12/30/15 15:07	DAS	TAL SAV
Instrument ID: CMSS										
Total/NA	Analysis	300.0		1	5 mL	5 mL	417107	01/04/16 13:36	AJO	TAL SAV
Instrument ID: CICK										
Total/NA	Analysis	9060A		1			282258	01/05/16 00:03	DLG	TAL BUF
Instrument ID: TOC10301										

Lab Chronicle

Client: Parsons Corporation
Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Client Sample ID: ALBW00046

Lab Sample ID: 680-120339-9

Date Collected: 12/21/15 11:25

Matrix: Water

Date Received: 12/22/15 10:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	416549	12/30/15 12:06	DAS	TAL SAV
Instrument ID: CMSS										

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

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ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica Inc.

TestAmerica Inc.
5102 LaRoche Avenue
Savannah, GA 31404
Ph: 912-354-7858
Fax:
Website: www.testamericainc.com

PROJECT & CLIENT INFORMATION

PROJECT NO: 748662-03300
Ash Landfill Long Term Monitoring
LAB PROJECT MANAGER: Kathy Smith
CLIENT (SITE) PM: Beth Badik, Todd Belanger
CLIENT PHONE: 617-449-1565
CLIENT FAX: 617-946-9777
CLIENT EMAIL: beth.badik@parsons.com
todd.belanger@parsons.com
CLIENT NAME: Parsons
CLIENT ADDRESS: 100 High Street, 4th Floor, Boston, MA 02110
Samplers Signature & Initials:

Project State: NY
CONTRACT/Quote NO.:

REQUIRED ANALYSES

LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	Method 8260B - VOCs	Method 9090A - TOC	EPA 300.1 - sulfate
1	1	8				

SAMPLED ON DATE	TIME	SAMPLE IDENTIFICATION	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	REMARKS
12/17/2015	1402	ALBW20343							1. Run straight sample analysis (without dilution) for every sample.
		ALBW20344							2. Use ALBW20353 as QA/QC sample for all analyses.
		ALBW20345							3. Please hold SDG open until all shipments from the project site have arrived.
		ALBW20346							
12/17/2015	1355	ALBW20347							Preservative
		ALBW20348							1 HCI
		ALBW20349							
		ALBW20350							
		ALBW20351							
12/16/2015	1102	ALBW20352							
12/16/2015	1102	ALBW20352MS							

RECEIVED FOR LABORATORY BY: *[Signature]* DATE: 12/18/15 TIME: 0830

RECEIVED BY: (SIGNATURE) DATE: 12/17/2015 TIME: 1551

RECEIVED BY: (SIGNATURE) DATE: TIME

RECEIVED BY: (SIGNATURE) DATE: TIME

LABORATORY SEAL NO. 1680120227

LABORATORY USE ONLY

REMARKS: S. Badik 3.60c



680-120227 Chain of Custody

Original - Return to Laboratory with Sample(s)

FCU036:12.20.00:2



STL JOB LOG #:
 Possible Hazards: Unknown
 Sample Disposal: Lab Disposal
 Website: www.testamericainc.com

TestAmerica Inc.
 5102 LaRoche Avenue
 Savannah, GA 31404
 Ph: 912-354-7858
 Fax: [Redacted]
 Website: www.testamericainc.com

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica Inc.

PROJECT & CLIENT INFORMATION
 PROJECT REFERENCE NAME: Ash Landfill Long Term Monitoring
 PROJECT NO.: 748662-03300
 P.O. NUMBER: 748662-03300
 CONTRACT/Octid/NC
 CLIENT (SITE) PM: Beth Badik
 CLIENT PHONE: 617-449-1566
 CLIENT FAX: 617-946-9777
 CLIENT NAME: Todd Belanger
 CLIENT EMAIL: todd.belanger@parsons.com
 CLIENT ADDRESS: 100 High Street, 4th Floor, Boston, MA 02110
 Samplers Signature & Initials:

LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	REQUIRED ANALYSES
Method 8260B - VOCs				Method 9060A - TOC
Method 300.1 - sulfate				
Final Report Type: ASP2000 Category B				EDD 15 calendar days
TAT/DATE DUE				TAT/DATE DUE 15 calendar days
IS/CREDITED REPORT (circle one)				IS/CREDITED REPORT (circle one)
EMAIL or FAX				EMAIL or FAX
TAT/DATE DUE				TAT/DATE DUE

SAMPLED ON DATE	TIME	SAMPLE IDENTIFICATION	LABORATORY USE ONLY		CUSTODY INTACT		RECEIVED BY		RELINQUISHED BY		REMARKS
			DATE	TIME	YES	NO	DATE	TIME	DATE	TIME	
12/16/2015	1102	ALBW20352MSD	N	GW	3	1					1. Run straight sample analysis (without dilution) for every sample.
12/16/2015	1112	ALBW20353	N	GW	3	1					2. Use ALBW20353 as QA/QC sample for all analyses.
12/16/2015	1400	ALBW20354	N	GW	3	1					3. Please hold SDG open until all shipments from the project site have arrived.
12/16/2015	1400	ALBW20355	N	GW	3	1					Preservative
12/17/2015	1150	ALBW20356	N	GW	3	1					1 HCl
12/17/2015	1210	ALBW20357	N	GW	3	1					8 Ice
12/17/2015	1505	ALBW00045	N	W	3	1					
		ALBW00046	N	W	3						
		ALBW00047	N	W	3						
RELINQUISHED BY: (SIGNATURE)											
RECEIVED BY: (SIGNATURE)											

LABORATORY SEAL NO. 68012022
 CUSTODY INTACT YES NO
 RECEIVED FOR LABORATORY BY: (SIGNATURE) [Signature]
 DATE: 12/18/15 0855
 RELINQUISHED BY: (SIGNATURE) [Signature] DATE: 12/17/2015 TIME: 1551
 RECEIVED BY: (SIGNATURE) [Signature] DATE: [Redacted] TIME: [Redacted]

3.2 (CF) B.6.



ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica Inc.

TestAmerica Inc.
5102 LaRoche Avenue
Savannah, GA 31404
Ph: 912-354-7858
Fax:
Website: www.testamericainc.com

Possible Hazards: Unknown

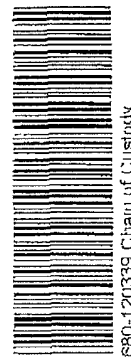
PROJECT & CLIENT INFORMATION		Project State	
PROJECT REFERENCE NAME Ash Landfill Long Term Monitoring	PROJECT NO 748662-03300	NY	
LAB PROJECT MANAGER Kathy Smith	P.O. NUMBER 748662-03300	CONTRACT/QUOTE NO	
CLIENT (SITE) PM Beth Badtk, Todd Belanger	CLIENT PHONE 617-449-1565	CLIENT FAX 617-946-9777	
CLIENT NAME Parsons	CLIENT EMAIL beth.badtk@parsons.com todd.belanger@parsons.com		
CLIENT ADDRESS 100 High Street, 4th Floor, Boston, MA 02110 Samplers Signature & Initials:			

LABORATORY SAMPLE ID		SAMPLE TYPE	FIELD FILTERED	MATRIX	NUMBER OF CONTAINERS SUBMITTED	REMARKS	
12/18/2015	1401	ALBW20343	N	GW	3	1	1. Run straight sample analysis (without dilution) for every sample.
12/18/2015	1145	ALBW20345	N	GW	3	3	2. Use ALBW20353 as QA/QC sample for all analyses.
12/18/2015	1016	ALBW20346	N	GW	3	3	3. Please hold SDG open until all shipments from the project site have arrived.
12/18/2015	1228	ALBW20348	N	GW	3		Preservative
12/18/2015	940	ALBW20349	N	GW	3		1 HCl
12/18/2015	1410	ALBW20350	N	GW	3		
12/19/2015	910	ALBW20351	N	GW	3		
		ALBW20352	N	GW	3		
		ALBW20352MS	N	GW	3		8 Ice

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
<i>[Signature]</i>	12/15	11:30	<i>[Signature]</i>	12/16	

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	REMARKS
<i>[Signature]</i>	12/15	10:25	12/16

LABORATORY SEAL NO. 88
CUSTODY INTACT YES NO
88



Original - Return to Laboratory with Sample(s)

FCU036:12.20.00:2



ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica Inc.

TestAmerica Inc.
5102 LaRoche Avenue
Savannah, GA 31404
Ph: 912-354-7858
Fax:
Website: www.testamericainc.com

Possible Hazards: Unknown

Sample Disposal: Lab Disposal
PAGE 2 OF 2

PROJECT & CLIENT INFORMATION		Project State	REQUIRED ANALYSES	
PROJECT NO. 748662-03300 Ash Landfill Long Term Monitoring		NY	Final Report Type: AS2000 Category B EOD 15 calendar days	
LAB PROJECT MANAGER Kathy Smith		CONTACT/Quest No.	TAT/ DATE DUE 15 calendar days	
CLIENT (SITE) PM Beth Bedik		CLIENT PHONE 817-449-1565	EXPEDITED REPORT (circle one) EMAIL or FAX TAT/ DATE DUE	
CLIENT NAME Parsons		CLIENT EMAIL beth.bedik@parsons.com todd.belanger@parsons.com	NUMBER OF COOLERS SUBMITTED PER SHIPMENT:	
CLIENT ADDRESS 100 High Street, 4th Floor, Boston, MA 02110		SAMPLERS SIGNATURE & INITIALS:		

SAMPLED ON DATE	TIME	SAMPLE IDENTIFICATION	FIELD FILTERED	SAMPLE TYPE	MATRIX			NUMBER OF CONTAINERS SUBMITTED			REMARKS
					Method 8260B - VOCs	Method 8060A - TOC	EPA 300.1 - sulfate	1	8		
		ALBW20352MSD	N	GW	3	3	1				1. Run straight sample analysis (without dilution) for every sample.
		ALBW20353	N	GW	3	3	1				2. Use ALBW20353 as OA/QC sample for all analyses.
		ALBW20354	N	GW	3	3	1				3. Please hold SDG open until all shipments from the project site have arrived.
		ALBW20355	N	GW	3	3	1				
		ALBW20356	N	GW	3	3	1				
		ALBW20357	N	GW	3	3	1				
12/18/2015	1500	ALBW00124	N	W	2						Preservative 1 HCI
12/21/2015	1125	ALBW00046	N	W	2						8 Ice

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
<i>[Signature]</i>	12/15	1130			

RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
<i>[Signature]</i>	12/15	1025			

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	LABORATORY SEAL NO.	LABORATORY REMARKS:
<i>[Signature]</i>	12/15	1025	00	686-120339 1.2/1.6

Original - Return to Laboratory with Sample(s)

Chain of Custody Record



Client Information (Sub Contract Lab) Client Contact: Shipping/Receiving Company: TestAmerica Laboratories, Inc. Address: 10 Hazelwood Drive, City: Amherst State, Zip: NY, 14228-2298 Phone: 716-691-2600(Tel) 716-691-7991(Fax) Email: Project Name: Seneca Army Depot: Ash Landfill Site:		Lab P/N: Smith, Kathryn E E-Mail: kathy.smith@testamericainc.com		Carrier Tracking No(s): COC No: 680-416024-1 Page: Page 1 of 1 Job #: 680-120227-1					
Due Date Requested: 1/8/2016 TAT Requested (days): PO #: WO #: Project #: 68010612 SSOW#:		Analysis Requested Preservation Codes: M - Hexane N - None O - ASNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - ph 4-5 X - EDTA L - EDA Z - other (specify) Other:							
Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Water, Seawater, On-water, Off-water)	Field Filtered Sample (Yes or No)	9060A (Organic Carbon, Total (TOC))	Temperature (MSD) (Yes or No)	Total Number of Bottles	Special Instructions/Note:
ALBW20343 (680-120227-1)	12/17/15	14:02 Eastern	Water	Water	X	X	X	3	Run straight /report most concentrated run
ALBW20347 (680-120227-2)	12/17/15	13:55 Eastern	Water	Water	X	X	X	3	Run straight /report most concentrated run
ALBW20352 (680-120227-3)	12/16/15	11:02 Eastern	Water	Water	X	X	X	3	Run straight /report most concentrated run
ALBW20352MS (680-120227-3MS)	12/16/15	11:02 Eastern	MS	Water	X	X	X	3	Run straight /report most concentrated run
ALBW20352MSD (680-120227-3MSD)	12/16/15	11:02 Eastern	MSD	Water	X	X	X	3	Run straight /report most concentrated run
ALBW20353 (680-120227-4)	12/16/15	11:12 Eastern	Water	Water	X	X	X	3	Run straight /report most concentrated run
ALBW20354 (680-120227-5)	12/16/15	14:00 Eastern	Water	Water	X	X	X	3	Run straight /report most concentrated run
ALBW20355 (680-120227-6)	12/16/15	14:00 Eastern	Water	Water	X	X	X	3	Run straight /report most concentrated run
ALBW20356 (680-120227-7)	12/17/15	11:50 Eastern	Water	Water	X	X	X	3	Run straight /report most concentrated run
ALBW20357 (680-120227-8)	12/17/15	12:10 Eastern	Water	Water	X	X	X	3	Run straight /report most concentrated run
Possible Hazard Identification Unconfirmed Deliverable Requested: I, II, III, IV, Other (specify)									
Empty Kit Requisitioned by: _____ Requisitioned by: _____ Requisitioned by: _____ Requisitioned by: _____					Method of Shipment: _____ Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months				
Special Instructions/QC Requirements:									
Date/Time: 12/22/15 10:30 Date/Time: 12/22/15 10:30 Date/Time: 12/22/15 10:30					Received by: _____ Received by: _____ Received by: _____ Company: _____ Company: _____ Company: _____				
Cooler Temperature(s) °C and Other Remarks: 41.3, 7.0									



Chain of Custody Record



Client Information (Sub Contract Lab) Client Contact: Smith, Kathryn E Shipping/Receiving: kathy.smith@testamericainc.com Company: TestAmerica Laboratories, Inc.		Lab P/N: Smith, Kathryn E E-Mail: kathy.smith@testamericainc.com Carrier Tracking No(s):		COC No: 680-416036.1 Page: Page 1 of 1 Job #: 680-120227-1	
Address: 10 Hazelwood Drive, City: Amherst State, Zip: NY, 14228-2298 Phone: 716-691-2600(Tel) 716-691-7991(Fax) Email:		Due Date Requested: 1/8/2016 TAT Requested (days):		Analysis Requested Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Anchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:	
Project Name: Seneca Army Depot: Ash Landfill Site:		Project #: 68010612 SOW#:		M - Hexane N - None O - As/NaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - ph 4-5 Z - other (specify)	
Sample Identification - Client ID (Lab ID) ALBW00124 (680-120339-8)		Sample Date 12/18/15		Sample Time 15:00 Eastern	
Sample Type (C=comp, G=grab)		Matrix (W=water, S=solid, O=wastofil, BT=tissue, A=air)		Field Filtered Sample (Yes or No) <input checked="" type="checkbox"/> Yes	
Sample Date 12/18/15		Sample Time 15:00 Eastern		906A/Organic Carbon, Total (TOC) <input checked="" type="checkbox"/> Yes	
Sample Date 12/18/15		Sample Time 15:00 Eastern		Total Number of Containers 3	
Sample Date 12/18/15		Sample Time 15:00 Eastern		Special Instructions/Note: Run straight/report most concentrated run	
Possible Hazard Identification Unconfirmed Deliverable Requested: I, II, III, IV, Other (specify)					
Empty Kit Relinquished by: [Signature] Relinquished by: [Signature] Relinquished by: [Signature] Relinquished by: [Signature]					
Chain of Custody Date/Time: 12/22/15 17:00 Date/Time: 1/13/16 10:30 Date/Time: 1/13/16 Date/Time: 1/13/16					
Company: [Signature] Company: [Signature] Company: [Signature] Company: [Signature]					
Cooler Temperature(s) °C and Other Remarks: #13.7°C					



Login Sample Receipt Checklist

Client: Parsons Corporation

Job Number: 680-120227-1

Login Number: 120227

List Number: 1

Creator: Banda, Christy S

List Source: TestAmerica Savannah

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

Login Sample Receipt Checklist

Client: Parsons Corporation

Job Number: 680-120227-1

Login Number: 120227

List Number: 2

Creator: Hulbert, Michael J

List Source: TestAmerica Buffalo

List Creation: 12/23/15 02:28 PM

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.7 #1
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	False	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

Login Sample Receipt Checklist

Client: Parsons Corporation

Job Number: 680-120227-1

Login Number: 120339

List Number: 1

Creator: Kicklighter, Marilyn D

List Source: TestAmerica Savannah

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



Login Sample Receipt Checklist

Client: Parsons Corporation

Job Number: 680-120227-1

Login Number: 120339

List Number: 2

Creator: Hulbert, Michael J

List Source: TestAmerica Buffalo

List Creation: 12/23/15 02:23 PM

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.7 #1
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	False	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

Certification Summary

Client: Parsons Corporation
Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Laboratory: TestAmerica Savannah

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
New York	NELAP	2	10842	03-31-16

Laboratory: TestAmerica Buffalo

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
New York	NELAP	2	10026	03-31-16

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January 4, 2016

Beth Badik
Parsons
100 High Street
4th Floor
Boston, MA 02110

RE: **ASH LANDFILL / 748662-03300**

Pace Workorder: 17732

Dear Beth Badik:

Enclosed are the analytical results for sample(s) received by the laboratory between Friday, December 18, 2015 and Monday, December 21, 2015. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ruth Welsh 01/04/2016
Ruth.Welsh@pacelabs.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email info@microseeps.com.

Total Number of Pages 120

Report ID: 17732 - 751451

Page 1 of 20



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LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water and Solid & Hazardous Waste
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water; Solid and Chemical Materials
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water; Solid and Hazardous Waste
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, PAES is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).



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SAMPLE SUMMARY

Workorder: 17732 ASH LANDFILL / 748662-03300

Lab ID	Sample ID	Matrix	Date Collected	Date Received
177320001	ALBW20343	Water	12/17/2015 14:02	12/18/2015 09:15
177320002	ALBW20347	Water	12/17/2015 13:55	12/18/2015 09:15
177320003	ALBW20352	Water	12/16/2015 11:02	12/18/2015 09:15
177320004	ALBW20352 MS	Water	12/16/2015 11:02	12/18/2015 09:15
177320005	ALBW20352 MSD	Water	12/16/2015 11:02	12/18/2015 09:15
177320006	ALBW20353	Water	12/16/2015 11:12	12/18/2015 09:15
177320007	ALBW20354	Water	12/16/2015 14:00	12/18/2015 09:15
177320008	ALBW20355	Water	12/16/2015 14:00	12/18/2015 09:15
177320009	ALBW20356	Water	12/17/2015 11:50	12/18/2015 09:15
177320010	ALBW20357	Water	12/17/2015 12:10	12/18/2015 09:15
177320011	ALB00124	Water	12/18/2015 15:00	12/21/2015 08:30



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PROJECT SUMMARY

Workorder: 17732 ASH LANDFILL / 748662-03300

Batch Comments

Batch: DISG/5110 - RSK175 QC

The matrix spike and/or spike duplicate, recovery or relative percent difference; accuracy influenced by the concentration of the reference sample 177320003. Analyte Methane. Batch acceptance based on laboratory control sample recovery.



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ANALYTICAL RESULTS

Workorder: 17732 ASH LANDFILL / 748662-03300

Lab ID: 177320001 Date Received: 12/18/2015 09:15 Matrix: Water
 Sample ID: ALBW20343 Date Collected: 12/17/2015 14:02

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - MICR								
Analysis Desc: EPA RSK175			Analytical Method: EPA RSK175					
Methane	21	ug/l	0.50	0.042	1	12/23/2015 13:37		SL
Ethane	0.13J	ug/l	0.20	0.0080	1	12/23/2015 13:37		SL
Ethene	0.044J	ug/l	0.20	0.030	1	12/23/2015 13:37		SL



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ANALYTICAL RESULTS

Workorder: 17732 ASH LANDFILL / 748662-03300

Lab ID: **177320002** Date Received: 12/18/2015 09:15 Matrix: Water
 Sample ID: **ALBW20347** Date Collected: 12/17/2015 13:55

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - MICR								
Analysis Desc: EPA RSK175			Analytical Method: EPA RSK175					
Methane	440	ug/l	5.0	0.42	10	12/28/2015 15:28	SL	d,M3,D3,M5
Ethane	0.84	ug/l	0.20	0.0080	1	12/23/2015 13:59	SL	
Ethene	0.13J	ug/l	0.20	0.030	1	12/23/2015 13:59	SL	

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ANALYTICAL RESULTS

Workorder: 17732 ASH LANDFILL / 748662-03300

Lab ID: 177320003 Date Received: 12/18/2015 09:15 Matrix: Water
 Sample ID: ALBW20352 Date Collected: 12/16/2015 11:02

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - MICR								
Analysis Desc: EPA RSK175			Analytical Method: EPA RSK175					
Methane	13000	ug/l	50	4.2	100	12/28/2015 15:40	SL	d,M3,D3,M5
Ethane	8.0	ug/l	0.20	0.0080	1	12/23/2015 14:39	SL	
Ethene	2.5	ug/l	0.20	0.030	1	12/23/2015 14:39	SL	



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ANALYTICAL RESULTS

Workorder: 17732 ASH LANDFILL / 748662-03300

Lab ID: 177320004 Date Received: 12/18/2015 09:15 Matrix: Water
 Sample ID: ALBW20352 MS Date Collected: 12/16/2015 11:02

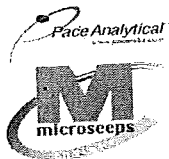
Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - MICR								
Analysis Desc: EPA RSK175			Analytical Method: EPA RSK175					
Methane	12000	ug/l	50	4.2	100	12/28/2015 15:50	SL	d,M3,D3,M5
Ethane	95	ug/l	0.20	0.0080	1	12/23/2015 14:54	SL	
Ethene	80	ug/l	0.20	0.030	1	12/23/2015 14:54	SL	



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ANALYTICAL RESULTS

Workorder: 17732 ASH LANDFILL / 748662-03300

Lab ID: 177320005
 Sample ID: ALBW20352 MSD

Date Received: 12/18/2015 09:15 Matrix: Water
 Date Collected: 12/16/2015 11:02

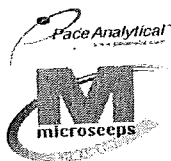
Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - MICR								
Analysis Desc: EPA RSK175		Analytical Method: EPA RSK175						
Methane	13000	ug/l	50	4.2	100	12/28/2015 16:01	SL	d,M3,D3,M5
Ethane	93	ug/l	0.20	0.0080	1	12/23/2015 15:05	SL	
Ethene	81	ug/l	0.20	0.030	1	12/23/2015 15:05	SL	

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ANALYTICAL RESULTS

Workorder: 17732 ASH LANDFILL / 748662-03300

Lab ID: 177320006
 Sample ID: ALBW20353

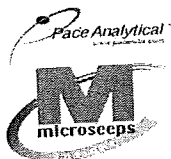
Date Received: 12/18/2015 09:15 Matrix: Water
 Date Collected: 12/16/2015 11:12

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - MICR								
Analysis Desc: EPA RSK175			Analytical Method: EPA RSK175					
Methane	13000	ug/l	50	4.2	100	12/28/2015 16:28	SL	d,M3,D3,M5
Ethane	7.4	ug/l	0.20	0.0080	1	12/23/2015 15:21	SL	
Ethene	2.3	ug/l	0.20	0.030	1	12/23/2015 15:21	SL	

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ANALYTICAL RESULTS

Workorder: 17732 ASH LANDFILL / 748662-03300

Lab ID: 177320007
 Sample ID: ALBW20354

Date Received: 12/18/2015 09:15 Matrix: Water
 Date Collected: 12/16/2015 14:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - MICR								
Analysis Desc: EPA RSK175 Analytical Method: EPA RSK175								
Methane	140	ug/l	0.50	0.042	1	12/23/2015 16:39	SL	
Ethane	1.1	ug/l	0.20	0.0080	1	12/23/2015 16:39	SL	
Ethene	0.27	ug/l	0.20	0.030	1	12/23/2015 16:39	SL	

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ANALYTICAL RESULTS

Workorder: 17732 ASH LANDFILL / 748662-03300

Lab ID: **177320008** Date Received: 12/18/2015 09:15 Matrix: Water
 Sample ID: **ALBW20355** Date Collected: 12/16/2015 14:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - MICR								
Analysis Desc: EPA RSK175		Analytical Method: EPA RSK175						
Methane	16000	ug/l	50	4.2	100	12/28/2015 16:39	SL	d,M3,D3,M5
Ethane	1.4	ug/l	0.20	0.0080	1	12/23/2015 16:51	SL	
Ethene	0.18J	ug/l	0.20	0.030	1	12/23/2015 16:51	SL	



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ANALYTICAL RESULTS

Workorder: 17732 ASH LANDFILL / 748662-03300

Lab ID: 177320009 Date Received: 12/18/2015 09:15 Matrix: Water
 Sample ID: ALBW20356 Date Collected: 12/17/2015 11:50

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - MICR								
Analysis Desc: EPA RSK175		Analytical Method: EPA RSK175						
Methane	14000	ug/l	50	4.2	100	12/28/2015 16:50	SL	d,M3,D3,M5
Ethane	0.29	ug/l	0.20	0.0080	1	12/23/2015 17:04	SL	
Ethene	0.20	U ug/l	0.20	0.030	1	12/23/2015 17:04	SL	



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ANALYTICAL RESULTS

Workorder: 17732 ASH LANDFILL / 748662-03300

Lab ID: 177320010
 Sample ID: ALBW20357

Date Received: 12/18/2015 09:15 Matrix: Water
 Date Collected: 12/17/2015 12:10

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - MICR								
Analysis Desc: EPA RSK175		Analytical Method: EPA RSK175						
Methane	1600	ug/l	5.0	0.42	10	12/28/2015 17:01	SL	d,M3,D3,M5
Ethane	2.3	ug/l	0.20	0.0080	1	12/23/2015 17:16	SL	
Ethene	7.4	ug/l	0.20	0.030	1	12/23/2015 17:16	SL	

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ANALYTICAL RESULTS

Workorder: 17732 ASH LANDFILL / 748662-03300

Lab ID: 177320011
 Sample ID: ALB00124

Date Received: 12/21/2015 08:30 Matrix: Water
 Date Collected: 12/18/2015 15:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - MICR								
Analysis Desc: EPA RSK175			Analytical Method: EPA RSK175					
Methane	0.10J	ug/l	0.50	0.042	1	12/23/2015 17:28	SL	
Ethane	0.20 U	ug/l	0.20	0.0080	1	12/23/2015 17:28	SL	
Ethene	0.20 U	ug/l	0.20	0.030	1	12/23/2015 17:28	SL	

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ANALYTICAL RESULTS QUALIFIERS

Workorder: 17732 ASH LANDFILL / 748662-03300

DEFINITIONS/QUALIFIERS

Disclaimer : The Pennsylvania Department of Environmental Protection (PADEP) has decided to no longer recognize analyses that do not produce data for primary compliance, for NELAP accreditation. The methods affected by this decision are AM20Gax, AM21G, SW846 7199 and AM4.02. The laboratory shall continue to administer the NELAP/TNI standard requirements in the performance of these methods.

- MDL Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
- PQL Practical Quantitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
- ND Not detected at or above reporting limit.
- DF Dilution Factor.
- S Surrogate.
- RPD Relative Percent Difference.
- % Rec Percent Recovery.
- U Indicates the compound was analyzed for, but not detected at or above the noted concentration.
- J Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).

- D3 The matrix spike duplicate relative percent difference (RPD) exceeded laboratory control limits.
- d The analyte concentration was determined from a dilution.
- M5 The matrix spike duplicate sample recovery was outside laboratory control limits.
- M3 The matrix spike sample recovery was outside laboratory control limits.



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QUALITY CONTROL DATA

Workorder: 17732 ASH LANDFILL / 748662-03300

QC Batch: DISG/5090 Analysis Method: EPA RSK175
 QC Batch Method: EPA RSK175
 Associated Lab Samples: 177320001, 177320002, 177320003, 177320004, 177320005, 177320006, 177320007, 177320008, 177320009, 177320010, 177320011

METHOD BLANK: 39475

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Methane	ug/l	0.50 U	0.50	
Ethane	ug/l	0.20 U	0.20	
Ethene	ug/l	0.20 U	0.20	

LABORATORY CONTROL SAMPLE & LCSD: 39476 39477

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Methane	ug/l	44	45	45	101	100	85-115	1	20	
Ethane	ug/l	83	84	83	101	100	85-115	1	20	
Ethene	ug/l	78	80	79	102	102	85-115	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 39584 39585 Original: 177320003

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK											
Ethane	ug/l	8	83	95	93	105	103	70-130			
Ethene	ug/l	2.5	78	80	81	100	101	70-130			

SAMPLE DUPLICATE: 39478 Original: 177320001

Parameter	Units	Original Result	DUP Result	RPD	Max RPD	Qualifiers
RISK						
Methane	ug/l	21	23	8.4	20	
Ethane	ug/l	0.13	0.13	3.5	20	
Ethene	ug/l	0.044	0.043	2.1	20	



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QUALITY CONTROL DATA

Workorder: 17732 ASH LANDFILL / 748662-03300

SAMPLE DUPLICATE: 39479

Original: 177320007

Parameter	Units	Original Result	DUP Result	RPD	Max RPD	Qualifiers
RISK						
Methane	ug/l	140	160	8.9	20	
Ethane	ug/l	1.1	1.2	9.4	20	
Ethene	ug/l	0.27	0.29	7	20	



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QUALITY CONTROL DATA

Workorder: 17732 ASH LANDFILL / 748662-03300

QC Batch: DISG/5110 Analysis Method: EPA RSK175
 QC Batch Method: EPA RSK175
 Associated Lab Samples: 177320002, 177320003, 177320004, 177320005, 177320006, 177320008, 177320009, 177320010

METHOD BLANK: 39646

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK Methane	ug/l	0.50 U	0.50	M3,D3,M5

LABORATORY CONTROL SAMPLE & LCSD: 39647 39648

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK Methane	ug/l	44	45	45	101	101	85-115	0	20	M3,M5,D3

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 39584 39585 Original: 177320003

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK Methane	ug/l	13000	44	12000	13000	-2880	-557	70-130	-135	20	d,M3,D3,M5

SAMPLE DUPLICATE: 39649 Original: 177320010

Parameter	Units	Original Result	DUP Result	RPD	Max RPD	Qualifiers
RISK Methane	ug/l	1600	1600	1.3	20	d,M3,D3,M5



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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 17732 ASH LANDFILL / 748662-03300

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
177320001	ALBW20343			EPA RSK175	DISG/5090
177320002	ALBW20347			EPA RSK175	DISG/5090
177320003	ALBW20352			EPA RSK175	DISG/5090
177320004	ALBW20352 MS			EPA RSK175	DISG/5090
177320005	ALBW20352 MSD			EPA RSK175	DISG/5090
177320006	ALBW20353			EPA RSK175	DISG/5090
177320007	ALBW20354			EPA RSK175	DISG/5090
177320008	ALBW20355			EPA RSK175	DISG/5090
177320009	ALBW20356			EPA RSK175	DISG/5090
177320010	ALBW20357			EPA RSK175	DISG/5090
177320011	ALB00124			EPA RSK175	DISG/5090
177320002	ALBW20347			EPA RSK175	DISG/5110
177320003	ALBW20352			EPA RSK175	DISG/5110
177320004	ALBW20352 MS			EPA RSK175	DISG/5110
177320005	ALBW20352 MSD			EPA RSK175	DISG/5110
177320006	ALBW20353			EPA RSK175	DISG/5110
177320008	ALBW20355			EPA RSK175	DISG/5110
177320009	ALBW20356			EPA RSK175	DISG/5110
177320010	ALBW20357			EPA RSK175	DISG/5110



CERTIFICATE OF ANALYSIS

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Chain of Custody Documents

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

17732

Microseeps, Inc
220 William Pitt Way
Pittsburgh, PA 15238
Phone 412 826 5245
Fax 412 826 3433
www.microseeps.com

Serial or COC #: _____
JOBLOG #: _____
Possible Hazards: Unknown
Sample Disposal: Lab Disposal of 120
PAGE 1 OF 2

PROJECT & CLIENT INFORMATION

PROJECT REFERENCE/NAME: Ash Landfill Long Term Monitoring
LAB PROJECT MANAGER: Taryn Manchie
CLIENT (SITE) PM: Beth Badik
Todd Belanger
CLIENT NAME: Parsons
CLIENT ADDRESS: 100 High Street, 4th Floor, Boston, MA 02110
Samplers Signature & Initials: _____

PROJECT NO.: 748662-03300
P.O. NUMBER: 748662-03300
CONTRACT/Quote NO.: _____
CLIENT PHONE: 617-449-1565
617-449-1428
CLIENT FAX: 617-946-9777
CLIENT EMAIL: beth.badik@parsons.com
todd.belanger@parsons.com

Project State: NY

SAMPLED ON DATE	TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID			MATRIX	REQUIRED ANALYSES		REMARKS
			SAMPLE TYPE	FIELD FILTERED	NUMBER OF CONTAINERS SUBMITTED		NUMBER OF COOLERS SUBMITTED PER SHIPMENT		
12/17/2015	1402	ALBW20343	SA	N	GW	3	1	RSK-175 - MEE	1. Run straight sample analysis (without dilution) for every sample. 2. Use ALBW20353 as QA/QC sample for MEE analysis.
12/17/2015	1355	ALBW20347	SA	N	GW	3			
12/16/2015	1102	ALBW20352	SA	N	GW	3			
12/16/2015	1102	ALBW20352MS	SA	N	GW	3			
12/16/2015	1102	ALBW20352MSD	SA	N	GW	3			
12/16/2015	1112	ALBW20353	SA	N	GW	3			
12/16/2015	1400	ALBW20354	SA	N	GW	3			
12/16/2015	1400	ALBW20355	SA	N	GW	3			
12/17/2015	1150	ALBW20356	SA	N	GW	3			Preservative 1 trisodium phosphate
RELINQUISHED BY: (SIGNATURE) _____			DATE	12/17/15	TIME	1537	RECEIVED BY: (SIGNATURE) _____	DATE	TIME
RECEIVED BY: (SIGNATURE) _____			DATE		TIME		RECEIVED BY: (SIGNATURE) _____	DATE	TIME

RECEIVED FOR LABORATORY BY: (SIGNATURE) _____ DATE: 12/15/15 TIME: 0915

CUSTODY INTACT: YES NO

LABORATORY SEAL NO. _____

LABORATORY REMARKS: _____

17732

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Microseeps, Inc
220 William Pitt Way
Pittsburgh, PA 15238
Phone 412 826 5245
Fax 412 826 3433
www.microseeps.com

JOB/LOG #:
Possible Hazards: Unknown
Sample Disposal: Lab Disposal
120

PROJECT & CLIENT INFORMATION

PROJECT REFERENCE NAME	Ash Landfill Long Term Monitoring	PROJECT NO.	748662-03300	Project State	NY
LAB PROJECT MANAGER	Tanya Maricite	P.O. NUMBER	748662-03300	CONTRACT/Quote NO.	
CLIENT (SITE) PM	Beth Badrik	CLIENT PHONE	617-449-1595	CLIENT FAX	617-946-9777
Todd Belanger		CLIENT EMAIL	beth.badrik@parsons.com todd.belanger@parsons.com		
CLIENT ADDRESS	100 High Street, 4th Floor, Boston, MA 02110				
Samplers Signature & Initials:					

Sample Information

LABORATORY SAMPLE ID	SA	SAMPLE TYPE	N	FIELD FILTERED	N	MATRIX	GW
	RB		N		W		3

REQUIRED ANALYSES

RSK-175 - MEE									

NUMBER OF CONTAINERS SUBMITTED

1									
---	--	--	--	--	--	--	--	--	--

Final Report Type (Circle at least one):
ASR2000 Category B
EDD Protected/Specified
TAT/ DATE DUE 15 calendar days Per OAR/Quote
EXPEDITED REPORT (circle one)
FAX EMAIL POST Other
TAT/ DATE DUE
or Per OAR/Project

REMARKS

1. Run straight sample analysis (without dilution) for every sample.
2. Use ALBW20353 as QA/QC sample for MEE analysis.

Preservative

1 trisodium phosphate

SAMPLED ON DATE	TIME	SAMPLE IDENTIFICATION	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
12/17/2015	1210	ALBW20357	12/17/15	1537	[Signature]					
		ALBW00124								

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES NO	CUSTODY SEAL NO.	LABORATORY REMARKS:
[Signature]	12/15/15	0915	YES	0	

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

17732

PROJECT & CLIENT INFORMATION

PROJECT REFERENCE/NAME	PROJECT NO.	Project State
Ash Landfill Long Term Monitoring	748662-03300	NY
LAB PROJECT MANAGER	P.O. NUMBER	CONTRACT/Quote NO.
Tamr Maniche	748662-03300	
CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
Beth Badik	617-449-1565	617-946-9777
Todd Belanger	617-449-1428	
CLIENT NAME	CLIENT EMAIL	
Parsons	beth.badik@parsons.com todd.belanger@parsons.com	
CLIENT ADDRESS		
100 High Street, 4th Floor, Boston, MA 02110		

Samplers Signature & Initials:

SAMPLED ON

DATE	TIME	SAMPLE IDENTIFICATION
12/18/2005	1500	ALBW00124

LABORATORY SAMPLE ID

RB	SAMPLE TYPE
N	FIELD FILTERED
W	MATRIX
3	RSK-175 - MEE

REQUIRED ANALYSES

NUMBER OF CONTAINERS SUBMITTED	DATE	TIME	RECEIVED BY: (SIGNATURE)
1			
3	12-21-15	0830	

Final Report Type (Circle at least one):
 ASP2000 Category B
 EDD Exited-Specified
 TAT/ DATE DUE 15 calendar days
 Per OAP/Quote
 EXPEDITED REPORT (circle one)
 FAX EMAIL POST Other
 TAT/ DATE DUE _____
 or Per OAP/Project

DATE	TIME	SAMPLE IDENTIFICATION	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
				12/18/15	1519			

DATE	TIME	SAMPLE IDENTIFICATION	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

DATE	TIME	SAMPLE IDENTIFICATION	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

RECEIVED FOR LABORATORY BY: (SIGNATURE) DATE TIME CUSTODY INTACT YES NO

LABORATORY REMARKS: 1 trisodium phosphate

Microseeps, Inc
 220 William Pitt Way
 Pittsburgh, PA 15238
 Phone 412 826 5245
 Fax 412 826 3433
 www.microseeps.com

JOBLOG #:
 Possible Hazards: Unknown
 Sample Disposal: Lab Disposal
 PAGE 1 OF 2

50C

NON-CONFORMANCE FORM

Date: 12.18.15 Time of Receipt: 0915 PAES Work Order #: 17732 Receiver: 29

Client: Parsons

REASON FOR NON-CONFORMANCE.

Did not receive ALBWO0124
12.21.15: Received ALBWO0124 COC date was
12/18/2005

ACTION TAKEN:

Client name: _____ Date: _____ Time: _____

Per attached email, left out of shipment
will be sent separately

Customer Service Initials EW

Date: 12-18-15

Ruth Welsh - RE: Ash Landfill

From: "Belanger, Todd" <Todd.Belanger@parsons.com>
To: Ruth Welsh <Ruth.Welsh@pacelabs.com>
Date: 12/21/2015 9:41 AM
Subject: RE: Ash Landfill

Ha. Ok, go ahead and make a change to the COC.

Thanks for the help!

Todd

From: Ruth Welsh [Ruth.Welsh@pacelabs.com]
Sent: Monday, December 21, 2015 9:37 AM
To: Belanger, Todd
Subject: RE: Ash Landfill

The paperwork just made it to my desk. We did receive it; however, the date of collection appears to have a typo. It is listed as 12-18-2005 and not 2015

Ruth Welsh
 Customer Service
 Pace Analytical Energy Services, LLC
 220 William Pitt Way
 Pittsburgh, PA 15238
[412-826-4482](tel:412-826-4482) (direct)
[412-826-5245](tel:412-826-5245) (main)
[412-826-3433](tel:412-826-3433) (fax)

>>> "Belanger, Todd" <Todd.Belanger@parsons.com> 12/21/2015 8:14 AM >>>
 Hi Ruth,

Did you receive the rinse blank for the Ash Landfill project?

Thanks,
 Todd

From: Ruth Welsh [<mailto:Ruth.Welsh@pacelabs.com>]
Sent: Friday, December 18, 2015 12:05 PM
To: Badik, Beth; Belanger, Todd

Cc: Taryn Mancine
Subject: RE: Ash Landfill

Please see the attached for the COC and login information

Ruth Welsh
Customer Service
Pace Analytical Energy Services, LLC
220 William Pitt Way
Pittsburgh, PA 15238
412-826-4482 (direct)
412-826-5245 (main)
412-826-3433 (fax)

>>> "Belanger, Todd" <Todd.Belanger@parsons.com> 12/18/2015 11:52 AM >>>
Hi Ruth,

The rinse blank was accidently left out of the shipment. Please cross it off the COC you have.

We will overnight a rinse blank and COC for the RB this evening. It will arrive tomorrow. Please include it as part of the SDG with the samples you have.

Please send us a log-in receipt and signed COC for the shipments.

Thank you
Todd

From: Ruth Welsh [<mailto:Ruth.Welsh@pacelabs.com>]
Sent: Friday, December 18, 2015 10:42 AM
To: Badik, Beth; Belanger, Todd
Cc: Taryn Mancine
Subject: Ash Landfill

We received the sample cooler today for this project. Sample ALBW00124 was missing from the shipment.

