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24 January 2018

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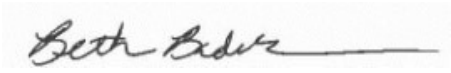
SUBJECT: Final Annual Report and Year 10 Review for the Ash Landfill Operable Unit at Seneca Army Depot Activity, Romulus, NY; EPA Site ID# NY0213820830 and NY Site ID# 8-50-006

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

Parsons Federal (Parsons) is pleased to submit the Final Annual Report and Year 10 Review for the tenth 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 10 Review provides a review of long-term groundwater monitoring for 2016 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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Seneca Army Depot Activity
Romulus, New York

USACE – New York District
US Army, Engineering & Support Center
Huntsville, AL

Final Annual Report and Year 10 Review

Ash Landfill Operable Unit
Seneca Army Depot Activity

Contract No. W912DY-08-D-0062-0003
Task Order No. 15
EPA SITE ID# NY0213820830
NY Site ID# 8-50-006

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January 2018

FINAL

ANNUAL REPORT AND YEAR 10 REVIEW

FOR THE ASH LANDFILL
SENECA ARMY DEPOT ACTIVITY, ROMULUS, NEW YORK

Prepared for:

U.S. ARMY, CORPS OF ENGINEERS, ENGINEERING AND SUPPORT CENTER
HUNTSVILLE, ALABAMA

U.S. ARMY, CORPS OF ENGINEERS, NEW YORK DISTRICT
NEW YORK, NEW YORK

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SENECA ARMY DEPOT ACTIVITY
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Contract Number W912DY-09-D-0062
Task Order No. 0023
EPA Site ID# NY0213820830
NY Site ID# 8-50-006

January 2018

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ACRONYMS AND ABBREVIATIONS

Ash Landfill OU	Ash Landfill Operable Unit
bgs	below ground surface
CCR	Construction Completion Report
cis-DCE	cis-1,2-dichloroethene
cm	centimeter(s)
cm/sec	centimeter(s) per second
COC	contaminants of concern
cy	cubic yards
DCE	dichloroethene
DO	Dissolved Oxygen
DoD	Department of Defense
ft/ft	feet per foot
ft/day	feet per day
ft/year	feet per year
ICWP	Incinerator Cooling Water Pond
ID	identification
IRM	Interim Removal Action
lf	linear ft
LTM	long-term monitoring
LUC(s)	land use control(s)
MEE	Methane, ethene, ethane
mg/L	milligram(s) per liter
mV	millivolts
NOAA	National Oceanic and Atmospheric Administration
NCFL	Non-Combustible Fill Landfill
NELAC	National Environmental Laboratory Accreditation Conference
NELAP	National Environmental Laboratory Accreditation Program
NTCRA	Non-Time Critical Removal Action
NYSDEC	New York State Department of Environmental Conservation
O&M	operations and maintenance
OPS	operating properly and successfully
ORP	oxidation-reduction potential
PAH	Polynuclear Aromatic Hydrocarbon
Parsons	Parsons Federal
RA	Remedial Action
RDR	Remedial Design Report
RI	Remedial Investigation
ROD	Record of Decision
SEDA	Seneca Army Depot Activity
SVOC	Semi-Volatile Organic Compound
SWMU	Solid Waste Management Unit
TAGM	Technical and Administrative Guidance Memorandum
TCE	trichloroethene

TOC	total organic content
U.S.	United States
µg/L	micrograms per liter
USAEHA	U.S. Army Environmental Hygiene Agency
USEPA	United States Environmental Protection Agency
VC	vinyl chloride
VOC	volatile organic compound

Chapter 1 Introduction

1.1 SITE-SPECIFIC LONG-TERM MONITORING BACKGROUND

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

- A review of the latest LTM results (**Section 3.1**);
- A comparison of the groundwater data to the LTM objectives (**Section 3.3**);
- An evaluation of the need to recharge (i.e., add substrate) the biowalls as outlined in the Remedial Design Report (RDR) (Parsons, 2006c) (**Section 3.4**); 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)) (**Section 3.5**)."

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 VOCs in groundwater that exceed New York State Department of Environmental Conservation (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 (ICWP) 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 semi-annual letter report was generated for each sampling round except for Round 16. The results of the most recent sampling event, Round 22, which took place in December 2016 are provided within this Annual Report in **Sections 3.1** and **3.2**.

Exhibit 1.1
Annual Report List

ROUND NUMBER	SAMPLE DATE	REPORT TITLE
Quarter 1	January 2007	**FINAL Annual Report and One-Year Review** 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** 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** 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	**FINAL Annual Report and Year 9 Review** Ash Landfill Operable Unit Seneca Army Depot Activity – (Parsons, 2017c)
Round 20	December 2015	
Round 21	June 2016	**DRAFT Annual Report and Year 10 Review** Ash Landfill Operable Unit Seneca Army Depot Activity
Round 22	December 2016	

This Annual Report reviews the results of the tenth 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).

Chapter 2 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 purchase of land by the Army 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-age[1] 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), 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).

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,

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

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, shown in **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. 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 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.

Chapter 3 Long-Term Monitoring

3.1 DATA ANALYSIS (YEAR 10)

3.1.1 SAMPLE COLLECTION

Exhibit 3.1 below presents the sample collection dates for the ten 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, 20111 – 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
Year 10	21R2016	June 14, 2016– June 17, 2016
	22R2016	December 5, 2016 – December 10, 2016

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, December 2015, June 2016, and December 2016. 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 22 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 National Environmental Laboratory Accreditation Conference (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 Hach 2100-P Turbidimeter.

In addition, a HACH® DR/890 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 analyses performed at each well location is presented in **Table 1**.

Groundwater samples were collected using low flow sampling techniques during each of the 2016 sampling rounds. Bladder pumps were used to purge the wells and collect the samples during these sampling events. Sampling procedures, sample handling and custody, holding times, and collection of field parameters were conducted in accordance with the "Final Sampling and Analysis Plan (SAP) for Seneca Army Depot Activity" (Parsons, 2006a). Field forms for Rounds 21 and 22 are included in **Appendix A**.

Groundwater data from Rounds 21 and 22 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.

3.1.2 GROUNDWATER ELEVATIONS

Historic groundwater elevations and groundwater elevations from the ten years of LTM rounds are presented in **Figure 7** and **Table 2**. The groundwater elevations observed during Round 21 and Round 22 followed similar trends as past sampling events. The groundwater elevations at all monitoring wells were within historically observed ranges. Groundwater contours and groundwater flow direction based on Round 22 measurements taken on December 5, 2016 are provided in **Figure 8**.

3.1.3 GEOCHEMICAL DATA

Measurable changes in groundwater geochemistry 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 3.1.1, 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. Additional geochemical analyses are collected at these wells to evaluate the condition of the groundwater environment immediately upgradient, inside, and downgradient of the biowalls and determine if this environment will promote reductive dechlorination. 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**,** organized with the most upgradient well listed first and the most downgradient well listed last, are presented in **Table 3**. A comparison of the geochemical parameters for wells MWT-26 (upgradient of Biowall B1) to MWT-28 (in Biowall B2) for Year 10, summarized below, demonstrates the change in geochemistry across the B1/B2 and C1/C2 Biowalls.

3.1.3.1 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 10 events with the exception of the December 2016 event in monitoring well MWT-28 (2.86 mg/L) within Biowall B2 (**Table 3**). The December 2016 value within Biowall B2 is the highest reading ever recorded at this well or within any biowall monitoring location (e.g., MWT-27 and MWT-23); this recorded value is likely not representative of the current condition at the well. A possible cause of the elevated DO value was snow melt during the sampling event. Due to the permeability of the mulch substrate, it is possible that snow melt may have more quickly infiltrated into the biowall and not the surrounding native soils. This is one possibility for the increase in DO concentration in well MWT-28; however, the reading may just be anomalous. Overall, DO is depleted due to the biological activity encouraged by the biowall substrate and will be

continued to be monitored in future sampling rounds. The depletion of DO enhances the potential for anaerobic degradation of chlorinated ethenes in groundwater.

3.1.3.2 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 10, concentrations were less than 20 mg/L in Biowall B1 (MWT-27), Biowall B2 (MWT-28) and Biowall C2 (MWT-23) for both Round 21 and Round 22 (**Table 3**) with the exception of the December 2016 event for monitoring well MWT-27 (32 mg/L). This suggests that the conditions at MWT-27 are not as robust as in previous years; however, the sulfate concentration is an order of magnitude lower than at the upgradient well – 610 mg/L at MWT-26 – showing that biodegradation is still supported to a degree.

3.1.3.3 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 170 micrograms per liter (µg/L) in Round 21 and at a concentration of 0.5 J µg/L in Round 22. 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 7,800 µg/L to 17,000 µg/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.

3.1.3.4 OXIDATION-REDUCTION POTENTIAL

Oxidation reduction potential 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 21 and 22, ORP values upgradient of Biowall B1/B2 were typically positive values and thus higher than negative ORP values within the biowall wells. The ORP value upgradient of the B1/B2 biowalls at well MWT-26 ranged from -61 mV to 77 mV, whereas the ORP values within Biowalls B1/B2 ranged from -95 mV to -43 mV (**Table 3**). Within well MWT-25 (upgradient of all the biowalls), ORP values were 23 mV and 153 mV in Rounds 21 and 22, respectively. A similar trend occurs upgradient and within Biowall C2 (**Table 3**).

The ORP values are within the benchmark value range (< 50mV), but are no longer better than the ideal benchmark value (< -100mV). An increasing trend in ORP value is evident over the length of LTM, which may be a sign of less robust conditions; 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.

3.1.3.5 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 21 in Biowall B2 is below the benchmark value; however, the concentration is higher than the benchmark in Round 22. In Biowall C2, the TOC concentration has decreased below the threshold value of 20 mg/L and has remained equivalent to the concentration of 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. TOC concentrations on-site have remained sufficiently high historically to serve as an energy source for anaerobic bacteria in the biowalls; however, the TOC concentrations are decreasing below suggested benchmark values. 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. A recharge of the biowall will result in an increase of the TOC concentration at the biowall wells.

3.1.3.6 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 10 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 21 and 22 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 0.04 mg/L and 0.35 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.

3.2 DATA SUMMARY (YEAR 10)

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

- DO remains below 1.0 mg/L at Biowalls B1/B2 and Biowall C2 (with the anomalous exception of the December 2016 event within Biowall B2), indicating favorable conditions for reductive dechlorination in the biowalls;
- Concentrations of TOC remain elevated in Biowalls B1/B2 (16 mg/L to 36 mg/L). The values in Biowalls B1/B2 are greater than the upgradient well, giving an indication that a measure of the

energy source that promotes anaerobic bacteria growth in the biowalls is sufficiently high; however, TOC values are not as high as in earlier sampling rounds. TOC concentrations within Biowall C2 are consistent with previous sampling rounds; however, the concentrations suggest a decline in the organic content of this biowall;

- ORP values ranged from -95 mV to -40 mV, indicating that conditions continue to be suitable for reductive dechlorination; however, ORP is no longer consistently meeting the ideal benchmark value of less than -100 mV;
- 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, although sulfate concentrations are trending to higher values;
- Methane concentrations ranged from 7,800 µg/L to 17,000 µg/L, indicating strongly reducing methanogenic conditions; and
- Ferrous iron and manganese concentrations are elevated (2.61 mg/L to >3.3 mg/L and 3.5 mg/L to >47.5 mg/L, respectively) in the biowalls in comparison to upgradient and background wells (0.00 mg/L to 0.35 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 entirely 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.

3.3 GROUNDWATER REMEDY EVALUATION

The concentrations of chlorinated ethenes detected in groundwater during each round of LTM is organized with the most upgradient well listed first and the most downgradient well listed last **(Table 4)**. A complete presentation of the groundwater data is provided in **Appendix B**. Concentrations of TCE, cis-1,2-dichloroethene (cis-DCE) and VC for each round of LTM are summarized by location in **Figure 6**. The discussion below focuses on data collected during Year 10 (Rounds 21 and 22) of the LTM program, and addresses how the remedial action objectives are being achieved.

3.3.1 ACHIEVEMENT OF FIRST PERFORMANCE MONITORING OBJECTIVE:

- Confirm that there are no exceedances of groundwater standards for COCs 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 (2.8 and 2.1 µg/L) at MW-56, but were well below its Class GA groundwater standard (5 µg/L).

3.3.2 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 Round 1 to below the Class GA groundwater standard at a concentration of 3.5 µg/L in Round 22.

Within the biowall wells, MWT-27 (in Biowall B1), MWT-28 (in Biowall B2), and MWT-23 (in Biowall C2), concentrations of TCE and cis-DCE remain below Class GA standards (**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. During Rounds 21 and 22, VC concentrations (3.1 and 4.35 µg/L) were observed above the Class GA standard (2 µg/L) within Biowall B1. VC was not detected within Biowall B2 during Rounds 21 and 22. During Round 20, the VC concentration (3.4 µg/L) within Biowall C2 was reported above the Class GA standards (2.0 µg/L); however, VC values decreased below the Class GA standard during Rounds 21 and 22 (1.9 and 0.9 J µg/L, respectively).

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 were below its Class GA standard with a limited range in concentration between 0.83 J 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 (5.5 µg/L) approximately equal to its Class GA standard (5 µg/L). Similarly, VC has a limited range in concentration of between 0.47 J µg/L and 7.6 µg/L with an average concentration (1.7 µg/L) below its Class GA standard (2 µg/L). 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 were at or below the Class GA groundwater standard (5 µg/L) at MWT-24 in all rounds, with the exceptions of 6.0 µg/L in Round 6 and 5.6 µg/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 **9V** depict these trends for Rounds 1 through 22. 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 17 µg/L observed at MWT-29 in Round 21, as compared to the upgradient concentrations of 0.18 J µg/L at MWT-26, also indicates that downgradient biotic reductive dechlorination is occurring (**Table 3**).

3.3.3 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-two sampling events at many of the wells downgradient of the biowalls. Although the third monitoring objective has not been met at all wells, COC concentrations in the plume performance monitoring wells are expected to decrease after the summer 2017 refresh of the biowalls.

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.

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 increasing concentrations of TCE at well PT-22 suggests that this well may be outside the effective zone of reductive dechlorination from Biowall B1/B2 (Figures 10G/C-7). The concentrations at this well will be continued to be monitored and are expected to decrease subsequent to the summer 2017 biowall refresh.

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 2049; 2) cis-DCE by 2068; and 3) VC by 2026 (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 in the near future (e.g., 2043, 2068) or for which a compliance date could not be calculated tend to exhibit very poor correlation (e.g., $R^2 < 0.2$). Additional data at these well locations will need to be collected to establish COC trends.

Time plots versus 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.

3.3.4 OTHER COMPOUNDS

Several other chlorinated compounds were detected during Year 10, including additional 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 (1,2-DCA) were observed in both Rounds 21 and 22. Trans-DCE exceedances were observed in wells MWT-22 and PT-17, downgradient of the B1/B2 and C1/C2 biowalls, respectively. 1,2-DCA

exceedances were observed in well PT-22 (between B and C biowalls) MWT-23 (Biowall C2). Future rounds of groundwater sampling will continue to monitor these analytes. Acetone, carbon disulfide and chloroform were detected during Round 21 and 22: acetone was detected (estimated) twice in Round 22 in MWT-27 (sample and duplicate sample) (7.8 J and 9.3 J µg/L); chloroform was detected once in well PT-18A at a concentration (2.3 µg/L) below its respective Class GA standard (7 µg/L) during Round 21; and carbon disulfide was detected once in downgradient well MW-56 (2.3 µg/L). There is no Class GA Standards for acetone and carbon disulfide; however, 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 analytes detected in the groundwater at the Ash Landfill OU over the length of the LTM program are presented in **Appendix B**.

3.4 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 9 concluded that recharge was not required and that a recharge evaluation would be performed again at the end of Year 10.

3.4.1 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:
  - 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
  - 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.

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.

3.4.2 RECHARGE EVALUATION FOR YEAR 10

Section 3.3 presents the geochemical data for Year 10. The values of geochemical parameters measured in Year 10 support the interpretation that reductive dechlorination is occurring in Biowalls A1/A2, B1/B2, and C1/C2; however, ORP and TOC values are deviating away from their benchmarks in Rounds 21 and 22 and are less similar to the suggested benchmark values for ideal reductive dechlorination. Although ORP values appear to be increasing very slowly and TOC values are decreasing in Biowall C1/C2 (indicating the depletion of the organic source), groundwater conditions remain reducing. Exhibit 3.2 below shows that the geochemical parameters for the wells within the biowalls meet or are close to the benchmark values.

Section 3.4 presents the analytical data for Year 10. 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 the biowalls, but recent concentrations have increased with two exceedances in Biowall B1. Some increases in the concentrations of cis-DCE are also evident in Biowall B1; however, a trend in the concentrations is not evident within all the biowalls. The ability of the biowalls to sustain a high degree of reductive dechlorination is well established.

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. Although substrate in the biowalls has not been fully depleted and biodegradation continues to occur, a depletion of organic resources within the biowalls is evident as observed though decreases in TOC concentrations. Low DO concentrations and negative ORPs indicate reducing conditions are being maintained with the current levels of TOC; however, concentrations are deviating from the ideal benchmark values. Reductions in sulfate and the production of methane further indicate that anaerobic conditions are being sustained.

Some geochemical parameters were below benchmark values in recent 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 biowall recharge event was conducted between August and October 2017. Approximately, 68 four-inch wells were installed into the A1/A2, B1/B2, pilot and C1/C2 biowalls. Groundwater was extracted, mixed with an emulsified vegetable oil product and pH buffer solution and reinjected into the walls to increase the overall carbon content of the biowall mulch. Further specifics of the recharge event are detailed in the Ash Landfill Biowall Recharge work plan (Parsons, 2017a).

Based on the review of the analytical and geochemical data, the biowall system continues to meet the long-term monitoring objectives established in the RDR (Parsons, 2006); however, it would be enhanced by recharging in the next year.

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
21R2016	-79	26.5	0.13	-70	16	0.48	-64	4.7	0.13
22R2016	-95	36	0.14	-43	28	2.86	-40	6.3	0.23

Notes:

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

Exhibit 3.3
Biowall Analytical Data

SAMPLE ROUND	MWT-27 (BIOWALL B1)			MWT-28 (BIOWALL B2)			MWT-23 (BIOWALL C2)		
	TCE (MG/L)	CIS-DCE (MG/L)	VC (MG/L)	TCE (MG/L)	CIS-DCE (MG/L)	VC (MG/L)	TCE (MG/L)	CIS-DCE (MG/L)	VC (MG/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
21R2016	ND	2.40	3.1	ND	ND	ND	ND	1.2	1.9
22R2016	ND	2.45	4.35	ND	ND	ND	ND	0.65 J	0.9 J

Notes:

ND = Not detected at the reporting limit

J = Estimated Value

NYSDEC Class GA Groundwater Standards: TCE = 5 µg/L; cis-DCE = 5 µg/L; VC = 2 µg/L; exceedances highlighted in grey

3.5 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 10 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.

3.6 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 21 and 22, 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).

3.7 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 10 of the LTM program are consistent with the data for Years 1 through 9 and demonstrate that the remedy is OPS, as described below.

3.7.1 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.

3.7.2 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 ten 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".

Chapter 4 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 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 continue to support reductive dechlorination within the biowalls, though they are not as strong as in earlier monitoring years;
- 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 urgent, though the biowalls are not operating as efficiently in Year 10;
- The remedial action continues to meets the requirements of the USEPA's "operating properly and successfully" designation; and
- To ensure the performance of the biowall system keeps meeting the USEPA requirements, biowalls A1/A2, B1/B2, and C1/C2 are planned to be recharged during the summer of 2017.

4.2 RECOMMENDATIONS

Based on ten 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). Based on the conclusions of the tenth year of monitoring, the recommendations for LTM are as follows:

- Conduct a biowall recharge event to optimize the biowall performance;
- Continue to monitor the process and performance monitoring wells;
- 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 is planning for a recharge event to take place during the summer of 2017.

Chapter 5 REFERENCES

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TABLES

Table 1
Groundwater Sample Collection
Ash Landfill Annual Report, Year 10
Seneca Army Depot Activity

	Monitoring Well Group			Laboratory Analysis				Field Test	
Monitoring Wells	**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 21 between June 14, 2015 and June 17, 2015 and in Round 22 between December 07, 2015 and December 10, 2016.

Table 2
Groundwater Elevation Data
Ash Landfill Annual Report, Year 10
Seneca Army Depot Activity

Monitoring Well	Top of Riser Elevation (ft)	Well Depth (rel. TOC) (ft)	LTM R21 - June 2016				LTM R22 - December 2016				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	6/14/2016	3.66	9.19	649.86	12/15/2016	6.72	6.13	652.92	653.25	649.65	3.60
MWT-25	654.51	13.25	6/14/2016	5.70	7.55	646.96	12/15/2016	8.51	4.74	649.77	650.65	645.93	4.72
MWT-26	652.19	13.22	6/14/2016	6.15	7.07	645.12	12/15/2016	9.54	3.68	648.51	648.92	644.58	4.34
MWT-27	652.99	12.90	6/14/2016	5.32	7.58	645.41	12/15/2016	8.34	4.56	648.43	648.60	644.27	4.33
MWT-28	652.69	12.85	6/14/2016	4.95	7.90	644.79	12/15/2016	8.18	4.67	648.02	648.31	644.20	4.11
MWT-29	651.82	13.10	6/14/2016	4.94	8.16	643.66	12/15/2016	9.37	3.73	648.09	648.09	643.18	4.91
MWT-22	650.66	14.90	6/14/2016	7.16	7.74	642.92	12/15/2016	11.17	3.73	646.93	648.13	642.29	5.84
PT-22	648.61	11.81	6/14/2016	2.96	8.85	639.76	12/15/2016	6.94	4.87	643.74	644.30	637.47	6.83
MWT-23	646.77	13.70	6/14/2016	4.62	9.08	637.69	12/15/2016	7.64	6.06	640.71	640.71	636.40	4.31
MWT-24	641.56	13.00	6/14/2016	5.38	7.62	633.94	12/15/2016	7.20	5.80	635.76	635.84	632.11	3.73
PT-17	640.14	11.65	6/14/2016	6.01	5.64	634.50	12/15/2016	8.91	2.74	637.40	637.50	632.74	4.76
MWT-7	638.34	13.64	6/14/2016	7.60	6.04	632.30	12/15/2016	8.28	5.36	632.98	633.58	626.58	7.00
PT-24	636.40	11.88	6/14/2016	6.61	5.27	631.13	12/15/2016	6.92	4.96	631.44	632.76	627.80	4.96
MW-56	630.51	6.88	6/14/2016	2.33	4.55	625.96	12/15/2016	3.51	3.37	627.14	627.58	624.39	3.19

Table 3
Groundwater Geochemical Data
Years 1 - 10
Ash Landfill Long-Term Monitoring
Seneca Army Depot Activity

Well ID	Location Description	Sample ID	Sample Round	pH	Turbidity (NTU)	Specific Conductance (mS/cm)	DO (mg/L)	ORP (mV)	TOC (mg/L)	Sulfate (mg/L)	Ethane (ug/L)	Ethene (ug/L)	Methane (ug/L)	Manganese (mg/L)	Ferrous Iron (mg/L)
PT-18A	Upgradient of walls	ALBW20059	1Q2007	6.63	141	1.69	1.33	93							
		ALBW20074	2Q2007	6.44	110	2.87	0.76	-177							
		ALBW20088	3Q2007	6.71	5	1.66	0	-23							
		ALBW20103	4Q2007	6.41	0.0	1.25	0.04	-5							
		ALBW20117	5R2008	6.36	1.9	1.75	0.22	-10						8.2	> 3.3
		ALBW20132	6R2008	6.58	0.56	2.04	1.76	83							
		ALBW20147	7R2009	6.77	0.45	2.01	0.12	66							
		ALBW20162	8R2009	6.71	0.00	2.04	0.62	154							
		ALBW02177	9R2010	6.7	1.00	2.05	0.1	62						1.5	0.15
		ALBW20192	10R2010	6.66	1.50	1.25	0.16	84							
		ALBW20207	11R2011	6.62	3.30	1.27	0.19	-17							
		ALBW20222	12R2011	6.62	0.40	1.75	0.09	59.9							
		ALBW20237	13R2012	6.80	4.25	1.06	0.12	78							
		ALBW20252	14R2012	6.84	1.83	1.33	4.22	74							
		ALBW20265	15R2013	6.83	2.49	1.46	0.13	199							
		ALBW20280	16R2013	6.76	0.92	1.11	1.18	201							
		ALBW20296	17R2014	6.95	0.77	1.20	0.15	76							
		ALBW20312	18R2014	7.07	0.93	1.23	2.99	107							
		ALBW20328	19R2015	6.66	1.10	1.40	0.67	121							
		ALBW20344	20R2015	7.17	0.74	1.12	0.86	114							
		ALBW20360	21R2016	7.04	1.39	1.40	0.25	112							
		ALBW20376	22R2016	6.50	0.81	1.80	1.57	152							
MWT-25	Upgradient of Biowall A	ALBW20064	1Q2007	8	9.6	0.290	2.83	63							
		ALBW20079	2Q2007	7.27	14	2.20	2.8	52							
		ALBW20093	3Q2007	7.36	6.2	2.43	4.14	100							
		ALBW20108	4Q2007	6.9	0	1.20	0.21	65							
		ALBW20123	5R2008	6.91	0.52	1.47	0.15	-41						1.4	0.75
		ALBW20138	6R2008	6.69	1.32	1.36	2.91	90							
		ALBW20153	7R2009	7.03	1.6	1.46	0.1	-31							
		ALBW20168	8R2009	7.21	0	0.792	3.35	98							
		ALBW20183	9R2010	7.06	0.7	1.48	0.2	-116							
		ALBW20198	10R2010	7.11	2.59	1.23	0.48	-94							
		ALBW20213	11R2011	6.72	13	1.13	0.03	13							
		ALBW20228	12R2011	7	5.2	1.50	1.5	-54.9							
		ALBW20243	13R2012	7.13	1.71	0.934	0.01	18							
		ALBW20258	14R2012	7.5	3.08	0.876	6.63	32							
		ALBW20271	15R2013	6.93	1.74	1.11	0.08	-5							
		ALBW20286	16R2013	7.49	2.44	1.00	2.77	185							
		ALBW20302	17R2014	7.36	0.92	1.46	0.09	-19							
		ALBW20318	18R2014	7.57	1.71	1.22	4.7	87							
		ALBW20334	19R2015	7.05	0.52	1.25	0.27	84							
		ALBW20350	20R2015	7.35	4.75	1.84	0.49	112							
		ALBW20366	21R2016	6.92	1.04	1.72	0.41	23							
		ALBW20382	22R2016	6.90	0.47	1.85	1.63	153							
MWT-26	**Upgradient of Biowalls B1/B2**	ALBW20066	1Q2007	6.89	10	2.01	1.84	-3	3.9 J	958	ND	ND	ND		
		ALBW20081	2Q2007	7.26	9	1.90	0.48	-135	15.2	738	0.4	7.8	210	2.1	> 3.3
		ALBW20095	3Q2007	6.89	2.2	1.94	0.21	-170	10.3	473	1	13	390	3.1	> 3.3
		ALBW20111	4Q2007	7.08	50	1.90	0.89	-40	6.1	1060	0.16	0.4	44	0.0	1.09
		ALBW20126	5R2008	7.05	0.67	1.88	0.31	-71	5.6	600	0.82	2.9	210	1.3	0.81
		ALBW20141	6R2008	7.01	28.7	1.58	3.54	60	4.4	541	0.046	0.028	10	0.6	0.22
		ALBW20156	7R2009	6.95	2.7	1.75	0.34	-11	6.9	570	3.2	2.7	1,100	0.5	0.71
		ALBW20171	8R2009	7.01	10	2.45	4.66	71	5.6	912	2.2	1.8	610	0.7	0.18
		ALBW20186	9R2010	6.99	1.4	2.04	0.14	-81	4.6	680	2.2	0.71	740	1.7	2.67
		ALBW20202	10R2010	6.77	0.6	1.71	0.5	109	5.5	690	3.7	3.3	1600	0.0	0.13
		ALBW20216	11R2011	6.64	2.4	1.67	0.07	-31	6.3	510	4.5	1	960	6.3	0.89
		ALBW20232	12R2011	7.05	2.2	1.87	0.54	12.1	4.5	860	0.23	ND	39	0.5	0.0
		ALBW20246	13R2012	7.26	8.72	1.02	0.48	2	4.4	640	1	0.5	230	0.6	0.09
		ALBW20262	14R2012	7.37	1.5	0.909	5.47	103	4.5	430	0.096	0.069	9.4	0.0	0.01
		ALBW20274	15R2013	6.91	1.24	0.834	0.13	24	4.1	250	0.69	0.54	130	1.0	0.02
		ALBW20289	16R2013	7.42	3.89	1.40	2.88	140	5.4	610	0.52	0.2	61	0.3	0.00
		ALBW20306	17R2014	6.80	17.5	1.72	0.36	61	4.7	680	0.92	0.15 J	240	1.2	0.04
		ALBW20321	18R2014	7.31	1.47	1.16	5.5	154	4.4	460	0.62	0.24	60	0.0	0.0
		ALBW20337	19R2015	6.83	2.22	1.88	0.27	143	5.5	680	0.43	0.13 J	83	0.7	0.01
		ALBW20354	20R2015	7.25	2.26	1.77	1.13	59	5.9	640	1.1	0.27	140	0.2	0.0
		ALBW20369	21R2016	7.32	0.86	1.5	0.23	77	5	590	0.69	0.18 J	170	0.8	0.0
		ALBW20385	22R2016	6.96	1.62	1.72	0.47	-61	5.8	610	0.013 J	0.01 J	0.5 J	1.7	0.35
MWT-27	**In Biowall B1**	ALBW20067	1Q2007	6.34	120	5.31	0.25	-158	2,050 J	ND	ND	ND			
		ALBW20082	2Q2007	6.65	87	4.37	0.08	-145	1350	ND	0.15	2.7	15,000	> 22	> 3.3
		ALBW20096	3Q2007	6.59	154	3.35	0	-141	755	1.9 J	0.081	0.33	13,500	> 22	> 3.3
		ALBW20112	4Q2007	6.43	58	5.76	0.06	-166	167	31.7	ND	0.014 J	13,000	> 22	2.19
		ALBW20127	5R2008	6.49	40	3.07	0.18	-133	88.9	ND	2.3	0.049	13,000	> 22	3.23
		ALBW20142	6R2008	5.95	24.5	2.59	0.13	-126	53.5	24	1.6	0.13	15,000	> 22	3.05
		ALBW20157	7R2009	6.68	38	2.99	0.06	-128	81.7	0.93 J	5.1	0.15	14,000	22	1.88
		ALBW20172/73	8R2009	6.32	5.1	2.38	0.15	-102	50.0	14.0	4.35	1.2	15,500	9	1.26
		ALBW20187	9R2010	6.52	1.4	2.55	0.05	-121	61	0.95 J	3.8	0.12	13,000	> 22	2.54
		ALBW20203	10R2010	6.42	8.91	2.22	0.05	-111	32	25.0	3	0.88	18,000	48	3.30
		ALBW20217/18	11R2011	6.3	3.2	1.75	0.01	-109	42	0.69 J	6.2	0.077	14,000	>22	>3.3
		ALBW20233	12R2011	5.55	16	1.98	0.08	-71	35	19.0	2	1.6	16,000	>22	1.23
		ALBW20247	13R2012	6.68	15.3	1.81	0.03	-82	28	1.4	8.4	0.68	14,000	22	1.80
		ALBW20263	14R2012	6.62	15.6	2.26	0.03	-120	35	2.5	0.88	0.051	13,000	47.5	2.17
		ALBW20275/76	15R2013	6.59	9.33	2.14	0.04	-33	41	4.1	2.15	ND	12,500	>47.5	2.63
		ALBW20290	16R2013	6.43	15.0	1.85	0.22	-66	37 J	5.2	1.4	0.16 J	20,000	19.2	2.75
		ALBW20307	17R2014	6.53	18.5	2.09	0.52	-77	39	6.6	5.3	0.79	16,000	>22	>3.3
		ALBW20322/23	18R2014	6.79	8.29	1.77	0.08	-105	38	36.5	2.2	0.335	12,000	>22	>3.3
		ALBW20338	19R2015	6.42	14.8	1.53	0.14	-85	37	5.7	4	0.56	16,000	>22	0.74
		ALBW20355	20R2015	6.60	12.2	1.73	0.29	-77	28	7.9	1.4	0.18 J	16,000	>47.5	3.14
		ALBW20370/371	21R2016	6.62	9.26	1.73	0.13	-79	26.5	11	4.5	0.965	17,000	>47.5	3.29
		ALBW20386/387	22R2016	6.57	9.2	1.92	0.14	-95	36	32	0.8	1.1	15,500	>47.5	>3.3
MWT-28	**In Biowall B2**	ALBW20068	1Q2007	7.5	163	0.610	0.16	-150	1,775 J	1.7	ND	ND	12,500 J		
		ALBW20083	2Q2007	6.6	21	2.30	0.09	-113	171	ND	0.67	0.48	19,000	7.5	> 3.3
		ALBW20098	3Q2007	6.56	100	2.74	0	-131	309	ND	0.01 J	0.057	11,000	> 22	> 3.3
		ALBW20113	4Q2007	6.48	10	1.72	0.08	-151	92	ND	0.014 J	ND	11,000	> 22	2.15
		ALBW20128	5R2008	6.31	14	2.16	0.15	-91	49.2	ND	0.65	0.044	12,000	> 22	> 3.3
		ALBW20144	6R2008	5.76	17	1.58	0.10	-95	27.9	48.3	2	0.12	19,000	5.3	1.98
		ALBW20158/59	7R2009	6.49	8.5	1.73	0.18	-135	28.2	ND	1.8	0.064	13,000	20.8	2.87
		ALBW20174	8R2009	6.4	10.8	1.88	0.29	-148	25.5	3.16	1.6	0.12	15,000	6.5	2.15
		ALBW20188/89	9R2010	6.36	5.5	1.62	0.06	-104	21	ND	1.55	0.059	13,500	18.6	0.57
		ALBW20204	10R2010	6.28	4.5	0.802	0.07	-100	12	4.8	1.4	0.17	12,000	5.8	2.58
		ALBW20219	11R2011	6.14	3.93	1.44	0.28	-135	17	0.63 J	0.9	0.0085 J	8,800	8.9	>3.3
		ALBW20234	12R2011	5.76	6.2	0.773	0.02	-125.9	12	19	1.6	ND	12,000	1.1	0.48
		ALBW20248/49	13R2012	6.46	7.41	1.16	0.06	-76	18	0.58	3.1	0.069	14,000	16.4	1.65
		ALBW20264	14R2012	6.27	16.3	1.38	0.07	-73	25	1.1	0.38	0.074	11,000	36	2.79
		ALBW20277	15R2013	6.27	6.33	1.33	0.04	-41	25	1.1 J	1.6	ND	14,000	>47.5	>3.3
		ALBW20291/92	16R2013	6.37	7.01	1.42	0.21	-49	24 J	2.5 U	1.45	0.24 J	19,500	4.3	2.74
		ALBW20308	17R2014	6.28	11.5	1.22	0.71	-87	19	1.3 U	2.8	0.0068 J	15,000	17.5	>3.3
		ALBW20324	18R2014	6.55	6.84	1.44	0.02	-88	18	11	0.35	0.049 J	12,000	7.4	2.13
		ALBW20339/40	19R2015	6.35	4.86	1.29	0.12	-74	24	0.84 J	1.55	ND	14,500	36.2	>3.3
		ALBW20356	20R2015	6.71	9.27	1.41	0.41	-18	19	ND	0.29	ND	14,000	34.3	3.13
		ALBW20372	21R2016	6.35	3.32	1.21	0.48	-70	16	0.77 J	1.7	ND	15,000	42.6	>3.3
		ALBW20388	22R2016	6.54	24.8	1.59	2.86	-43	28	1.9	0.18 J	ND	7,800	>47.5	22

Table 3
Groundwater Geochemical Data
Years 1 - 10
Ash Landfill Long-Term Monitoring
Seneca Army Depot Activity

Well ID	Location Description	Sample ID	Sample Round	pH	Turbidity (NTU)	Specific Conductance (mS/cm)	DO (mg/L)	ORP (mV)	TOC (mg/L)	Sulfate (mg/L)	Ethane (ug/L)	Ethene (ug/L)	Methane (ug/L)	Manganese (mg/L)	Ferrous Iron (mg/L)
MWT-29	Downgradient of Biowall B2	ALBW20070	1Q2007	6.49	7.2	2.10	0.33	-76	25.1 J	113	ND	ND	ND		
		ALBW20084/5	2Q2007	6.8	1.7	2.21	0.39	-53	36.7	173	25	150	8,100	7.5	> 3.3
		ALBW20099	3Q2007	6.64	1.8	1.68	0.11	-79	15.7	151	13	160	2,800	8.1	2.84
		ALBW20114	4Q2007	7.04	12.2	1.88	0.21	-101	20.9	289	19	200	2,600	8.6	> 3.3
		ALBW20129/30	5R2008	6.44	2.7	1.85	0.17	-115	14.1	174	14.5	140	3,100	0.0	> 3.3
		ALBW20145	6R2008	6.57	3.69	1.58	1.32	67	13.6	312	14	19	2,700	3.3	0.20
		ALBW20160	7R2009	6.8	1.9	1.80	0.15	-105	11.8	300	10	47	3,000	6.8	2.97
		ALBW20175	8R2009	6.87	0	2.05	0.58	-75	8.2	644	6.7	12	1,500	6.3	0.96
		ALBW20190	9R2010	6.77	2	1.74	0.06	-86	10	170	18	88	5,400	9.1	2.54
		ALBW20205	10R2010	6.71	1.07	1.31	0.56	22	7.4	300	5.1	7.9	3,100	6.4	2.60
		ALBW20220	11R2011	6.55	2.8	1.37	0.05	-90	7.7	170	8.3	47	3,100	12.1	0.03
		ALBW20235	12R2011	6.26	1.9	0.898	0.29	-30.2	4.9	210	1.7	7.3	760	1	0.04
		ALBW20250	13R2012	6.78	1.05	1.05	0.07	-29	8.2	95	10	38	5,200	19.6	2.88
		ALBW20265	14R2012	6.96	1.58	0.606	4.99	312	4.8	130	0.58	0.8	180	1.2	0.00
		ALBW20278	15R2013	6.65	1.72	0.960	0.07	25	5.8	84	2.9	6.6	2,500	0.09	0.93
		ALBW20293	16R2013	6.91	4.46	0.844	3.43	54	6.2	130	1.5	3.8	1,700	2.0	0.05
		ALBW20309	17R2014	6.59	0.96	1.60	0.13	-28	5.7	97	9.1	45	6,100	7.9	>3.3
		ALBW20325	18R2014	7.15	1.67	0.712	7.55	81	4.7	120	0.34	0.87	160	0.7	0.11
		ALBW20341	19R2015	6.62	0.81	1.37	0.15	-30	8.6	84	8.3	27	5,400	8.0	>3.3
		ALBW20357	20R2015	6.89	1.55	0.96	0.83	-16	6.1	180	2.3	7.4	1,600	3.1	0.54
		ALBW20373	21R2016	6.65	0.71	1.54	0.28	-60	6.5	90	5.6	17	6,200	18.4	>3.3
		ALBW20389	22R2016	7.19	7.46	0.91	0.88	-21	5.4	100	0.01 J	0.0083 J	1.4	0.0	0.01
MWT-22	Downgradient of Biowall B2	ALBW20071	1Q2007	7.7	4.5	0.130	0.09	-80							
		ALBW20075	2Q2007	6.72	41	2.16	0.3	-65							
		ALBW20100	3Q2007	6.45	2.7	2.03	0.05	-107							
		ALBW20115	4Q2007	6.53	7.5	1.81	0.18	-132							
		ALBW20121	5R2008	6.38	14	2.21	0.3	-34						18.2	> 3.3
		ALBW20136	6R2008	6.44	8.17	1.86	0.57	-19							
		ALBW20151	7R2009	6.59	13	2.14	0.31	-91							
		ALBW20166	8R2009	6.5	15	0.898	0.34	-65							
		ALBW20181	9R2010	6.52	16.8	2.20	0.22	-63							
		ALBW20196	10R2010	6.39	6.8	1.34	0.07	-58							
		ALBW20211	11R2011	6.2	3.6	1.27	0.16	-71							
		ALBW20226	12R2011	5.65	7.7	1.81	0.05	10							
		ALBW20241	13R2012	6.41	8.78	1.37	0.17	-27							
		ALBW20256	14R2012	6.54	12	1.53	0.11	-55							
		ALBW20269	15R2013	6.48	4.63	1.32	0.47	-11							
		ALBW20281	16R2013	6.47	20.4	1.55	0.15	-21							
		ALBW20300	17R2014	6.58	8.99	1.35	0.32	-33							
		ALBW20316	18R2014	7.33	10.7	1.36	0.17	-46							
		ALBW20332	19R2015	6.78	3.46	1.52	0.45	-14							
		ALBW20348	20R2015	6.55	4.25	1.34	1.05	-77							
		ALBW20364	21R2016	6.31	4.93	1.47	0.24	-37							
		ALBW20380	22R2016	6.47	0.3	1.87	0.11	4							
PT-22	Between Biowalls B and C	ALBW20060	1Q2007	7.70	4.5	0.130	0.09	-80							
		ALBW20086	2Q2007	6.78	7	1.18	0.78	-54							
		ALBW20089	3Q2007	6.67	0	1.44	0.09	-97							
		ALBW20104	4Q2007	6.73	5.1	1.26	0.17	-166							
		ALBW20118	5R2008	6.69	7.4	1.38	0.29	-119						0.3	1.38
		ALBW20133	6R2008	6.79	1.96	1.20	0.69	-37							
		ALBW20148	7R2009	6.76	11	1.53		-123							
		ALBW20163	8R2009	6.74	6.3	1.45	1.0	-73							
		ALBW20178	9R2010	6.87	3.6	1.39	0.4	-75							
		ALBW20193	10R2010	6.75	0.8	1.14	0.18	15							
		ALBW20208	11R2011	6.65	2	0.877	0.39	-62							
		ALBW20223	12R2011	5.95	0.38	1.57	0.27	205.8							
		ALBW20238	13R2012	6.74	8.4	0.904	2.50	12							
		ALBW20253	14R2012	6.98	1.44	0.731	5.36	201							
		ALBW20266	15R2013	6.77	0.82	0.927	0.08	82							
		ALBW20284	16R2013	6.62	0.38	0.942	1.54	203							
		ALBW20297	17R2014	6.74	2.42	1.05	1.48	61							
		ALBW20313	18R2014	7.07	2.83	0.921	6.66	134							
		ALBW20329	19R2015	7.02	0.59	1.09	0.11	121							
		ALBW20345	20R2015	7.00	1.29	0.981	1.59	131							
		ALBW20361	21R2016	6.71	0.88	1.21	0.64	107							
		ALBW20377	22R2016	6.79	0	1.09	1.94	124							
MWT-23	In Biowall C2	ALBW20065	1Q2007	7.2	5	0.200	0.26	-122	260 J	ND	ND	ND	12,000		
		ALBW20080	2Q2007	6.51	30	1.80	0.35	-109	210	ND	45	5.9	23,000	5.4	2.73
		ALBW20094	3Q2007	6.3	69.3	1.82	0	-87	303	ND	4.1	0.28	18,000	> 22	2.99
		ALBW20109	4Q2007	6.32	21	2.21	0.12	-144	151	2.8	0.58	0.35	16,000	> 22	2.32
		ALBW20125	5R2008	6.27	29	1.54	0.15	-129	28.4	ND	0.53	0.048	18,000	> 22	> 3.3
		ALBW20140	6R2008	6.44	32	1.86	0.20	-104	20.1	6.3	4.6	1.2	19,000	> 22	2.75
		ALBW20155	7R2009	7.72	16	1.50	0.07	-117	15.6	ND	1.6	0.16	21,000	22	2.08
		ALBW20170	8R2009	6.78	10	2.10	0.63	-90	17.4	ND	1	0.058	18,000	7	3.3
		ALBW20185	9R2010	6.38	9	1.57	0.04	-115	11	ND	2.4	0.038	18,000	>22	1.71
		ALBW20200/201	10R2010	6.41	2.8	1.07	0.29	-103	5.9	16	16	2.85	16,000	13	> 3.3
		ALBW20215	11R2011	6.21	5.97	1.20	0.85	-136	6.2	1.5	2.3	0.1	15,000	8	>3.3
		ALBW20230/231	12R2011	5.64	6.7	1.00	0.08	-104.1	6.3	14	8.9	1.2	16,000	12.6	1.17
		ALBW20245	13R2012	6.52	6.14	0.915	0.08	-71	4.8	1.5	5	0.26	18,000	31.1	3.3
		ALBW20260	14R2012	6.33	8.56	1.07	0.11	-91	11	13	2.5	0.63	15,500	46.1	2.18
		ALBW20273	15R2013	6.60	6.81	0.929	0.18	-102	4.1	15	7.0	2.6	14,000	8.7	>3.3
		ALBW20288	16R2013	6.59	5.23	1.05	0.24	-16	5.5	10	7.0	1.7	15,000	15.3	>3.3
		ALBW20304/05	17R2014	6.40	3.17	1.25	0.18	-56	4.7	1.4 J	11 J	0.13 J	16,500	4.0	>3.3
		ALBW20320	18R2014	6.69	7.93	1.21	0.07	-77	5.6	98	5.4	2.2	13,000	4.8	3.21
		ALBW20336	19R2015	6.46	4.08	0.989	0.24	-80	3.4	13	3.1	2	14,000	5.1	>3.3
		ALBW20352	20R2015	6.86	4.48	0.929	0.08	-85	4.8	9.5	7.7	2.4	13,000	4.9	>3.3
		ALBW20368	21R2016	6.9	4.31	0.96	0.13	-64	4.7	5.9	5.4	0.82	14,000	3.5	2.61
		ALBW20384	22R2016	6.38	4.22	1.280	0.23	-40	6.3	3.5	2	0.24	16,000	6.3	2.62
MWT-24	Downgradient of Biowalls C1/C2	ALBW20063	1Q2007	7.02	10	0.762	0.27	-160							
		ALBW20078	2Q2007	6.91	59	1.08	0.32	-146							
		ALBW20092	3Q2007	6.8	5.4	1.48	0.03	-115							
		ALBW20107	4Q2007	6.81	134	1.32	0.41	-114							
		ALBW20122	5R2008	6.65	45	1.21	0.35	-43						9.1	1.54
		ALBW20137	6R2008	6.40	10	1.31	0.09	40							
		ALBW20152	7R2009	6.81	6.7	1.34	0.11	-20							
		ALBW20164	8R2009	6.61	23	0.558	1.31	59							
		ALBW20182	9R2010	6.63	6.8	1.45	0.06	-21							
		ALBW20197	10R2010	6.78	8.9	0.919	0.14	10							
		ALBW20212	11R2011	6.67	75	0.735	0.39	27							
		ALBW20227	12R2011	6.56	8.67	0.627	0.10	46.2							
		ALBW20242	13R2012	7.22	10.2	0.747	0.11	3							
		ALBW20257	14R2012	6.69	9.47	0.689	0.55	181							
		ALBW20270	15R2013	6.78	4.44	0.765	0.05	42							
		ALBW20285	16R2013	6.97	19.7	0.801	0.12	38							
		ALBW20301	17R2014	7.07	8.88	1.21	0.11	15							
		ALBW20317	18R2014	7.57	9.16	0.826	1.03	95							
		ALBW20333	19R2015	7.08	9.35	0.982	0.06	51							
		ALBW20349	20R2015	6.99	9.79	0.901	0.13	55							
		ALBW20365	21R2016	6.43	9.8	0.970	0.09	44							
		ALBW20381	22R2016	6.72	3.00	1.030	0.08	143							

Table 3
Groundwater Geochemical Data
Years 1 - 10
Ash Landfill Long-Term Monitoring
Seneca Army Depot Activity

Well ID	Location Description	Sample ID	Sample Round	pH	Turbidity (NTU)	Specific Conductance (mS/cm)	DO (mg/L)	ORP (mV)	TOC (mg/L)	Sulfate (mg/L)	Ethane (ug/L)	Ethene (ug/L)	Methane (ug/L)	Manganese (mg/L)	Ferrous Iron (mg/L)
PT-17[1]	Downgradient of biowalls	ALBW20058	1Q2007	8	3.8	92.0	0.23	-111							
		ALBW20073	2Q2007	7.1	14	0.729	0.76	-151							
		ALBW20087	3Q2007	6.99	0.4	0.732	0.9	-157							
		ALBW20102	4Q2007	7.12	8.7	2.00	NS	-24							
		ALBW20116	5R2008		70		0.24		6	15.2	98	66	5700		
		ALBW20131	6R2008	6.68	0.85	0.796	0.30	26	2.6	45.8	6.9	6.6	380	2.8	0.43
		ALBW20146	7R2009	7.19	0.2	1.00	0.30	-20	4.9	28	50	56	8300	7.5	0.53
		ALBW20161	8R2009	6.75	4	0.345	0.58	-52	2.4	46.2	9.9	5	1,500	2.1	0.07
		ALBW20176	9R2010	6.73	0.9	0.816	0.11	-13	2.4	36	16	20	4,300	5.8	0.29
		ALBW20191	10R2010	6.72	0.45	0.619	0.21	42	1.5	31	4.8	3.5	900	4.0	0.06
		ALBW20206	11R2011	6.57	4	0.573	0.85	-22	3.4	24	1.8	3.8	780	>22	0.64
		ALBW20221	12R2011	6.73	3.03	0.686	2.63	91	1.6	27	1.7	2.4	810	0.6	0.01
		ALBW20236	13R2012	7.09	2.8	0.688	0.17	28	2.8	25	10	12	8,200	4.6	0.0
		ALBW20251	14R2012	6.74	0.51	0.569	3.44	52	1.7	35	2.2	2.4	810	2.2	0.08
		ALBW20264	15R2013	6.94	1.36	0.679	0.24	74	1.2	27	1.1	0.69	780	3.4	0.0
		ALBW20279	16R2013	6.83	0.64	0.663	0.75	62	2.0	31	1.5	1.4	960	2.6	0.10
		ALBW20295	17R2014	6.18	0.55	0.908	0.07	35	2.9	20	4.5	6.5	5,700	4.5	0.14
		ALBW20311	18R2014	6.87	0.94	0.687	0.48	28	1.7	29	2.5	2.0	1,600	6.5	0.08
		ALBW20327	19R2015	7.09	0.46	0.780	0.22	40	1.6	25	1.6	1.8	1,600	5.9	0.05
		ALBW20343	20R2015	7.13	0.93	0.526	0.79	111	1.7	42	0.13 J	0.044 J	21	0.5	0
		ALBW20359	21R2016	6.77	0.79	0.830	0.06	12	2.9	18	1.9	1.5	3,400	3.5	0.18
		ALBW20375	22R2016	6.69	1.01	0.928	0.35	-12	2.7	22	1.2	1.4	870	3.2	0.03
MWT-7	Immediately upgradient of ZVI wall	ALBW20062	1Q2007	6.80	19.6	0.581	0.01	62							
		ALBW20077	2Q2007	6.95	8	0.763	0.76	52							
		ALBW20091	3Q2007	6.91	4	0.586	0.19	22							
		ABLW20106	4Q2007	6.88	0	0.900	0.16	14							
		ALBW20120	5R2008	6.85	15	0.974	0.43	37	2.3	29.1	6.7	2	400	0.2	0.09
		ALBW20135	6R2008	6.85	7.37	0.859	0.28	66	29.1	3	11	0.27	670	0.8	0.16
		ALBW20150	7R2009	7.61	2.6	0.786	0.05	16	3.1	27	7.8	0.76	1100	0	0.05
		ALBW20165	8R2009	7.12	0.9	0.555	0.46	32	4.5	29.3	17	0.52	2,900	0.01	0.14
		ALBW20180	9R2010	6.85	1.35	1.04	0.02	-21	1.5	29	9	0.55	1,700	0.2	0.19
		ALBW20195	10R2010	6.85	3.3	0.758	0.06	35	1.3	31	4.5	0.2	400	1.1	0.18
		ALBW20210	11R2011	6.70	0.85	0.784	0.08	-85	2	39	4.9	0.21	1,600	0.4	0.45
		ALBW20225	12R2011	6.56	3.9	0.619	0.17	197	1.7	26	0.84	ND	79	0.2	0.05
		ALBW20240	13R2012	6.86	3.67	0.638	0.24	-35	1.6	28	3.1	0.33	1,600	0.1	0.0
		ALBW20255	14R2012	6.85	1.74	0.597	2.84	34	1.6	29	0.64	0.067	96	0	0.1
		ALBW20268	15R2013	6.82	1.88	0.663	0.34	68	0.89 J	31	0.5	ND	160	0.0	0.0
		ALBW20283	16R2013	6.95	3.63	0.833	0.32	66	2.0	26	1.2	0.18 J	1,000	0.8	0.27
		ALBW20299	17R2014	6.26	3.16	0.946	0.55	63	1.4	23	1.2	0.19 J	510	0.6	0.0
		ALBW20315	18R2014	7.00	2.35	0.954	0.61	81	2.0	23	1.1	0.095 J	1300	0.7	0.0
		ALBW20331	19R2015	7.14	0.25	0.798	0.08	30	0.86 J	23	0.74 J	0.084 J	160	0.7	0.3
		ALBW20347	20R2015	7.09	1.12	0.719	0.23	57	1.8	22	0.84	0.13 J	440	0.2	0.09
		ALBW20363	21R2016	6.92	0.92	0.729	0.1	64	2.0	26	0.36	0.054 J	160	1.1	0.09
		ALBW20379	22R2016	6.81	0.54	0.992	1.61	29	1.8	35	0.018 J	ND	1.7	0.4	0.00
PT-24	Downgradient of ZVI wall	ALBW20061	1Q2007	8.10	10	70.00	0.37	-59							
		ALBW20076	2Q2007	7.58	0	0.464	2.2	-59							
		ALBW20090	3Q2007	7.22	1.3	0.557	0.13	-80							
		ALBW20105	4Q2007	7.35	9.7	2.38	0.19	-46							
		ALBW20119	5R2008	6.99	4.3	0.900	0.16	-104						0.5	0.55
		ALBW20134	6R2008	6.84	5.8	0.656	0.11	-10							
		ALBW20149	7R2009	7.14	4.1	0.679	0.05	-101							
		ALBW20164	8R2009	7.32	1	0.410	0.34	-192						1.9	0.2
		ALBW20179	9R2010	7.07	8.3	0.780	0.19	-37							
		ALBW20194	10R2010	7.05	6.14	0.568	0.09	-29							
		ALBW20208	11R2011	6.69	1.6	0.528	0.82	-16							
		ALBW20224	12R2011	6.79	0.48	0.391	0.13	26.2							
		ALBW20239	13R2012	7.47	8.9	0.554	0.14	-55							
		ALBW20254	14R2012	6.95	1.23	0.428	1.19	77							
		ALBW20267	15R2013	7.20	1.68	0.484	0.06	10							
		ALBW20282	16R2013	6.97	2.12	0.538	0.19	19							
		ALBW20298	17R2014	6.93	1.12	0.935	0.05	18							
		ALBW20314	18R2014	7.84	8.65	0.008	0.15	83							
		ALBW20330	19R2015	7.31	0.69	0.748	0.04	6							
		ALBW20346	20R2015	6.94	1.64	0.628	0.14	69							
		ALBW20362	21R2016	7.35	1.92	0.692	0.06	9							
		ALBW20378	22R2016	6.83	0	0.706	0.94	189							
MW-56 [2]	Off-site well	ALBW20072	1Q2007	6.85	3.30	0.462	0.37	-102							
		ALBW20101	3Q2007	6.90	0.00	0.603	NS	-65							
		ALBW20124	5R2008	6.73	2.00	0.763	0.18	-132						0.4	1.18
		ALBW20139	6R2008	6.85	6.00	0.545	0.81	-125							
		ALBW20154	7R2009	7.01	0.10	0.623	0.23	-186							
		ALBW20169	8R2009	6.59	7.30	0.311	1.86	-149							
		ALBW20184	9R2010	6.85	3.19	0.403	0.16	-131							
		ALBW20199	10R2010	6.88	1.26	0.659	0.32	-105							
		ALBW20214	11R2011	6.89	4.80	0.662	0.21	-105							
		ALBW20229	12R2011	7.15	5.50	0.415	0.45	-74.2							
		ALBW20244	13R2012	7.00	1.20	0.520	0.23	-283							
		ALBW20259	14R2012	6.95	3.16	0.504	0.93	-69							
		ALBW20272	15R2013	7.00	1.65	0.509	0.42	-192							
		ALBW20287	16R2013	6.86	1.49	0.534	0.38	-77							
		ALBW20303	17R2014	7.00	1.33	0.696	0.44	-99							
		ALBW20319	18R2014	7.11	3.03	0.687	0.52	-119							
		ALBW20335	19R2015	6.54	12.9	0.555	0.53	-119							
		ALBW20351	20R2015	6.89	3.04	0.588	0.55	-108							
		ALBW20367	21R2016	6.63	1.87	0.792	0.22	-87							
		ALBW20383	22R2016	6.71	5.11	0.850	1.11	46							

Notes:
> = The concentration exceeded the range of the Hach DR/850 Colorimeter field kit.
J = the reported value is an estimated concentration.
ND = Non-detect.
NS = Not sampled; water level was below the indicator probe.