Ruth Welsh
Customer Service
Pace Analytical Energy Services, LLC

220 William Pitt Way
 Pittsburgh, PA 15238
412-826-4482 (direct)
412-826-5245 (main)
412-826-3433 (fax)

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 For more information please visit <http://www.symanteccloud.com>

Cooler Receipt Form

Client Name: Parsons Project: Ash Landfill Lab Work Order: 17732

A. Shipping/Container Information (circle appropriate response)

Courier: FedEx UPS USPS Client Other: _____ Air bill Present: Yes No

Tracking Number: _____

Custody Seal on Cooler/Box Present: Yes No Seals Intact: Yes No

Cooler/Box Packing Material: Bubble Wrap Absorbent Foam Other: _____

Type of Ice: Wet Blue None Ice Intact: Yes Melted

Cooler Temperature: 4°C Radiation Screened: Yes No Chain of Custody Present: Yes No

Comments: _____

B. Laboratory Assignment/Log-in (check appropriate response)

	YES	NO	N/A	Comment Reference non-conformance
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC		✓		
Containers intact	✓			
Were samples in separate bags	✓			
Sample container labels match COC	✓			
Sample name/date and time collected	✓			
Sufficient volume provided	✓			
PAES containers used	✓			
Are containers properly preserved for the requested testing? (as labeled)	✓			
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form...
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	

Comments: _____

Cooler contents examined/received by: LY Date: 12.18.15

Project Manager Review: EW Date: 12-21-15

Sample Tracking Record

Client Name:

Parsons

Page 1 of 1

Client Project Number:

Ashland LF

Bottle Type Circle or Highlight (Sample Receiving Only)	VOA	VFA	TIC	Hydrogen
	G. Chem.	LLVFA	Soils	
	TOC/DOC	Cations	Diss. Gas	
	Sulfide	Anions	Vapor	

Sample Receiving only to mark above dotted line

Sample Numbers	Removed from Storage			Bottle Type	Returned or Placed in Storage		
	By	Date	Time		By	Date	Time
17732 / 1-10	AM	12/23/15	1000	see above	AM	12/18/15	0915
17732 / 1-11	AM	12/23/15	1000	Diss. Gas	AM	12/23/15	1800
17732 / 2-6, 8-10	AM	12/28/15	1200	Diss. Gas	AM	12/28/15	1800

Enter Bottle Type From List Above In Proper Column

Dissolved Gases Data

Method File: LHC060915
 Operator: slyon

Title: LHC RSK175
 Datasource: BIOREM13_local
 Location: DissolvedGasesRSK175WATER060915SEL.SEQ

Created: 10/10/2008 3:21:33 PM by Administrator
 Last Update: 6/9/2015 1:34:24 PM by slyon

Peak Table:

Use Recently Detected Retention Times: Off
 Peak Retention Time Determination: Absolute
 Dead time:
 Delay Time of 2'nd Detector: <None>
 Delay Time of 3'rd Detector: <None>

No.	Peak Name	Ret.Time	Ret.Time FID	Window	Standard	Int.Type	Cal.Type	Peak Type	Group	Comment
1	Methane	0.663 min	0.663 min	0.040 AG	External	Area	Quad	Auto		
2	Ethane	0.999 min	0.999 min	0.060 AG	External	Area	Quad	Auto		
3	Ethene	1.261 min	1.261 min	0.080 AG	External	Area	Quad	Auto		
4	Propane	2.114 min	2.114 min	0.150 AG	External	Area	Quad	Auto		
5	Propene	3.725 min	3.725 min	0.290 AG	External	Area	Quad	Auto		
6	iso-Butane	5.623 min	5.623 min	0.225 AG	External	Area	Quad	Auto		
7	n-Butane	6.455 min	6.455 min	0.275 AG	External	Area	Quad	Auto		

Method File: LHC060915
 Operator: slyon

Title: LHC RSK175
 Datasource: BIOREM13_local
 Location: DissolvedGasesRSK175WATER060915SEL.SEQ

Created: 10/10/2008 3:21:33 PM by Administrator
 Last Update: 6/9/2015 1:34:24 PM by slyon

Amount Table:

Dimension of Amounts: ug/L
 Reference volume for amounts: Use inject volume of first standard
 Number of Amount Columns: 7
 Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Ret.Time FID	Resp.Fact.	Comment	Amount ICAL LHC L7	Amount ICAL LHC L6	Amount ICAL LHC L5	Amount ICAL LHC L4
1	Methane	0.663 min	0.663 min	1.000000		0.060744	0.121488	0.485951	1.943806
2	Ethane	0.999 min	0.999 min	1.000000		0.117965	0.235929	0.943717	3.774867
3	Ethene	1.261 min	1.261 min	1.000000		0.131276	0.262553	1.050210	4.200840
4	Propane	2.114 min	2.114 min	1.000000		0.169439	0.338879	1.355515	5.422061
5	Propene	3.725 min	3.725 min	1.000000		0.190538	0.381076	1.524305	6.097219
6	iso-Butane	5.623 min	5.623 min	1.000000		0.211271	0.422542	1.690169	6.760676
7	n-Butane	6.455 min	6.455 min	1.000000		0.218522	0.437044	1.748175	6.992699

Method File: LHC060915
 Operator: slyon

Title: LHC RSK175
 Datasource: BIOREM13_local
 Location: DissolvedGasesRSK175WATER060915SEL.SEQ

Created: 10/10/2008 3:21:33 PM by Administrator
 Last Update: 6/9/2015 1:34:24 PM by slyon

Amount Table:

Dimension of Amounts: ug/L
 Reference volume for amounts: Use inject volume of first standard
 Number of Amount Columns: 7
 Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Amount		
			ICAL LHC L3	ICAL LHC L2	ICAL LHC L1
1	<i>Methane</i>	0.663 min	9.719028	48.595140	242.975700
2	Ethane	0.999 min	18.874336	94.371680	471.858400
3	Ethene	1.261 min	21.004200	105.021000	525.105000
4	Propane	2.114 min	27.110304	135.551520	677.757600
5	Propene	3.725 min	30.486095	152.430480	762.152400
6	iso-Butane	5.623 min	33.803380	169.016900	845.084500
7	n-Butane	6.455 min	34.963496	174.817480	874.087400

Method File: LHC060915
 Operator: slyon

Printed: 6/12/2015 12:36:44 PM

Title: LHC RSK175
 Datasource: BIOREM13_local
 Location: DissolvedGasesRSK175\WATER060915SEL.SEQ

Created: 10/10/2008 3:21:33 PM by Administrator
 Last Update: 6/9/2015 1:34:24 PM by slyon

Calibration:

Calibration Mode: Total
 Auto Recalibrate: On
 Curve Fitting Model: Normal
 Dual-Column Separate Calibration: Off

No.	Enabled	Name	Smp.No.	Pos.	Inj. Vol.	Weight	ISTD Amount	Dil. Factor	Inj. Date/Time
1	<input checked="" type="checkbox"/>	ICAL LHC L7	3	2	1.0	1.0000	1.0000	1.0000	6/9/2015 11:04:10 AM
2	<input checked="" type="checkbox"/>	ICAL LHC L6	4	3	1.0	1.0000	1.0000	1.0000	6/9/2015 11:19:03 AM
3	<input checked="" type="checkbox"/>	ICAL LHC L5	5	4	1.0	1.0000	1.0000	1.0000	6/9/2015 11:29:54 AM
4	<input checked="" type="checkbox"/>	ICAL LHC L4	6	5	1.0	1.0000	1.0000	1.0000	6/9/2015 11:43:29 AM
5	<input checked="" type="checkbox"/>	ICAL LHC L3	7	6	1.0	1.0000	1.0000	1.0000	6/9/2015 11:57:56 AM
6	<input checked="" type="checkbox"/>	ICAL LHC L2	8	7	1.0	1.0000	1.0000	1.0000	6/9/2015 12:08:47 PM
7	<input checked="" type="checkbox"/>	ICAL LHC L1	9	8	1.0	1.0000	1.0000	1.0000	6/9/2015 12:31:45 PM

Method File: LHC060915
 Operator: slyon

Printed: 6/12/2015 12:36:45 PM

Title: LHC RSK175
 Datasource: BIOREM13_local
 Location: DissolvedGasesRSK175WATER060915SEL.SEQ

Created: 10/10/2008 3:21:33 PM by Administrator
 Last Update: 6/9/2015 1:34:24 PM by slyon

Calibration:

Calibration Mode: Total
 Auto Recalibrate: On
 Curve Fitting Model: Normal
 Dual-Column Separate Calibration: Off

No.	Enabled	Name	Sample Comment	Calib. Comment
1	<input checked="" type="checkbox"/>	ICAL LHC L7		Ok
2	<input checked="" type="checkbox"/>	ICAL LHC L6		Ok
3	<input checked="" type="checkbox"/>	ICAL LHC L5		Ok
4	<input checked="" type="checkbox"/>	ICAL LHC L4		Ok
5	<input checked="" type="checkbox"/>	ICAL LHC L3		Ok
6	<input checked="" type="checkbox"/>	ICAL LHC L2		Ok
7	<input checked="" type="checkbox"/>	ICAL LHC L1		Ok

Sequence: WATER060915SEL
Operator: akerr

Title: WATER060915SEL
Datatype: BIOREM13_local
Location: DissolvedGasesRSK175
Timebase: BIOREM13
#Samples: 775

Created: 6/8/2015 2:51:32 PM by slyon
Last Update: 8/25/2015 11:49:48 AM by akerr

No.	Name	Type	Program	Method	Status	Inj. Date/Time	Dil. Factor	Comment
1	Instrument Blank	Unknown	LHC060915	LHC060915	Finished	6/9/2015 9:33:44 AM	1.0000	
2	Instrument Blank	Unknown	LHC060915	LHC060915	Finished	6/9/2015 9:52:08 AM	1.0000	
3	ICAL LHC L7	Standard	LHC060915	LHC060915	Finished	6/9/2015 11:04:10 AM	1.0000	
4	ICAL LHC L6	Standard	LHC060915	LHC060915	Finished	6/9/2015 11:19:03 AM	1.0000	
5	ICAL LHC L5	Standard	LHC060915	LHC060915	Finished	6/9/2015 11:29:54 AM	1.0000	
6	ICAL LHC L4	Standard	LHC060915	LHC060915	Finished	6/9/2015 11:43:29 AM	1.0000	
7	ICAL LHC L3	Standard	LHC060915	LHC060915	Finished	6/9/2015 11:57:56 AM	1.0000	
8	ICAL LHC L2	Standard	LHC060915	LHC060915	Finished	6/9/2015 12:08:47 PM	1.0000	
9	ICAL LHC L1	Standard	LHC060915	LHC060915	Finished	6/9/2015 12:31:45 PM	1.0000	
10	ICV/CCV 060915	Unknown	LHC060915	LHC060915	Finished	6/9/2015 1:00:03 PM	1.0000	RA-13-03
11	ICB/CCB 060915	Unknown	LHC060915	LHC060915	Finished	6/9/2015 1:10:20 PM	1.0000	
12	35394-MB	Unknown	LHC060915	LHC060915	Finished	6/9/2015 2:09:20 PM	1.0000	
13	35395-LCS	Unknown	LHC060915	LHC060915	Finished	6/9/2015 3:04:28 PM	1.0000	RA-11-09 5X
14	35396-LCSD	Unknown	LHC060915	LHC060915	Finished	6/9/2015 3:32:58 PM	1.0000	RA-11-09 5X
15	156700001-2 5X DIL	Unknown	LHC060915	LHC060915	Finished	6/9/2015 4:18:50 PM	1.0000	
16	157230001-1	Unknown	LHC060915	LHC060915	Finished	6/9/2015 4:29:24 PM	1.0000	
17	157230002-1	Unknown	LHC060915	LHC060915	Finished	6/9/2015 4:39:46 PM	1.0000	
18	157230003-1	Unknown	LHC060915	LHC060915	Finished	6/9/2015 5:02:11 PM	1.0000	
19	157230004-1	Unknown	LHC060915	LHC060915	Finished	6/9/2015 5:20:03 PM	1.0000	
20	157770001-1	Unknown	LHC060915	LHC060915	Finished	6/9/2015 5:37:36 PM	1.0000	
21	157900001-1	Unknown	LHC060915	LHC060915	Finished	6/9/2015 5:48:47 PM	1.0000	
22	157230002-2 re check	Unknown	LHC060915	LHC060915	Finished	6/9/2015 6:07:25 PM	1.0000	
23	157230003-2 DUP	Unknown	LHC060915	LHC060915	Finished	6/9/2015 6:22:34 PM	1.0000	
24	35397-157230004-2 DUP	Unknown	LHC060915	LHC060915	Finished	6/9/2015 6:39:20 PM	1.0000	
25	CCV2 FID 060915	Unknown	LHC060915	LHC060915	Finished	6/9/2015 6:58:51 PM	1.0000	
26	CCB2 060915	Unknown	LHC060915	LHC060915	Finished	6/9/2015 7:14:25 PM	1.0000	
27	Instrument Blank	Unknown	LHC060915	LHC060915	Finished	6/10/2015 9:48:21 AM	1.0000	

Sequence: WATER060915SEL
 Operator: slyon

Printed: 12/30/2015 7:38:27 AM

Title: WATER060915SEL

Datasource: BIOREM13_local
 Location: DissolvedGasesRSK175
 Timebase: BIOREM13
 #Samples: 1920

Created: 6/8/2015 2:51:32 PM by slyon
 Last Update: 12/29/2015 5:06:12 PM by slyon

No.	Name	Type	Program	Method	Status	Inj. Date/Time	Dil. Factor	Comment
805	176900001-1	Unknown	LHCV081711	LHC060915	Finished	12/22/2015 1:11:24 PM	1.0000	
806	176900002-1	Unknown	LHCV081711	LHC060915	Finished	12/22/2015 1:21:47 PM	1.0000	
807	176900003-1	Unknown	LHCV081711	LHC060915	Finished	12/22/2015 1:32:12 PM	1.0000	
808	176900004-1	Unknown	LHCV081711	LHC060915	Finished	12/22/2015 1:44:01 PM	1.0000	
809	176900005-1	Unknown	LHCV081711	LHC060915	Finished	12/22/2015 2:03:07 PM	1.0000	
810	CCV2 FID 122215	Unknown	LHCV081711	LHC060915	Finished	12/22/2015 2:21:36 PM	1.0000	RA-14-12 5X
811	CCB2 122215	Unknown	LHCV081711	LHC060915	Finished	12/22/2015 3:12:53 PM	1.0000	
812	177130001-1	Unknown	LHCV081711	LHC060915	Finished	12/22/2015 3:24:35 PM	1.0000	
813	177220001-1	Unknown	LHCV081711	LHC060915	Finished	12/22/2015 3:39:22 PM	1.0000	
814	177220002-1	Unknown	LHCV081711	LHC060915	Finished	12/22/2015 3:49:44 PM	1.0000	
815	177230001-1	Unknown	LHCV081711	LHC060915	Finished	12/22/2015 4:00:03 PM	1.0000	
816	176680001-2 5X DIL	Unknown	LHCV081711	LHC060915	Finished	12/22/2015 4:31:01 PM	1.0000	
817	176700001-2 5X DIL	Unknown	LHCV081711	LHC060915	Finished	12/22/2015 4:47:48 PM	1.0000	
818	177130001-2 100X DIL	Unknown	LHCV081711	LHC060915	Finished	12/22/2015 4:58:10 PM	1.0000	
819	CCV3 FID 122215	Unknown	LHCV081711	LHC060915	Finished	12/22/2015 5:14:24 PM	1.0000	RA-14-12 2X
820	CCB3 122215	Unknown	LHCV081711	LHC060915	Finished	12/22/2015 5:40:08 PM	1.0000	
821	Insturment Blank	Unknown	LHCV081711	LHC060915	Finished	12/23/2015 11:01:21 AM	1.0000	
822	CCV FID 122315	Unknown	LHCV081711	LHC060915	Finished	12/23/2015 11:20:27 AM	1.0000	RA-14-12 2X
823	CCB 122315	Unknown	LHCV081711	LHC060915	Finished	12/23/2015 12:05:59 PM	1.0000	
824	39475-MB	Unknown	LHCV081711	LHC060915	Finished	12/23/2015 12:32:07 PM	1.0000	
825	39476-LCS	Unknown	LHCV081711	LHC060915	Finished	12/23/2015 12:54:20 PM	1.0000	RA-12-08 5X
826	39477-LCSD	Unknown	LHCV081711	LHC060915	Finished	12/23/2015 1:22:01 PM	1.0000	RA-12-08 5X
827	177320001-1	Unknown	LHCV081711	LHC060915	Finished	12/23/2015 1:37:53 PM	1.0000	
828	177320002-1	Unknown	LHCV081711	LHC060915	Finished	12/23/2015 1:59:22 PM	1.0000	
829	39478-177320001-2 DUP	Unknown	LHCV081711	LHC060915	Finished	12/23/2015 2:17:45 PM	1.0000	
830	177320003-1 ORIG	Unknown	LHCV081711	LHC060915	Finished	12/23/2015 2:39:02 PM	1.0000	
831	39584-177320004-1 MS	Unknown	LHCV081711	LHC060915	Finished	12/23/2015 2:54:10 PM	1.0000	
832	39585-177320005-1 MSD	Unknown	LHCV081711	LHC060915	Finished	12/23/2015 3:05:40 PM	1.0000	
833	177320006-1	Unknown	LHCV081711	LHC060915	Finished	12/23/2015 3:21:57 PM	1.0000	
834	CCV2 FID 122315	Unknown	LHCV081711	LHC060915	Finished	12/23/2015 3:42:27 PM	1.0000	RA-14-12 5X
835	CCB2 122315	Unknown	LHCV081711	LHC060915	Finished	12/23/2015 4:25:45 PM	1.0000	
836	177320007-1	Unknown	LHCV081711	LHC060915	Finished	12/23/2015 4:39:37 PM	1.0000	
837	177320008-1	Unknown	LHCV081711	LHC060915	Finished	12/23/2015 4:51:16 PM	1.0000	
838	177320009-1	Unknown	LHCV081711	LHC060915	Finished	12/23/2015 5:04:48 PM	1.0000	
839	177320010-1	Unknown	LHCV081711	LHC060915	Finished	12/23/2015 5:16:09 PM	1.0000	
840	177320011-1	Unknown	LHCV081711	LHC060915	Finished	12/23/2015 5:28:16 PM	1.0000	
841	39479-177320007-2 DUP	Unknown	LHCV081711	LHC060915	Finished	12/23/2015 5:39:47 PM	1.0000	
842	CCV3 FID 122315	Unknown	LHCV081711	LHC060915	Finished	12/23/2015 5:50:04 PM	1.0000	RA-14-12 2X
843	CCB3 122315	Unknown	LHCV081711	LHC060915	Finished	12/23/2015 6:19:14 PM	1.0000	
844	Insturment Blank	Unknown	LHCV081711	LHC060915	Finished	12/24/2015 9:49:07 AM	1.0000	
845	CCV FID 122415	Unknown	LHCV081711	LHC060915	Finished	12/24/2015 10:14:05 AM	1.0000	RA-14-12 2X
846	CCB 122415	Unknown	LHCV081711	LHC060915	Finished	12/24/2015 10:42:35 AM	1.0000	
847	39502-MB	Unknown	LHCV081711	LHC060915	Finished	12/24/2015 10:53:18 AM	1.0000	
848	39503-LCS	Unknown	LHCV081711	LHC060915	Finished	12/24/2015 11:13:16 AM	1.0000	RA-12-08 5X

Sequence: WATER060915SEL
 Operator: slyon

Title: WATER060915SEL
 Datasource: BIOREM13_local
 Location: DissolvedGasesRSK175
 Timebase: BIOREM13
 #Samples: 1921

Created: 6/8/2015 2:51:32 PM by slyon
 Last Update: 12/31/2015 1:59:00 PM by slyon

No.	Name	Type	Program	Method	Status	Inj. Date/Time	Dil. Factor	Comment
849	39504-LCSD	Unknown	LHCV081711	LHC060915	Finished	12/24/2015 11:29:17 AM	1.0000	RA-12-08 5X
850	178200001-1	Unknown	LHCV081711	LHC060915	Finished	12/24/2015 11:40:23 AM	1.0000	
851	178200002-1	Unknown	LHCV081711	LHC060915	Finished	12/24/2015 11:50:35 AM	1.0000	
852	178200003-1	Unknown	LHCV081711	LHC060915	Finished	12/24/2015 12:00:52 PM	1.0000	
853	178200004-1	Unknown	LHCV081711	LHC060915	Finished	12/24/2015 12:11:07 PM	1.0000	
854	178200005-1	Unknown	LHCV081711	LHC060915	Finished	12/24/2015 12:22:45 PM	1.0000	
855	178200006-1	Unknown	LHCV081711	LHC060915	Finished	12/24/2015 12:33:06 PM	1.0000	
856	178200007-1	Unknown	LHCV081711	LHC060915	Finished	12/24/2015 12:43:30 PM	1.0000	
857	178200008-1	Unknown	LHCV081711	LHC060915	Finished	12/24/2015 12:55:51 PM	1.0000	
858	39505-178200005-2 DUP	Unknown	LHCV081711	LHC060915	Finished	12/24/2015 1:14:15 PM	1.0000	
859	178200002-2 100X DIL	Unknown	LHCV081711	LHC060915	Finished	12/24/2015 1:32:24 PM	1.0000	
860	178200004-2 5X DIL	Unknown	LHCV081711	LHC060915	Finished	12/24/2015 1:48:51 PM	1.0000	
861	CCV2 FID 122415	Unknown	LHCV081711	LHC060915	Finished	12/24/2015 2:00:47 PM	1.0000	RA-14-12 5X
862	CCB2 122415	Unknown	LHCV081711	LHC060915	Finished	12/24/2015 2:31:46 PM	1.0000	
863	Insturment Blank	Unknown	LHCV081711	LHC060915	Finished	12/28/2015 10:06:41 AM	1.0000	
864	Insturment Blank	Unknown	LHCV081711	LHC060915	Finished	12/28/2015 10:21:30 AM	1.0000	
865	CCV FID 122815	Unknown	LHCV081711	LHC060915	Finished	12/28/2015 1:08:04 PM	1.0000	RA-14-12 2X
866	CCB 122815	Unknown	LHCV081711	LHC060915	Finished	12/28/2015 2:08:23 PM	1.0000	
867	39646-MB	Unknown	LHCV081711	LHC060915	Finished	12/28/2015 2:33:41 PM	1.0000	
868	39647-LCS	Unknown	LHCV081711	LHC060915	Finished	12/28/2015 2:47:22 PM	1.0000	RA-12-08 5X
869	39648-LCSD	Unknown	LHCV081711	LHC060915	Finished	12/28/2015 3:02:50 PM	1.0000	RA-12-08 5X
870	177320002-2 10X DIL	Unknown	LHCV081711	LHC060915	Finished	12/28/2015 3:28:10 PM	1.0000	
871	177320003-2 ORIG 100X DIL	Unknown	LHCV081711	LHC060915	Finished	12/28/2015 3:40:27 PM	1.0000	
872	177320004-2 MS 100X DIL	Unknown	LHCV081711	LHC060915	Finished	12/28/2015 3:50:40 PM	1.0000	
873	177320005-2 MSD 100X DIL	Unknown	LHCV081711	LHC060915	Finished	12/28/2015 4:01:37 PM	1.0000	
874	177320006-2 50X DIL	Unknown	LHCV081711	LHC060915	Finished	12/28/2015 4:14:27 PM	1.0000	
875	177320006-2 100X DIL	Unknown	LHCV081711	LHC060915	Finished	12/28/2015 4:28:44 PM	1.0000	
876	177320008-2 100X DIL	Unknown	LHCV081711	LHC060915	Finished	12/28/2015 4:39:12 PM	1.0000	
877	177320009-2 100X DIL	Unknown	LHCV081711	LHC060915	Finished	12/28/2015 4:50:42 PM	1.0000	
878	177320010-2 10X DIL	Unknown	LHCV081711	LHC060915	Finished	12/28/2015 5:01:37 PM	1.0000	
879	39649-177320010-3 10X DIL DUP	Unknown	LHCV081711	LHC060915	Finished	12/28/2015 5:20:06 PM	1.0000	
880	CCV2 FID 122815	Unknown	LHCV081711	LHC060915	Finished	12/28/2015 5:32:30 PM	1.0000	RA-14-12 5X
881	CCB2 122815	Unknown	LHCV081711	LHC060915	Finished	12/28/2015 6:05:59 PM	1.0000	
882	Insturment Blank	Unknown	LHCV081711	LHC060915	Finished	12/29/2015 10:11:35 AM	1.0000	
883	Insturment Blank	Unknown	LHCV081711	LHC060915	Finished	12/29/2015 10:27:44 AM	1.0000	
884	CCV FID 122915	Unknown	LHCV081711	LHC060915	Finished	12/29/2015 10:40:34 AM	1.0000	RA-14-12 2X
885	CCB 122915	Unknown	LHCV081711	LHC060915	Finished	12/29/2015 11:06:14 AM	1.0000	
886	39567-MB	Unknown	LHCV081711	LHC060915	Finished	12/29/2015 11:21:59 AM	1.0000	
887	39568-LCS	Unknown	LHCV081711	LHC060915	Finished	12/29/2015 11:32:27 AM	1.0000	
888	39569-LCSD	Unknown	LHCV081711	LHC060915	Finished	12/29/2015 11:45:16 AM	1.0000	
889	177840001-1	Unknown	LHCV081711	LHC060915	Finished	12/29/2015 11:55:39 AM	1.0000	
890	177850001-1	Unknown	LHCV081711	LHC060915	Finished	12/29/2015 12:06:56 PM	1.0000	
891	177850002-1	Unknown	LHCV081711	LHC060915	Finished	12/29/2015 12:17:21 PM	1.0000	
892	177860001-1	Unknown	LHCV081711	LHC060915	Finished	12/29/2015 12:31:01 PM	1.0000	

260915, 2 Temp Min - 22°C Max - 23°C

ICAL RSK175 R9 Sea Water 060915SEL

Stock RA-11-09 Lot# 109-26-06666

Instrument Settings: He 12 PSI
 H₂ 25 PSI
 Air 30 PSI

Standard Level	Concentration (PPM)	Standard Volume	UHP He
w/s 1	40	8 cc	192 cc
w/s 2	5	1 cc	199 cc
Level 7	0.25	2cc w/s 2	36 cc
6	0.50	5cc w/s 2	45 cc
5	2.00	25cc w/s 1	47.5 cc
4	8.00	10cc w/s 1	40 cc
3	40.00	2cc	48 cc
2	200	10 cc	40 cc
1	1000	From cylinder	—

ICV/CCV RA-13-03 From cylinder
 CCV2 RA-13-03 2X DIL
 LCS/LCSD RA-11-09 5X DIL

Samples: 15670-(1) 5X DIL, 15723-(1-4), 15777-(1)
 15790-(1)

* All samples had a PH of 10 or greater

RSK175 FID Water Min: Max Arch 06/10/15
 Temp 23 24
 CCV1 RA-13-3 2X
 CCV2 RA-13-3 5X
 Sample: 157240001 → 4
 PH: 157240001 at pH 8, 157240002 → 4 at pH 7.10
 Dilutions: 157240001 at 100X DIL
 LCS/LCSD: RA-11-9 5X

6A

12115, SL

RSK 175 R9 water
 CCV1 RA-10-14 2X
 CCV1 ~~RA-10-14~~ RA-11-04 2X
 CCV2 RA-10-14 1X
 CCV3 RA-10-14 2X
 CCV4 RA-10-14 1X
 LCS/LCSD | MS/MSD RA-10-14 2.5X

Samples 17566-(12-21), 17636-(1) 17631-(2-24)
 17671-(3,5)

12205, SL

RSK 175 R7 water
 CCV1 RA-10-14 2X
 CCV1 RA-11-04 2X
 CCV2 RA-10-14 1X
 CCV3 RA-10-14 2X
 LCS/LCSD | MS/MSD RA-10-14 2.5X

Samples : 17631-(25-30) 17671-(1-2) 17653-(1-11)

12215, SL

RSK 175 R9 water
 CCV1 + CCV3 RA-14-12 2X
 CCV2 RA-14-12 5X
 LCS/LCSD RA-12-08 5X

Samples : 17666-17670-(1) 17690-(4,5) 17713-(1)
 17722-(1-2) 17723-(1)

Samples with pH less than 10 17690-(2) 17713-(1)

12315, SL

RSK 175 R9 water
 CCV1 + CCV3 RA-14-12 2X
 CCV2 RA-14-12 5X
 LCS/LCSD | MS/MSD RA-10-14 2X 12315 RA-12-08 5X

Samples 17732-(1-11)

Samples with pH under 10 (17732-(6,8,9))

22415 SL RSK 175 R9 water
CCV1 RA-14-12 2X
CCV2 RA-14-12 5X
LCS/LSD RA-12-08 5X

Samples: 17620-(1-8) All samples had a pH of 10 or greater

22615 SL RSK 175 R9 water
CCV1 RA-14-12 2X
CCV2 RA-14-12 5X
LCS/LSD/MS/MED RA-12-08 5X

Samples: 17732-(2-6, 8-10) Dilutions

MATHESON TRI-GAS INC
1650 Enterprise Pkwy
Twinsburg, OH 44087
1-215-648-4000

RA-12-08

CERTIFICATE OF ANALYSIS

Microseeps Inc
220 William Pitt Way
Attn Pat Mcloughlin Po B130123
Pittsburgh, Pa 15238

OPENED 10/30/15

EXPIRES 10/30/17

Ref Po# 8630

221 LITER DISPOSABLE

LOT NUMBER: 109-36-09088

COMPONENT

CONCENTRATION

Methane	999.9 PPM
Ethane	999.7 PPM
Propane	1002.6 PPM
Butane	1000.1 PPM
Ethylene	1000.2 PPM
PROPYLENE	1000.2 PPM
Isobutane	1000.1 PPM
Nitrogen	BALANCE

ITEM NUMBER: GMT2675592TD

CGA: 165

PSIG: 260 PSIG

FILL DATE: 1/31/13

EXPIRATION DATE: 02/01/15

Above are the results of the analysis you requested, as reported by our laboratory. Results are in mole percent, unless otherwise indicated. Mixture accuracy is $\pm 2\%$. NIST traceable by weights or gaseous standards.


Amanda Miller, Lab Technician

2/6/2013

DATE

RA-14-12



AIR LIQUIDE

Air Liquide America
Specialty Gases LLC



Scott™

Shipped
From:

6141 EASTON ROAD, BLDG 1
PLUMSTEADVILLE PA 18949-0310
Phone: 800-331-4953

PO BOX 310

18949-0310

Fax: 215-766-7226

C E R T I F I C A T E O F A N A L Y S I S

PACE ANALYTICAL ENERGY SERVICES LLC
PO# B141211
220 WILLIAM PITT WAY
PITTSBURGH PA 15238
US

DOCUMENT#: 58156744 -001
PO#: B141211
ITEM #: TNA00013-48
DATE: 05Jan2015

ANALYTICAL ACCURACY: +/-2%
PRODUCT EXPIRATION: 05Jan2018

LOT # : 365PLU4SPC04L

COMPONENT	REQUESTED GAS		ANALYSIS	
	CONC	MOLES	(MOLES)	
METHANE	1,000.	PPM	1,000.	PPM
ETHANE	1,000.	PPM	1,010.	PPM
ETHYLENE	1,000.	PPM	1,010.	PPM
PROPANE	1,000.	PPM	1,000.	PPM
PROPYLENE	1,000.	PPM	1,000.	PPM
ISOBUTANE	1,000.	PPM	1,000.	PPM
N-BUTANE	1,000.	PPM	1,000.	PPM
ISOPENTANE	1,000.	PPM	1,000.	PPM
N-PENTANE	1,000.	PPM	1,000.	PPM
N-HEXANE	1,000.	PPM	1,010.	PPM
NITROGEN		BALANCE		BALANCE

MANUFACTURED DATE: 05Jan2015

SCOTTY SIZE: 48

APPROVED BY:

JEFFREY SCHAFER 44 of 120

Dissolved Gases in Water

Method: RSK175

6/9/2015

Detection: FID

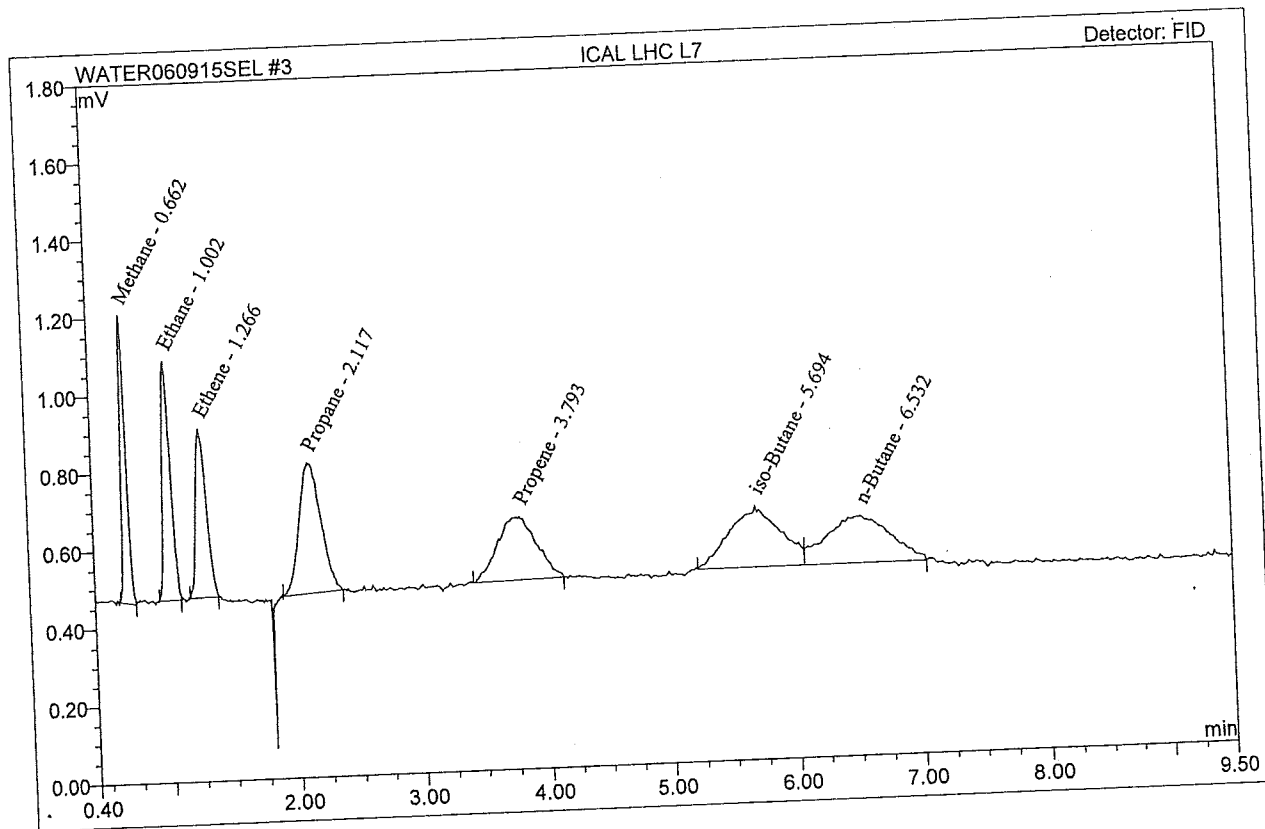
No.	Ret.Time min	Peak Name	Cal.Type	Points	Coeff.Det. %	Offset	Slope	Curve
1	0.66	Methane	Quad	7	100.0000	0.0000	0.3957	0.0001
2	1.00	Ethane	Quad	7	100.0000	0.0000	0.3922	0.0000
3	1.26	Ethene	Quad	7	100.0000	0.0000	0.3550	0.0000
4	2.12	Propane	Quad	7	100.0000	0.0000	0.3999	0.0000
5	3.70	Propene	Quad	7	99.9999	0.0000	0.3388	0.0000
6	5.62	iso-Butane	Quad	7	99.9999	0.0000	0.4027	0.0000
7	6.44	n-Butane	Quad	7	99.9999	0.0000	0.3883	0.0000

MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL LHC L7	Sequence No:	3
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHC081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/9/2015 11:04	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.662	0.035	0.741	BMB	0.0874
2	Ethane	1.002	0.045	0.615	BMB	0.1145
3	Ethene	1.266	0.042	0.435	BMB	0.1659
4	Propane	2.117	0.066	0.337	BMB	0.1713
5	Propene	3.793	0.058	0.165	BM	0.1831
6	iso-Butane	5.694	0.074	0.158	BM	0.1851
7	n-Butane	6.532	0.072	0.123	MB	0.1851

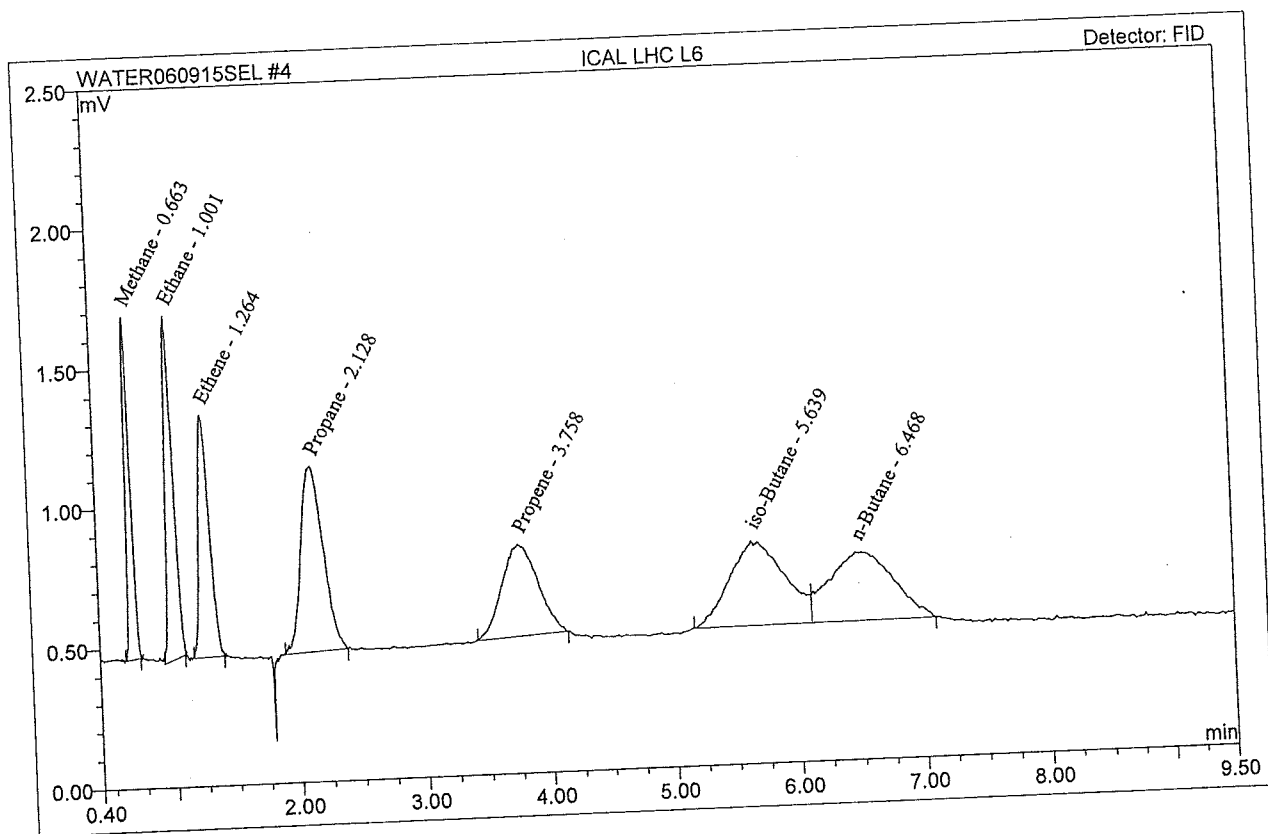


MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL LHC L6	Sequence No:	4
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/9/2015 11:19	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.663	0.057	1.224	BMB	0.1429
2	Ethane	1.001	0.089	1.226	BMB	0.2266
3	Ethene	1.264	0.088	0.868	BMB	0.2475
4	Propane	2.128	0.133	0.664	BMB	0.3321
5	Propene	3.758	0.112	0.328	BMB	0.3298
6	iso-Butane	5.639	0.155	0.302	BM	0.3855
7	n-Butane	6.468	0.143	0.245	MB	0.3694

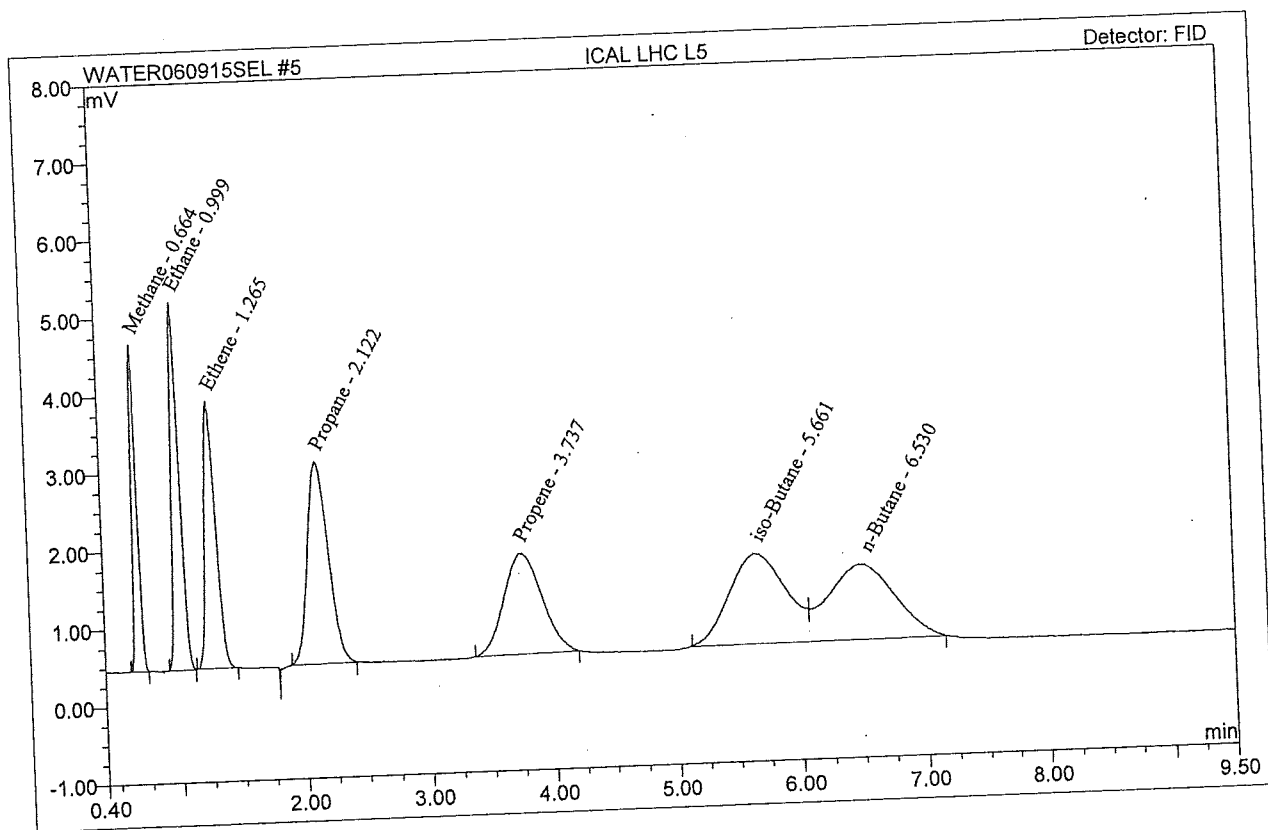


MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL LHC L5	Sequence No:	5
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/9/2015 11:29	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.664	0.196	4.208	BMB	0.4944
2	Ethane	0.999	0.348	4.729	BMB	0.8883
3	Ethene	1.265	0.348	3.435	BMB	0.9807
4	Propane	2.122	0.512	2.601	BMB	1.2809
5	Propene	3.737	0.464	1.296	BMB	1.3698
6	iso-Butane	5.661	0.618	1.161	BM	1.5339
7	n-Butane	6.530	0.596	0.970	MB	1.5346

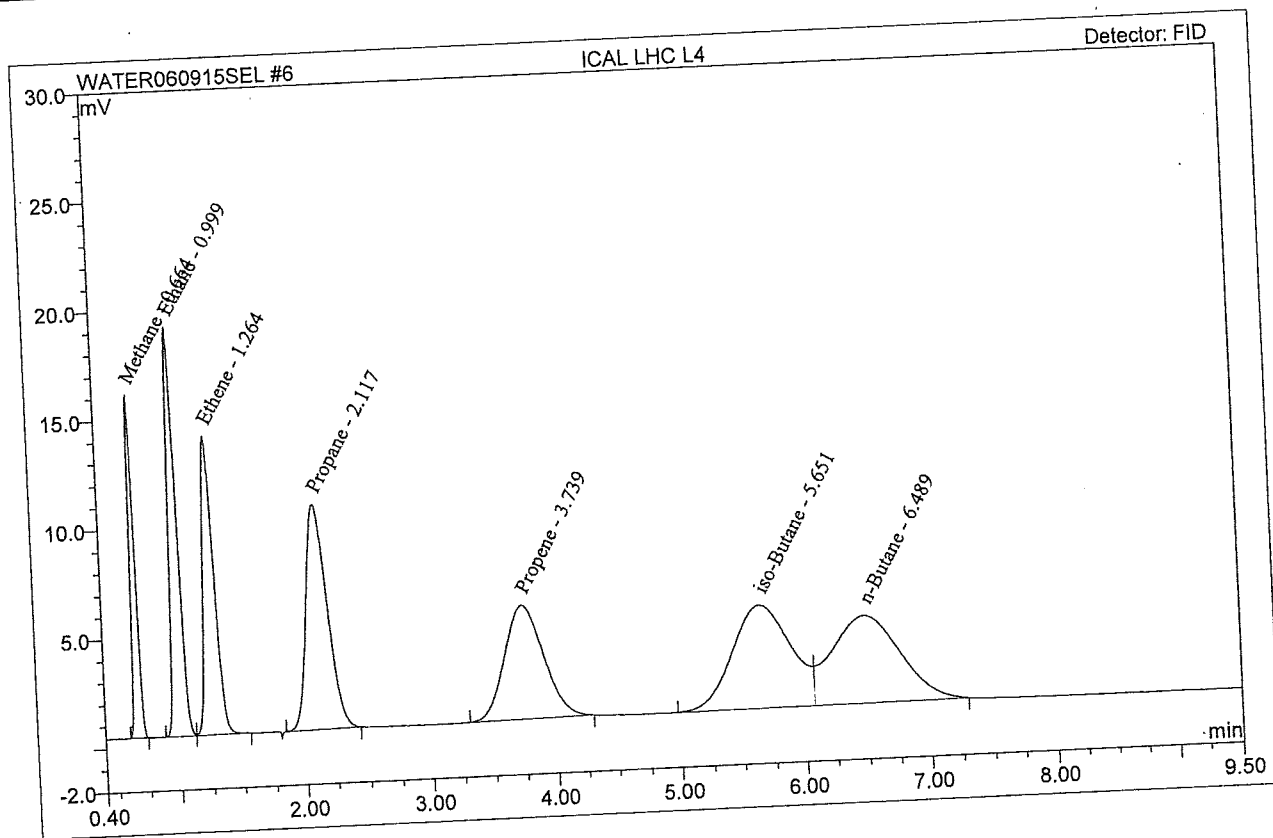


MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL LHC L4	Sequence No:	6
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/9/2015 11:43	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.664	0.730	15.699	BMB	1.8440
2	Ethane	0.999	1.382	18.749	BM	3.5223
3	Ethene	1.264	1.396	13.680	MB	3.9300
4	Propane	2.117	2.049	10.315	BMB	5.1221
5	Propene	3.739	1.915	5.239	BMB	5.6479
6	iso-Butane	5.651	2.608	4.739	BM	6.4706
7	n-Butane	6.489	2.542	4.032	MB	6.5414

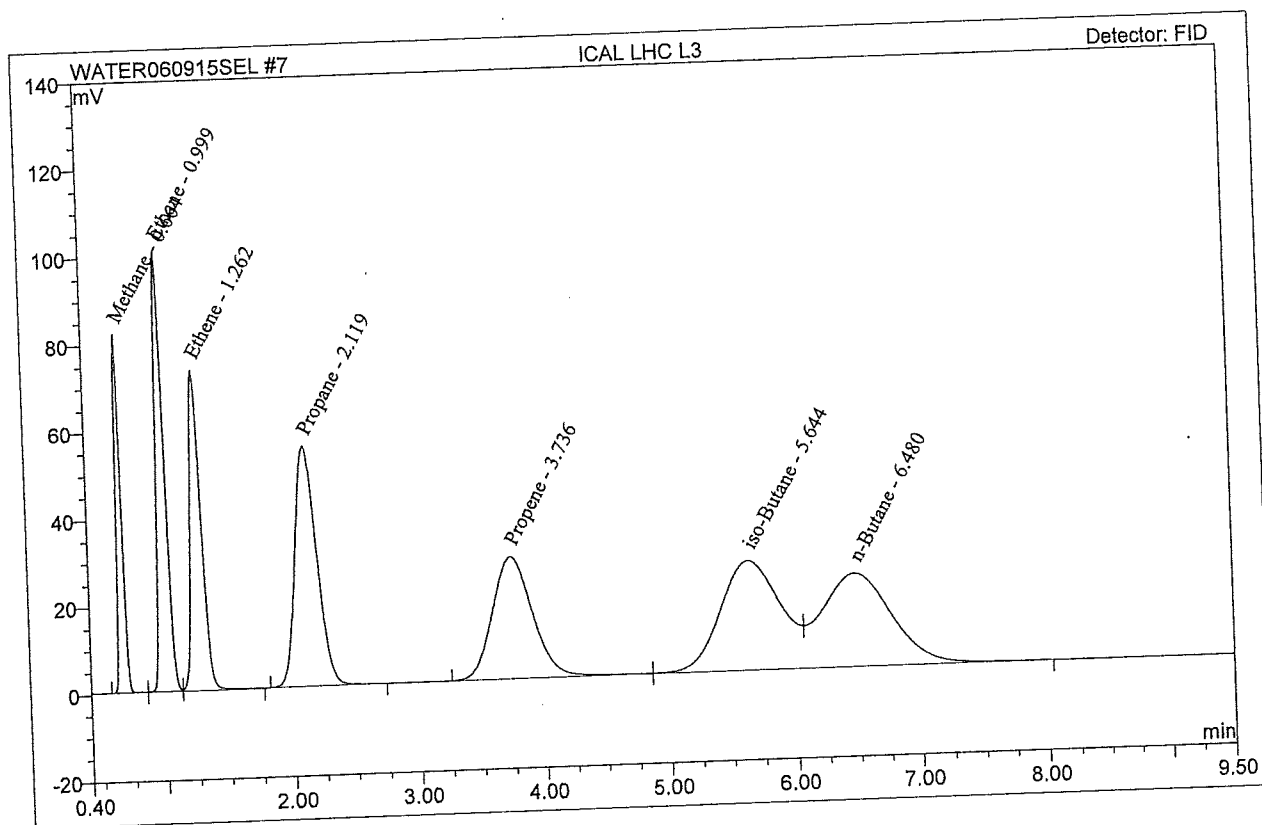


MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL LHC L3	Sequence No:	7
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/9/2015 11:57	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.664	3.859	82.166	BM	9.7245
2	Ethane	0.999	7.386	100.709	M	18.8010
3	Ethene	1.262	7.517	73.428	MB	21.1324
4	Propane	2.119	10.890	54.871	BMB	27.1619
5	Propene	3.736	10.454	28.001	BM	30.7588
6	iso-Butane	5.644	13.882	25.147	M	34.3510
7	n-Butane	6.480	13.882	21.398	MB	35.6121

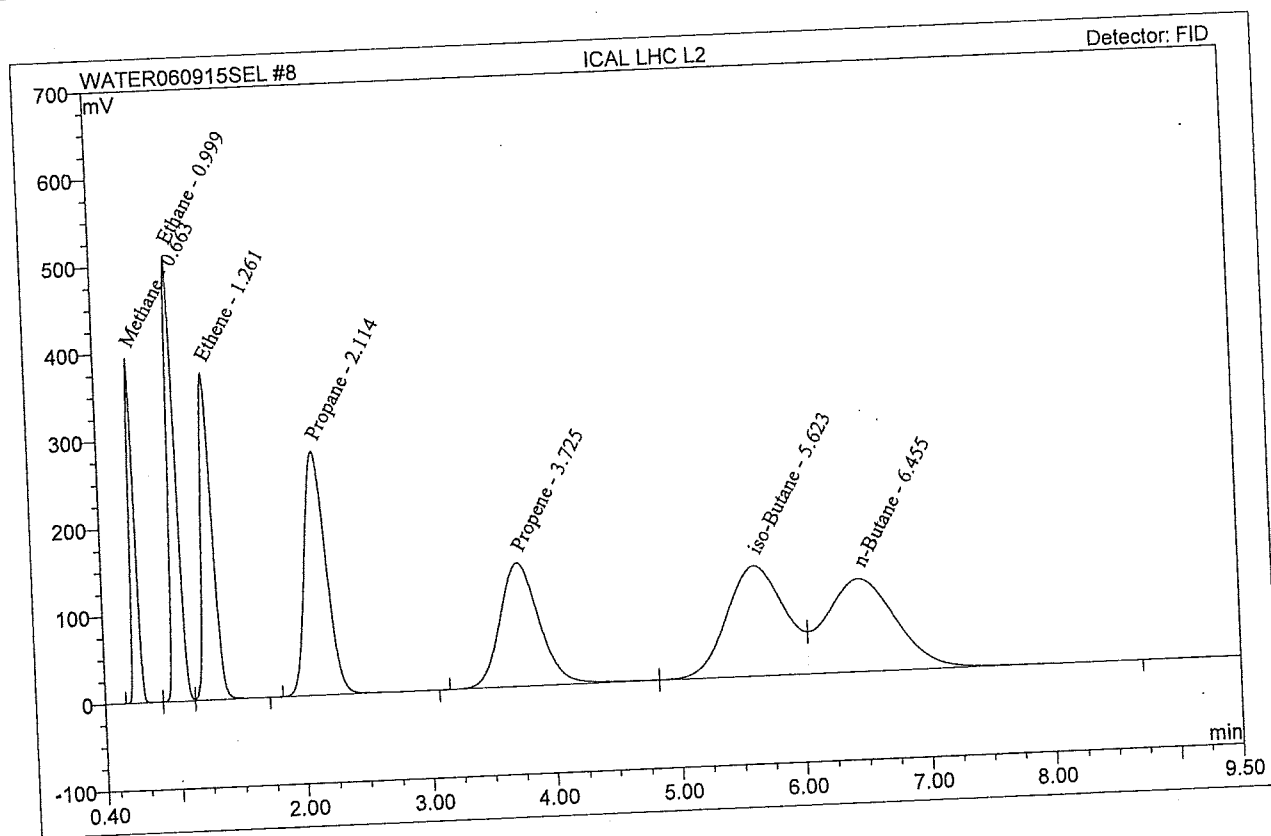


MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL LHC L2	Sequence No:	8
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/9/2015 12:08	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.663	19.511	394.028	BM	48.5985
2	Ethane	0.999	37.321	509.840	M	94.4021
3	Ethene	1.261	37.642	373.812	MB	105.0048
4	Propane	2.114	54.897	278.404	BMB	135.5548
5	Propene	3.725	52.459	141.588	BM	152.3903
6	iso-Butane	5.623	69.168	126.561	M	168.9049
7	n-Butane	6.455	69.170	106.678	MB	174.6909

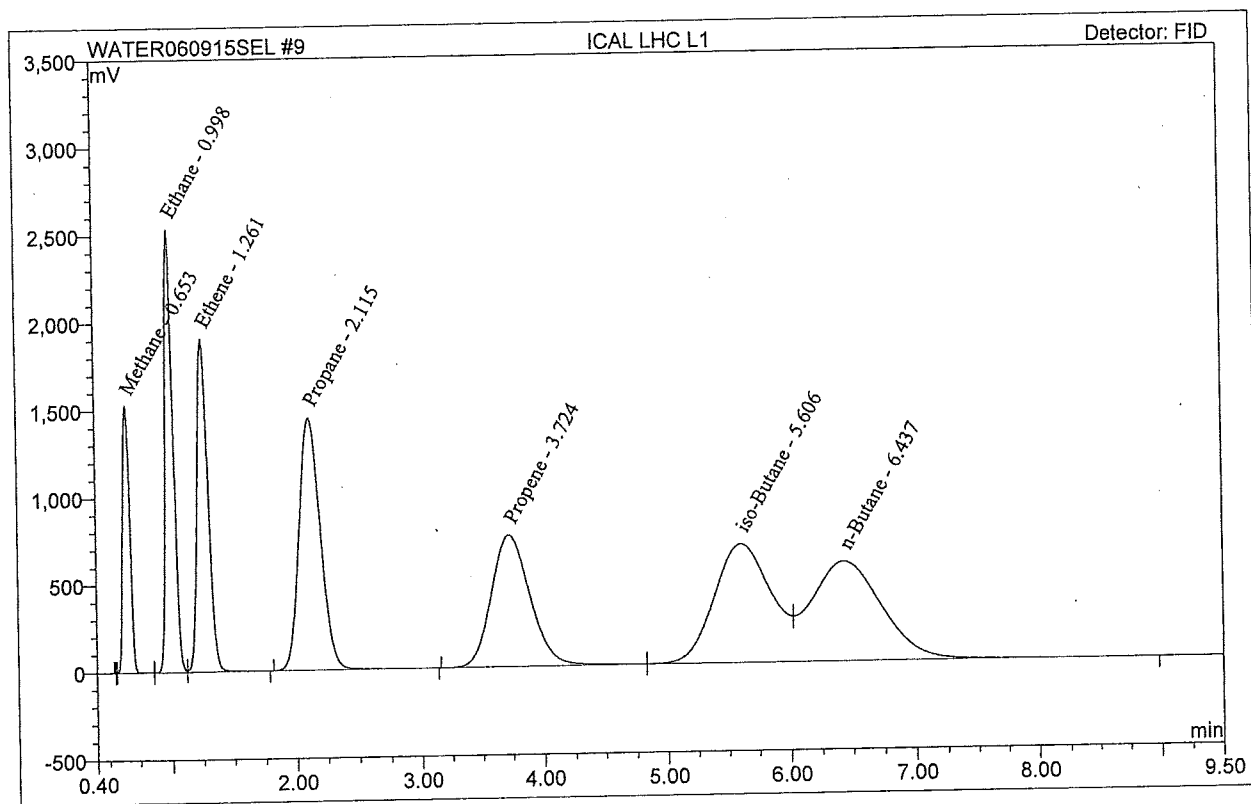


MICROSEEPS

Sample Analysis Report

Sample Name:	ICAL LHC L1	Sequence No:	9
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/9/2015 12:31	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
3	Methane	0.653	103.210	1528.201	M	242.9756
4	Ethane	0.998	192.436	2535.590	M	471.8574
5	Ethene	1.261	195.475	1906.844	MB	525.1054
6	Propane	2.115	288.150	1445.393	BMB	677.7574
7	Propene	3.724	279.022	755.115	BM	762.1535
8	iso-Butane	5.606	368.964	681.735	M	845.0877
9	n-Butane	6.437	373.051	572.846	MB	874.0909

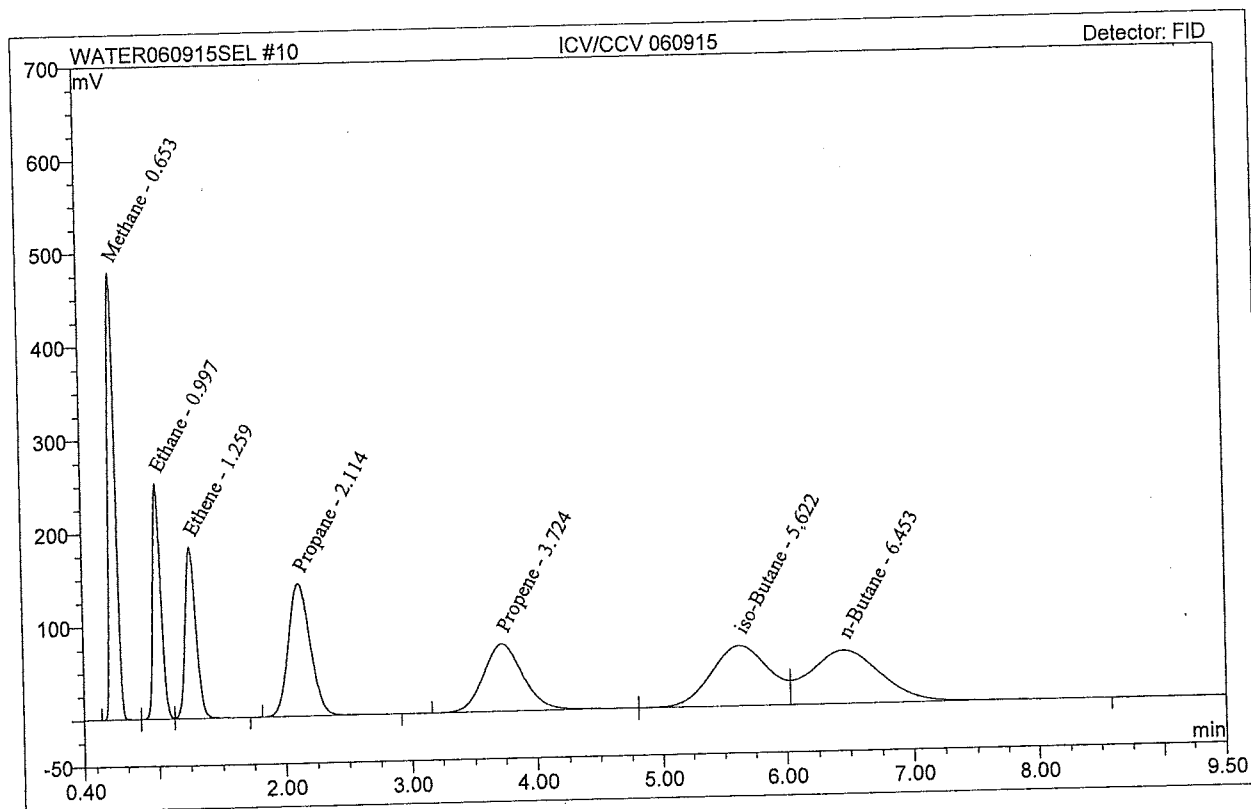


MICROSEEPS

Sample Analysis Report

Sample Name:	ICV/CCV 060915	Sequence No:	10
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/9/2015 13:00	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	RA-13-03

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	TV	Amount ug/L	
1	Methane	0.653	31.152	479.088	BM	72.171	76.9429	107
2	Ethane	0.997	18.767	252.474	M	46.303	47.6559	103
3	Ethene	1.259	18.562	183.752	MB	51.135	52.0313	102
4	Propane	2.114	28.106	142.209	BMB	66.045	69.8240	106
5	Propene	3.724	26.940	72.633	BM	71.248	78.8639	97
6	iso-Butane	5.622	35.485	64.799	M	83.233	87.3513	105
7	n-Butane	6.453	37.259	57.444	MB	90.022	94.9416	105

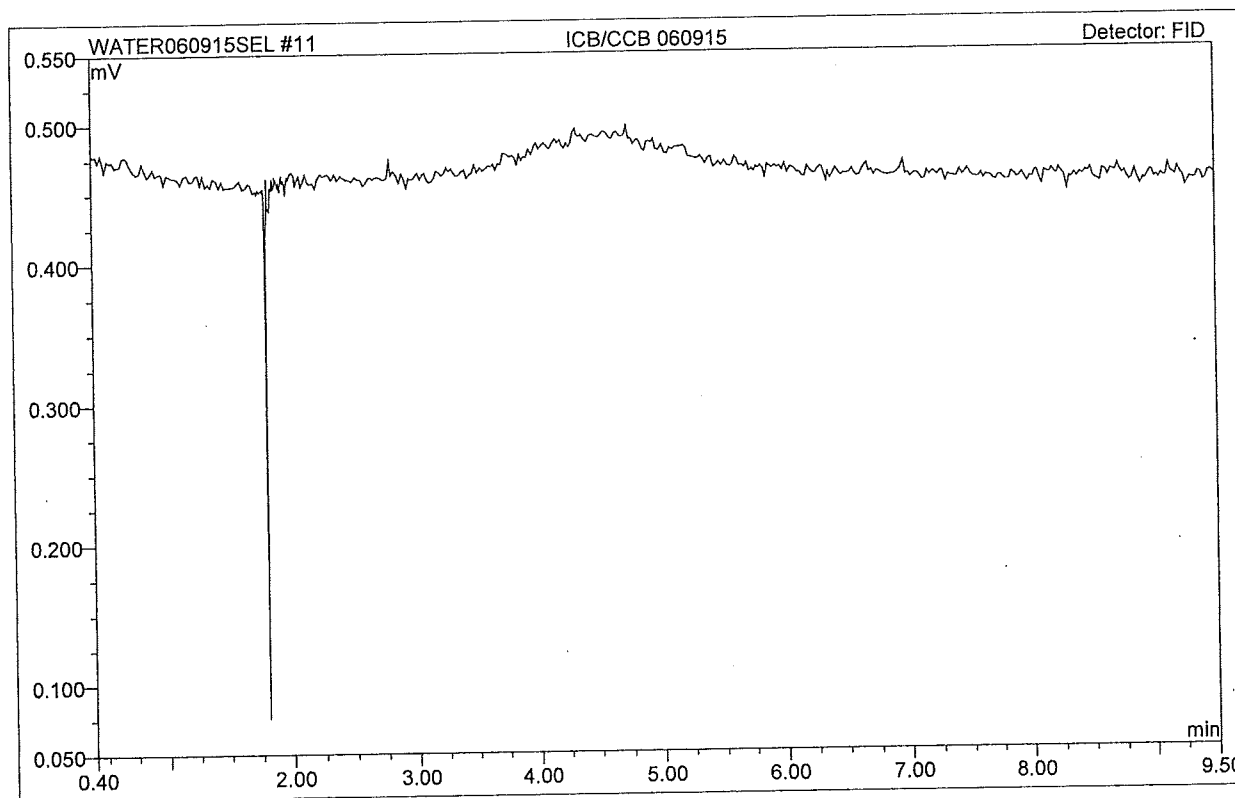


MICROSEEPS

Sample Analysis Report

Sample Name:	ICB/CCB 060915	Sequence No:	11
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	6/9/2015 13:10	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
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PAES
Case Narrative

Batch number: 5090 - PISG

Analysis Date: 122315

Sample numbers:

17732-(1-11)

Matrix: Water

Out of Control Event:

17732-(2,3,4,5,6,8,9,10) Required dilutions

Corrective Action Taken:

None

Result:

Repeat dilutions on a future batch

Observations to support use of data:

17732-(6,8,9) Had a pH of less than 10

Manual Integration was used when the software algorithm failed to integrate a peak properly according to the experience of the analyst.

Manual Integration Checklist and Approval

- Manual Integration approved? Yes No
- Satisfactorily documented on this narrative?
- Manually integrated chromatogram initialed and dated by analyst?

[Signature] 122315
Signature Lead Analyst or Lab. Mgr. Date

Analyzed & Reviewed: [Signature] Date: 122915
Manual Integration Conducted? YES NO

(Circle One)
Reviewed by: RAW Date: 123015

Reviewed & Entered by: upload Date: 122915

Reviewed by: [Signature] Date: 123015

Corrected by: _____ Date: _____


---- BIOREM-13 ----
 ---- QUALITY CONTROL ----
 ---- ANALYSIS DATE: 12/23/15 ----
 ---- MATRIX: WATER ----

SPIKE RECOVERY/ACCURACY DATA

SAMPLE: 177320003 ORIG, 39584-177320004 MS, 39585-177320005 MSD

MS/MSD	SAMPLE CONC.	SPIKE CONC.	MS CONC.	MSD CONC.	MS %R	MSD %R	%D
COMPOUND	N/A	44.48	N/A	N/A	N/A	N/A	N/A
METHANE	7.9907	83.30	95.165	93.286	104.65	102.40	2.18
ETHANE	2.5236	77.92	79.956	80.989	99.37	100.70	1.33
ETHYLENE							

Methane amount is greater than 4 times the spike conc. See dilution for MS/MSD result

Reviewed 

Analyst 

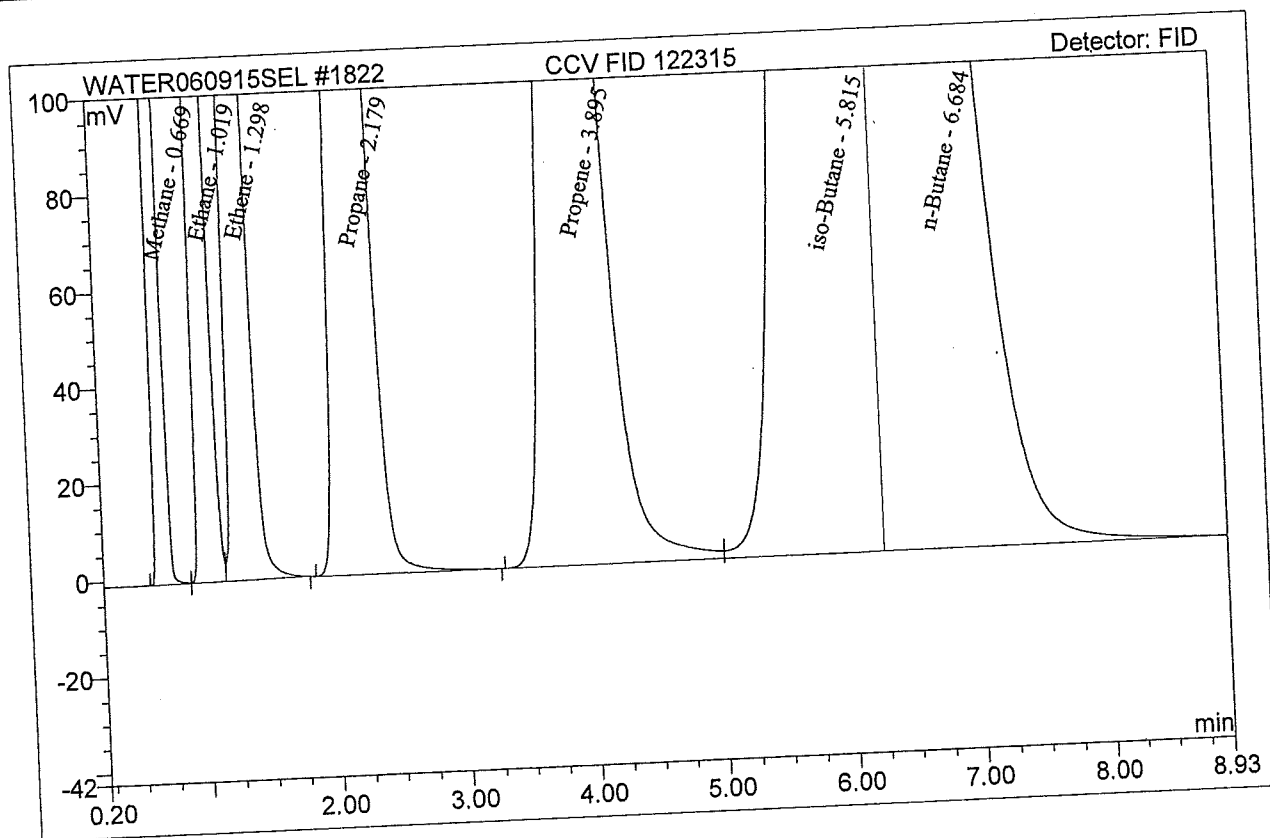
MICROSEEPS

Sample Analysis Report

Sample Name:	CCV FID 122315	Sequence No:	1822
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/23/2015 11:20	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	RA-14-12 2X

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.669	52.103	921.376	BM	126.8150
2	Ethane	1.019	98.910	1298.037	M	247.0337
3	Ethene	1.298	99.210	940.581	MB	272.5741
4	Propane	2.179	144.656	707.154	BMB	350.2837
5	Propene	3.895	138.662	356.627	BM	392.9629
6	iso-Butane	5.815	186.357	331.253	M	443.1838
7	n-Butane	6.684	186.355	277.335	MB	456.3382

TV
121.5
236.360
245.125

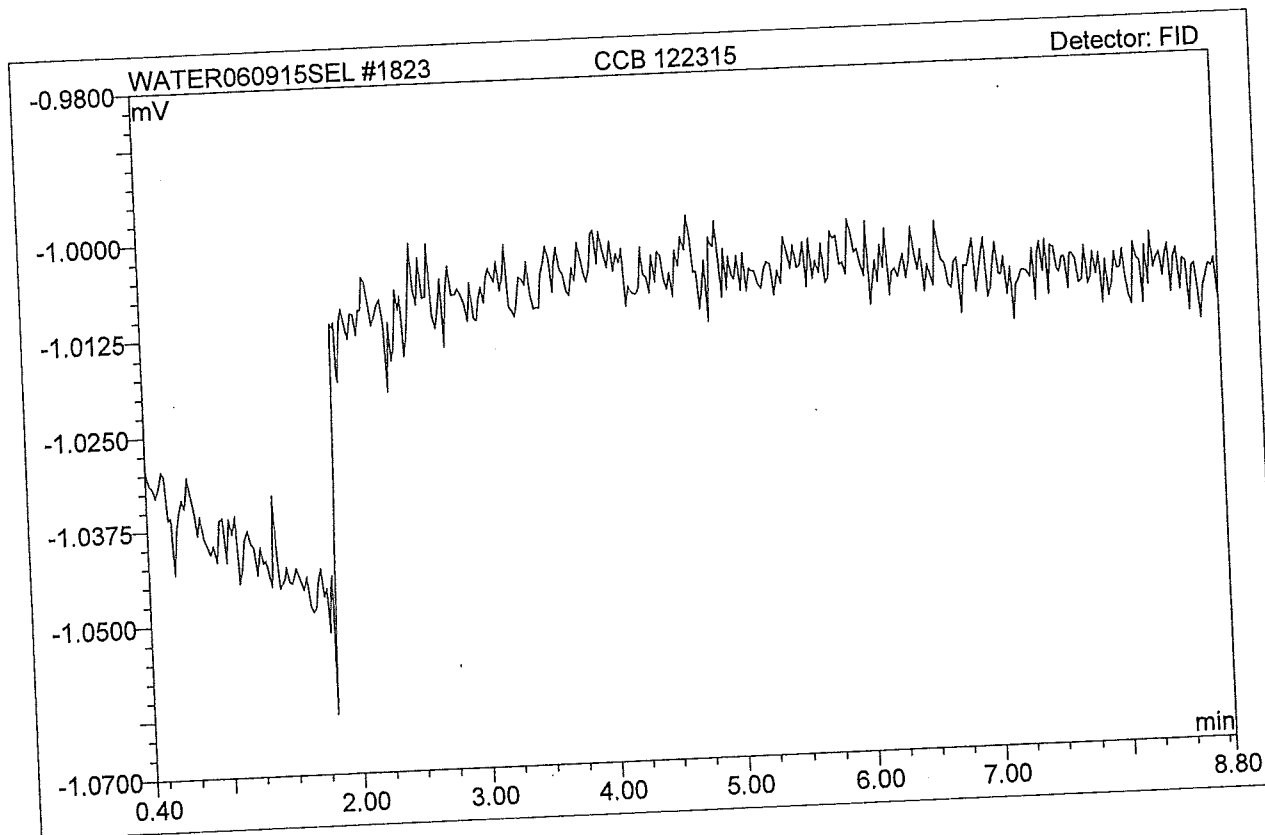


MICROSEEPS

Sample Analysis Report

Sample Name:	CCB 122315	Sequence No:	1823
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/23/2015 12:05	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
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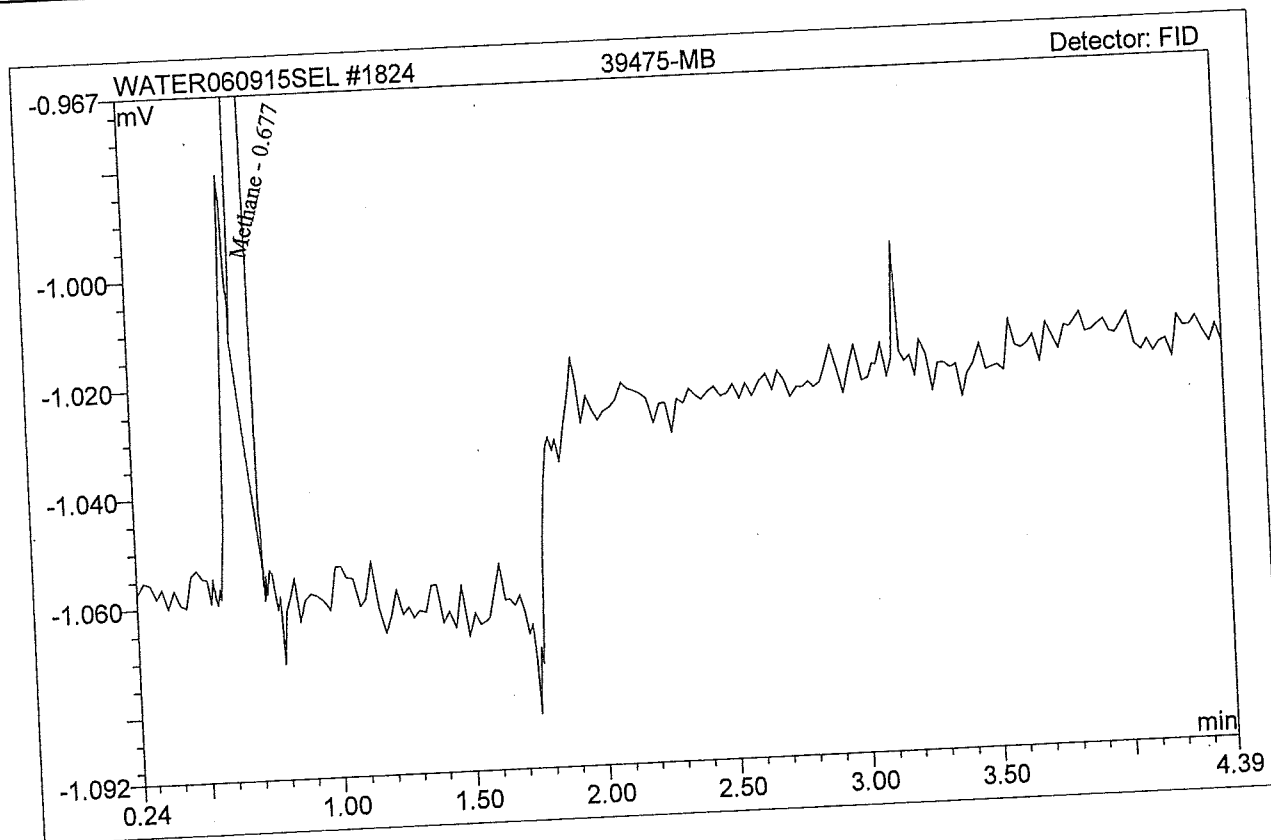


MICROSEEPS

Sample Analysis Report

Sample Name:	39475-MB	Sequence No:	1824
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/23/2015 12:32	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.677	0.009	0.209	BMB	0.0226

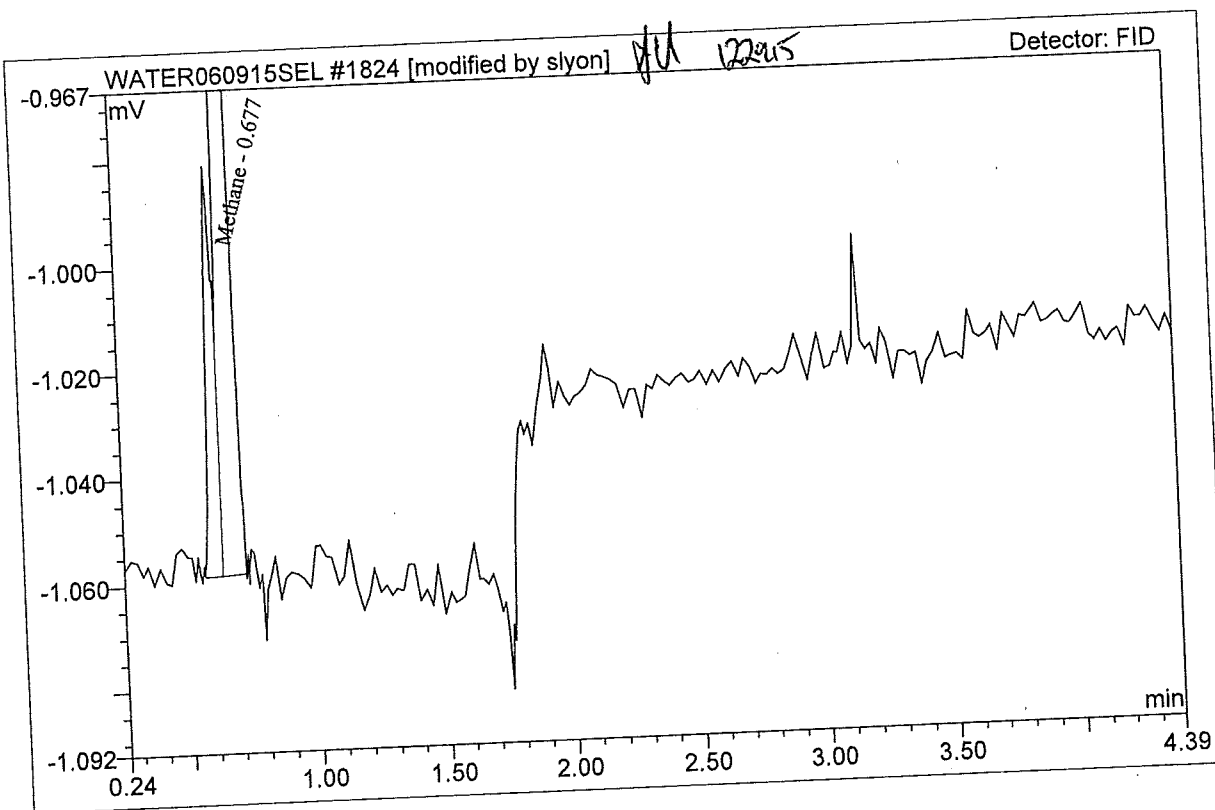


MICROSEEPS

Sample Analysis Report

Sample Name:	39475-MB	Sequence No:	1824
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/23/2015 12:32	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
2	Methane	0.677	0.011	0.235	MB*	0.0284



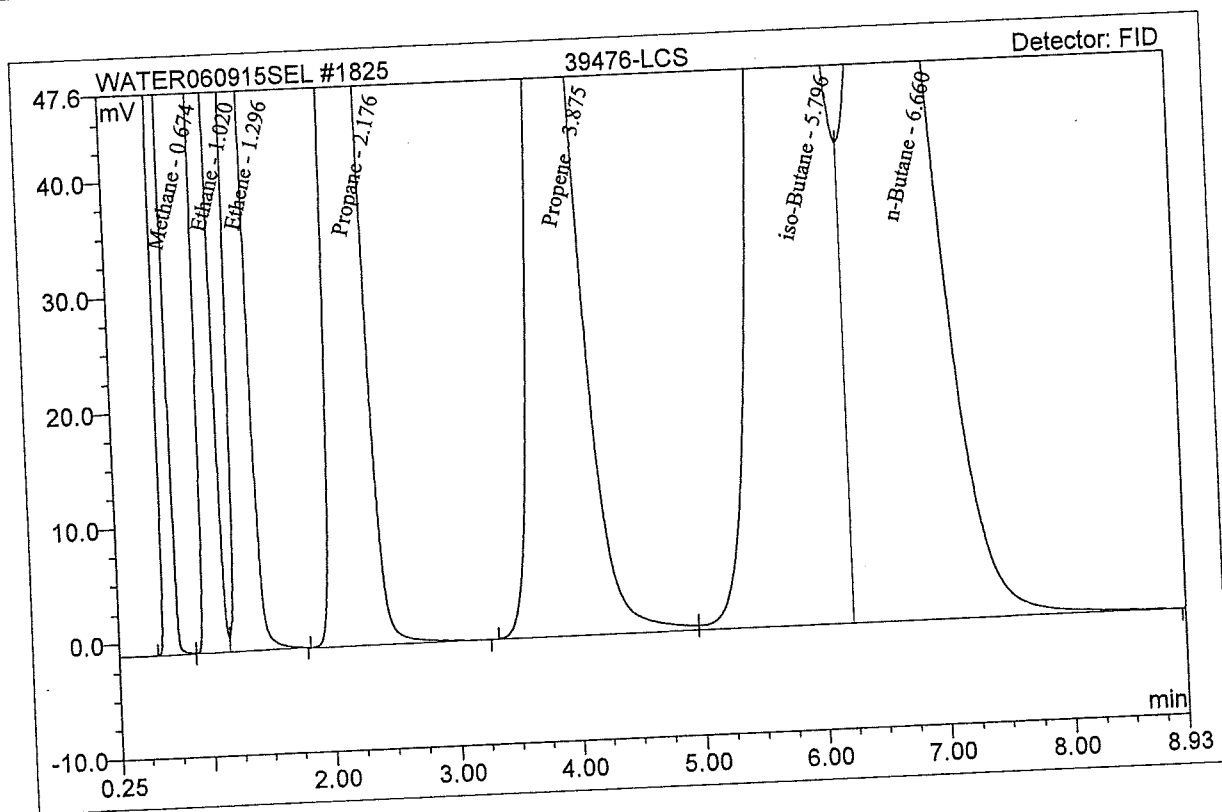
MICROSEEPS

Sample Analysis Report

Sample Name:	39476-LCS	Sequence No:	1825
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/23/2015 12:54	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	RA-12-08 5X

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.674	18.046	352.907	BM	44.9962
2	Ethane	1.020	33.179	441.285	M	83.9992
3	Ethene	1.296	28.477	271.885	MB	79.6238
4	Propane	2.176	49.189	241.714	BMB	121.6174
5	Propene	3.875	36.762	94.676	BM	107.2954
6	iso-Butane	5.796	64.765	114.325	M	158.3179
7	n-Butane	6.660	60.023	89.866	MB	151.9745

TV
44.48
83.3
77.92



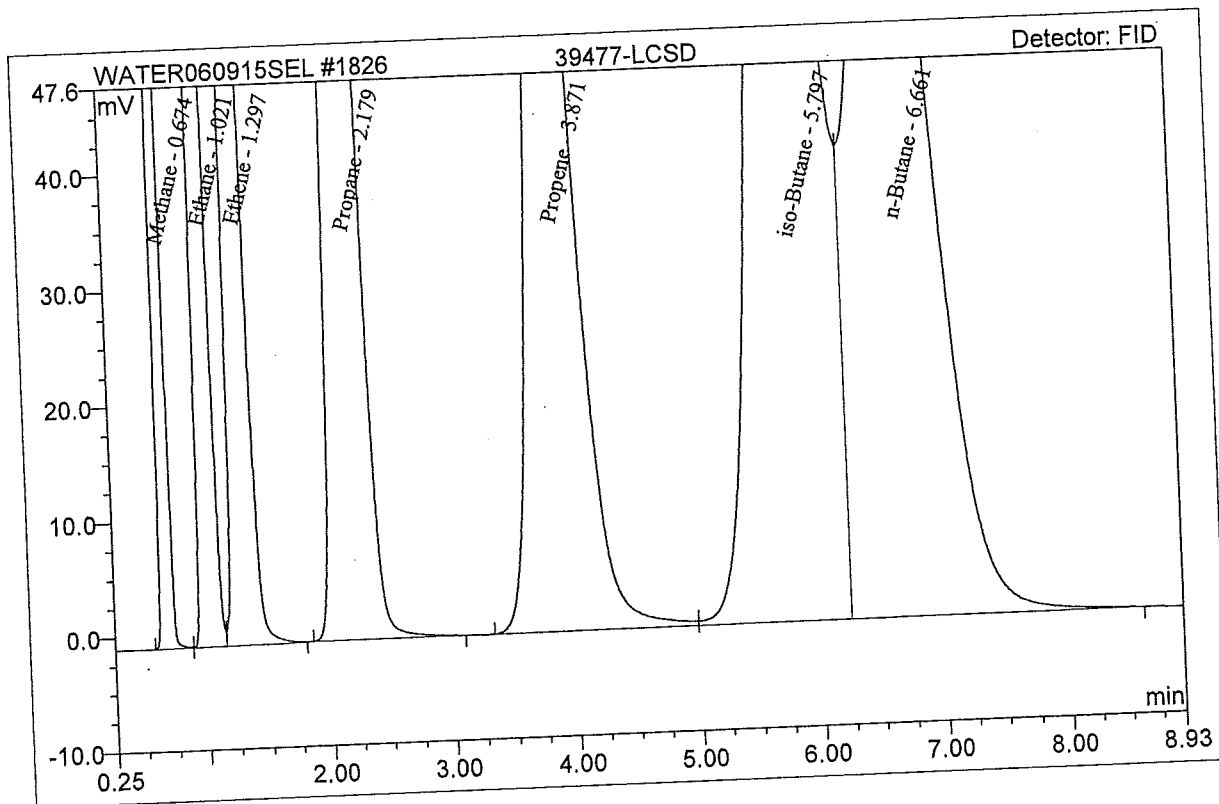
MICROSEEPS

Sample Analysis Report

Sample Name:	39477-LCSD	Sequence No:	1826
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHC081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/23/2015 13:22	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	RA-12-08 5X

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.674	17.913	348.599	BM	44.6708
2	Ethane	1.021	32.875	436.490	M	83.2353
3	Ethene	1.297	28.312	269.875	MB	79.1654
4	Propane	2.179	48.642	239.174	BMB	120.2805
5	Propene	3.871	36.485	93.943	BM	106.4957
6	iso-Butane	5.797	63.993	112.977	M	156.4582
7	n-Butane	6.661	59.086	88.389	MB	149.6422

TV
44.48
83.3
77.92

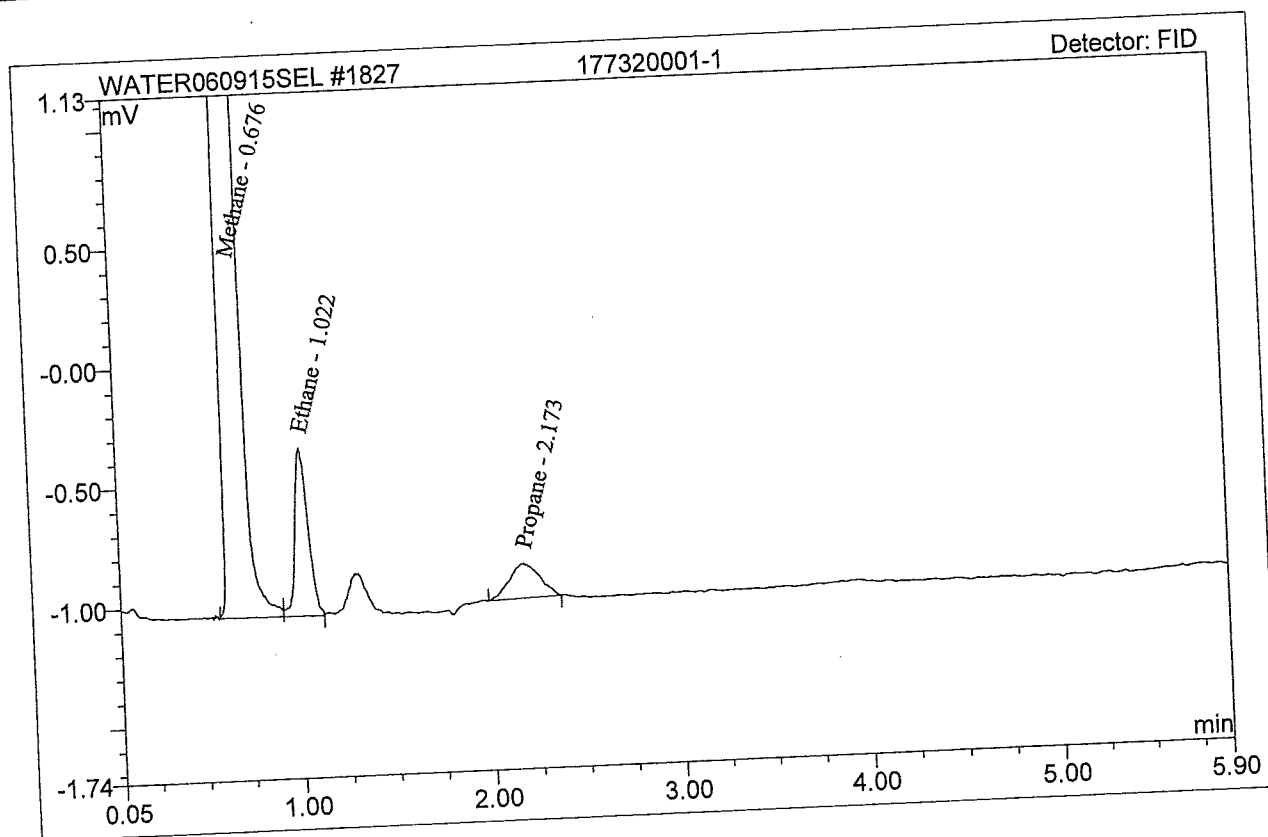


MICROSEEPS

Sample Analysis Report

Sample Name:	177320001-1	Sequence No:	1827
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/23/2015 13:37	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.676	8.316	172.227	BM	20.8850
2	Ethane	1.022	0.056	0.703	MB	0.1417
3	Propane	2.173	0.027	0.146	BMB	0.0671

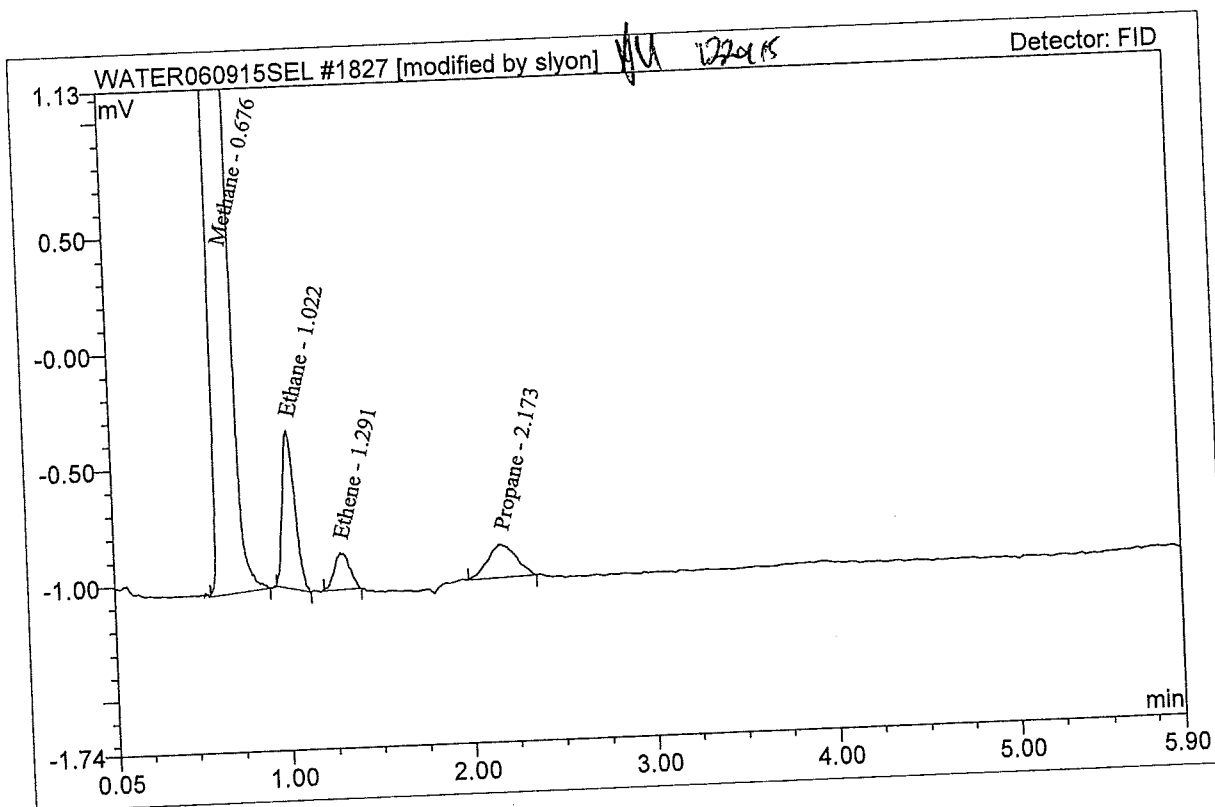


MICROSEEPS

Sample Analysis Report

Sample Name:	177320001-1	Sequence No:	1827
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/23/2015 13:37	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.676	8.311	172.218	BMB*	20.8733
2	Ethane	1.022	0.050	0.678	BMB*	0.1283
3	Ethene	1.291	0.016	0.158	BMB*	0.0442
4	Propane	2.173	0.027	0.146	BMB	0.0671