1Q2007 - First round of LTM (January 2007)
2Q2007 - Second round of LTM (March 2007)
3Q2007 - Third round of LTM (June 2007)
4Q2007 - Fourth round of LTM (November 2007)
5R2008 - Fifth Round of LTM (June 2008)
6R2008 - Sixth Round of LTM (December 2008)
7R2009 - Seventh Round of LTM (June 2009)
8R2009 - Eighth Round of LTM (December 2009)
9R2010 - Ninth Round of LTM (June 2010)
10R2010 - Tenth Round of LTM (December 2010)
11R2011 - Eleventh Round of LTM (July 2011)
12R2011 - Twelfth Round of LTM (December 2011)
13R2012 - Thirteenth Round of LTM (June 2012)
14R2012 - Fourteenth Round of LTM (December 2012)
15R2013 - Fifteenth Round of LTM (July 2013)
16R2013 - Sixteenth Round of LTM (December 2013)
17R2014 - Seventeenth Round of LTM (June 2014)
18R2014 - Eighteenth Round of LTM (December 2014)
19R2015 - Nineteenth Round of LTM (June 2015)
20R2015 - Twentieth Round of LTM (December 2015)
21R2016 - Twenty-first Round of LTM (June 2016)
22R2016 - Twenty-second Round of LTM (December 2016)

Empty cells indicate that the specified analysis was not completed for that well. The bolded wells are the five wells included in the biowall process monitoring group.
Analysis of TOC, sulfate, methane, ethane, and ethene were completed for the biowall process wells only.
1. During the 5R2008 event the water level in PT-17 was extremely low and water quality readings were not collected.
2. During the 11R2011 event, data was collected at MW-56 in October 2011.

Table 4
Chlorinated Organics in Groundwater
Rounds 1-22
Ash Landfill Long-Term Monitoring
Seneca Army Depot Activity

Upgradient ↑

Sample Identification		Round	Sample Date	PCE (ug/L)	TCE (ug/L)	1,1-DCE (ug/L)	cis-DCE (ug/L)	trans-DCE (ug/L)	VC (ug/L)	1,1-DCA (ug/L)	1,2-DCA (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
		21	16-Jun-16	0.74 U	280	0.36 U	66	0.39 J	0.76 J	0.38 U	0.5 U
		22	10-Dec-16	0.74 U	9.7	0.36 U	1.1	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
		21	16-Jun-16	0.74 U	6.9	0.36 U	5.7	0.37 U	0.73 J	0.38 U	0.5 U
		22	10-Dec-16	0.74 U	3.5	0.36 U	2.8	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
		21	15-Jun-16	0.74 U	2.1	0.36 U	3.7	0.37 U	1.2	0.38 U	0.5 U
		22	7-Dec-16	0.74 U	1	0.36 U	1.3	0.37 U	0.5 U	0.38 U	0.5 U

↓ Downgradient

Table 4
Chlorinated Organics in Groundwater
Rounds 1-22
Ash Landfill Long-Term Monitoring
Seneca Army Depot Activity

Upgradient ↑

Sample Identification		Round	Sample Date	PCE (ug/L)	TCE (ug/L)	1,1-DCE (ug/L)	cis-DCE (ug/L)	trans-DCE (ug/L)	VC (ug/L)	1,1-DCA (ug/L)	1,2-DCA (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
		21	14-Jun-16	0.74 U	0.48 U	0.36 U	2.40	0.37 U	3.1	0.38 U	0.5 U
		22	7-Dec-16	0.74 U	0.48 U	0.36 U	2.45	0.37 U	4.35	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
		21	14-Jun-16	0.74 U	0.48 U	0.36 U	0.41 U	0.37 U	0.5 U	0.38 U	0.5 U
		22	7-Dec-16	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
		21	15-Jun-16	0.74 U	1.8	0.36 U	72	1.2	120	0.38 U	0.5 U
		22	7-Dec-16	0.74 U	2.1	0.36 U	1.2	0.37 U	0.5 U	0.38 U	0.5 U

Downgradient ↓

Table 4
Chlorinated Organics in Groundwater
Rounds 1-22
Ash Landfill Long-Term Monitoring
Seneca Army Depot Activity

Upgradient ↑

Sample Identification		Round	Sample Date	PCE (ug/L)	TCE (ug/L)	1,1-DCE (ug/L)	cis-DCE (ug/L)	trans-DCE (ug/L)	VC (ug/L)	1,1-DCA (ug/L)	1,2-DCA (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
		21	16-Jun-16	0.74 U	0.54 J	0.36 U	39	5.6	110	0.38 U	0.5 U
		22	9-Dec-16	0.74 U	0.98 J	0.36 U	71	4.3	93	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
		21	16-Jun-16	0.74 U	23	0.36 U	44	0.87 J	2.8	0.38 U	2.6
		22	9-Dec-16	0.74 U	25	0.36 U	19	0.37 U	0.5 U	0.38 U	1.1
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
		21	15-Jun-16	0.74 UJ	0.48 U	0.36 U	1.2	0.54 J	1.9	0.38 U	1.3
		22	8-Dec-16	0.74 U	0.48 U	0.36 U	0.65 J	0.37 U	0.9 J	0.38 U	0.64 J

Downgradient ↓

Table 4
Chlorinated Organics in Groundwater
Rounds 1-22
Ash Landfill Long-Term Monitoring
Seneca Army Depot Activity

Upgradient ↑ ↓ Downgradient

Sample Identification		Round	Sample Date	PCE (ug/L)	TCE (ug/L)	1,1-DCE (ug/L)	cis-DCE (ug/L)	trans-DCE (ug/L)	VC (ug/L)	1,1-DCA (ug/L)	1,2-DCA (ug/L)
		Class GA Standard (ug/L)		5	5	5	5	5	2	5	0.6
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
		21	16-Jun-16	0.74 U	1.8	0.36 U	15	1.7	3.2	0.53 J	0.5 U
		22	9-Dec-16	0.74 U	3.7	0.36 U	14	0.43 J	1.8	0.43 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
		21	15-Jun-16	0.74 U	5	0.36 U	61	11	25	0.38 U	0.5 U
		22	8-Dec-16	0.74 U	9.9	0.36 U	59	12	22	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
		21	15-Jun-16	0.74 U	170	0.51 J	95	0.5 J	5.5	0.38 U	0.5 U
		22	8-Dec-16	0.74 U	190	0.44 J	81	0.37 U	0.5 U	0.38 U	0.5 U

Table 4
Chlorinated Organics in Groundwater
Rounds 1-22
Ash Landfill Long-Term Monitoring
Seneca Army Depot Activity

Upgradient ↓ Downgradient

Sample Identification		Round	Sample Date	PCE (ug/L)	TCE (ug/L)	1,1-DCE (ug/L)	cis-DCE (ug/L)	trans-DCE (ug/L)	VC (ug/L)	1,1-DCA (ug/L)	1,2-DCA (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
		21	15-Jun-16	0.74 U	0.48 U	0.36 U	18	1.1	3.6	0.42 J	0.5 U
		22	9-Dec-16	0.74 U	1.2	0.36 U	12	0.45 J	0.5 U	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
		21	17-Jun-16	0.74 U	0.48 U	0.36 U	2.8	0.37 U	0.5 U	0.38 U	0.5 U
		22	10-Dec-16	0.74 U	0.48 U	0.36 U	2.1	0.37 U	0.5 U	0.38 U	0.5 U

Notes:

1. 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, June-16, Dec-16; 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.
2. Wells in bold are the biowall process monitoring wells.
3. 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 10
Seneca Army Depot Activity

		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	
	Well ID	Lower Limit	Upper Limit	Lower Limit	Upper Limit	Lower Limit	Upper Limit
Upgradient	**PT-18A**	**2024**		**2018**		**Achieved** R9 (June 2010)**	
		2011	Decreasing	2009	Decreasing		
	MWT-25	**Achieved** R14 (Dec 2012)**		**Achieved** R12 (Dec 2011)**		**Achieved* Q4 (Nov 2007)**	
	MWT-26	**Achieved* Q3 (June 2007)**		**2011**		**Achieved* R12 (Dec 2011)**	
				2007	Decreasing		
Biowall B1	**MWT-27**	**Achieved Q1 (Jan 2007)**		**Achieved Q1 (Jan 2007)**		**Achieved* R13 (June 2012)**	
Biowall B2	**MWT-28**	**Achieved Q1 (Jan 2007)**		**Achieved Q1 (Jan 2007)**		**Achieved Q1 (Jan 2007)**	
	MWT-29	**Achieved R7 (June 2009)**		**2022**		**2026**	
				2014	2054	2014	2203
	MWT-22	**Achieved R7 (June 2009)**		**2043**		**N/A**	
				2022	Decreasing	-	-
	PT-22	**N/A**		**2068**		**Achieved** R11 (July 2011)**	
		-	-	2032	Decreasing		
Biowall C2	**MWT-23**	**Achieved Q1 (Jan 2007)**		**Achieved Q3 (June 2007)**		**Achieved** Q3 (June 2007)**	
	MWT-24	**Achieved R7* (June 2009)**		**2025**		**2014**	
				2015	2098	2009	2031
	PT-17	**2015**		**N/A**		**N/A**	
		2007	2034	-	-	-	-
	MWT-7	**2049**		**N/A**		**N/A**	
		2019	Decreasing	-	-	-	-
	PT-24	**Achieved Q1 (Jan 2007)**		**2025**		**Achieved R14* (Dec 2012)**	
				2021	2032		
Downgradient	**MW-56**	**Achieved Q1 (Jan 2007)**		**Achieved Q1 (Jan 2007)**		**Achieved Q1 (Jan 2007)**	

Notes:

1. The estimated remediation timeframes are calcuated 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 calcuated 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 ($R^2 < 0.2$). An upper confidence limit could not be calculated because the decay rate calcuated for the upper limit is negative (increasing concentration).

FIGURES

N
W E
S

INSTITUTIONAL AREA

DATA STORAGE /
TELECOMMUNICATIONS

CONSERVATION / RECREATION

PLANNED INDUSTRIAL /
OFFICE DEVELOPMENT
AND WAREHOUSING
(PID) AREA

ASH LANDFILL
SEAD-3,6,8,14 & 15

FARMING

FORMER AIRFIELD
COUNTY FIRE TRAINING
& FACTORY

FED TO FED
TRANSFER

PRISON AREA

PARSONS

SENECA ARMY DEPOT ACTIVITY
Ash Landfill Annual Report

FIGURE 1 - Ash Landfill Location and
SEDA Future Land Use

April 2017

Legend

ASH LANDFILL

SEDA Boundary

0 2,500 5,000 10,000
Feet

Path: P:\PIT\Projects\Huntsville WERS\Seneca LTM, TO 23\02 - GIS\AshLandfill\YR10_AnnualReport\SenecaLandUseMap_AshYr10.mxd

N

NON-COMBUSTIBLE FILL LANDFILL (NCFL) (SEAD-8) 3.4 ACRES

ASH LANDFILL (SEAD-6) 2.2 ACRES

SEAD-2 EL.634.91'

SEAD-1 EL.630.90'

APPROXIMATE LOCATION OF 8" WATER MAIN

APPROXIMATE LOCATION OF 6" WATER MAIN

ZERO VALENT IRON WALL

FORMER INCINERATOR

WEST SMITH FARM ROAD

WEST PATROL ROAD

SEDA PROPERTY BOUNDARY

W-A, W-B, W-C, W-D, W-E, W-F

A1/A2, B1, B2, C1, C2

PT-10, PT-16, PT-17, PT-18A, PT-19, PT-20, PT-22, PT-24

MW-27, MW-29, MW-32, MW-39, MW-40, MW-44A, MW-46, MW-48, MW-56, MW-58D

MWT-1, -2, -3, MWT-4, -5, -6, MWT-7, -8, -9, MWT-10, MWT-12R, MWT-17R, MWT-22, MWT-23, MWT-24, MWT-25, MWT-26, MWT-27, MWT-28, MWT-29

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

100 0 100 200
(feet)

PARSONS

CLIENT/PROJECT TITLE

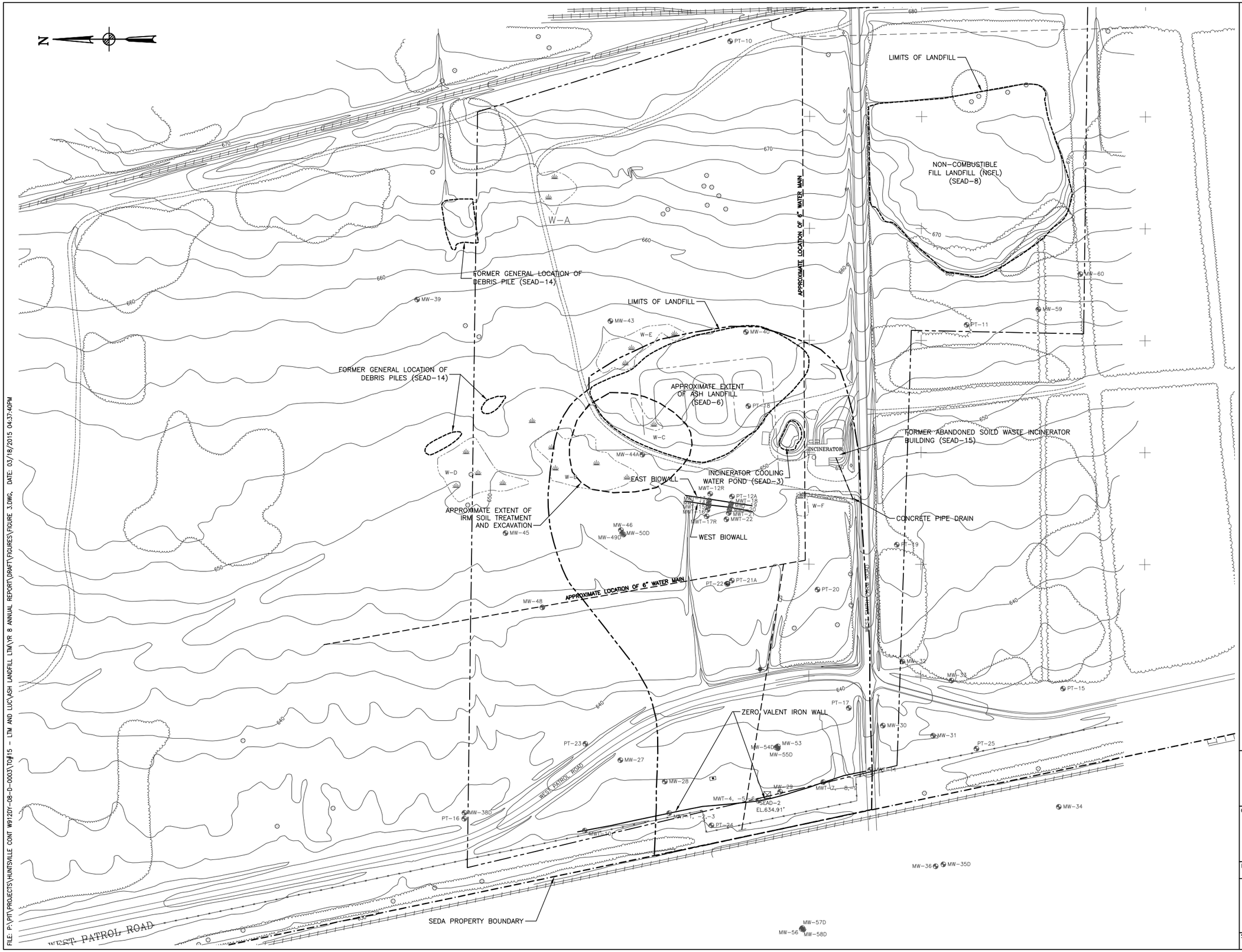
SENECA ARMY DEPOT
ASH LANDFILL
ASH LANDFILL ANNUAL REPORT

DEPT. ENVIRONMENTAL ENGINEERING | Dwg. No.

FIGURE 2
ASH LANDFILL
SITE PLAN

SCALE | DATE MARCH 2017 | REV –

FILE: P:\PIT\PROJECTS\HUNTSVILLE CONT W912DY-08-D-0003\TO#15 - LTM AND LUC\ASH LANDFILL LTM\YR 7 ANNUAL REPORT\FIGURES\FIGURE 2.DWG, DATE: 04/07/2014 11:17:43AM, p0018397



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

100 0 100 200
(feet)

PARSONS

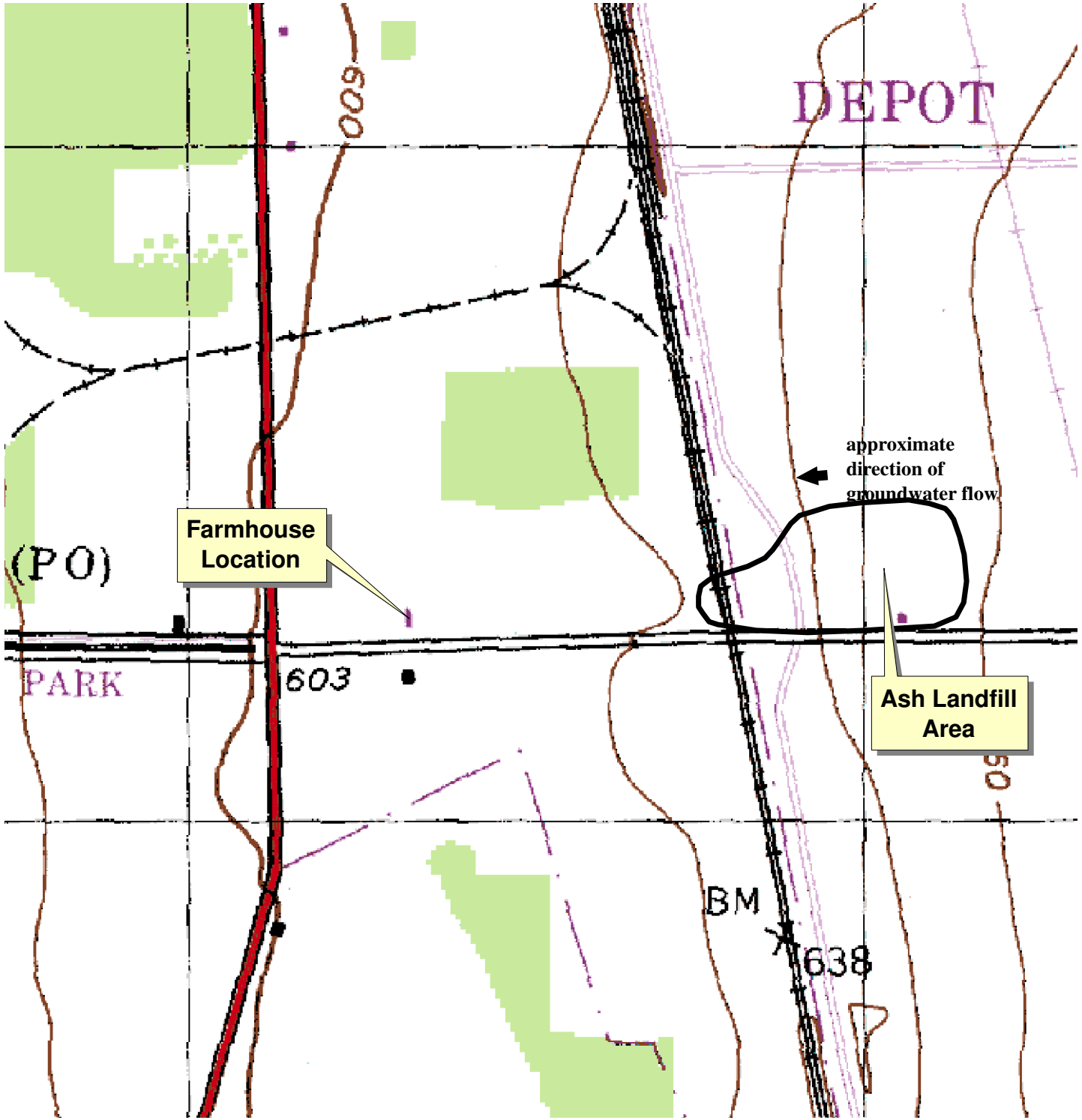
CLIENT/PROJECT TITLE
SENECA ARMY DEPOT
ASH LANDFILL
ASH LANDFILL ANNUAL REPORT

DEPT.	Dwg. No.
ENVIRONMENTAL ENGINEERING	

FIGURE 3
ASH LANDFILL
HISTORIC SITE MAP

SCALE	DATE	REV
	MARCH 2017	

FILE: P:\PIT\PROJECTS\HUNTSVILLE CONT W912DY-08-D-0003\TO#15 - LTM AND LUC\ASH LANDFILL LTM\YR 8 ANNUAL REPORT\DRAFT\FIGURES\FIGURE 3.DWG, DATE: 03/18/2015 04:37:40PM



N

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

700 350 0 700 Feet

PARSONS

SENECA ARMY DEPOT ACTIVITY

ASH LANDFILL ANNUAL REPORT

FIGURE 4

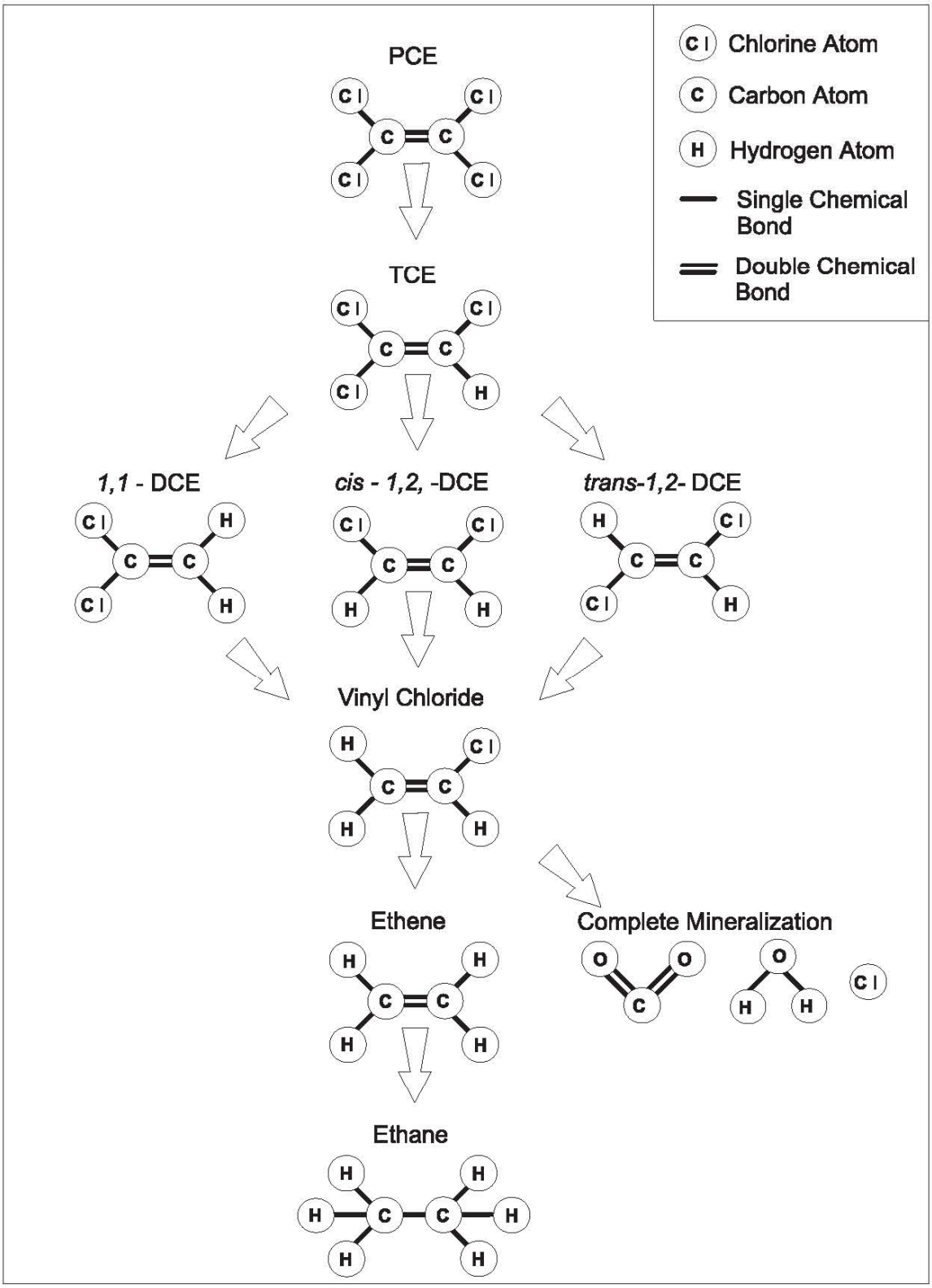
ASH LANDFILL

LOCATION OF FARMHOUSE

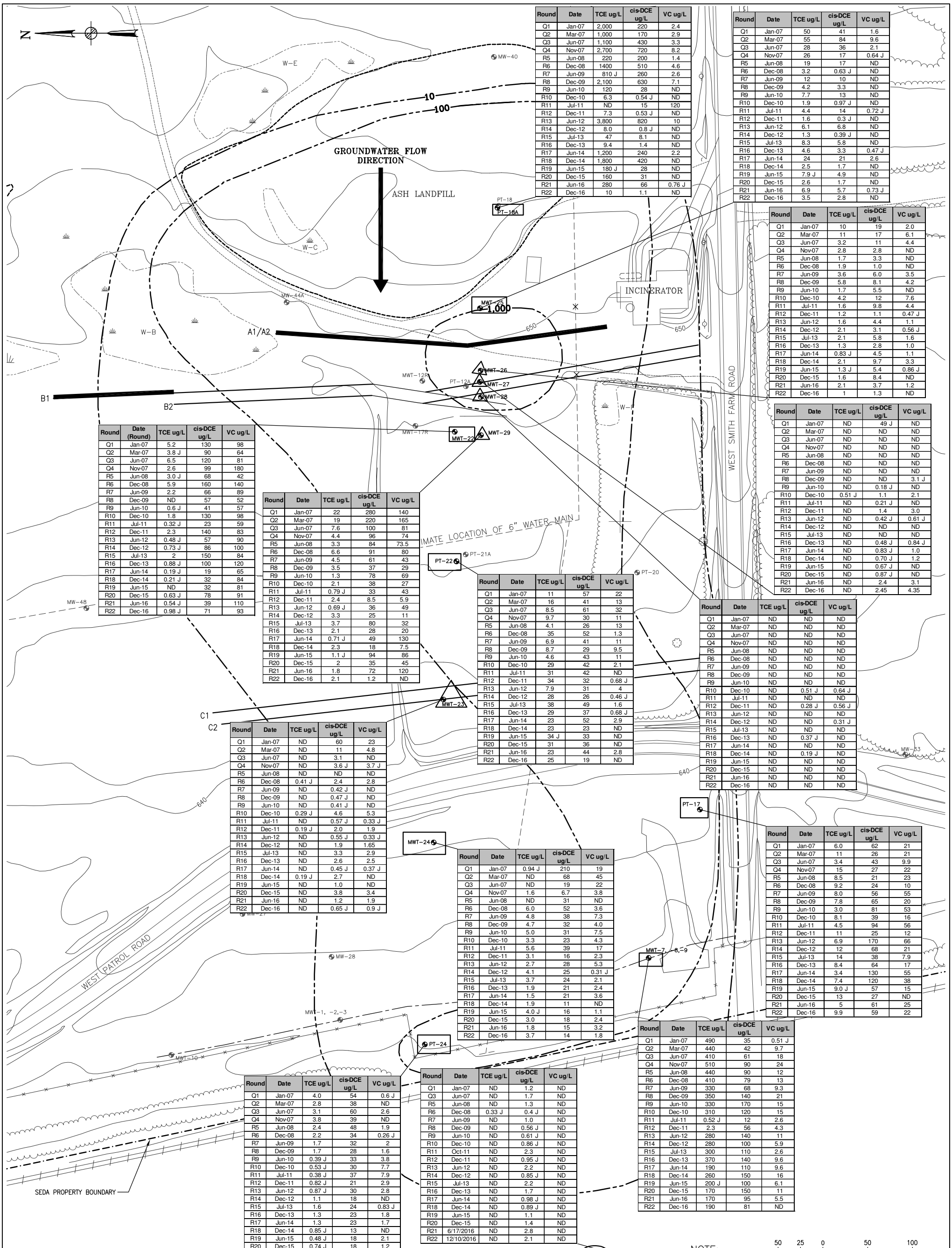
DATE: MARCH 2017

P:\PIT\Projects\Huntsville Cont W912DY-08-D-0003\TO#15 - LTM and LUC\Ash Landfill LTM\Yr 7 Annual Report\Figures\FIGURE 4.mxd

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



(USEPA, 1998)



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
R21	Jun-16	280	66	0.76 J
R22	Dec-16	10	1.1	ND

Round	Date	TCE ug/L	cis-DCE ug/L	VC ug/L
Q1	Jan-07	50	41	1.6
Q2	Mar-07	55	84	9.6
Q3	Jun-07	28	36	2.1
Q4	Nov-07	26	17	0.64 J
R5	Jun-08	19	17	ND
R6	Dec-08	3.2	0.63 J	ND
R7	Jun-09	12	10	ND
R8	Dec-09	4.2	3.3	ND
R9	Jun-10	7.7	13	ND
R10	Dec-10	1.9	0.97 J	ND
R11	Jul-11	4.4	14	0.72 J
R12	Dec-11	1.6	0.3 J	ND
R13	Jun-12	6.1	6.8	ND
R14	Dec-12	1.3	0.39 J	ND
R15	Jul-13	8.3	5.8	ND
R16	Dec-13	4.6	3.3	0.47 J
R17	Jun-14	24	21	2.6
R18	Dec-14	2.5	1.7	ND
R19	Jun-15	7.9 J	4.9	ND
R20	Dec-15	2.6	1.7	ND
R21	Jun-16	6.9	5.7	0.73 J
R22	Dec-16	3.5	2.8	ND

Round	Date	TCE ug/L	cis-DCE ug/L	VC ug/L
Q1	Jan-07	10	19	2.0
Q2	Mar-07	11	17	6.1
Q3	Jun-07	3.2	11	4.4
Q4	Nov-07	2.8	2.8	ND
R5	Jun-08	1.7	3.3	ND
R6	Dec-08	1.9	1.0	ND
R7	Jun-09	3.6	6.0	3.5
R8	Dec-09	5.8	8.1	4.2
R9	Jun-10	1.7	5.5	ND
R10	Dec-10	4.2	12	7.6
R11	Jul-11	1.6	9.8	4.4
R12	Dec-11	1.2	1.1	0.47 J
R13	Jun-12	1.6	4.4	1.1
R14	Dec-12	2.1	3.1	0.56 J
R15	Jul-13	2.1	5.8	1.6
R16	Dec-13	1.3	2.8	1.0
R17	Jun-14	0.83 J	4.5	1.1
R18	Dec-14	2.1	9.7	3.3
R19	Jun-15	1.3 J	5.4	0.86 J
R20	Dec-15	1.6	8.4	ND
R21	Jun-16	2.1	3.7	1.2
R22	Dec-16	1	1.3	ND

Round	Date (Round)	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
R21	Jun-16	0.54 J	39	110
R22	Dec-16	0.98 J	71	93

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
R21	Jun-16	ND	2.4	3.1
R22	Dec-16	ND	2.45	4.35

Round	Date	TCE ug/L	cis-DCE ug/L	VC ug/L
Q1	Jan-07	22	280	140
Q2	Mar-07	19	220	165
Q3	Jun-07	7.6	100	81
Q4	Nov-07	4.4	96	74
R5	Jun-08	3.3	84	73.5
R6	Dec-08	6.6	91	80
R7	Jun-09	4.5	61	43
R8	Dec-09	3.5	37	29
R9	Jun-10	1.3	78	69
R10	Dec-10	2.1	38	27
R11	Jul-11	0.79 J	33	43
R12	Dec-11	2.4	8.5	5.9
R13	Jun-12	0.69 J	36	49
R14	Dec-12	3.3	25	11
R15	Jul-13	3.7	80	32
R16	Dec-13	2.1	28	20
R17	Jun-14	0.71 J	49	130
R18	Dec-14	2.3	18	7.5
R19	Jun-15	1.1 J	94	86
R20	Dec-15	2	35	45
R21	Jun-16	1.8	72	120
R22	Dec-16	2.1	1.2	ND

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
R21	Jun-16	23	44	2.8
R22	Dec-16	25	19	ND

Round	Date	TCE ug/L	cis-DCE ug/L	VC ug/L
Q1	Jan-07	ND	ND	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	ND
R9	Jun-10	ND	ND	ND
R10	Dec-10	ND	0.51 J	0.64 J
R11	Jul-11	ND	ND	ND
R12	Dec-11	ND	0.28 J	0.56 J
R13	Jun-12	ND	ND	ND
R14	Dec-12	ND	ND	0.31 J
R15	Jul-13	ND	ND	ND
R16	Dec-13	ND	0.37 J	ND
R17	Jun-14	ND	ND	ND
R18	Dec-14	ND	0.19 J	ND
R19	Jun-15	ND	ND	ND
R20	Dec-15	ND	ND	ND
R21	Jun-16	ND	ND	ND
R22	Dec-16	ND	ND	ND

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
R21	Jun-16	ND	1.2	1.9
R22	Dec-16	ND	0.65 J	0.9 J

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
R21	Jun-16	1.8	15	3.2
R22	Dec-16	3.7	14	1.8

Round	Date	TCE ug/L	cis-DCE ug/L	VC ug/L
Q1	Jan-07	6.0	62	21
Q2	Mar-07	11	26	21
Q3	Jun-07	3.4	43	9.9
Q4	Nov-07	15	27	22
R5	Jun-08	8.5	21	23
R6	Dec-08	9.2	24	10
R7	Jun-09	8.0	56	55
R8	Dec-09	7.8	65	20
R9	Jun-10	3.0	81	53
R10	Dec-10	8.1	39	16
R11	Jul-11	4.5	94	56
R12	Dec-11	11	25	12
R13	Jun-12	6.9	170	66
R14	Dec-12	12	68	21
R15	Jul-13	14	38	7.9
R16	Dec-13	8.4	64	17
R17	Jun-14	3.4	130	55
R18	Dec-14	7.4	120	38
R19	Jun-15	9.0 J	57	15
R20	Dec-15	13	27	ND
R21	Jun-16	5	61	25
R22	Dec-16	9.9	59	22

Round	Date	TCE ug/L	cis-DCE ug/L	VC ug/L
Q1	Jan-07	490	35	0.51 J
Q2	Mar-07	440	42	9.7
Q3	Jun-07	410	61	18
Q4	Nov-07	510	90	24
R5	Jun-08	440	90	12
R6	Dec-08	410	79	13
R7	Jun-09	330	68	9.3
R8	Dec-09	350	140	21
R9	Jun-10	330	170	15
R10	Dec-10	310	120	15
R11	Jul-11	0.52 J	12	2.6
R12	Dec-11	2.3	56	4.3
R13	Jun-12	280	140	11
R14	Dec-12	280	100	5.9
R15	Jul-13	300	110	2.6
R16	Dec-13	370	140	9.6
R17	Jun-14	190	110	9.6
R18	Dec-14	260	150	16
R19	Jun-15	200 J	100	6.1
R20	Dec-15	170	150	11
R21	Jun-16	170	95	5.5
R22	Dec-16	190	81	ND

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
R21	Jun-16	ND	18	3.6
R22	Dec-16	1.2	12	ND

Round	Date	TCE ug/L	cis-DCE ug/L	VC ug/L
Q1	Jan-07	ND	1.2	ND
Q3	Jun-07	ND	1.7	ND
R5	Jun-08	ND	1.3	ND
R6	Dec-08	0.33 J	0.4 J	ND
R7	Jun-09	ND	1.0	ND
R8	Dec-09	ND	0.56 J	ND
R9	Jun-10	ND	0.61 J	ND
R10	Dec-10	ND	0.86 J	ND
R11	Oct-11	ND	2.3	ND
R12	Dec-11	ND	0.95 J	ND
R13	Jun-12	ND	2.2	ND
R14	Dec-12	ND	0.85 J	ND
R15	Jul-13	ND	2.2	ND
R16	Dec-13	ND	1.7	ND
R17	Jun-14	ND	0.98 J	ND
R18	Dec-14	ND	0.89 J	ND
R19	Jun-15	ND	1.1	ND
R20	Dec-15	ND	1.4	ND
R21	6/17/2016	ND	2.8	ND
R22	12/10/2016	ND	2.1	ND

NOTE:
ND = NON-DETECT

50 25 0 50 100
SCALE (FT.)

LEGEND:

- PAVED ROAD
- DIRT ROAD
- GROUND CONTOUR AND ELEVATION (650)
- TREE
- WETLAND & DESIGNATION (W-B)
- MONITORING WELL AND DESIGNATION (PT-22)
- RAILROAD TRACKS
- BRUSH
- CHAIN LINK FENCE
- UTILITY POLE
- APPROXIMATE LOCATION OF FIRE HYDRANT
- FUEL OR UNDERGROUND STORAGE TANK
- SURVEY MONUMENT (SEAD-1 EL.630.90')
- APPROXIMATE LOCATION OF WATER MAIN
- 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 (10)
- OFF-SITE PERFORMANCE MONITORING WELL IN L.T.M. PROGRAM (MW-56)
- ON-SITE PLUME PERFORMANCE MONITORING WELL IN L.T.M. PROGRAM (PT-22)
- BIOWALL PROCESS MONITORING WELL IN L.T.M. PROGRAM (MWT-26)

PARSONS

CLIENT/PROJECT TITLE

SENECA ARMY DEPOT

ASH LANDFILL

ASH LANDFILL ANNUAL REPORT

DEPT. ENVIRONMENTAL ENGINEERING

Dwg. No.

FIGURE 6

CHLORINATED ETHENES CONCENTRATIONS IN GROUNDWATER

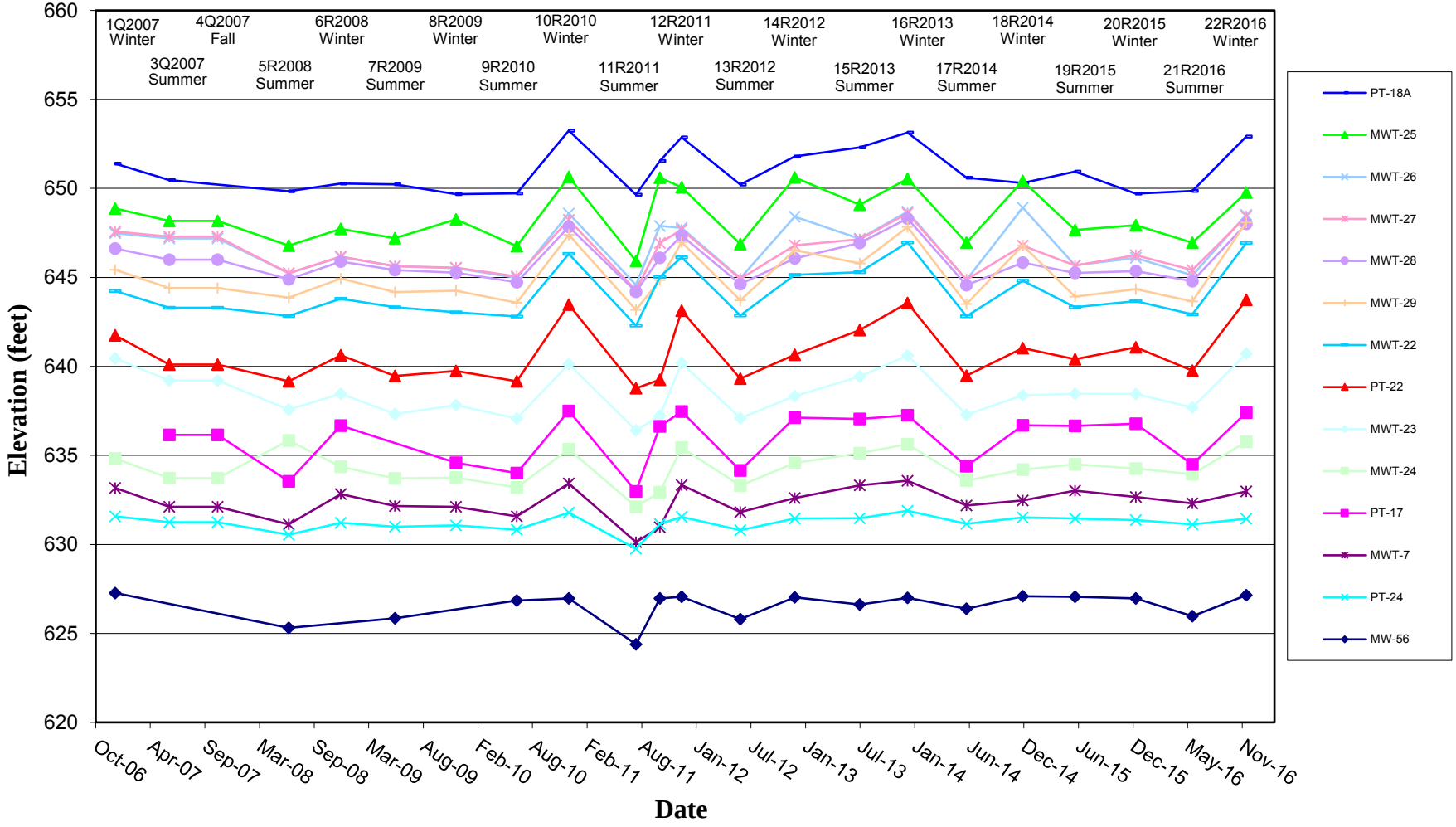
SCALE

DATE MARCH 2016

REV –

FILE: P:\PIT\PROJECTS\HUNTSVILLE CONT W912DY-08-D-0003\TO#15 - LTM AND LUC\ASH LANDFILL LTM\YR 10 ANNUAL REPORT\DRAFT\03 - FIGURES\FIGURE 6.DWG, DATE: 03/10/2017 12:44:01PM, p0018397

Figure 7
Groundwater Elevations Rounds 1 through 22
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, Dec 15, 2015, Jun 14, 2016, and Dec 05, 2016.
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

70 0 70 140
(FEET)

PARSONS

CLIENT/PROJECT TITLE

SENECA ARMY DEPOT
ASH LANDFILL
ANNUAL REPORT

DEPT.	Dwg. No.
ENVIRONMENTAL ENGINEERING	

FIGURE 8
ASH LANDFILL GROUNDWATER CONTOURS & GROUNDWATER FLOW DIRECTION DEC. 2016

SCALE	DATE	REV
	MARCH 2017	–

FILE: P:\PIT\PROJECTS\HUNTSVILLE CONT W912DY-08-D-0003\TO#15 - LTM AND LUC\ASH LANDFILL LTM\YR 10 ANNUAL REPORT\DRAFT\03 - FIGURES\FIGURE 8.DWG, DATE: 03/27/2017 10:17:05AM, p0018397

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

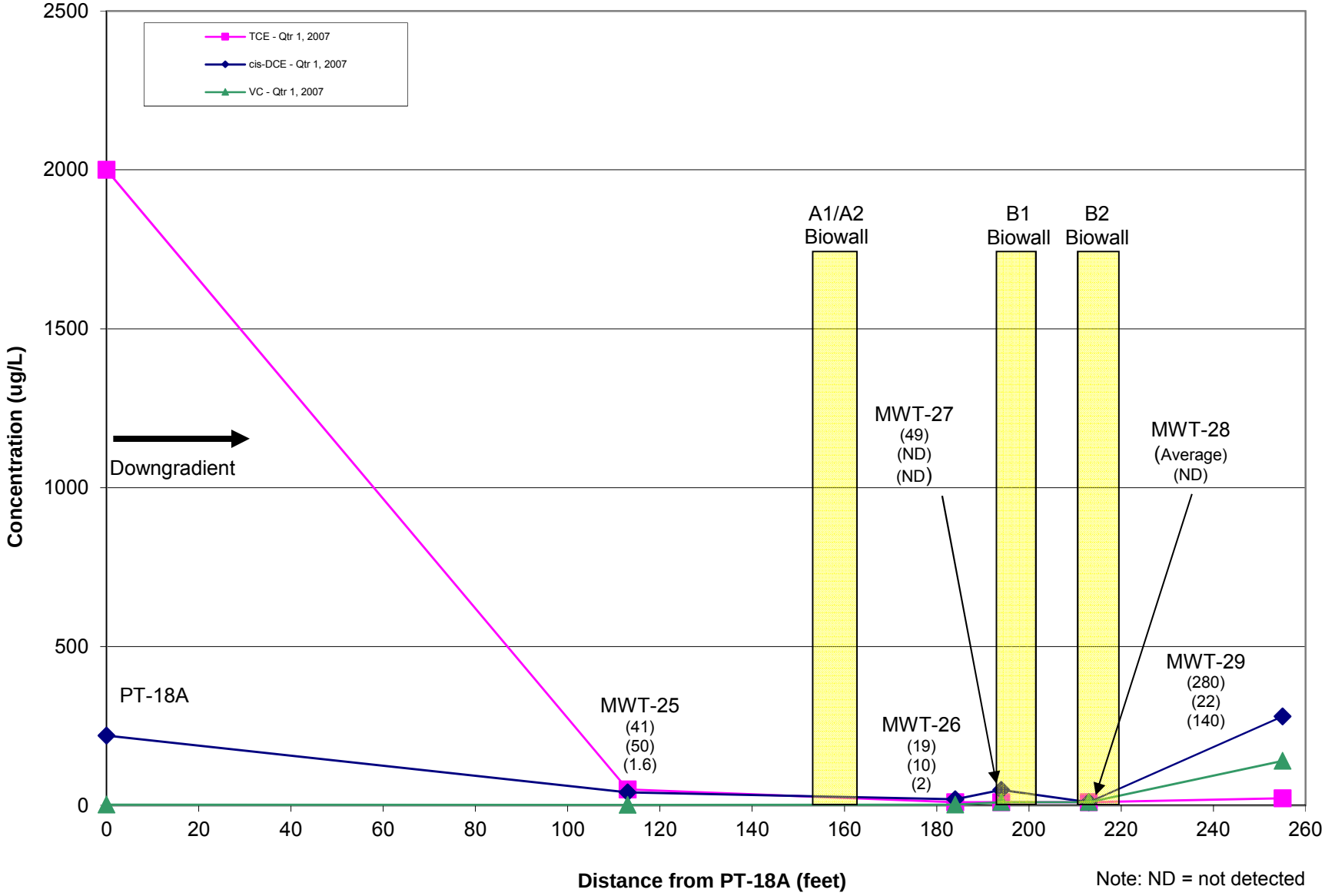


Figure 9B
Concentrations of VOCs Along the Biowalls - Quarter 2, 2007
Ash Landfill Annual Report
Seneca Army Depot Activity

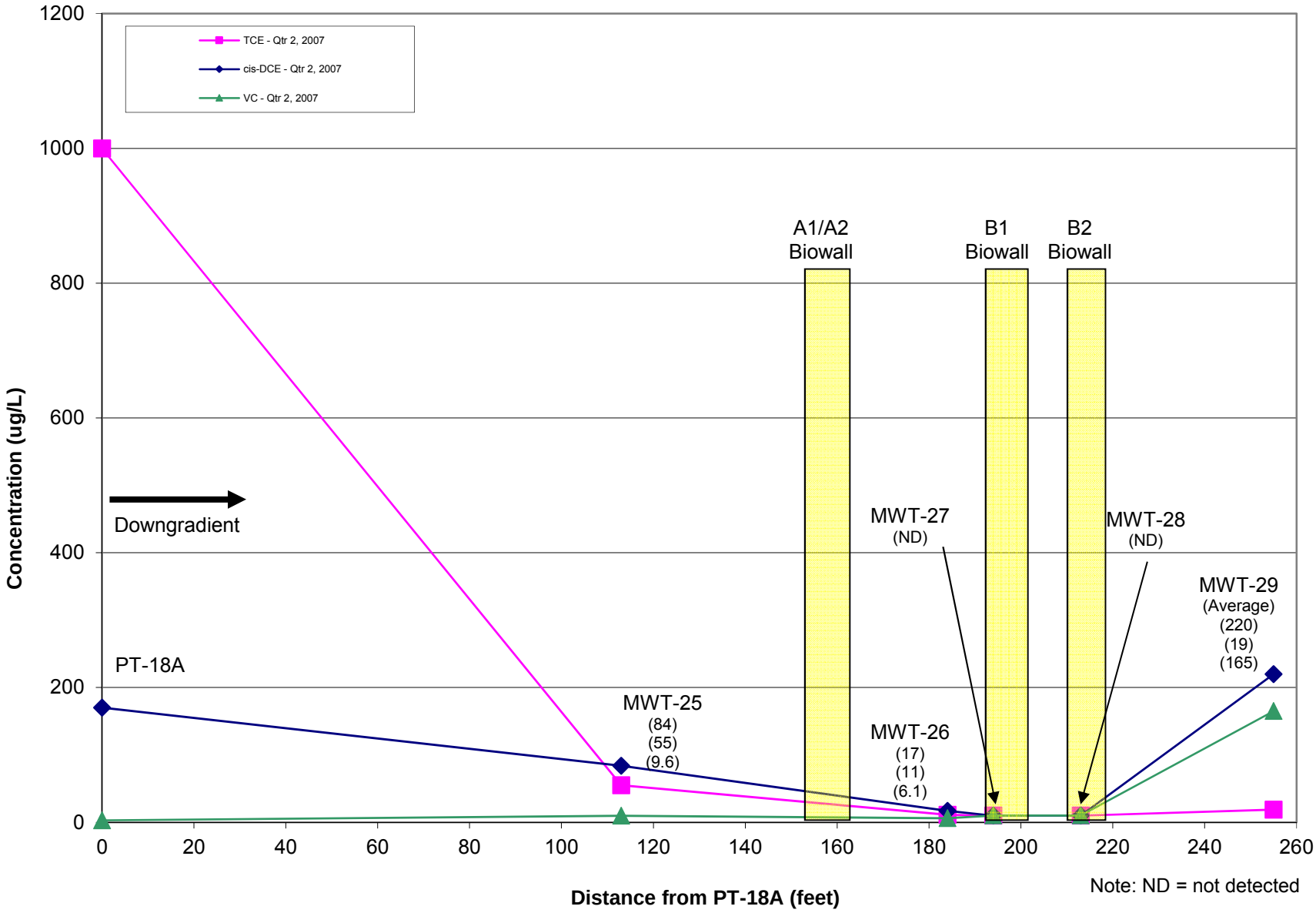


Figure 9C
Concentrations of VOCs Along the Biowalls - Quarter 3, 2007
Ash Landfill Annual Report
Seneca Army Depot Activity

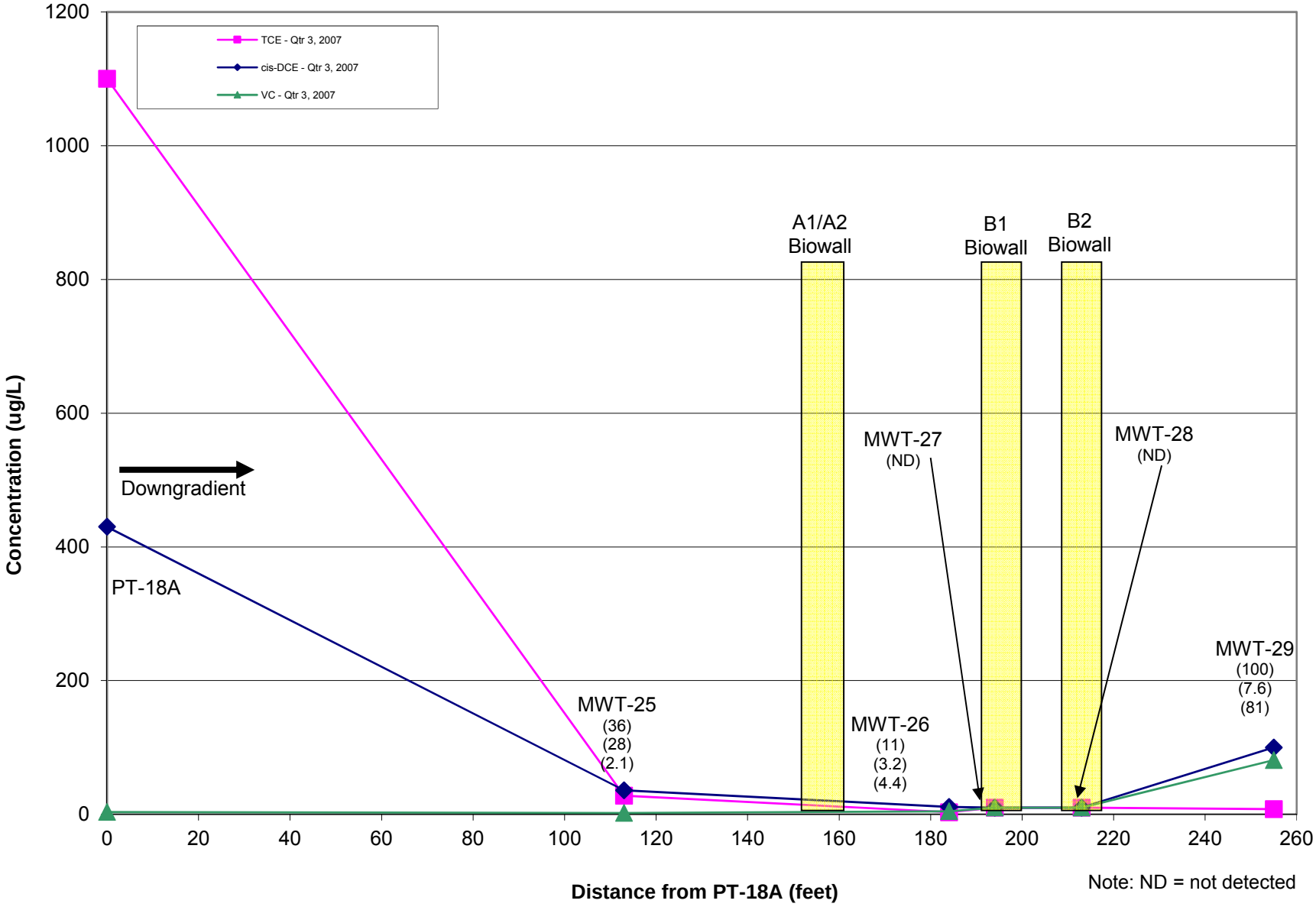


Figure 9D
Concentrations of VOCs Along the Biowalls - Quarter 4, 2007
Ash Landfill Annual Report
Seneca Army Depot Activity

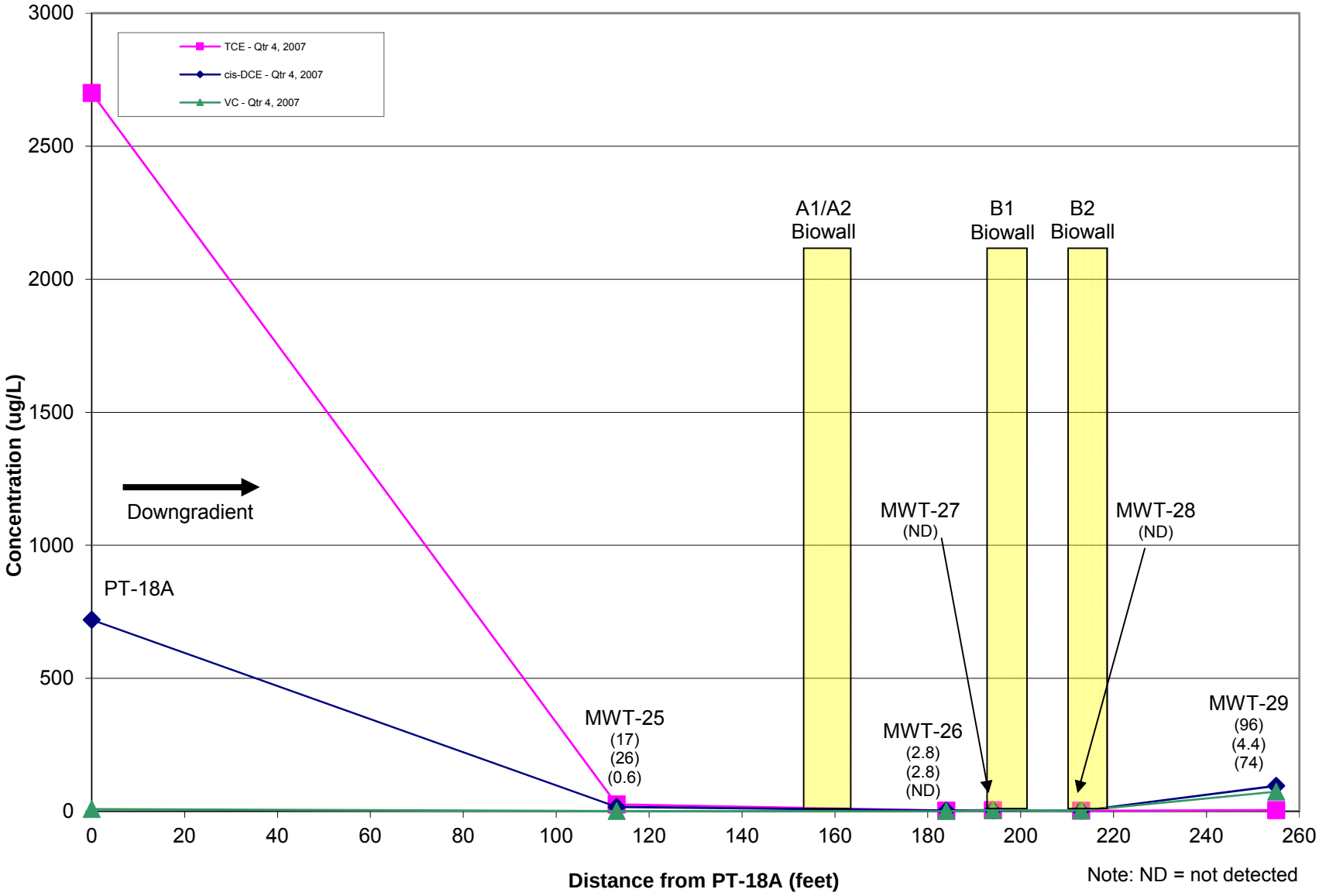


Figure 9E
Concentrations of VOCs Along the Biowalls - Round 5, 2008
Ash Landfill Annual Report
Seneca Army Depot Activity

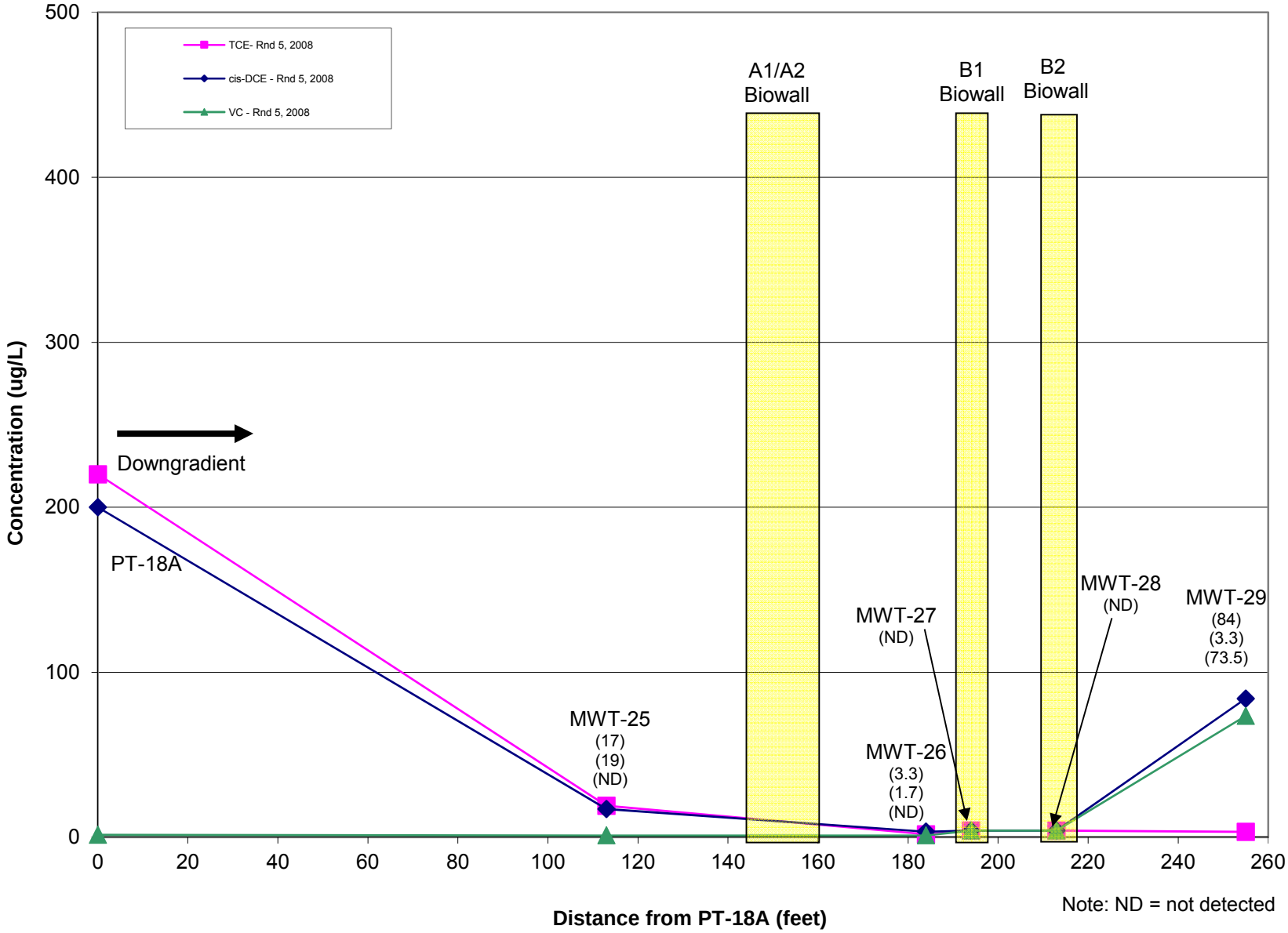


Figure 9F
Concentrations of VOCs Along the Biowalls - Round 6, 2008
Ash Landfill Annual Report
Seneca Army Depot Activity

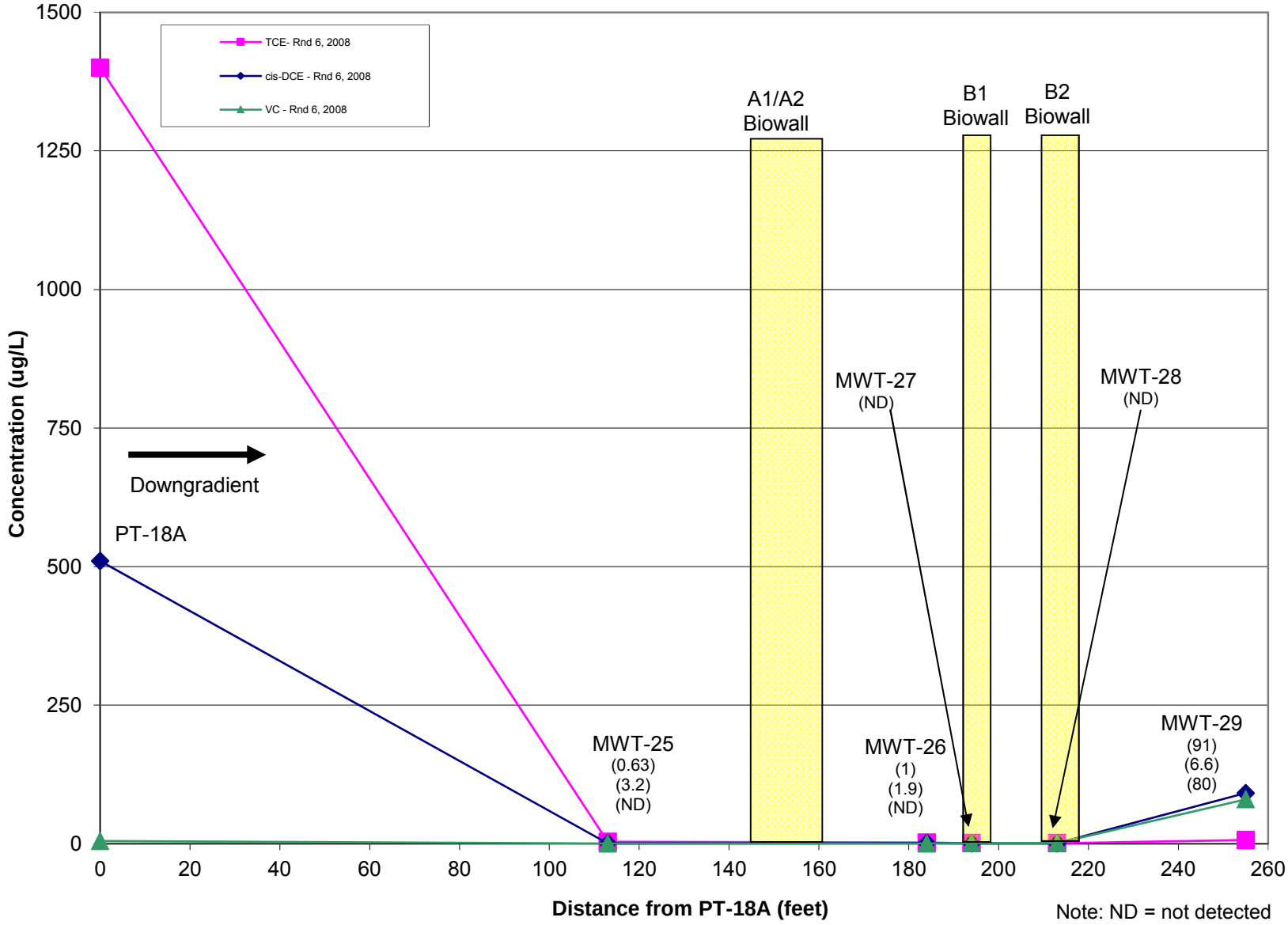


Figure 9G
Concentrations of VOCs Along the Biowalls - Round 7, 2009
Ash Landfill Annual Report
Seneca Army Depot Activity

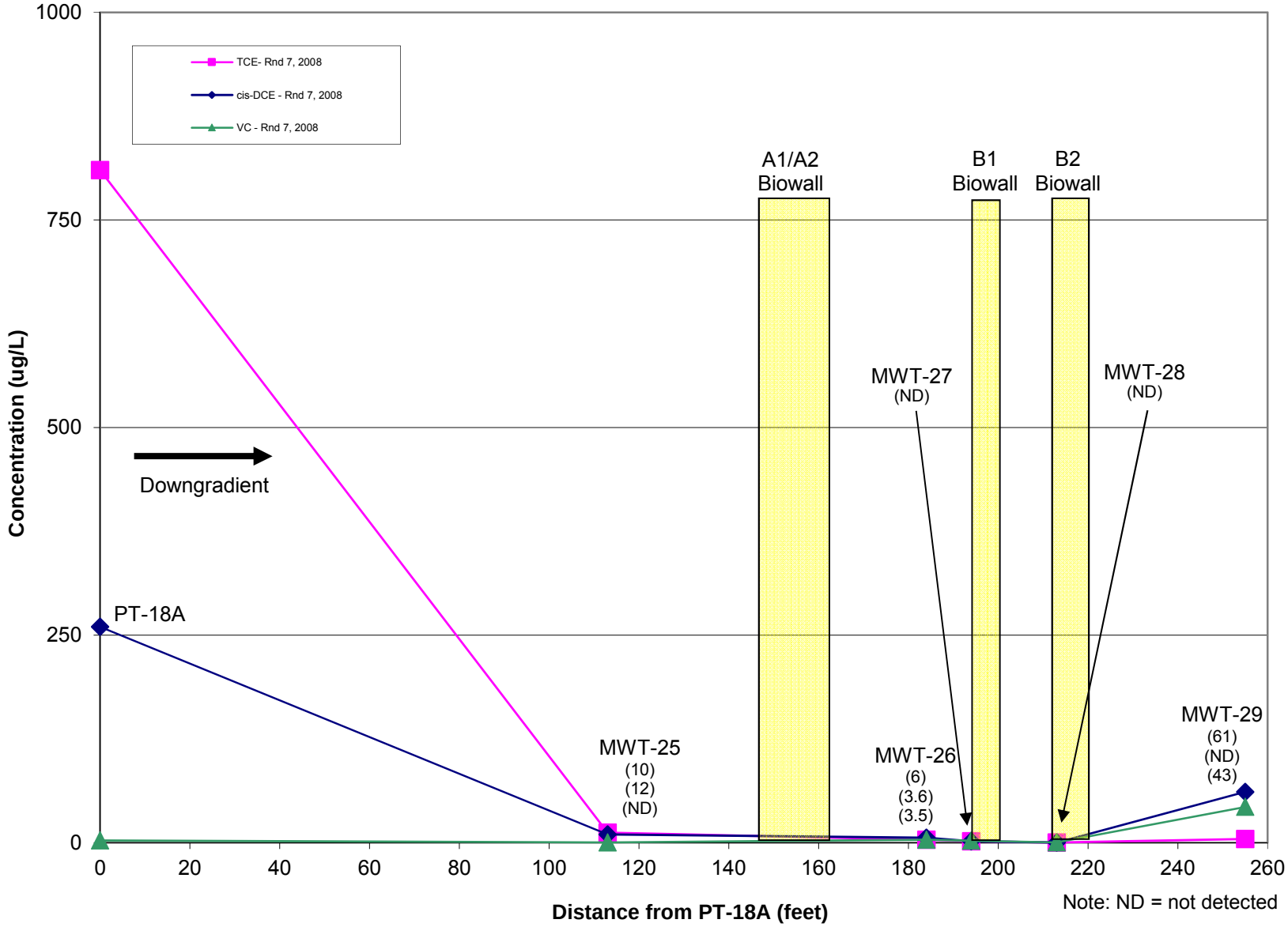


Figure 9H
Concentrations of VOCs Along the Biowalls - Round 8, 2009
Ash Landfill Annual Report
Seneca Army Depot Activity

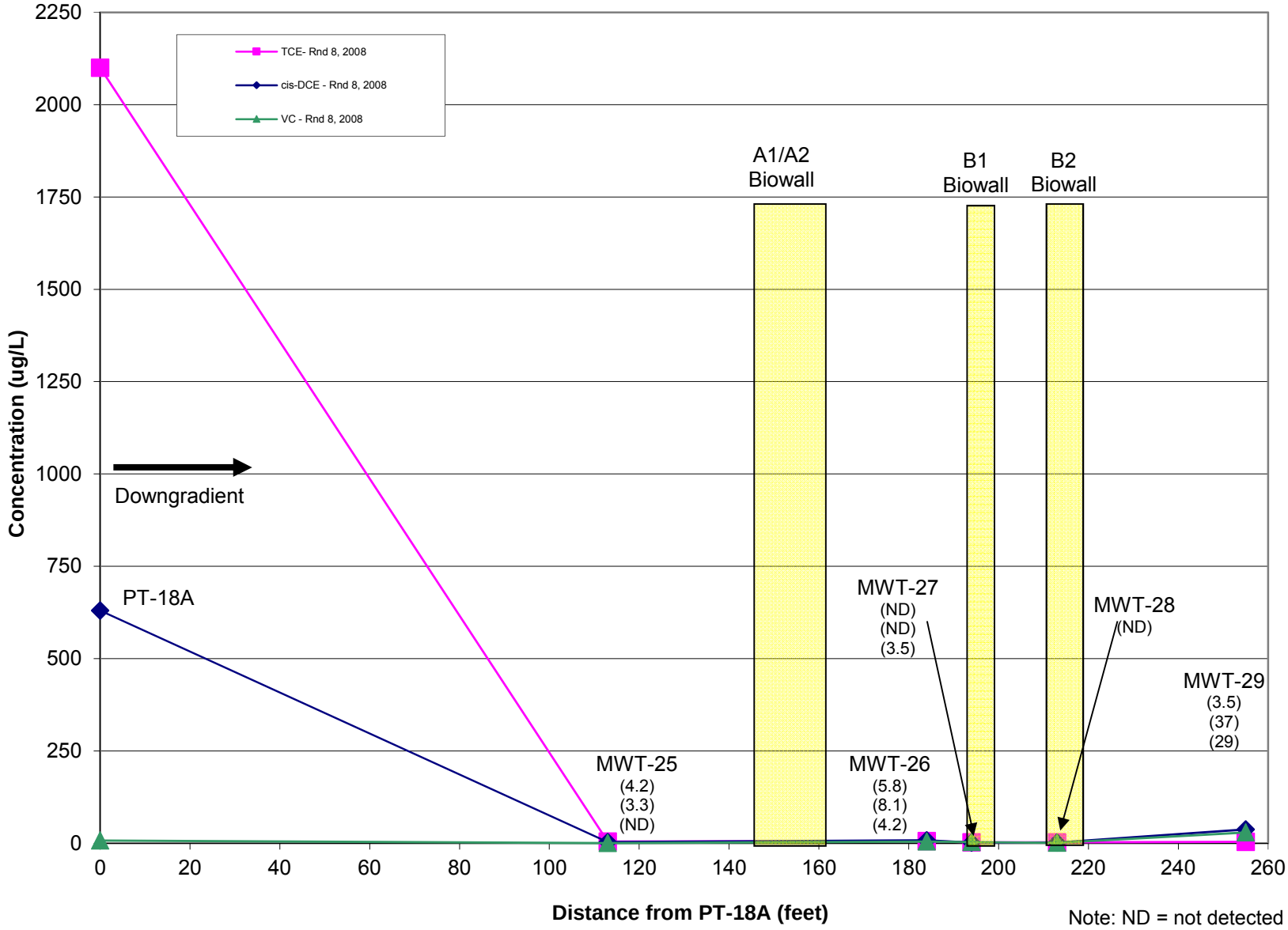
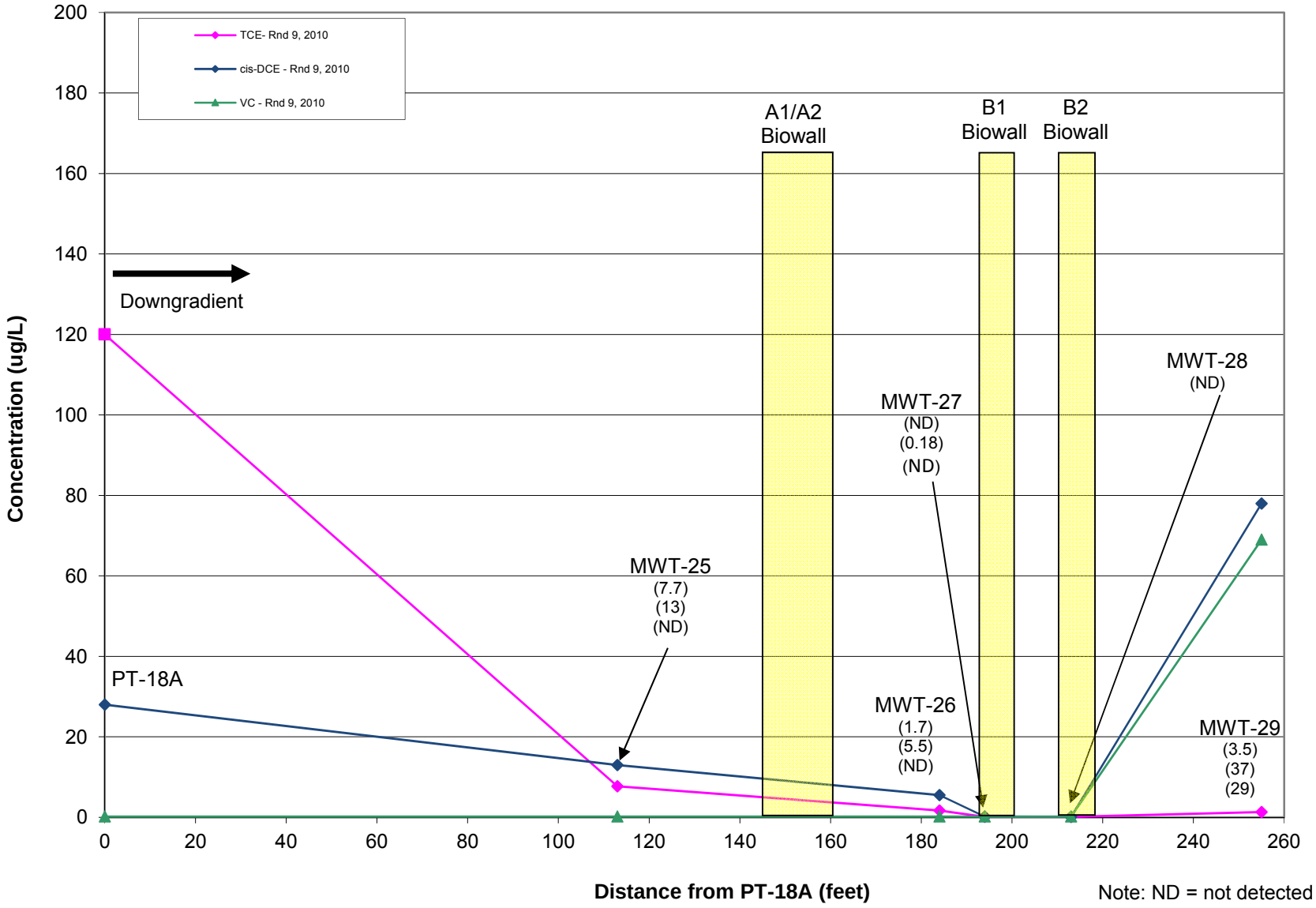


Figure 9I
Concentrations of VOCs Along the Biowalls - Round 9, 2010
Ash Landfill Annual Report
Seneca Army Depot Activity



Note: ND = not detected

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

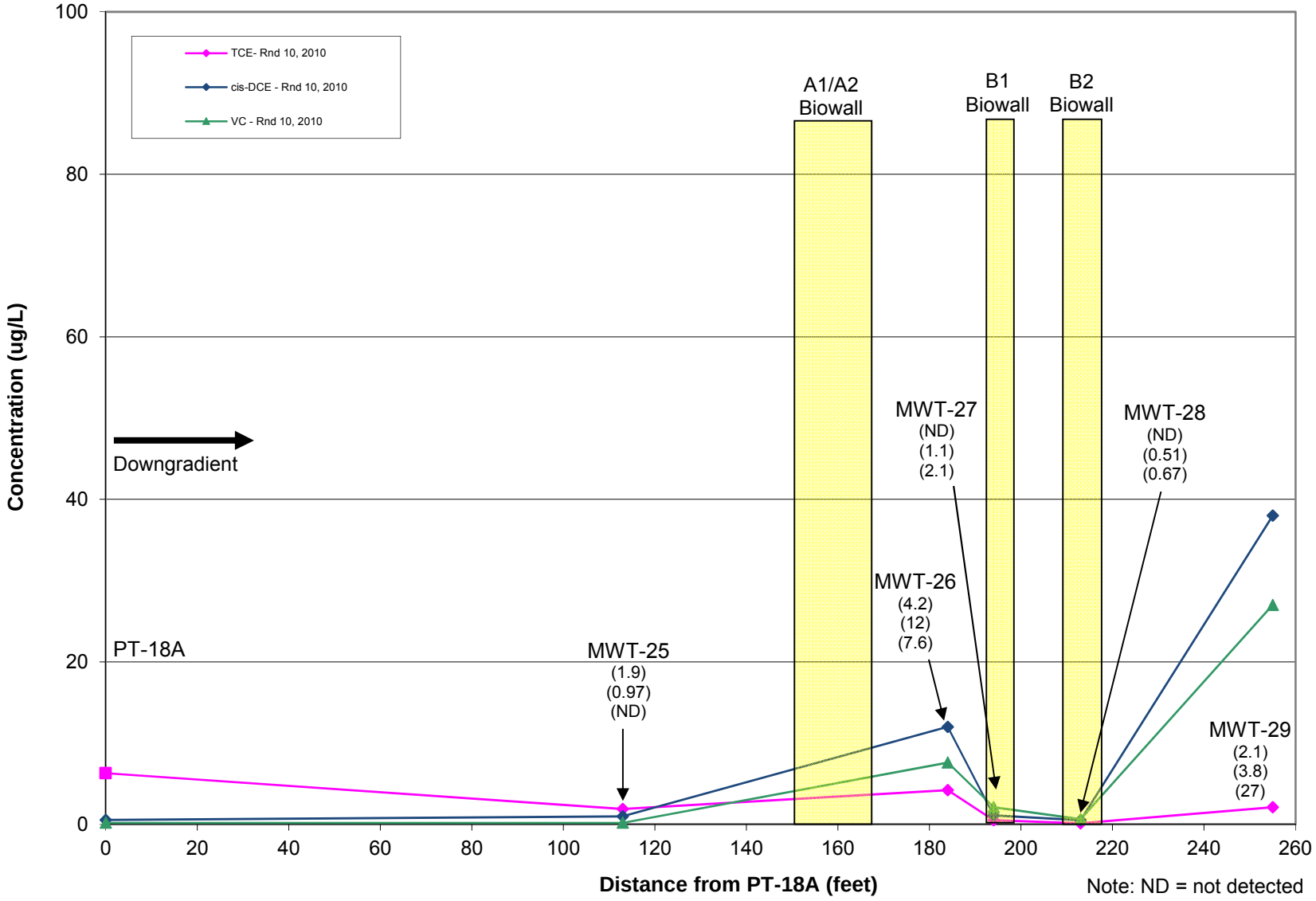
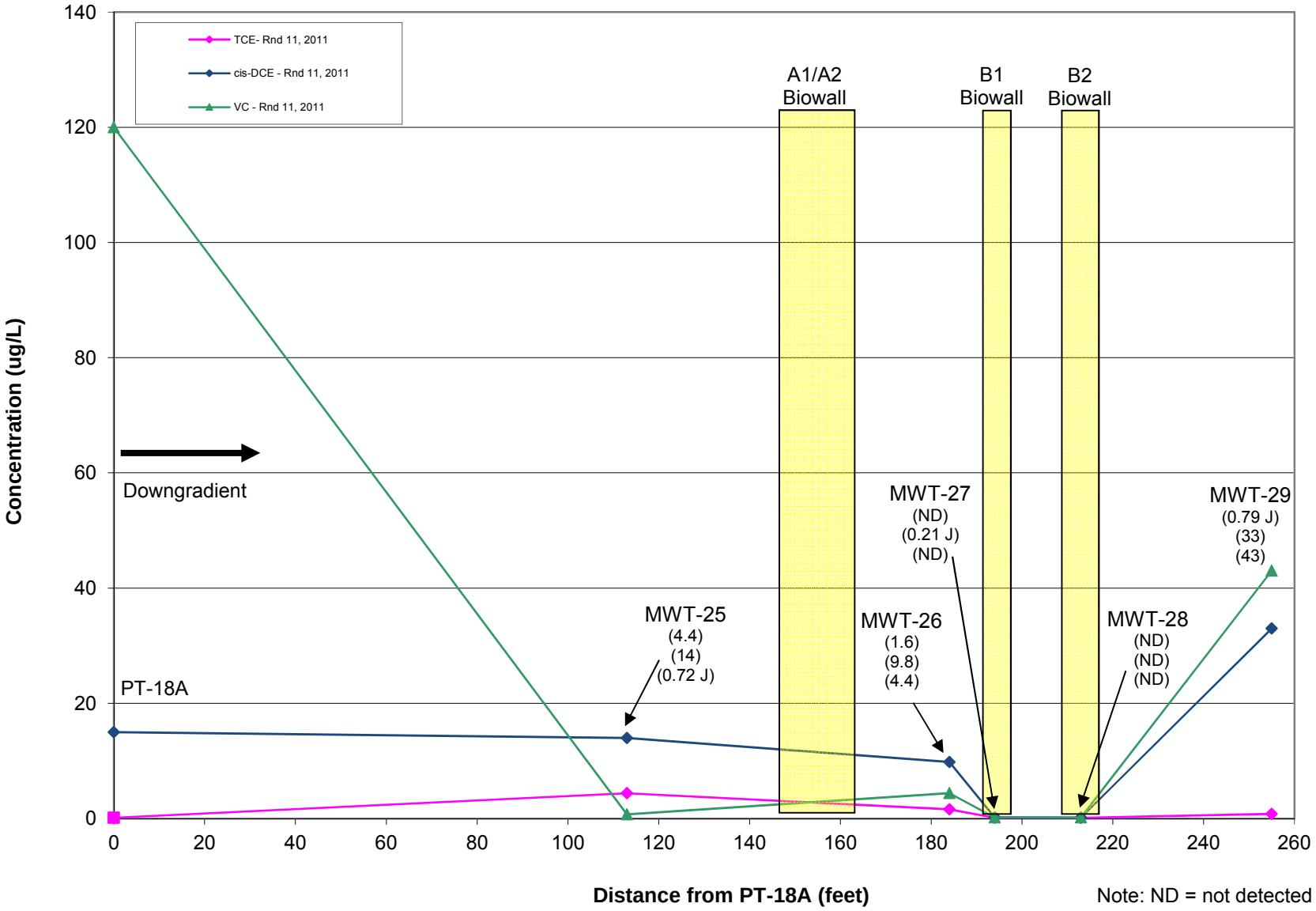


Figure 9K
Concentrations of VOCs Along the Biowalls - Round 11, 2011
Ash Landfill Annual Report
Seneca Army Depot Activity



Note: ND = not detected

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

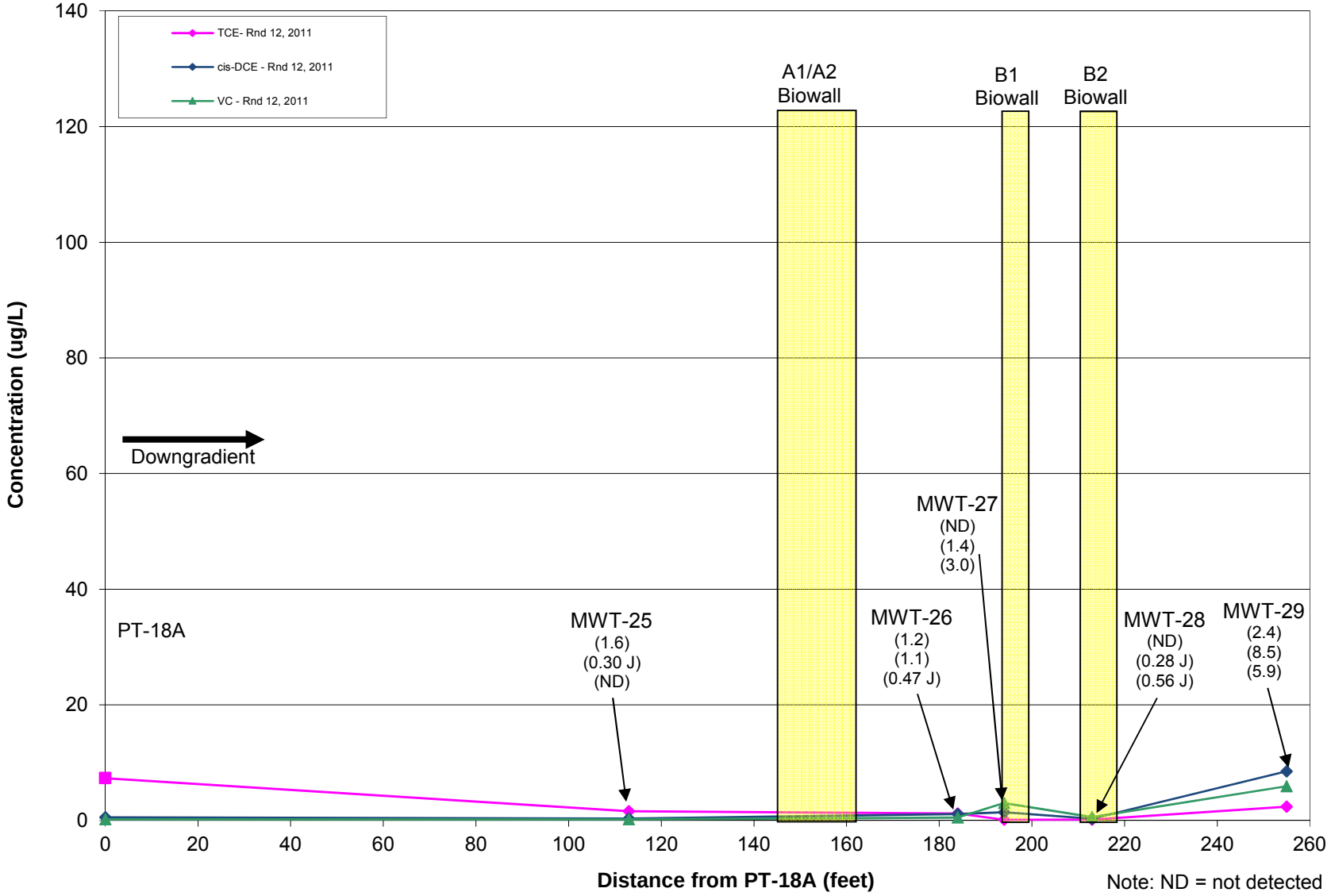


Figure 9M
Concentrations of VOCs Along the Biowalls - Round 13, 2012
Ash Landfill Annual Report
Seneca Army Depot Activity

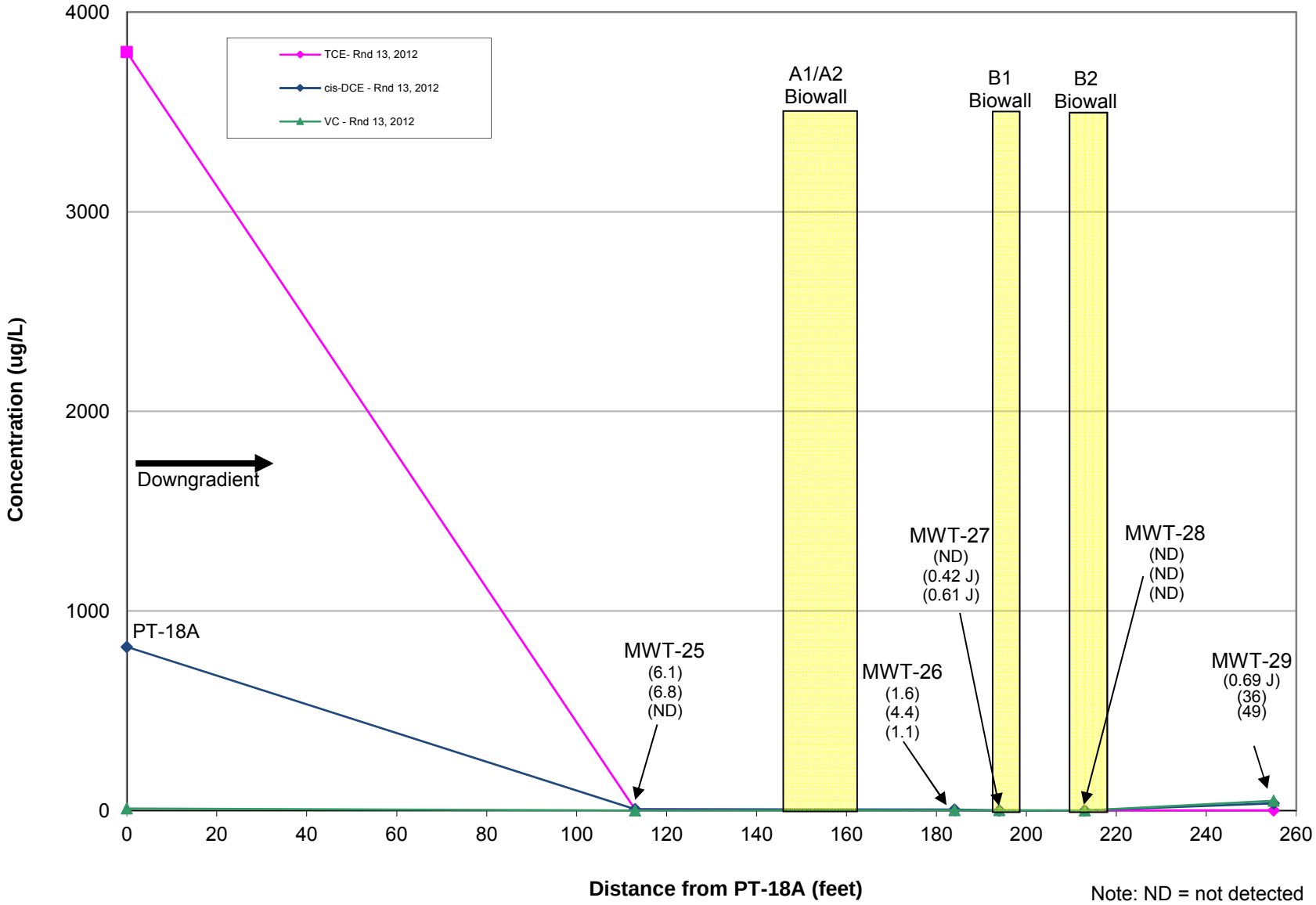
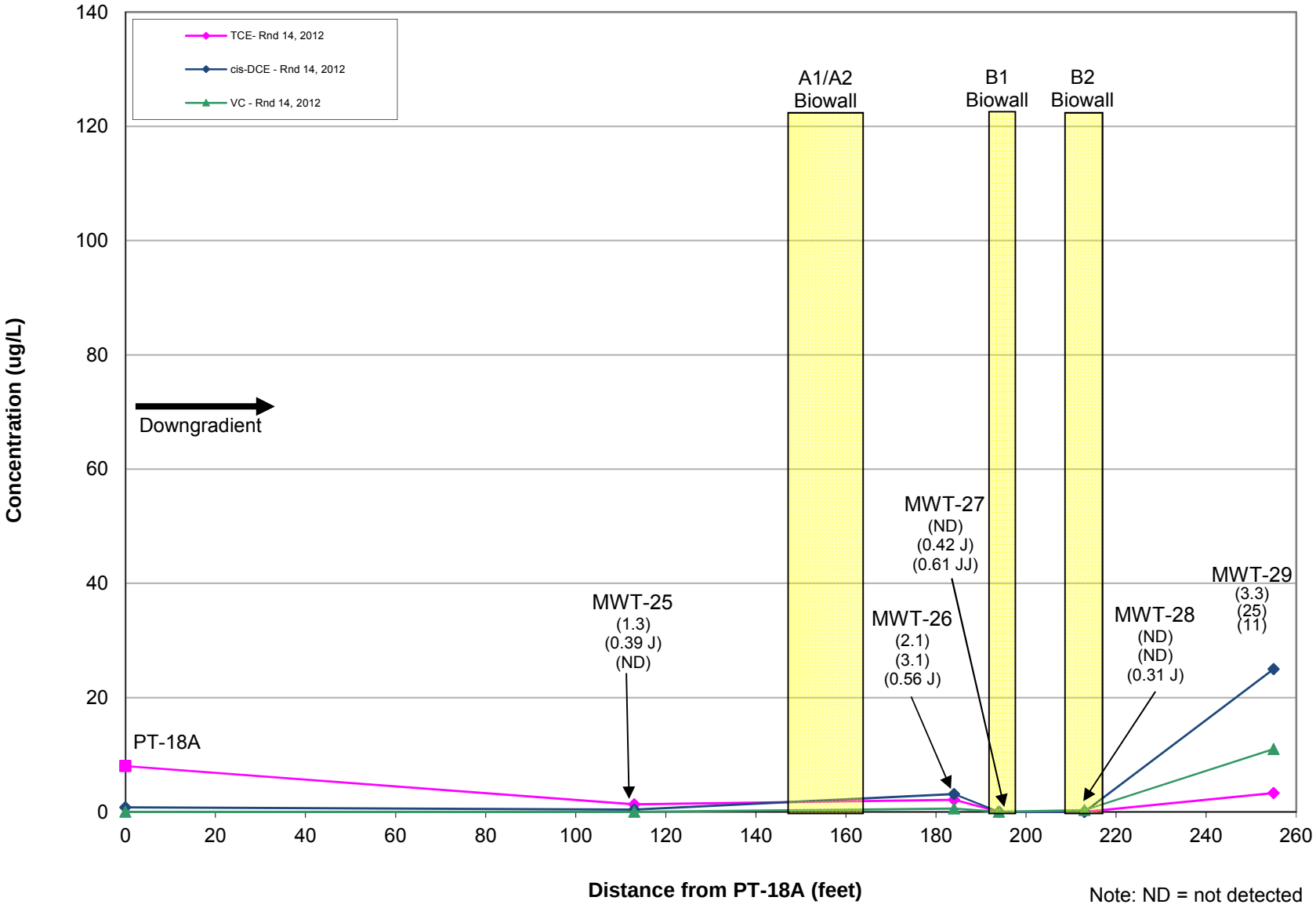


Figure 9N
Concentrations of VOCs Along the Biowalls - Round 14, 2012
Ash Landfill Annual Report
Seneca Army Depot Activity



Note: ND = not detected

Figure 9O
Concentrations of VOCs Along the Biowalls - Round 15, 2013
Ash Landfill Annual Report
Seneca Army Depot Activity

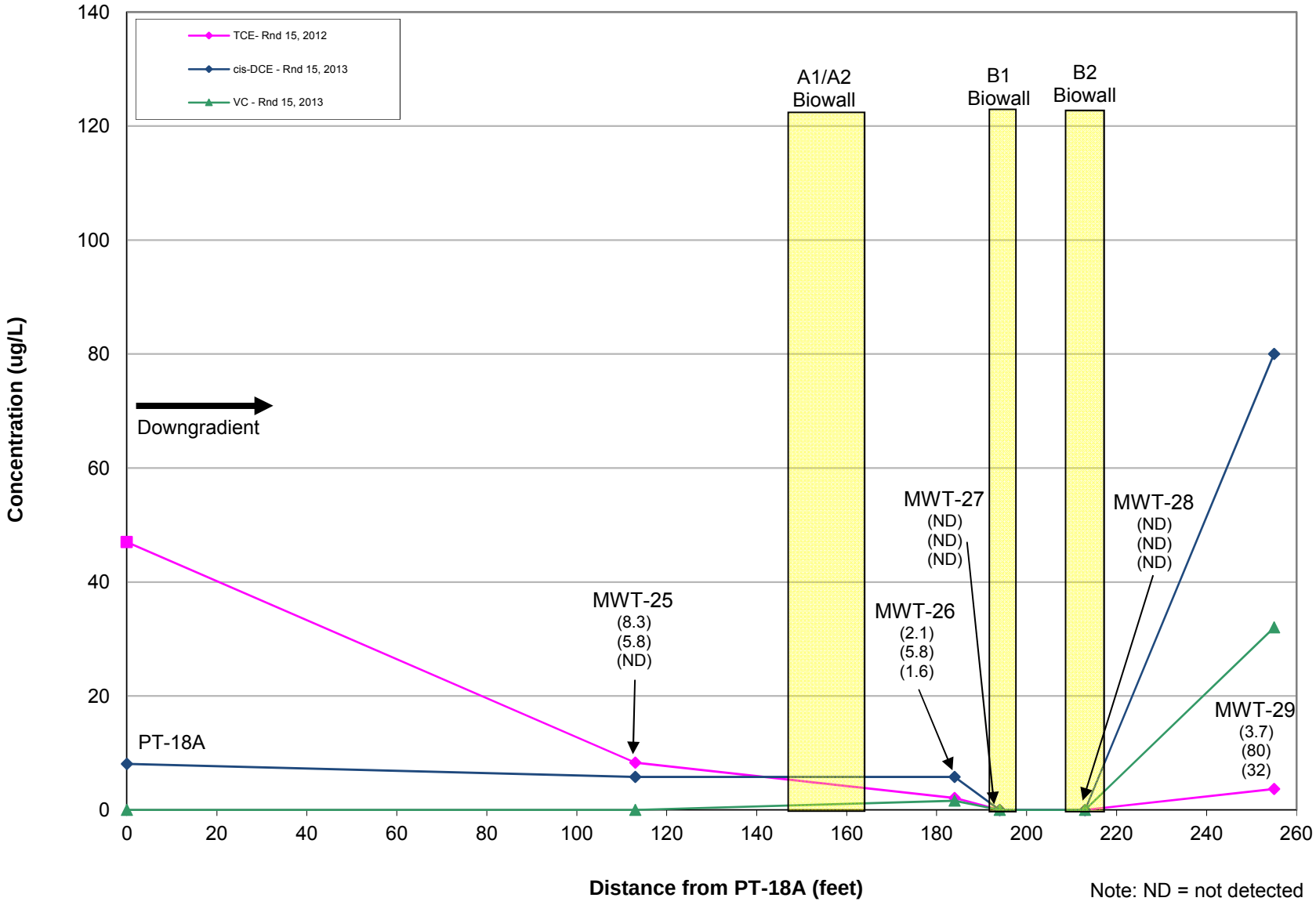
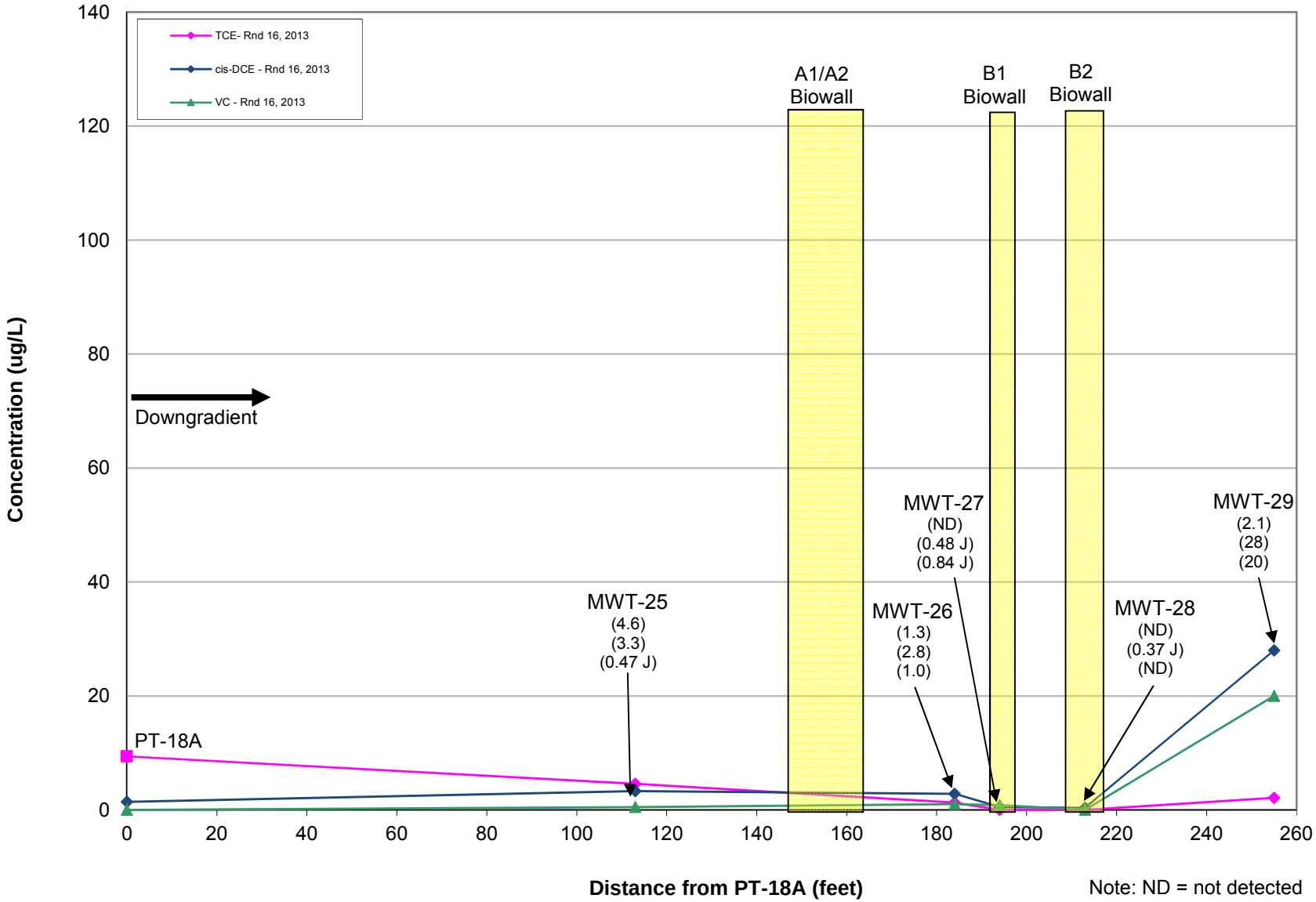
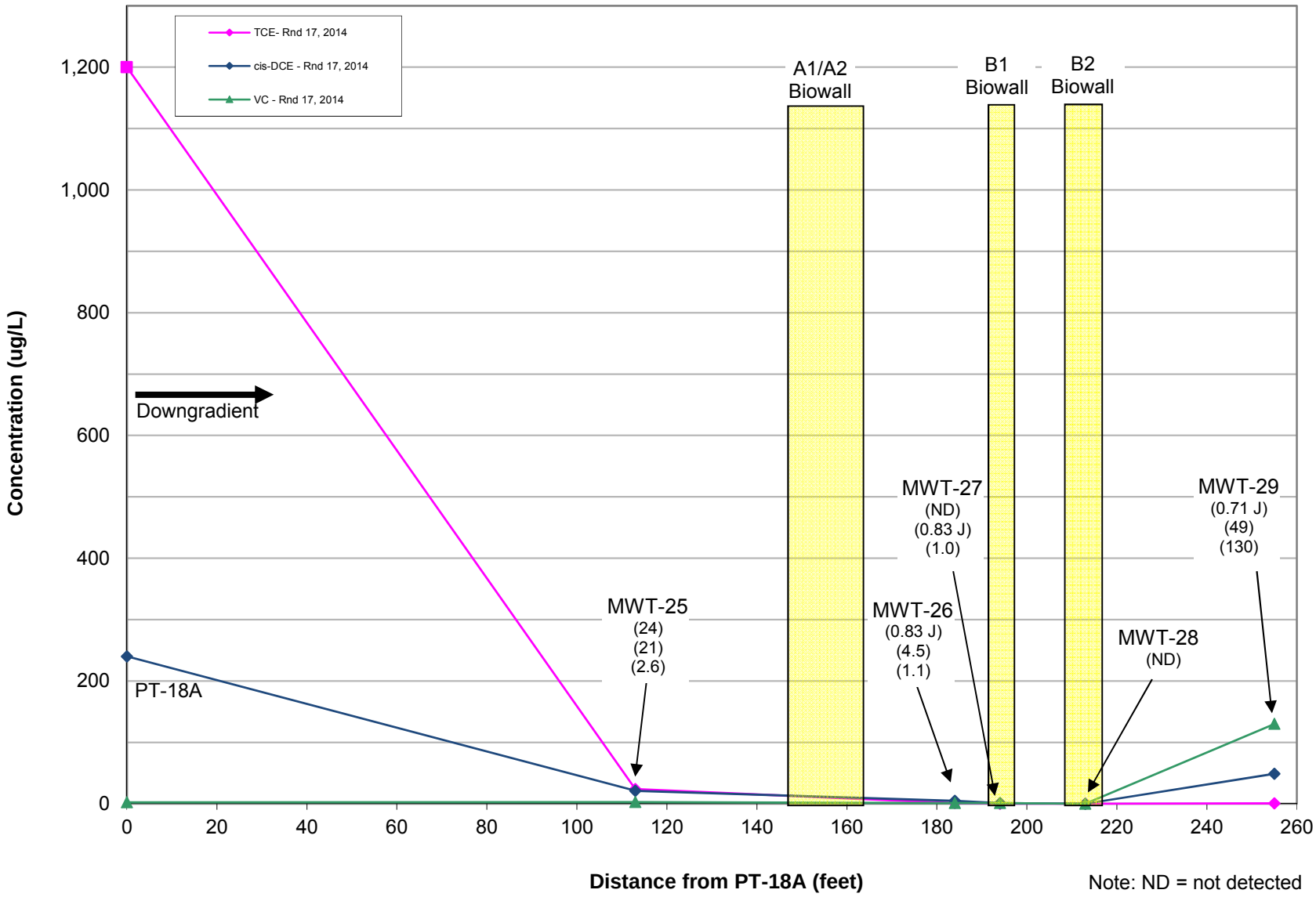