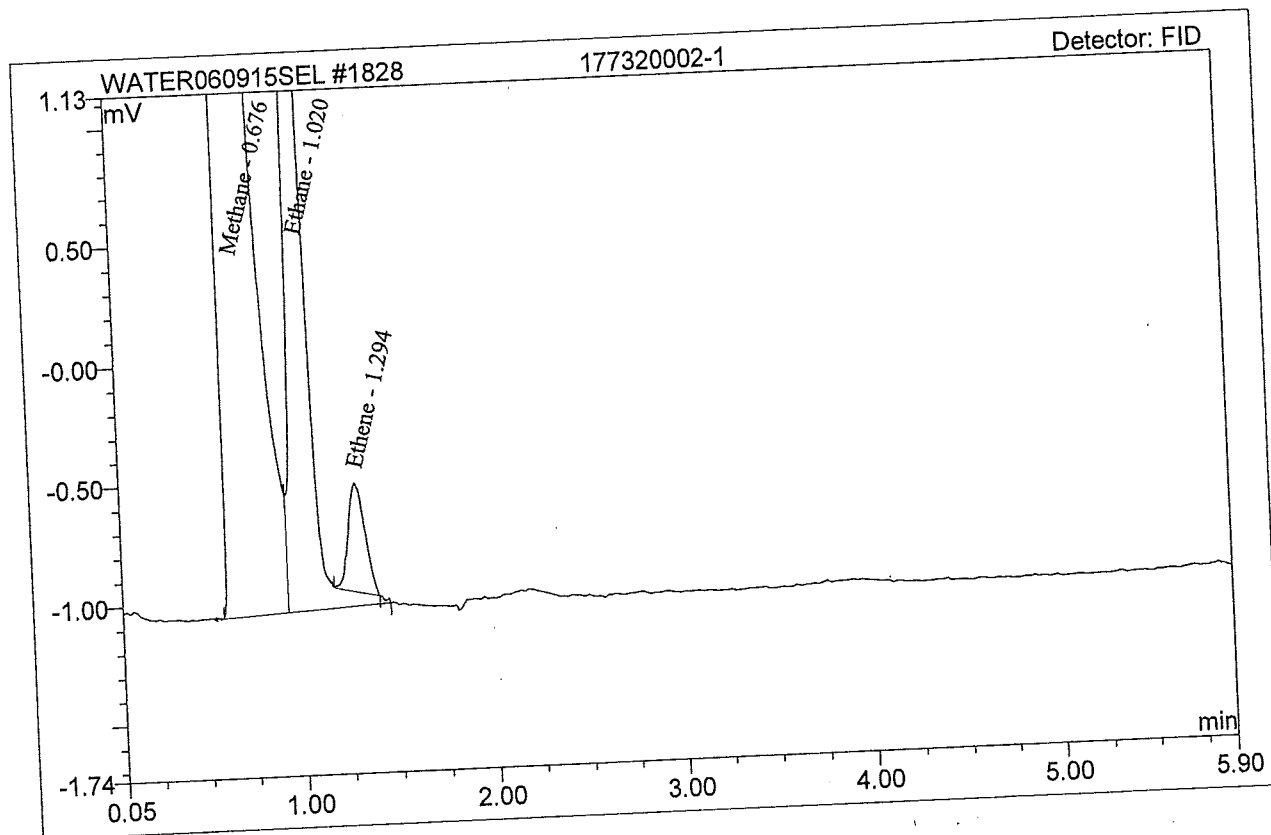


MICROSEEPS

Sample Analysis Report

Sample Name:	177320002-1	Sequence No:	1828
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/23/2015 13:59	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.676	158.940	3262.470	BM	362.0186
2	Ethane	1.020	0.415	4.791	MB	1.0568
3	Ethene	1.294	0.046	0.455	Rd	0.1286

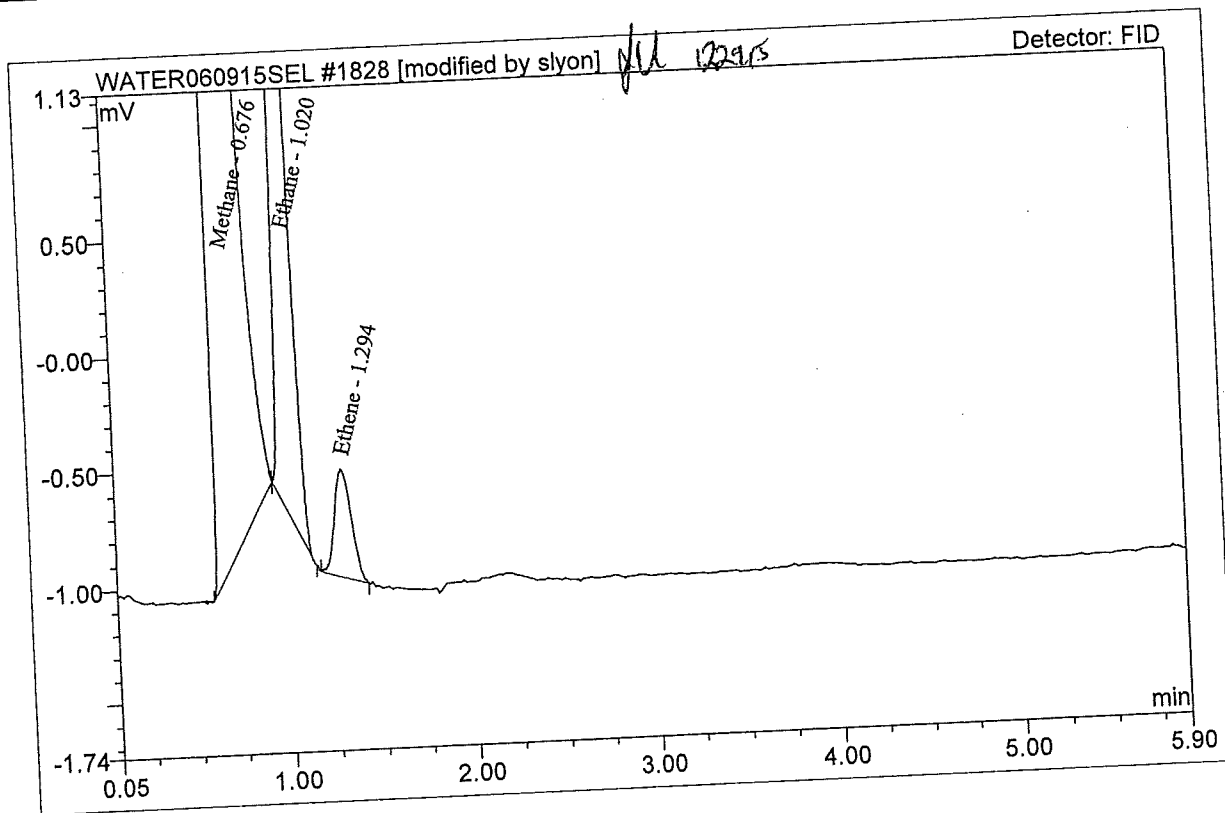


MICROSEEPS

Sample Analysis Report

Sample Name:	177320002-1	Sequence No:	1828
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/23/2015 13:59	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.676	158.856	3262.339	BMB*	361.8446 (1)
2	Ethane	1.020	0.330	4.458	BMB*	0.8423
3	Ethene	1.294	0.047	0.462	BMB*	0.1332



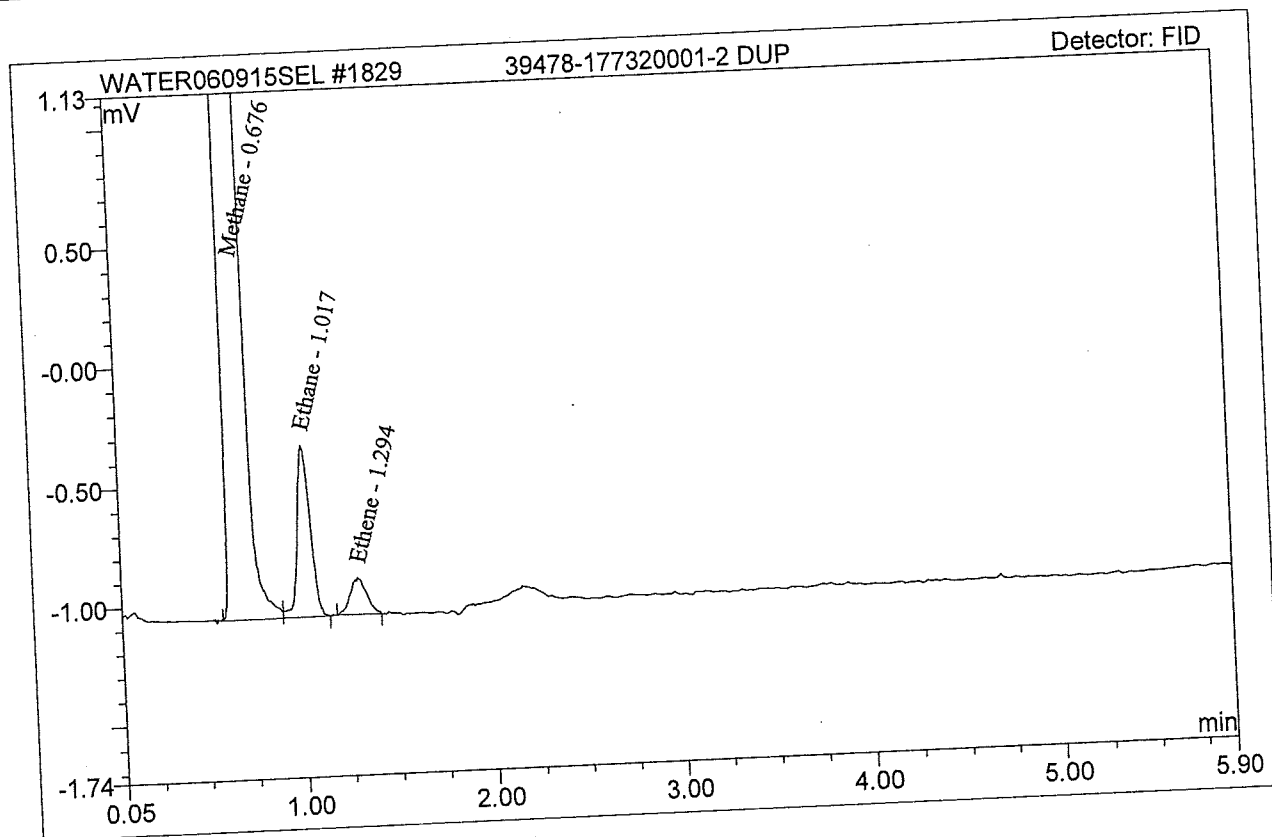
(1) Requires dilution

MICROSEEPS

Sample Analysis Report

Sample Name:	39478-177320001-2 DUP	Sequence No:	1829
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/23/2015 14:17	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.676	9.045	187.845	BM	22.7040
2	Ethane	1.017	0.057	0.723	MB	0.1458
3	Ethene	1.294	0.015	0.155	BMB	0.0433

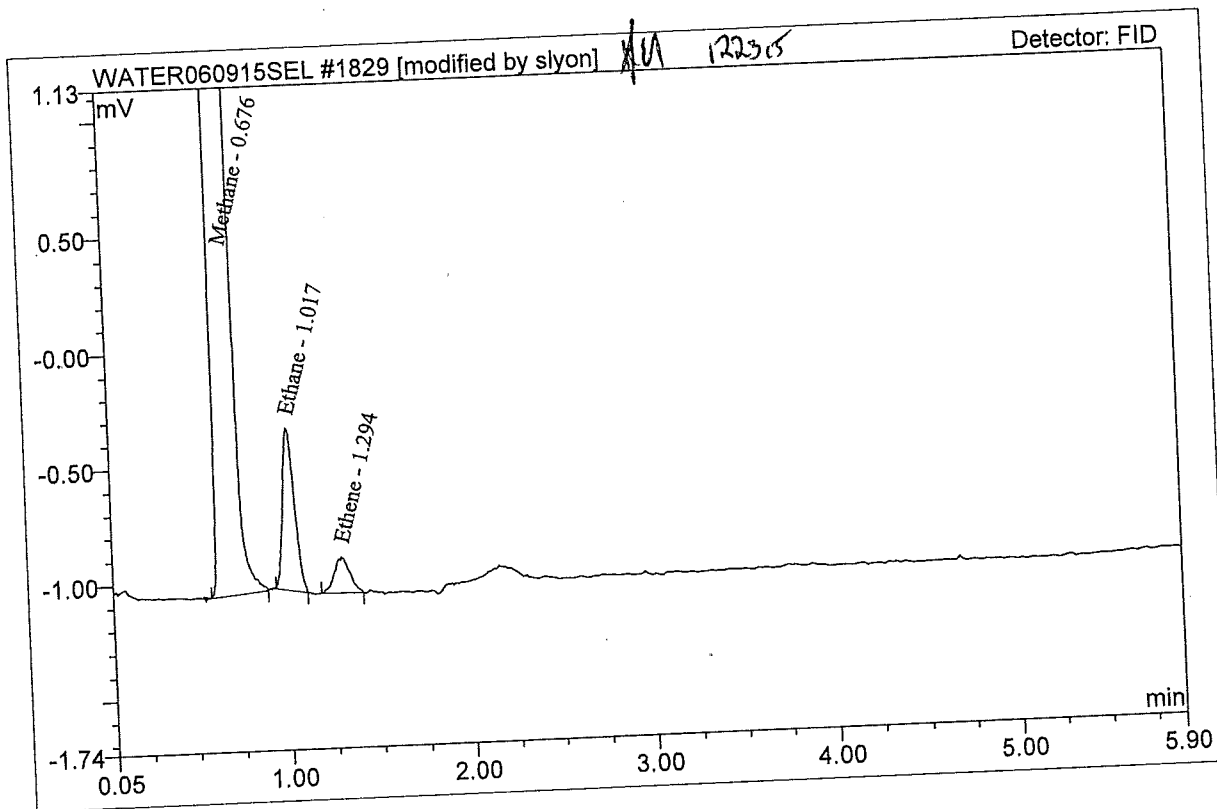


MICROSEEPS

Sample Analysis Report

Sample Name:	39478-177320001-2 DUP	Sequence No:	1829
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/23/2015 14:17	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.676	9.041	187.837	BMB*	22.6941
2	Ethane	1.017	0.052	0.701	BMB*	0.1329
3	Ethene	1.294	0.015	0.155	BMB	0.0433

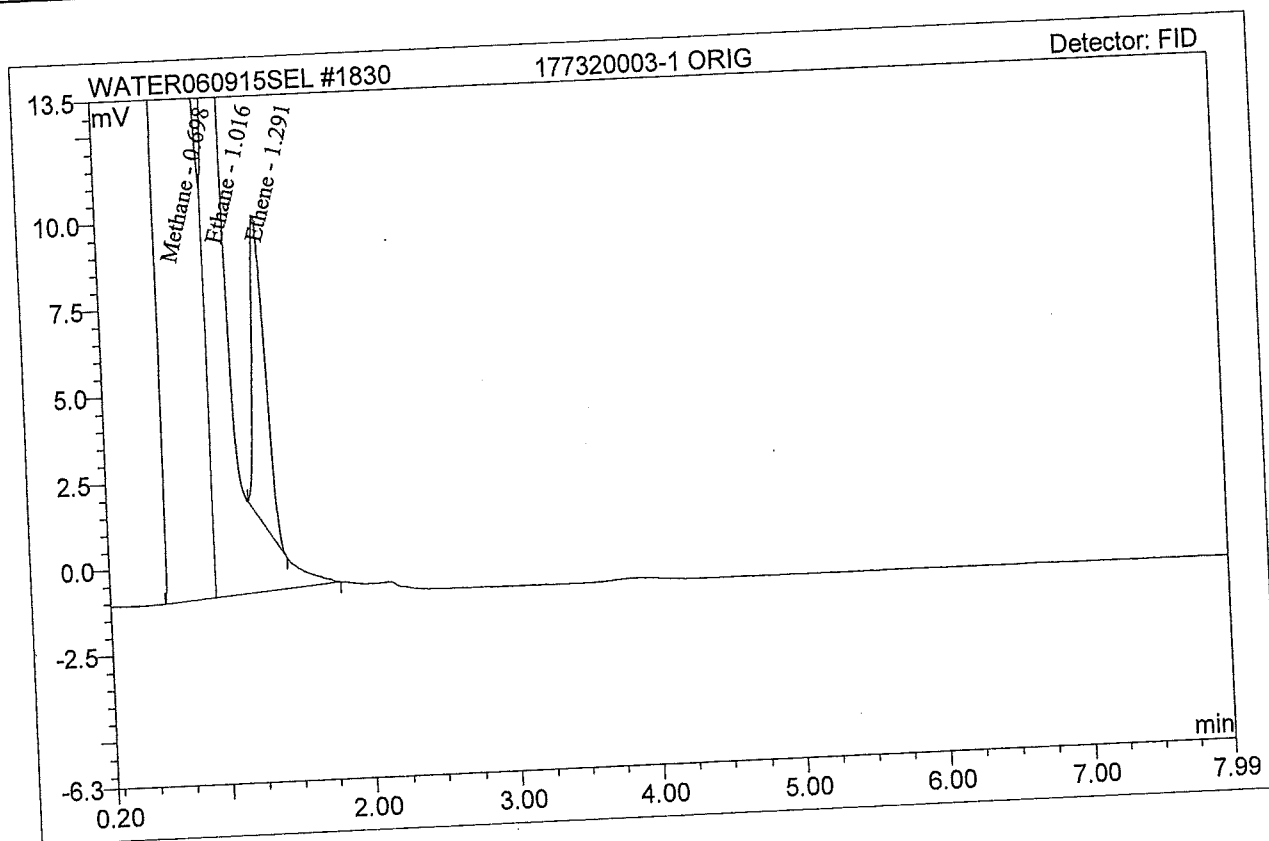


MICROSEEPS

Sample Analysis Report

Sample Name:	177320003-1 ORIG	Sequence No:	1830
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/23/2015 14:39	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
						1615.0397
1	Methane	0.698	951.570	10285.071	BM	13.7049
3	Ethane	1.016	5.381	52.010	MB	2.5271
4	Ethene	1.291	0.897	8.949	Rd	

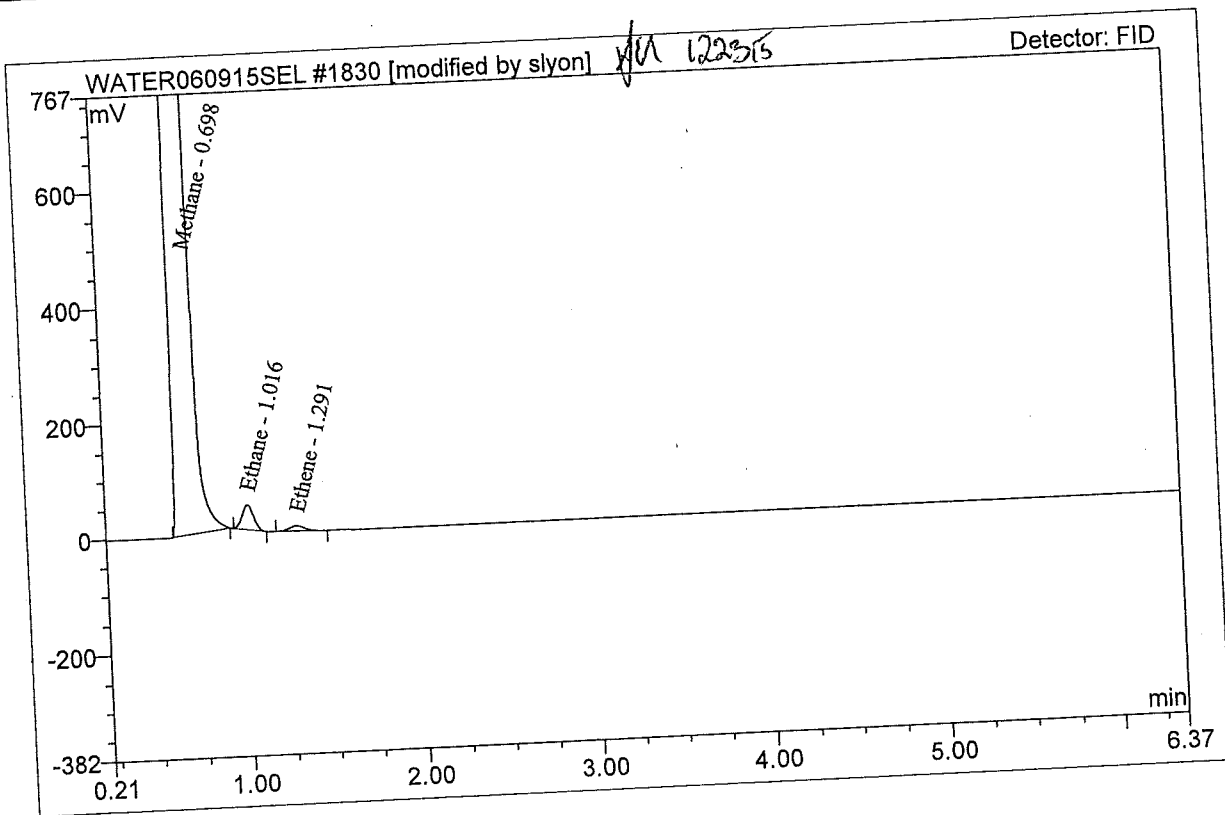


MICROSEEPS

Sample Analysis Report

Sample Name:	177320003-1 ORIG	Sequence No:	1830
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/23/2015 14:39	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.698	966.730	10280.168	BMB*	1634.3515
2	Ethane	1.016	3.136	43.524	BMB*	7.9907
3	Ethene	1.291	0.896	8.951	BMB*	2.5236

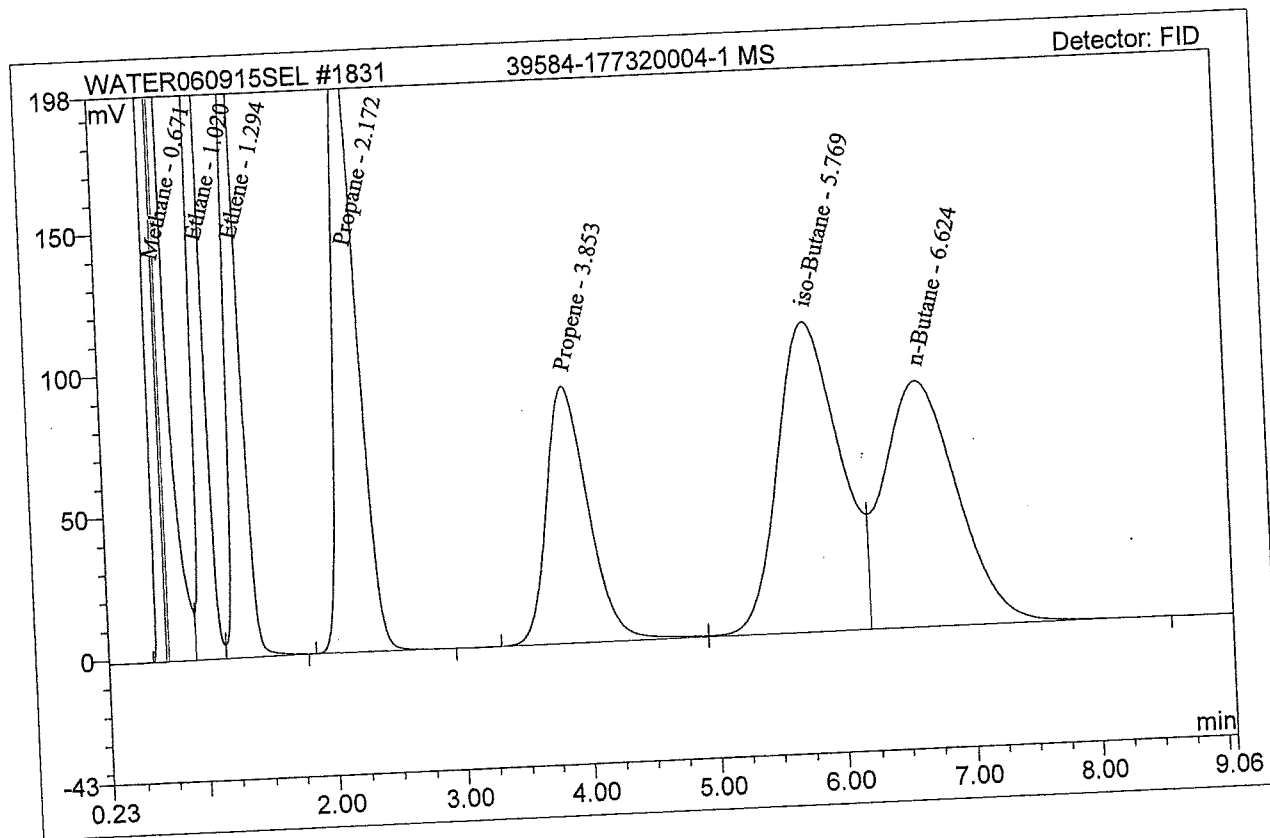


MICROSEEPS

Sample Analysis Report

Sample Name:	39584-177320004-1 MS	Sequence No:	1831
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/23/2015 14:54	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
		0.671	588.846	10283.529	BM	1113.0513
1	Methane	1.020	37.534	482.074	M	94.9366
7	Ethane	1.294	28.731	270.620	MB	80.3283
8	Ethene	2.172	46.529	229.887	BMB	115.1083
9	Propane	3.853	34.900	90.528	BM	101.9173
10	Propene	5.769	61.498	109.243	M	150.4473
11	iso-Butane	6.624	57.578	86.929	MB	145.8850
12	n-Butane					

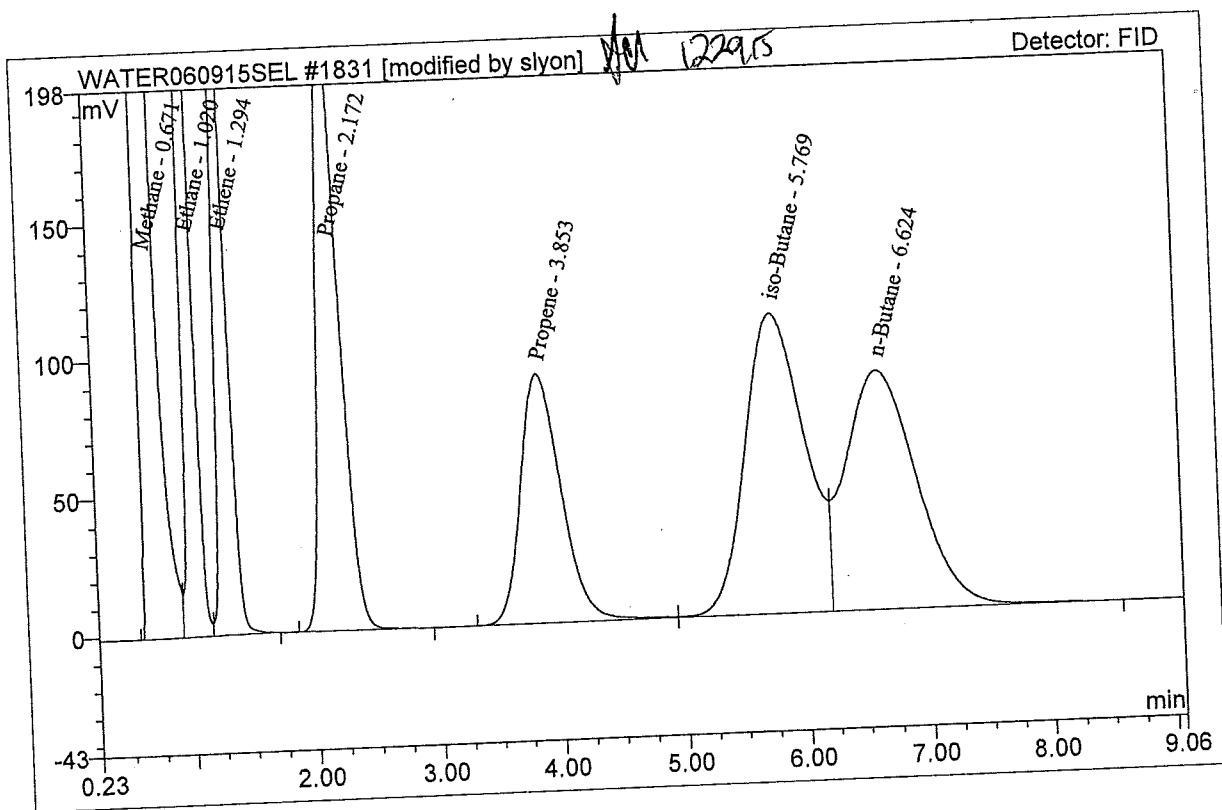


MICROSEEPS

Sample Analysis Report

Sample Name:	39584-177320004-1 MS	Sequence No:	1831
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/23/2015 14:54	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.671	1043.272	10283.496	BM *	1730.1676
2	Ethane	1.020	37.625	481.972	M *	95.1649
3	Ethene	1.294	28.596	270.464	MB*	79.9556
4	Propane	2.172	46.529	229.887	BMB	115.1083
5	Propene	3.853	34.900	90.528	BM	101.9173
6	iso-Butane	5.769	61.498	109.243	M	150.4473
7	n-Butane	6.624	57.578	86.929	MB	145.8850

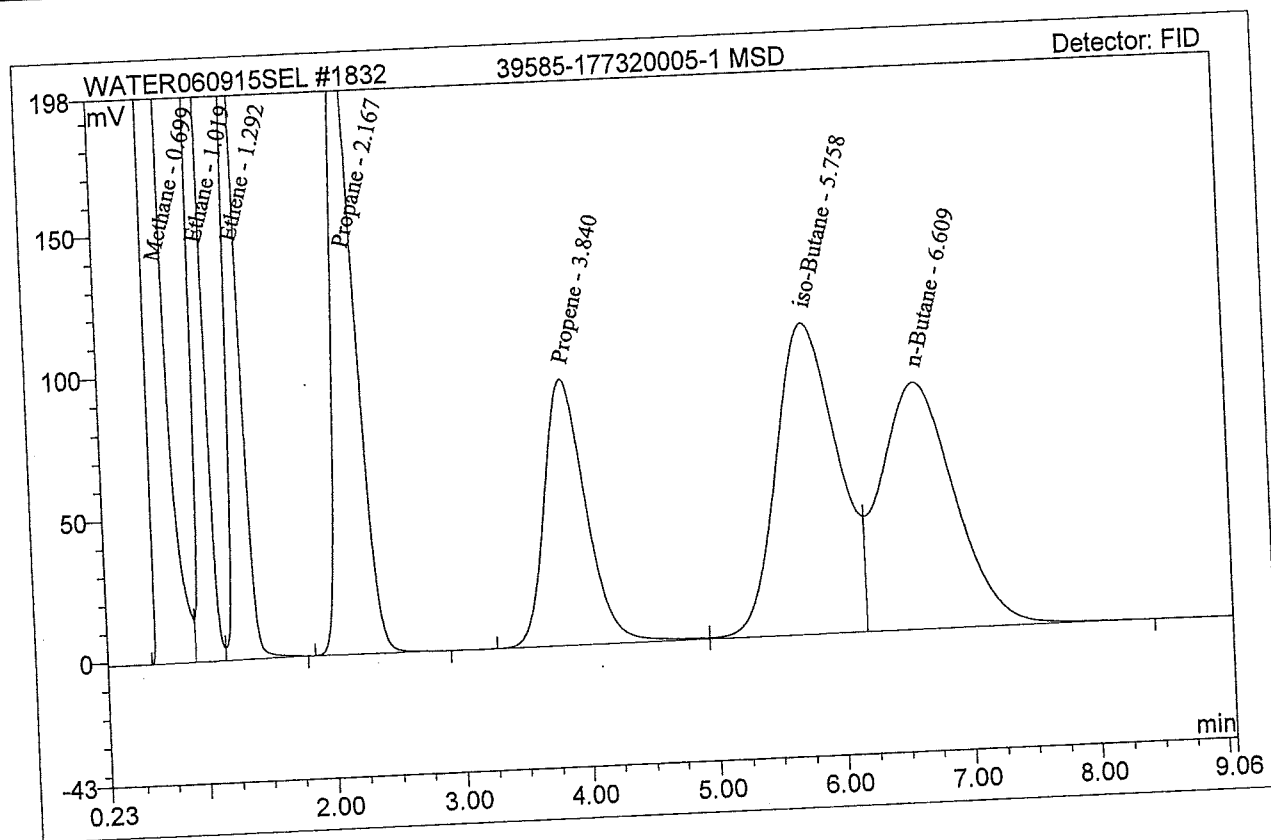


MICROSEEPS

Sample Analysis Report

Sample Name:	39585-177320005-1 MSD	Sequence No:	1832
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/23/2015 15:05	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.699	990.656	10110.267	BM	1664.6001
3	Ethane	1.019	36.876	475.851	M	93.2858
4	Ethene	1.292	28.969	273.597	MB	80.9888
5	Propane	2.167	46.916	232.606	BMB	116.0565
6	Propene	3.840	36.123	93.900	BM	105.4524
7	iso-Butane	5.758	61.631	109.579	M	150.7683
8	n-Butane	6.609	57.898	87.387	MB	146.6822

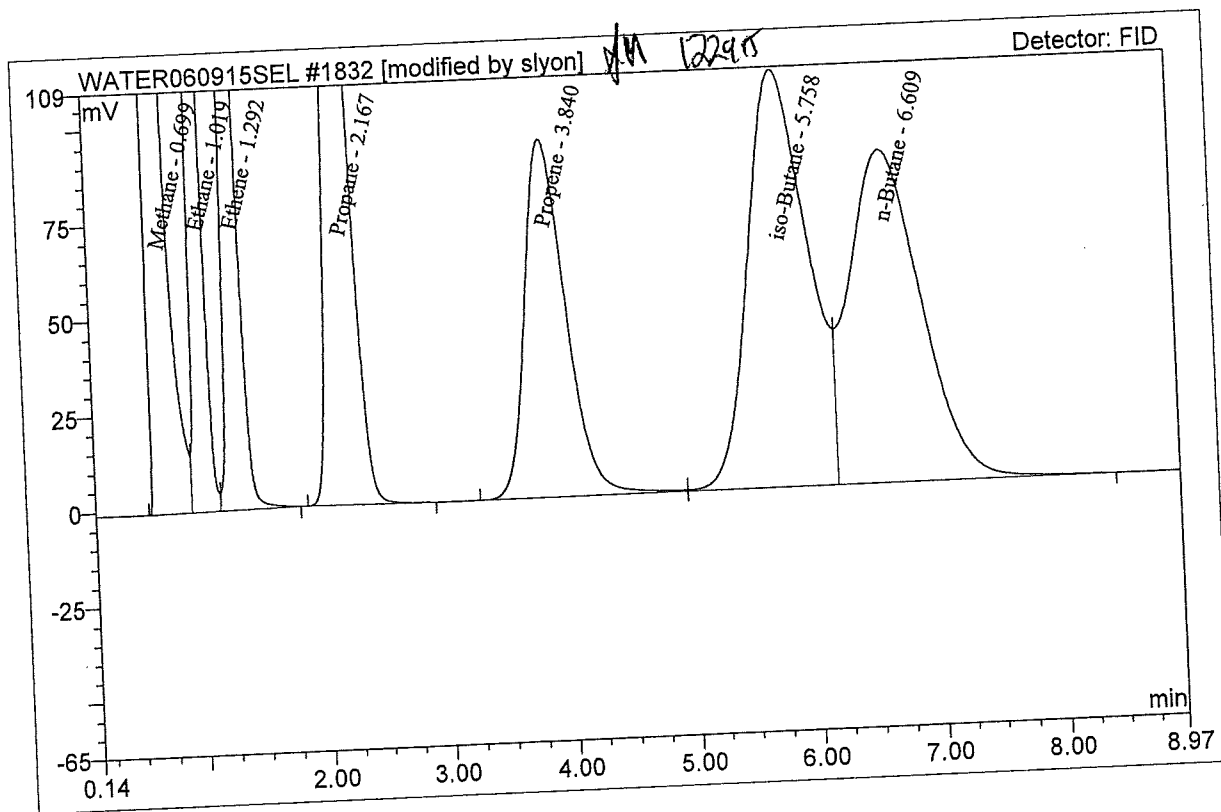


MICROSEEPS

Sample Analysis Report

Sample Name:	39585-177320005-1 MSD	Sequence No:	1832
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/23/2015 15:05	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
					BM *	1689.8222
1	Methane	0.699	1010.774	10110.267	M	93.2858
2	Ethane	1.019	36.876	475.851	MB	80.9888
3	Ethene	1.292	28.969	273.597	BMB	116.0565
4	Propane	2.167	46.916	232.606	BM	105.4524
5	Propene	3.840	36.123	93.900	M	150.7683
6	iso-Butane	5.758	61.631	109.579	MB	146.6822
7	n-Butane	6.609	57.898	87.387		

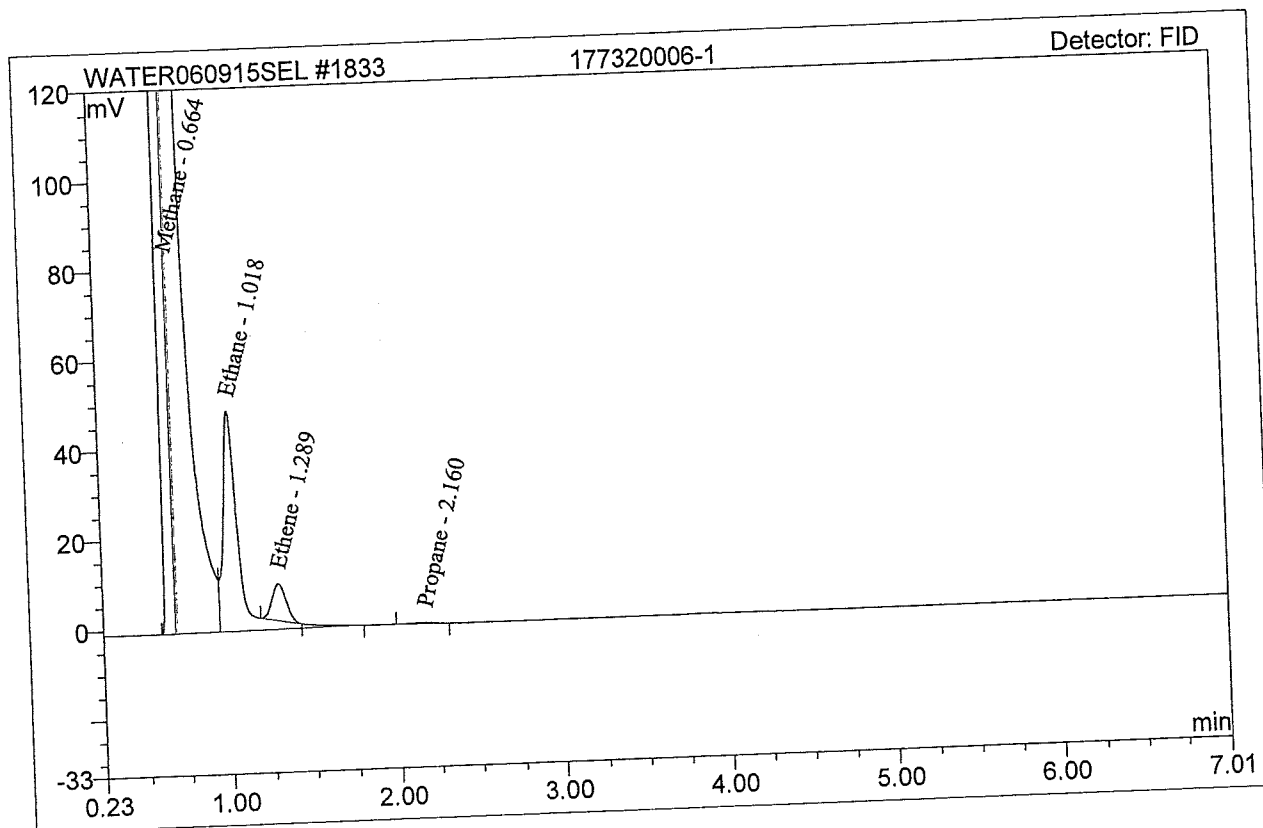


MICROSEEPS

Sample Analysis Report

Sample Name:	177320006-1	Sequence No:	1833
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/23/2015 15:21	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.664	376.390	10283.083	BM	771.1801
8	Ethane	1.018	5.085	49.109	MB	12.9500
9	Ethene	1.289	0.816	8.189	Rd	2.2981
10	Propane	2.160	0.042	0.257	BMB	0.1054

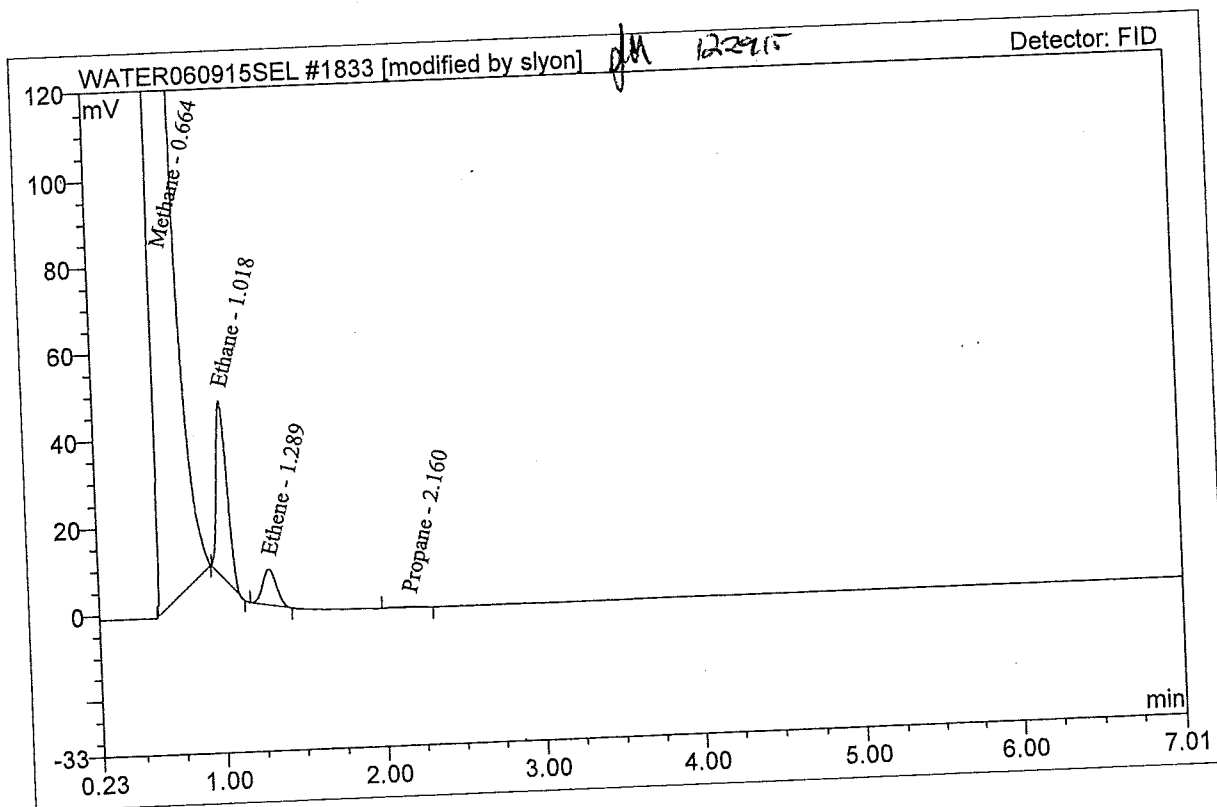


MICROSEEPS

Sample Analysis Report

Sample Name:	177320006-1	Sequence No:	1833
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/23/2015 15:21	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.664	955.090	10280.529	BMB*	1649.5337
2	Ethane	1.018	2.919	40.822	BMB*	7.4383
3	Ethene	1.289	0.818	8.199	BMB*	2.3043
4	Propane	2.160	0.042	0.257	BMB	0.1054