Figure 9P
Concentrations of VOCs Along the Biowalls - Round 16, 2013
Ash Landfill Annual Report
Seneca Army Depot Activity



Note: ND = not detected

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



Note: ND = not detected

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

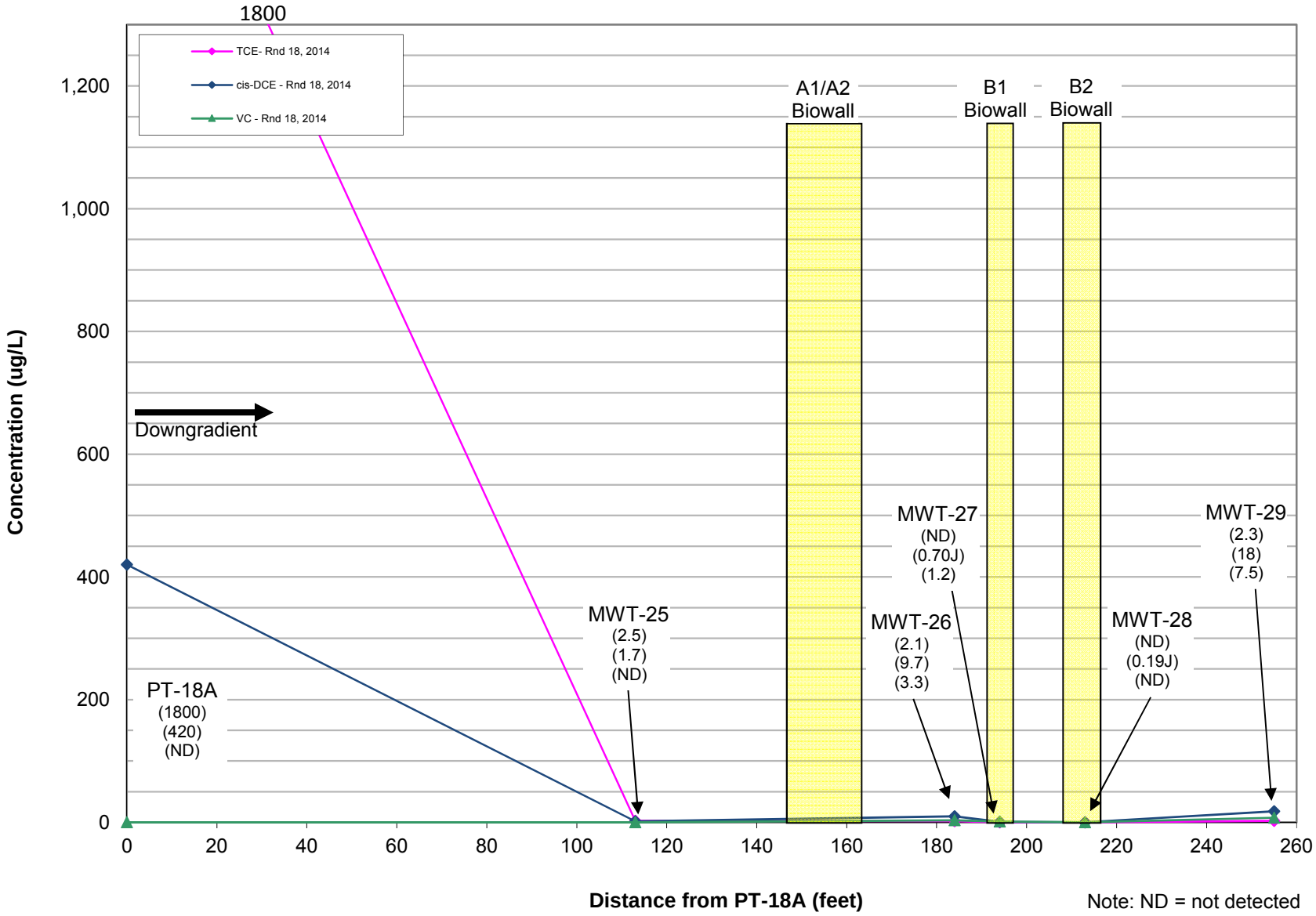


Figure 9S
Concentrations of VOCs Along the Biowalls - Round 19, 2015
Ash Landfill Annual Report
Seneca Army Depot Activity

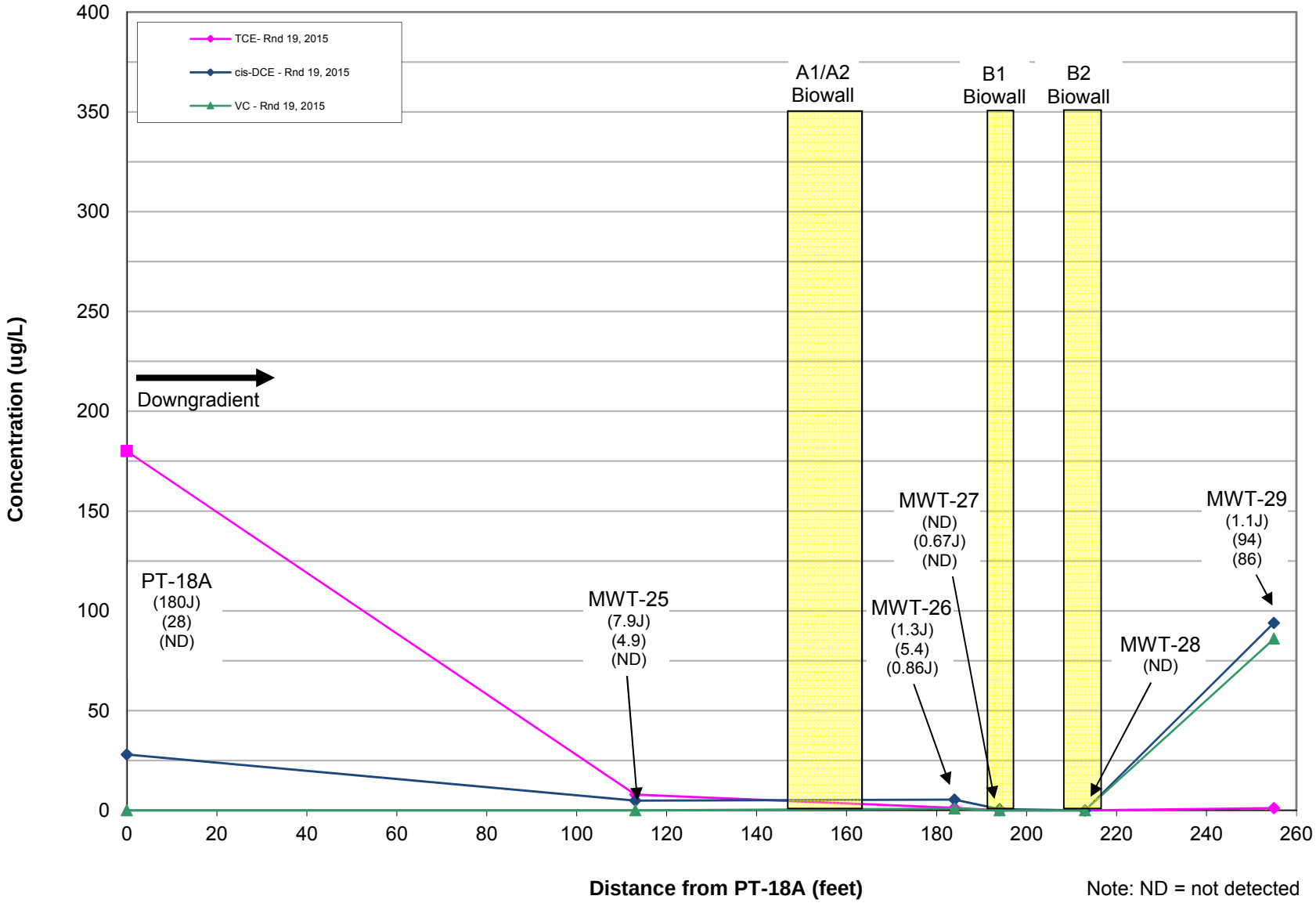


Figure 9T
Concentrations of VOCs Along the Biowalls - Round 20, 2015
Ash Landfill Annual Report
Seneca Army Depot Activity

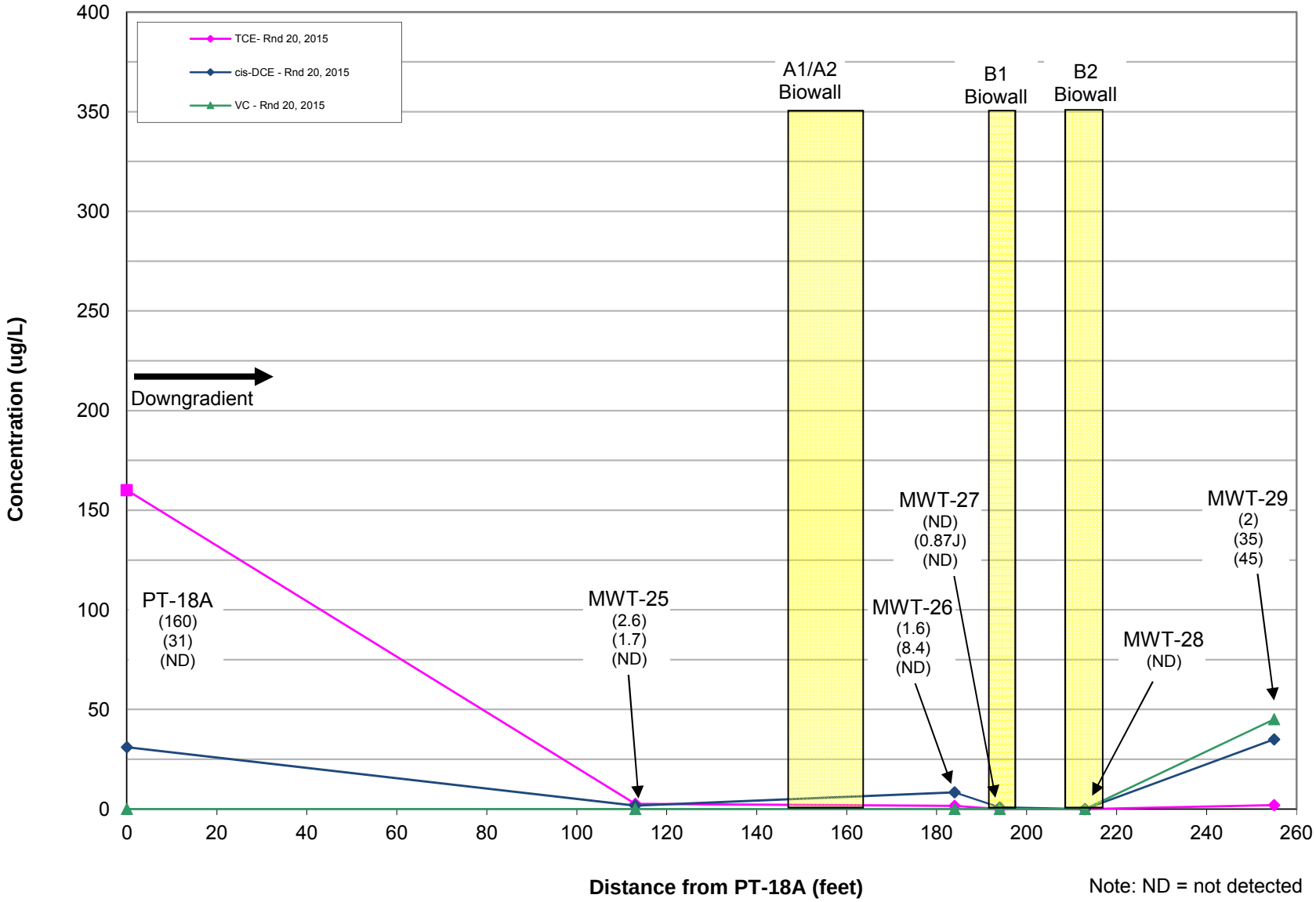
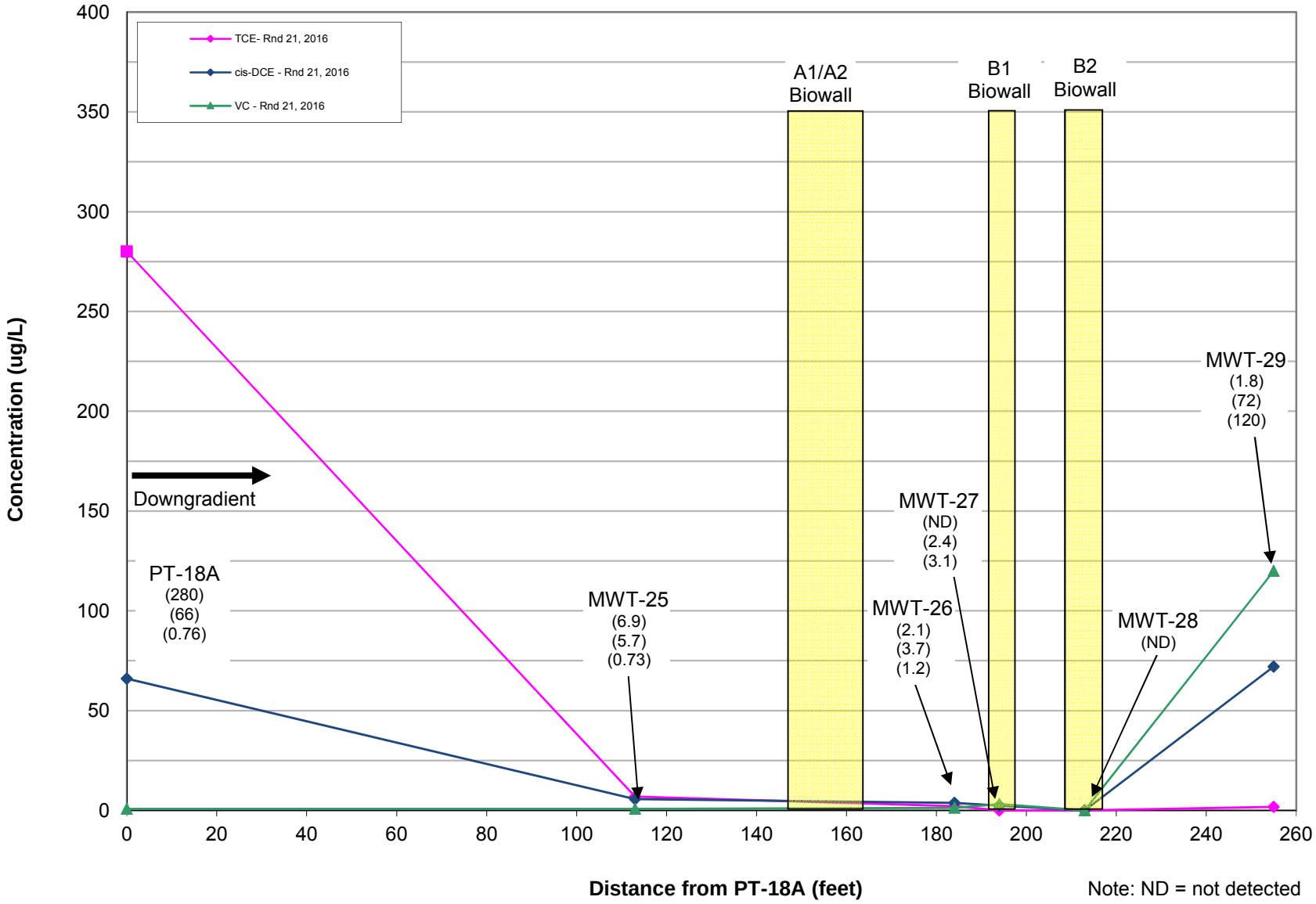


Figure 9U
Concentrations of VOCs Along the Biowalls - Round 21, 2016
Ash Landfill Annual Report
Seneca Army Depot Activity



Note: ND = not detected

Figure 9V
Concentrations of VOCs Along the Biowalls - Round 22, 2016
Ash Landfill Annual Report
Seneca Army Depot Activity

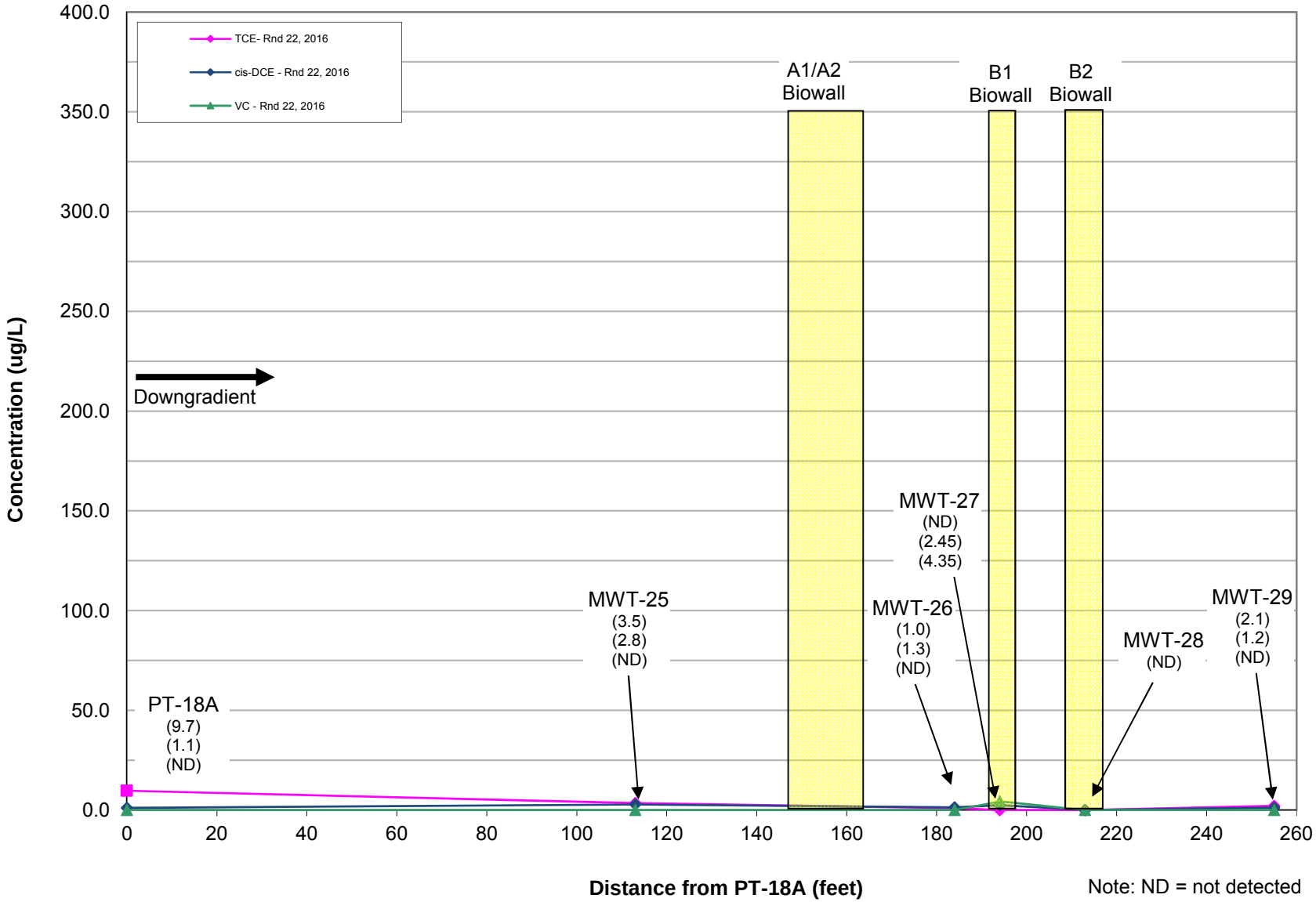
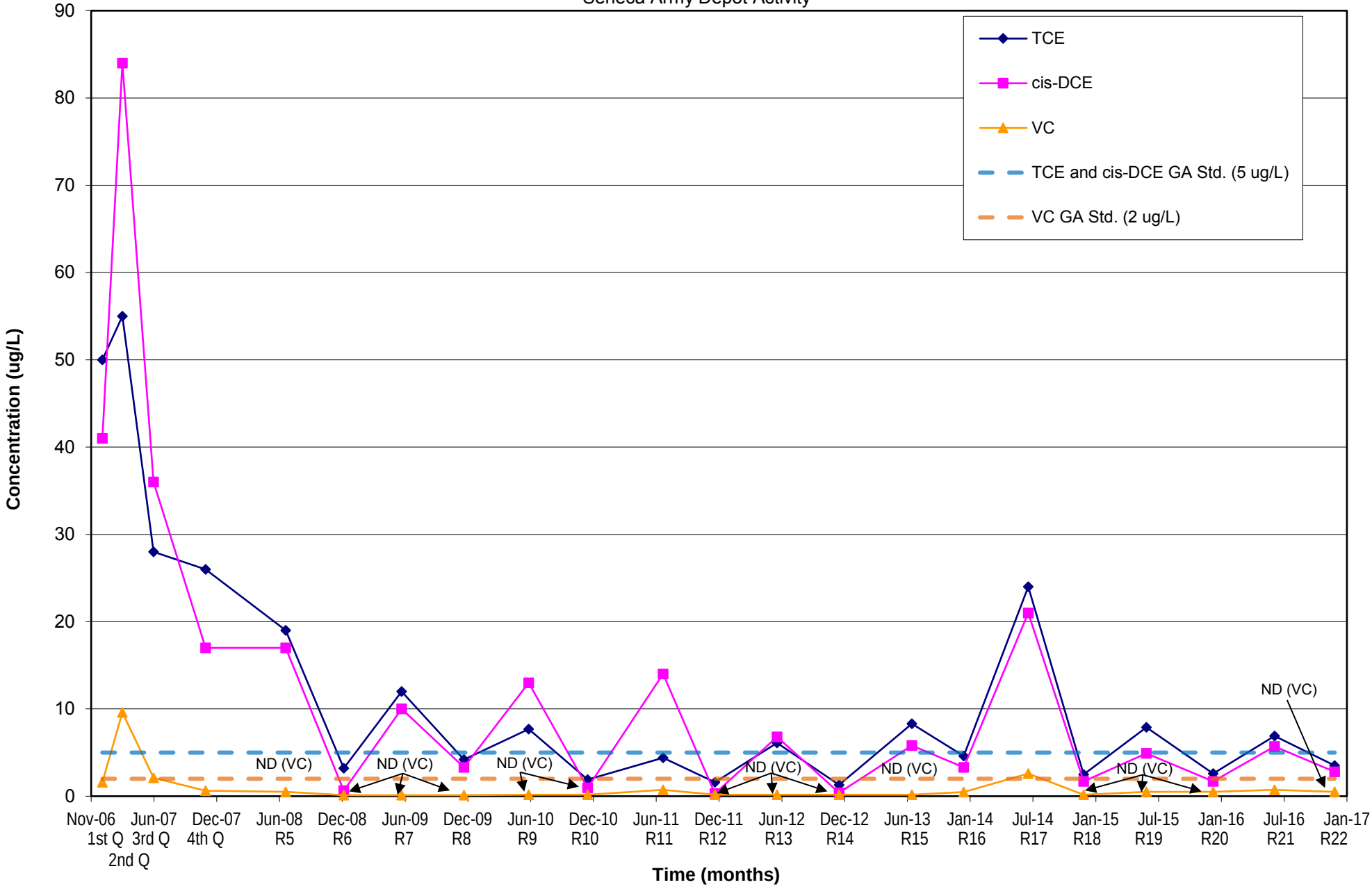
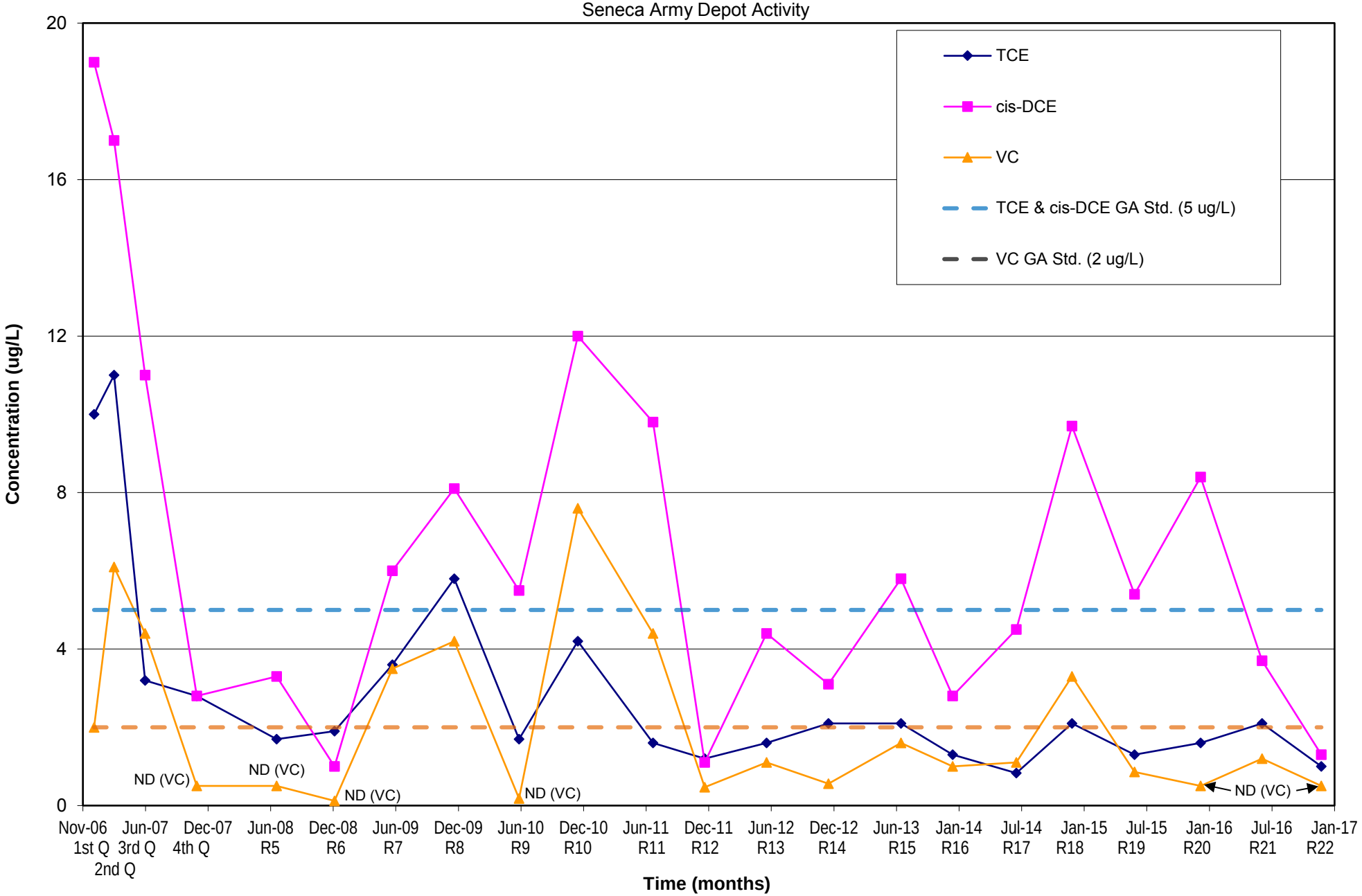


Figure 10A
Concentrations of Chlorinated Organics Over Time at MWT-25
Ash Landfill Annual Report
Seneca Army Depot Activity



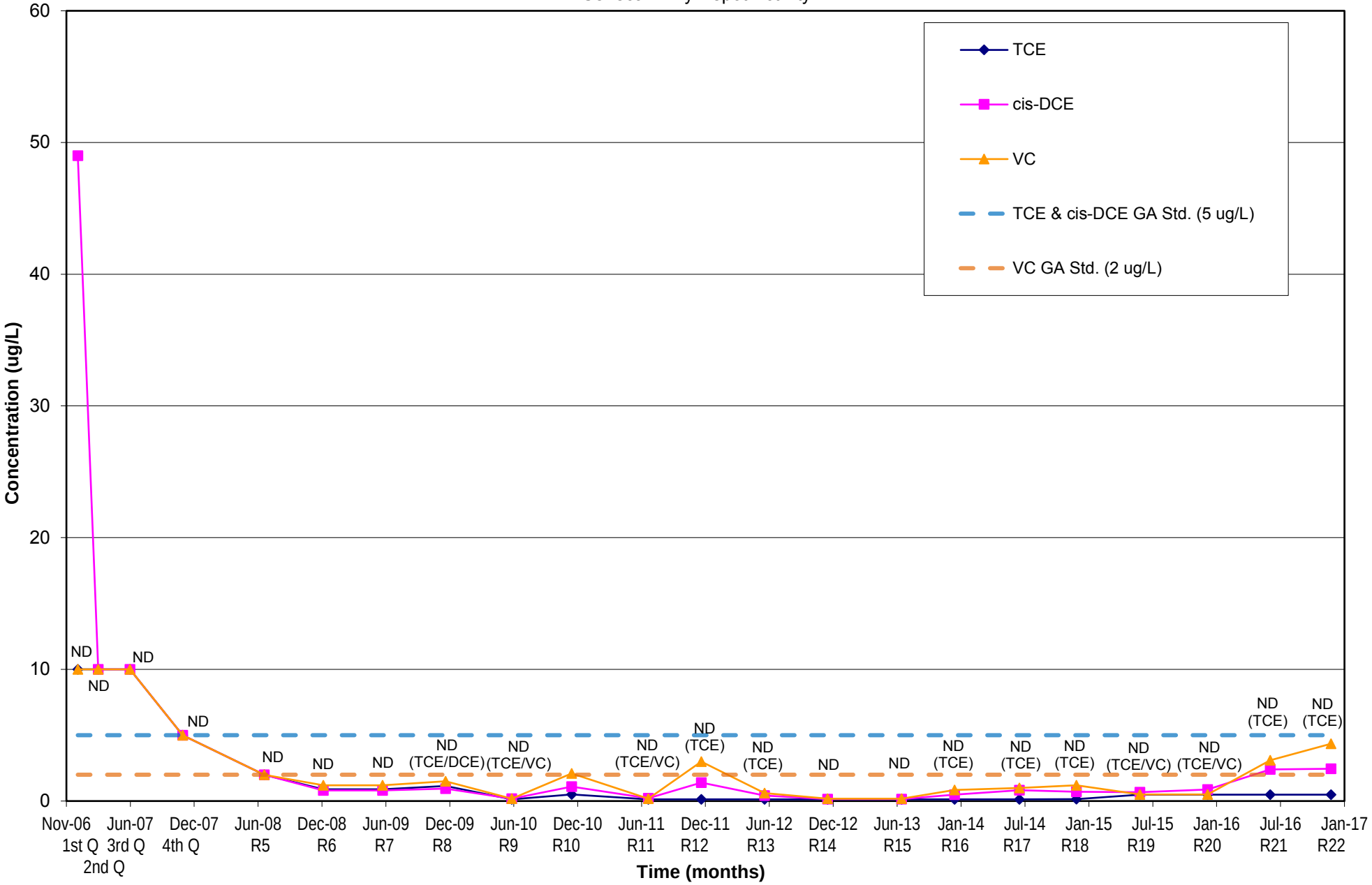
ND = not detected.

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, Round 18, Round 21, and Round 22 data is the average of the sample and its duplicate.
ND = not detected.

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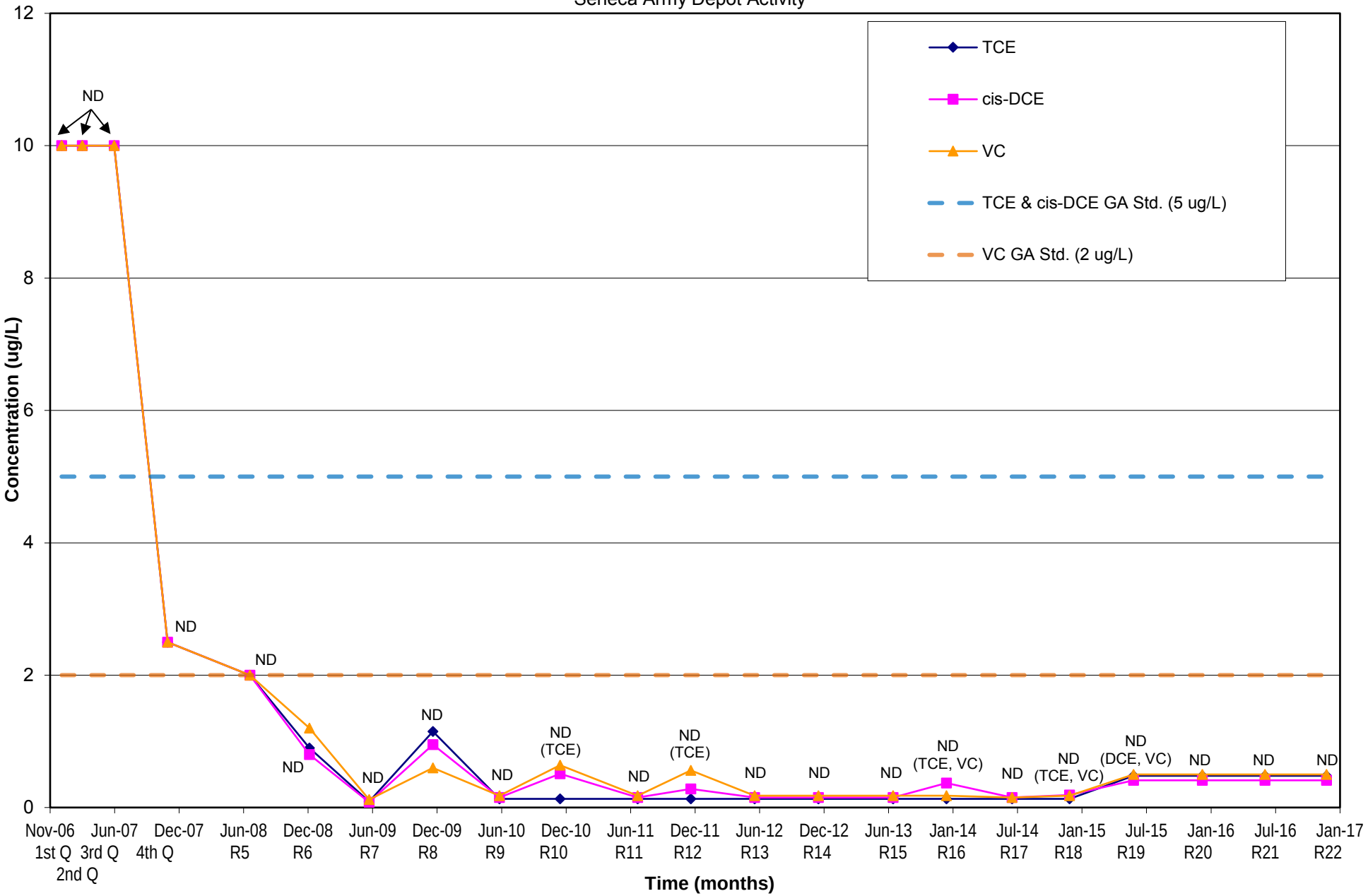
Figure 10D
Concentrations of Chlorinated Organics Over Time at MWT-28
Ash Landfill Annual Report
Seneca Army Depot Activity



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.

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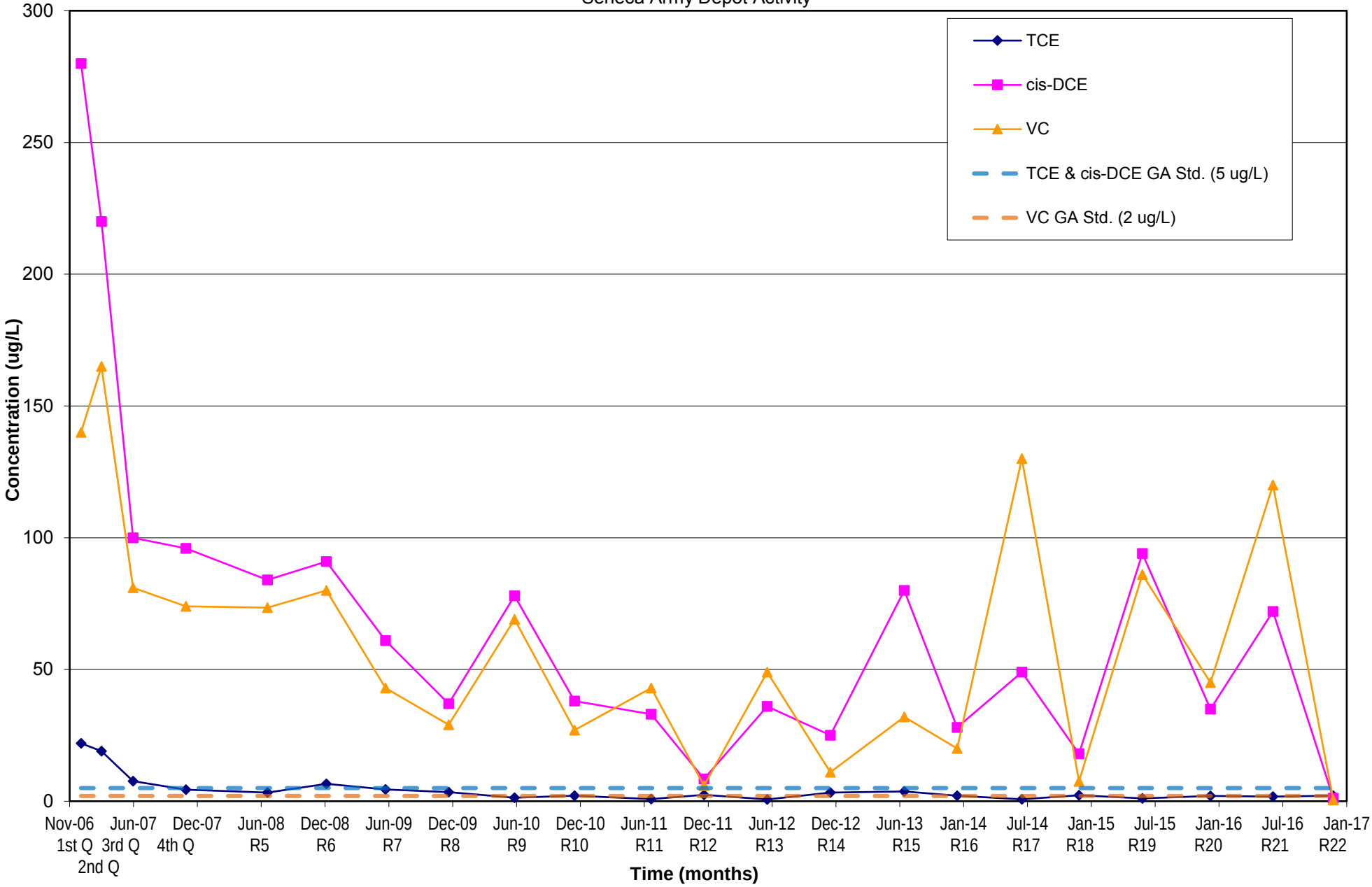
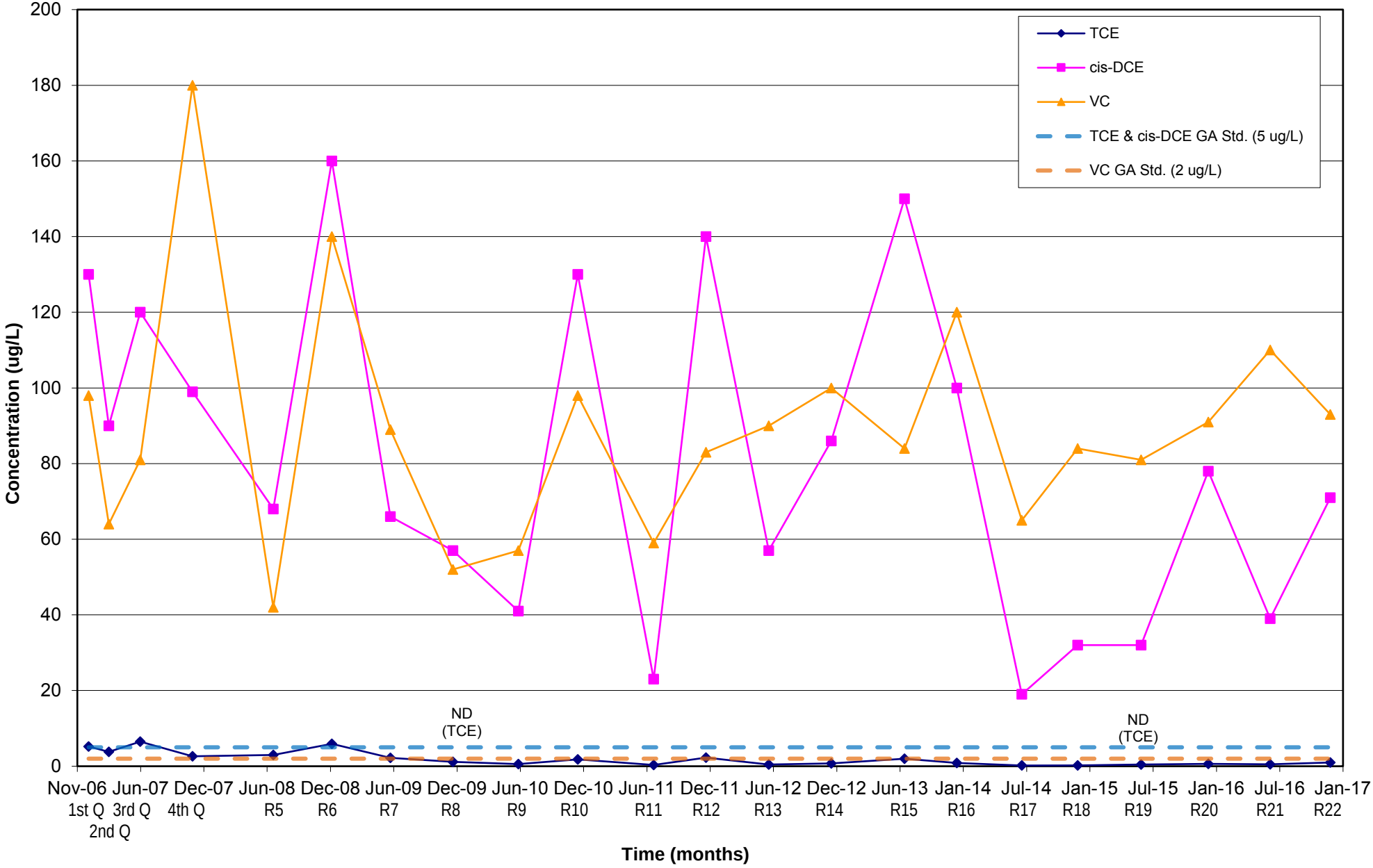
Figure 10E
Concentrations of Chlorinated Organics Over Time at MWT-29
Ash Landfill Annual Report
Seneca Army Depot Activity



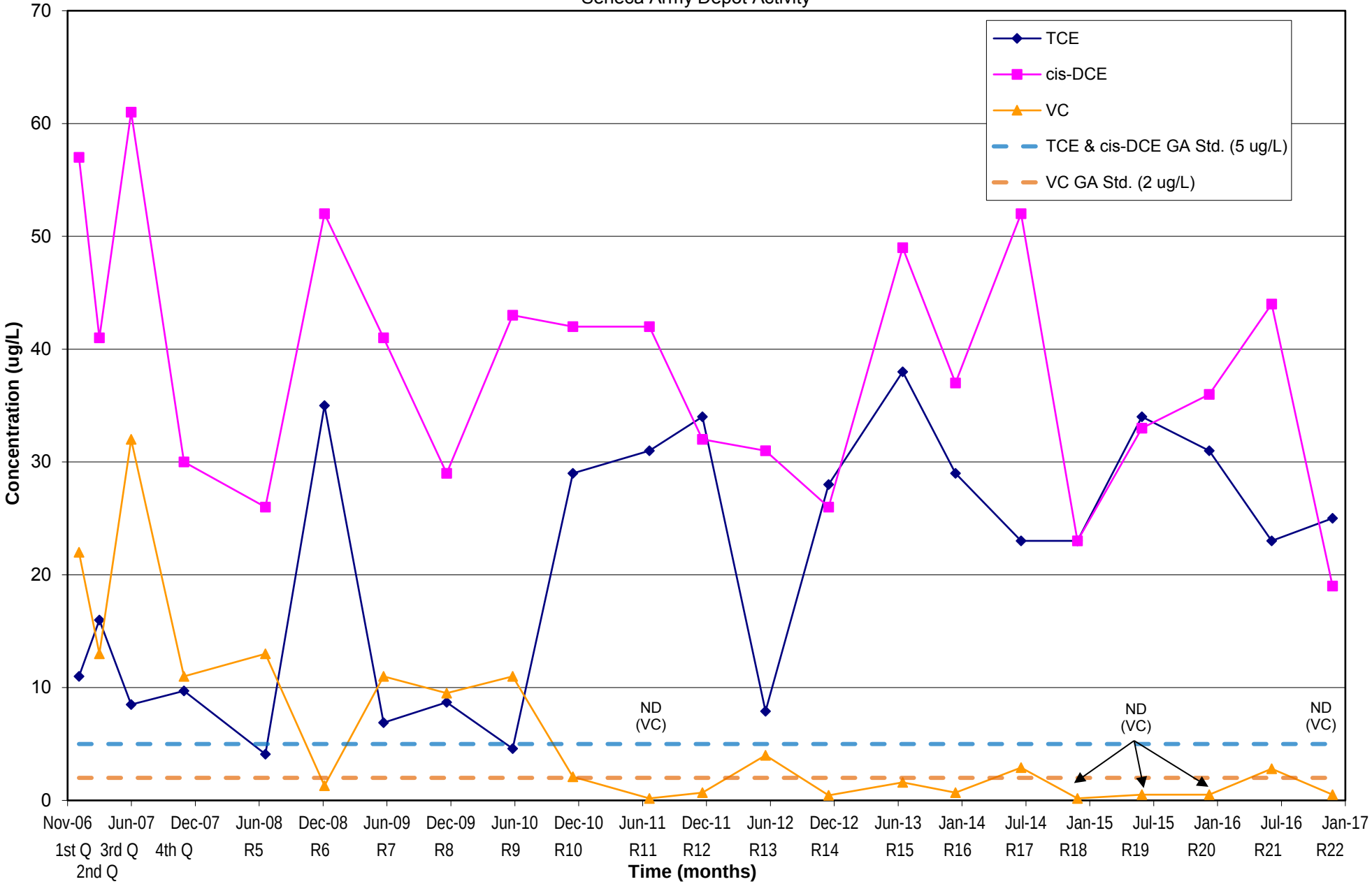
Round 2 and Round 5 data is the average of the sample and its duplicate.
ND = not detected.

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



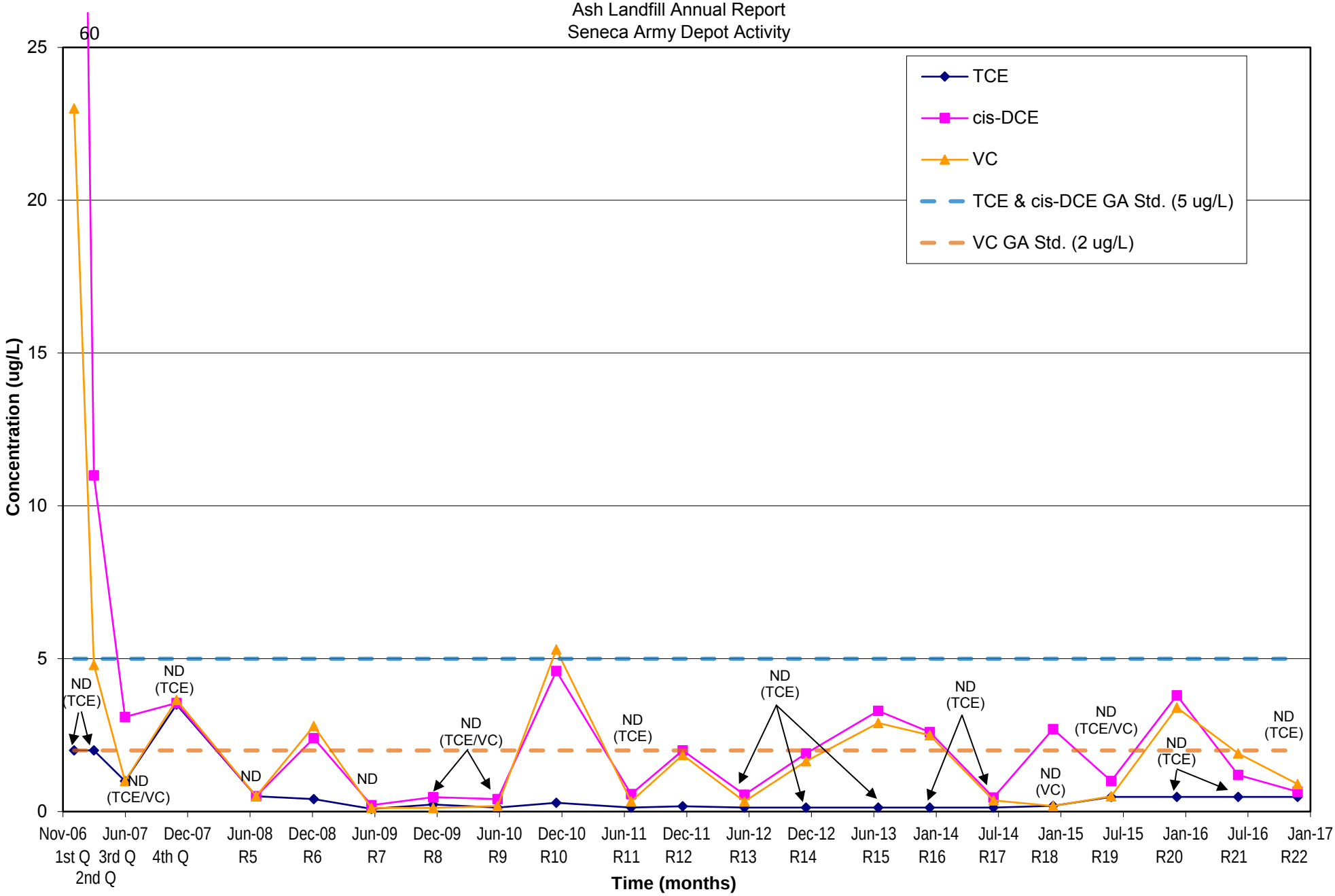
ND = not detected.

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



ND = not detected.

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.

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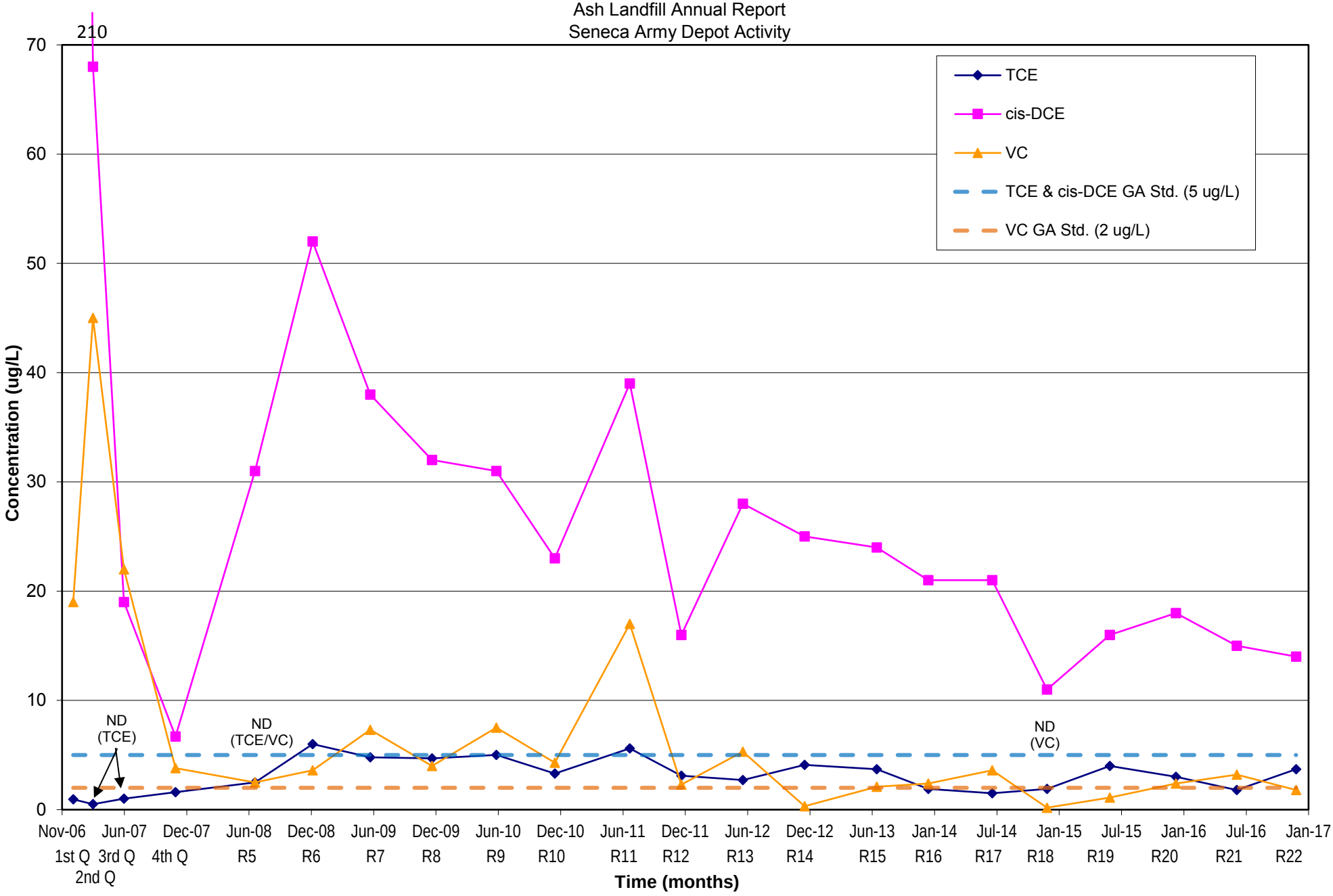
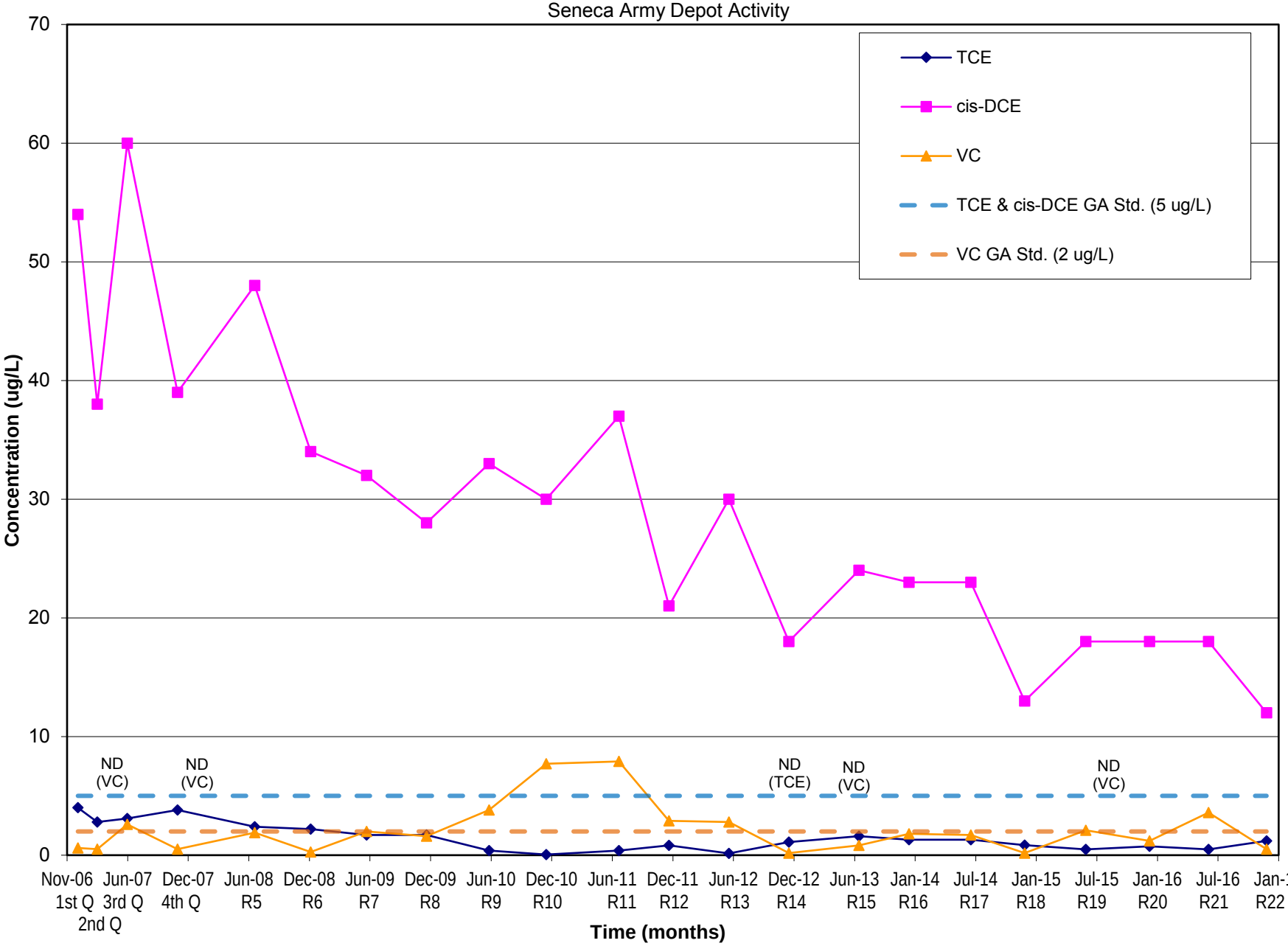
Figure 10I
Concentrations of Chlorinated Organics Over Time at MWT-24
Ash Landfill Annual Report
Seneca Army Depot Activity



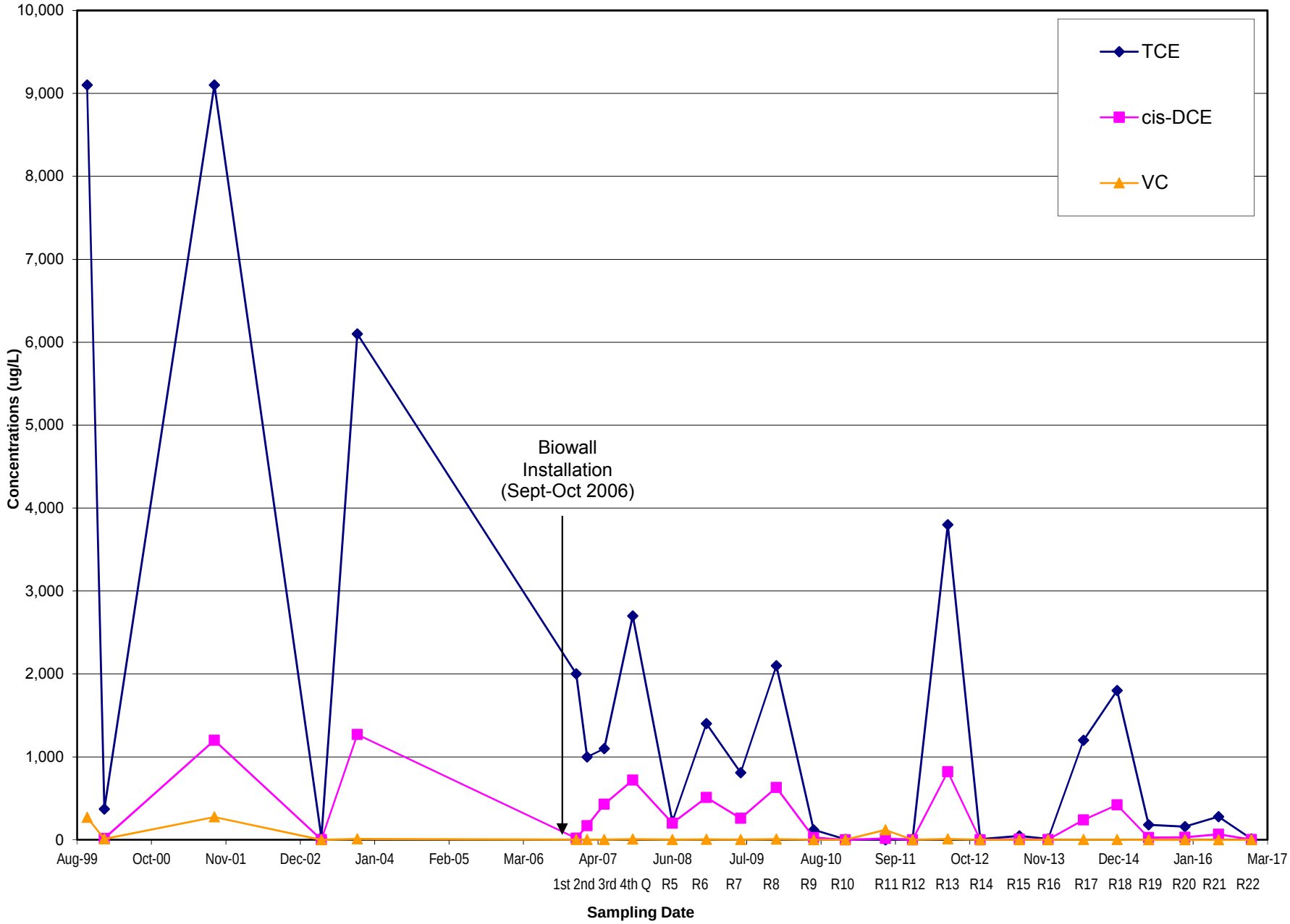
cis-DCE concentration in Quarter 1 was 210 ug/L.
ND = not detected.

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



P:\PIT\Projects\Huntsville Cont W912DY-08-D-0003\TO#15 - LTM and LUC\Ash Landfill LTM\Yr 10 Annual Report\Draft\03 - Figures\Figure 11 Historic Data.xls Fig 11A PT-18A
3/22/2017

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

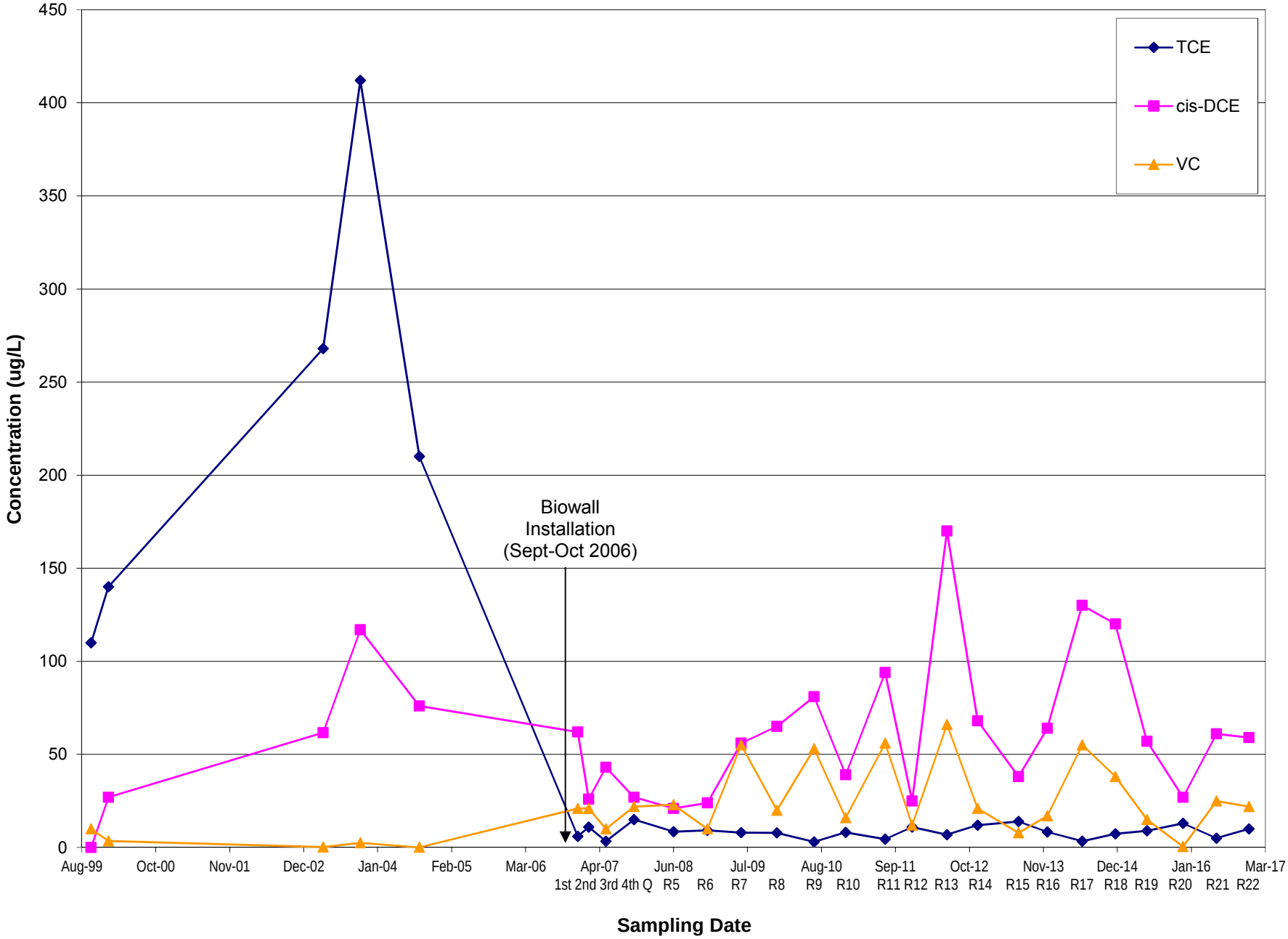
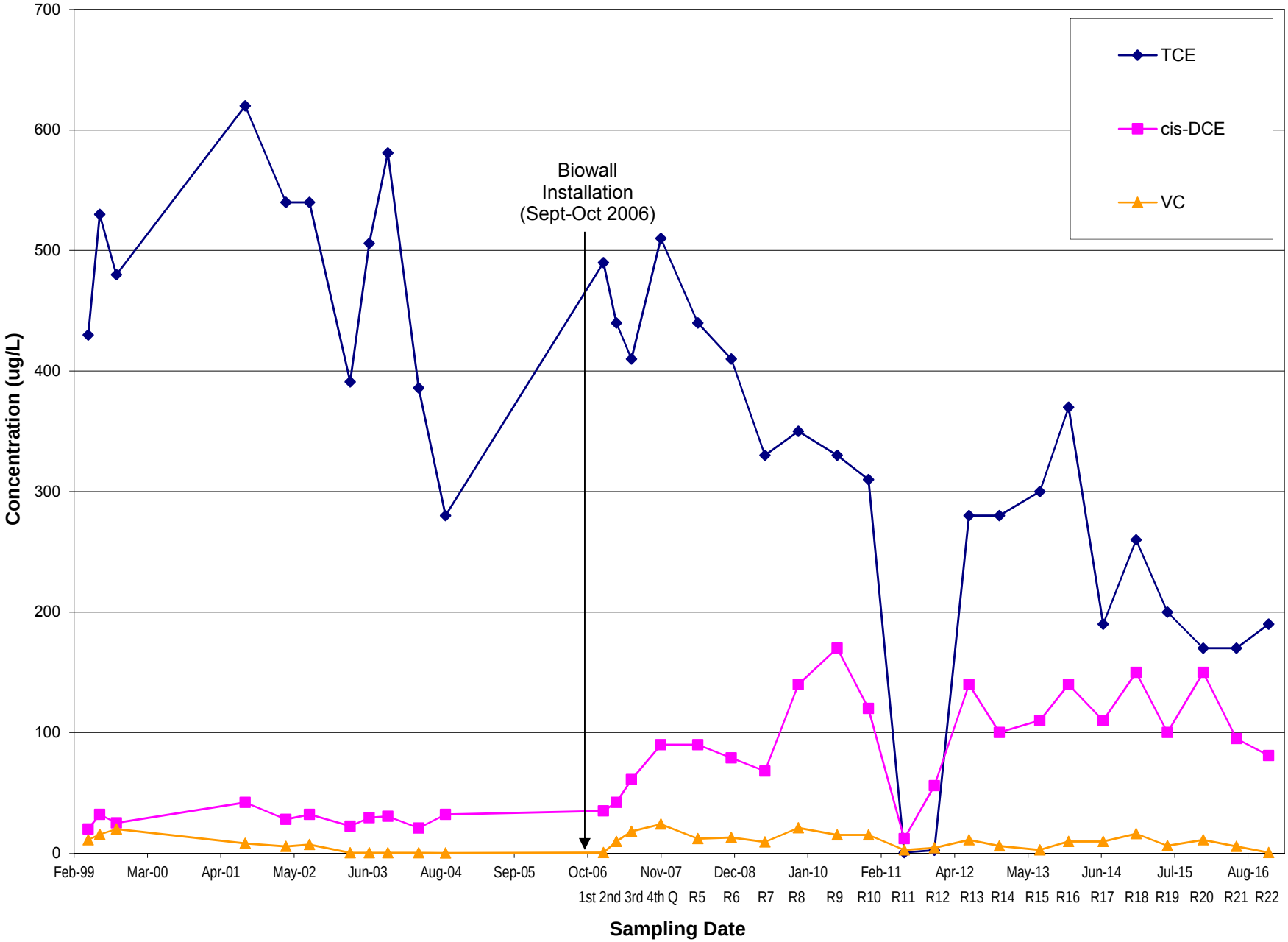
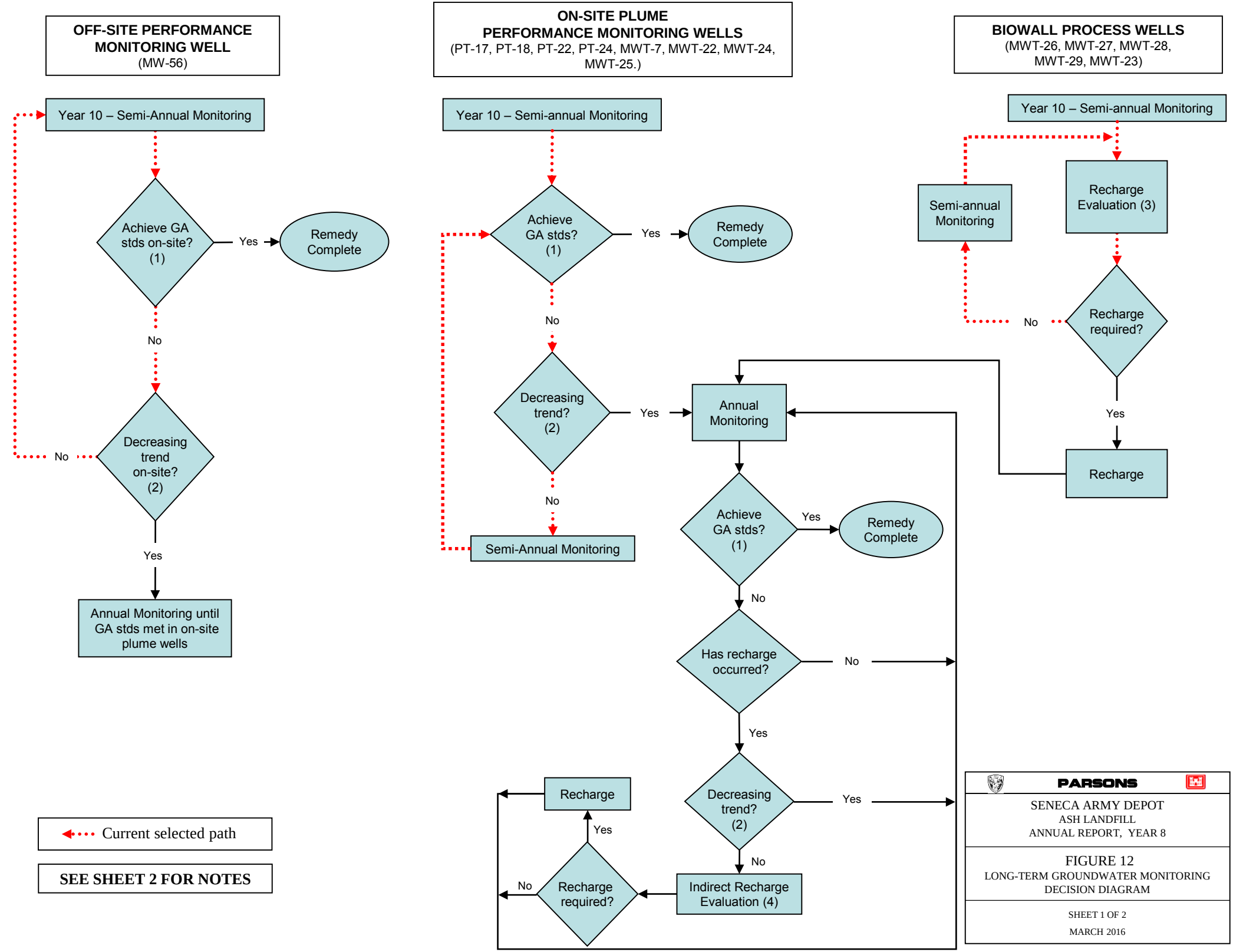


Figure 11C
Historic Concentrations of Chlorinated Organics at MWT-7
Ash Landfill Annual Report
Seneca Army Depot Activity




OFF-SITE PERFORMANCE MONITORING WELL
(MW-56)
Year 10 – Semi-Annual Monitoring
Achieve GA stds on-site? (1)
Yes
Remedy Complete
No
Decreasing trend on-site? (2)
No
Yes
Annual Monitoring until GA stds met in on-site plume wells
ON-SITE PLUME PERFORMANCE MONITORING WELLS
(PT-17, PT-18, PT-22, PT-24, MWT-7, MWT-22, MWT-24, MWT-25.)
Year 10 – Semi-annual Monitoring
Achieve GA stds? (1)
Yes
Remedy Complete
No
Decreasing trend? (2)
Yes
Annual Monitoring
No
Semi-Annual Monitoring
Achieve GA stds? (1)
Yes
Remedy Complete
No
Has recharge occurred?
No
Yes
Decreasing trend? (2)
Yes
No
Indirect Recharge Evaluation (4)
Recharge required?
No
Yes
Recharge
BIOWALL PROCESS WELLS
(MWT-26, MWT-27, MWT-28, MWT-29, MWT-23)
Year 10 – Semi-annual Monitoring
Recharge Evaluation (3)
Recharge required?
No
Semi-annual Monitoring
Yes
Recharge
Current selected path
SEE SHEET 2 FOR NOTES
PARSONS
SENECA ARMY DEPOT
ASH LANDFILL
ANNUAL REPORT, YEAR 8
FIGURE 12
LONG-TERM GROUNDWATER MONITORING DECISION DIAGRAM
SHEET 1 OF 2
MARCH 2016

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 21R2016 and 22R2016
Appendix B	Complete Groundwater Data
Appendix C	Regression Plots
Appendix D	Laboratory Reports

APPENDIX A

FIELD FORMS FOR ROUNDS 21R2016 AND 22R2016

GROUNDWATER ELEVATION REPORT

SENECA ARMY DEPOT ACTIVITY	PARSONS	DATE: 6/14/16
PROJECT: Ash Landfill LTM - Round 21		PROJECT NO: 748662.03300
LOCATION: Seneca Army Depot, Romulus, NY		INSPECTOR: B. Baranek-Olmstead

MONITORING EQUIPMENT:

INSTRUMENT	DECTECTOR	BGD	TIME	REMARKS

WATER LEVEL INDICATOR:

INSTRUMENT	CORRECTION FACTOR

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	7.22	12.62		1322	F / B	no well cap, locked,
PT-16	11.00	4.62	11.00		1305	F / B	locked, ant nest
PT-17	7.52	5.64	7.50		1421	F / B	flush cover damaged, no well cap
PT-18A	12.78	9.19	12.7		1332	F / B	locked, bags
PT-19	11.63	5.32	11.63		1211	F / B	locked, bush Path over stream, lock rusty
PT-20	11.63	7.68	11.80		1342	F / B	locked, rusty metal casing, bush stream, creek bank
PT-22	11.90	0.85	11.90		1347	F / B	by Ant nest
PT-24	11.86	5.27	11.85		1407	F / B	Rusty metal casing, locked
MW-27	10.48	6.86	10.50		1357	F / B	Rusty casing loose, wiggles, no well cap
MW-29	10.37	5.96	10.50		1413	F / B	locked, base loose
MW-32	10.37	8.36	10.35		1217	F / B	locked, rusty, rust metal casing
MW-39	11.90	2.98	11.90		1241	F / B	lid rust off
MW-40	14.68	6.32	14.65		1335	F / B	Metal lid hinge rust off, locked
MW-44A	12.41	6.35	12.45		1249	F / B	locked, rusty casing, overgrown bush
MW-46	11.43	7.34	11.45		1257	F / B	no well cap, locked
MW-48	11.38	6.30	11.52		1256	F / B	locked
MW-56	6.48	4.55	6.50		1225	F / B	not locked, no USGS Probe
MW-60	10.20	2.71	10.02		1200	F / B	locked, bee nest
MWT-1	10.09	5.26	10.08	5.26	1404	F / B	east, locked rusty lid
MWT-3	10.08	5.07	10.08		1403	F / B	west, locked rusty lid
MWT-4	12.45	6.24	12.40	12.4	1411	F / B	east, rusty metal lid locked
MWT-6	12.45	5.44	12.45		1410	F / B	west, " locked
MWT-7	13.66	6.04	13.65	6.04	1417	F / B	east, locked, rusty lid
MWT-9	13.98	6.87	14.1		1419	F / B	west, bush around well
MWT-10	8.97	4.02	9.0		1400	F / B	locked
MWT-17R	11.38	7.94	11.30		1319	F / B	no well cap
MWT-22	14.83	7.74	14.8		1317	F / B	well cap
MWT-23	13.65	9.08	13.65		1350	F / B	locked
MWT-24	12.91	7.62	12.72		1424	F / B	locked, PVC recently cut
MWT-25	13.16	7.55	13.2		1328	F / B	locked
MWT-26	13.13	7.07	13.15		1326	F / B	locked
MWT-27	12.70	7.58	12.50		1324	F / B	locked, PVC cut recently
MWT-28	12.79	7.90	12.8		1321	F / B	locked
MWT-29	12.99	8.16	13.05		1316	F / B	locked

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MWT-27

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 21
LOCATION: ROMULUS, NY

DATE: 6/14/16
INSPECTORS: DRD / BBO
PUMP #: 023069
SAMPLE ID #: ALBW 20370/MS/MSD
ALBW20371 (Duplicate)

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
1435	75°F	Clear	Low	5-10	NW	Grassy-Hilly	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)]
Well Vol = 0.79 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
	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
		7.58			

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)
1450	7.45	~100		YSI	YSI	Hor. bar →			Hach
1500	7.85	100		0.28	11.5	1.85	6.67	-95	321
1505	8.00	110		0.21	11.7	1.79	6.65	-86	305
1510	8.00	110		0.20	11.7	1.78	6.64	-82	
1515	8.06	110		0.21	11.5	1.77	6.62	-80	
1520	8.10	110		0.19	11.5	1.77	6.60	-78	
1525	8.10	110		0.19	11.5	1.77	6.63	-79	74.0
1530	8.12	115		0.17	11.3	1.77	6.64	-78	
1535	8.14	115		0.15	11.4	1.78	6.62	-77	
1540	8.12	110		0.16	11.4	1.76	6.60	-77	44.3
1545	8.14	115		0.15	11.3	1.77	6.62	-78	29.9
1550	8.16	105		0.15	11.3	1.77	6.60	-77	
1555	8.18	105		0.15	11.3	1.77	6.60	-78	25.9
1600	8.15	115		0.15	11.3	1.76	6.62	-79	
1605	8.15	110		0.15	11.2	1.77	6.62	-79	19.8
1610	8.16	110		0.15	11.0	1.77	6.63	-79	15.4
1615	8.18	115		0.13	11.2	1.76	6.63	-78	11.8
1620	8.18	115		0.13	11.1	1.74	6.62	-78	11.5
1625	8.18	115		0.13	11.1	1.74	6.62	-78	10.1
1630	8.18	115	2.75 gals	0.13	11.1	1.73	6.62	-79	9.26

1640 Collected ALBW20370 / ALBW 20371 (Duplicate)
ALBW 20370 MS / ALBW 20370 MSD

Fet: 3.29 mg/L Mnt: 47.5 Lmt mg/L

Filled 3x VOAs for VOC
3x VOA for MEE
3x VOAs for TOC
1x Plastic for Sulfate

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: 4WT-28

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 21
LOCATION: ROMULUS, NY

DATE: 6/14/16
INSPECTORS: BBO
PUMP #: 14264
SAMPLE ID #: ALBW20372

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1440	70	Sunny		0-7	NW→SE	dry, grass

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)]
0.799 gal 1 well = 2.4 gal 3 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
	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
		7.90			

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)
1454	7.71	YSI &	Pump in well	YSI	YSI	Hor. bar	→	→	Hach
1456/59		Pump	started						
1509	8.33			0.16	10.8	1.03	6.38	-63	51.3
1514	8.64	130		0.16	10.9	1.04	6.35	-78	16.9
1519	8.75	110		0.22	11.3	1.05	6.33	-78	9.62
1524	8.81	110		0.54	11.3	1.06	6.35	-78	7.51
1529	8.82			0.46	11.3	1.07	6.35	-77	6.77
1534	8.83			0.52	11.2	1.09	6.36	-76	6.12
1539	8.85	108	~0.5 gal	0.48	11.2	1.12	6.34	-74	5.09
1544	8.89		~~~0.5 gal~~~	0.50	11.2	1.14	6.36	-73	4.53
1549	8.89	106	~0.75 gal	0.46	11.1	1.16	6.34	-72	3.82
1554	8.88		~1.0 gal	0.45	11.2	1.17	6.34	-71	3.18
1559	8.88		~1.2 gal	0.43	11.1	1.19	6.35	-71	3.37
1604	8.88	110	~1.25 gal	0.48	11.1	1.21	6.35	-70	3.32
			~2.0 gal						
1610		Sample Collected					Filled 3x VOAs for VOC		
							3x VOAs for MEE		
							3x VOAs for TOC		
			Fe+: 3.30 mg/L over limit				1x Plastic for Sulfate		
			Mn+: 42.6 mg/L						

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MWT-29

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 21
LOCATION: ROMULUS, NY

DATE: 6/15/16
INSPECTORS: TB
PUMP #: 114091
SAMPLE ID #: ALBW20373

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
821	55	Sunny		0-5	W→E	dry

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)]
0.79 gal 1well => 2.38 gal 3xWell

	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
HISTORIC DATA	13.05					
	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)		DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
DATA COLLECTED AT WELL SITE		8.18				
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)
841	7.99	YSI & Pump in well		YSI	YSI	Horiba →			Hach
842		Pump Started							
847				0.17	10.5	1.55	6.56	8	-
852	8.42	90		0.52	10.6	1.57	6.59	-42	16.7
857	8.45	120		0.30	10.8	1.56	6.58	-49	8.55
902	8.63			0.42	11.0	1.56	6.59	-53	5.47
907	8.77	112		0.41	11.1	1.55	6.60	-56	3.80
912	8.85	108	~0.5 gal	0.36	11.1	1.55	6.62	-58	2.68
917	8.95	100		0.34	11.0	1.54	6.75	-60	1.63
922	9.07			0.33	11.6	1.53	6.67	-61	0.97
927	9.21		~1.0 gal	0.31	11.0	1.54	6.65	-61	0.68
932	9.3			0.29	10.9	1.54	6.64	-61	0.72
937	9.38		~1.25 gal	0.28	10.9	1.54	6.65	-60	0.71
			~2.0 gal						
949		Sample Collected				Filled	3x VOAs for VOC		
							3x VOAs for MEE		
		Fe+	3.30 mg/L	overlimit			3x VOAs for TOC		
		Mg+	18.4 mg/L				1x Plastic for Sulfate		

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW-7

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 21
LOCATION: ROMULUS, NY

DATE: ~~6/14~~ 6/15/16
INSPECTORS: BBO
PUMP #: 12867
SAMPLE ID #: ALBG20363

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1050	70's	Sunny		1-3	W-E	dry

MONITORING INSTRUMENT	MONITORING 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)]
1.23 gal 1x Well 3.69 gal 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
	13.65					

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
		6.11			

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)
1108	6.06	YSI 9	Pump in well						
1109		Pump	Started	YSI	YSI	Horiba →			Hach
1116	6.2	100		0.42	10.2	0.723	6.97	36	3.45
1121	6.2			0.29	10.1	0.721	6.96	17	3.16
1126	6.19	96		0.27	10.0	0.722	6.95	16	3.93
1131	6.21	108		0.27	10.0	0.730	6.94	19	2.38
1136	6.19			0.23	9.9	0.728	6.94	23	1.55
1141	6.19	106	~0.75 gal	0.11	9.9	0.734	6.93	26	2.50
1146	6.19			0.10	9.9	0.731	6.93	33	1.35
1151	6.19	110	~1.0 gal	0.13	9.9	0.733	6.92	35	1.20
1156	6.19			0.10	9.9	0.730	6.92	39	0.97
1201	6.19	104		0.10	9.9	0.726	6.92	42	0.88
1206	6.19			0.10	9.9	0.723	6.93	46	1.19
1211	6.19	108	~1.6 gals	0.09	9.9	0.729	6.92	49	0.87
1216	6.19			0.09	9.8	0.728	6.93	55	0.94
1221	6.19	104	~2.0 gal	0.09	9.8	0.736	6.92	55	0.66
1226	6.19			0.10	9.8	0.727	6.92	58	0.72
1231	6.19	108	~2.25 gal	0.09	9.8	0.728	6.93	61	0.54
1236	6.19			0.10	9.8	0.729	6.92	64	0.92
			~2.5 gals						
1243		Samples Collected			Filled Bottles		3x VOAs for VOC		

Fe+ = 0.09 mg/L
Mn+ = 1.1 mg/L

3x VOAs for MEE
3x VOAs for TOC
1x Plastic for Sulfide

202 591 6826

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MWT-26

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 21
LOCATION: ROMULUS, NY

DATE: 6/15/16
INSPECTORS: DRD
PUMP #: 31726
SAMPLE ID #: ALBW20369

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
0820	70°F	Clear	Low	5-10	NW	High Grass

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)]
Well Vol = 0.97 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
	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
		7.10			

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)
0825	6.88			YSI	YSI	Hor.bar	→	→	Hach
0830	7.23	110		0.39	11.3	1.80	7.29	229	
0835				0.38	11.3	1.79	7.32	228	10.4
0840	7.36	110		0.41	11.5	1.79	7.39	226	
0845				0.56	11.6	1.76	7.37	223	6.49
0850				0.70	11.6	1.71	7.37	223	
0855	7.66	105		0.75	11.7	1.62	7.38	225	
0900	7.85	100		0.60	11.8	1.52	7.37	209	3.50
0905	7.99	100		0.51	11.8	1.47	7.35	183	
0910				0.45	11.8	1.46	7.34	161	
0915	8.17	100		0.43	11.8	1.44	7.35	130	
0920		100		0.42	11.8	1.43	7.35	111	
0925	8.33	95		0.43	11.8	1.42	7.33	109	1.41
0930	8.45	110		0.39	11.8	1.41	7.37	95	
0935		110		0.30	11.8	1.40	7.34	84	
0940	8.70	100		0.29	11.9	1.42	7.33	77	0.89
0945		105		0.25	11.8	1.45	7.32	78	
0950		105		0.25	11.8	1.46	7.31	76	
0955	8.95	105	3.0 gals	0.23	11.8	1.50	7.32	77	0.86
							Filled bottles		

3 x VOAs for VOC
3 x VOAs for MEE
3 x VOAs for TOC
1 x Plastic for Sulfate

1000 Collected Sample # ALBW20369

Mn = 0.8 mg/L
Fe = 0.02 mg/L

6/14/2016

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MTW-23
PROJECT: Ash Landfill LTM Groundwater Sampling - Round 21		DATE: 6/15/16
LOCATION: ROMULUS, NY		INSPECTORS: DRD
		PUMP #: 30971
		SAMPLE ID #: ALBW 20368

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1050	75°F	Clear	Low	0-5	NW	Grassy

MONITORING INSTRUMENT	MONITORING 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)]

Well Vol. = 0.72 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
	13.65					
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
		9.13				
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)
1050	8.95			YSI	YSI	Horiba →			Hach
1055		100		0.21	10.5	0.998	7.08	-49	
1100	9.35	100		0.19	10.4	0.986	7.03	-51	18.9
1105		110		0.17	10.2	0.972	6.99	-52	
1110	9.37	110		0.12	10.1	0.965	6.94	-55	
1115		110		0.13	10.0	0.967	6.89	-54	10.2
1120		100		0.10	10.0	0.982	6.93	-58	
1125	9.33	100		0.08	10.0	0.991	6.97	-60	7.82
1130		100		0.17	9.9	0.974	6.92	-60	
1135				0.17	9.9	0.963	6.92	-61	
1140	9.40	110		0.16	9.9	0.959	6.90	-61	6.00
1145		110		0.15	9.8	0.960	6.90	-61	
1150		110		0.15	9.8	0.961	6.91	-62	
1155	9.38	100		0.14	9.8	0.968	6.90	-62	5.46
1200		100		0.14	9.7	0.970	6.88	-62	3.99
1205		100		0.13	9.7	0.957	6.88	-63	
1210	9.39	100	3.0 gals	0.13	9.7	0.960	6.90	-64	4.31
			1215 - Collected Sample			ALBW 20368			
			Filled 3x VOAs for	VOC		3x VOAs for	TOC		
			3x VOAs for	MEE		1x Plastic for	Sulfate		

Fe - ~~2.61~~ mg/L

Mn - 3.5 mg/L

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: PT-24
PROJECT: Ash Landfill LTM Groundwater Sampling - Round 21		DATE: 6/15/16
LOCATION: ROMULUS, NY		INSPECTORS: ORD
		PUMP #: 27891
		SAMPLE ID #: ALBW 20362

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1350	80°F	Clear	Low	0-5	NW	High Grass

MONITORING INSTRUMENT	MONITORING 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)]

Well Vol. = 1.04 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
	11.85					
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
		5.32				
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)
				YSI	YSI	Horiba →			Hach
1355	5.37								
1400	5.35	110		0.24	12.0	0.667	7.45	-31	
1405		110		0.19	12.0	0.682	7.37	-30	11.0
1410	5.37	100		0.17	12.0	0.683	7.36	-25	
1415				0.15	12.0	0.684	7.31	-13	
1420	5.37	100		0.12	12.0	0.689	7.36	-8	3.96
1425				0.11	12.0	0.689	7.36	-5	
1430	5.36	105		0.10	12.0	0.690	7.38	-1	
1435				0.08	12.0	0.684	7.36	4	2.25
1440		105		0.08	12.0	0.680	7.37	6	
1445				0.08	12.0	0.686	7.36	7	
1450	5.37	110		0.07	12.0	0.690	7.35	8	1.92
1455		110		0.06	12.0	0.691	7.35	9	
1500	5.36	110	2.5 gals.	0.06	12.0	0.692	7.35	9	1.92

Collected Sample # ALBW 20362 at 1505
Filled 3x VOAs for VOC

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: PT-17
PROJECT: Ash Landfill LTM Groundwater Sampling - Round 21		DATE: 6/15/16
LOCATION: ROMULUS, NY		INSPECTORS: BBO
		PUMP #: 12026
		SAMPLE ID #: ALBW 20359

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
1409	81	Sunny		5-10	SW→NE	dry	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)]

0.29 gal 1 well → 0.88 gal 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
	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
		5.71			

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)
1423	5.70	YSI ?	Pump in well						
1423		Pump Started							
→ DO probe exposed to air after 1st pump cycle. Removed bladder pump. Will pump well dry w/ peristaltic pump and wait for recharge.									
1520	5.72	State water level, setup Peristaltic pump.							
1526	5.72	YSI in well							
1526		Peristaltic pump started		YSI	YSI	Horiba →			Hach
1537	5.82	126		0.32	12.1	0.802	6.80	1	53.1
1542	5.80			0.19	11.9	0.823	6.77	1	14.5
1547	5.80			0.15	11.9	0.829	6.77	1	7.92
1552	5.80		0.75 gal	0.15	11.9	0.828	6.76	2	3.32
1557	5.81			0.11	11.8	0.836	6.77	3	1.83
H602 ~~1502~~									
1611	5.82		~1.6 gals	0.07	11.8	0.836	6.77	8	0.89
1616	5.82			0.06	11.7	0.833	6.77	9	0.68
1621	5.82			0.07	11.7	0.833	6.77	10	0.81
1627	5.82		~2.1 gal	0.06	11.7	0.830	6.77	12	0.79
		→ collected samples using bailer, teflon lined w/ single check valve							
1630		Collected Sample		Filled		3x VOAs for VOC			

Fe+: 0.18 mg/L
Mn+: 3.5 mg/L

3x VOAs for MEE
3x VOAs for TOC
1x Plastic for Sulfate

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: PT-18A

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 21
LOCATION: ROMULUS, NY

DATE: 6/16/16
INSPECTORS: BBO
PUMP #: 12026 / 023069
SAMPLE ID #: ALBGW20360

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1033	73	thin clouds		0-10	~~SE~~ NW	dry

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)]
0.56 gal / well => 1.67 gal 3x well

	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
HISTORIC DATA	12.7					
	PID READING (OPENING WELL)	**DEPTH TO STATIC WATER LEVEL (TOC)**		**DEPTH TO STABILIZED WATER LEVEL (TOC)**	**DEPTH TO PUMP INTAKE (TOC)**	**PUMPING START TIME**
DATA COLLECTED AT WELL SITE		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)
1045	9.01	YSI & Pump in well							
1045		Pump Started							
1053		Stopped pump, suspect Air leak in pump, will pull pump & check o-rings							
1059		Re-started pump, DO spike above 2.0 mg/L, will replace Pump #023069 with #12026							
1106	9.47	Placed Pump #023069 in well, will wait 5 min before start pump							
1111		Pump Started		0.85	12.4				
1116	9.59	88		1.70	11.8	1.40	7.17	34	88.9
1121	9.75	100		1.20	11.5	1.42	7.11	39	115
1126	9.79	94		1.03	11.3	1.42	7.10	42	112
1131	9.83	96		0.84	11.1	1.41	7.09	51	73.1
1136	9.9	100	~0.5 gal	0.75	11.0	1.41	7.08	60	44.5
1141	9.96			0.41	10.8	1.41	7.07	70	24.3
1146	10.02		~0.75	0.23	10.7	1.40	7.09	82	10.8
1151	10.06	92		0.25	10.6	1.41	7.06	87	6.44
1156	10.12	99	~1.0 gal	0.23	10.5	1.41	7.05	96	3.19
1201	10.16			0.20	10.5	1.41	7.05	100	2.02
1206	10.2	100	~1.25 gals	0.19	10.4	1.41	7.05	104	1.53
1211	10.25			0.22	10.4	1.41	7.05	109	2.12
1216	10.29		~1.6 gal	0.25	10.4	1.40	7.06	111	1.67
1221	10.31		~1.75 gal	0.25	10.4	1.40	7.04	112	1.39

1229 Sample Collected 3x VOAs for VOC

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: PT-22

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 21
LOCATION: ROMULUS, NY

DATE: 6/16/16
INSPECTORS: BGO
PUMP #: 27891
SAMPLE ID #: ALBGW20361

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
0838	65	Partly cloudy		0-5	W→E	Moderate rain

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)]
0.47 gal / well => 1.4 gal 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
	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
		9.03			

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 (mS/cm^3)	pH	ORP (mV)	TURBIDITY (NTU)
854	8.94	YSI	Pump in Well						
855		Pump	Started						
902	9.23	84		0.60	11.1	1.20	6.76	202	11.0
907	9.36	118		0.41	10.8	1.20	6.73	172	4.87
912	9.41	104		0.39	10.7	1.19	6.72	149	4.12
917	9.50			0.36	10.5	1.19	6.71	145	1.40
922	9.53	70	~0.5 gal	0.36	10.4	1.19	6.70	143	1.24
927	9.59			0.37	10.4	1.20	6.71	129	1.20
932	9.63	98	~0.75 gal	0.38	10.4	1.20	6.71	115	0.88
937	9.66	96		0.56	10.4	1.20	6.71	110	1.07
942	9.69			0.63	10.4	1.20	6.72	107	1.13
947	9.66	92	~1.25 gal	0.62	10.4	1.19	6.71	104	1.16
952	9.69	102		0.63	10.4	1.20	6.72	104	1.11
957	9.74		~1.5 gal	0.64	10.4	1.21	6.71	107	0.88
			~2.0 gals						
1007		Sample	Called	3x VOAs	for	VOC			

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW-40

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 21
LOCATION: ROMULUS, NY

DATE: 6/16/16
INSPECTORS: BBC
PUMP #: Peristaltic
SAMPLE ID #: ACBW20374

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1310	79	Partly cloudy		5-7N	5-10	dry

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)]
1.34 gal 1 well => 4.03 gal 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
	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
		6.41			

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 (mS/cm^3)	pH	ORP (mV)	TURBIDITY (NTU)
1324	6.28	YSI	tubing in well						
1324		Peristaltic pump started							
1343	7.58	110		0.12	9.4	0.598	7.44	12	6.09
1348	7.66			0.18	9.5	0.586	7.43	25	2.23
1353	7.7		~0.5 gal	0.21	9.6	0.582	7.42	32	3.50
1358	7.76			0.19	9.7	0.570	7.41	45	2.41
1403			~1.0 gal	0.19	9.7	0.571	7.42	47	1.39
1408	7.8			0.18	9.7	0.565	7.42	55	1.47
1413	7.83			0.16	9.8	0.564	7.42	57	2.24
1422	7.85		~1.5 gal	0.15	9.8	0.560	7.41	62	2.87
1427	7.87			0.15	9.8	0.561	7.42	64	5.30
1432	7.89			0.15	9.8	0.562	7.42	66	
1437	7.90			0.15	9.8	0562	7.43	67	1.98
1442				0.14	9.8	0.565	7.43	68	
1447	7.93			0.14	9.8	0.562	7.42	70	1.32
1452				0.15	9.8	0.563	7.43	70	
1457	7.96		2.25 gals	0.14	9.8	0.564	7.43	71	1.03
			Fe = 0.03	mg/L					

Fe = 0.03 mg/L Mn = 0.7 mg/L

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MWT-24

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 21
LOCATION: ROMULUS, NY

DATE: 6/16/16
INSPECTORS: DRD
PUMP #: 14264
SAMPLE ID #: ALBW 20365

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1235	80°F	p/cloudy	med	5-10	NW	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)]
Well Vol. = 0.79 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
	12.72					

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
		7.76			

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)
1240	7.69								
1245		100		0.18	11.4	0.982	6.84	7	
1250	7.83	100		0.18	11.4	0.982	6.61	12	18.4
1255		100		0.17	11.5	0.975	6.55	14	
1300	7.85	100		0.17	11.5	0.967	6.50	19	
1305				0.14	11.4	0.967	6.51	22	
1310	7.85	110		0.12	11.4	0.961	6.50	28	12.2
1315				0.10	11.4	0.964	6.47	32	
1320	7.85	105		0.09	11.4	0.966	6.46	34	
1325				0.10	11.4	0.966	6.46	36	
1330	7.85	110		0.10	11.4	0.966	6.45	39	10.3
1335				0.09	11.4	0.967	6.45	39	
1340	7.85	110		0.09	11.4	0.967	6.46	40	
1345				0.08	11.4	0.969	6.44	42	11.1
1350				0.09	11.4	0.970	6.46	41	
1355	7.85	110		0.09	11.4	0.972	6.50	40	
1400				0.09	11.4	0.972	6.45	43	10.9
1405		110		0.09	11.4	0.970	6.43	44	
1410	7.85	110	2.5 gals	0.09	11.4	0.970	6.43	44	9.8
			1415 Collected Sample # ALBW 20365						

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MWT-25

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 21
LOCATION: ROMULUS, NY

DATE: 6/16/16
INSPECTORS: DRD
PUMP #: 114091
SAMPLE ID #: ALBW 20366

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1025	75°F	Clear	Low	0-5	NNW	High Grass

MONITORING INSTRUMENT	MONITORING 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)]
Well Vol. = 0.90 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
	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
		7.60			

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)
1035	7.27								
1040		100		0.49	11.1	1.74	7.04	43	
1045	7.85	105		0.66	11.3	1.78	6.99	39	3.12
1050	7.97	110		0.70	11.3	1.76	6.96	34	
1055		105		0.75	11.3	1.74	6.96	32	
1100	8.25	105		0.71	11.3	1.69	6.93	25	1.62
1105				0.68	11.2	1.69	6.94	12	
1110	8.55	100		0.63	11.2	1.68	6.94	2	
1115				0.58	11.2	1.68	6.98	-2	
1120	8.85	110		0.55	11.2	1.68	6.95	-7	2.15
1125	8.94	110		0.49	11.2	1.68	6.96	-8	
1130		100		0.48	11.1	1.68	6.94	-3	
1135	9.18	100		0.46	11.1	1.70	6.94	0	0.96
1140				0.45	11.0	1.71	6.96	5	
1145	9.49	100		0.43	10.9	1.70	6.94	12	
1150				0.42	10.9	1.72	6.94	18	
1155	9.64	100		0.41	10.9	1.72	6.91	22	
1200			2.7 gals	0.41	10.9	1.72	6.92	23	1.04
			1205 Collected Sample #			ALBW	20366		

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW-22

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 21
LOCATION: ROMULUS, NY

DATE: 6/16/16
INSPECTORS: DRD
PUMP #: 30971
SAMPLE ID #: ALBW20364

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
0835	70°F	p/cloudy	Med	Calm	~	High Grass	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)]
Well Vol = 1.11 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
	14.80					

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
		7.88			

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)
0840	7.35								
0845		100							
0850		100		0.24	10.0	1.52	6.32	-49	
0855	8.70	100		0.22	10.0	1.52	6.32	-53	25.5
0900	9.65	100		0.20	10.1	1.51	6.29	-50	
0905	10.08	100		0.19	10.1	1.50	6.29	-48	19.8
0910		100		0.20	10.1	1.49	6.29	-46	
0915	10.40	100		0.19	10.2	1.49	6.29	-45	
0920				0.22	10.1	1.48	6.29	-44	
0925	10.40	105		0.26	10.1	1.48	6.29	-43	11.6
0930				0.25	10.0	1.47	6.31	-42	
0935	10.40	100		0.24	10.0	1.47	6.31	-40	
0940		100		0.23	9.9	1.47	6.30	-39	
0945	10.60	100		0.23	9.9	1.47	6.30	-38	6.52
0950				0.23	9.9	1.47	6.31	-37	
0955	10.78	100	20 gals.	0.24	9.9	1.47	6.31	-37	4.93
			1000 Collected	Sample #	ALBW	20364			

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW-56

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 21
LOCATION: ROMULUS, NY

DATE: 6/17/16
INSPECTORS:
PUMP #: 31726
SAMPLE ID #: ALSW20367

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

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)]
0.32 gal 1 well = 0.97 gal 3 x well

	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
HISTORIC DATA	6.50					
	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)		DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
DATA COLLECTED AT WELL SITE		4.52'				
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)
		YSI & Bladder Pump in well							
		Pump Started							
0745	4.09								
754	4.90	120		0.48	14.9	0.692	6.21	-59	27.4
759	4.85	140		0.42	14.7	0.743	6.46	-78	14.4
804	4.90	~125		0.38	14.6	0.774	6.59	-87	6.98
809	4.90	130	~0.5 gal	0.36	14.6	0.784	6.53	-88	-
814	4.92	140		0.31	14.5	0.790	6.61	-88	3.25
819	4.91	140	~1.0 gal	0.26	14.4	0.792	6.63	-88	2.21
824	4.90			0.22	14.3	0.792	6.63	-87	1.87
830		Sample	Collected	3 x 40 VOAs for VOC					

GROUNDWATER ELEVATION REPORT

SENECA army DEPOT ACTIVITY | **PARSONS** | **DATE:** 12/5/16

PROJECT: Ash Landfill LTM - Round 22
LOCATION: Seneca Army Depot, Romulus, NY

PROJECT NO: 748662.03300
INSPECTOR: B. Baranek-Olmstead

MONITORING EQUIPMENT:

INSTRUMENT	DECTECTOR	BGD	TIME	REMARKS

WATER LEVEL INDICATOR:

INSTRUMENT	CORRECTION FACTOR

COMMENTS:

Field Entry

Monitoring Well	Historic Well Depth (rel. TOC) (ft)	Depth to Water (rel. TOC) (ft)	Well Depth (rel. TOC) (ft) (tape tip)	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	3.96	12.41		1239	F / B	locked
PT-16	11.00	3.00	10.83		1314	(F) / B	locked
PT-17	7.52	2.74	7.31		1355	F / (B)	flush mounted, cover broken
PT-18A	12.78	6.13	12.57		1231	F / (B)	locked, PVC lifted into the lid
PT-19	11.63	3.1	11.4		1128	(F) / B	locked
PT-20	11.63	4.72	11.55		1256	F / (B)	not locked
PT-22	11.90	4.87	11.69		1252	F / (B)	not locked, unable to fit lock shank
~~PT-24~~ MWT-24	11.86	5.80	12.53		1328	(F) / B	locked
MW-27	10.48	4.88	10.16		1321	(F) / B	locked
MW-29	10.37	5.67	10.24		1347	F / (B)	PVC has lifted - needs to be cut See photo
MW-32	10.37	4.5	10.86		1143	(F) / B	locked, difficult to re lock
MW-39	11.90	1.86	11.69		1156	F / (B)	lid has rusted off
MW-40	14.68	3.86	14.45		1222	(F) / B	locked
MW-44A	12.41	3.06	12.24		1204	(F) / B	locked
MW-46	11.43	2.15	11.21		1208	(F) / B	locked
MW-48	11.38	3.25	11.35		1212	(F) / B	locked
MW-56	6.48	3.37	6.28		1414	(F) / B	
MW-60	10.20	2.3	9.8		1126	F / B	locked
MWT-1	10.09	4.50	9.87		1334	(F) / B	locked
MWT-3	10.08	5.10	9.88		1332	(F) / B	locked
MWT-4	12.45	4.82	12.22		1344	(F) / B	locked
MWT-6	12.45	5.68	12.24		1342	(F) / B	locked
MWT-7	13.66	5.36	13.45		1353	(F) / ~~B~~	locked
MWT-9	13.98	6.27	13.92		1350	(F) / B	locked
MWT-10	8.97	3.77	8.80		1318	(F) / B	locked
MWT-17R	11.38	3.34	10.90		12.45	(F) / B	no well cap
MWT-22	14.83	3.73	14.62		12.44	(F) / B	well cap on
MWT-23	13.65	6.06	13.45		1310	(F) / B	locked
~~MWT-24~~ PT-24	12.91	4.96	11.51		1339	(F) / B	locked
MWT-25	13.16	4.74	12.99		12.34	(F) / B	locked
MWT-26	13.13	3.68	12.96		1237	(F) / B	locked
MWT-27	12.70	4.56	12.25		1238	(F) / B	locked
MWT-28	12.79	4.67	12.60		1241	(F) / B	locked
MWT-29	12.99	3.73	12.83		1243	(F) / B	locked

GROUNDWATER ELEVATION REPORT

PARSONS | **CLIENT:** | **DATE:** 12-05-16

PROJECT: 16-17 | PROJECT NO:

LOCATION: | INSPECTOR: BBO & CW

MONITORING EQUIPMENT:

INSTRUMENT	DECTECTOR	BGD	TIME	REMARKS

WATER LEVEL INDICATOR:

INSTRUMENT	CORRECTION FACTOR

COMMENTS:

WELL	TIME	DEPTH TO WATER	DEPTH TO ~~PRODUCT~~ well	CORRECTED WATER LEVEL	MEASURED POW	INSTALLED POW	PRODUCT SPEC. GRAV.	WELL STATUS / COMMENTS (Lock?, Well #?, Surface Disturbance?, Riser marked?, Condition of: riser, concrete, protective casing, etc.)
16-2	1455	3.36	5.42					
16-6	1458	2.68	6.67					
16-4	1459	2.73	6.85					
16-1	1502	3.34	7.77					
16-7	1506	3.51	6.65					
16-5	~~13~~1509							PVC lifted. unable to open
16-2	1514	3.39	7.71					
17-3	1517	2.57	7.25					
17-4	1520	3.19	8.00					mouse nest/debris in well
17-5	1522	2.76	9.91					
17-1	1526	3.42	9.71					not locked, no well cap