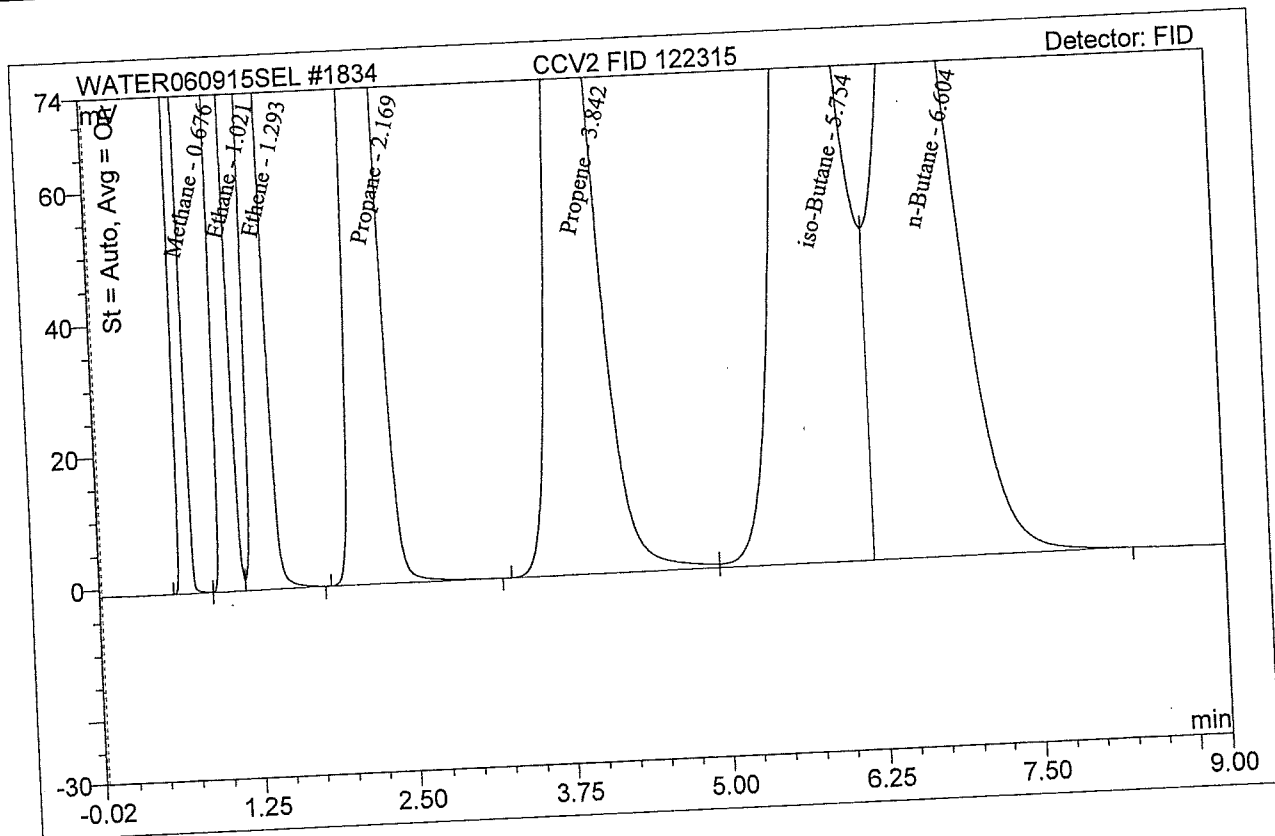
MICROSEEPS

Sample Analysis Report

Sample Name:	CCV2 FID 122315	Sequence No:	1834
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/23/2015 15:42	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	RA-14-12 5X

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.676	20.343	400.655	BM	50.6398
2	Ethane	1.021	39.208	521.519	M	99.1354
3	Ethene	1.293	39.060	374.527	MB	108.9209
4	Propane	2.169	57.421	283.371	BMB	141.7069
5	Propene	3.842	54.806	143.030	BM	159.0982
6	iso-Butane	5.754	74.067	131.881	M	180.6613
7	n-Butane	6.604	72.631	109.868	MB	183.2570

TV
48.2
95.344
106.050

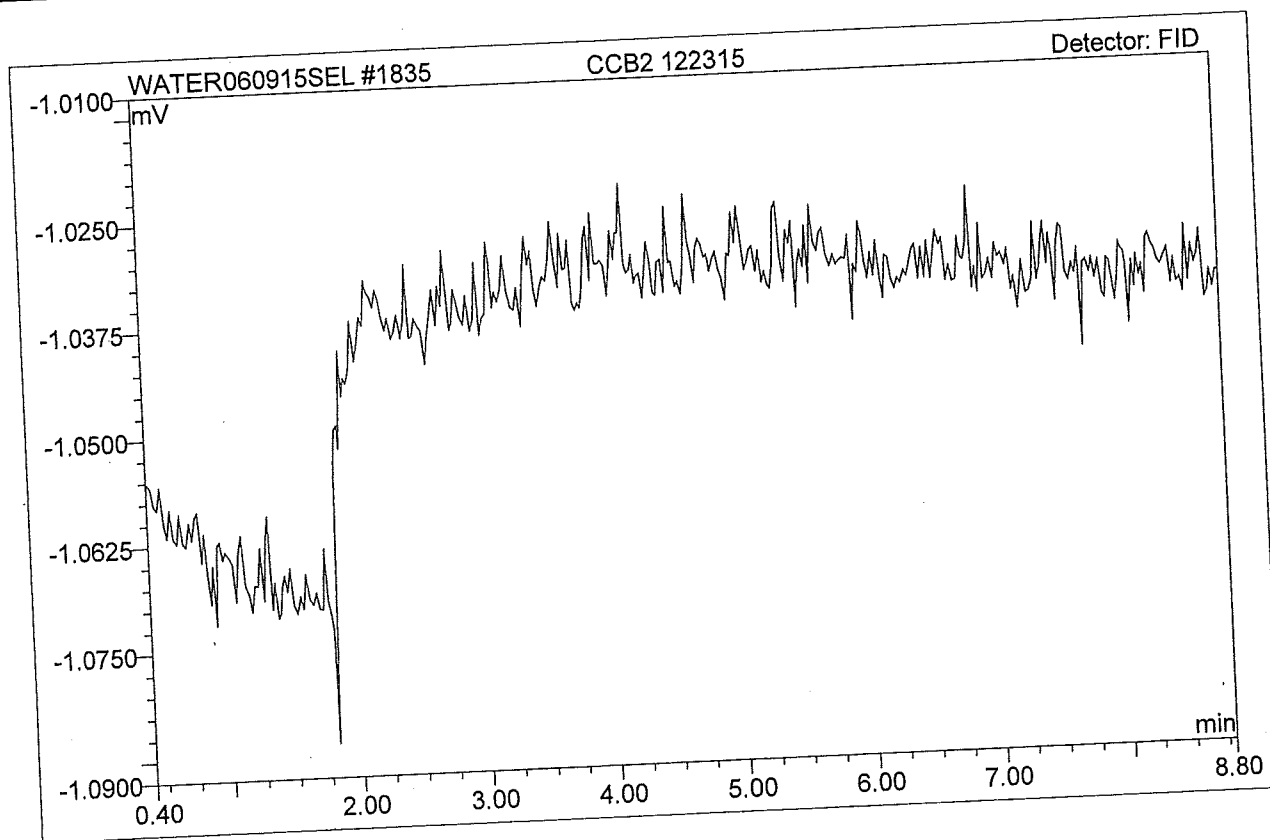


MICROSEEPS

Sample Analysis Report

Sample Name:	CCB2 122315	Sequence No:	1835
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/23/2015 16:25	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
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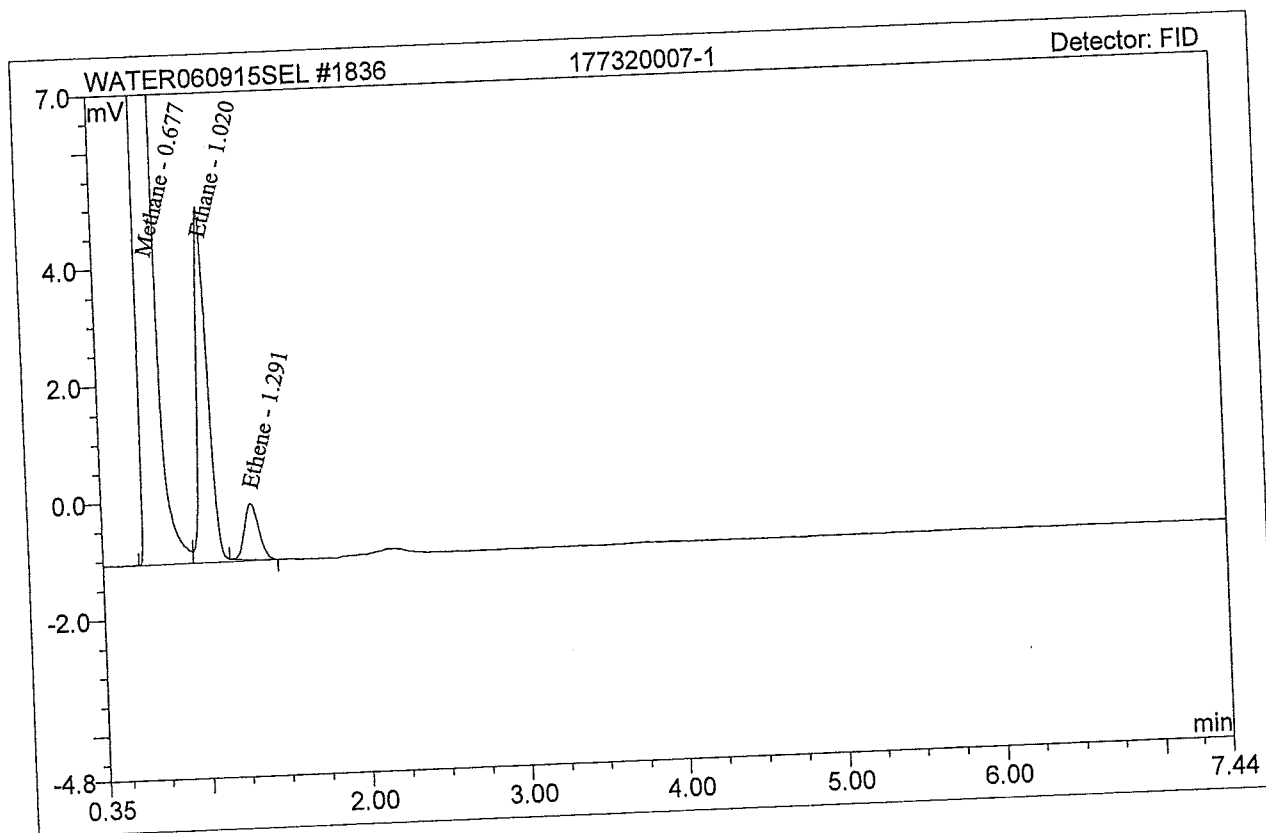


MICROSEEPS

Sample Analysis Report

Sample Name:	177320007-1	Sequence No:	1836
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/23/2015 16:39	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.677	58.941	1220.385	BM	142.7934
2	Ethane	1.020	0.478	6.090	MB	1.2195
3	Ethene	1.291	0.100	0.958	Rd	0.2814

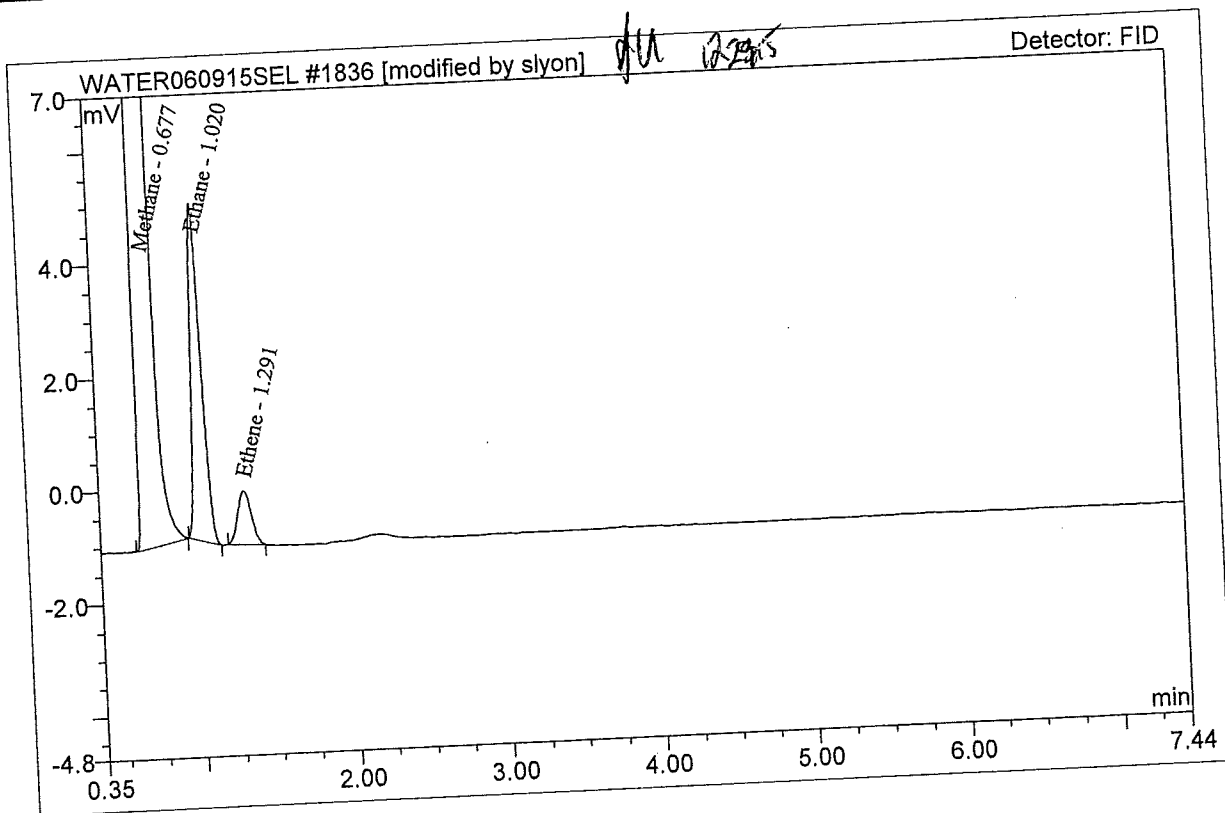


MICROSEEPS

Sample Analysis Report

Sample Name:	177320007-1	Sequence No:	1836
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/23/2015 16:39	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.677	58.908	1220.332	BMB*	142.7173
2	Ethane	1.020	0.445	5.952	BMB*	1.1333
3	Ethene	1.291	0.095	0.941	BMB*	0.2687

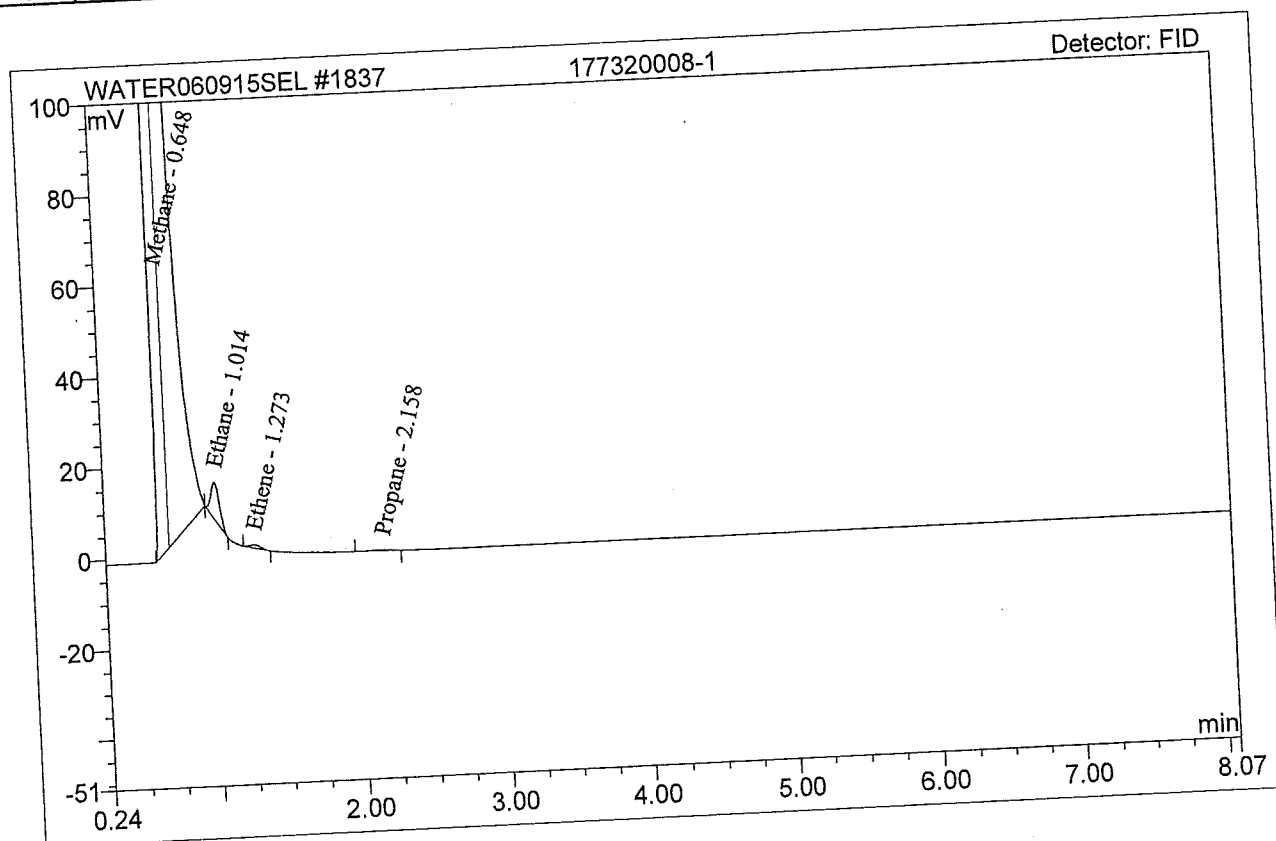


MICROSEEPS

Sample Analysis Report

Sample Name:	177320008-1	Sequence No:	1837
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/23/2015 16:51	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.648	532.269	10122.913	BM	1026.2784
7	Ethane	1.014	0.543	8.110	bMB	1.3844
8	Ethene	1.273	0.065	0.676	BMB	0.1822
9	Propane	2.158	0.036	0.222	BMB	0.0911

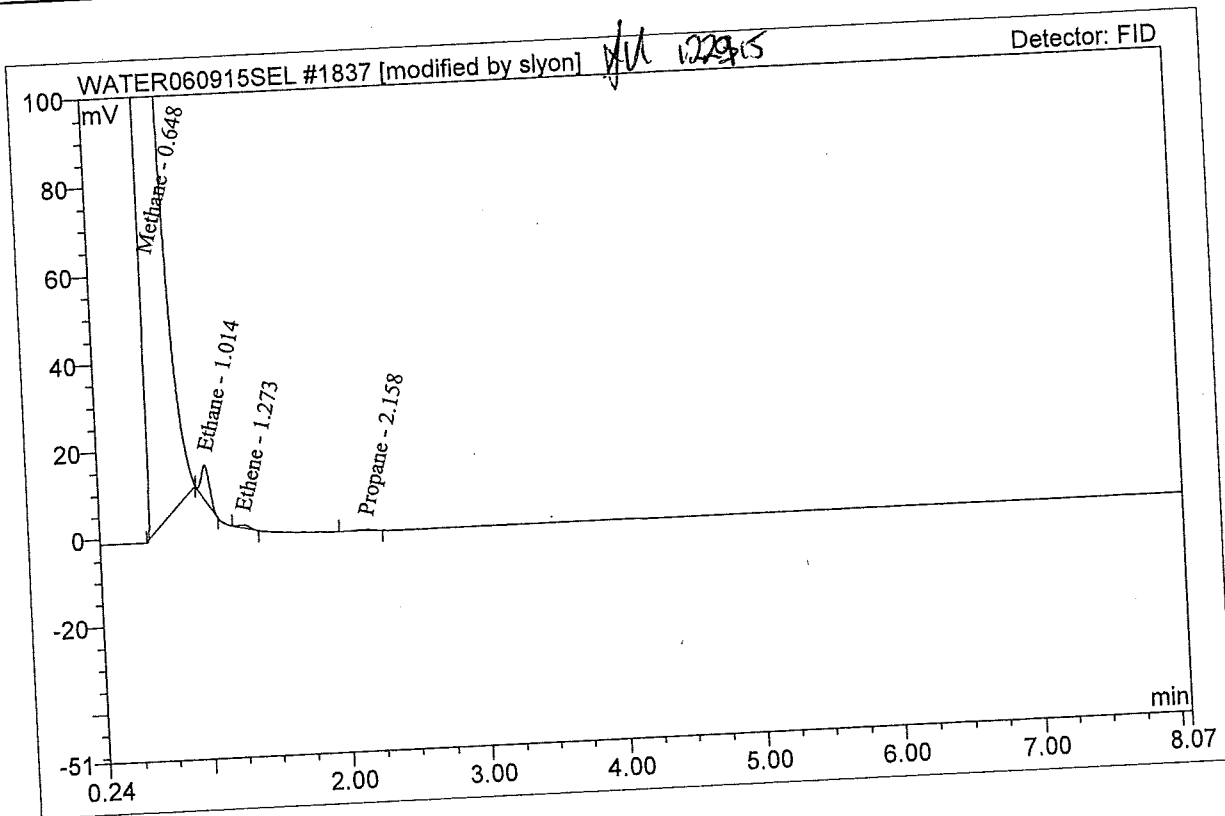


MICROSEEPS

Sample Analysis Report

Sample Name:	177320008-1	Sequence No:	1837
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/23/2015 16:51	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
						1620.2990
1	Methane	0.648	955.690	10122.666	BMB*	1.3844
2	Ethane	1.014	0.543	8.110	BMB*	0.1822
3	Ethene	1.273	0.065	0.676	BMB	0.0911
4	Propane	2.158	0.036	0.222	BMB	

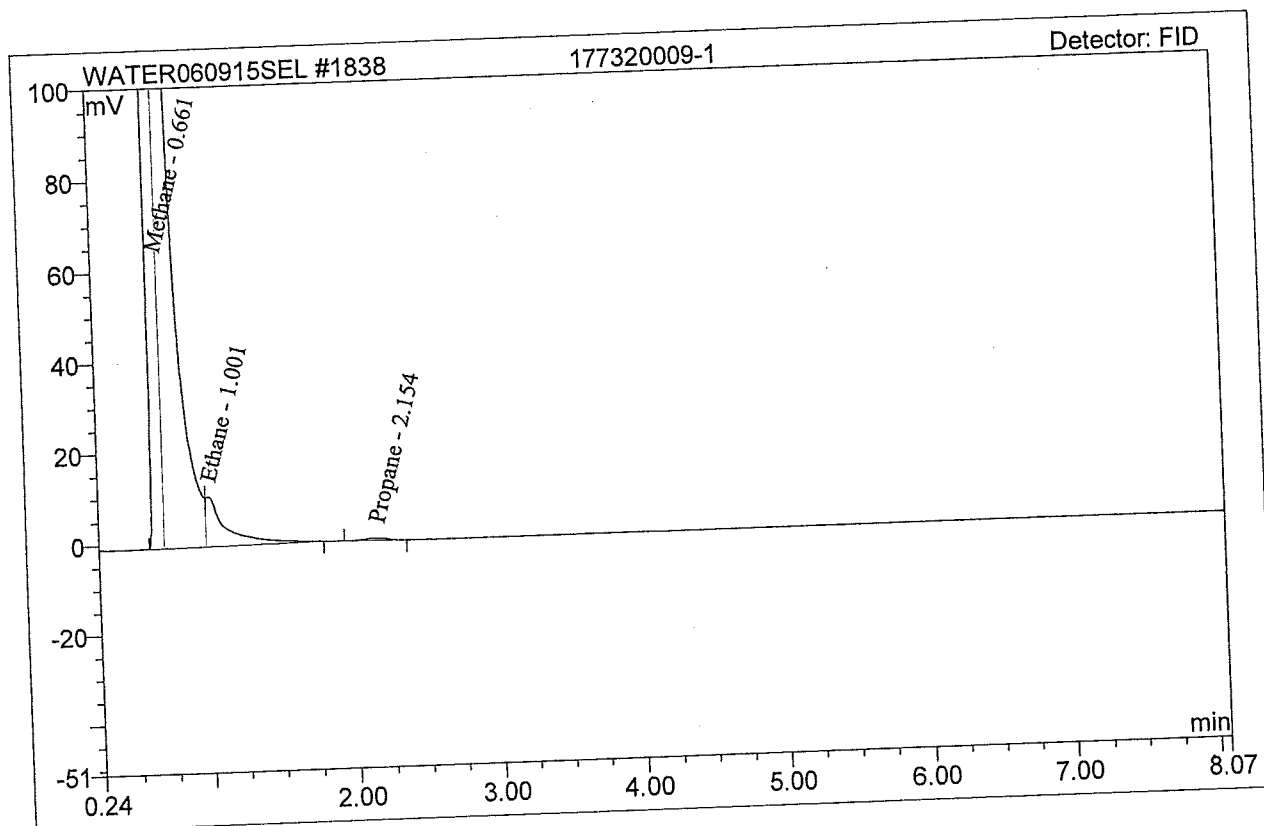


MICROSEEPS

Sample Analysis Report

Sample Name:	177320009-1	Sequence No:	1838
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/23/2015 17:04	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.661	609.727	10124.191	BM	1144.3945
6	Ethane	1.001	1.840	10.903	MB	4.6886
7	Propane	2.154	0.100	0.533	BMB	0.2493

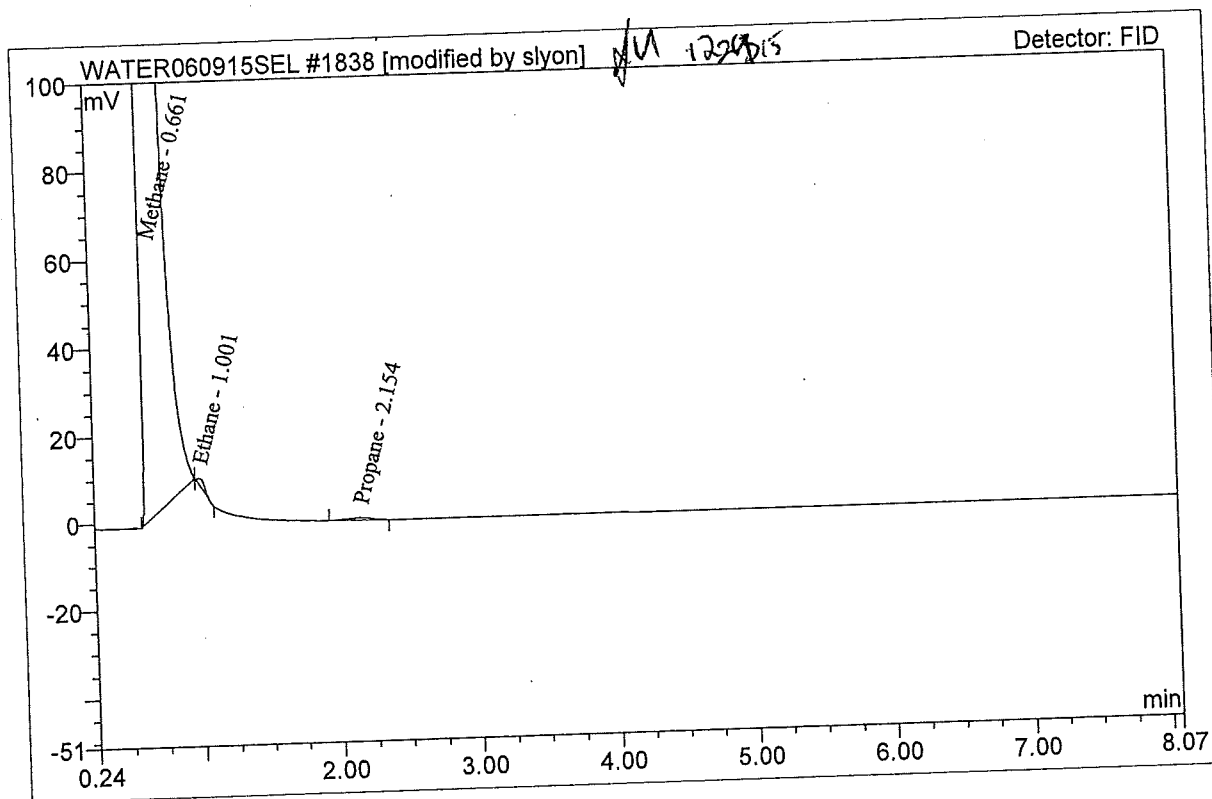


MICROSEEPS

Sample Analysis Report

Sample Name:	177320009-1	Sequence No:	1838
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/23/2015 17:04	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.661	965.243	10121.981	BMB*	1632.4620
2	Ethane	1.001	0.113	1.641	bMB*	0.2886
3	Propane	2.154	0.100	0.533	BMB	0.2493

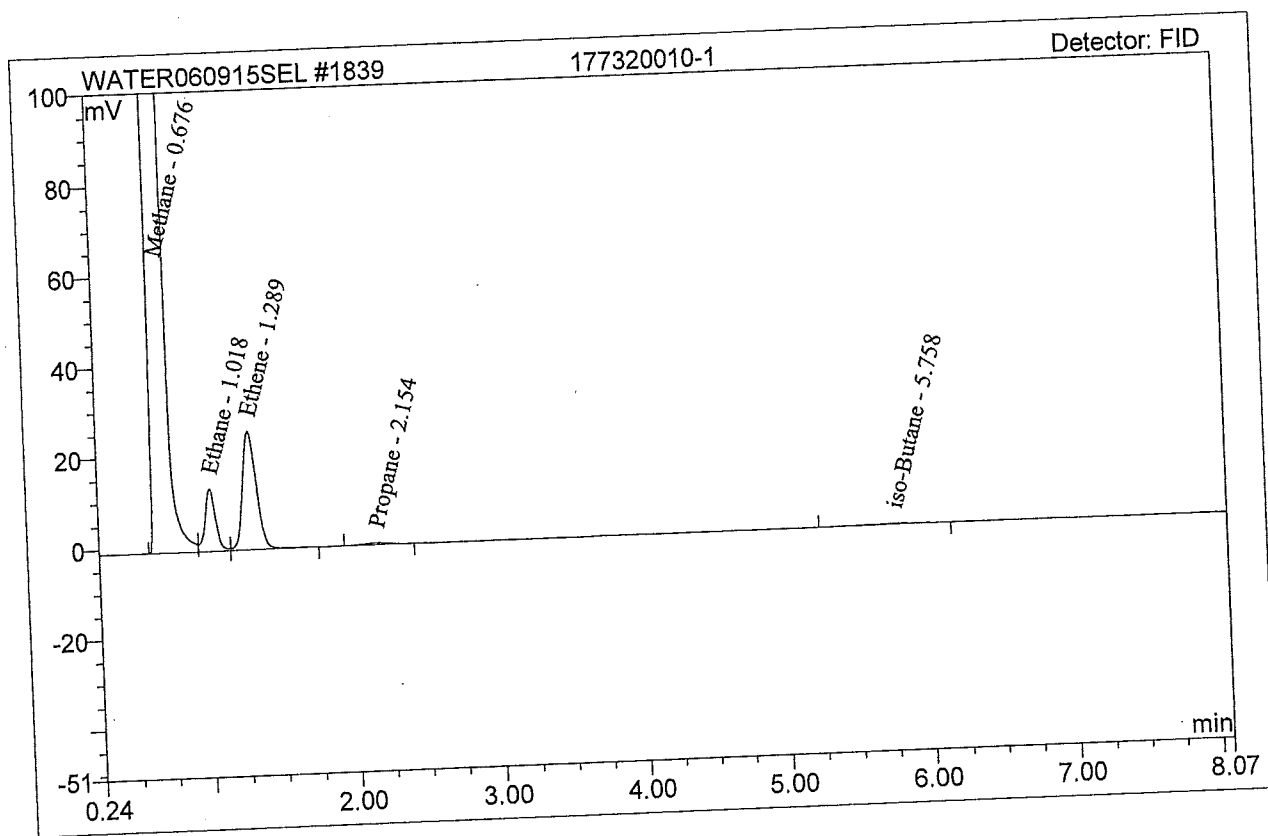


MICROSEEPS

Sample Analysis Report

Sample Name:	177320010-1	Sequence No:	1839
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/23/2015 17:16	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.676	488.708	9922.856	BM	957.5031
2	Ethane	1.018	1.142	13.640	M	2.9097
3	Ethene	1.289	2.785	26.037	MB	7.8378
4	Propane	2.154	0.080	0.412	BMB	0.2004
5	iso-Butane	5.758	0.073	0.156	BMB	0.1821

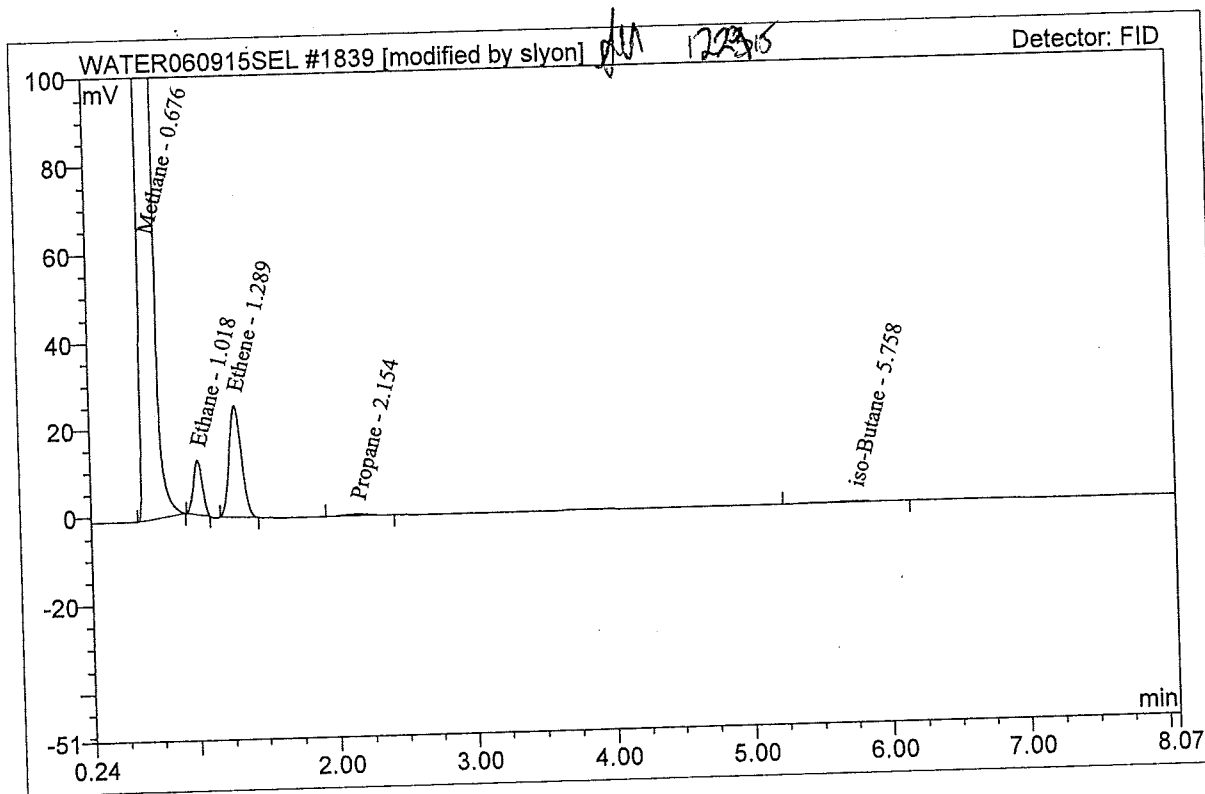


MICROSEEPS

Sample Analysis Report

Sample Name:	177320010-1	Sequence No:	1839
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/23/2015 17:16	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.676	488.429	9922.428	BMB*	957.0565
2	Ethane	1.018	0.888	12.337	BMB*	2.2627
3	Ethene	1.289	2.616	25.538	BMB*	7.3643
4	Propane	2.154	0.080	0.412	BMB	0.2004
5	iso-Butane	5.758	0.073	0.156	BMB	0.1821

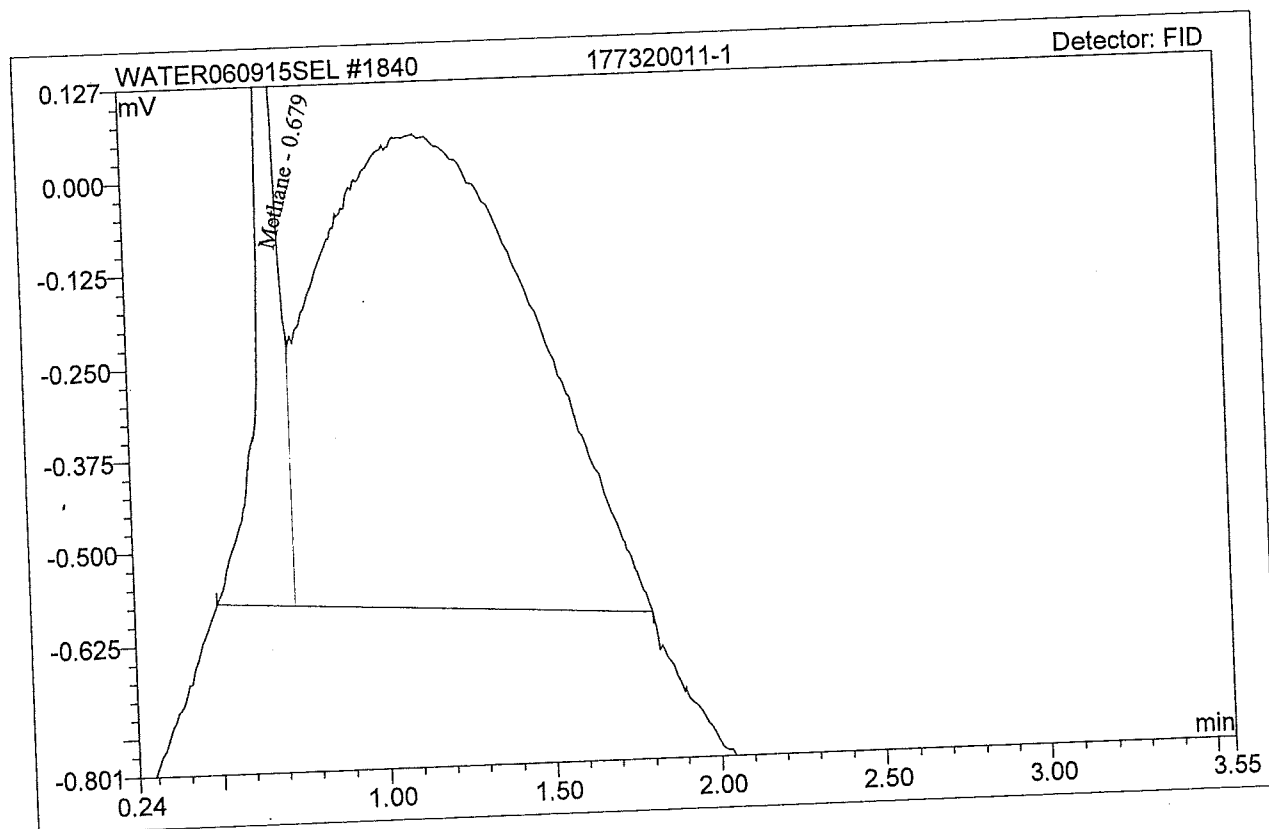


MICROSEEPS

Sample Analysis Report

Sample Name:	177320011-1	Sequence No:	1840
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/23/2015 17:28	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.679	0.085	1.163	BM	0.2157

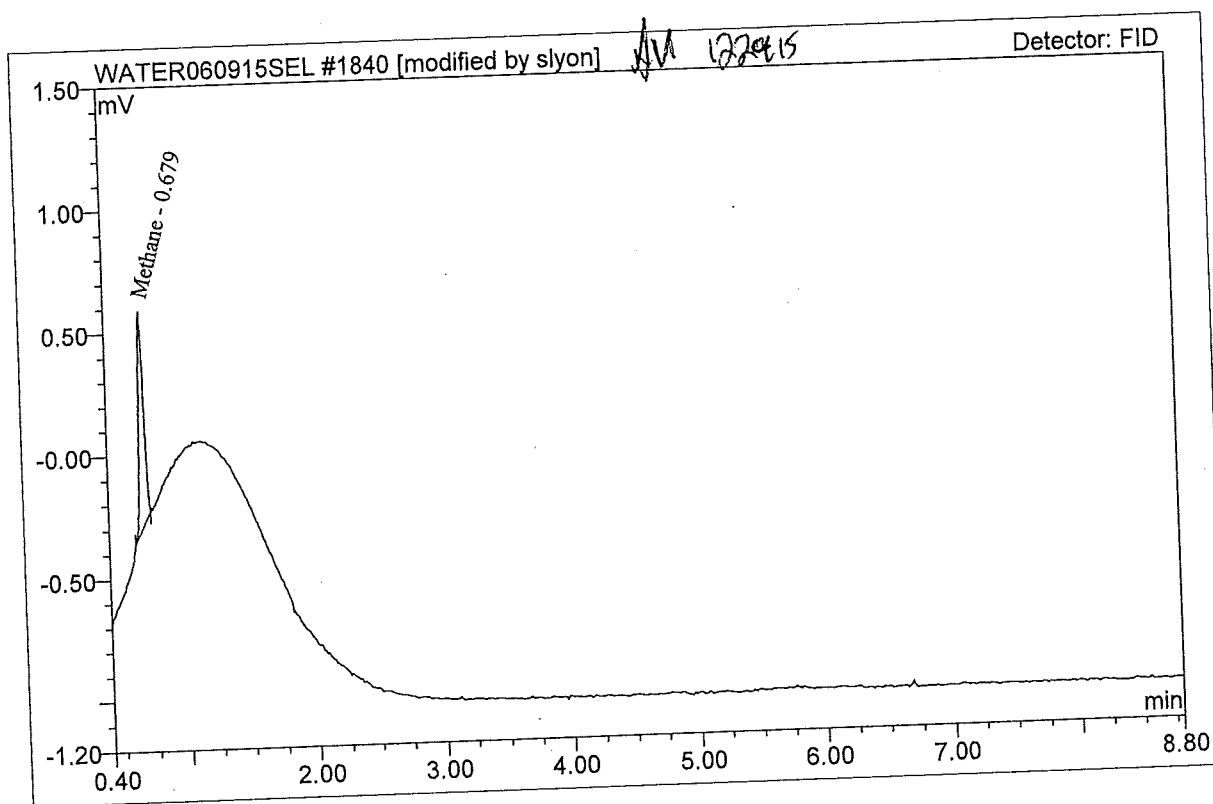


MICROSEEPS

Sample Analysis Report

Sample Name:	177320011-1	Sequence No:	1840
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/23/2015 17:28	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.679	0.041	0.872	BMB*	0.1040

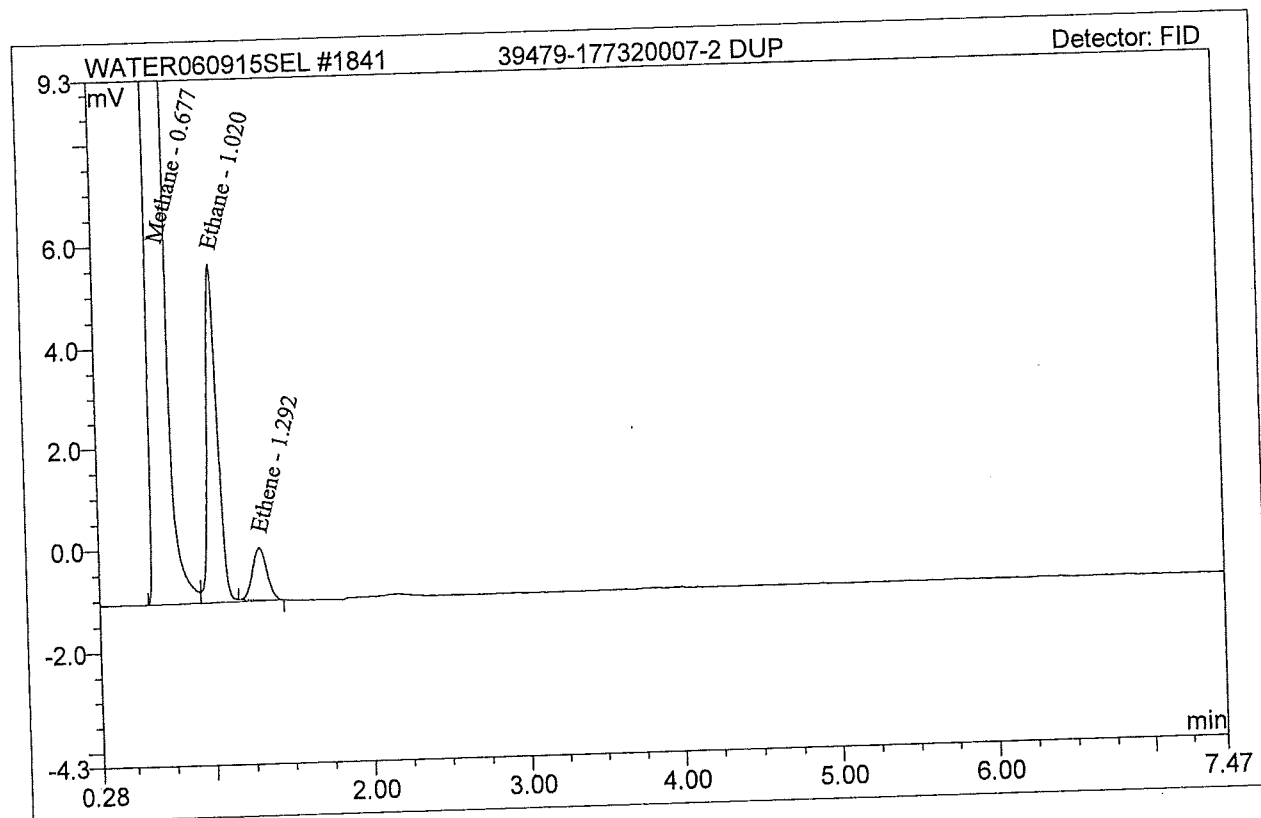


MICROSEEPS

Sample Analysis Report

Sample Name:	39479-177320007-2 DUP	Sequence No:	1841
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/23/2015 17:39	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.677	64.653	1336.460	BM	156.0327
2	Ethane	1.020	0.523	6.671	MB	1.3328
3	Ethene	1.292	0.106	1.023	Rd	0.2999