(ALL DEPTH MEASUREMENTS FROM MARKED LOCATION ON RISER)

GROUNDWATER ELEVATION REPORT

PARSONS | **CLIENT:** | **DATE:** 12-5-16

PROJECT: | PROJECT NO:

LOCATION: SEAD 25 | INSPECTOR: BBO CW

MONITORING EQUIPMENT:

INSTRUMENT	DECTECTOR	BGD	TIME	REMARKS

WATER LEVEL INDICATOR:

INSTRUMENT	CORRECTION FACTOR

COMMENTS:

WELL	TIME	DEPTH TO WATER	DEPTH TO PRODUCT	CORRECTED WATER LEVEL	MEASURED POW	INSTALLED POW	PRODUCT SPEC. GRAV.	WELL STATUS / COMMENTS (Lock?, Well #?, Surface Disturbance?, Riser marked?, Condition of: riser, concrete, protective casing, etc.)
25-1	~~1540~~ 1507	5.84						
25-13	1548	2.54						No well cap, metal lid rusted & bent out of shape
25-15	1619	2.37						
25-19	1552	3.74						
25-6	1555	3.69						
25-17	1556	2.34						
25-18	1600	4.51						
25-10	1603	2.11						
25-9	1605	1.61						
25-8	1608	1.91						not locked
25-3	1610	3.72						
25-2	1613	4.31						

(ALL DEPTH MEASUREMENTS FROM MARKED LOCATION ON RISER)

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MWT-26

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 22
LOCATION: ROMULUS, NY

DATE: 12/07/16
INSPECTORS: BBO/CW
PUMP #: 9294
SAMPLE ID #: ALBW20385

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
835		overcast	0-5-10		NE-SW	fresh snow	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
	13.13					

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
		3.07			

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)
911	2.98	Pump & YSI in well		new tubing installed					
915		Pump Started							
~~932~~									
947	3.23	90		1.24	10.7	1.80	7.20	235	
952	3.34	~130		1.01	10.1	1.81	6.98	~~238~~ 232	7.24
~~957~~	3.35			0.88	10.1	1.79	6.95	214	5.69
1002	3.38			0.67	10.2	1.78	6.94	111	4.23
1007	3.39			0.58	10.1	1.77	6.93	22	4.06
1012	3.39			0.65	10.1	1.76	6.93	-14	3.51
1017	3.43		~1.25 gal	0.83	10.1	1.75	6.94	-30	2.85
1022	3.43			0.73	10.6	1.74	6.94	-40	2.34
1027				0.74	10.1	1.75	6.94	-46	1.87
1032				0.58	9.9	1.74	6.95	-51	2.06
1037	3.54			0.49	10.0	1.73	6.95	-54	1.74
1042	3.58		~2.5 gal	0.39	10.0	1.73	6.95	-58	1.98
1047				0.53	10.0	1.72	6.96	-60	1.90
1052	3.58		~3.0 gal	0.47	10.2	1.72	6.96	-61	1.62
1100		Sample Collected		$Fe^{+} = 0.35$ ~5/L					
				$Mn^{+} = 1.7$ ~5/L					

Conyers #025693
Hach #R10673
YSI # 3217
Hach # 7293
Water #

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: ~~MW-7-2~~ MW-27

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 22
LOCATION: ROMULUS, NY

DATE: 12/7/16
INSPECTORS: SW/BBO
PUMP #: 12639
SAMPLE ID #:

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	MONITORING INSTRUMENT	MONITORING DETECTOR
844	39			0-5	NW-SE	fresh snow	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
	12.70					

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
		3.92			

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

Geopump #19236
Horiba #R10674
YSI #32854
Hach #7293
Water Level #

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)
900	3.72	Pump & YSI in well							
915		Pump Start							
933	4.44	200	~~0.13~~	~~10.3~~ 0.13	10.3	2.27	6.64	-76	
938	~~4.35~~	140		0.13	10.5	2.21	6.62	-82	
943	4.33			0.12	10.4	2.16	6.63	-84	31.7
948	4.32			0.12	10.5	2.13	6.61	-86	24.6
953	4.26		~1 gal	0.14	10.5	2.10	6.61	-88	22.6
958	4.25			0.14	10.5	2.07	6.60	-89	18.7
1003	4.22	~144		0.13	10.5	2.02	6.60	-91	14.2
1008	4.19		~1.75	0.12	10.5	2.01	6.59	-91	13.7
1013				0.13	10.5	1.98	6.59	-92	13.2
1018	4.19	140	~2.0	0.13	10.5	1.97	6.58	-93	11.7
1023				0.13	10.6	1.96	6.58	-93	10.6
1028				0.14	10.6	1.95	6.59	-94	10.7
1033	4.13		~2.5 gal	0.14	10.5	1.94	6.57	-94	9.95
1038	4.14			0.14	10.5	1.93	6.58	-95	9.23
1043				0.14	10.5	1.92	6.57	-95	9.20
							True		
1050		Sample Collected		~~BBW~~ ALB	W20	386	1050	Fe+: 3.30 mg/L	overlimit
					"	386 mS	1050	Mn+: 47.5 mg/L	overlimit
					"	386 mS	1050		
					"	387	1100		

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW1-22

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 22
LOCATION: ROMULUS, NY

DATE: 12/7/16
INSPECTORS: BBO/CW
PUMP #: 027062
SAMPLE ID #: ALBW20388

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	MONITORING INSTRUMENT	MONITORING DETECTOR
1222	34°F	Partly sunny			W→E	melting snow	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
	12.79					

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
		4.11			

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)
1229	3.69	Pump & YSI in well							
1230		Pump Started							
1243	4.61	140		1.66	11.3	1.55	6.65	-43	24.7
1248	4.79	120		2.04	11.5	1.56	6.62	-44	30.0
1253	4.76	100		2.31	11.7	1.56	6.61	-44	26.5
1258	4.73			2.52	11.7	1.56	6.58	-45	24.8
1303	4.74	100		2.75	11.7	1.56	6.58	-45	25.3
1308	4.71	93		2.79	11.8	1.56	6.55	-44	24.7
1313	4.71			2.85	11.8	1.58	6.57	-45	23.8
1318	4.65	94	1 gallon	2.88	11.8	1.58	6.54	-43	23.7
1323	4.71			2.86	11.8	1.59	6.54	-43	24.8
1330		Sample Collected				Fe+ =	22.0	mg/L	
						Mn+ =	47.5	mg/L over limit	
		Total	~1.75 gal						

Hach 027295
Horiba R10674
YSI 032584
Aspirator 025693

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MWT-24

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 22
LOCATION: ROMULUS, NY

DATE: 12/7/16
INSPECTORS: TBO/CG
PUMP #: 023069 / 36073 (replace)
SAMPLE ID #: ALBGW20389

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	MONITORING INSTRUMENT	MONITORING DETECTOR
1357	39°F	Partly Sunny		5-10	W-E	wet/muddy	OVM-580	PID

Compressor #025693

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)]

HACH 007293
YSI 032854
Horiba R10674

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
	12.99					

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 (mS/cm^3)	pH	ORP (mV)	TURBIDITY (NTU)
1401	3.00	Pump & YSI in the well							
1402		Pump Started							
1426		Pulled pump up, no w/ #36073	water came up the tubing during purge, replaced pump						
1426	2.84	Pump & YSI in well							
1431		Pump Started							
1435	3.45	100		1.01	9.6	0.904	7.36	-43	52.1
1440	3.55			1.08	9.4	0.904	7.23	-31	43.7
1445	3.59	100		0.95	9.4	0.904	7.22	-29	27.2
1450	3.59			0.97	9.3	0.906	7.23	-28	19.5
1455	3.60		½ gallon	0.98	9.7	0.907	7.22	-26	10.9
1500	3.64	90		0.91	9.5	0.909	7.22	-24	11.1
1505	3.65		1 gallon	0.88	9.4	0.909	7.19	-21	7.46
1515		Sample Collected				Fe+	0.01	mg/L	
						Mn+	0.0	mg/L	checked twice

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: PT-17
PROJECT: Ash Landfill LTM Groundwater Sampling - Round 22		DATE: 12/8/16
LOCATION: ROMULUS, NY		INSPECTORS: BBO/CW
		PUMP #: ~~30~~ 360073
		SAMPLE ID #: ALBCW20375

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	MONITORING INSTRUMENT	DETECTOR
1118	30's	Snow showers		5-10	W-7E	fresh snow	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)]

~~[illegible]~~ .85 gallons

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
	7.52					

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
		2.31			

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

YSI 032854
Horiba R10674
Hach 7293
Compensator
~~19325~~
19235

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)
1130	2.30	Pump & YSI in well							
1130		Pump Started							
1	~~2.30~~								
1135	2.36	164		0.27	10.4	.809	7	-43	4.33
1140	2.35	138		0.21	10.5	.802	6.93	-37	1.97
1145	2.35			0.25	10.5	.808	6.89	-30	2.26
1150	2.35			0.31	10.6	.826	6.83	-28	1.78
1155	2.35			0.33	10.6	.842	6.78	-24	1.44
1200	2.36			0.31	10.6	.854	6.78	-24	1.44
1205	2.39			0.29	10.6	.867	6.78	-21	0.86
1210	2.35	130	1 gallons	0.34	10.6	.881	6.76	-20	0.73
1215	2.35			0.34	10.6	.894	6.75	-18	0.67
1220	2.35			0.37	10.6	.903	6.74	-17	0.62
1225	2.35	140		0.36	10.6	0.913	6.63	-16	0.62
1230	2.35		2 gallons	0.36	10.6	0.920	6.72	-16	0.66
1235	2.35			0.35	10.6	0.928	6.69	-12	1.01
		Sampling	1240						
			Fe^+	003 mg/L					
			Mn^+	3.20 mg/L					
1257		Final	Volume 2.6 gallons						

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MWT-7

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 22
LOCATION: ROMULUS, NY

DATE: 12/8/16
INSPECTORS: BBO CW
PUMP #: 12639
SAMPLE ID #: HCBW20379

YSI 032854
Hach 007293
Horiba K10674
Compass

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1317	30s	Snowing		5-15	W → E	Fresh snow

MONITORING INSTRUMENT	MONITORING 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)]: 1.43

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
	13.66 ~~15.66~~					

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
		4.90			

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)
1320	4.79		Pump + YSI in well						
1326	4.89		Pump Started						
1336	4.96			2.21	11.0	0.963	7.00	24	~~77.00~~
1341	4.96	52		2.28	11.1	0.976	6.82	33	8.37
1346	4.99	80		2.21	11.0	0.981	6.85	29	6.87
1351	5.00	80		2.26	11.0	0.981	6.87	28	3.44
1356	5.00	120		2.31	11.0	0.986	6.85	28	2.84
1401	5.00		½ gallon	2.16	10.8	0.985	6.85	28	1.86
1406	5.00			1.91	10.9	0.988	6.83	28	1.48
1411	5.02	120		1.79	11.0	0.988	6.83	28	2.38
1416	5.02		1 gallon	1.74	11.0	0.989	6.83	28	0.96
1421	5.02		1.25 gallons	~~0.~~ 1.71	11.1	0.989	6.81	29	0.69
1426	5.02			1.61	11.1	0.992	6.81	29	0.54
1430		Sampling							
			Mn^+	0.4 mg/L					
			Fe^+	0.0 mg/L					
			Final volume 2.75 gallons						

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MWT-23

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 22
LOCATION: ROMULUS, NY

DATE: 12-8-12
INSPECTORS: BJO CW
PUMP #: 027062
SAMPLE ID #: ~~BTT~~ ALBW20354

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
	30°F	Cloudy/light snow		5-15	W-7E	muddy

MONITORING

INSTRUMENT	DETECTOR
OVM-580	PID

YSI 032854
Horiba R10674
Hach 7293
~~Waterra~~
Compressor 19235

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)]
2.13 gallons

	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
HISTORIC DATA	13.65					
	PID READING (OPENING WELL)	**DEPTH TO STATIC WATER LEVEL (TOC)**		**DEPTH TO STABILIZED WATER LEVEL (TOC)**	**DEPTH TO PUMP INTAKE (TOC)**	**PUMPING START TIME**
DATA COLLECTED AT WELL SITE		5.49				
	PUMP PRIOR TO SAMPLING (cps)			**PUMP AFTER SAMPLING (cps)**		
RADIATION SCREENING DATA						

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)
849	5.59	Pump & YSI in well							
~~848~~ 852		Pump Started							
912	5.69	84		0.27	10.2	1.34	6.38	110	47.6
917	5.74	130		0.36	10.0	1.31	6.29	50	29.3
923	5.74			0.73	9.9	1.29	6.27	16	18.4
928	5.74			0.85	9.9	1.28	6.28	4	12.5
933	5.73			0.97	9.8	1.27	6.32	-5	11.1
938	5.73	70		0.79	9.8	1.28	6.34	-11	8.5
943	6.12	110	1/2 gallon	0.39	10.6	1.28	6.35	-16	7.68
948	6.12			0.26	10.7	1.29	6.34	-17	7.14
953	6.12			0.23	10.8	1.29	6.37	-22	8.89
958	6.12	100	3/4 gallon	0.24	10.8	1.29	6.37	-25	5.85
1003	6.13			0.34	10.8	1.30	6.36	-27	5.45
1008	6.13			0.46	10.8	1.30	6.37	-29	5.78
1013	6.14			0.46	10.9	1.30	6.38	-32	5.78
1018	6.14	106	1.25 gallons	0.47	10.9	1.30	6.39	-34	4.22
1023	6.15			0.43	10.9	1.29	6.40	-36	4.71
1028	6.15			0.36	10.9	1.29	6.40	-37	4.64
1033	6.15		1.6 gallons	0.21	10.9	1.29	6.41	-39	3.94
1038	6.15			0.23	10.9	1.28	6.38	-40	4.22
Sample time			10:50						

Fe^{+} 2.62 mg/L
Mn^{+} 6.3 mg/L

Total purge volume = 2 gallons

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW-44A

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 22
LOCATION: ROMULUS, NY

DATE: 12/2/16
INSPECTORS: BJD CW
PUMP #: Peristaltic Pump
SAMPLE ID #: ALBW20390

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND DIRECTION (FROM) (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1305	430's	Partly sunny breezy		5-15	W→E	fresh shot

MONITORING INSTRUMENT	MONITORING 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)]
1.5 gallons

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
	12.41					

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
		3.32			

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)
1513	3.22	Peristaltic pump & YSI in well							
1517		Pump Started							
1518	5.00	230		3.52	10.6	0.921	7.04	50	5.21
1523	6.75			3.59	9.8	0.906	7.14	44	2.53
1528	8.00			2.98	10.1	0.910	7.11	45	1.80
1533	8.01			2.71	10.5	0.937	7.09	46	1.76
1538	8.00		3 gallons	2.65	10.5	0.959	7.10	44	1.13
1543	8.17		3.75 gallons	2.02	10.6	0.957	6.99	50	0.93
1548	8.52		5 gallons	2.25	10.7	0.973	7.00	47	2.51
				Fe+	0.04	mg/L			
				Mn+	0.0m				
			Final volume 5 gallons						

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW1-22

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 22
LOCATION: ROMULUS, NY

DATE: 12/9/16
INSPECTORS: BBO/CW
PUMP #: 109032
SAMPLE ID #: ALTW20580

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1526	20s	Sunny/Partly Cloudy		Variable	6-15	

MONITORING INSTRUMENT	MONITORING 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)]
1.83 gallons

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
	14.23					

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
		3.62			

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)
1526	3.63	Pump	SYST in well						
1526		Pump	Started						
1531	~~3.68~~ 3.72	108		0.09	10.6	1.85	6.63	130	61.2
1536	4.12			0.07	10.4	1.87	6.54	103	65.0
1541	4.8	110		0.08	10.2	1.89	6.52	1083	52.3
1546	5.4	92		0.09	10.2	1.90	6.53	72	44
1551	6.7	162		0.11	10.7	1.90	6.52	67	37.8
1556	6.5			0.12	10.9	1.90	6.52	65	34.9
1601	6.91	110	1 gallon	0.11	10.8	1.91	6.47	62	33.4
1606	7.2			0.11	10.9	1.91	6.52	56	32.9
1611	7.45	108		0.11	11.2	1.91	6.51	50	30.4
1616	7.60			0.11	11.2	1.91	6.51	46	28.1
1621	7.78	100		0.10	11.2	1.91	6.50	39	24.0
1626	7.92		1.75	0.09	11.2	1.90	6.48	30	20.7
1631	7.95	100	2 gallons	0.09	11.4	1.89	6.48	27	18.1
1636	7.95			0.09	11.5	1.89	6.48	23	17.2
1641	8.02	~124	~2.25	0.12	11.4	1.88	6.46	19	13.8
1646	8.10			0.08	11.5	1.88	6.47	14	9.9
1650	8.14		~2.5 gal	0.13	11.5	1.88	6.46	13	7.4
1654	8.2			0.10	11.5	1.88	6.46	10	5.7
1659	8.24		~3.0 gal	0.12	11.5	1.87	6.47	8	3.5
1705	8.22			0.12	11.6	1.88	6.47	7	1.6
1707	8.24			0.11	11.5	1.87	6.47	4	0.3

1710 Sample Collected

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MWT-24

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 22
LOCATION: ROMULUS, NY

DATE: 12/9/16
INSPECTORS: BTB/CW
PUMP #: 9294
SAMPLE ID #: ALBW20381

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
1130	20c	Sunny	[illegible]	5-15	NW→SE	~1" snow on ground

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)]

YSI 32554

Comprensco 025693

Horiba R10674

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
	12.91					

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
		5.561			

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)
1130	5.41	Pump ON	YSI in well						
1131		Pump	Started						
1151	5.65	120		0.59	10.7	1.02	6.84	179	1.8
1156	5.66			0.45	10.8	1.03	6.78	174	2.8
1201	5.65	110		0.32	10.7	1.03	6.77	169	4.1
1206	5.65			0.22	10.7	1.04	6.77	164	4.1
1211	5.65			0.13	10.9	1.03	6.76	161	2.9
1216	5.65	118	.75 gallons	0.11	10.9	1.03	6.75	158	2.5
1221	5.65			0.15	10.8	1.03	6.75	156	2.9
1226	5.65			0.14	10.8	1.03	6.75	154	2.3
1231	5.65			0.12	10.8	1.03	6.74	152	2.8
1236	5.65	104	1½ gallons	0.08	10.7	1.03	6.74	150	1.6
1241	5.65			0.09	10.8	1.03	6.74	149	1.2
1246	5.65			0.07	10.8	1.03	6.73	148	1.0
1251	5.65	102		0.07	10.8	1.03	6.73	146	1.0
1256	5.65			0.07	10.9	1.02	6.73	145	1.0
1301	5.65			0.09	10.8	1.03	6.72	144	1.3
1306	5.68	108	2.5 gallons	0.08	10.8	1.03	6.72	143	3.0
1310		Sample	Collected						

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: PT-22

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 22
LOCATION: ROMULUS, NY

DATE: 12/09/~~2016~~ 2016
INSPECTORS: BBO (W)
PUMP #: 027062
SAMPLE ID #: ALGW20377

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1328	high 20s	Sunny		5-15	NW→SE	snow

MONITORING INSTRUMENT	MONITORING 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)]
1.22 gallons

YSI 32854

Compress: 025693

Horiba K1067Y

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
	11.9					

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
		9.44			

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)
1331	4.31	Pump	x YSI in						
		Pump	started						
1336	4.53			1.91	9.4	1.07	7.02	137	0.0
1341	4.56	118		1.91	9.5	1.45	6.83	176	0.0
1346	4.56			1.84	9.6	1.09	6.81	144	0.0
1351	4.54			1.85	9.6	1.09	6.79	144	0.0
1356	4.54	130		1.87	9.6	1.09	6.77	143	0.0
1401	4.54		1 gallon	1.78	9.6	1.08	6.79	140	0.0
1406	4.55		~1.25 gal	1.73	9.6	1.09	6.77	139	0.0
1411	4.55			1.91	9.6	1.09	6.79	138	0.0
1416	4.57	134	~1.6 gallons	1.87	9.7	1.09	6.77	137	0.0
1421	~~4.57~~	4.57		1.89	9.7	1.09	6.79	134	0.0
1426	4.57	90		1.93	9.7	1.09	6.77	134	0.0
1431	4.57		2 gallons	1.94	9.6	1.09	6.78	132	0.0
1436	4.57			2.02	9.7	1.09	6.77	131	0.0
1441	4.60			1.97	9.7	1.09	6.78	129	0.0
1446	4.60		2.6 gallons	2.01	9.7	1.09	6.78	128	0.0
1451	4.6	116		2.04	9.7	1.09	6.78	128	0.0
1456	4.6		~3 gallons	1.94	9.7	1.09	6.79	124	0.0
1500	Sample		Collected						
			3.25 gal						

Total

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: PT-24
PROJECT: Ash Landfill LTM Groundwater Sampling - Round 22 LOCATION: ROMULUS, NY		DATE: 12/9/16 INSPECTORS: BBO/CW PUMP #: 12639 SAMPLE ID #: ALBW20378

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	(FROM) WIND DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
858	20's	snowing		5-15	NW→SE	~1" snow on ground	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)]

1.16 gal 1well vol

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
	11.86					

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
		4.75'			

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

Horiba
YSI 32854
Compressor 0-5693
Horiba R10674

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)
905	4.76	Pump	& YSI in well						
908		Pump	Started						
924	4.75			1.18	10.9	0.729	6.89	230	3.6
929	4.77	100		1.06	10.9	0.738	6.92	236	1.7
934	4.77			1.14	10.9	0.722	6.73	238	0.1
939	4.77	80		1.17	10.9	0.716	6.70	236	0.0
944	4.80			0.69	10.8	0.702	6.67	236	0.0
947	4.79	120	1/2 gallon	0.58	10.8	0.703	6.65	236	0.0
954	4.79			0.83	10.5	0.700	6.59	233	0.0
959	4.79			0.81	10.6	0.706	6.65	230	0.0
1004	4.79	126	1.25 gallons	0.82	10.5	0.707	6.64	226	0.0
1009	4.80			0.89	10.5	0.708	6.68	220	0.0
1014	4.8	126	1.6 gallons	0.83	10.6	0.709	6.70	216	0.0
1019	4.8			0.87	10.6	0.711	6.71	214	0.0
1024	4.8			0.87	10.6	0.712	6.75	209	0.0
1029	4.8	92	2 gallons	0.92	10.5	0.712	6.76	207	0.0
1034	4.8	92		0.90	10.5	0.711	6.77	204	0.0
1039	4.8		2.3 gallons	0.85	10.45	0.709	6.77	202	0.0
1044	4.8	100		0.78	10.5	0.709	6.77	208	0.0
1049	4.8		2.5 gallons	0.86	10.5	0.709	6.79	197	0.0
1054	4.81			0.90	10.4	0.709	6.81	193	0.0
1059	4.81		2.8 gallons	0.79	10.4	0.709	6.82	192	0.0
1104	4.81			0.89	10.5	0.706	6.82	190	0.0
1109	4.81		3.1 gallons	0.74	10.4	0.706	6.83	189	0.0

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: PT-18A

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 22
LOCATION: ROMULUS, NY

DATE: 12/10/16
INSPECTORS: BBO/CW
PUMP #: R8490
SAMPLE ID #: ALBW20376

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
1159	20's	Partly Sunny		5-10	~~360~~ S	dusty at
					SW→NE	snow

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)]
1.1 gallons

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
	12.78					

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
		6.01			

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

Hach 020134
Horiba R10674
YSI 032854
Compressor 025693

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)
1203	5.92	Pump & YSI in well							
1204		Pump Started							
1211	6.0	155		0.81	10.0	1.79	6.71	156	4.27
1216	6.02	124		0.89	10.2	1.79	6.58	156	3.75
1221	6.03			0.90	10.2	1.79	6.56	155	2.82
1226	6.03			1.14	10.2	1.80	6.54	155	3.00
1231	6.05	126	0.5 gal	1.38	10.1	1.80	6.53	155	1.83
1236	~~6.08~~			1.29	10.1	1.81	6.52	154	1.67
1241	6.08			1.29	10.1	1.80	6.50	154	1.50
1246	6.08		~1.0 gal	1.31	10.1	1.80	6.51	153	1.40
1251	6.08			1.25	10.1	1.80	6.57	153	1.34
1256	6.05	~120		1.27	10.1	1.80	6.52	153	1.41
1301	6.05		1.6 gallons	1.52	10.1	1.80	6.51	153	1.07
1306	6.08			1.44	10.0	1.80	6.50	152	1.07
1311	6.05			1.57	10.0	1.80	6.50	152	0.81
1315		Sample Collected							

Page 1 of 2

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MWT-25

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 22
LOCATION: ROMULUS, NY

DATE: 12-10-16
INSPECTORS: BSO CW
PUMP #: 8231
SAMPLE ID #: ALB120382

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	MONITORING INSTRUMENT	MONITORING DETECTOR
0908	20s	Snowy		5-10	SW-NE	overnight snow, dust	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)]
1.36 gal 1 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
	13.16					

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
		4.81			

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

Horiba #R10674
Hach #020134
YSI 85 #03 2854
Compressor #025693

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)
0914	4.44	Pump + YSI							
915		Pump started							
920	4.92	158		2.95	9.8	1.74	6.86	220	7.35
925	5.23	156		3.08	9.7	1.76	6.81	219	2.72
930	5.46	102		3.02	9.7	1.77	6.82	225	2.05
935	5.58			2.92	9.7	1.78	6.80	225	1.75
940	5.75	100		2.65	10.0	1.78	6.80	221	1.81
945	5.92			2.60	9.9	1.79	6.80	218	1.43
950	6.13	96		2.73	9.9	1.80	6.81	216	1.22
955	6.4	96		2.65	10.0	1.80	6.85	210	.88
1000	6.77	140		2.81	9.8	1.80	6.85	206	.98
1005	6.99	128		2.50	10.0	1.81	6.86	203	.99
1010	7.13			2.60	9.9	1.81	6.86	200	.83
1015	7.25	126	~1.75	2.70	10.0	1.82	6.87	197	0.87
1020	7.41			2.63	10.0	1.82	6.87	194	0.81
1025	7.53	116		2.55	10.1	1.82	6.89	191	0.70
1030	7.65		~2.0 gal	2.53	10.2	1.83	6.89	189	0.72
1035	7.74	102		2.55	10.1	1.83	6.90	186	0.46
1040	7.85		~2.5 gal	2.51	10.3	1.84	6.90	185	0.50
1045	7.95			2.36	10.2	1.82	6.90	182	0.51

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW1-05

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 22
LOCATION: ROMULUS, NY

DATE: 12/10/16
INSPECTORS: BBO/CW
PUMP #: 2231
SAMPLE ID #: ALB-20382

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	MONITORING INSTRUMENT	MONITORING 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)]

	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
HISTORIC DATA						

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

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)
1050	8.03	102	~2.75	2.36	10.2	1.84	6.90	170	0.32
1055	8.15			2.22	10.2	1.84	6.91	178	0.46
1100	8.25		3.0 gal	2.49	10.3	1.83	6.91	177	0.39
1105	8.39	108		2.47	10.2	1.84	6.92	175	0.57
1110	8.46			2.33	10.3	1.83	6.92	173	0.54
1115			~3.25 gal	2.31	10.8	1.84	6.92	171	0.50
1120	8.69			2.12	10.9	1.84	6.94	167	0.42
1125	8.78	108	~3.5 gal	2.07	10.8	1.84	6.92	167	0.41
1130	8.27			1.96	10.9	1.84	6.90	165	0.51
1135				1.69	11.0	1.85	6.90	158	0.53
1140			~4 gallons	1.63	11.0	1.85	6.90	153	0.47
1150		Sample	Collected						
			~4 Liters						

Landowner cell 315-246-1515 or 315-712-0118 Martin Landowner

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW-56

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 22
LOCATION: ROMULUS, NY

DATE: 12/10/16
INSPECTORS: BTB/CW
PUMP #: 36675
SAMPLE ID #: ALBWC0383

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
1400	20's	overcast		0-5	W-E	overc dust show	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)]
0.48 gal / 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
	6.48					

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
		3.48			

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

Horiba #R10674
Hach #020134
YSI #032854
Compass #025693

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)
1406 BT	3.48	Pump on	YSI in well						
1408		Pump	Start						
1413	3.52	210		1.56	6.2	0.907	6.94	136	24.1
1418	3.55	152		1.05	6.1	0.881	6.77	122	26.2
1423	3.52		~0.5 gal	0.85	6.0	0.879	6.76	110	15.3
1428	3.53			1.21	6.0	0.879	6.74	91	10.8
1433	3.54		~1.0 gal	1.65	5.9	0.872	6.73	74	9.70
1438	3.53	152		1.40	5.8	0.867	6.71	64	6.07
1443	3.54		~1.25 gal	1.27	5.8	0.860	6.72	55	5.92
1448	3.54		~1.6 gal	1.11	5.8	0.850	6.71	46	5.11
1455		Sample	Collected						
			~1.75 gals						

APPENDIX B

COMPLETE GROUNDWATER DATA

Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 10
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Num of Detects Above Standard-1	ASH LANDFILL MWT-22 GW ALBW20071 1/4/2007 SA LTM 1 Total	ASH LANDFILL MWT-22 GW ALBW20075 3/17/2007 SA LTM 2 Total	ASH LANDFILL MWT-22 GW ALBW20100 6/6/2007 SA LTM 3 Total	ASH LANDFILL MWT-22 GW ALBW20115 11/14/2007 SA LTM 4 Total	ASH LANDFILL MWT-22 GW ALBW20121 6/25/2008 SA LTM 5 Total	ASH LANDFILL MWT-22 GW ALBW20136 12/15/2008 SA LTM 6 Total	ASH LANDFILL MWT-22 GW ALBW20151 6/3/2009 SA LTM 7 Total	ASH LANDFILL MWT-22 GW ALBW20166 12/16/2009 SA LTM 8 Total	ASH LANDFILL MWT-22 GW ALBW20181 7/1/2010 SA LTM 9 Total
									Value Qual	Value Qual	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	328	GA	5	1	2 U	4 U	1 U	1 U	5 U	1.3 UJ	0.26 U	1.3 U	0.5 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	0	328	GA	5	0	2 U	4 U	1 U	1 U	5 U	1 UJ	0.21 U	1.1 U	0.18 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	0	328	GA	5	0	2 U	4 U	1 UJ	1 U	5 UJ	1.6 UJ	0.31 U	1.5 U	0.5 U
1,1,2-Trichloroethane	UG/L	0	0%	0	328	GA	1	0	2 U	4 U	1 U	1 U	5 U	1.2 UJ	0.23 U	1.2 U	0.13 U
1,1-Dichloroethane	UG/L	62	12%	40	328	GA	5	1	2 U	4 U	1 U	1 U	5 U	3.8 U	0.75 U	1.9 U	0.25 U
1,1-Dichloroethene	UG/L	2.6	11%	36	328	GA	5	0	2 U	4 U	1 U	1 U	5 U	1.4 U	0.29 U	1.5 U	0.12 J
1,2,4-Trichlorobenzene	UG/L	0	0%	0	327	GA	5	0	2 U	4 U	1 U	1 U	5 U	2 UJ	0.41 U	2 U	0.25 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0	328	GA	0.04	0	2 U	4 U	1 U	1 U	5 UJ	5 UJ	1 UJ	2 U	0.44 U
1,2-Dibromoethane	UG/L	0	0%	0	328	GA	0.0006	0	2 U	4 U	1 U	1 U	5 U	0.85 UJ	0.17 U	0.83 U	0.25 U
1,2-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	2 U	4 U	1 U	1 U	5 U	1 U	0.2 U	1 U	0.21 U
1,2-Dichloroethane	UG/L	5.6	15%	49	328	GA	0.6	41	2 U	4 U	1 U	1 U	5 U	1 U	0.21 U	1.1 U	0.1 U
1,2-Dichloropropane	UG/L	0.29	0%	1	328	GA	1	0	2 U	4 U	1 U	1 U	5 U	0.7 U	0.14 U	1.6 U	0.13 U
1,3-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	2 U	4 U	1 U	1 U	5 U	0.8 U	0.16 U	1.8 U	0.25 U
1,4-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	2 U	4 U	1 U	1 U	5 U	0.8 U	0.16 U	2 U	0.28 U
Acetone	UG/L	2600	16%	49	315				10 U	18 J	38	5 U	25 U	6.5 UJ	2.5 J	6.7 U	5 U
Benzene	UG/L	0.48	2%	5	328	GA	1	0	2 U	4 U	1 U	1 U	5 U	0.8 U	0.16 U	2 U	0.25 U
Bromodichloromethane	UG/L	0	0%	0	328	MCL	80	0	2 U	4 U	1 U	1 U	5 U	1.9 U	0.39 U	1.9 U	0.25 U
Bromoform	UG/L	0	0%	0	328	MCL	80	0	2 U	4 U	1 U	1 U	5 U	1.3 UJ	0.26 UJ	1.3 U	0.5 U
Carbon disulfide	UG/L	2.3	0%	1	328				2 U	4 U	1 U	1 U	5 U	0.95 U	0.19 UJ	0.97 U	0.6 U
Carbon tetrachloride	UG/L	0	0%	0	328	GA	5	0	2 U	4 U	1 U	1 U	5 U	1.4 UJ	0.27 U	1.3 U	0.5 U
Chlorobenzene	UG/L	0	0%	0	328	GA	5	0	2 U	4 U	1 U	1 U	5 U	0.9 U	0.32 U	1.6 U	0.25 U
Chlorodibromomethane	UG/L	0	0%	0	328	MCL	80	0	2 U	4 U	1 U	1 U	5 U	1.6 U	0.32 U	1.6 U	0.1 U
Chloroethane	UG/L	1.1	2%	7	328	GA	5	0	2 UJ	4 U	1 U	1 U	5 UJ	1.6 U	0.32 U	1.6 U	1 U
Chloroform	UG/L	71	8%	25	328	GA	7	7	2 U	4 U	1 U	1 U	5 U	1.7 U	0.34 U	1.7 U	0.14 U
Cis-1,2-Dichloroethene	UG/L	820	88%	290	328	GA	5	199	**130**	**90**	**120**	**99**	**68**	**160**	**66**	**57**	**41**
Cis-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	2 U	4 U	1 U	1 U	5 U	1.8 U	0.36 U	1.8 U	0.11 U
Cyclohexane	UG/L	0.3	0%	1	328				2 U	4 U	1 U	1 U	5 U	1.1 UJ	0.53 U	2.7 U	0.25 U
Dichlorodifluoromethane	UG/L	0.3	0%	1	321	GA	5	0	2 U	4 U	1 U	1 U	5 U	1.4 U	0.29 U	1.4 U	0.25 UJ
Ethyl benzene	UG/L	9.2	6%	19	328	GA	5	1	2 U	4 U	1 U	1 U	5 U	0.9 U	0.18 U	0.92 U	0.11 U
Isopropylbenzene	UG/L	0.1	0%	1	328	GA	5	0	2 U	4 U	1 U	1 U	5 U	0.95 U	0.19 U	0.96 U	0.1 U
Methyl Acetate	UG/L	6	1%	2	313				2 U	4 UJ	1 U	1 UJ	5 UJ	0.85 UJ	0.17 UJ	2.5 U	0.19 U
Methyl bromide	UG/L	2.1	0%	1	322	GA	5	0	2 U	4 U	1 U	1 U	5 UJ	1.4 U	0.28 U	1.4 U	0.8 U
Methyl butyl ketone	UG/L	0	0%	0	328				10 U	20 U	5 U	5 UJ	25 UJ	6 U	1.2 U	6.2 U	1 U
Methyl chloride	UG/L	0	0%	0	328	GA	5	0	2 U	4 U	1 U	1 U	5 UJ	1.7 U	0.35 U	1.7 U	0.33 U
Methyl cyclohexane	UG/L	0.17	0%	1	328				2 U	4 U	1 U	1 U	5 U	1.1 UJ	0.5 U	2.5 U	0.1 U
Methyl ethyl ketone	UG/L	4900	7%	22	321				6 J	20 U	5 U	5 U	25 UJ	6.5 UJ	1.3 U	6.6 U	1 U
Methyl isobutyl ketone	UG/L	1.9	0%	1	328				10 U	20 U	5 U	5 U	25 UJ	4.6 UJ	0.91 U	4.5 U	1 U
Methyl Tertbutyl Ether	UG/L	0	0%	0	328				2 U	4 U	1 U	1 U	5 U	0.8 UJ	0.16 U	0.8 U	0.2 U
Methylene chloride	UG/L	18	4%	12	328	GA	5	7	1.2 J	4 U	1 U	1 U	5 U	2.2 UJ	0.44 U	2.2 U	1 U
Styrene	UG/L	0	0%	0	328	GA	5	0	2 U	4 U	1 U	1 U	5 U	0.9 U	0.18 U	0.92 U	0.11 U
Tetrachloroethene	UG/L	27	1%	2	328	GA	5	1	2 U	4 U	1 U	1 U	5 U	1.8 U	0.36 U	1.8 U	0.15 U
Toluene	UG/L	590	10%	32	328	GA	5	18	2 U	4 U	1 U	1 U	5 U	2.6 U	0.51 U	2.6 U	0.33 U
Total Xylenes	UG/L	60	1%	2	328	GA	5	1	6 U	12 U	3 U	3 U	15 U	4.6 U	0.66 U	3.3 U	0.2 U
Trans-1,2-Dichloroethene	UG/L	22	51%	168	328	GA	5	17	2.7	4 U	3.2	0.85 J	5 U	0.65 U	0.77 J	2.1 U	1.3
Trans-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	2 U	4 U	1 U	1 U	5 U	1.8 U	0.37 U	1.8 U	0.21 U
Trichloroethene	UG/L	3800	68%	223	328	GA	5	104	**5.2**	3.8 J	**6.5**	2.6	3 J	**5.9**	2.2	2.3 U	0.6 J
Trichlorofluoromethane	UG/L	0	0%	0	328	GA	5	0	2 U	4 U	1 UJ	1 U	5 UJ	0.75 UJ	0.15 U	0.76 U	0.25 U
Vinyl chloride	UG/L	180	65%	213	328	GA	2	161	**98**	**64**	**81**	**180**	**42**	**140**	**89**	**52**	**57**
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	96%	161	168												
Ethene	UG/L	200	88%	148	168												
Methane	UG/L	23,000	98%	165	168												
Sulfate	MG/L	1060	86%	144	168	GA	250	26									
Total Organic Carbon	MG/L	2050	100%	168	168												

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 10
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Num of Detects Above Standard-1	ASH LANDFILL MWT-22 GW ALBW20196 12/17/2010 SA LTM 10 Total Value Qual	ASH LANDFILL MWT-22 GW ALBW20211 7/20/2011 SA LTM 11 Total Value Qual	ASH LANDFILL MWT-22 GW ALBW20226 12/14/2011 SA LTM 12 Total Value Qual	ASH LANDFILL MWT-22 GW ALBW20241 6/21/2012 SA LTM 13 Total Value Qual	ASH LANDFILL MWT-22 GW ALBW20256 12/12/2012 SA LTM 14 Total Value Qual	ASH LANDFILL MWT-22 GW ALBW20269 7/10/2013 SA LTM 15 Total Value Qual	ASH LANDFILL MWT-22 GW ALBW20281 12/12/2013 SA LTM 16 Total Value Qual	ASH LANDFILL MWT-22 GW ALBW20300 6/21/2014 SA LTM 17 Total Value Qual	ASH LANDFILL MWT-22 GW ALBW20316 12/18/2014 SA LTM 18 Total Value Qual
Volatile Organic Compounds																	
1,1,1-Trichloroethane	UG/L	15	2%	5	328	GA	5	1	0.5 U	0.5 U	0.5 U	0.5 UJ	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	328	GA	5	0	0.18 U	0.18 U	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	328	GA	5	0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U
1,1,2-Trichloroethane	UG/L	0	0%	0	328	GA	1	0	0.13 U	0.13 U	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%	40	328	GA	5	1	0.25 U	0.25 U	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%	36	328	GA	5	0	0.66 J	0.11 U	0.38 J	0.11 U	0.11 U	0.27 J	0.14 J	0.11 U	0.11 U
1,2,4-Trichlorobenzene	UG/L	0	0%	0	327	GA	5	0	0.25 U	0.25 U	0.25 U	0.25 U	0.25 UJ	0.25 U	0.25 U	0.25 U	0.25 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0	328	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	0.44 U	0.44 U
1,2-Dibromoethane	UG/L	0	0%	0	328	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	0.25 U	0.25 U
1,2-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.21 U	0.21 U	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%	49	328	GA	0.6	41	0.25 J	0.1 U	0.29 J	0.1 UJ	0.22 J	0.28 J	0.25 J	0.11 J	0.1 U
1,2-Dichloropropane	UG/L	0.29	0%	1	328	GA	1	0	0.13 U	0.13 U	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	328	GA	3	0	0.25 U	0.25 U	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	328	GA	3	0	0.28 U	0.28 U	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%	49	315				5 UJ	5 UR	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U
Benzene	UG/L	0.48	2%	5	328	GA	1	0	0.25 U	0.25 U	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	328	MCL	80	0	0.25 U	0.25 U	0.25 U	0.25 UJ	0.25 UJ	0.25 U	0.25 U	0.25 U	0.25 U
Bromoform	UG/L	0	0%	0	328	MCL	80	0	0.5 U	0.5 U	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	2.3	0%	1	328				0.6 U	0.6 U	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	328	GA	5	0	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	UG/L	0	0%	0	328	GA	5	0	0.25 U	0.25 U	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	328	MCL	80	0	0.1 U	0.1 U	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	328	GA	5	0	1 U	1 UJ	1 U	1 UJ	1 U	2 U	2 U	2 UJ	2 U
Chloroform	UG/L	71	8%	25	328	GA	7	7	0.14 U	0.14 U	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%	290	328	GA	5	199	**130**	**23**	**140**	**57**	**86**	**150**	**100**	**19**	**32**
Cis-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	0.11 U	0.11 U	0.11 U	0.11 U	0.11 UJ	0.11 U	0.11 U	0.11 U	0.11 U
Cyclohexane	UG/L	0.3	0%	1	328				0.25 U	0.25 U	0.25 U	0.25 U	0.25 UJ	0.25 U	0.25 U	0.25 U	0.25 U
Dichlorodifluoromethane	UG/L	0.3	0%	1	321	GA	5	0	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 UJ	0.25 U	0.25 U
Ethyl benzene	UG/L	9.2	6%	19	328	GA	5	1	0.11 U	0.11 U	0.11 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	328	GA	5	0	0.1 U	0.1 U	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	313				0.19 U	0.19 UJ	0.19 U	0.19 UR	0.19 UJ	0.19 U	0.19 U	0.19 U	0.19 U
Methyl bromide	UG/L	2.1	0%	1	322	GA	5	0	0.8 UJ	0.8 UJ	0.8 UJ	0.8 UJ	0.8 UJ	2 U	2 UJ	2 U	2 U
Methyl butyl ketone	UG/L	0	0%	0	328				1 U	1 UJ	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U
Methyl chloride	UG/L	0	0%	0	328	GA	5	0	0.33 U	0.33 U	0.33 UJ	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Methyl cyclohexane	UG/L	0.17	0%	1	328				0.1 U	0.1 U	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	7%	22	321				1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U
Methyl isobutyl ketone	UG/L	1.9	0%	1	328				1 U	1 U	1 U	1 UJ	1 UJ	1 UJ	1 U	1 U	1 U
Methyl Tertbutyl Ether	UG/L	0	0%	0	328				0.2 U	0.2 U	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	328	GA	5	7	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	UG/L	0	0%	0	328	GA	5	0	0.11 U	0.11 U	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	328	GA	5	1	0.15 U	0.15 U	0.15 UJ	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
Toluene	UG/L	590	10%	32	328	GA	5	18	0.33 U	0.33 U	0.33 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	328	GA	5	1	0.2 U	0.2 U	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	51%	168	328	GA	5	17	2.8	2	3.9	5	3.8	**6.2**	**7.1**	2.8	3.6
Trans-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	0.21 U	0.21 U	0.21 U	0.21 UJ	0.21 UJ	0.21 UJ	0.21 UJ	0.21 U	0.21 U
Trichloroethene	UG/L	3800	68%	223	328	GA	5	104	1.8	0.32 J	2.3	0.48 J	0.73 J	2	0.88 J	0.19 J	0.21 J
Trichlorofluoromethane	UG/L	0	0%	0	328	GA	5	0	0.25 U	0.25 U	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%	213	328	GA	2	161	**98**	**59**	**83**	**90**	**100**	**84**	**120**	**65**	**84**
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	96%	161	168												
Ethene	UG/L	200	88%	148	168												
Methane	UG/L	23,000	98%	165	168												
Sulfate	MG/L	1060	86%	144	168	GA	250	26									
Total Organic Carbon	MG/L	2050	100%	168	168												

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
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Appendix B

Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 10
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Num of Detects Above Standard-1	ASH LANDFILL MWT-22 GW ALBW20332 6/5/2015 SA LTM 19 Total Value Qual	ASH LANDFILL MWT-22 GW ALBW20348 12/18/2015 SA LTM 20 Total Value Qual	ASH LANDFILL MWT-22 GW ALBW20364 6/16/2016 SA LTM 21 Total Value Qual	ASH LANDFILL MWT-22 GW ALBW20380 12/9/2016 SA LTM 22 Total Value Qual	ASH LANDFILL PT-22 GW ALBW20060 1/3/2007 SA LTM 1 Total Value Qual	ASH LANDFILL PT-22 GW ALBW20086 3/15/2007 SA LTM 2 Total Value Qual	ASH LANDFILL PT-22 GW ALBW20089 6/5/2007 SA LTM 3 Total Value Qual	ASH LANDFILL PT-22 GW ALBW20104 11/14/2007 SA LTM 4 Total Value Qual	ASH LANDFILL PT-22 GW ALBW20118 6/26/2008 SA LTM 5 Total Value Qual
Volatile Organic Compounds																	
1,1,1-Trichloroethane	UG/L	15	2%	5	328	GA	5	1	0.37 U	0.37 U	0.37 U	0.37 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	0	328	GA	5	0	0.62 U	0.62 U	0.62 U	0.62 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	0	328	GA	5	0	0.36 U	0.36 U	0.36 U	0.36 U	1 U	1 U	1 U	1 U	1 UJ
1,1,2-Trichloroethane	UG/L	0	0%	0	328	GA	1	0	0.33 U	0.33 U	0.33 U	0.33 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	UG/L	62	12%	40	328	GA	5	1	0.38 U	0.38 U	0.38 U	0.38 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	UG/L	2.6	11%	36	328	GA	5	0	0.36 U	0.36 U	0.36 U	0.36 U	1 U	1 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene	UG/L	0	0%	0	327	GA	5	0	2.5 U	2.5 U	2.5 U	2.5 U	1 U	1 U	1 UJ	1 U	1 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0	328	GA	0.04	0	1.1 U	1.1 U	1.1 U	1.1 U	1 U	1 U	1 U	1 U	1 UJ
1,2-Dibromoethane	UG/L	0	0%	0	328	GA	0.0006	0	0.44 U	0.44 U	0.44 U	0.44 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.37 U	0.37 U	0.37 U	0.37 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	UG/L	5.6	15%	49	328	GA	0.6	41	0.5 U	0.5 U	0.5 U	0.5 U	**3.3**	**2.4**	**5.6**	**5**	**3.9**
1,2-Dichloropropane	UG/L	0.29	0%	1	328	GA	1	0	0.67 U	0.67 U	0.67 U	0.67 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.43 U	0.43 U	0.43 U	0.43 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.46 U	0.46 U	0.46 U	0.46 U	1 U	1 U	1 U	1 U	1 U
Acetone	UG/L	2600	16%	49	315				7 U	7 UR	7 U	7 U	5 U	5 U	3.8 J	5.3	5 U
Benzene	UG/L	0.48	2%	5	328	GA	1	0	0.43 U	0.43 U	0.43 U	0.43 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	UG/L	0	0%	0	328	MCL	80	0	0.44 U	0.44 U	0.44 U	0.44 U	1 U	1 U	1 U	1 U	1 U
Bromoform	UG/L	0	0%	0	328	MCL	80	0	0.43 UJ	0.43 U	0.43 UJ	0.43 U	1 U	1 U	1 U	1 U	1 U
Carbon disulfide	UG/L	2.3	0%	1	328				1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Carbon tetrachloride	UG/L	0	0%	0	328	GA	5	0	0.33 U	0.33 U	0.33 U	0.33 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	UG/L	0	0%	0	328	GA	5	0	0.26 U	0.26 U	0.26 U	0.26 U	1 U	1 U	1 U	1 U	1 U
Chlorodibromomethane	UG/L	0	0%	0	328	MCL	80	0	0.32 UJ	0.32 U	0.32 U	0.32 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	UG/L	1.1	2%	7	328	GA	5	0	2.5 U	2.5 U	2.5 U	2.5 U	1 UJ	1 U	1.1 J	0.82 J	1 UJ
Chloroform	UG/L	71	8%	25	328	GA	7	7	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	1 U
Cis-1,2-Dichloroethene	UG/L	820	88%	290	328	GA	5	199	**32**	**78**	**39**	**71**	**57**	**41**	**61**	**30**	**26**
Cis-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	0.4 U	0.4 U	0.4 U	0.4 U	1 U	1 U	1 U	1 U	1 U
Cyclohexane	UG/L	0.3	0%	1	328				0.39 U	0.39 U	0.39 U	0.39 U	1 U	1 U	1 U	1 U	1 U
Dichlorodifluoromethane	UG/L	0.3	0%	1	321	GA	5	0	0.6 U	0.6 U	0.6 U	0.6 U*	1 U	1 U	1 UJ	1 U	1 U
Ethyl benzene	UG/L	9.2	6%	19	328	GA	5	1	0.33 U	0.33 U	0.33 U	0.33 U	1 U	1 U	1 U	1 U	1 U
Isopropylbenzene	UG/L	0.1	0%	1	328	GA	5	0	0.35 U	0.35 U	0.35 U	0.35 U	1 U	1 U	1 U	1 U	1 U
Methyl Acetate	UG/L	6	1%	2	313				1.8 U	1.8 U	1.8 U	1.8 U	1 U	1 UJ	1 UJ	1 U	1 UJ
Methyl bromide	UG/L	2.1	0%	1	322	GA	5	0	2.5 U	2.5 UJ	2.5 U	2.5 U	1 U	1 U	1 UJ	1 U	1 UJ
Methyl butyl ketone	UG/L	0	0%	0	328				2 U	2 U	2 U	2 U	5 U	5 U	5 U	5 U	5 UJ
Methyl chloride	UG/L	0	0%	0	328	GA	5	0	0.4 U	0.4 U	0.4 U	0.4 U	1 U	1 U	1 U	1 U	1 UJ
Methyl cyclohexane	UG/L	0.17	0%	1	328				0.43 U	0.43 U	0.43 U	0.43 U	1 U	1 U	1 UJ	1 U	1 U
Methyl ethyl ketone	UG/L	4900	7%	22	321				3.4 U	3.4 UR	3.4 U	3.4 U	5 U	5 U	5 U	5 U	5 UJ
Methyl isobutyl ketone	UG/L	1.9	0%	1	328				2.1 U	2.1 U	2.1 U	2.1 U	5 U	5 U	5 U	5 U	5 UJ
Methyl Tertbutyl Ether	UG/L	0	0%	0	328				0.3 U	0.3 U	0.3 U	0.3 U	1 U	1 U	1 U	1 U	1 U
Methylene chloride	UG/L	18	4%	12	328	GA	5	7	2.5 U	2.5 U	2.5 U	2.5 U	1 UJ	1 U	1 U	1 U	1 U
Styrene	UG/L	0	0%	0	328	GA	5	0	0.27 U	0.27 U	0.27 U	0.27 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	UG/L	27	1%	2	328	GA	5	1	0.74 U	0.74 U	0.74 U	0.74 U	1 U	1 U	1 U	1 U	1 U
Toluene	UG/L	590	10%	32	328	GA	5	18	0.48 U	0.48 U	0.48 U	0.48 U	1 U	1 U	1 U	1 U	1 U
Total Xylenes	UG/L	60	1%	2	328	GA	5	1	0.23 U	0.23 U	0.23 U	0.23 U	3 U	3 U	3 U	3 U	3 U
Trans-1,2-Dichloroethene	UG/L	22	51%	168	328	GA	5	17	4	**6**	**5.6**	4.3	0.86 J	0.51 J	0.72 J	0.67 J	0.57 J
Trans-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	0.42 U	0.42 U	0.42 U	0.42 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	UG/L	3800	68%	223	328	GA	5	104	0.48 UJ	0.63 J	0.54 J	0.98 J	**11**	**16**	**8.5**	**9.7**	4.1
Trichlorofluoromethane	UG/L	0	0%	0	328	GA	5	0	0.42 U	0.42 U	0.42 U	0.42 U	1 U	1 U	1 U	1 U	1 UJ
Vinyl chloride	UG/L	180	65%	213	328	GA	2	161	**81**	**91**	**110**	**93**	**22**	**13**	**32**	**11**	**13**
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	96%	161	168												
Ethene	UG/L	200	88%	148	168												
Methane	UG/L	23,000	98%	165	168												
Sulfate	MG/L	1060	86%	144	168	GA	250	26									
Total Organic Carbon	MG/L	2050	100%	168	168												

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 10
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Num of Detects Above Standard-1	ASH LANDFILL PT-22 GW ALBW20133 12/15/2008 SA LTM 6 Total	ASH LANDFILL PT-22 GW ALBW20148 6/2/2009 SA LTM 7 Total	ASH LANDFILL PT-22 GW ALBW20163 12/16/2009 SA LTM 8 Total	ASH LANDFILL PT-22 GW ALBW20178 6/30/2010 SA LTM 9 Total	ASH LANDFILL PT-22 GW ALBW20193 12/17/2010 SA LTM 10 Total	ASH LANDFILL PT-22 GW ALBW20208 7/22/2011 SA LTM 11 Total	ASH LANDFILL PT-22 GW ALBW20223 12/14/2011 SA LTM 12 Total	ASH LANDFILL PT-22 GW ALBW20238 6/21/2012 SA LTM 13 Total	ASH LANDFILL PT-22 GW ALBW20253 12/13/2012 SA LTM 14 Total
									Value Qual	Value Qual	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	328	GA	5	1	0.26 U	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	328	GA	5	0	0.21 U	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	328	GA	5	0	0.31 U	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	328	GA	1	0	0.23 U	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%	40	328	GA	5	1	0.75 U	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%	36	328	GA	5	0	0.29 U	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	327	GA	5	0	0.41 U	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	328	GA	0.04	0	1 UJ	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	328	GA	0.0006	0	0.17 U	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	328	GA	3	0	0.2 U	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%	49	328	GA	0.6	41	**2.8**	**4**	**3**	**3.2**	**1.9**	0.1 U	**1.9**	**2.1**	**1.6**
1,2-Dichloropropane	UG/L	0.29	0%	1	328	GA	1	0	0.14 U	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	328	GA	3	0	0.16 U	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	328	GA	3	0	0.16 U	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%	49	315				1.3 U	1.3 U	1.3 U	5 U	5 UJ	5.3 J	5 U	5 UJ	5 U
Benzene	UG/L	0.48	2%	5	328	GA	1	0	0.16 U	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	328	MCL	80	0	0.38 U	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	328	MCL	80	0	0.26 U	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	2.3	0%	1	328				0.19 U	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	328	GA	5	0	0.27 U	0.27 U	0.27 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U
Chlorobenzene	UG/L	0	0%	0	328	GA	5	0	0.18 U	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	328	MCL	80	0	0.32 U	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	328	GA	5	0	0.32 U	0.32 U	0.32 U	1 U	1 U	1 U	1 U	1 UJ	1 U
Chloroform	UG/L	71	8%	25	328	GA	7	7	0.34 U	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%	290	328	GA	5	199	**52**	**41**	**29**	**43**	**42**	**42**	**32**	**31**	**26**
Cis-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	0.36 U	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	328				0.22 U	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	321	GA	5	0	0.28 U	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	328	GA	5	1	0.18 U	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	328	GA	5	0	0.19 U	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	313				0.17 U	0.17 UJ	0.5 U	0.19 UJ	0.19 U	0.19 U	0.19 U	0.19 UR	0.19 UJ
Methyl bromide	UG/L	2.1	0%	1	322	GA	5	0	0.28 U	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	328				1.2 U	1.2 U	1.2 U	1 UJ	1 U	1 U	1 U	1 UJ	1 U
Methyl chloride	UG/L	0	0%	0	328	GA	5	0	0.34 U	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	328				0.22 U	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	7%	22	321				1.3 U	1.3 U	1.3 U	1 U	1 U	1 U	1 U	1 UJ	1 U
Methyl isobutyl ketone	UG/L	1.9	0%	1	328				0.91 U	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	328				0.16 U	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	328	GA	5	7	0.44 UJ	0.44 U	0.44 U	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	UG/L	0	0%	0	328	GA	5	0	0.18 U	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	328	GA	5	1	0.36 U	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	10%	32	328	GA	5	18	0.51 U	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	328	GA	5	1	0.93 U	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	51%	168	328	GA	5	17	0.41 J	0.81 J	0.42 U	0.75 J	0.48 J	0.2 U	0.37 J	0.84 J	0.2 U
Trans-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	0.37 U	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%	223	328	GA	5	104	**35**	**6.9**	**8.7**	4.6	**29**	**31**	**34**	**7.9**	**28**
Trichlorofluoromethane	UG/L	0	0%	0	328	GA	5	0	0.15 U	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%	213	328	GA	2	161	1.3	**11**	**9.5**	**11**	**2.1**	0.18 U	0.68 J	**4**	0.46 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	96%	161	168												
Ethene	UG/L	200	88%	148	168												
Methane	UG/L	23,000	98%	165	168												
Sulfate	MG/L	1060	86%	144	168	GA	250	26									
Total Organic Carbon	MG/L	2050	100%	168	168												

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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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 10
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Num of Detects Above Standard-1	ASH LANDFILL PT-22 GW ALBW20266 7/9/2013 SA LTM 15 Total	ASH LANDFILL PT-22 GW ALBW20284 12/12/2013 SA LTM 16 Total	ASH LANDFILL PT-22 GW ALBW20297 6/21/2014 SA LTM 17 Total	ASH LANDFILL PT-22 GW ALBW20313 12/18/2014 SA LTM 18 Total	ASH LANDFILL PT-22 GW ALBW20329 6/6/2015 SA LTM 19 Total	ASH LANDFILL PT-22 GW ALBW20345 12/18/2015 SA LTM 20 Total	ASH LANDFILL PT-22 GW ALBW20361 6/16/2016 SA LTM 21 Total	ASH LANDFILL PT-22 GW ALBW20377 12/9/2016 SA LTM 22 Total	ASH LANDFILL MWT-23 GW ALBW20065 1/3/2007 SA LTM 1 Total
									Value Qual	Value Qual	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	328	GA	5	1	0.5 U	0.5 U	0.5 U	0.5 U	0.37 U	0.37 U	0.37 U	0.37 U	4 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	0	328	GA	5	0	0.18 U	0.18 U	0.18 U	0.18 U	0.62 U	0.62 U	0.62 U	0.62 U	4 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	0	328	GA	5	0	0.5 U	0.5 U	0.5 U	0.5 U	0.36 U	0.36 U	0.36 U	0.36 U	4 U
1,1,2-Trichloroethane	UG/L	0	0%	0	328	GA	1	0	0.13 U	0.13 U	0.13 U	0.13 U	0.33 U	0.33 U	0.33 U	0.33 U	4 U
1,1-Dichloroethane	UG/L	62	12%	40	328	GA	5	1	0.25 U	0.25 U	0.25 U	0.25 U	0.38 U	0.38 U	0.38 U	0.38 U	4 U
1,1-Dichloroethene	UG/L	2.6	11%	36	328	GA	5	0	0.11 U	0.11 U	0.11 U	0.11 U	0.36 U	0.36 U	0.36 U	0.36 U	4 U
1,2,4-Trichlorobenzene	UG/L	0	0%	0	327	GA	5	0	0.25 U	0.25 U	0.25 U	0.25 U	2.5 U	2.5 U	2.5 U	2.5 U	4 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0	328	GA	0.04	0	0.44 U	0.44 U	0.44 U	0.44 U	1.1 U	1.1 U	1.1 U	1.1 U	4 U
1,2-Dibromoethane	UG/L	0	0%	0	328	GA	0.0006	0	0.25 U	0.25 U	0.25 U	0.25 U	0.44 U	0.44 U	0.44 U	0.44 U	4 U
1,2-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.21 U	0.21 U	0.21 U	0.21 U	0.37 U	0.37 U	0.37 U	0.37 U	4 U
1,2-Dichloroethane	UG/L	5.6	15%	49	328	GA	0.6	41	**2.3**	**2**	**3.1**	**1.2**	**2.3**	**2.3**	**2.6**	**1.1**	**2.3 J**
1,2-Dichloropropane	UG/L	0.29	0%	1	328	GA	1	0	0.13 U	0.13 U	0.13 U	0.13 U	0.67 U	0.67 U	0.67 U	0.67 U	4 U
1,3-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.25 U	0.25 U	0.25 U	0.25 U	0.43 U	0.43 U	0.43 U	0.43 U	4 U
1,4-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.28 U	0.28 U	0.28 U	0.28 U	0.46 U	0.46 U	0.46 U	0.46 U	4 U
Acetone	UG/L	2600	16%	49	315				5 U	5 U	5 U	5 U	7 U	7 UR	7 U	7 U	180
Benzene	UG/L	0.48	2%	5	328	GA	1	0	0.25 U	0.25 U	0.25 U	0.25 U	0.43 U	0.43 U	0.43 U	0.43 U	4 U
Bromodichloromethane	UG/L	0	0%	0	328	MCL	80	0	0.25 U	0.25 U	0.25 U	0.25 U	0.44 U	0.44 U	0.44 U	0.44 U	4 U
Bromoform	UG/L	0	0%	0	328	MCL	80	0	0.5 U	0.5 U	0.5 U	0.5 U	0.43 UJ	0.43 U	0.43 UJ	0.43 U	4 U
Carbon disulfide	UG/L	2.3	0%	1	328				0.6 U	0.6 U	0.6 U	0.6 U	1 U	1 U	1 U	1 U	4 U
Carbon tetrachloride	UG/L	0	0%	0	328	GA	5	0	0.5 U	0.5 U	0.5 U	0.5 U	0.33 U	0.33 U	0.33 U	0.33 U	4 U
Chlorobenzene	UG/L	0	0%	0	328	GA	5	0	0.25 U	0.25 U	0.25 U	0.25 U	0.26 U	0.26 U	0.26 U	0.26 U	4 U
Chlorodibromomethane	UG/L	0	0%	0	328	MCL	80	0	0.1 U	0.1 U	0.1 U	0.1 U	0.32 UJ	0.32 U	0.32 U	0.32 U	4 U
Chloroethane	UG/L	1.1	2%	7	328	GA	5	0	2 U	2 U	2 U	2 U	2.5 U	2.5 U	2.5 U	2.5 U	4 U
Chloroform	UG/L	71	8%	25	328	GA	7	7	0.14 U	0.14 U	0.14 U	0.14 U	0.5 U	0.5 U	0.5 U	0.5 U	4 U
Cis-1,2-Dichloroethene	UG/L	820	88%	290	328	GA	5	199	**49**	**37**	**52**	**23**	**33**	**36**	**44**	**19**	**60**
Cis-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	0.11 U	0.11 U	0.11 U	0.11 U	0.4 U	0.4 U	0.4 U	0.4 U	4 U
Cyclohexane	UG/L	0.3	0%	1	328				0.25 U	0.25 U	0.25 U	0.25 U	0.39 U	0.39 U	0.39 U	0.39 U	4 U
Dichlorodifluoromethane	UG/L	0.3	0%	1	321	GA	5	0	0.25 U	0.25 UJ	0.25 U	0.25 U	0.6 U	0.6 U	0.6 U	0.6 U*	4 U
Ethyl benzene	UG/L	9.2	6%	19	328	GA	5	1	0.11 U	0.11 U	0.11 U	0.11 U	0.33 U	0.33 U	0.33 U	0.33 U	4 U
Isopropylbenzene	UG/L	0.1	0%	1	328	GA	5	0	0.1 U	0.1 U	0.1 U	0.1 U	0.35 U	0.35 U	0.35 U	0.35 U	4 U
Methyl Acetate	UG/L	6	1%	2	313				0.19 U	0.19 U	0.19 U	0.19 U	1.8 U	1.8 U	1.8 U	1.8 U	4 U
Methyl bromide	UG/L	2.1	0%	1	322	GA	5	0	2 U	2 UJ	2 U	2 U	2.5 U	2.5 UJ	2.5 U	2.5 U	4 U
Methyl butyl ketone	UG/L	0	0%	0	328				1 U	1 U	1 U	1 U	2 U	2 U	2 U	2 U	20 U
Methyl chloride	UG/L	0	0%	0	328	GA	5	0	0.33 U	0.33 U	0.33 U	0.33 U	0.4 U	0.4 U	0.4 U	0.4 U	4 U
Methyl cyclohexane	UG/L	0.17	0%	1	328				0.1 U	0.1 U	0.1 U	0.1 U	0.43 U	0.43 U	0.43 U	0.43 U	4 U
Methyl ethyl ketone	UG/L	4900	7%	22	321				1 U	1 U	1 U	1 U	3.4 U	3.4 UR	3.4 U	3.4 U	250
Methyl isobutyl ketone	UG/L	1.9	0%	1	328				1 UJ	1 U	1 U	1 U	2.1 U	2.1 U	2.1 U	2.1 U	20 U
Methyl Tertbutyl Ether	UG/L	0	0%	0	328				0.2 U	0.2 U	0.2 U	0.2 U	0.3 U	0.3 U	0.3 U	0.3 U	4 U
Methylene chloride	UG/L	18	4%	12	328	GA	5	7	1 U	1 U	1 U	1 U	2.5 U	2.5 U	2.5 U	2.5 U	2.8 J
Styrene	UG/L	0	0%	0	328	GA	5	0	0.11 U	0.11 U	0.11 U	0.11 U	0.27 U	0.27 U	0.27 U	0.27 U	4 U
Tetrachloroethene	UG/L	27	1%	2	328	GA	5	1	0.15 U	0.15 U	0.15 U	0.15 U	0.74 U	0.74 U	0.74 U	0.74 U	4 U
Toluene	UG/L	590	10%	32	328	GA	5	18	0.33 U	0.33 U	0.33 U	0.33 U	0.48 U	0.48 U	0.48 U	0.48 U	4 U
Total Xylenes	UG/L	60	1%	2	328	GA	5	1	0.2 U	0.2 U	0.2 U	0.2 U	0.23 U	0.23 U	0.23 U	0.23 U	12 U
Trans-1,2-Dichloroethene	UG/L	22	51%	168	328	GA	5	17	0.45 J	0.28 J	1.3	0.2 U	0.37 U	0.37 U	0.87 J	0.37 U	4 U
Trans-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	0.21 UJ	0.21 UJ	0.21 U	0.21 U	0.42 U	0.42 U	0.42 U	0.42 U	4 U
Trichloroethene	UG/L	3800	68%	223	328	GA	5	104	**38**	**29**	**23**	**23**	**34 J**	**31**	**23**	**25**	4 U
Trichlorofluoromethane	UG/L	0	0%	0	328	GA	5	0	0.25 U	0.25 U	0.25 U	0.25 U	0.42 U	0.42 U	0.42 U	0.42 U	4 U
Vinyl chloride	UG/L	180	65%	213	328	GA	2	161	1.6	0.68 J	**2.9**	0.18 U	0.5 U	0.5 U	**2.8**	0.5 U	**23**
Other																	
Iron	UG/L	296,000	100%	12	12	GA	300	11									**122,000 J**
Iron+Manganese	UG/L	352,900	100%	12	12	GA	500	12									**141,500 J**
Manganese	UG/L	56,900	100%	12	12	GA	300	12									**19,500**
Ethane	UG/L	98	96%	161	168												10,000 U
Ethene	UG/L	200	88%	148	168												10,000 U
Methane	UG/L	23,000	98%	165	168												12,000
Sulfate	MG/L	1060	86%	144	168	GA	250	26									2 U
Total Organic Carbon	MG/L	2050	100%	168	168												260 J

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 10
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Num of Detects Above Standard-1	ASH LANDFILL MWT-23 GW ALBW20080 3/16/2007 SA LTM 2 Total Value Qual	ASH LANDFILL MWT-23 GW ALBW20094 6/6/2007 SA LTM 3 Total Value Qual	ASH LANDFILL MWT-23 GW ALBW20109 11/16/2007 SA LTM 4 Total Value Qual	ASH LANDFILL MWT-23 GW ALBW20110 11/16/2007 DU LTM 4 Total Value Qual	ASH LANDFILL MWT-23 GW ALBW20125 6/25/2008 SA LTM 5 Total Value Qual	ASH LANDFILL MWT-23 GW ALBW20140 12/12/2008 SA LTM 6 Total Value Qual	ASH LANDFILL MWT-23 GW ALBW20155 6/2/2009 SA LTM 7 Total Value Qual	ASH LANDFILL MWT-23 GW ALBW20170 12/15/2009 SA LTM 8 Total Value Qual	ASH LANDFILL MWT-23 GW ALBW20185 6/29/2010 SA LTM 9 Total Value Qual
Volatile Organic Compounds																	
1,1,1-Trichloroethane	UG/L	15	2%	5	328	GA	5	1	4 U	2 U	10 U	4 U	1 U	0.26 UJ	0.26 U	0.26 U	0.5 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	0	328	GA	5	0	4 U	2 U	10 U	4 U	1 U	0.21 U	0.21 U	0.21 U	0.18 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	0	328	GA	5	0	4 U	2 UJ	10 U	4 U	1 U	0.31 U	0.31 U	0.31 U	0.5 UJ
1,1,2-Trichloroethane	UG/L	0	0%	0	328	GA	1	0	4 U	2 U	10 U	4 U	1 U	0.23 U	0.23 U	0.23 U	0.13 U
1,1-Dichloroethane	UG/L	62	12%	40	328	GA	5	1	4 U	2 U	10 U	4 U	1 U	0.75 U	0.75 U	0.38 U	0.25 U
1,1-Dichloroethene	UG/L	2.6	11%	36	328	GA	5	0	4 U	2 U	10 U	4 U	1 U	0.29 U	0.29 U	0.29 U	0.11 U
1,2,4-Trichlorobenzene	UG/L	0	0%	0	327	GA	5	0	4 U	2 U	10 U	4 U	1 U	0.41 U	0.41 U	0.41 U	0.25 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0	328	GA	0.04	0	4 U	2 U	10 U	4 U	1 U	1 UJ	1 UJ	0.39 U	0.44 U
1,2-Dibromoethane	UG/L	0	0%	0	328	GA	0.0006	0	4 U	2 U	10 U	4 U	1 U	0.17 U	0.17 U	0.17 U	0.25 U
1,2-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	4 U	2 U	10 U	4 U	1 U	0.2 U	0.2 U	0.2 U	0.21 U
1,2-Dichloroethane	UG/L	5.6	15%	49	328	GA	0.6	41	4 U	**1.6 J**	10 U	4 U	0.6 J	0.6 J	**0.64 J**	0.21 U	**0.66 J**
1,2-Dichloropropane	UG/L	0.29	0%	1	328	GA	1	0	4 U	2 U	10 U	4 U	1 U	0.14 U	0.14 U	0.32 U	0.13 U
1,3-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	4 U	2 U	10 U	4 U	1 U	0.16 U	0.16 U	0.36 U	0.25 U
1,4-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	4 U	2 U	10 U	4 U	1 U	0.16 U	0.16 U	0.39 U	0.28 U
Acetone	UG/L	2600	16%	49	315				190	190	64	62	4 J	1.3 U	1.6 J	1.3 U	5 U
Benzene	UG/L	0.48	2%	5	328	GA	1	0	4 U	2 U	10 U	4 U	1 U	0.16 U	0.16 U	0.41 U	0.25 U
Bromodichloromethane	UG/L	0	0%	0	328	MCL	80	0	4 U	2 U	10 U	4 U	1 U	0.38 U	0.39 U	0.39 U	0.25 U
Bromoform	UG/L	0	0%	0	328	MCL	80	0	4 U	2 U	10 U	4 U	1 U	0.26 U	0.26 UJ	0.26 UJ	0.5 U
Carbon disulfide	UG/L	2.3	0%	1	328				4 U	2 U	10 U	4 U	1 U	0.19 U	0.19 UJ	0.19 UJ	0.6 U
Carbon tetrachloride	UG/L	0	0%	0	328	GA	5	0	4 U	2 U	10 U	4 U	1 U	0.27 UJ	0.27 U	0.27 U	0.5 U
Chlorobenzene	UG/L	0	0%	0	328	GA	5	0	4 U	2 U	10 U	4 U	1 U	0.18 U	0.32 U	0.32 U	0.25 U
Chlorodibromomethane	UG/L	0	0%	0	328	MCL	80	0	4 U	2 U	10 U	4 U	1 U	0.32 U	0.32 U	0.32 U	0.1 U
Chloroethane	UG/L	1.1	2%	7	328	GA	5	0	4 U	2 U	10 U	4 U	1 UJ	0.32 U	0.32 U	0.32 UJ	1 U
Chloroform	UG/L	71	8%	25	328	GA	7	7	4 U	2 U	10 U	4 U	1 U	0.34 U	0.34 U	0.34 U	0.14 U
Cis-1,2-Dichloroethene	UG/L	820	88%	290	328	GA	5	199	**11**	3.1	10 U	2.1 J	1 U	2.4	0.42 J	0.47 J	0.41 J
Cis-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	4 U	2 U	10 U	4 U	1 U	0.36 U	0.36 U	0.36 U	0.11 U
Cyclohexane	UG/L	0.3	0%	1	328				4 U	2 U	10 U	4 U	1 U	0.22 U	0.53 U	0.53 U	0.25 U
Dichlorodifluoromethane	UG/L	0.3	0%	1	321	GA	5	0	4 U	2 U	10 U	4 U	1 U	0.28 UJ	0.29 U	0.29 U	0.25 U
Ethyl benzene	UG/L	9.2	6%	19	328	GA	5	1	4 U	1.3 J	10 U	4 U	0.85 J	0.71 J	0.49 J	0.18 U	0.38 J
Isopropylbenzene	UG/L	0.1	0%	1	328	GA	5	0	4 U	2 U	10 U	4 U	1 U	0.19 U	0.19 U	0.19 U	0.1 U
Methyl Acetate	UG/L	6	1%	2	313				4 UJ	5.1	10 U	4 UJ	1 UJ	0.17 U	0.17 UJ	0.5 U	0.19 UJ
Methyl bromide	UG/L	2.1	0%	1	322	GA	5	0	4 U	2 U	10 U	4 U	1 UJ	0.28 U	0.28 U	0.28 U	0.8 UJ
Methyl butyl ketone	UG/L	0	0%	0	328				20 U	10 U	50 U	20 UJ	5 UJ	1.2 U	1.2 U	1.2 U	1 UJ
Methyl chloride	UG/L	0	0%	0	328	GA	5	0	4 U	2 U	10 U	4 U	1 U	0.34 U	0.35 U	0.35 UJ	0.33 U
Methyl cyclohexane	UG/L	0.17	0%	1	328				4 U	2 U	10 U	4 U	1 U	0.22 U	0.5 U	0.5 U	0.1 U
Methyl ethyl ketone	UG/L	4900	7%	22	321				130	73	26 J	25	12	1.3 U	1.3 U	1.3 U	1 U
Methyl isobutyl ketone	UG/L	1.9	0%	1	328				20 U	10 U	50 U	20 U	5 U	0.91 U	0.91 U	0.91 U	1 U
Methyl Tertbutyl Ether	UG/L	0	0%	0	328				4 U	2 U	10 U	4 U	1 U	0.16 U	0.16 U	0.16 U	0.2 U
Methylene chloride	UG/L	18	4%	12	328	GA	5	7	4 U	2 U	**12**	4 U	1 U	0.44 UJ	0.44 U	0.44 U	1 U
Styrene	UG/L	0	0%	0	328	GA	5	0	4 U	2 U	10 U	4 U	1 U	0.18 U	0.18 U	0.18 U	0.11 U
Tetrachloroethene	UG/L	27	1%	2	328	GA	5	1	4 U	2 U	10 U	4 U	1 U	0.36 U	0.36 U	0.36 U	0.15 U
Toluene	UG/L	590	10%	32	328	GA	5	18	**7.4**	**37**	**570**	**590**	**300**	**43**	1.5	0.51 U	0.34 J
Total Xylenes	UG/L	60	1%	2	328	GA	5	1	12 U	6 U	30 U	12 U	3 U	0.93 U	0.66 U	0.66 U	0.2 U
Trans-1,2-Dichloroethene	UG/L	22	51%	168	328	GA	5	17	4 U	2 U	10 U	4 U	1 U	0.13 U	0.13 U	0.42 U	0.2 U
Trans-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	4 U	2 U	10 U	4 U	1 U	0.37 U	0.37 U	0.37 U	0.21 U
Trichloroethene	UG/L	3800	68%	223	328	GA	5	104	4 U	2 U	10 U	4 U	1 U	0.41 J	0.18 U	0.46 U	0.13 U
Trichlorofluoromethane	UG/L	0	0%	0	328	GA	5	0	4 U	2 UJ	10 U	4 U	1 UJ	0.15 UJ	0.15 U	0.15 U	0.25 U
Vinyl chloride	UG/L	180	65%	213	328	GA	2	161	**4.8**	2 U	10 U	**2.3 J**	1 U	**2.8**	0.24 U	0.24 U	0.18 U
Other																	
Iron	UG/L	296,000	100%	12	12	GA	300	11	**120,000**								
Iron+Manganese	UG/L	352,900	100%	12	12	GA	500	12	**139,500**								
Manganese	UG/L	56,900	100%	12	12	GA	300	12	**19,500**								
Ethane	UG/L	98	96%	161	168				45	4.1	0.49	0.66	0.53	4.6	1.6	1	2.4
Ethene	UG/L	200	88%	148	168				5.9	0.28	0.3	0.39	0.048	1.2	0.16	0.058	0.038
Methane	UG/L	23,000	98%	165	168				23,000	18,000	15,000	17,000	18,000	19,000	21,000	18,000	18,000
Sulfate	MG/L	1060	86%	144	168	GA	250	26	2 U	2 U	2.8	2.7	2 U	6.3	0.35 U	0.35 U	0.5 U
Total Organic Carbon	MG/L	2050	100%	168	168				210	303	147	155	28.4	20.1	15.6	17.4	11

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 10
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Num of Detects Above Standard-1	ASH LANDFILL MWT-23 GW ALBW20200 12/19/2010 SA LTM 10 Total Value Qual	ASH LANDFILL MWT-23 GW ALBW20201 12/19/2010 DU LTM 10 Total Value Qual	ASH LANDFILL MWT-23 GW ALBW20215 7/19/2011 SA LTM 11 Total Value Qual	ASH LANDFILL MWT-23 GW ALBW20230 12/14/2011 SA LTM 12 Total Value Qual	ASH LANDFILL MWT-23 GW ALBW20231 12/14/2011 DU LTM 12 Total Value Qual	ASH LANDFILL MWT-23 GW ALBW20245 6/20/2012 SA LTM 13 Total Value Qual	ASH LANDFILL MWT-23 GW ALBW20260 12/13/2012 SA LTM 14 Total Value Qual	ASH LANDFILL MWT-23 GW ALBW20261 12/13/2012 DU LTM 14 Total Value Qual	ASH LANDFILL MWT-23 GW ALBW20273 7/10/2013 SA LTM 15 Total Value Qual
Volatile Organic Compounds																	
1,1,1-Trichloroethane	UG/L	15	2%	5	328	GA	5	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	0	328	GA	5	0	0.18 U	0.18 U	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	328	GA	5	0	0.5 U	0.5 U	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	328	GA	1	0	0.13 U	0.13 U	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%	40	328	GA	5	1	0.52 J	0.52 J	0.25 U	0.32 J	0.33 J	0.25 U	0.25 U	0.25 U	0.5 J
1,1-Dichloroethene	UG/L	2.6	11%	36	328	GA	5	0	0.11 U	0.11 U	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	327	GA	5	0	0.25 U	0.25 U	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	328	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	0.44 U	0.44 U
1,2-Dibromoethane	UG/L	0	0%	0	328	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	0.25 U	0.25 U
1,2-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.21 U	0.21 U	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%	49	328	GA	0.6	41	**1.5**	**1.6**	**1**	**1.3**	**1.2**	**0.65 J**	**0.72 J**	**0.61 J**	**1.2**
1,2-Dichloropropane	UG/L	0.29	0%	1	328	GA	1	0	0.13 U	0.13 U	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	328	GA	3	0	0.25 U	0.25 U	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	328	GA	3	0	0.28 U	0.28 U	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%	49	315				5 UJ	5 UJ	5 UR	5 U	5 U	5 UJ	5 U	5 U	5 U
Benzene	UG/L	0.48	2%	5	328	GA	1	0	0.25 U	0.25 U	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	328	MCL	80	0	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 UJ	0.25 U	0.25 U	0.25 U
Bromoform	UG/L	0	0%	0	328	MCL	80	0	0.5 U	0.5 U	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	2.3	0%	1	328				0.6 U	0.6 U	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	328	GA	5	0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
Chlorobenzene	UG/L	0	0%	0	328	GA	5	0	0.25 U	0.25 U	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	328	MCL	80	0	0.1 U	0.1 U	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	328	GA	5	0	1 UJ	1 UJ	1 UJ	1 U	1 U	1 UJ	1 U	1 U	2 U
Chloroform	UG/L	71	8%	25	328	GA	7	7	0.14 U	0.17 J	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%	290	328	GA	5	199	4.6	4.6	0.57 J	2	2	0.55 J	2	1.8	3.3
Cis-1,3-Dichloropropene	UG/L	0	0%	0	328	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	0.11 U	0.11 U
Cyclohexane	UG/L	0.3	0%	1	328				0.25 U	0.25 U	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	321	GA	5	0	0.25 U	0.25 U	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	328	GA	5	1	0.14 J	0.12 J	0.13 J	0.15 J	0.17 J	0.13 J	0.21 J	0.19 J	0.11 U
Isopropylbenzene	UG/L	0.1	0%	1	328	GA	5	0	0.1 U	0.1 U	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	313				0.19 U	0.19 U	0.19 UJ	0.19 U	0.19 U	0.19 UR	0.19 UJ	0.19 UJ	0.19 U
Methyl bromide	UG/L	2.1	0%	1	322	GA	5	0	0.8 U	0.8 U	0.8 UJ	0.8 UJ	0.8 UJ	0.8 UJ	0.8 UJ	0.8 U	2 U
Methyl butyl ketone	UG/L	0	0%	0	328				1 U	1 U	1 UJ	1 U	1 U	1 UJ	1 U	1 U	1 U
Methyl chloride	UG/L	0	0%	0	328	GA	5	0	0.33 U	0.33 U	0.33 U	0.33 UJ	0.33 UJ	0.33 U	0.33 U	0.33 U	0.33 U
Methyl cyclohexane	UG/L	0.17	0%	1	328				0.1 U	0.1 U	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	7%	22	321				1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U
Methyl isobutyl ketone	UG/L	1.9	0%	1	328				1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 UJ
Methyl Tertbutyl Ether	UG/L	0	0%	0	328				0.2 U	0.2 U	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	328	GA	5	7	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	UG/L	0	0%	0	328	GA	5	0	0.11 U	0.11 U	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	328	GA	5	1	0.15 U	0.15 U	0.15 U	0.15 UJ	0.15 UJ	0.15 U	0.15 U	0.15 U	0.15 U
Toluene	UG/L	590	10%	32	328	GA	5	18	0.33 U	0.33 U	1 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	328	GA	5	1	0.2 U	0.2 U	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	51%	168	328	GA	5	17	0.49 J	0.49 J	0.22 J	0.38 J	0.35 J	0.42 J	0.29 J	0.29 J	1.4
Trans-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 UJ	0.21 U	0.21 U	0.21 UJ
Trichloroethene	UG/L	3800	68%	223	328	GA	5	104	0.34 J	0.24 J	0.13 U	0.19 J	0.16 J	0.13 U	0.13 U	0.13 U	0.13 U
Trichlorofluoromethane	UG/L	0	0%	0	328	GA	5	0	0.25 U	0.25 U	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%	213	328	GA	2	161	**5.3**	**5.3**	0.33 J	1.9	1.8	0.33 J	1.9	1.4	**2.9**
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	96%	161	168				16	16	2.3	8.7	8.9	5	2.5	2.6	7
Ethene	UG/L	200	88%	148	168				2.9	2.8	0.1	1.2	1.2	0.26	0.63	0.65	2.6
Methane	UG/L	23,000	98%	165	168				16,000	16,000	15,000	16,000	16,000	18,000	16,000	15,000	14,000
Sulfate	MG/L	1060	86%	144	168	GA	250	26	16	16	1.5	14	14	1.5	13	13	15
Total Organic Carbon	MG/L	2050	100%	168	168				5.9	6.3	6.2	6.3	6.3	4.8	11	11	4.1

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 10
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Num of Detects Above Standard-1	ASH LANDFILL MWT-23 GW ALBW20288 12/14/2013 SA LTM 16 Total Value Qual	ASH LANDFILL MWT-23 GW ALBW20304 6/20/2014 SA LTM 17 Total Value Qual	ASH LANDFILL MWT-23 GW ALBW20305 6/20/2014 DU LTM 17 Total Value Qual	ASH LANDFILL MWT-23 GW ALBW20320 12/18/2014 SA LTM 18 Total Value Qual	ASH LANDFILL MWT-23 GW ALBW20336 6/4/2015 SA LTM 19 Total Value Qual	ASH LANDFILL MWT-23 GW ALBW20352 12/16/2015 SA LTM 20 Total Value Qual	ASH LANDFILL MWT-23 GW ALBW20353 12/16/2015 DU LTM 20 Total Value Qual	ASH LANDFILL MWT-23 GW ALBW20368 6/15/2016 SA LTM 21 Total Value Qual	ASH LANDFILL MWT-23 GW ALBW20384 12/8/2016 SA LTM 22 Total Value Qual
Volatile Organic Compounds																	
1,1,1-Trichloroethane	UG/L	15	2%	5	328	GA	5	1	0.5 U	0.5 U	0.5 U	0.5 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	0	328	GA	5	0	0.18 U	0.18 U	0.18 U	0.18 U	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	0	328	GA	5	0	0.5 U	0.5 U	0.5 U	0.5 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U
1,1,2-Trichloroethane	UG/L	0	0%	0	328	GA	1	0	0.13 U	0.13 U	0.13 U	0.13 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
1,1-Dichloroethane	UG/L	62	12%	40	328	GA	5	1	0.25 U	0.25 U	0.25 U	0.43 J	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U
1,1-Dichloroethene	UG/L	2.6	11%	36	328	GA	5	0	0.11 U	0.11 U	0.11 U	0.11 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U
1,2,4-Trichlorobenzene	UG/L	0	0%	0	327	GA	5	0	0.25 U	0.25 U	0.25 U	0.25 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0	328	GA	0.04	0	0.44 U	0.44 U	0.44 U	0.44 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
1,2-Dibromoethane	UG/L	0	0%	0	328	GA	0.0006	0	0.25 U	0.25 U	0.25 U	0.25 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U
1,2-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.21 U	0.21 U	0.21 U	0.21 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U
1,2-Dichloroethane	UG/L	5.6	15%	49	328	GA	0.6	41	**0.81 J**	**0.65 J**	**0.67 J**	0.1 U	**0.9 J**	0.5 U	0.5 U	**1.3**	**0.64 J**
1,2-Dichloropropane	UG/L	0.29	0%	1	328	GA	1	0	0.13 U	0.13 U	0.13 U	0.13 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U
1,3-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.25 U	0.25 U	0.25 U	0.25 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U
1,4-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.28 U	0.28 U	0.28 U	0.28 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U
Acetone	UG/L	2600	16%	49	315				5 UJ	5 U	5 U	5 U	7 U	7 U	7 U	7 U	7 U
Benzene	UG/L	0.48	2%	5	328	GA	1	0	0.25 U	0.25 U	0.25 U	0.25 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U
Bromodichloromethane	UG/L	0	0%	0	328	MCL	80	0	0.25 U	0.25 U	0.25 U	0.25 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U
Bromoform	UG/L	0	0%	0	328	MCL	80	0	0.5 U	0.5 U	0.5 U	0.5 U	0.43 UJ	0.43 U	0.43 U	0.43 UJ	0.43 U
Carbon disulfide	UG/L	2.3	0%	1	328				0.6 U	0.6 U	0.6 U	0.6 U	1 U	1 U	1 U	1 U	1 U
Carbon tetrachloride	UG/L	0	0%	0	328	GA	5	0	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Chlorobenzene	UG/L	0	0%	0	328	GA	5	0	0.25 U	0.25 U	0.25 U	0.25 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
Chlorodibromomethane	UG/L	0	0%	0	328	MCL	80	0	0.1 U	0.1 U	0.1 U	0.1 U	0.32 UJ	0.32 U	0.32 U	0.32 U	0.32 U
Chloroethane	UG/L	1.1	2%	7	328	GA	5	0	2 U	2 U	2 U	2 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Chloroform	UG/L	71	8%	25	328	GA	7	7	0.14 U	0.14 U	0.14 U	0.14 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cis-1,2-Dichloroethene	UG/L	820	88%	290	328	GA	5	199	2.6	0.46 J	0.43 J	2.7	1	3.9	3.7	1.2	0.65 J
Cis-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	0.11 U	0.11 U	0.11 U	0.11 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
Cyclohexane	UG/L	0.3	0%	1	328				0.25 U	0.25 U	0.25 U	0.25 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U
Dichlorodifluoromethane	UG/L	0.3	0%	1	321	GA	5	0	0.25 U	0.25 U	0.25 U	0.25 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
Ethyl benzene	UG/L	9.2	6%	19	328	GA	5	1	0.11 U	0.11 U	0.11 U	0.11 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Isopropylbenzene	UG/L	0.1	0%	1	328	GA	5	0	0.1 U	0.1 U	0.1 U	0.1 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U
Methyl Acetate	UG/L	6	1%	2	313				0.19 U	0.19 U	0.19 U	0.19 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Methyl bromide	UG/L	2.1	0%	1	322	GA	5	0	2 U	2 UJ	2 UJ	2 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Methyl butyl ketone	UG/L	0	0%	0	328				1 U	1 U	1 U	1 U	2 U	2 U	2 U	2 U	2 U
Methyl chloride	UG/L	0	0%	0	328	GA	5	0	0.33 U	0.33 U	0.33 U	0.33 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
Methyl cyclohexane	UG/L	0.17	0%	1	328				0.1 U	0.1 U	0.1 U	0.1 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U
Methyl ethyl ketone	UG/L	4900	7%	22	321				1 U	1 U	1 U	1 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U
Methyl isobutyl ketone	UG/L	1.9	0%	1	328				1 U	1 U	1 U	1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U
Methyl Tertbutyl Ether	UG/L	0	0%	0	328				0.2 U	0.2 U	0.2 U	0.2 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Methylene chloride	UG/L	18	4%	12	328	GA	5	7	1 U	1 U	1 U	1 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Styrene	UG/L	0	0%	0	328	GA	5	0	0.11 U	0.11 U	0.11 U	0.11 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U
Tetrachloroethene	UG/L	27	1%	2	328	GA	5	1	0.15 U	0.21 J	0.15 U	0.15 U	0.74 U	0.74 U	0.74 U	0.74 UJ	0.74 U
Toluene	UG/L	590	10%	32	328	GA	5	18	0.33 U	0.33 U	0.33 U	0.33 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U
Total Xylenes	UG/L	60	1%	2	328	GA	5	1	0.2 U	0.2 U	0.2 U	0.2 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U
Trans-1,2-Dichloroethene	UG/L	22	51%	168	328	GA	5	17	0.52 J	0.45 J	0.48 J	0.39 J	1.2	0.39 J	0.37 U	0.54 J	0.37 U
Trans-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	0.21 U	0.21 U	0.21 U	0.21 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U
Trichloroethene	UG/L	3800	68%	223	328	GA	5	104	0.13 U	0.13 U	0.13 U	0.19 J	0.48 UJ	0.48 U	0.48 U	0.48 U	0.48 U
Trichlorofluoromethane	UG/L	0	0%	0	328	GA	5	0	0.25 U	0.25 U	0.25 U	0.25 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U
Vinyl chloride	UG/L	180	65%	213	328	GA	2	161	**2.5**	0.37 J	0.36 J	0.18 U	0.5 U	**3.8**	**2.9**	1.9	0.9 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	96%	161	168				7	3.4 J	11 J	5.4	3.1	8	7.4	5.4	2
Ethene	UG/L	200	88%	148	168				1.7	0.1 J	0.13 J	2.2	2	2.5	2.3	0.82	0.24
Methane	UG/L	23,000	98%	165	168				15,000	17,000	16,000	13,000	14,000	13,000	13,000	14,000	16,000
Sulfate	MG/L	1060	86%	144	168	GA	250	26	10	1.4 J	1.4 J	98	13	9.5	9.6	5.9	3.5 *
Total Organic Carbon	MG/L	2050	100%	168	168				5.5	4.9	4.5	5.6	3.4	4.8	4.7	4.7	6.3

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 10
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Num of Detects Above Standard-1	ASH LANDFILL MWT-24 GW ALBW20063 1/3/2007 SA LTM 1 Total Value Qual	ASH LANDFILL MWT-24 GW ALBW20078 3/15/2007 SA LTM 2 Total Value Qual	ASH LANDFILL MWT-24 GW ALBW20092 6/5/2007 SA LTM 3 Total Value Qual	ASH LANDFILL MWT-24 GW ALBW20107 11/13/2007 SA LTM 4 Total Value Qual	ASH LANDFILL MWT-24 GW ALBW20122 6/26/2008 SA LTM 5 Total Value Qual	ASH LANDFILL MWT-24 GW ALBW20137 12/12/2008 SA LTM 6 Total Value Qual	ASH LANDFILL MWT-24 GW ALBW20152 6/2/2009 SA LTM 7 Total Value Qual	ASH LANDFILL MWT-24 GW ALBW20167 12/15/2009 SA LTM 8 Total Value Qual	ASH LANDFILL MWT-24 GW ALBW20182 7/1/2010 SA LTM 9 Total Value Qual
Volatile Organic Compounds																	
1,1,1-Trichloroethane	UG/L	15	2%	5	328	GA	5	1	0.71 J	0.58 J	2 U	1 U	5 U	0.76 J	0.26 U	0.4 J	0.5 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	0	328	GA	5	0	1 U	1 U	2 U	1 U	5 U	0.21 U	0.21 U	0.21 U	0.18 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	0	328	GA	5	0	1 U	1 U	2 UJ	1 U	5 UJ	0.31 U	0.31 U	0.31 U	0.5 U
1,1,2-Trichloroethane	UG/L	0	0%	0	328	GA	1	0	1 U	1 U	2 U	1 U	5 U	0.23 U	0.23 U	0.23 U	0.13 U
1,1-Dichloroethane	UG/L	62	12%	40	328	GA	5	1	0.81 J	0.83 J	1.1 J	1 U	5 U	0.75 U	0.75 U	0.7 J	0.79 J
1,1-Dichloroethene	UG/L	2.6	11%	36	328	GA	5	0	1 U	1 U	2 U	1 U	5 U	0.29 U	0.29 U	0.29 U	0.11 U
1,2,4-Trichlorobenzene	UG/L	0	0%	0	327	GA	5	0	1 U	1 U	2 U	1 U	5 U	0.41 U	0.41 U	0.41 U	0.25 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0	328	GA	0.04	0	1 U	1 U	2 U	1 U	5 UJ	1 UJ	1 UJ	0.39 U	0.44 U
1,2-Dibromoethane	UG/L	0	0%	0	328	GA	0.0006	0	1 U	1 U	2 U	1 U	5 U	0.17 U	0.17 U	0.17 U	0.25 U
1,2-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	1 U	1 U	2 U	1 U	5 U	0.2 U	0.2 U	0.2 U	0.21 U
1,2-Dichloroethane	UG/L	5.6	15%	49	328	GA	0.6	41	1 U	1 U	2 U	1 U	5 U	0.21 U	0.21 U	0.21 U	0.1 U
1,2-Dichloropropane	UG/L	0.29	0%	1	328	GA	1	0	1 U	1 U	2 U	1 U	5 U	0.14 U	0.14 U	0.32 U	0.13 U
1,3-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	1 U	1 U	2 U	1 U	5 U	0.16 U	0.16 U	0.36 U	0.25 U
1,4-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	1 U	1 U	2 U	1 U	5 U	0.16 U	0.16 U	0.39 U	0.28 U
Acetone	UG/L	2600	16%	49	315				42 U	54	73	5 U	25 U	1.3 U	1.3 U	1.3 U	5 U
Benzene	UG/L	0.48	2%	5	328	GA	1	0	1 U	1 U	2 U	1 U	5 U	0.16 U	0.16 U	0.41 U	0.25 U
Bromodichloromethane	UG/L	0	0%	0	328	MCL	80	0	1 U	1 U	2 U	1 U	5 U	0.38 U	0.39 U	0.39 U	0.25 U
Bromoform	UG/L	0	0%	0	328	MCL	80	0	1 U	1 U	2 U	1 U	5 U	0.26 U	0.26 UJ	0.26 UJ	0.5 U
Carbon disulfide	UG/L	2.3	0%	1	328				1 U	1 U	2 U	1 U	5 U	0.19 U	0.19 UJ	0.19 UJ	0.6 U
Carbon tetrachloride	UG/L	0	0%	0	328	GA	5	0	1 U	1 U	2 U	1 U	5 U	0.27 UJ	0.27 U	0.27 U	0.5 U
Chlorobenzene	UG/L	0	0%	0	328	GA	5	0	1 U	1 U	2 U	1 U	5 U	0.18 U	0.32 U	0.32 U	0.25 U
Chlorodibromomethane	UG/L	0	0%	0	328	MCL	80	0	1 U	1 U	2 U	1 U	5 U	0.32 U	0.32 U	0.32 U	0.1 U
Chloroethane	UG/L	1.1	2%	7	328	GA	5	0	1 U	1 U	2 U	1 U	5 UJ	0.32 U	0.47 J	0.32 UJ	1 U
Chloroform	UG/L	71	8%	25	328	GA	7	7	1 U	1 U	2 U	1 U	5 U	0.34 U	0.34 U	0.34 U	0.14 U
Cis-1,2-Dichloroethene	UG/L	820	88%	290	328	GA	5	199	**210**	**68**	**19**	**6.7**	**31**	**52**	**38**	**32**	**31**
Cis-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	1 U	1 U	2 U	1 U	5 U	0.36 U	0.36 U	0.36 U	0.11 U
Cyclohexane	UG/L	0.3	0%	1	328				1 U	1 U	2 U	1 U	5 U	0.22 U	0.53 U	0.53 U	0.25 U
Dichlorodifluoromethane	UG/L	0.3	0%	1	321	GA	5	0	1 U	1 U	2 U	1 U	5 U	0.28 UJ	0.29 U	0.29 U	0.25 UJ
Ethyl benzene	UG/L	9.2	6%	19	328	GA	5	1	1 U	1 U	2 U	1 U	5 U	0.18 U	0.18 U	0.18 U	0.11 U
Isopropylbenzene	UG/L	0.1	0%	1	328	GA	5	0	1 U	1 U	2 U	1 U	5 U	0.19 U	0.19 U	0.19 U	0.1 U
Methyl Acetate	UG/L	6	1%	2	313				1 U	1 UJ	6	1 UJ	5 UJ	0.17 U	0.17 UJ	0.5 U	0.19 U
Methyl bromide	UG/L	2.1	0%	1	322	GA	5	0	1 U	1 U	2 U	1 U	5 UJ	0.28 U	0.28 U	0.28 U	0.8 U
Methyl butyl ketone	UG/L	0	0%	0	328				5 U	5 U	10 U	5 UJ	25 UJ	1.2 U	1.2 U	1.2 U	1 U
Methyl chloride	UG/L	0	0%	0	328	GA	5	0	1 U	1 U	2 U	1 U	5 UJ	0.34 U	0.35 U	0.35 UJ	0.33 U
Methyl cyclohexane	UG/L	0.17	0%	1	328				1 U	1 U	2 U	1 U	5 U	0.22 U	0.5 U	0.5 U	0.1 U
Methyl ethyl ketone	UG/L	4900	7%	22	321				24	36	40	5 U	25 UJ	1.3 U	1.3 U	1.3 U	1 U
Methyl isobutyl ketone	UG/L	1.9	0%	1	328				5 U	5 U	10 U	5 U	25 UJ	0.91 U	0.91 U	0.91 U	1 U
Methyl Tertbutyl Ether	UG/L	0	0%	0	328				1 U	1 U	2 U	1 U	5 U	0.16 U	0.16 U	0.16 U	0.2 U
Methylene chloride	UG/L	18	4%	12	328	GA	5	7	1 U	1 U	1 J	1 U	5 U	0.44 UJ	0.44 U	0.44 U	1 U
Styrene	UG/L	0	0%	0	328	GA	5	0	1 U	1 U	2 U	1 U	5 U	0.18 U	0.18 U	0.18 U	0.11 U
Tetrachloroethene	UG/L	27	1%	2	328	GA	5	1	1 U	1 U	2 U	1 U	5 U	0.36 U	0.36 U	0.36 U	0.15 U
Toluene	UG/L	590	10%	32	328	GA	5	18	1 U	1 U	2 U	1 U	5 U	0.51 U	0.51 U	0.51 U	0.33 U
Total Xylenes	UG/L	60	1%	2	328	GA	5	1	3 U	3 U	6 U	3 U	15 U	0.93 U	0.66 U	0.66 U	0.2 U
Trans-1,2-Dichloroethene	UG/L	22	51%	168	328	GA	5	17	2.1	0.88 J	2 U	1 U	5 U	0.13 U	0.13 U	0.42 U	0.41 J
Trans-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	1 U	1 U	2 U	1 U	5 U	0.37 U	0.37 U	0.37 U	0.21 U
Trichloroethene	UG/L	3800	68%	223	328	GA	5	104	0.94 J	1 U	2 U	1.6	5 U	**6**	4.8	4.7	5
Trichlorofluoromethane	UG/L	0	0%	0	328	GA	5	0	1 U	1 U	2 UJ	1 U	5 UJ	0.15 UJ	0.15 U	0.15 U	0.25 U
Vinyl chloride	UG/L	180	65%	213	328	GA	2	161	**19**	**45**	**22**	**3.8**	5 U	**3.6**	**7.3**	**4**	**7.5**
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	96%	161	168												
Ethene	UG/L	200	88%	148	168												
Methane	UG/L	23,000	98%	165	168												
Sulfate	MG/L	1060	86%	144	168	GA	250	26									
Total Organic Carbon	MG/L	2050	100%	168	168												

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 10
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Num of Detects Above Standard-1	ASH LANDFILL MWT-24 GW ALBW20197 12/17/2010 SA LTM 10 Total Value Qual	ASH LANDFILL MWT-24 GW ALBW20212 7/22/2011 SA LTM 11 Total Value Qual	ASH LANDFILL MWT-24 GW ALBW20227 12/13/2011 SA LTM 12 Total Value Qual	ASH LANDFILL MWT-24 GW ALBW20242 6/19/2012 SA LTM 13 Total Value Qual	ASH LANDFILL MWT-24 GW ALBW20257 12/12/2012 SA LTM 14 Total Value Qual	ASH LANDFILL MWT-24 GW ALBW20270 7/9/2013 SA LTM 15 Total Value Qual	ASH LANDFILL MWT-24 GW ALBW20285 12/11/2013 SA LTM 16 Total Value Qual	ASH LANDFILL MWT-24 GW ALBW20301 6/21/2014 SA LTM 17 Total Value Qual	ASH LANDFILL MWT-24 GW ALBW20317 12/18/2014 SA LTM 18 Total Value Qual
Volatile Organic Compounds																	
1,1,1-Trichloroethane	UG/L	15	2%	5	328	GA	5	1	0.5 U	0.5 U	0.5 U	0.5 UJ	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	328	GA	5	0	0.18 U	0.18 U	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	328	GA	5	0	0.5 U	0.5 U	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	328	GA	1	0	0.13 U	0.13 U	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%	40	328	GA	5	1	0.58 J	0.25 U	0.44 J	0.8 J	0.57 J	0.7 J	0.67 J	0.25 U	0.38 J
1,1-Dichloroethene	UG/L	2.6	11%	36	328	GA	5	0	0.11 U	0.11 U	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	327	GA	5	0	0.25 U	0.25 U	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	328	GA	0.04	0	0.44 U	0.44 UJ	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	328	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	0.25 U	0.25 U
1,2-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.21 U	0.21 U	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%	49	328	GA	0.6	41	0.1 U	**3.3**	0.1 U	0.1 UJ	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,2-Dichloropropane	UG/L	0.29	0%	1	328	GA	1	0	0.13 U	0.13 U	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	328	GA	3	0	0.25 U	0.25 U	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	328	GA	3	0	0.28 U	0.28 U	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%	49	315				5 UJ	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U
Benzene	UG/L	0.48	2%	5	328	GA	1	0	0.25 U	0.25 U	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	328	MCL	80	0	0.25 U	0.25 U	0.25 U	0.25 UJ	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Bromoform	UG/L	0	0%	0	328	MCL	80	0	0.5 U	0.5 UJ	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	2.3	0%	1	328				0.6 U	0.6 U	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	328	GA	5	0	0.5 U	0.5 UJ	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	UG/L	0	0%	0	328	GA	5	0	0.25 U	0.25 U	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	328	MCL	80	0	0.1 U	0.1 UJ	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	328	GA	5	0	1 U	1 U	1 UJ	1 UJ	1 U	2 U	2 U	2 U	2 U
Chloroform	UG/L	71	8%	25	328	GA	7	7	0.19 J	0.14 U	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%	290	328	GA	5	199	**23**	**39**	**16**	**28**	**25**	**24**	**21**	**21**	**11**
Cis-1,3-Dichloropropene	UG/L	0	0%	0	328	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	0.11 U	0.11 U
Cyclohexane	UG/L	0.3	0%	1	328				0.25 U	0.25 U	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	321	GA	5	0	0.25 U	0.25 U	0.25 UJ	0.25 U	0.25 U	0.25 U	0.25 UJ	0.25 U	0.25 U
Ethyl benzene	UG/L	9.2	6%	19	328	GA	5	1	0.11 U	0.11 U	0.11 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	328	GA	5	0	0.1 U	0.1 U	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	313				0.19 U	0.19 U	0.19 U	0.19 UR	0.19 UJ	0.19 U	0.19 U	0.19 U	0.19 U
Methyl bromide	UG/L	2.1	0%	1	322	GA	5	0	0.8 UJ	0.8 UJ	0.8 UJ	0.8 UJ	0.8 UJ	2 U	2 UJ	2 U	2 U
Methyl butyl ketone	UG/L	0	0%	0	328				1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U
Methyl chloride	UG/L	0	0%	0	328	GA	5	0	0.33 U	0.33 U	0.33 UJ	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Methyl cyclohexane	UG/L	0.17	0%	1	328				0.1 U	0.1 U	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	7%	22	321				1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U
Methyl isobutyl ketone	UG/L	1.9	0%	1	328				1 U	1 U	1 U	1 UJ	1 U	1 UJ	1 U	1 U	1 U
Methyl Tertbutyl Ether	UG/L	0	0%	0	328				0.2 U	0.2 U	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	328	GA	5	7	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	UG/L	0	0%	0	328	GA	5	0	0.11 U	0.11 U	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	328	GA	5	1	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
Toluene	UG/L	590	10%	32	328	GA	5	18	0.33 U	0.33 U	0.33 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	328	GA	5	1	0.2 U	0.2 U	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	51%	168	328	GA	5	17	1	1.6	0.39 J	1.5	0.2 U	1.2	1.5	1.6	0.2 U
Trans-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	0.21 U	0.21 U	0.21 UJ	0.21 UJ	0.21 U	0.21 UJ	0.21 UJ	0.21 U	0.21 U
Trichloroethene	UG/L	3800	68%	223	328	GA	5	104	3.3	**5.6**	3.1	2.7	4.1	3.7	1.9	1.5	1.9
Trichlorofluoromethane	UG/L	0	0%	0	328	GA	5	0	0.25 U	0.25 U	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%	213	328	GA	2	161	**4.3**	**17**	**2.3**	**5.3**	0.31 J	**2.1**	**2.4**	**3.6**	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	96%	161	168												
Ethene	UG/L	200	88%	148	168												
Methane	UG/L	23,000	98%	165	168												
Sulfate	MG/L	1060	86%	144	168	GA	250	26									
Total Organic Carbon	MG/L	2050	100%	168	168												