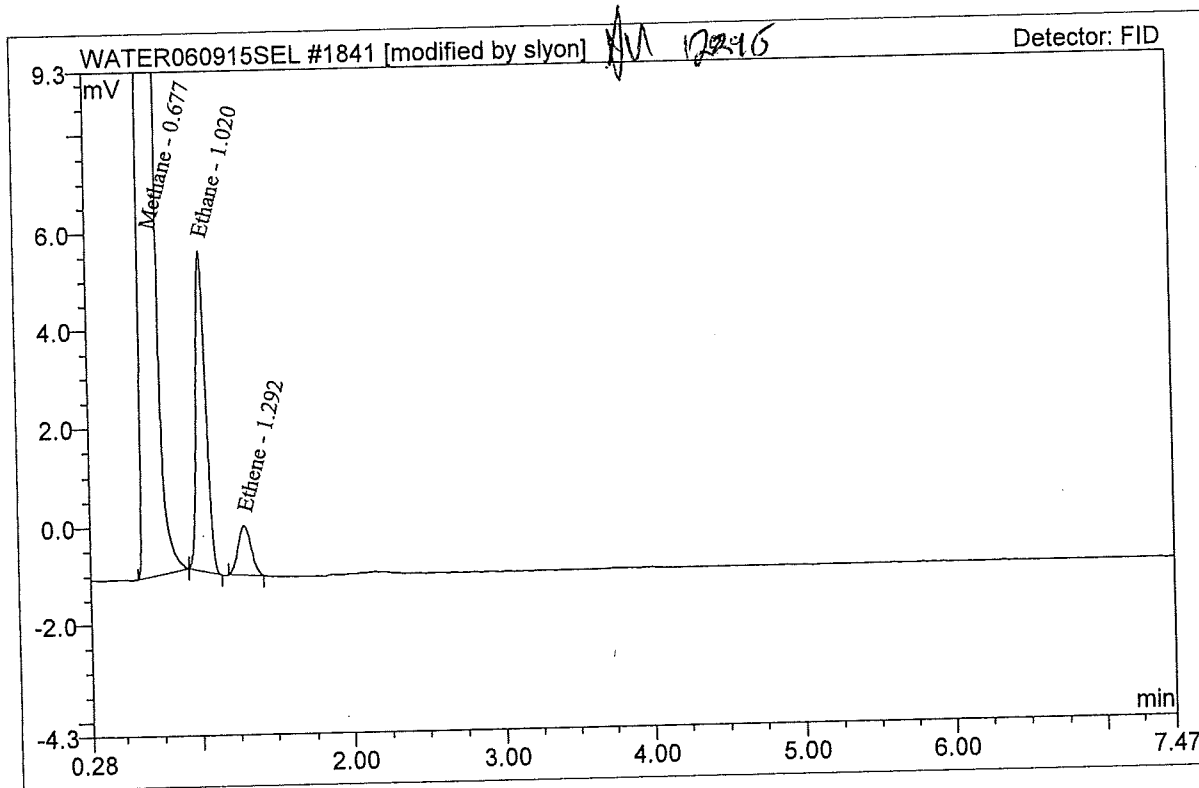


MICROSEEPS

Sample Analysis Report

Sample Name:	39479-177320007-2 DUP	Sequence No:	1841
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/23/2015 17:39	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.677	64.618	1336.405	BMB*	155.9514
2	Ethane	1.020	0.488	6.529	bMB*	1.2446
3	Ethene	1.292	0.102	1.006	BMB*	0.2882



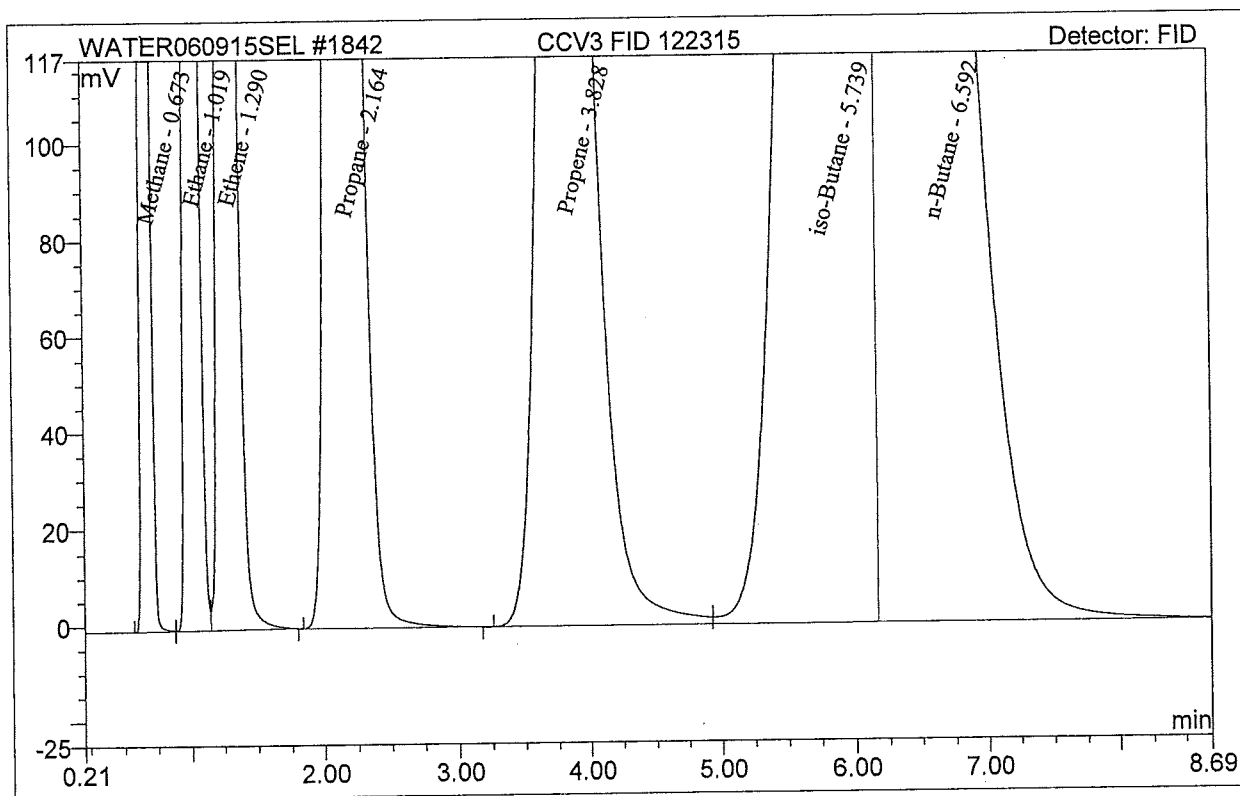
MICROSEEPS

Sample Analysis Report

Sample Name:	CCV3 FID 122315	Sequence No:	1842
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/23/2015 17:50	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	RA-14-12 2X

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.673	51.440	906.263	BM	125.2592
2	Ethane	1.019	97.413	1279.013	M	243.3699
3	Ethene	1.290	97.666	933.445	MB	268.4318
4	Propane	2.164	143.350	705.834	BMB	347.2184
5	Propene	3.828	137.635	360.075	BM	390.1642
6	iso-Butane	5.739	185.194	332.170	M	440.5291
7	n-Butane	6.592	184.321	277.309	MB	451.5885

TU
121.5
238.36
265.125

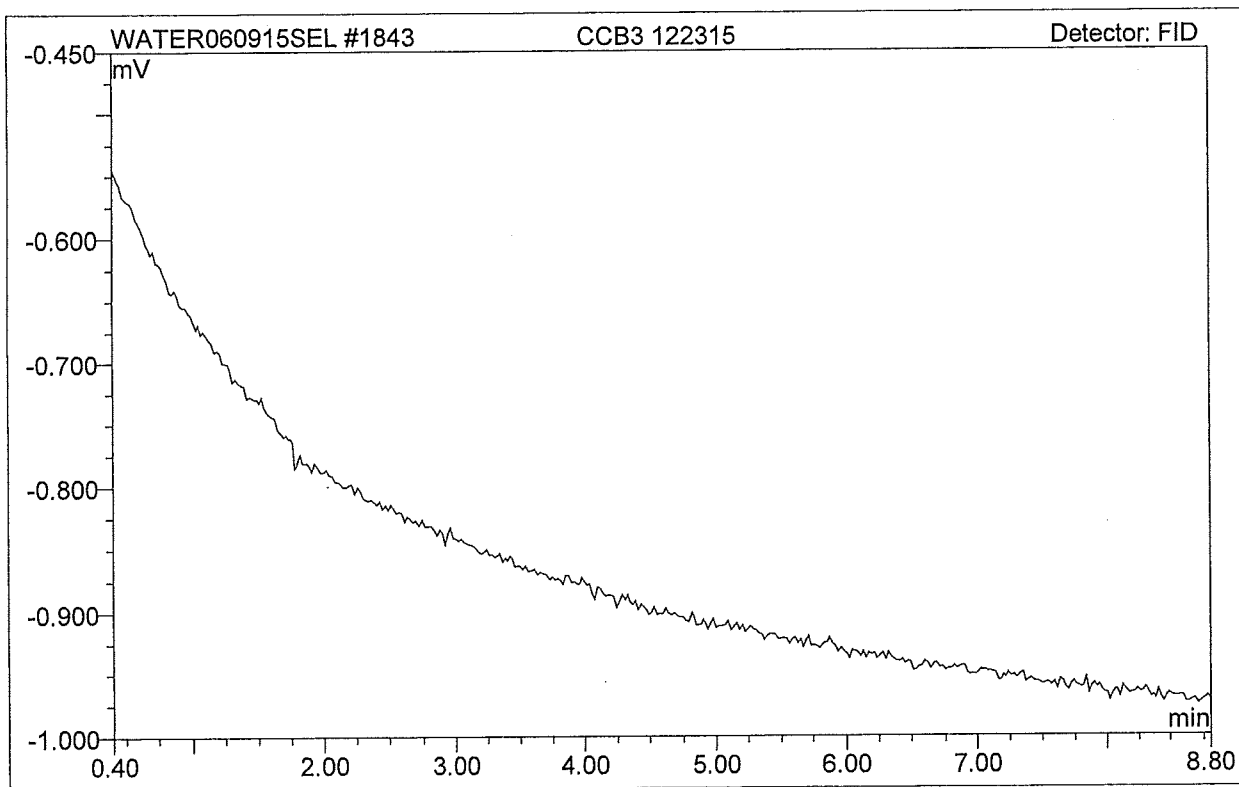


MICROSEEPS

Sample Analysis Report

Sample Name:	CCB3 122315	Sequence No:	1843
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/23/2015 18:19	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
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PAES
Case Narrative

Batch number: 5110-DISG

Analysis Date: 02/26/15

Sample numbers:

Matrix: Water

17732-(2,6,8-10) Dilutions/L4 FDP

Out of Control Event:

MS/MSD - Methane out of range due to concentration of orig sample being 4 times greater than spike concentration

Corrective Action Taken:

None

Result:

Reported

Observations to support use of data:

Manual Integration was used when the software algorithm failed to integrate a peak properly according to the experience of the analyst.

Manual Integration Checklist and Approval

- Manual Integration approved? Yes No
- Satisfactorily documented on this narrative?
- Manually integrated chromatogram initialed and dated by analyst?

Signature [Signature] Date 02/26/15
 Signature Lead Analyst or Lab. Mgr.

Analyzed & Reviewed: [Signature] Date: 02/26/15
 Manual Integration Conducted? YES NO
 (Circle One)
 Reviewed by: [Signature] Date: 12/31/15
 Reviewed & Entered by: [Signature] Date: 02/26/15
 Reviewed by: [Signature] Date: 01/04/16
 Corrected by: _____ Date: _____

---- BIOREM-13 ----
 ---- QUALITY CONTROL ----
 ---- ANALYSIS DATE: 12/28/15 ----
 ---- MATRIX: WATER ----

SPIKE RECOVERY/ACCURACY DATA

SAMPLE: 177320003 ORIG, 39584-177320004 MS, 39585-177320005 MSD

MS/MSD	SAMPLE CONC.	SPIKE CONC.	MS CONC.	MSD CONC.	MS %R	MSD %R	%D
METHANE	13478.8300	44.48	12195.560	13201.980	-2885.05	-622.41	129.02

Methane amount is greater than 4 times the spike conc.

Reviewed APK 12/31/15

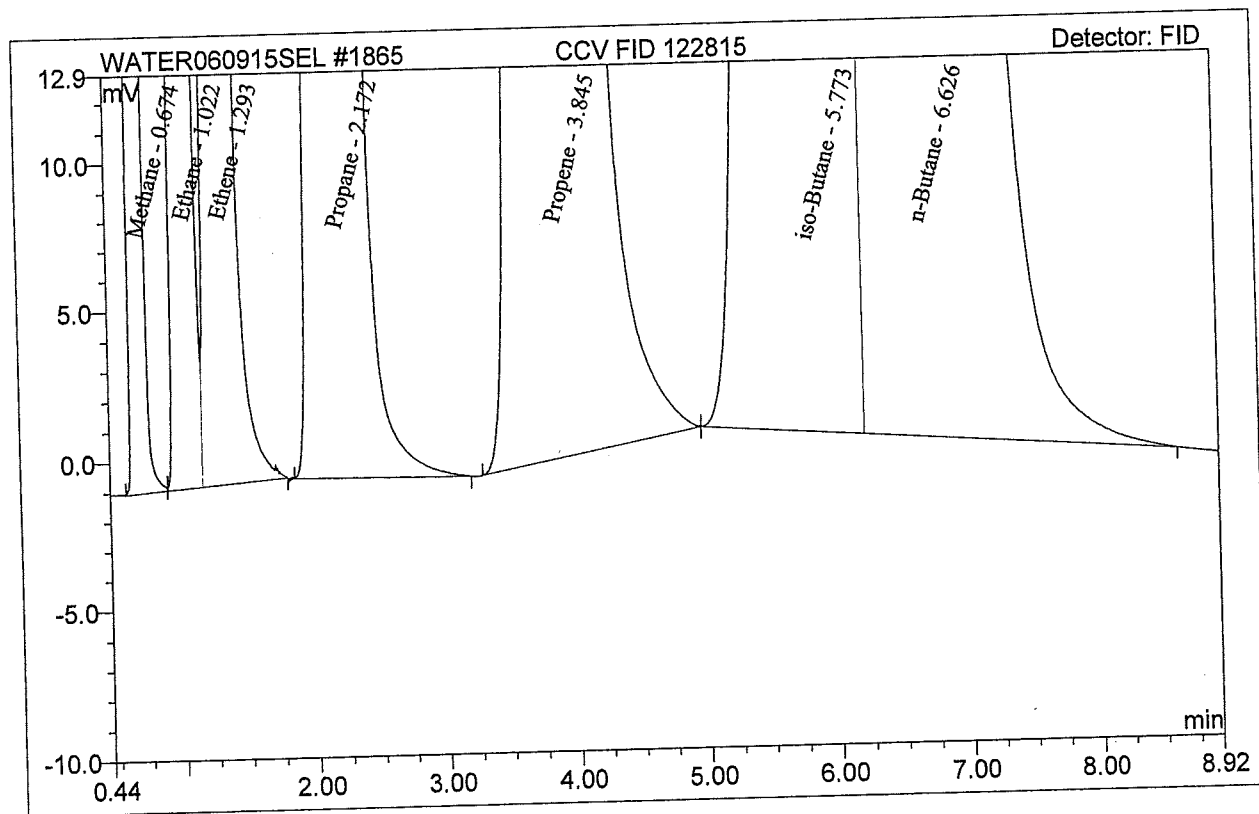
Analyst JM

MICROSEEPS

Sample Analysis Report

Sample Name:	CCV FID 122815	Sequence No:	1865
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/28/2015 13:08	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	RA-14-12 2X

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.674	52.402	915.726	BM	127.5177
2	Ethane	1.022	99.312	1296.859	M	248.0195
3	Ethene	1.293	99.577	948.165	MB	273.5593
4	Propane	2.172	145.912	714.925	BMB	353.2329
5	Propene	3.845	138.842	363.782	BMB	393.4540
6	iso-Butane	5.773	186.911	335.389	bM	444.4477
7	n-Butane	6.626	186.976	282.571	MB	457.7881



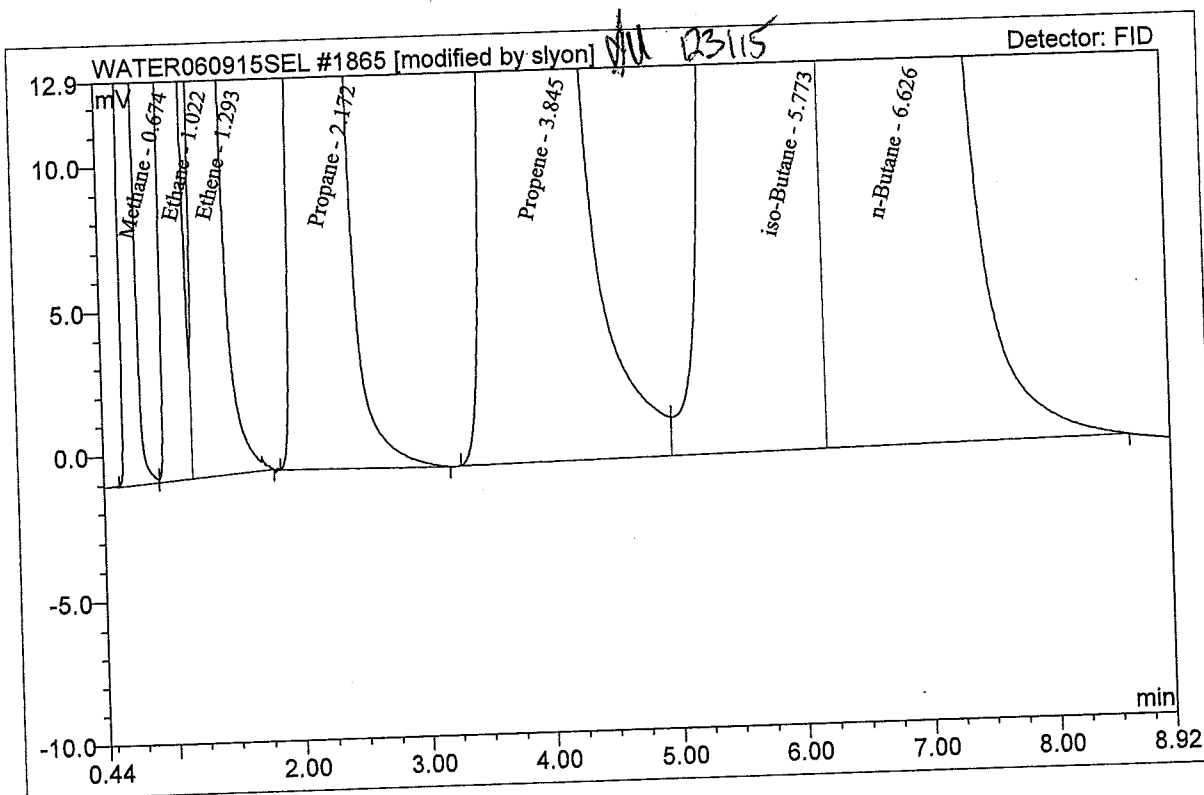
MICROSEEPS

Sample Analysis Report

Sample Name:	CCV FID 122815	Sequence No:	1865
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHC081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/28/2015 13:08	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	RA-14-12 2X

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.674	52.402	915.726	BM	127.5177
2	Ethane	1.022	99.312	1296.859	M	248.0195
3	Ethene	1.293	99.577	948.165	MB	273.5593
4	Propane	2.172	145.912	714.925	BMB	353.2329
5	Propene	3.845	139.948	364.225	BM *	396.4661
6	iso-Butane	5.773	188.284	336.422	M *	447.5796
7	n-Butane	6.626	188.030	283.293	MB*	460.2450

TV
121.5

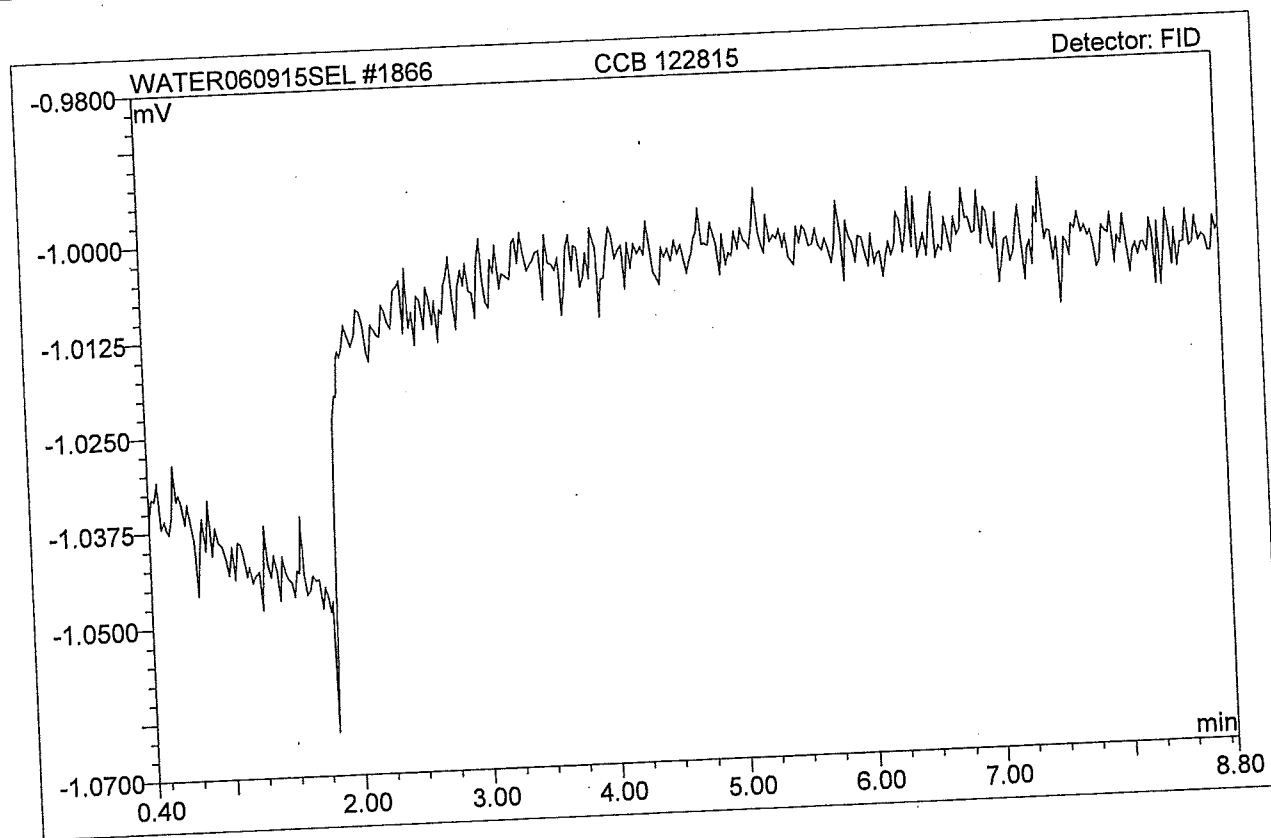


MICROSEEPS

Sample Analysis Report

Sample Name:	CCB 122815	Sequence No:	1866
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/28/2015 14:08	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
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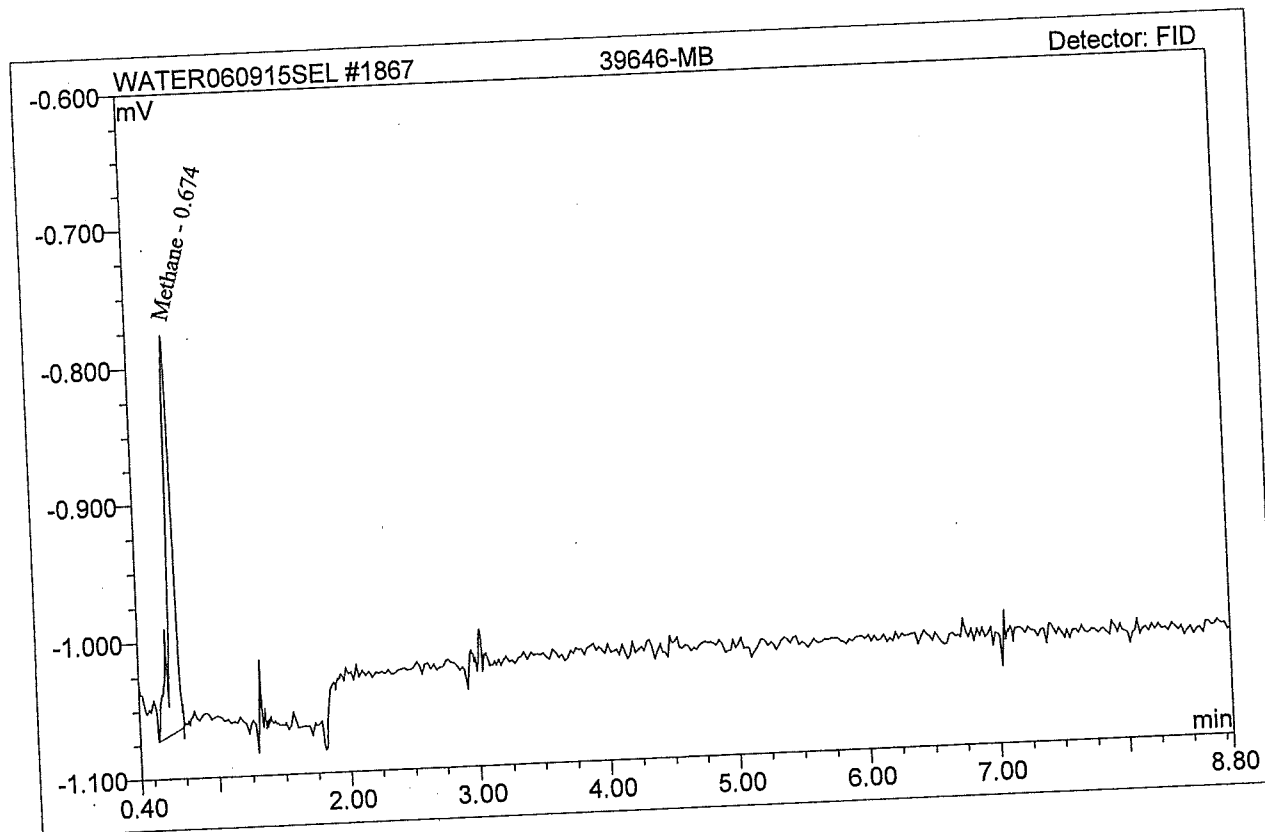


MICROSEEPS

Sample Analysis Report

Sample Name:	39646-MB	Sequence No:	1867
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/28/2015 14:33	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.674	0.018	0.289	BMB	0.0449

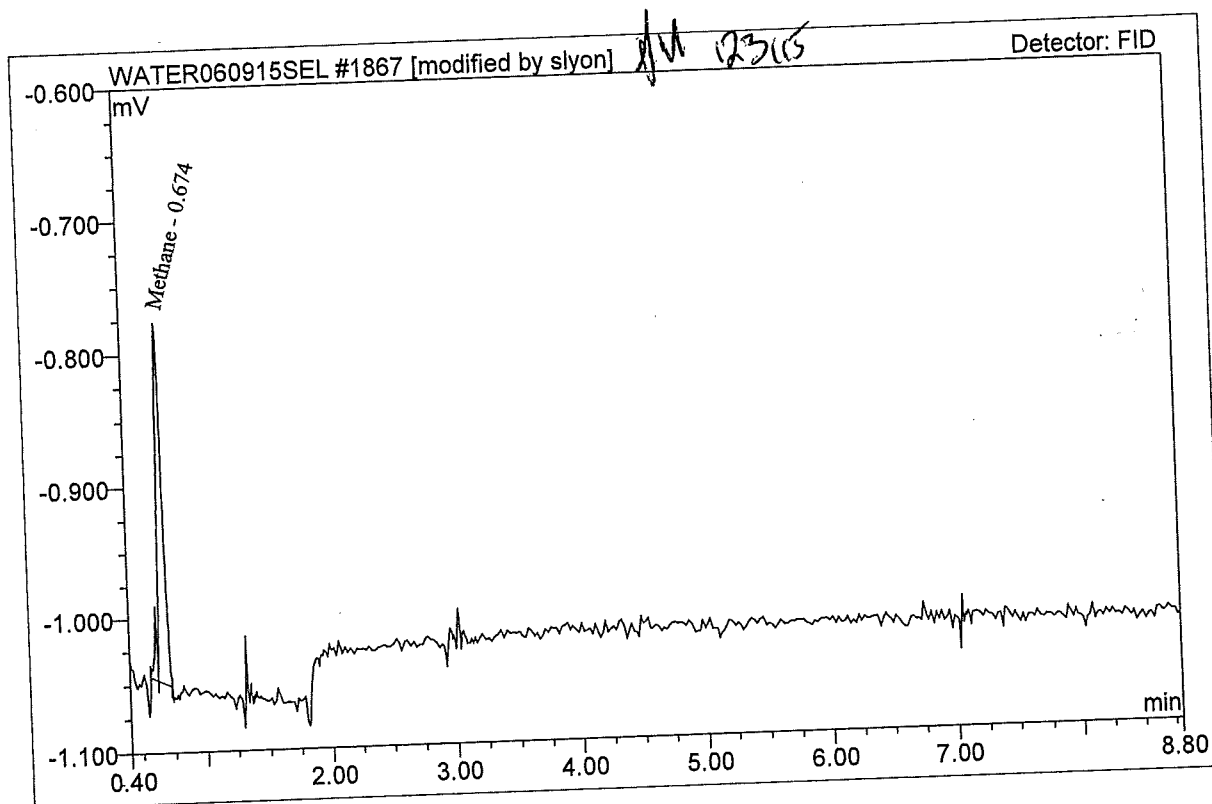


MICROSEEPS

Sample Analysis Report

Sample Name:	39646-MB	Sequence No:	1867
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/28/2015 14:33	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
2	Methane	0.674	0.013	0.272	MB*	0.0333



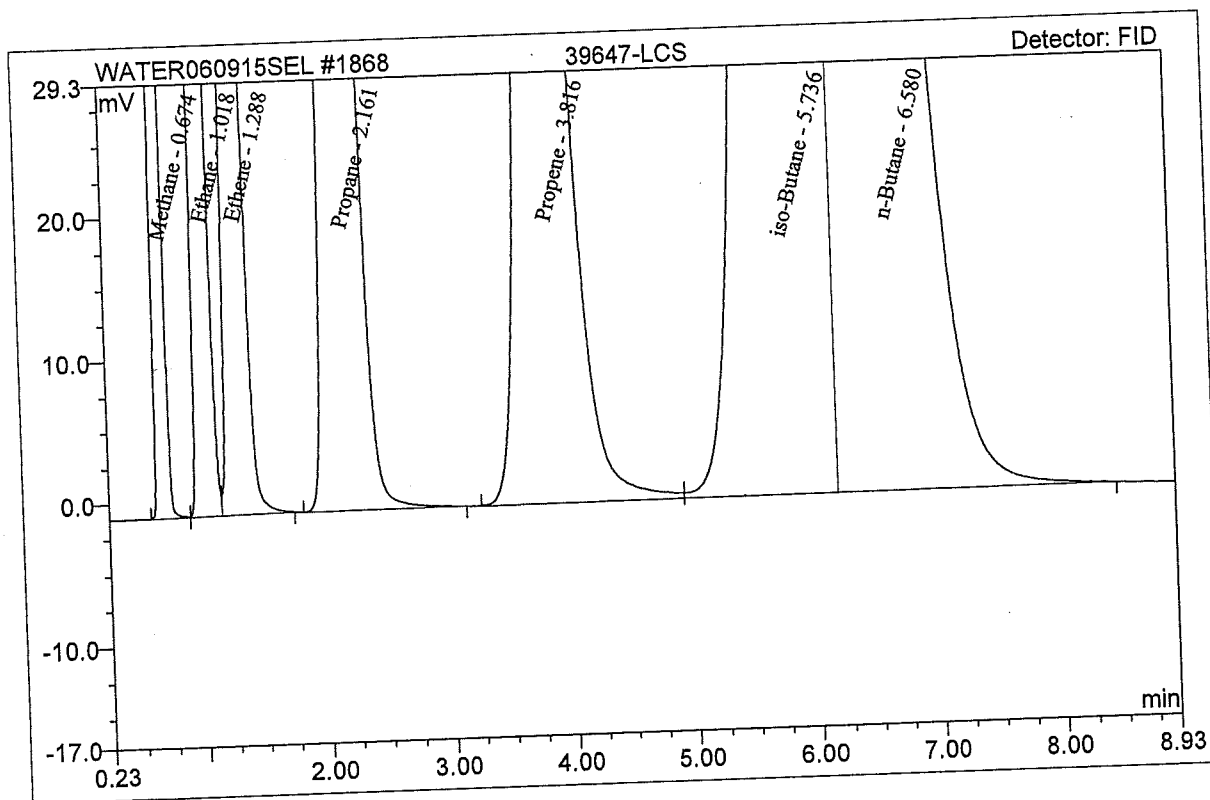
MICROSEEPS

Sample Analysis Report

Sample Name:	39647-LCS	Sequence No:	1868
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/28/2015 14:47	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	RA-12-08 5X

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.674	17.947	352.123	BM	44.7532
2	Ethane	1.018	33.138	443.044	M	83.8955
3	Ethene	1.288	28.377	274.282	MB	79.3469
4	Propane	2.161	49.462	244.767	BMB	122.2844
5	Propene	3.816	37.104	97.319	BM	108.2818
6	iso-Butane	5.736	65.115	116.314	M	159.1605
7	n-Butane	6.580	61.585	93.277	MB	155.8619

TV
44.48



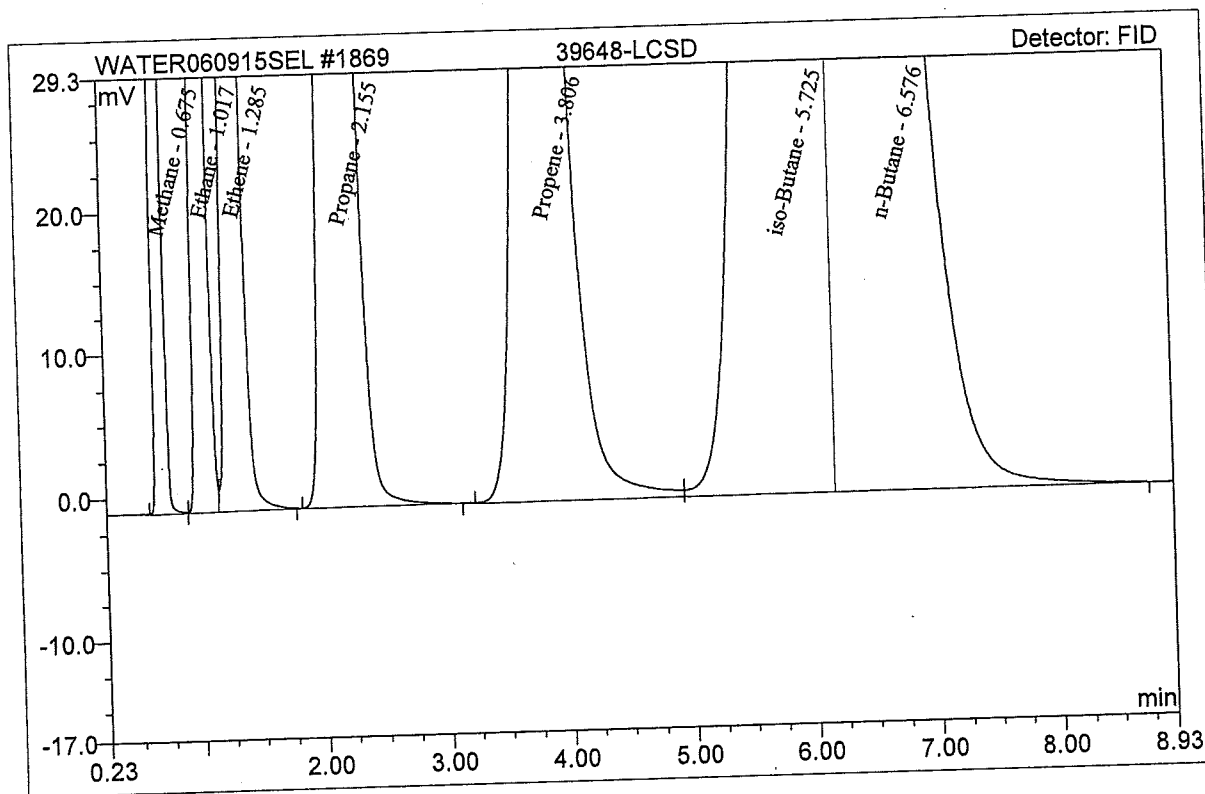
MICROSEEPS

Sample Analysis Report

Sample Name:	39648-LCSD	Sequence No:	1869
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/28/2015 15:02	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	RA-12-08 5X

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.675	18.073	353.314	BM	45.0632
2	Ethane	1.017	33.220	444.413	M	84.1004
3	Ethene	1.285	28.485	275.825	MB	79.6449
4	Propane	2.155	49.448	245.089	BMB	122.2497
5	Propene	3.806	37.135	97.041	BM	108.3731
6	iso-Butane	5.725	65.134	116.132	M	159.2056
7	n-Butane	6.576	61.226	92.965	MB	154.9692

TU
44.48

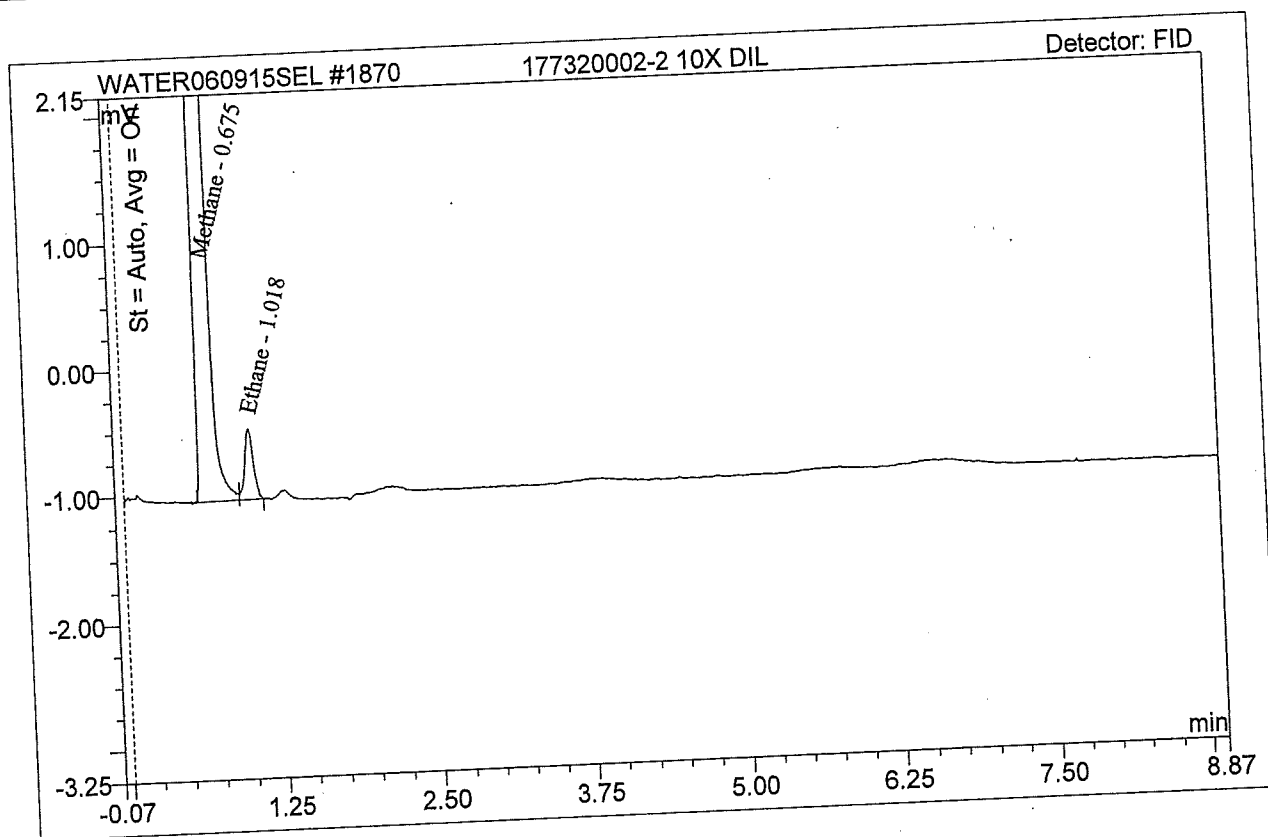


MICROSEEPS

Sample Analysis Report

Sample Name:	177320002-2 10X DIL	Sequence No:	1870
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/28/2015 15:28	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.675	17.824	379.678	BM	44.4500
2	Ethane	1.018	0.044	0.562	MB	0.1130



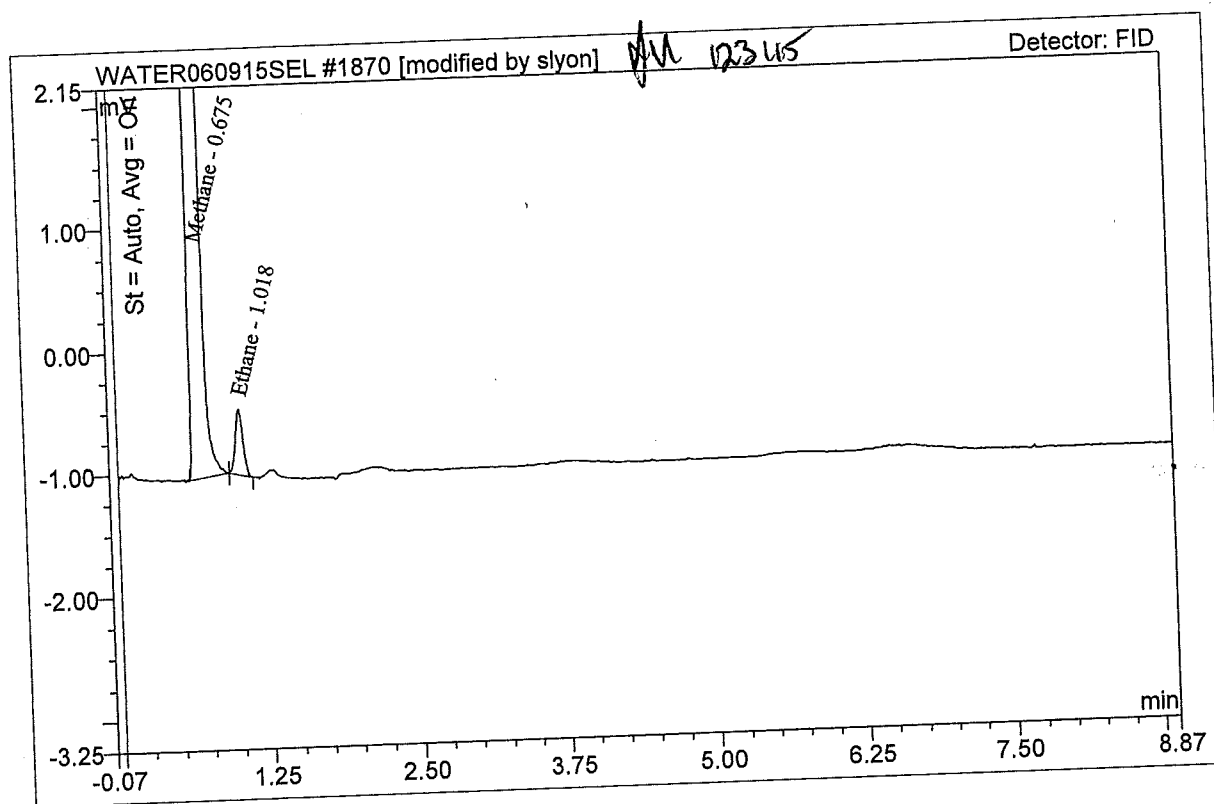
MICROSEEPS

Sample Analysis Report

Sample Name:	177320002-2 10X DIL	Sequence No:	1870
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/28/2015 15:28	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.675	17.816	379.667	BMB*	44.4313
2	Ethane	1.018	0.040	0.537	bMB*	0.1018

X LO

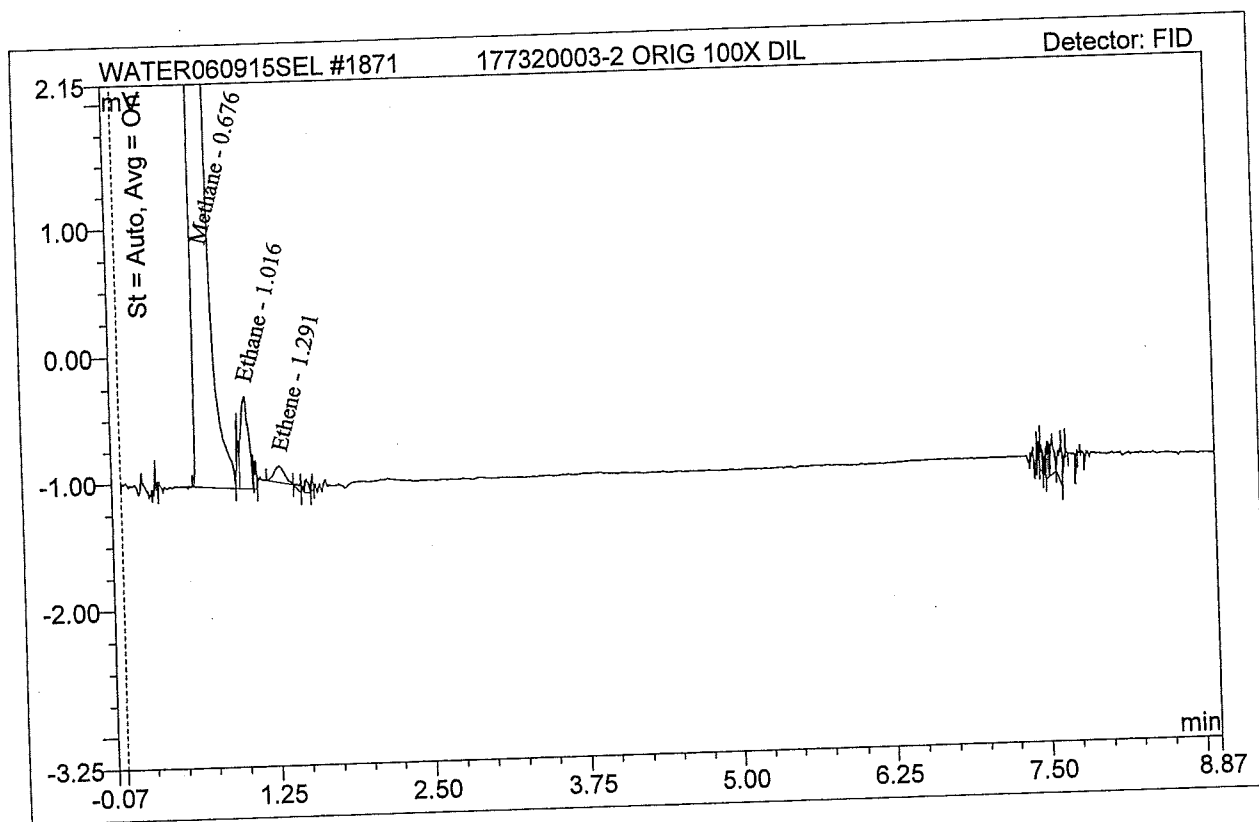


MICROSEEPS

Sample Analysis Report

Sample Name:	177320003-2 ORIG 100X DIL	Sequence No:	1871
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/28/2015 15:40	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.676	55.525	1174.342	BMb	134.8291
3	Ethane	1.016	0.052	0.734	M	0.1324
6	Ethene	1.291	0.013	0.131	BMb	0.0373



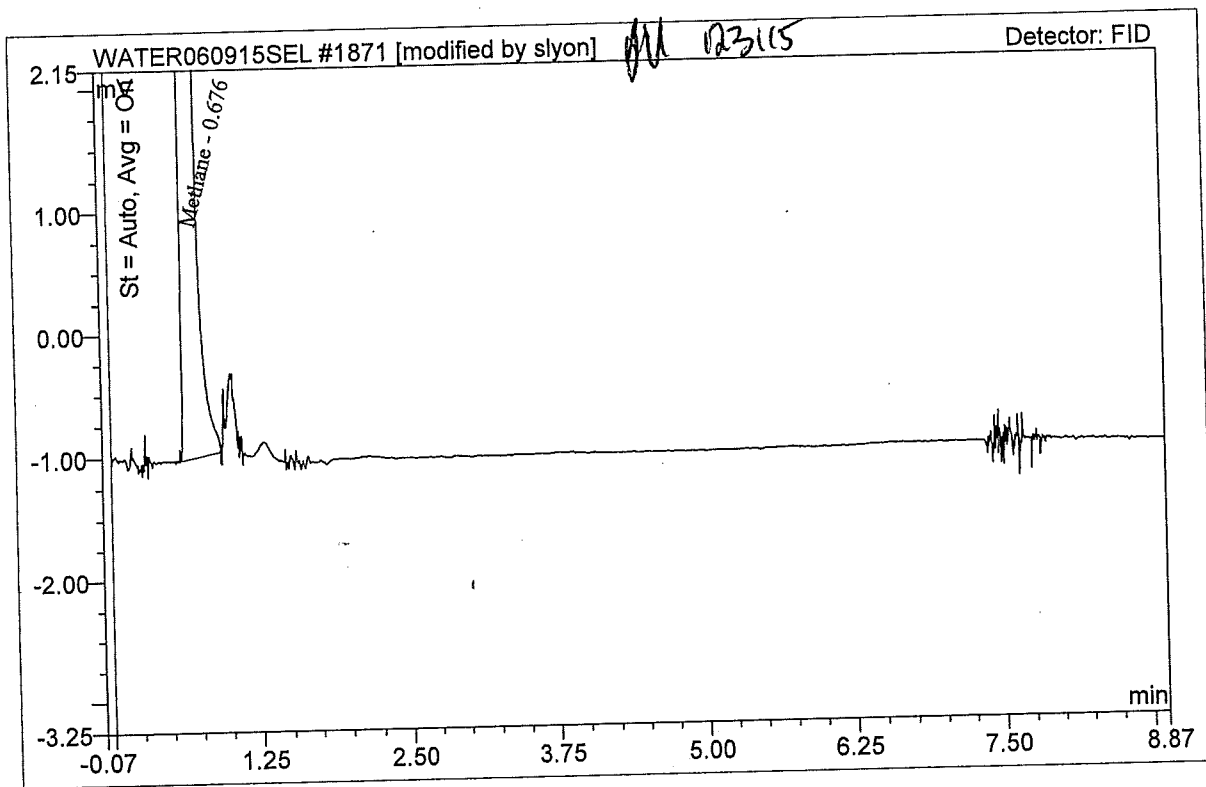
MICROSEEPS

Sample Analysis Report

Sample Name:	177320003-2 ORIG 100X DIL	Sequence No:	1871
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/28/2015 15:40	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.676	55.507	1174.316	BMB*	134.7883

* 100

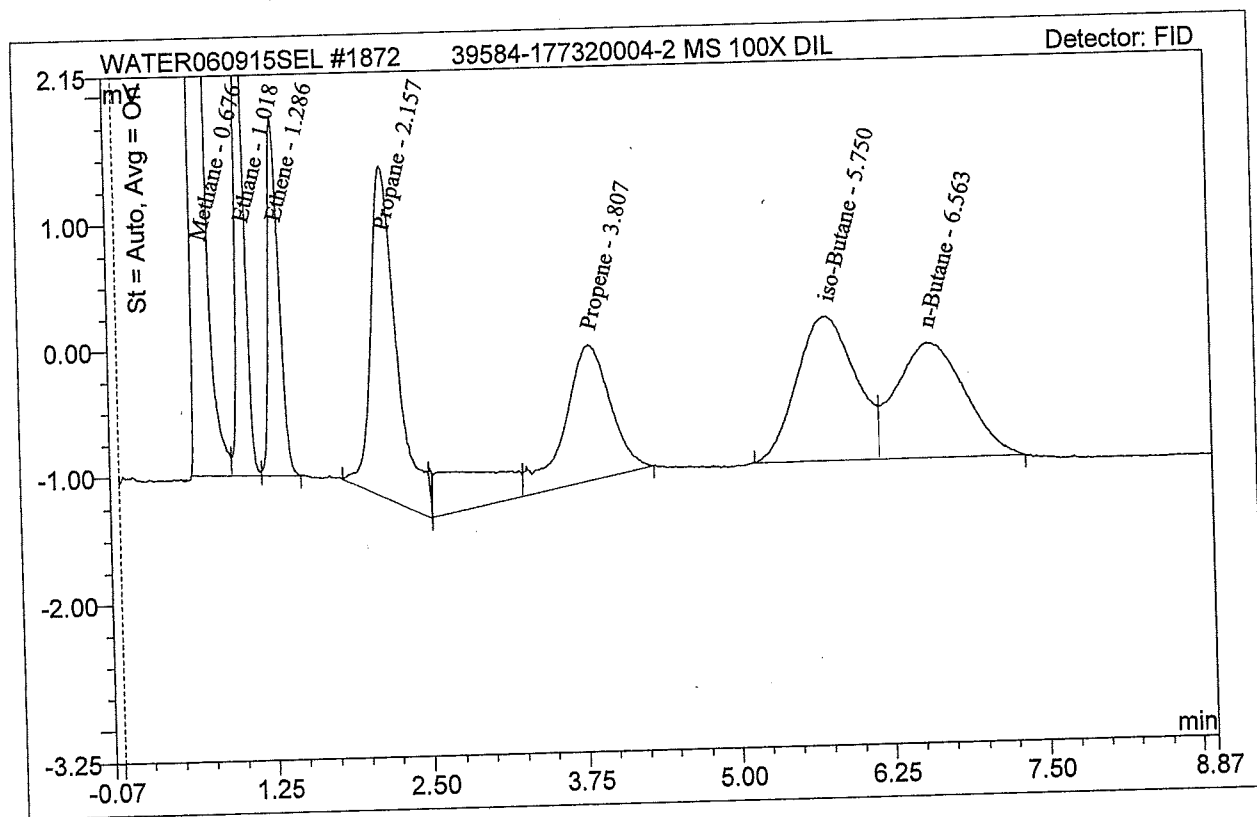


MICROSEEPS

Sample Analysis Report

Sample Name:	39584-177320004-2 MS 100X DIL	Sample No:	1872
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/28/2015 15:50	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.676	50.035	1038.821	BM	121.9556
2	Ethane	1.018	0.385	4.971	M	0.9807
3	Ethene	1.286	0.298	2.844	MB	0.8391
4	Propane	2.157	0.630	2.624	BMB	1.5743
7	Propene	3.807	0.467	1.076	MB	1.3791
8	iso-Butane	5.750	0.634	1.146	BM	1.5742
9	n-Butane	6.563	0.586	0.914	MB	1.5085

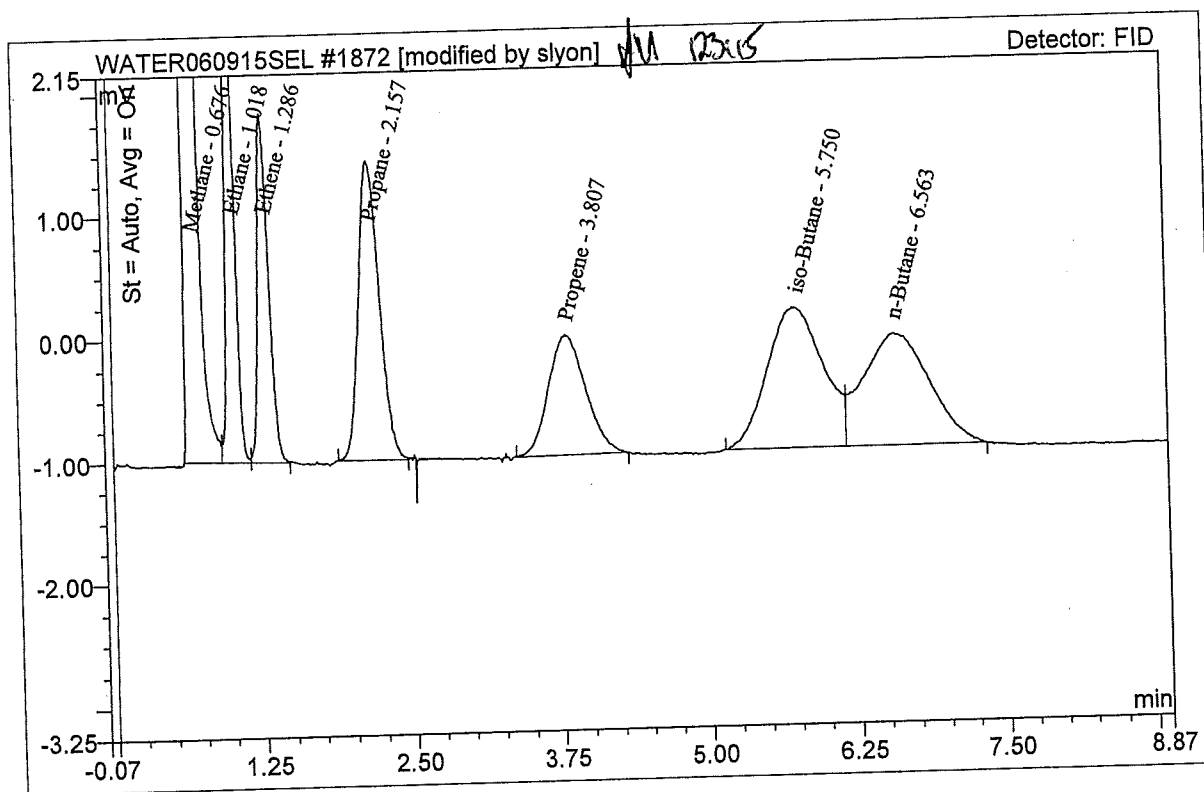


MICROSEEPS

Sample Analysis Report

Sample Name:	39584-177320004-2 MS 100X DIL	Sequence No:	1872
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHC081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/28/2015 15:50	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.676	50.035	1038.821	BM	121.9556
2	Ethane	1.018	0.385	4.971	M	0.9807
3	Ethene	1.286	0.298	2.844	MB	0.8391
4	Propane	2.157	0.494	2.433	BMB*	1.2346
5	Propene	3.807	0.361	0.979	BMB*	1.0662
6	iso-Butane	5.750	0.634	1.146	BM	1.5742
7	n-Butane	6.563	0.586	0.914	MB	1.5085

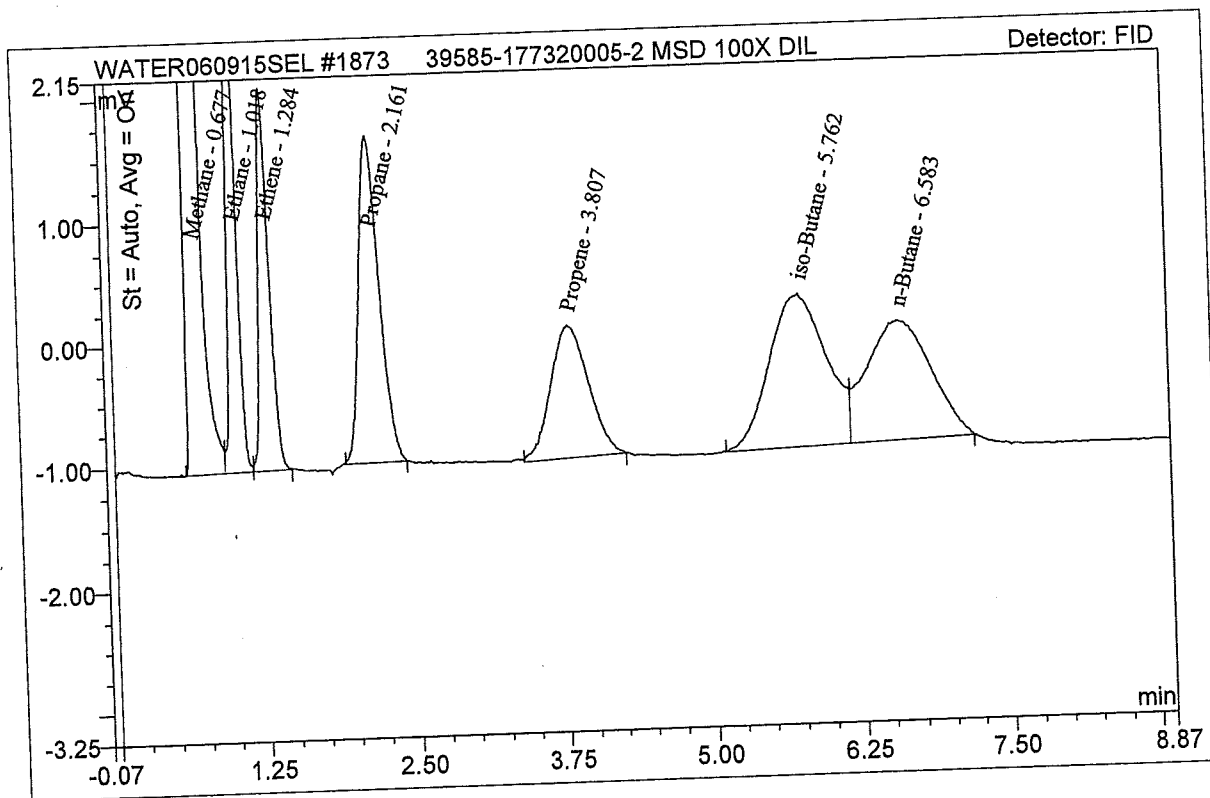


MICROSEEPS

Sample Analysis Report

Sample Name:	39585-177320005-2 MSD 100X DIL	Sequence No:	1873
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/28/2015 16:01	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.677	54.447	1147.680	BM	132.3093
2	Ethane	1.018	0.423	5.431	M	1.0792
3	Ethene	1.284	0.328	3.121	MB	0.9251
4	Propane	2.161	0.534	2.665	BMB	1.3354
5	Propene	3.807	0.406	1.091	BMB	1.1973
6	iso-Butane	5.762	0.692	1.261	BM	1.7175
7	n-Butane	6.583	0.605	0.985	MB	1.5586

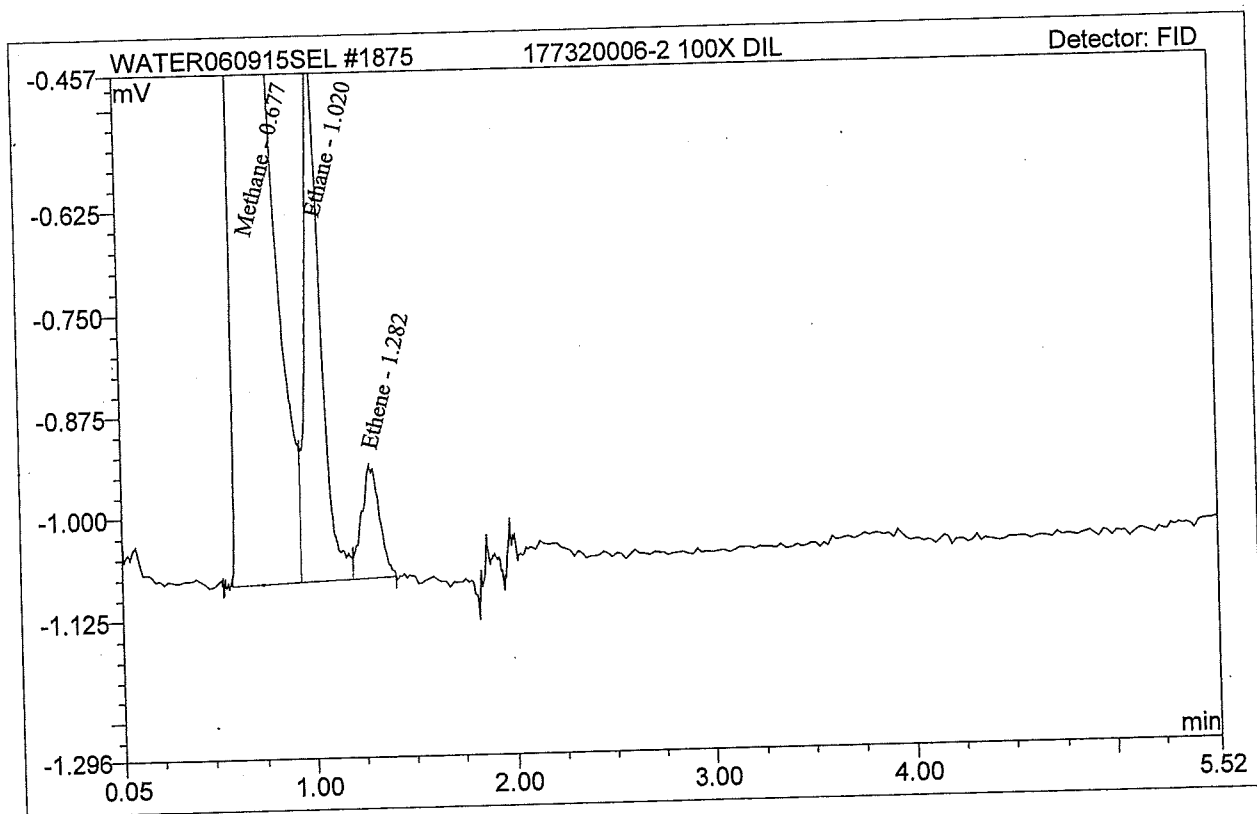


MICROSEEPS

Sample Analysis Report

Sample Name:	177320006-2 100X DIL	Sequence No:	1875
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/28/2015 16:28	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.677	54.323	1144.960	BM	132.0198
2	Ethane	1.020	0.061	0.657	M	0.1551
3	Ethene	1.282	0.015	0.140	MB	0.0411

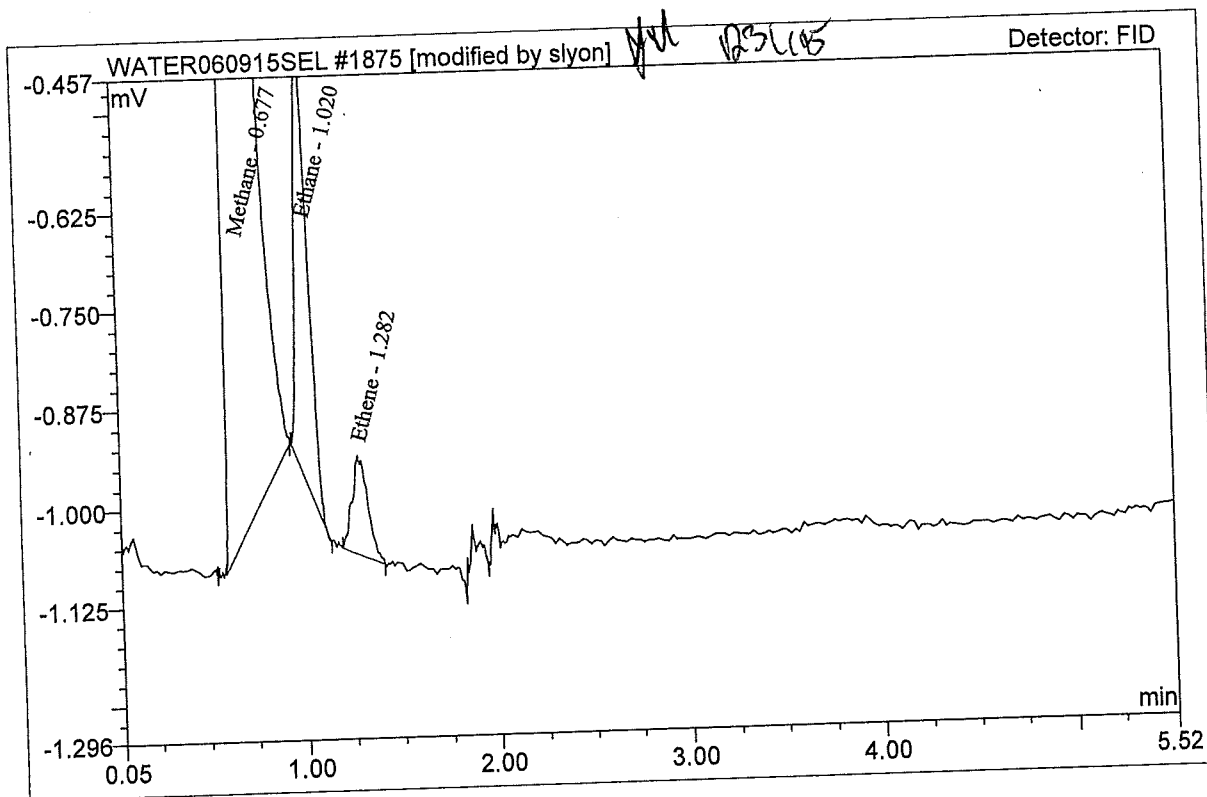


MICROSEEPS

Sample Analysis Report

Sample Name:	177320006-2 100X DIL	Sequence No:	1875
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/28/2015 16:28	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.677	54.296	1144.922	BMB*	131.9562
2	Ethane	1.020	0.039	0.548	BMB*	0.1002
3	Ethene	1.282	0.012	0.125	BMB*	0.0335

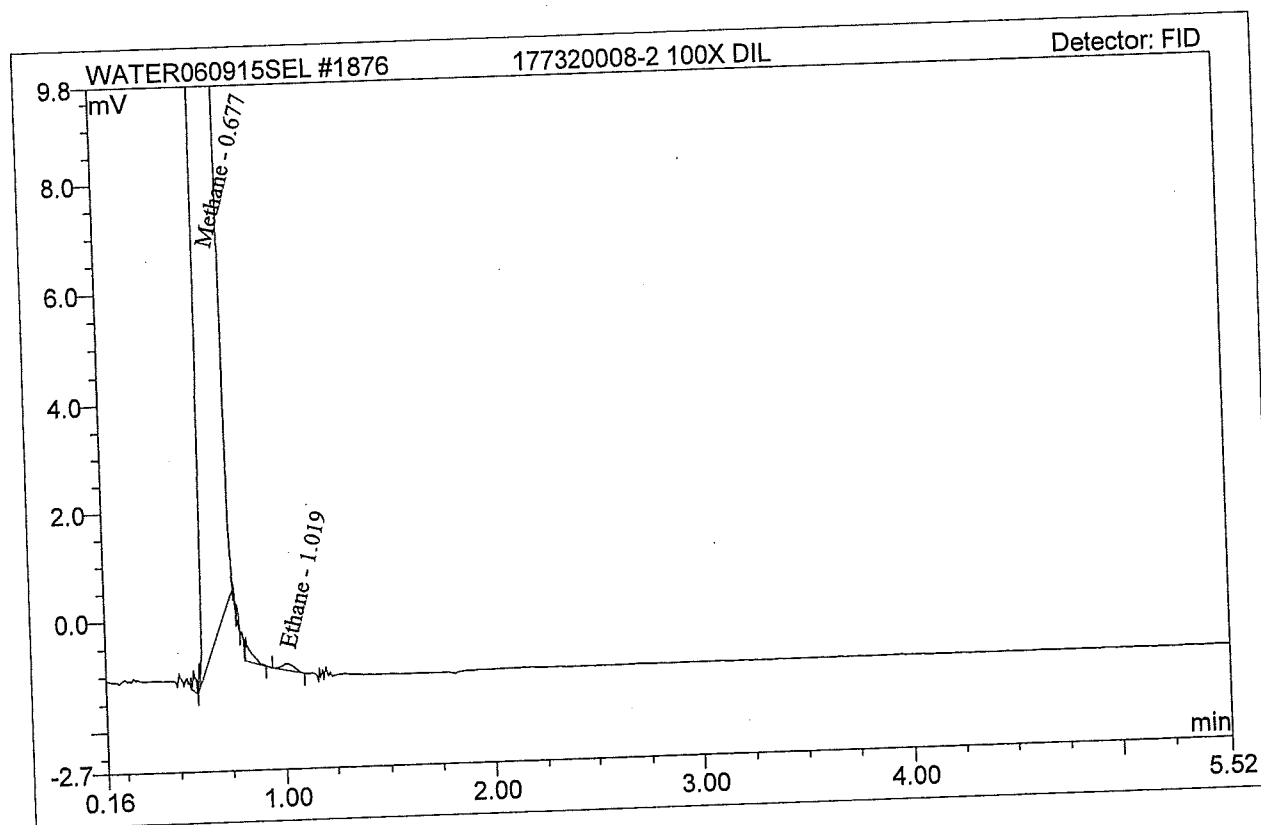


MICROSEEPS

Sample Analysis Report

Sample Name:	177320008-2 100X DIL	Sequence No:	1876
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/28/2015 16:39	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
3	Methane	0.677	65.602	1385.638	Mb	158.2236
7	Ethane	1.019	0.008	0.125	BMB	0.0212

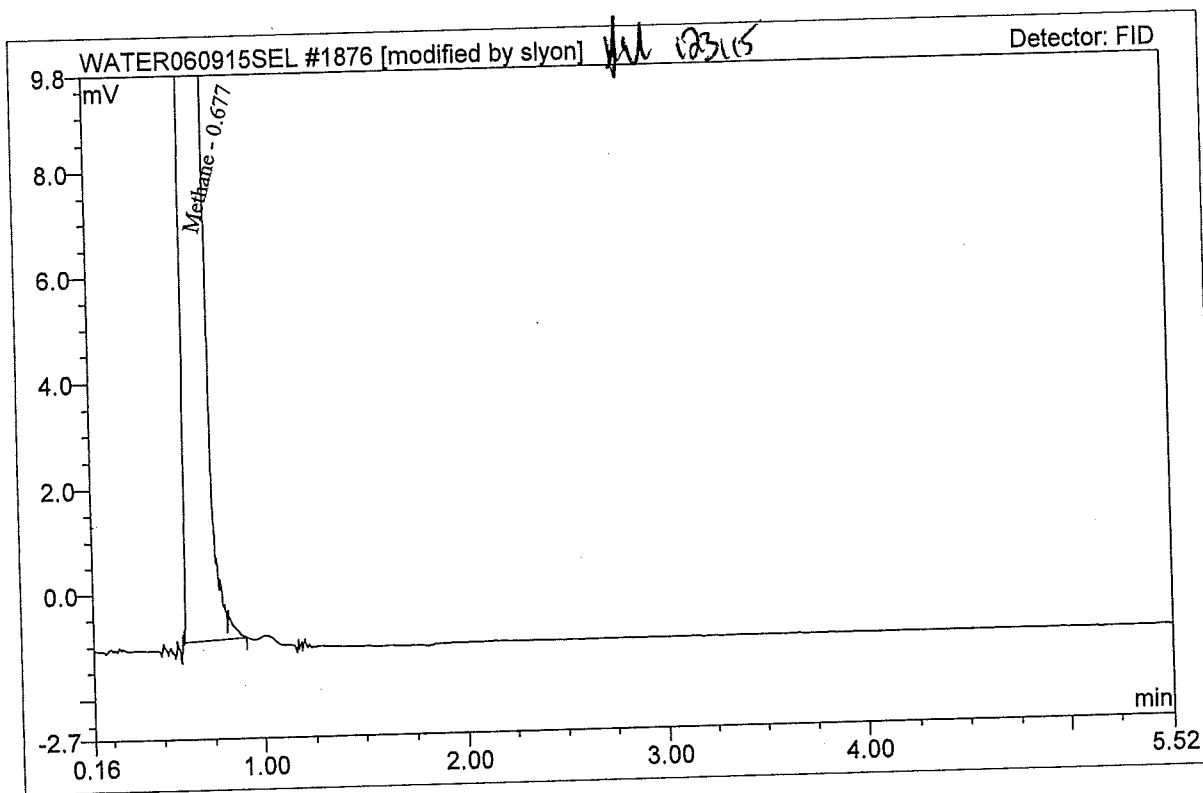


MICROSEEPS

Sample Analysis Report

Sample Name:	177320008-2 100X DIL	Sequence No:	1876
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/28/2015 16:39	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.677	65.763	1386.146	BMB*	158.5950 <i>X100</i>

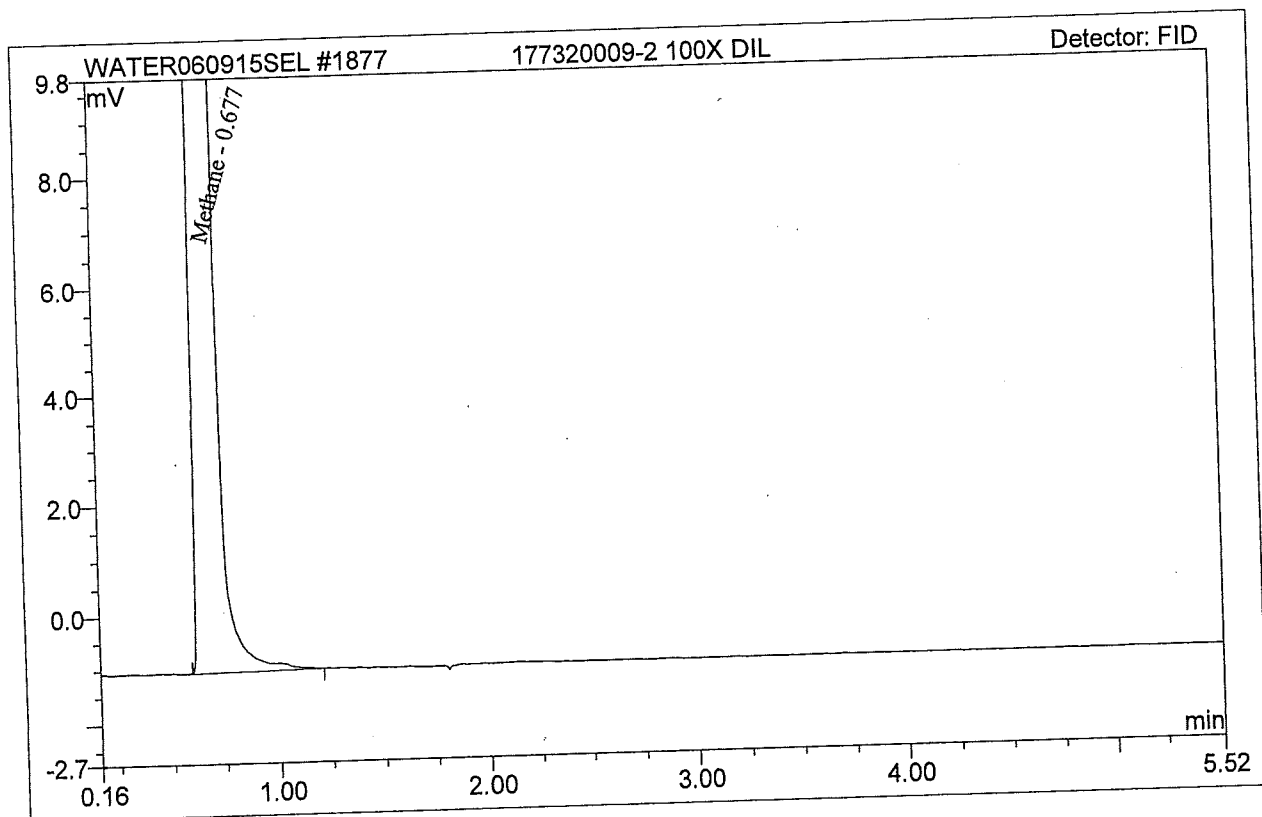


MICROSEEPS

Sample Analysis Report

Sample Name:	177320009-2 100X DIL	Sequence No:	1877
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/28/2015 16:50	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.677	58.517	1232.192	BMB	141.8083



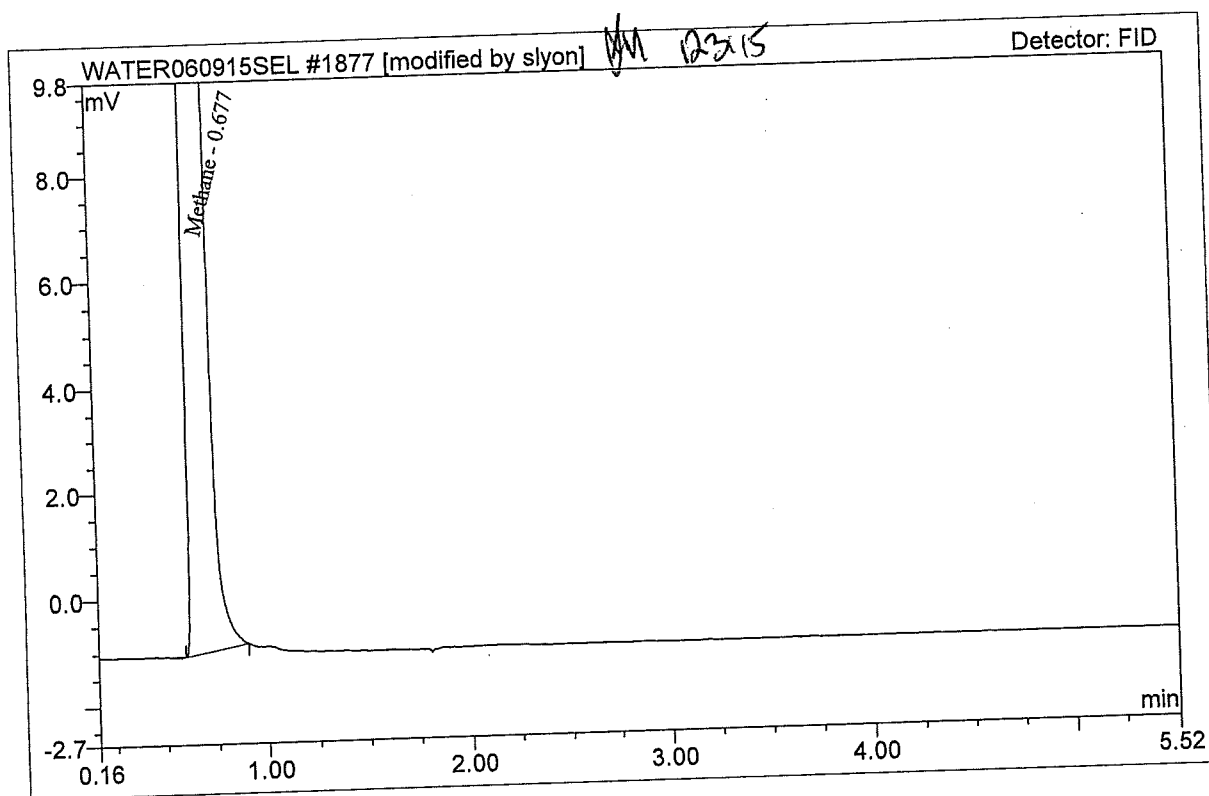
MICROSEEPS

Sample Analysis Report

Sample Name:	177320009-2 100X DIL	Sequence No:	1877
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/28/2015 16:50	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.677	58.462	1232.138	BMB*	141.6786

x100

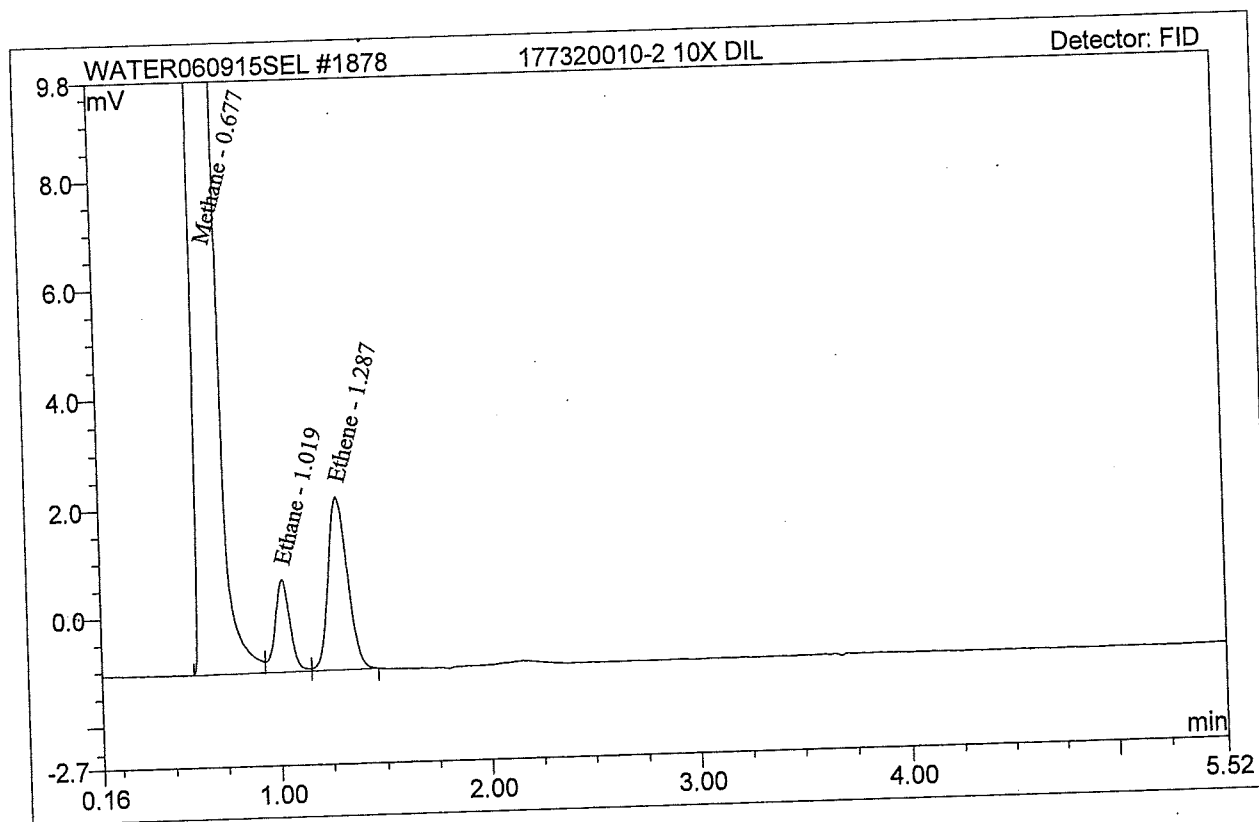


MICROSEEPS

Sample Analysis Report

Sample Name:	177320010-2 10X DIL	Sequence No:	1878
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/28/2015 17:01	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.677	65.042	1368.526	BM	156.9317
2	Ethane	1.019	0.142	1.713	M	0.3621
3	Ethene	1.287	0.335	3.203	MB	0.9441



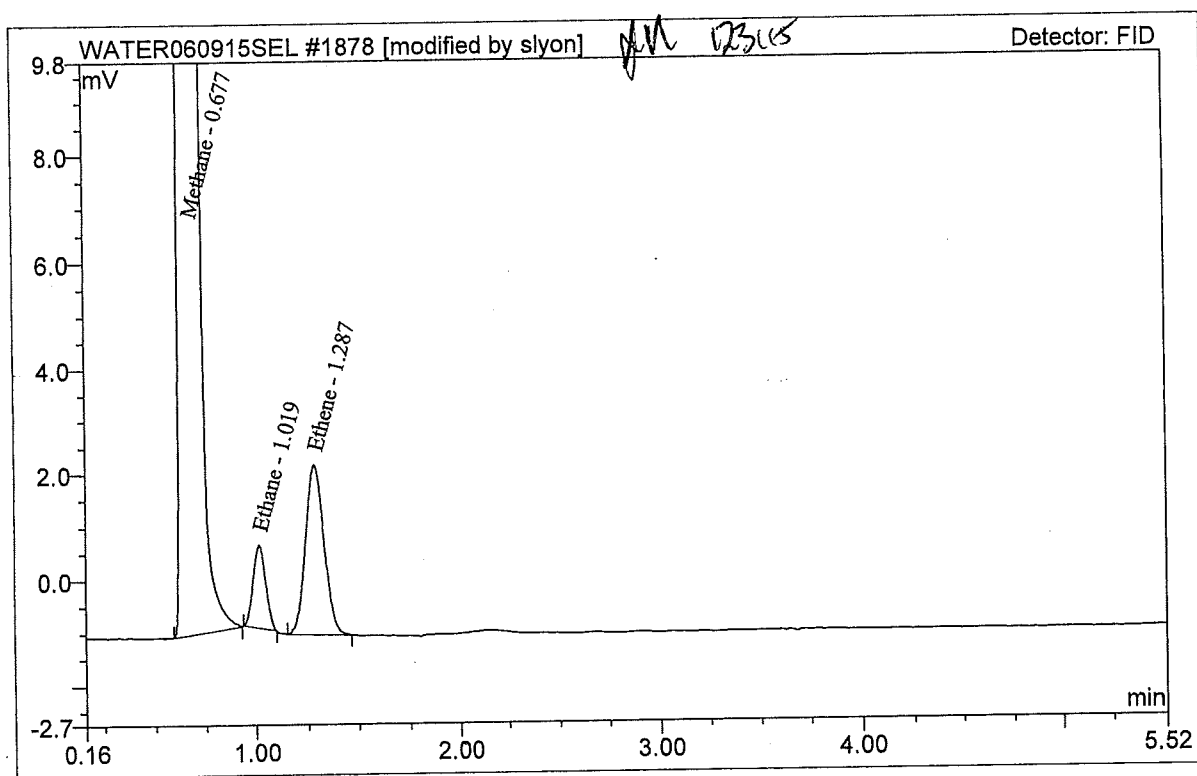
MICROSEEPS

Sample Analysis Report

Sample Name:	177320010-2 10X DIL	Sequence No:	1878
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/28/2015 17:01	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.677	65.010	1368.478	BMB*	156.8564
2	Ethane	1.019	0.112	1.558	BMB*	0.2868
3	Ethene	1.287	0.330	3.182	BMB*	0.9285

K 10

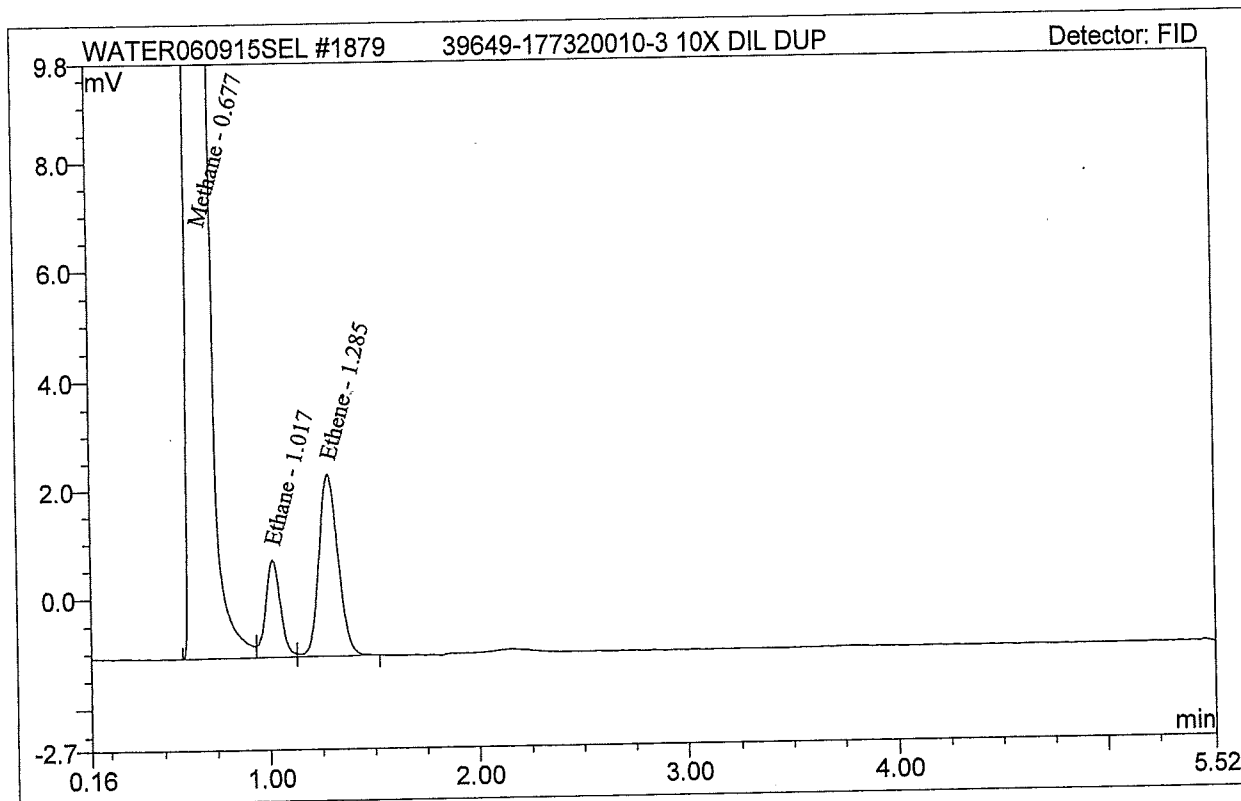


MICROSEEPS

Sample Analysis Report

Sample Name:	39649-177320010-3 10X DIL DUP	uence No:	1879
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/28/2015 17:20	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.677	65.936	1387.583	BM	158.9937
2	Ethane	1.017	0.144	1.766	M	0.3671
3	Ethene	1.285	0.352	3.340	MB	0.9917

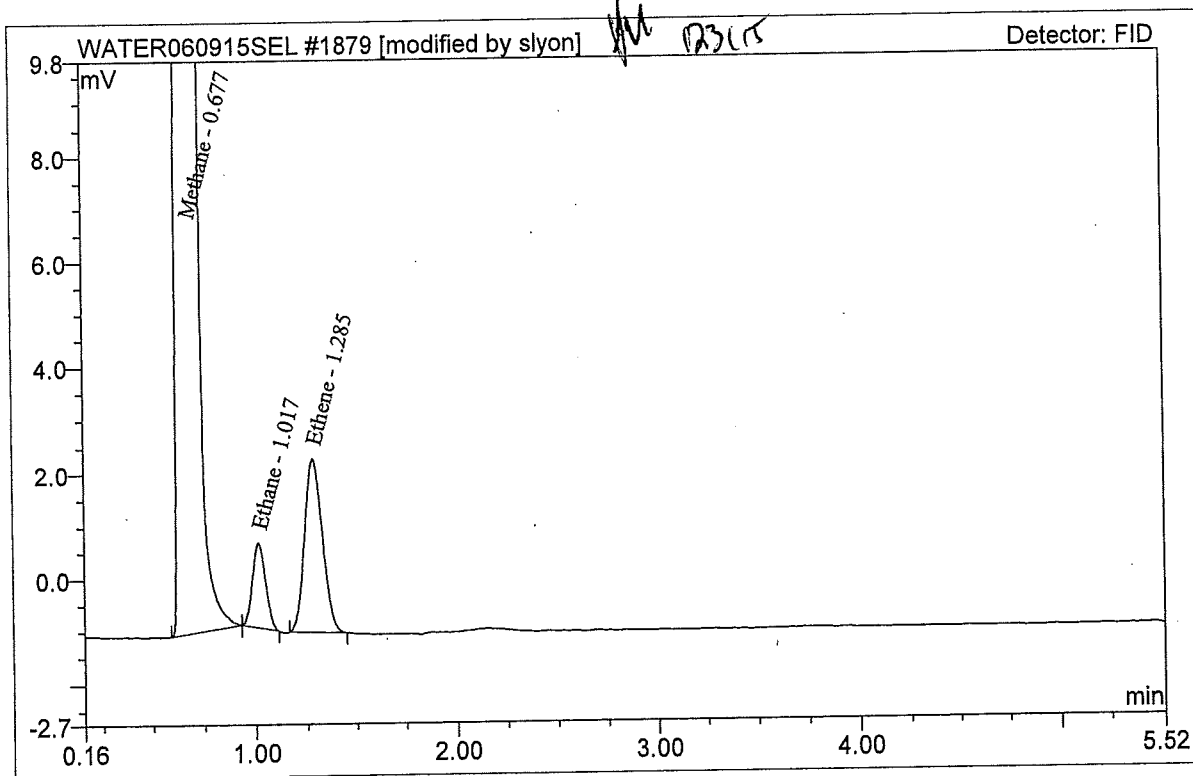


MICROSEEPS

Sample Analysis Report

Sample Name:	39649-177320010-3 10X DIL DUP	uence No:	1879
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/28/2015 17:20	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.677	65.901	1387.532	BMB*	158.9133
2	Ethane	1.017	0.118	1.618	bMB*	0.2998
3	Ethene	1.285	0.338	3.295	BMB*	0.9506



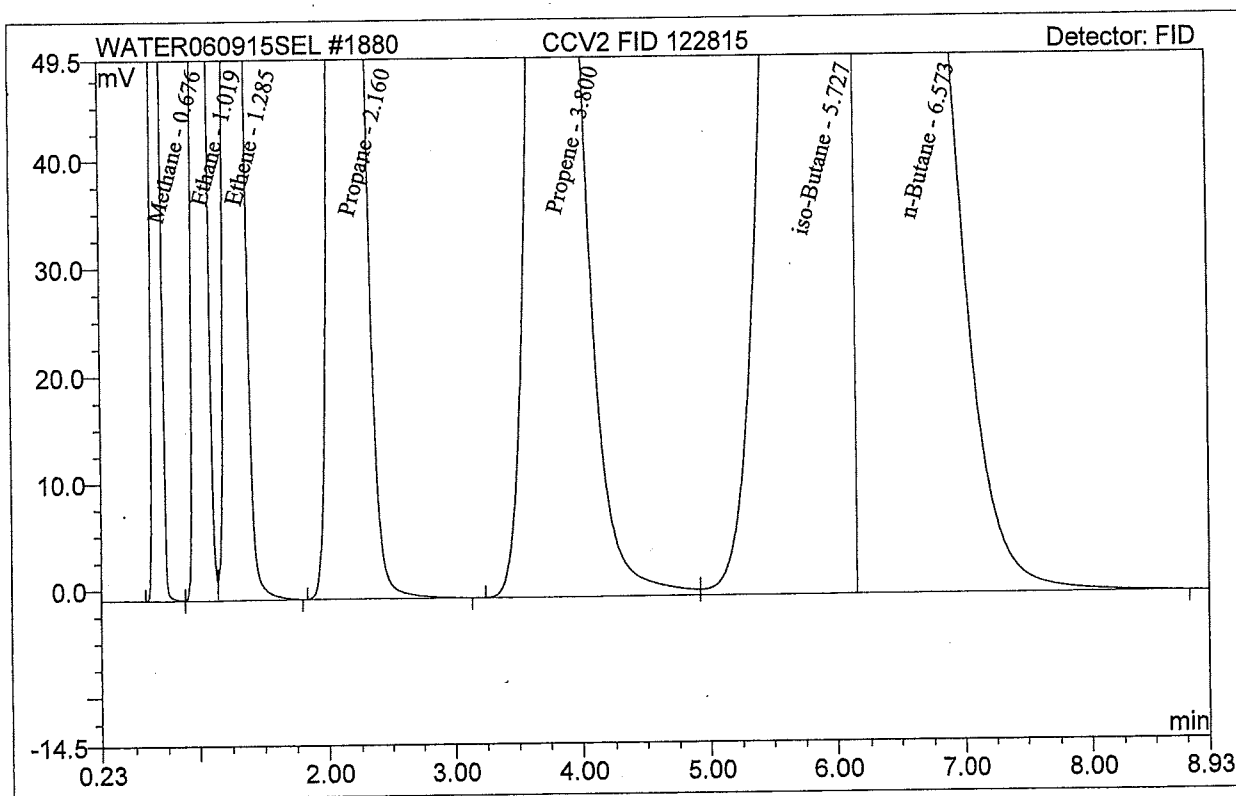
MICROSEEPS

Sample Analysis Report

Sample Name:	CCV2 FID 122815	Sequence No:	1880
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/28/2015 17:32	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	RA-14-12 5X

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
1	Methane	0.676	20.567	405.824	BM	51.1876
2	Ethane	1.019	39.391	525.560	M	99.5961
3	Ethene	1.285	39.311	380.511	MB	109.6155
4	Propane	2.160	57.561	285.129	BMB	142.0480
5	Propene	3.800	55.145	144.881	BM	160.0671
6	iso-Butane	5.727	74.097	132.559	M	180.7339
7	n-Butane	6.573	73.865	111.890	MB	186.3092

TV
48.6

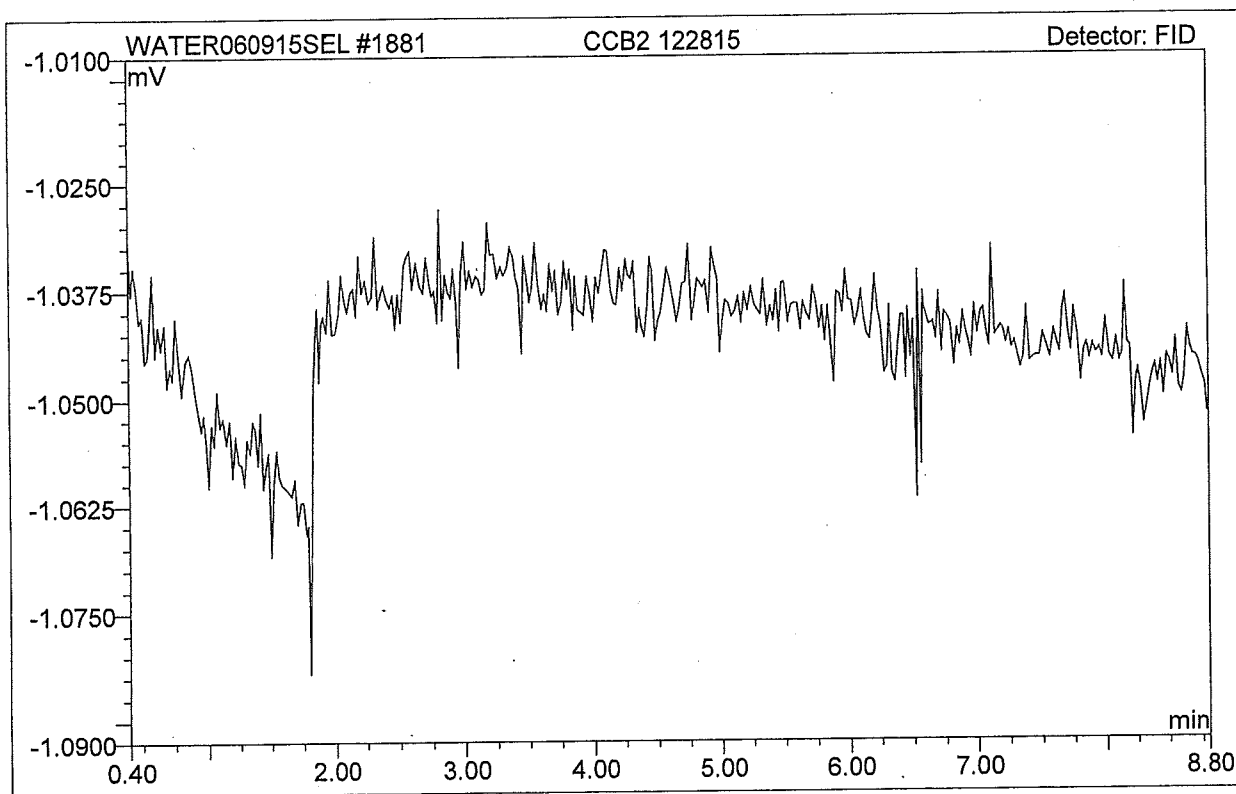


MICROSEEPS

Sample Analysis Report

Sample Name:	CCB2 122815	Sequence No:	1881
Sequence Name:	WATER060915SEL	Instrument ID:	BIOREM13F
Program Method:	LHCV081711	User ID:	slyon
Quantitation Method:	LHC060915	Dilution Factor:	1.0000
Date Time Collected:	12/28/2015 18:05	Analytical Method:	RSK175/PM01
System Operator:	slyon	Comment:	

Peak No.	Component Name	Retention Time	Area mV*min	Height mV	Type	Amount ug/L
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APPENDIX E
DATA VALIDATION SHEETS

PROJECT NAME/NO. USACE - Seneca Army Depot Ash Landfill LTM Round 19
LAB: TestAmerica (TA)
SDG: 680-113295-1 (SALF07)
FRACTION: TCL VOC (SW846 8260B)
MEDIA: GROUNDWATER
NUMBER OF SAMPLES: 18

CRITERIA	Did Analyses Meet all criteria as specified in the SOPS?	Region 2 Acceptable limits / criteria	Comments/Qualifying Actions	Qualifiers Added?
Data Completeness, Holding Times, Preservation, & Solids Percentage	Yes	Cooler temp < 10°. Samples holding time requirement < 14 days. Solids percentage >50%.	Cooler was received at 3.0-4.7°C on 6/6/15 and 6/9/15 by the laboratory. The samples were received in good condition based on the laboratory login report. The samples were analyzed within 14 days from sample collection.	No
System Monitoring Compounds	Yes	recoveries within limits (70 - 130%) or laboratory established limits	All system monitoring compound recoveries were within the laboratory limits for all samples in this SDG.	No
Matrix Spike/Matrix Spike Duplicates and Laboratory Control Sample Recoveries	No	MS/MSD: 1 per 20 project samples. Recoveries within lab limits (or 70-130%). RPD < lab limit.	Project sample ALBW20339 was used for the MS/MSD for this SDG. All MS/MSD recoveries were within laboratory limits. LCS/LCSD recoveries were within laboratory limits and the project limits (70-130%) except LCS/LCSD recoveries for dichlorodifluoromethane (148%R/148%R) associated with sample ALBW00044; and the LCS/LCSD precision for methylene chloride (22%RPD; QC limit 0-20%RPD) associated with all samples except ALBW00044. Validation qualification of these samples was not required for these compounds.	No
Blanks	No	Method blanks: 1 per 20 project samples. No TCL or TICs detected in MB, TB, or EB.	No TCL VOCs were detected in laboratory method blanks associated with the project samples. No TCLs were detected in the trip blanks ALBW00043 and ALBW00044. Acetone was detected in the rinse blank ALBW00123 above the reporting limit at a concentration of 35 ug/L. Acetone results less than two times this concentration was considered not detected and qualified "U".	Yes
GC/MS Instrument Performance Check	Yes	Performance check every 12 hours per instrument. Ion abundances normalized to m/z 95.	Checks were performed every 12 hours and the ion abundance was normalized to m/z 95.	No

PROJECT NAME/NO. USACE - Seneca Army Depot Ash Landfill LTM Round 19
LAB: TestAmerica (TA)
SDG: 680-113295-1 (SALF07)
FRACTION: TCL VOC (SW846 8260B)
MEDIA: GROUNDWATER
NUMBER OF SAMPLES: 18

CRITERIA	Did Analyses Meet all criteria as specified in the SOPS?	Region 2 Acceptable limits / criteria	Comments/Qualifying Actions	Qualifiers Added?
TCL Analytes	Yes	RRT within 0.06 RRT units of standard RRT in CV.4. Relative intensities of characteristic ions within \pm 30% of reference MS.	All relative ion intensities generally agree within 30% for all primary quant ions for the compounds and with the corresponding reference spectra. All RTs within 0.06 RRT units of the standard RRT.	No
Tentatively Identified Compounds	N/A	No TCLs are listed as TIC. Ions in reference MS with relative intensity \geq 10% present in sample MS. TIC and "best match" standard relative ion intensities agree within \pm 20%.	TICs were not reported for this SDG.	NA
Reported Quantitation Limits	Yes	Quantitation limits adjusted to reflect sample dilutions and moisture.	The lowest calibration standards were reported as reporting limits.	No
GC/MS Initial Calibration	Yes	%RSD \leq 20%. Average RRFs > 0.050.	All initial calibration criteria were met.	No

PROJECT NAME/NO. USACE - Seneca Army Depot Ash Landfill LTM Round 19
LAB: TestAmerica (TA)
SDG: 680-113295-1 (SALF07)
FRACTION: TCL VOC (SW846 8260B)
MEDIA: GROUNDWATER
NUMBER OF SAMPLES: 18

CRITERIA	Did Analyses Meet all criteria as specified in the SOPS?	Region 2 Acceptable limits / criteria	Comments/Qualifying Actions	Qualifiers Added?
GC/MS Continuing Calibration	No	CV performed for every 12 hours per instrument. %D ≤ ±20%. RRFs ≥ 0.05.	The continuing calibration (6/14/15 10:04) associated with all samples except ALBW00044 had %D outliers for trichloroethene (21.1%D), dibromochloromethane (27.7%D), and bromoform (30.9%D). The continuing calibration (6/15/15 13:24) associated with sample ALBW00044 had %D outliers for dichlorodifluoromethane (48.8%D). The continuing calibration (6/15/15 08:44) associated with trichloroethene sample ALBW20331 had %D outliers for trichloroethene (24.8%D). Results for these compounds in the associated samples were considered estimated and qualified "J" or "UJ" for the affected samples.	Yes
Internal Standards	Yes	IS areas of samples & blank within (-50% to +100%). RTs < 30 seconds.	Standard recovery area within the QC limits for all standards; and retention times were within 30 seconds of the standard for all samples that were used in this SDG.	No
Field Duplicate	Yes	All % RPD ≤ 50%?	A field duplicate pair was collected for this SDG, sample ALBW20339 and its duplicate ALBW20340. %RPD were within the required limit.	No

RT = Retention Time; %D = Percent Deviation; %RPD = Relative Percent Difference; %RSD = Percent Relative Standard Deviation; RRF = Relative Response Factor; CCV = Continuing Calibration Verification
 TCL = Target Compound List; TIC = Tentatively Identified Compound

PROJECT NAME/NO. USACE - Seneca Army Depot Ash Landfill LTM Round 19
SDG: 680-113295-1 (SALF07)
LAB: TestAmerica (TA)
FRACTION: General Chemistry (sulfate - Method 300.0)
MEDIA: Water

CRITERIA	Did Analyses Meet all criteria as specified in the SOPS?	If no, specify analysis IDs which do not meet criteria	Comments/Qualifying Actions	Qualifiers Added?
Data Completeness, Holding Times & Preservation	YES		Cooler was received at 3-4.7°C on 6/6/15 and 6/9/15 by the laboratory. The samples were received in good condition based on the laboratory login report. All samples analyzed within the holding time specified in the SAP (28 days).	NO
Calibration	YES		Calibration for sulfate had R2>0.99.	NO
Blanks	NO		No contamination was detected in the laboratory blanks for sulfate. The rinse blank (ALBW00123) contained sulfate less than the reporting limit at 0.46 J mg/L. Validation action was not taken.	NO
Laboratory Control Sample	YES		LCS/LCSD recoveries met the SAP specified criteria for sulfate analysis (80-120%) and the laboratory limits.	NO
Duplicates	YES		A field duplicate pair (ALBW20339 and ALBW20340) was collected for this SDG. The RPD for sulfate was within the limit (RPD <30%). No action was taken based on the field duplicate results.	NO
Spike Sample Analysis	YES		MS/MSD were performed for ALBW20339 and ALBW00123 for sulfate and the %Rs were within the project limits (75-125%).	NO

PROJECT NAME/NO. USACE - Seneca Army Depot Ash Landfill LTM Round 19
SDG: 680-113295-1 (SALF07)
LAB: TestAmerica (TA)
FRACTION: TOC
METHOD: Method 9060A
MEDIA: Groundwater

CRITERIA	Did Analyses Meet all criteria as specified in the SOPS?	If no, specify analysis IDs which do not meet criteria	Comments/Qualifying Actions	Qualifiers Added?
Data Completeness, Holding Times & Preservation	Yes		Cooler was received at 3.8°C on 6/10/15 by the Buffalo laboratory. The samples were received in good condition based on the laboratory login report. All samples were analyzed within the holding time specified in the SAP (i.e., 28 days). It was noted that Test America-Savannah sent the samples to the Buffalo laboratory for analysis because of instrument issues.	No
Calibration	Yes		Five-point calibration was conducted. Correlation coefficient was greater than 0.99.	No
Blanks	No		The laboratory continuing calibration blanks contained TOC below the reporting limit at a concentration range of 0.448-0.834 J mg/L and the laboratory method blank associated with samples ALBW20327, ALBW20331, and ALBW20336 contained TOC below the reporting limit at 0.729 J mg/L. Validation action was not required. The rinse blank (ALBW00123) contain TOC below the reporting limit at 0.87 J mg/L. Validation action was not taken.	No
Laboratory Control Sample	Yes		LCS/LCSD results were within the laboratory limits and the project limits of 90%-110%.	No
Spike Sample Recovery	Yes		MS/MSD analysis was conducted for ALBW20339. Recoveries were with the laboratory limits and the project limit of 90%-110%.	No
Duplicates	Yes		A field duplicate pair (ALBW20339 and ALBW20340) was collected for this SDG. The RPD for TOC was within the limit (RPD <30%).	No

PROJECT NAME/NO. USACE - Seneca Army Depot Ash Landfill Round 19
LABORATORY: Microseeps/Pace Laboratory
SDG: 15779
MEDIA: Water
FRACTION: Methane, Ethane, Ethene (RSK 175)

CRITERIA	Did Analyses Meet all criteria as specified in the SOPS? Yes/No	Meet Criteria?	Comments	Qualifiers Added? Yes/No	Qualifying Actions
Data Package Completeness	All results forms and raw data, Cover Letter, and Case Narrative included? All samples in COC present? All notes in Case Narrative consistent with chemist's review of data package?	Yes		No	
Sample Conditions, Preservations, and Solids Percentage	Cooler temperature between 2°C~6°C? Record sample preservation and problems noted for sample conditions (e.g., bubbles?)	Yes	All samples received within two to four days of sample collection at 4.8°C.	No	
Holding Times	Samples met holding time requirement (non-preserved aqueous - 7 days; preserved aqueous - 14 days; non-aqueous - 14 days)	Yes		No	
Laboratory Control Sample (LCS)	LCS analyzed for every 20 project samples for corresponding matrix? LCS recoveries within laboratory limits (or 70~130% if not available)?	Yes		No	
Matrix Spike/Matrix Spike Duplicates (MS/MSD)	Was one MS/MD or one MS/MSD performed for every 20 project samples? Were recoveries within laboratory limits (or 70~130% if not available)?	No	ALBW20339 was designated for MS/MSD analyses. MS/MSD accuracy outliers for methane (81%R/176%R). No action taken since sample concentration greater than 4 times spike concentration.	No	
Blanks	1. Method blanks available for every 20 project samples? 2. Were trip blanks, rinsate blanks, and field blanks collected in accordance with QAPP (Table 16)? 3. No analytes should be detected in ICBs, CCBs, method blanks, trip blanks, or rinsate blanks. 4. Was chromatographic performance for laboratory blanks stable?	No	All laboratory blanks ND for MEE. Sample ALBW00123 is the rinse blank which contained methane at a concentration of 0.12 J ug/L. Validation qualification of the project samples was not required.	No	
Sample Result Verification	Were results verified with instrument raw data?	Yes		No	

PROJECT NAME/NO. USACE - Seneca Army Depot Ash Landfill Round 19
LABORATORY: Microseeps/Pace Laboratory
SDG: 15779
MEDIA: Water
FRACTION: Methane, Ethane, Ethene (RSK 175)

CRITERIA	Did Analyses Meet all criteria as specified in the SOPS? Yes/No	Meet Criteria?	Comments	Qualifiers Added? Yes/No	Qualifying Actions
Quantitation Limits	Were quantitation limits correctly calculated based on sample amount/volume and adjusted to reflect sample dilutions and, for soils, sample moisture?	Yes		No	
GC/MS Initial Calibration	1. ICVs analyzed at appropriate frequency with recoveries 90-110%R? 2. Curves linear for FID and TCD detectors?	Yes		No	
GC/MS Calibration Verification (CV)	1. Were CCV at the appropriate frequency with recoveries 90-110%R? 2. Were curves linear for the FID and TCD detectors?	Yes		No	
Field Duplicate	1. Was field duplicates collected for every 20 samples? 2. Were % RPDs ≤ 50% (soil) or 30% (aqueous) or difference ≤ 2RL (aqueous) or 4RL (soil) when one or both results < 5RL?	No	Sample ALBW20340 was collected as the field duplicate of ALBW20339. Precision within criteria. Laboratory duplicate outliers for ethane (35%RPD; QC limit 0-20%RPD) associated with ALBW20331; methane (38%RPD; QC limit 0-20%RPD) and ethene (68%RPD; QC limit 0-20%RPD) associated with ALBW00123. These results were qualified "J" or "UJ".	Yes	"J" ethane for ALBW20331; "J" methane and "UJ" ethene in ALBW00123.

- Notes:
1. Sampling frequency and %RPD for field duplicates based on the Quality Assurance Plan.
 2. If the specified criteria are not met, samples will be qualified in accordance with the Region 2 SOP.
 - 3 Spot check at least two positive values; verify that the values were correctly calculated based on internal standard, quantitation ion, and average initial RRF/CF.

PROJECT NAME/NO. USACE - Seneca Army Depot Ash Landfill LTM Round 20
LAB: TestAmerica (TA)
SDG: 680-120227-1
FRACTION: TCL VOC (SW846 8260B)
MEDIA: GROUNDWATER
NUMBER OF SAMPLES: 18

CRITERIA	Did Analyses Meet all criteria as specified in the SOPS?	Region 2 Acceptable limits / criteria	Comments/Qualifying Actions	Qualifiers Added?
Data Completeness, Holding Times, Preservation, & Solids Percentage	Yes	Cooler temp < 10°. Samples holding time requirement < 14 days. Solids percentage >50%.	Cooler was received at 1.2-3.7°C on 12/18/15 and 12/22/15 by the laboratory. The samples were received in good condition based on the laboratory login report. The samples were analyzed within 14 days from sample collection.	No
System Monitoring Compounds	Yes	recoveries within limits (70 - 130%) or laboratory established limits	All system monitoring compound recoveries were within the laboratory limits for all samples in this SDG.	No
Matrix Spike/Matrix Spike Duplicates and Laboratory Control Sample Recoveries	No	MS/MSD: 1 per 20 project samples. Recoveries within lab limits (or 70-130%). RPD < lab limit.	Project sample ALBW20352 was used for the MS/MSD for this SDG. All MS/MSD recoveries were within laboratory limits with the exception of the high accuracy outliers for carbon disulfide (134%R MS; QC limit 73-127%R), chloromethane (154%R/143%R; QC limit 63-126%R), methylene chloride (135%R MS; QC limit 76-129%R), and vinyl chloride (133%R MS; QC limit 68-132%R). Validation qualification of the parent sample was not required. LCS/LCSD recoveries were within laboratory limits and the project limits (70-130%) except LCSD recovery for chloromethane (130%R; QC limit 63-126%R) associated with samples collected on 12/16/15 and 12/17/15. Validation qualification of these samples was not required.	No
Blanks	Yes	Method blanks: 1 per 20 project samples. No TCL or TICs detected in MB, TB, or EB.	No TCL VOCs were detected in laboratory method blanks associated with the project samples. No TCL VOCs were detected in the trip blanks ALBW00045 and ALBW00046. No TCL VOCs were detected in the rinse blank ALBW00124.	No
GC/MS Instrument Performance Check	Yes	Performance check every 12 hours per instrument. Ion abundances normalized to m/z 95.	Checks were performed every 12 hours and the ion abundance was normalized to m/z 95.	No

PROJECT NAME/NO. USACE - Seneca Army Depot Ash Landfill LTM Round 20
LAB: TestAmerica (TA)
SDG: 680-120227-1
FRACTION: TCL VOC (SW846 8260B)
MEDIA: GROUNDWATER
NUMBER OF SAMPLES: 18

CRITERIA	Did Analyses Meet all criteria as specified in the SOPS?	Region 2 Acceptable limits / criteria	Comments/Qualifying Actions	Qualifiers Added?
TCL Analytes	Yes	RRT within 0.06 RRT units of standard RRT in CV.4. Relative intensities of characteristic ions within \pm 30% of reference MS.	All relative ion intensities generally agree within 30% for all primary quant ions for the compounds and with the corresponding reference spectra. All RTs within 0.06 RRT units of the standard RRT.	No
Tentatively Identified Compounds	N/A	No TCLs are listed as TIC. Ions in reference MS with relative intensity \geq 10% present in sample MS. TIC and "best match" standard relative ion intensities agree within \pm 20%.	TICs were not reported for this SDG.	NA
Reported Quantitation Limits	Yes	Quantitation limits adjusted to reflect sample dilutions and moisture.	The lowest calibration standards were reported as reporting limits.	No
GC/MS Initial Calibration	No	%RSD \leq 20%. Average RRFs > 0.050.	All initial calibration criteria were met with the exception of acetone (RRF=0.0068) associated with samples received on 12/22/15. Nondetected acetone results were considered unusable and qualified "R".	Yes

PROJECT NAME/NO. USACE - Seneca Army Depot Ash Landfill LTM Round 20
LAB: TestAmerica (TA)
SDG: 680-120227-1
FRACTION: TCL VOC (SW846 8260B)
MEDIA: GROUNDWATER
NUMBER OF SAMPLES: 18

CRITERIA	Did Analyses Meet all criteria as specified in the SOPS?	Region 2 Acceptable limits / criteria	Comments/Qualifying Actions	Qualifiers Added?
GC/MS Continuing Calibration	No	CV performed for every 12 hours per instrument. %D ≤ ±20%. RRFs ≥ 0.05.	The continuing calibration (12/30/15 08:19) associated with samples received 12/22/15 had %D outliers for bromomethane (-28.3%D) and 2,2-dichloropropane (40.7%D) and RRF outliers for acetone (RRF=0.0062) and 2-butanone (RRF=0.0085). Results for these compounds in the associated samples were considered estimated and qualified "J" or "UJ" for the affected samples. Nondetected acetone and 2-butanone were considered unusable and qualified "R".	Yes
Internal Standards	Yes	IS areas of samples & blank within (-50% to +100%). RTs < 30 seconds.	Standard recovery area within the QC limits for all standards; and retention times were within 30 seconds of the standard for all samples that were used in this SDG.	No
Field Duplicate	Yes	All % RPD ≤ 50%?	A field duplicate pair was collected for this SDG, sample ALBW20352 and its duplicate ALBW20353. %RPD were within the required limit.	No

RT = Retention Time; %D = Percent Deviation; %RPD = Relative Percent Difference; %RSD = Percent Relative Standard Deviation; RRF = Relative Response Factor; CCV = Continuing Calibration Verification
 TCL = Target Compound List; TIC = Tentatively Identified Compound

PROJECT NAME/NO. USACE - Seneca Army Depot Ash Landfill LTM Round 20
SDG: 680-120227-1
LAB: TestAmerica (TA)
FRACTION: General Chemistry (sulfate - Method 300.0)
MEDIA: Water

CRITERIA	Did Analyses Meet all criteria as specified in the SOPS?	If no, specify analysis IDs which do not meet criteria	Comments/Qualifying Actions	Qualifiers Added?
Data Completeness, Holding Times & Preservation	YES		Cooler was received at 1.2-3.7°C on 12/18/15 and 12/22/15 by the laboratory. The samples were received in good condition based on the laboratory login report. All samples analyzed within the holding time specified in the SAP (28 days).	NO
Calibration	YES		Calibration for sulfate had R2>0.99.	NO
Blanks	YES		No contamination was detected in the laboratory blanks for sulfate. The rinse blank (ALBW00124) did not contain sulfate.	NO
Laboratory Control Sample	YES		LCS/LCSD recoveries met the SAP specified criteria for sulfate analysis (80-120%) and the laboratory limits.	NO
Duplicates	YES		A field duplicate pair (ALBW20352 and ALBW20353) was collected for this SDG. The RPD for sulfate was within the limit (RPD <30%). No action was taken based on the field duplicate results.	NO
Spike Sample Analysis	YES		MS/MSD were performed for ALBW20352 and ALBW00124 for sulfate and the %Rs were within the project limits (75-125%).	NO

PROJECT NAME/NO. USACE - Seneca Army Depot Ash Landfill LTM Round 20
SDG: 680-120227-1
LAB: TestAmerica (TA)
FRACTION: TOC
METHOD: Method 9060A
MEDIA: Groundwater

CRITERIA	Did Analyses Meet all criteria as specified in the SOPS?	If no, specify analysis IDs which do not meet criteria	Comments/Qualifying Actions	Qualifiers Added?
Data Completeness, Holding Times & Preservation	Yes		Cooler was received at 1.2-3.7°C on 12/18/15 and 12/22/15. The samples were received in good condition based on the laboratory login report. All samples were analyzed within the holding time specified in the SAP (i.e., 28 days).	No
Calibration	Yes		Five-point calibration was conducted. Correlation coefficient was greater than 0.99.	No
Blanks	No		The laboratory continuing calibration blanks contained TOC below the reporting limit at a concentration range of 0.574-0.607 J mg/L and the laboratory method blank contained TOC below the reporting limit at 0.583 J mg/L. Validation action was not required. The rinse blank (ALBW00124) did not contain TOC.	No
Laboratory Control Sample	Yes		LCS/LCSD results were within the laboratory limits and the project limits of 90%-110%.	No
Spike Sample Recovery	Yes		MS/MSD analysis was conducted for ALBW20352. Recoveries were with the laboratory limits and the project limit of 90%-110%.	No
Duplicates	Yes		A field duplicate pair (ALBW20352 and ALBW20353) was collected for this SDG. The RPD for TOC was within the limit (RPD <30%).	No

PROJECT NAME/NO. USACE - Seneca Army Depot Ash Landfill Round 20
LABORATORY: Microseeps/Pace Laboratory
SDG: 17732
MEDIA: Water
FRACTION: Methane, Ethane, Ethene (RSK 175)

CRITERIA	Did Analyses Meet all criteria as specified in the SOPS? Yes/No	Meet Criteria?	Comments	Qualifiers Added? Yes/No	Qualifying Actions
Data Package Completeness	All results forms and raw data, Cover Letter, and Case Narrative included? All samples in COC present? All notes in Case Narrative consistent with chemist's review of data package?	Yes		No	
Sample Conditions, Preservations, and Solids Percentage	Cooler temperature between 2°C~6°C? Record sample preservation and problems noted for sample conditions (e.g., bubbles?)	Yes	All samples received within one to three days of sample collection at 4°C.	No	
Holding Times	Samples met holding time requirement (non-preserved aqueous - 7 days; preserved aqueous - 14 days; non-aqueous - 14 days)	Yes		No	
Laboratory Control Sample (LCS)	LCS analyzed for every 20 project samples for corresponding matrix? LCS recoveries within laboratory limits (or 70~130% if not available)?	Yes		No	
Matrix Spike/Matrix Spike Duplicates (MS/MSD)	Was one MS/MD or one MS/MSD performed for every 20 project samples? Were recoveries within laboratory limits (or 70~130% if not available)?	No	ALBW20353 was designated for MS/MSD analyses. MS/MSD accuracy outliers for methane (-2880%R/-557%R). No action taken since sample concentration greater than 4 times spike concentration.	No	
Blanks	1. Method blanks available for every 20 project samples? 2. Were trip blanks, rinsate blanks, and field blanks collected in accordance with QAPP (Table 16)? 3. No analytes should be detected in ICBs, CCBs, method blanks, trip blanks, or rinsate blanks. 4. Was chromatographic performance for laboratory blanks stable?	No	All laboratory blanks ND for MEE. Sample ALBW00124 is the rinse blank which contained methane at a concentration of 0.1 J ug/L. Validation qualification of the project samples was not required.	No	

PROJECT NAME/NO. USACE - Seneca Army Depot Ash Landfill Round 20
LABORATORY: Microseeps/Pace Laboratory
SDG: 17732
MEDIA: Water
FRACTION: Methane, Ethane, Ethene (RSK 175)

CRITERIA	Did Analyses Meet all criteria as specified in the SOPS? Yes/No	Meet Criteria?	Comments	Qualifiers Added? Yes/No	Qualifying Actions
Sample Result Verification	Were results verified with instrument raw data?	Yes		No	
Quantitation Limits	Were quantitation limits correctly calculated based on sample amount/volume and adjusted to reflect sample dilutions and, for soils, sample moisture?	Yes		No	
GC/MS Initial Calibration	1. ICVs analyzed at appropriate frequency with recoveries 90-110%R? 2. Curves linear for FID and TCD detectors?	Yes		No	
GC/MS Calibration Verification (CV)	1. Were CCV at the appropriate frequency with recoveries 90-110%R? 2. Were curves linear for the FID and TCD detectors?	Yes		No	
Field Duplicate	1. Were field duplicates collected for every 20 samples? 2. Were % RPDs ≤ 50% (soil) or 30% (aqueous) or difference ≤ 2RL (aqueous) or 4RL (soil) when one or both results ≤ 5RL?	No	Sample ALBW20353 was collected as the field duplicate of ALBW20352. Precision within criteria.	No	

- Notes:
1. Sampling frequency and %RPD for field duplicates based on the Quality Assurance Plan.
 2. If the specified criteria are not met, samples will be qualified in accordance with the Region 2 SOP.
 - 3 Spot check at least two positive values; verify that the values were correctly calculated based on internal standard, quantitation ion, and average initial RRF/CF.

APPENDIX F
RESPONSE TO COMMENTS

Response to Comments from USEPA

Subject: DRAFT ANNUAL REPORT AND YEAR 9 REVIEW FOR THE ASH LANDFILL OPERABLE UNIT AT SENECA ARMY DEPOT ACTIVITY DATED OCTOBER 2016

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

Comments Dated: 29 November 2017

Date of Comment Response: 18 January 2018

Response to Comments

GENERAL COMMENTS

Comment 1: It is not clear whether data verification/validation was performed on the analytical results generated by the subcontracted laboratories. Revise Section 3.0 of the text to indicate whether or not any data verification/validation took place, and if so, describe the scope of the data verification/validation and any effects on data usability or completeness.

Response 1: Data validation was performed on all of the analytical data collected at Ash Landfill during all sampling rounds. Appendix E was added to the Final Annual Report and includes data validation sheets. Text was added to Section 3 indicating that the data was validated.

Groundwater data from Rounds 19 and 20 were validated per the measurement performance criteria outlined in the Final Sampling and Analysis Plan (Parsons, 2006a) and utilizing the EPA Region 2 Standard Operating Procedures (SOPs) revised in March 2013. Validation did not find any data quality concerns and no data were rejected. Data validation sheets are provided in Appendix E.

Comment 2: The text incorrectly references Year 8 instead of Year 9, and 2014 instead of 2015 in a few instances. See Pages 15, 16 and 24 for examples. Revise the Year 9 Annual Report to ensure that descriptions of the most recent sampling rounds reference Year 9 and 2015.

Response 2: The document was scrubbed for incorrect references to Year 8 and 2014. These errors were corrected.

SPECIFIC COMMENTS

Comment 1: Section 3.3, Geochemical Data, Page 18:

The results within the Ferrous Iron and Manganese subsection are discussed in mg/L while the ferrous iron and manganese results within the Summary subsection and Table 3 are presented in ug/L. In addition, the field forms in Appendix A report the manganese and ferrous iron concentrations in mg/L. Revise the units of measure for the iron and manganese results in Section 3.3, Table 3 and Appendix A to provide consistent citations.

Response 1: The correct units are mg/L. The units were corrected in the noted sections and Tables.

Comment 2: Section 3.4, Chemical Data Analysis and Groundwater Remedy Evaluation, Page 21: The text in the last paragraph on Page 21 indicates that: “Concentrations of TCE, cis-DCE, and VC have decreased over the twenty sampling events at the wells within and downgradient of the biowalls.” This statement is misleading because the concentrations of TCE and/or its daughter products have not decreased or actually increased at several downgradient wells. Revise this statement to indicate that concentrations of TCE, cis-DCE, and VC have decreased over the twenty sampling events at the wells within the biowalls and with a few exceptions, the wells downgradient of the biowalls have experienced similar decreases in concentrations of TCE, cis-DCE, and VC.

Response 2: Section 3.4 –Text was modified to read “Concentrations of TCE, cis-DCE, and VC have decreased over the twenty sampling events at the wells within the biowalls and with a few exceptions, the wells downgradient of the biowalls have experienced similar decreases in concentrations of TCE, cis-DCE, and VC”.

Comment 3: Section 3.5, Biowall Recharge Evaluation, Pages 24 and 25: The references to previous sections are incorrect. “**Section 3.2** presents the geochemical data for Year 9.” (actually **Section 3.3**) and “**Section 3.3** presents the analytical data for Year 9” (actually **Section 3.4**).

Response 3: The Section numbering was corrected.

Comment 4: Section 3.5, Biowall Recharge Evaluation, Pages 26 and 27: The statements made within the last two paragraphs of this section regarding the recharge of the biowalls are contradictory. The first paragraph on Page 27 indicates that the biowalls do not require recharge at this time, while the last paragraph on Page 26 states that a recharge event is being planned for 2017. Remove the statement “Based on the review of the analytical and geochemical data, the biowalls do not need to be recharged at this time, and the biowall system continues to meet the long-term monitoring objectives established in the RDR (Parsons, 2006)” or revise the statement to indicate that a recharge of the substrate within the biowalls is imminent.

Response 4: The noted statement was removed.

Comment 5: Section 4.2, Recommendations, Page 29: It is not clear from the description presented in Section 4.2 why MWT-26, MWT-27 and MWT-29 will be excluded from the long-term monitoring (LTM) program if recharge of the biowalls is conducted. While the Remedial Design Report (RDR) is cited for discontinuing LTM at these wells, the rationale is not provided in the Year 9 Annual Report. Revise Section 4.2 to explain why MWT-26, MWT-27 and MWT-29 will be excluded from the LTM program if recharge of the biowalls is conducted. In addition, Figure 12 indicates that MWT-15 and MWT-23 will be added to the plume monitoring portion of the LTM, but only MWT-23 is discussed in Section 4.2. Revise Section 4.2 to indicate that MWT-15 will be added to the plume monitoring portion of the LTM program or explain why this will not be instituted, per Figure 12.

Response 5: During the construction phase of the B1/B2 biowalls (subsequent to the RDR), several of the wells associated with the biowall pilot study were destroyed. One of these wells was MWT-15. Wells MWT-26, MWT-27 and MWT-29 will not be removed from the LTM programs and this error was corrected. Biowall well MWT-23 will also remain as part of the LTM program. The text in Section 4.2

and Figure 12 were updated to reflect current conditions as documented in the Ash Landfill Construction Completion report and as shown in this Annual Report. Figure 12 was also revised to reflect changes made as a result of the Year 8 RTCs. The 50% rebound metric was eliminated and replaced with a lines-of-evidence approach to determine when the biowalls should be recharged.

If the recharge evaluation recommends that a recharge is warranted, all existing wells in the LTM program will continue to be monitored.

Comment 6: Table 5, Groundwater Trends:

The predicted date for when TCE will meet its cleanup objective of 5 ug/L at well PT-17 is populated with "2014", however this cannot be correct as the results in Rounds 19, 20 and 21 were above the cleanup objective and steadily increasing. Please incorporate the latest rounds of analytical data into the modeling software and revise the predicted date for this well accordingly.

Response 6: The latest data from Rounds 19, 20, and 21 were previously evaluated with SourceDK and Excel regression plots. Plotting the TCE concentrations in either SourceDK or Excel and solving the equation of the trendline for $y = 5$ ug/L (when the trendline intersects the cleanup value) yields a date of approximately 2014/2015 (depending on which program is used for the calculation). SourceDK also provides a 95% confidence interval on the predicted cleanup date. For TCE concentrations at well PT-17 the predicted cleanup date ranges from 2006 to 2033 as shown in Table 5. The predicted date is based on all the data, and the trendline fit of that data; this well is an example of a location where the mathematical prediction is not valid with this given data set, since the predicted date is in the past. The predicted date will be updated and reviewed with subsequent monitoring events.

Response to Comments from USEPA

Subject: TECHNICAL MEMORANDUM
ROUND 21 – LONG-TERM MONITORING RESULTS FOR THE ASH LANDFILL
DATED NOVEMBER 2016

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

Comments Dated: 29 November 2017

Date of Comment Response: 18 January 2018

Response to Comments

GENERAL COMMENTS

Comment 1: Along the western edge of the plume near the SEDA property boundary (wells PT-17, MWT-24, MWT-7 and PT-24) it appears as if the reductive dechlorination of cis-1,2-dichloroethene (cis-1,2-DCE) and vinyl chloride are stalled as demonstrated by the persistent concentrations of these analytes. Sampling for Dehalococcoides populations, which have been proven to enhance the reduction of cis-1,2-DCE and vinyl chloride concentrations, would provide confirmation as to whether or not complete dehalogenation may occur in this downgradient portion of the plume. Consideration should be given to sampling for Dehalococcoides populations to confirm that dehalogenation is occurring or will occur in this portion of the plume.

Response 1: Declining reductive dechlorination factors (e.g., COC concentrations, DO, ORP, TOC) at the noted wells prompted a biowall recharge event this recent summer, 2017. COC and geochemical concentrations will be monitored after the recharge event and if improvements are not observed across the LTM network, sampling of Dehalococcoides populations may be considered at that time.