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 10
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Num of Detects Above Standard-1	ASH LANDFILL MWT-24 GW ALBW20333 6/5/2015 SA LTM 19 Total Value Qual	ASH LANDFILL MWT-24 GW ALBW20349 12/18/2015 SA LTM 20 Total Value Qual	ASH LANDFILL MWT-24 GW ALBW20365 6/16/2016 SA LTM 21 Total Value Qual	ASH LANDFILL MWT-24 GW ALBW20381 12/9/2016 SA LTM 22 Total Value Qual
Volatile Organic Compounds												
1,1,1-Trichloroethane	UG/L	15	2%	5	328	GA	5	1	0.37 U	0.37 U	0.37 U	0.37 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	0	328	GA	5	0	0.62 U	0.62 U	0.62 U	0.62 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	0	328	GA	5	0	0.36 U	0.36 U	0.36 U	0.36 U
1,1,2-Trichloroethane	UG/L	0	0%	0	328	GA	1	0	0.33 U	0.33 U	0.33 U	0.33 U
1,1-Dichloroethane	UG/L	62	12%	40	328	GA	5	1	0.58 J	0.62 J	0.53 J	0.43 J
1,1-Dichloroethene	UG/L	2.6	11%	36	328	GA	5	0	0.36 U	0.36 U	0.36 U	0.36 U
1,2,4-Trichlorobenzene	UG/L	0	0%	0	327	GA	5	0	2.5 U	2.5 U	2.5 U	2.5 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0	328	GA	0.04	0	1.1 U	1.1 U	1.1 U	1.1 U
1,2-Dibromoethane	UG/L	0	0%	0	328	GA	0.0006	0	0.44 U	0.44 U	0.44 U	0.44 U
1,2-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.37 U	0.37 U	0.37 U	0.37 U
1,2-Dichloroethane	UG/L	5.6	15%	49	328	GA	0.6	41	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	UG/L	0.29	0%	1	328	GA	1	0	0.67 U	0.67 U	0.67 U	0.67 U
1,3-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.43 U	0.43 U	0.43 U	0.43 U
1,4-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.46 U	0.46 U	0.46 U	0.46 U
Acetone	UG/L	2600	16%	49	315				7 U	7 UR	7 U	7 U
Benzene	UG/L	0.48	2%	5	328	GA	1	0	0.43 U	0.43 U	0.43 U	0.43 U
Bromodichloromethane	UG/L	0	0%	0	328	MCL	80	0	0.44 U	0.44 U	0.44 U	0.44 U
Bromoform	UG/L	0	0%	0	328	MCL	80	0	0.43 UJ	0.43 U	0.43 UJ	0.43 U
Carbon disulfide	UG/L	2.3	0%	1	328				1 U	1 U	1 U	1 U
Carbon tetrachloride	UG/L	0	0%	0	328	GA	5	0	0.33 U	0.33 U	0.33 U	0.33 U
Chlorobenzene	UG/L	0	0%	0	328	GA	5	0	0.26 U	0.26 U	0.26 U	0.26 U
Chlorodibromomethane	UG/L	0	0%	0	328	MCL	80	0	0.32 UJ	0.32 U	0.32 U	0.32 U
Chloroethane	UG/L	1.1	2%	7	328	GA	5	0	2.5 U	2.5 U	2.5 U	2.5 U
Chloroform	UG/L	71	8%	25	328	GA	7	7	0.5 U	0.5 U	0.5 U	0.5 U
Cis-1,2-Dichloroethene	UG/L	820	88%	290	328	GA	5	199	**16**	**18**	**15**	**14**
Cis-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	0.4 U	0.4 U	0.4 U	0.4 U
Cyclohexane	UG/L	0.3	0%	1	328				0.39 U	0.39 U	0.39 U	0.39 U
Dichlorodifluoromethane	UG/L	0.3	0%	1	321	GA	5	0	0.6 U	0.6 U	0.6 U	0.6 U*
Ethyl benzene	UG/L	9.2	6%	19	328	GA	5	1	0.33 U	0.33 U	0.33 U	0.33 U
Isopropylbenzene	UG/L	0.1	0%	1	328	GA	5	0	0.35 U	0.35 U	0.35 U	0.35 U
Methyl Acetate	UG/L	6	1%	2	313				1.8 U	1.8 U	1.8 U	1.8 U
Methyl bromide	UG/L	2.1	0%	1	322	GA	5	0	2.5 U	2.5 UJ	2.5 U	2.5 U
Methyl butyl ketone	UG/L	0	0%	0	328				2 U	2 U	2 U	2 U
Methyl chloride	UG/L	0	0%	0	328	GA	5	0	0.4 U	0.4 U	0.4 U	0.4 U
Methyl cyclohexane	UG/L	0.17	0%	1	328				0.43 U	0.43 U	0.43 U	0.43 U
Methyl ethyl ketone	UG/L	4900	7%	22	321				3.4 U	3.4 UR	3.4 U	3.4 U
Methyl isobutyl ketone	UG/L	1.9	0%	1	328				2.1 U	2.1 U	2.1 U	2.1 U
Methyl Tertbutyl Ether	UG/L	0	0%	0	328				0.3 U	0.3 U	0.3 U	0.3 U
Methylene chloride	UG/L	18	4%	12	328	GA	5	7	2.5 U	2.5 U	2.5 U	2.5 U
Styrene	UG/L	0	0%	0	328	GA	5	0	0.27 U	0.27 U	0.27 U	0.27 U
Tetrachloroethene	UG/L	27	1%	2	328	GA	5	1	0.74 U	0.74 U	0.74 U	0.74 U
Toluene	UG/L	590	10%	32	328	GA	5	18	0.48 U	0.48 U	0.48 U	0.48 U
Total Xylenes	UG/L	60	1%	2	328	GA	5	1	0.23 U	0.23 U	0.23 U	0.23 U
Trans-1,2-Dichloroethene	UG/L	22	51%	168	328	GA	5	17	0.74 J	1.1	1.7	0.43 J
Trans-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	0.42 U	0.42 U	0.42 U	0.42 U
Trichloroethene	UG/L	3800	68%	223	328	GA	5	104	4 J	3	1.8	3.7
Trichlorofluoromethane	UG/L	0	0%	0	328	GA	5	0	0.42 U	0.42 U	0.42 U	0.42 U
Vinyl chloride	UG/L	180	65%	213	328	GA	2	161	1.1	**2.4**	**3.2**	1.8
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	96%	161	168							
Ethene	UG/L	200	88%	148	168							
Methane	UG/L	23,000	98%	165	168							
Sulfate	MG/L	1060	86%	144	168	GA	250	26				
Total Organic Carbon	MG/L	2050	100%	168	168							

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 10
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Num of Detects Above Standard-1	ASH LANDFILL MWT-26 GW ALBW20066 1/3/2007 SA LTM 1 Total	ASH LANDFILL MWT-26 GW ALBW20081 3/17/2007 SA LTM 2 Total	ASH LANDFILL MWT-26 GW ALBW20095 6/5/2007 SA LTM 3 Total	ASH LANDFILL MWT-26 GW ALBW20111 11/15/2007 SA LTM 4 Total	ASH LANDFILL MWT-26 GW ALBW20126 6/24/2008 SA LTM 5 Total	ASH LANDFILL MWT-26 GW ALBW20141 12/15/2008 SA LTM 6 Total	ASH LANDFILL MWT-26 GW ALBW20156 6/3/2009 SA LTM 7 Total	ASH LANDFILL MWT-26 GW ALBW20171 12/17/2009 SA LTM 8 Total	ASH LANDFILL MWT-26 GW ALBW20186 6/29/2010 SA LTM 9 Total
									Value Qual	Value Qual	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	328	GA	5	1	1 U	1 U	1 U	1 U	1 U	0.26 U	0.26 U	0.26 U	0.5 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	0	328	GA	5	0	1 U	1 U	1 U	1 U	1 U	0.21 U	0.21 U	0.21 U	0.18 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	0	328	GA	5	0	1 U	1 U	1 UJ	1 U	1 U	0.31 U	0.31 U	0.31 UJ	0.5 U
1,1,2-Trichloroethane	UG/L	0	0%	0	328	GA	1	0	1 U	1 U	1 U	1 U	1 U	0.23 U	0.23 U	0.23 U	0.13 U
1,1-Dichloroethane	UG/L	62	12%	40	328	GA	5	1	1 U	1 U	1 U	1 U	1 U	0.75 U	0.75 U	0.38 U	0.25 U
1,1-Dichloroethene	UG/L	2.6	11%	36	328	GA	5	0	1 U	1 U	1 U	1 U	1 U	0.29 U	0.29 U	0.29 U	0.11 U
1,2,4-Trichlorobenzene	UG/L	0	0%	0	327	GA	5	0	1 U	1 U	1 U	1 U	1 U	0.41 U	0.41 U	0.41 U	0.25 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0	328	GA	0.04	0	1 U	1 U	1 U	1 U	1 U	1 UJ	1 UJ	0.39 U	0.44 U
1,2-Dibromoethane	UG/L	0	0%	0	328	GA	0.0006	0	1 U	1 U	1 U	1 U	1 U	0.17 U	0.17 U	0.17 U	0.25 U
1,2-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	1 U	1 U	1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	0.21 U
1,2-Dichloroethane	UG/L	5.6	15%	49	328	GA	0.6	41	1 U	1 U	1 U	1 U	1 U	0.21 U	0.21 U	0.21 U	0.1 U
1,2-Dichloropropane	UG/L	0.29	0%	1	328	GA	1	0	1 U	1 U	1 U	1 U	1 U	0.14 U	0.14 U	0.32 U	0.13 U
1,3-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	1 U	1 U	1 U	1 U	1 U	0.16 U	0.16 U	0.36 U	0.25 U
1,4-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	1 U	1 U	1 U	1 U	1 U	0.16 U	0.16 U	0.39 U	0.28 U
Acetone	UG/L	2600	16%	49	315				5 U	17	5 U	5 U	5 U	1.3 U	1.3 U	1.3 U	5 U
Benzene	UG/L	0.48	2%	5	328	GA	1	0	1 U	1 U	1 U	1 U	1 U	0.16 U	0.16 U	0.41 U	0.25 U
Bromodichloromethane	UG/L	0	0%	0	328	MCL	80	0	1 U	1 U	1 U	1 U	1 U	0.38 U	0.39 U	0.39 U	0.25 U
Bromoform	UG/L	0	0%	0	328	MCL	80	0	1 U	1 U	1 U	1 U	1 U	0.26 U	0.26 UJ	0.26 U	0.5 U
Carbon disulfide	UG/L	2.3	0%	1	328				1 U	1 U	1 U	1 U	1 U	0.19 U	0.19 UJ	0.19 U	0.6 U
Carbon tetrachloride	UG/L	0	0%	0	328	GA	5	0	1 U	1 U	1 U	1 U	1 U	0.27 U	0.27 U	0.27 U	0.5 U
Chlorobenzene	UG/L	0	0%	0	328	GA	5	0	1 U	1 U	1 U	1 U	1 U	0.18 U	0.32 U	0.32 U	0.25 U
Chlorodibromomethane	UG/L	0	0%	0	328	MCL	80	0	1 U	1 U	1 U	1 U	1 U	0.32 U	0.32 U	0.32 U	0.1 U
Chloroethane	UG/L	1.1	2%	7	328	GA	5	0	1 U	1 U	1 U	1 U	1 UJ	0.32 U	0.32 U	0.32 UJ	1 UJ
Chloroform	UG/L	71	8%	25	328	GA	7	7	1 U	1 U	1 U	1 U	1 U	0.34 U	0.34 U	0.34 U	0.14 U
Cis-1,2-Dichloroethene	UG/L	820	88%	290	328	GA	5	199	**19**	**17**	**11**	2.8	3.3	1	**6**	**8.1**	**5.5**
Cis-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	1 U	1 U	1 U	1 U	1 U	0.36 U	0.36 U	0.36 U	0.11 U
Cyclohexane	UG/L	0.3	0%	1	328				1 U	1 U	1 U	1 U	1 U	0.22 U	0.53 U	0.53 U	0.25 U
Dichlorodifluoromethane	UG/L	0.3	0%	1	321	GA	5	0	1 U	1 U	1 U	1 U	1 U	0.28 U	0.29 U	0.29 U	0.25 U
Ethyl benzene	UG/L	9.2	6%	19	328	GA	5	1	1 U	1 U	1 U	1 U	1 U	0.18 U	0.18 U	0.18 U	0.11 U
Isopropylbenzene	UG/L	0.1	0%	1	328	GA	5	0	1 U	1 U	1 U	1 U	1 U	0.19 U	0.19 U	0.19 U	0.1 U
Methyl Acetate	UG/L	6	1%	2	313				1 U	1 UJ	1 U	1 UJ	1 UJ	0.17 U	0.17 UJ	0.5 U	0.19 U
Methyl bromide	UG/L	2.1	0%	1	322	GA	5	0	1 U	1 U	1 U	1 U	1 UJ	0.28 U	0.28 U	0.28 UJ	0.8 UJ
Methyl butyl ketone	UG/L	0	0%	0	328				5 U	5 U	5 U	5 UJ	5 UJ	1.2 U	1.2 U	1.2 U	1 U
Methyl chloride	UG/L	0	0%	0	328	GA	5	0	1 U	1 U	1 U	1 U	1 U	0.34 U	0.35 U	0.35 U	0.33 U
Methyl cyclohexane	UG/L	0.17	0%	1	328				1 U	1 U	1 U	1 U	1 U	0.22 U	0.5 U	0.5 U	0.1 U
Methyl ethyl ketone	UG/L	4900	7%	22	321				5 U	15	5 U	5 U	5 U	1.3 U	1.3 U	1.3 U	1 U
Methyl isobutyl ketone	UG/L	1.9	0%	1	328				5 U	5 U	5 U	5 U	5 U	0.91 U	0.91 U	0.91 U	1 U
Methyl Tertbutyl Ether	UG/L	0	0%	0	328				1 U	1 U	1 U	1 U	1 U	0.16 U	0.16 U	0.16 U	0.2 U
Methylene chloride	UG/L	18	4%	12	328	GA	5	7	1 U	1 U	1 U	1 U	1 U	0.44 UJ	0.44 U	0.44 U	1 U
Styrene	UG/L	0	0%	0	328	GA	5	0	1 U	1 U	1 U	1 U	1 U	0.18 U	0.18 U	0.18 U	0.11 U
Tetrachloroethene	UG/L	27	1%	2	328	GA	5	1	1 U	1 U	1 U	1 U	1 U	0.36 U	0.36 U	0.36 U	0.15 U
Toluene	UG/L	590	10%	32	328	GA	5	18	1 U	1 U	1 U	1 U	1 U	0.51 U	0.51 U	0.51 U	0.33 U
Total Xylenes	UG/L	60	1%	2	328	GA	5	1	3 U	3 U	3 U	3 U	3 U	0.93 U	0.66 U	0.66 U	0.2 U
Trans-1,2-Dichloroethene	UG/L	22	51%	168	328	GA	5	17	0.6 J	1	0.7 J	1 U	1 U	0.13 U	0.13 U	0.42 U	0.37 J
Trans-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	1 U	1 U	1 U	1 U	1 U	0.37 U	0.37 U	0.37 U	0.21 U
Trichloroethene	UG/L	3800	68%	223	328	GA	5	104	**10**	**11**	3.2	2.8	1.7	1.9	3.6	**5.8**	1.7
Trichlorofluoromethane	UG/L	0	0%	0	328	GA	5	0	1 U	1 U	1 UJ	1 U	1 UJ	0.15 U	0.15 U	0.15 UJ	0.25 U
Vinyl chloride	UG/L	180	65%	213	328	GA	2	161	2	**6.1**	**4.4**	1 U	1 U	0.24 U	**3.5**	**4.2**	0.18 U
Other																	
Iron	UG/L	296,000	100%	12	12	GA	300	11	275 J	**844**							
Iron+Manganese	UG/L	352,900	100%	12	12	GA	500	12	**1,043 J**	**2,464**							
Manganese	UG/L	56,900	100%	12	12	GA	300	12	**768**	**1,620**							
Ethane	UG/L	98	96%	161	168				2 U	0.4	1	0.16	0.82	0.046	3.2	2.2	2.2
Ethene	UG/L	200	88%	148	168				2 U	7.8	13	0.4	2.9	0.028	2.7	1.8	0.71
Methane	UG/L	23,000	98%	165	168				2 U	210	390	44	210	10	1,100	610	740
Sulfate	MG/L	1060	86%	144	168	GA	250	26	**958**	**738**	**473**	**1,060**	**600**	**541**	**570**	**912**	**680**
Total Organic Carbon	MG/L	2050	100%	168	168				3.9 J	15.2	10.3	6.1	5.6	4.4	6.9	5.6	4.6

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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Appendix B

Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 10
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Num of Detects Above Standard-1	ASH LANDFILL MWT-26 GW ALBW20202 12/19/2010 SA LTM 10 Total Value Qual	ASH LANDFILL MWT-26 GW ALBW20216 7/20/2011 SA LTM 11 Total Value Qual	ASH LANDFILL MWT-26 GW ALBW20232 12/15/2011 SA LTM 12 Total Value Qual	ASH LANDFILL MWT-26 GW ALBW20246 6/20/2012 SA LTM 13 Total Value Qual	ASH LANDFILL MWT-26 GW ALBW20262 12/14/2012 SA LTM 14 Total Value Qual	ASH LANDFILL MWT-26 GW ALBW20274 7/11/2013 SA LTM 15 Total Value Qual	ASH LANDFILL MWT-26 GW ALBW20289 12/14/2013 SA LTM 16 Total Value Qual	ASH LANDFILL MWT-26 GW ALBW20306 6/19/2014 SA LTM 17 Total Value Qual	ASH LANDFILL MWT-26 GW ALBW20321 12/17/2014 SA LTM 18 Total Value Qual
Volatile Organic Compounds																	
1,1,1-Trichloroethane	UG/L	15	2%	5	328	GA	5	1	0.5 U	0.5 U	0.5 U	0.5 UJ	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	328	GA	5	0	0.18 U	0.18 U	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	328	GA	5	0	0.5 U	0.5 U	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	328	GA	1	0	0.13 U	0.13 U	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%	40	328	GA	5	1	0.25 U	0.25 U	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%	36	328	GA	5	0	0.11 U	0.11 U	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	327	GA	5	0	0.25 U	0.25 U	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	328	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	0.44 U	0.44 U
1,2-Dibromoethane	UG/L	0	0%	0	328	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	0.25 U	0.25 U
1,2-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.21 U	0.21 U	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%	49	328	GA	0.6	41	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,2-Dichloropropane	UG/L	0.29	0%	1	328	GA	1	0	0.13 U	0.13 U	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	328	GA	3	0	0.25 U	0.25 U	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	328	GA	3	0	0.28 U	0.28 U	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%	49	315				5 UJ	5 UR	5 UJ	5 UJ	5 U	5 U	5 UJ	5 U	5 U
Benzene	UG/L	0.48	2%	5	328	GA	1	0	0.25 U	0.25 U	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	328	MCL	80	0	0.25 U	0.25 U	0.25 U	0.25 UJ	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Bromoform	UG/L	0	0%	0	328	MCL	80	0	0.5 U	0.5 U	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	2.3	0%	1	328				0.6 U	0.6 U	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	328	GA	5	0	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U
Chlorobenzene	UG/L	0	0%	0	328	GA	5	0	0.25 U	0.25 U	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	328	MCL	80	0	0.1 U	0.1 U	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	328	GA	5	0	1 UJ	1 UJ	1 UJ	1 UJ	1 U	2 U	2 U	2 U	2 U
Chloroform	UG/L	71	8%	25	328	GA	7	7	0.14 U	0.14 U	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%	290	328	GA	5	199	**12**	**9.8**	1.1	4.4	3.1	**5.8**	2.8	4.5	**9.7**
Cis-1,3-Dichloropropene	UG/L	0	0%	0	328	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	0.11 U	0.11 U
Cyclohexane	UG/L	0.3	0%	1	328				0.25 U	0.25 U	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	321	GA	5	0	0.25 U	0.25 U	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	328	GA	5	1	0.11 U	0.11 U	0.11 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	328	GA	5	0	0.1 U	0.1 U	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	313				0.19 U	0.19 UJ	0.19 U	0.19 UR	0.19 UJ	0.19 U	0.19 U	0.19 U	0.19 U
Methyl bromide	UG/L	2.1	0%	1	322	GA	5	0	0.8 U	0.8 UJ	0.8 UJ	0.8 UJ	0.8 UJ	2 U	2 U	2 UJ	2 U
Methyl butyl ketone	UG/L	0	0%	0	328				1 U	1 UJ	1 UJ	1 UJ	1 U	1 U	1 U	1 U	1 U
Methyl chloride	UG/L	0	0%	0	328	GA	5	0	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 UJ	0.33 U	0.33 U	0.33 U
Methyl cyclohexane	UG/L	0.17	0%	1	328				0.1 U	0.1 U	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	7%	22	321				1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U
Methyl isobutyl ketone	UG/L	1.9	0%	1	328				1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U
Methyl Tertbutyl Ether	UG/L	0	0%	0	328				0.2 U	0.2 U	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	328	GA	5	7	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	UG/L	0	0%	0	328	GA	5	0	0.11 U	0.11 U	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	328	GA	5	1	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
Toluene	UG/L	590	10%	32	328	GA	5	18	0.33 U	0.33 U	0.33 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	328	GA	5	1	0.2 U	0.2 U	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	51%	168	328	GA	5	17	0.67 J	0.81 J	0.2 U	0.24 J	0.2 U	0.2 U	0.2 U	0.4 J	0.2 U
Trans-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	0.21 U	0.21 U	0.21 U	0.21 UJ	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U
Trichloroethene	UG/L	3800	68%	223	328	GA	5	104	4.2	1.6	1.2	1.6	2.1	2.1	1.3	0.83 J	2.1
Trichlorofluoromethane	UG/L	0	0%	0	328	GA	5	0	0.25 U	0.25 U	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%	213	328	GA	2	161	**7.6**	**4.4**	0.47 J	1.1	0.56 J	1.6	1	1.1	**3.3**
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	96%	161	168				3.7	4.5	0.23	1	0.096	0.69	0.52	0.92	0.62
Ethene	UG/L	200	88%	148	168				3.3	1	0.425 U	0.5	0.069	0.54	0.2	0.15 J	0.24
Methane	UG/L	23,000	98%	165	168				1,600	960	39	230	9.4	130	61	240	60
Sulfate	MG/L	1060	86%	144	168	GA	250	26	**690**	**510**	**860**	**640**	**430**	250	**610**	**680**	**460**
Total Organic Carbon	MG/L	2050	100%	168	168				5.5	6.3	4.5	4.4	4.5	4.1	5.4	4.7	4.4

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
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Appendix B

Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 10
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Num of Detects Above Standard-1	ASH LANDFILL MWT-26 GW ALBW20337 6/4/2015 SA LTM 19 Total	ASH LANDFILL MWT-26 GW ALBW20354 12/16/2015 SA LTM 20 Total	ASH LANDFILL MWT-26 GW ALBW20369 6/15/2016 SA LTM 21 Total	ASH LANDFILL MWT-26 GW ALBW20385 12/7/2016 SA LTM 22 Total	ASH LANDFILL MWT-27 GW ALBW20067 1/3/2007 SA LTM 1 Total	ASH LANDFILL MWT-27 GW ALBW20082 3/16/2007 SA LTM 2 Total	ASH LANDFILL MWT-27 GW ALBW20096 6/5/2007 SA LTM 3 Total	ASH LANDFILL MWT-27 GW ALBW20097 6/5/2007 DU LTM 3 Total	ASH LANDFILL MWT-27 GW ALBW20112 11/15/2007 SA LTM 4 Total
Volatile Organic Compounds																	
1,1,1-Trichloroethane	UG/L	15	2%	5	328	GA	5	1	0.37 U	0.37 U	0.37 U	0.37 U	20 UJ	20 U	20 U	20 U	10 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	0	328	GA	5	0	0.62 U	0.62 U	0.62 U	0.62 U	20 UJ	20 U	20 U	20 U	10 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	0	328	GA	5	0	0.36 U	0.36 U	0.36 U	0.36 U	20 UJ	20 U	20 UJ	20 UJ	10 U
1,1,2-Trichloroethane	UG/L	0	0%	0	328	GA	1	0	0.33 U	0.33 U	0.33 U	0.33 U	20 UJ	20 U	20 U	20 U	10 U
1,1-Dichloroethane	UG/L	62	12%	40	328	GA	5	1	0.38 U	0.38 U	0.38 U	0.38 U	20 UJ	20 U	20 U	20 U	10 U
1,1-Dichloroethene	UG/L	2.6	11%	36	328	GA	5	0	0.36 U	0.36 U	0.36 U	0.36 U	20 UJ	20 U	20 U	20 U	10 U
1,2,4-Trichlorobenzene	UG/L	0	0%	0	327	GA	5	0	2.5 U	2.5 U	2.5 UJ	2.5 U	20 UJ	20 U	20 U	20 U	10 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0	328	GA	0.04	0	1.1 U	1.1 U	1.1 U	1.1 U	20 UJ	20 U	20 U	20 U	10 U
1,2-Dibromoethane	UG/L	0	0%	0	328	GA	0.0006	0	0.44 U	0.44 U	0.44 U	0.44 U	20 UJ	20 U	20 U	20 U	10 U
1,2-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.37 U	0.37 U	0.37 U	0.37 U	20 UJ	20 U	20 U	20 U	10 U
1,2-Dichloroethane	UG/L	5.6	15%	49	328	GA	0.6	41	0.5 U	0.5 U	0.5 U	0.5 U	20 UJ	20 U	20 U	20 U	10 U
1,2-Dichloropropane	UG/L	0.29	0%	1	328	GA	1	0	0.67 U	0.67 U	0.67 U	0.67 U	20 UJ	20 U	20 U	20 U	10 U
1,3-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.43 U	0.43 U	0.43 U	0.43 U	20 UJ	20 U	20 U	20 U	10 U
1,4-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.46 U	0.46 U	0.46 U	0.46 U	20 UJ	20 U	20 U	20 U	10 U
Acetone	UG/L	2600	16%	49	315				7 U	7 U	7 U	7 U	2,000 J	1,300	1,300	1,300	30 J
Benzene	UG/L	0.48	2%	5	328	GA	1	0	0.43 U	0.43 U	0.43 U	0.43 U	20 UJ	20 U	20 U	20 U	10 U
Bromodichloromethane	UG/L	0	0%	0	328	MCL	80	0	0.44 U	0.44 U	0.44 U	0.44 U	20 UJ	20 U	20 U	20 U	10 U
Bromoform	UG/L	0	0%	0	328	MCL	80	0	0.43 UJ	0.43 U	0.43 UJ	0.43 U	20 UJ	20 U	20 U	20 U	10 U
Carbon disulfide	UG/L	2.3	0%	1	328				1 U	1 U	1 U	1 U	20 UJ	20 U	20 U	20 U	10 U
Carbon tetrachloride	UG/L	0	0%	0	328	GA	5	0	0.33 U	0.33 U	0.33 U	0.33 U	20 UJ	20 U	20 U	20 U	10 U
Chlorobenzene	UG/L	0	0%	0	328	GA	5	0	0.26 U	0.26 U	0.26 U	0.26 U	20 UJ	20 U	20 U	20 U	10 U
Chlorodibromomethane	UG/L	0	0%	0	328	MCL	80	0	0.32 UJ	0.32 U	0.32 U	0.32 U	20 UJ	20 U	20 U	20 U	10 U
Chloroethane	UG/L	1.1	2%	7	328	GA	5	0	2.5 U	2.5 U	2.5 U	2.5 U	20 UJ	20 U	20 U	20 U	10 U
Chloroform	UG/L	71	8%	25	328	GA	7	7	0.5 U	0.5 U	0.5 U	0.5 U	20 UJ	20 U	20 U	20 U	10 U
Cis-1,2-Dichloroethene	UG/L	820	88%	290	328	GA	5	199	**5.4**	**8.4**	3.7	1.3	**49 J**	20 U	20 U	20 U	10 U
Cis-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	0.4 U	0.4 U	0.4 U	0.4 U	20 UJ	20 U	20 U	20 U	10 U
Cyclohexane	UG/L	0.3	0%	1	328				0.39 U	0.39 U	0.39 U	0.39 U	20 UJ	20 U	20 U	20 U	10 U
Dichlorodifluoromethane	UG/L	0.3	0%	1	321	GA	5	0	0.6 U	0.6 U	0.6 U	0.6 U	20 UJ	20 U	20 U	20 U	10 U
Ethyl benzene	UG/L	9.2	6%	19	328	GA	5	1	0.33 U	0.33 U	0.33 U	0.33 U	20 UJ	20 U	20 U	20 U	10 U
Isopropylbenzene	UG/L	0.1	0%	1	328	GA	5	0	0.35 U	0.35 U	0.35 U	0.35 U	20 UJ	20 U	20 U	20 U	10 U
Methyl Acetate	UG/L	6	1%	2	313				1.8 U	1.8 U	1.8 U	1.8 U	20 UJ	20 UJ	20 U	20 U	10 UJ
Methyl bromide	UG/L	2.1	0%	1	322	GA	5	0	2.5 U	2.5 U	2.5 U	2.5 U	20 UJ	20 U	20 U	20 U	10 U
Methyl butyl ketone	UG/L	0	0%	0	328				2 U	2 U	2 U	2 U	100 UJ	100 U	100 U	100 U	50 UJ
Methyl chloride	UG/L	0	0%	0	328	GA	5	0	0.4 U	0.4 U	0.4 U	0.4 U	20 UJ	20 U	20 U	20 U	10 U
Methyl cyclohexane	UG/L	0.17	0%	1	328				0.43 U	0.43 U	0.43 U	0.43 U	20 UJ	20 U	20 U	20 U	10 U
Methyl ethyl ketone	UG/L	4900	7%	22	321				3.4 U	3.4 U	3.4 U	3.4 U	4,100 J	2,200	1,800	1,700	50 U
Methyl isobutyl ketone	UG/L	1.9	0%	1	328				2.1 U	2.1 U	2.1 U	2.1 U	100 UJ	100 U	100 U	100 U	50 U
Methyl Tertbutyl Ether	UG/L	0	0%	0	328				0.3 U	0.3 U	0.3 U	0.3 U	20 UJ	20 U	20 U	20 U	10 U
Methylene chloride	UG/L	18	4%	12	328	GA	5	7	2.5 U	2.5 U	2.5 U	2.5 U	**18 J**	20 U	**11 J**	**13 J**	10 U
Styrene	UG/L	0	0%	0	328	GA	5	0	0.27 U	0.27 U	0.27 U	0.27 U	20 UJ	20 U	20 U	20 U	10 U
Tetrachloroethene	UG/L	27	1%	2	328	GA	5	1	0.74 U	0.74 U	0.74 U	0.74 U	20 UJ	20 U	20 U	20 U	10 U
Toluene	UG/L	590	10%	32	328	GA	5	18	0.48 U	0.48 U	0.48 U	0.48 U	20 UJ	20 U	20 U	20 U	**7.3 J**
Total Xylenes	UG/L	60	1%	2	328	GA	5	1	0.23 U	0.23 U	0.23 U	0.23 U	60 UJ	60 U	60 U	60 U	30 U
Trans-1,2-Dichloroethene	UG/L	22	51%	168	328	GA	5	17	0.49 J	0.37 U	0.37 U	0.37 U	20 UJ	20 U	20 U	20 U	10 U
Trans-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	0.42 U	0.42 U	0.42 U	0.42 U	20 UJ	20 U	20 U	20 U	10 U
Trichloroethene	UG/L	3800	68%	223	328	GA	5	104	1.3 J	1.6	2.1	1	20 UJ	20 U	20 U	20 U	10 U
Trichlorofluoromethane	UG/L	0	0%	0	328	GA	5	0	0.42 U	0.42 U	0.42 U	0.42 U	20 UJ	20 U	20 UJ	20 UJ	10 U
Vinyl chloride	UG/L	180	65%	213	328	GA	2	161	0.86 J	0.5 U	1.2	0.5 U	20 UJ	20 U	20 U	20 U	10 U
Other																	
Iron	UG/L	296,000	100%	12	12	GA	300	11					**296,000 J**	**229,000**			
Iron+Manganese	UG/L	352,900	100%	12	12	GA	500	12					**352,900 J**	**273,500**			
Manganese	UG/L	56,900	100%	12	12	GA	300	12					**56,900**	**44,500**			
Ethane	UG/L	98	96%	161	168				0.43	1.1	0.69	0.013 J	10,000 UJ	0.15	0.082	0.079	0.025 U
Ethene	UG/L	200	88%	148	168				0.13 J	0.27	0.18 J	0.01 J	10,000 UJ	2.7	0.34	0.32	0.014 J
Methane	UG/L	23,000	98%	165	168				83	140	170	0.5 J	10,000 UJ	15,000	14,000	13,000	13,000
Sulfate	MG/L	1060	86%	144	168	GA	250	26	**680**	**640**	**590**	**610**	10 U	10 U	2 U	2.7	31.7
Total Organic Carbon	MG/L	2050	100%	168	168				5.5	5.9	5	5.8	2,050 J	1,350	738	771	167

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  b. Federal Maximum Contaminant Level (http://www.epa.gov/safewater/contaminants/index.html)
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U = compound was not detected
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Appendix B

Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 10
Seneca Army Depot Activity

Area									ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID									MWT-27	MWT-27	MWT-27	MWT-27	MWT-27	MWT-27	MWT-27	MWT-27	MWT-27
Matrix									GW	GW	GW	GW	GW	GW	GW	GW	GW
Sample ID									ALBW20127	ALBW20142	ALBW20143	ALBW20157	ALBW20172	ALBW20173	ALBW20187	ALBW20203	ALBW20217
Sample Date									6/24/2008	12/15/2008	12/15/2008	6/3/2009	12/16/2009	12/16/2009	6/29/2010	12/18/2010	7/20/2011
QC Type									SA	SA	DU	SA	SA	DU	SA	SA	SA
Study ID									LTM	LTM	LTM	LTM	LTM	LTM	LTM	LTM	LTM
Sample Round									5	6	6	7	8	8	9	10	11
Filtered									Total	Total	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	Num of Detects Above Standard-1	Value Qual	Value Qual	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	328	GA	5	1	4 U	2.6 UJ	2.6 UJ	2.6 U	1.3 U	1.3 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	0	328	GA	5	0	4 U	2.1 UJ	2.1 UJ	2.1 U	1.1 U	1.1 U	0.18 U	0.18 U	0.18 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	0	328	GA	5	0	4 U	3.1 UJ	3.1 UJ	3.1 U	1.5 U	1.5 U	0.5 UJ	0.5 U	0.5 U
1,1,2-Trichloroethane	UG/L	0	0%	0	328	GA	1	0	4 U	2.3 UJ	2.3 UJ	2.3 U	1.2 U	1.2 U	0.13 U	0.13 U	0.13 U
1,1-Dichloroethane	UG/L	62	12%	40	328	GA	5	1	4 U	7.5 U	7.5 U	7.5 U	1.9 U	1.9 U	0.25 U	0.25 U	0.25 U
1,1-Dichloroethene	UG/L	2.6	11%	36	328	GA	5	0	4 U	2.9 U	2.9 U	2.9 U	1.5 U	1.5 U	0.11 U	0.11 U	0.11 U
1,2,4-Trichlorobenzene	UG/L	0	0%	0	327	GA	5	0	4 U	4.1 UJ	4.1 UJ	4.1 U	2 U	2 U	0.25 U	0.25 U	0.25 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0	328	GA	0.04	0	4 U	10 UJ	10 UJ	10 UJ	2 U	2 U	0.44 U	0.44 U	0.44 U
1,2-Dibromoethane	UG/L	0	0%	0	328	GA	0.0006	0	4 U	1.7 UJ	1.7 UJ	1.7 U	0.83 U	0.83 U	0.25 U	0.25 U	0.25 U
1,2-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	4 U	2 U	2 U	2 U	1 U	1 U	0.21 U	0.21 U	0.21 U
1,2-Dichloroethane	UG/L	5.6	15%	49	328	GA	0.6	41	4 U	2.1 U	2.1 U	2.1 U	1.1 U	1.1 U	0.1 U	0.1 U	0.1 U
1,2-Dichloropropane	UG/L	0.29	0%	1	328	GA	1	0	4 U	1.4 U	1.4 U	1.4 U	1.6 U	1.6 U	0.13 U	0.13 U	0.13 U
1,3-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	4 U	1.6 U	1.6 U	1.6 U	1.8 U	1.8 U	0.25 U	0.25 U	0.25 U
1,4-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	4 U	1.6 U	1.6 U	1.6 U	2 U	2 U	0.28 U	0.28 U	0.28 U
Acetone	UG/L	2600	16%	49	315				20 U	26 J	13 UJ	13 U	6.7 U	6.7 U	11 J	5 UJ	5 UR
Benzene	UG/L	0.48	2%	5	328	GA	1	0	4 U	1.6 U	1.6 U	1.6 U	2 U	2 U	0.25 U	0.25 U	0.25 U
Bromodichloromethane	UG/L	0	0%	0	328	MCL	80	0	4 U	3.8 U	3.8 U	3.9 U	1.9 U	1.9 U	0.25 U	0.25 U	0.25 U
Bromoform	UG/L	0	0%	0	328	MCL	80	0	4 U	2.6 UJ	2.6 UJ	2.6 UJ	1.3 U	1.3 U	0.5 U	0.5 U	0.5 U
Carbon disulfide	UG/L	2.3	0%	1	328				4 U	1.9 U	1.9 U	1.9 UJ	0.97 U	0.97 U	0.6 U	0.6 U	0.6 U
Carbon tetrachloride	UG/L	0	0%	0	328	GA	5	0	4 U	2.7 UJ	2.7 UJ	2.7 U	1.3 U	1.3 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	UG/L	0	0%	0	328	GA	5	0	4 U	1.8 U	1.8 U	3.2 U	1.6 U	1.6 U	0.25 U	0.25 U	0.25 U
Chlorodibromomethane	UG/L	0	0%	0	328	MCL	80	0	4 U	3.2 U	3.2 U	3.2 U	1.6 U	1.6 U	0.1 U	0.1 U	0.1 U
Chloroethane	UG/L	1.1	2%	7	328	GA	5	0	4 UJ	3.2 U	3.2 U	3.2 U	1.6 U	1.6 U	1 U	1 UJ	1 UJ
Chloroform	UG/L	71	8%	25	328	GA	7	7	4 U	3.4 U	3.4 U	3.4 U	1.7 U	1.7 U	0.14 U	0.14 U	0.14 U
Cis-1,2-Dichloroethene	UG/L	820	88%	290	328	GA	5	199	4 U	1.6 U	1.6 U	1.6 U	1.9 U	1.9 U	0.18 J	1.1	0.15 J
Cis-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	4 U	3.6 U	3.6 U	3.6 U	1.8 U	1.8 U	0.11 U	0.11 U	0.11 U
Cyclohexane	UG/L	0.3	0%	1	328				4 U	2.2 UJ	2.2 UJ	5.3 U	2.7 U	2.7 U	0.25 U	0.25 U	0.25 U
Dichlorodifluoromethane	UG/L	0.3	0%	1	321	GA	5	0	4 U	2.8 U	2.8 U	2.9 U	1.4 U	1.4 U	0.25 U	0.25 U	0.25 U
Ethyl benzene	UG/L	9.2	6%	19	328	GA	5	1	4 U	1.8 U	1.8 U	1.8 U	0.92 U	0.92 U	0.11 U	0.11 U	0.11 U
Isopropylbenzene	UG/L	0.1	0%	1	328	GA	5	0	4 U	1.9 U	1.9 U	1.9 U	0.96 U	0.96 U	0.1 U	0.1 U	0.1 U
Methyl Acetate	UG/L	6	1%	2	313				4 UJ	1.7 UJ	1.7 UJ	1.7 UJ	2.5 U	2.5 U	0.19 UJ	0.19 U	0.19 UJ
Methyl bromide	UG/L	2.1	0%	1	322	GA	5	0	4 UJ	2.8 U	2.8 U	2.8 U	1.4 U	1.4 U	0.8 UJ	0.8 U	0.8 UJ
Methyl butyl ketone	UG/L	0	0%	0	328				20 UJ	12 U	12 U	12 U	6.2 U	6.2 U	1 UJ	1 U	1 UJ
Methyl chloride	UG/L	0	0%	0	328	GA	5	0	4 U	3.4 U	3.4 U	3.5 U	1.7 U	1.7 U	0.33 U	0.33 U	0.33 U
Methyl cyclohexane	UG/L	0.17	0%	1	328				4 U	2.2 UJ	2.2 UJ	5 U	2.5 U	2.5 U	0.1 U	0.1 U	0.1 U
Methyl ethyl ketone	UG/L	4900	7%	22	321				20 U	13 UJ	13 UJ	13 U	6.6 U	6.6 U	1 U	1 U	1 U
Methyl isobutyl ketone	UG/L	1.9	0%	1	328				20 U	9.1 UJ	9.1 UJ	9.1 U	4.5 U	4.5 U	1 U	1 U	1 U
Methyl Tertbutyl Ether	UG/L	0	0%	0	328				4 U	1.6 UJ	1.6 UJ	1.6 U	0.8 U	0.8 U	0.2 U	0.2 U	0.2 U
Methylene chloride	UG/L	18	4%	12	328	GA	5	7	4 U	4.4 UJ	4.4 UJ	4.4 U	2.2 U	2.2 U	1 U	1 U	1 U
Styrene	UG/L	0	0%	0	328	GA	5	0	4 U	1.8 U	1.8 U	1.8 U	0.92 U	0.92 U	0.11 U	0.11 U	0.11 U
Tetrachloroethene	UG/L	27	1%	2	328	GA	5	1	4 U	3.6 U	3.6 U	3.6 U	1.8 U	1.8 U	0.15 U	0.15 U	0.15 U
Toluene	UG/L	590	10%	32	328	GA	5	18	**5.9**	**6.9 J**	**7.2 J**	5.1 U	2.6 U	2.6 U	0.61 J	0.33 U	1 U
Total Xylenes	UG/L	60	1%	2	328	GA	5	1	12 U	9.3 U	9.3 U	6.6 U	3.3 U	3.3 U	0.2 U	0.2 U	0.2 U
Trans-1,2-Dichloroethene	UG/L	22	51%	168	328	GA	5	17	4 U	1.3 U	1.3 U	1.3 U	2.1 U	2.1 U	0.2 U	0.2 U	0.33 J
Trans-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	4 U	3.7 U	3.7 U	3.7 U	1.8 U	1.8 U	0.21 U	0.21 U	0.21 U
Trichloroethene	UG/L	3800	68%	223	328	GA	5	104	4 U	1.8 U	1.8 U	1.8 U	2.3 U	2.3 U	0.13 U	0.51 J	0.13 U
Trichlorofluoromethane	UG/L	0	0%	0	328	GA	5	0	4 UJ	1.5 UJ	1.5 UJ	1.5 U	0.76 U	0.76 U	0.25 U	0.25 U	0.25 U
Vinyl chloride	UG/L	180	65%	213	328	GA	2	161	4 U	2.4 U	2.4 U	2.4 U	**3.2 J**	**2.9 J**	0.18 U	**2.1**	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	96%	161	168				2.3	1.6	1.6	5.1	4.4	4.3	3.8	3	6.2
Ethene	UG/L	200	88%	148	168				0.049	0.13	0.12	0.15	1.2	1.1	0.12	0.88	0.083
Methane	UG/L	23,000	98%	165	168				13,000	15,000	15,000	14,000	15,000	16,000	13,000	18,000	14,000
Sulfate	MG/L	1060	86%	144	168	GA	250	26	2 U	24.2	23.8	0.93 J	13.9 J	14 J	0.95 J	25	0.76 J
Total Organic Carbon	MG/L	2050	100%	168	168				88.9	53.8	53.1	81.7	49	50.9	61	32	42

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 10
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Num of Detects Above Standard-1	Area	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
									Loc ID	MWT-27	MWT-27	MWT-27	MWT-27	MWT-27	MWT-27	MWT-27	MWT-27	MWT-27
									Matrix	GW	GW	GW	GW	GW	GW	GW	GW	GW
									Sample ID	ALBW20218	ALBW20233	ALBW20247	ALBW20265	ALBW20275	ALBW20276	ALBW20290	ALBW20307	ALBW20322
									Sample Date	7/20/2011	12/14/2011	6/20/2012	12/14/2012	7/11/2013	7/11/2013	12/12/2013	6/19/2014	12/17/2014
									QC Type	DU	SA	SA	SA	SA	DU	SA	SA	SA
									Study ID	LTM	LTM	LTM	LTM	LTM	LTM	LTM	LTM	LTM
									Sample Round	11	12	13	14	15	15	16	17	18
									Filtered	Total	Total	Total	Total	Total	Total	Total	Total	Total
										Value Qual	Value Qual	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	328	GA	5	1		0.5 U	0.5 U	0.5 UJ	0.5 U	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	328	GA	5	0		0.18 U	0.18 U	0.18 U	0.18 U	0.18 UJ	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	328	GA	5	0		0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	UG/L	0	0%	0	328	GA	1	0		0.13 U	0.13 U	0.13 U	0.13 U	0.13 UJ	0.13 U	0.13 U	0.13 U	0.13 U
1,1-Dichloroethane	UG/L	62	12%	40	328	GA	5	1		0.25 U	0.25 U	0.25 U	0.25 U	0.25 UJ	0.25 U	0.25 U	0.25 U	0.25 U
1,1-Dichloroethene	UG/L	2.6	11%	36	328	GA	5	0		0.11 U	0.11 U	0.11 U	0.11 U	0.11 UJ	0.11 U	0.11 U	0.11 U	0.11 U
1,2,4-Trichlorobenzene	UG/L	0	0%	0	327	GA	5	0		0.25 U	0.25 U	0.25 U	0.25 U	0.25 UJ	0.25 U	0.25 U	0.25 U	0.25 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0	328	GA	0.04	0		0.44 U	0.44 U	0.44 U	0.44 U	0.44 UJ	0.44 U	0.44 U	0.44 U	0.44 U
1,2-Dibromoethane	UG/L	0	0%	0	328	GA	0.0006	0		0.25 U	0.25 U	0.25 U	0.25 U	0.25 UJ	0.25 U	0.25 U	0.25 U	0.25 U
1,2-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0		0.21 U	0.21 U	0.21 U	0.21 U	0.21 UJ	0.21 U	0.21 U	0.21 U	0.21 U
1,2-Dichloroethane	UG/L	5.6	15%	49	328	GA	0.6	41		0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 UJ	0.1 U	0.1 U	0.1 U	0.1 U
1,2-Dichloropropane	UG/L	0.29	0%	1	328	GA	1	0		0.13 U	0.13 U	0.13 U	0.13 U	0.13 UJ	0.13 U	0.13 U	0.13 U	0.13 U
1,3-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0		0.25 U	0.25 U	0.25 U	0.25 U	0.25 UJ	0.25 U	0.25 U	0.25 U	0.25 U
1,4-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0		0.28 U	0.28 U	0.28 U	0.28 U	0.28 UJ	0.28 U	0.28 U	0.28 U	0.28 U
Acetone	UG/L	2600	16%	49	315					5.6 J	5 U	5 UJ	10 J	5 U	25 U	5 U	8.5 J	9.8 J
Benzene	UG/L	0.48	2%	5	328	GA	1	0		0.25 U	0.26 J	0.25 U	0.25 U	0.25 UJ	0.25 U	0.25 U	0.25 U	0.27 J
Bromodichloromethane	UG/L	0	0%	0	328	MCL	80	0		0.25 U	0.25 U	0.25 UJ	0.25 U	0.25 UJ	0.25 U	0.25 U	0.25 U	0.25 U
Bromoform	UG/L	0	0%	0	328	MCL	80	0		0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U
Carbon disulfide	UG/L	2.3	0%	1	328					0.6 U	0.6 U	0.6 U	0.6 U	0.6 UJ	0.6 U	0.6 U	0.6 U	0.6 U
Carbon tetrachloride	UG/L	0	0%	0	328	GA	5	0		0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 UJ	0.5 U
Chlorobenzene	UG/L	0	0%	0	328	GA	5	0		0.25 U	0.25 U	0.25 U	0.25 U	0.25 UJ	0.25 U	0.25 U	0.25 U	0.25 U
Chlorodibromomethane	UG/L	0	0%	0	328	MCL	80	0		0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.1 U	0.1 U
Chloroethane	UG/L	1.1	2%	7	328	GA	5	0		1 UJ	1 U	1 UJ	1 U	2 UJ	2 U	2 U	2 U	2 U
Chloroform	UG/L	71	8%	25	328	GA	7	7		0.14 U	0.14 U	0.14 U	0.14 U	0.14 UJ	0.14 U	0.14 U	0.14 U	0.14 U
Cis-1,2-Dichloroethene	UG/L	820	88%	290	328	GA	5	199		0.27 J	1.4	0.42 J	0.15 U	0.15 UJ	0.15 U	0.48 J	0.83 J	0.76 J
Cis-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0		0.11 U	0.11 U	0.11 U	0.11 U	0.11 UJ	0.11 U	0.11 U	0.11 U	0.11 U
Cyclohexane	UG/L	0.3	0%	1	328					0.25 U	0.25 U	0.25 U	0.25 U	0.25 UJ	0.25 U	0.25 U	0.25 U	0.25 U
Dichlorodifluoromethane	UG/L	0.3	0%	1	321	GA	5	0		0.25 U	0.25 U	0.25 U	0.25 U	0.25 UJ	0.25 U	0.25 UJ	0.25 U	0.25 U
Ethyl benzene	UG/L	9.2	6%	19	328	GA	5	1		0.11 U	0.11 U	0.11 U	0.11 U	0.11 UJ	0.11 U	0.11 U	0.11 U	0.11 U
Isopropylbenzene	UG/L	0.1	0%	1	328	GA	5	0		0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.1 U	0.1 U
Methyl Acetate	UG/L	6	1%	2	313					0.19 UJ	0.19 U	0.19 UR	0.19 UJ	0.19 UJ	0.19 U	0.19 U	0.19 U	0.19 U
Methyl bromide	UG/L	2.1	0%	1	322	GA	5	0		0.8 UJ	0.8 UJ	0.8 UJ	0.8 UJ	2 UJ	2 U	2 UJ	2 UJ	2 U*
Methyl butyl ketone	UG/L	0	0%	0	328					1 UJ	1 U	1 UJ	1 U	1 UJ	1 U	1 U	1 U	1 U
Methyl chloride	UG/L	0	0%	0	328	GA	5	0		0.33 U	0.33 UJ	0.33 U	0.33 U	0.33 UJ	0.33 UJ	0.33 U	0.33 U	0.33 U
Methyl cyclohexane	UG/L	0.17	0%	1	328					0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.1 U	0.1 U
Methyl ethyl ketone	UG/L	4900	7%	22	321					1 U	1 U	1 UJ	1 U	1 UJ	1 U	1 U	1 U	1 U
Methyl isobutyl ketone	UG/L	1.9	0%	1	328					1 U	1 U	1 UJ	1 U	1 UJ	1 U	1 U	1 U	1 U
Methyl Tertbutyl Ether	UG/L	0	0%	0	328					0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U
Methylene chloride	UG/L	18	4%	12	328	GA	5	7		1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U
Styrene	UG/L	0	0%	0	328	GA	5	0		0.11 U	0.11 U	0.11 U	0.11 U	0.11 UJ	0.11 U	0.11 U	0.11 U	0.11 U
Tetrachloroethene	UG/L	27	1%	2	328	GA	5	1		0.15 U	0.15 UJ	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	10%	32	328	GA	5	18		1 U	0.33 U	0.33 U	0.33 U	0.33 UJ	0.33 U	0.33 U	0.33 U	0.33 U
Total Xylenes	UG/L	60	1%	2	328	GA	5	1		0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U
Trans-1,2-Dichloroethene	UG/L	22	51%	168	328	GA	5	17		0.23 J	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 U	0.27 J	0.2 U
Trans-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0		0.21 U	0.21 U	0.21 UJ	0.21 U	0.21 UJ	0.21 U	0.21 UJ	0.21 U	0.21 U
Trichloroethene	UG/L	3800	68%	223	328	GA	5	104		0.13 U	0.13 U	0.13 U	0.13 U	0.13 UJ	0.13 U	0.13 U	0.13 U	0.13 U
Trichlorofluoromethane	UG/L	0	0%	0	328	GA	5	0		0.25 U	0.25 U	0.25 U	0.25 U	0.25 UJ	0.25 U	0.25 U	0.25 U	0.25 U
Vinyl chloride	UG/L	180	65%	213	328	GA	2	161		0.18 U	3	0.61 J	0.18 U	0.18 UJ	0.18 U	0.84 J	1	1.3
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	96%	161	168					6.1	2	8.4	0.88	2	2.3	1.4	5.3	2.3
Ethene	UG/L	200	88%	148	168					0.072	1.6	0.68	0.051	0.2 U	0.2 U	0.16 J	0.79	0.35
Methane	UG/L	23,000	98%	165	168					14,000	16,000	14,000	13,000	13,000	12,000	20,000	16,000	12,000
Sulfate	MG/L	1060	86%	144	168	GA	250	26		0.61 J	19	1.4	2.5	4.2	3.9	5.2	6.6	37
Total Organic Carbon	MG/L	2050	100%	168	168					41	35	28	35	41	40	37 J	39	38

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 10
Seneca Army Depot Activity

Area									ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID									MWT-27	MWT-27	MWT-27	MWT-27	MWT-27	MWT-27	MWT-27	MWT-28	MWT-28
Matrix									GW	GW	GW	GW	GW	GW	GW	GW	GW
Sample ID									ALBW20323	ALBW20338	ALBW20355	ALBW20370	ALBW20371	ALBW20386	ALBW20387	ALBW20068	ALBW20069
Sample Date									12/17/2014	6/3/2015	12/16/2015	6/14/2016	6/14/2016	12/7/2016	12/7/2016	1/3/2007	1/3/2007
QC Type									DU	SA	SA	SA	DU	SA	DU	SA	DU
Study ID									LTM	LTM	LTM	LTM	LTM	LTM	LTM	LTM	LTM
Sample Round									18	19	20	21	21	22	22	1	1
Filtered									Total	Total	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	Num of Detects Above Standard-1	Value Qual	Value Qual	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	328	GA	5	1	0.5 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	20 UJ	20 UJ
1,1,2,2-Tetrachloroethane	UG/L	0	0%	0	328	GA	5	0	0.18 U	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U	20 UJ	20 UJ
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	0	328	GA	5	0	0.5 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	20 UJ	20 UJ
1,1,2-Trichloroethane	UG/L	0	0%	0	328	GA	1	0	0.13 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	20 UJ	20 UJ
1,1-Dichloroethane	UG/L	62	12%	40	328	GA	5	1	0.25 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	20 UJ	20 UJ
1,1-Dichloroethene	UG/L	2.6	11%	36	328	GA	5	0	0.11 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	20 UJ	20 UJ
1,2,4-Trichlorobenzene	UG/L	0	0%	0	327	GA	5	0	0.25 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 UF1	2.5 U	20 UJ	20 UJ
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0	328	GA	0.04	0	0.44 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	20 UJ	20 UJ
1,2-Dibromoethane	UG/L	0	0%	0	328	GA	0.0006	0	0.25 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	20 UJ	20 UJ
1,2-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.21 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	20 UJ	20 UJ
1,2-Dichloroethane	UG/L	5.6	15%	49	328	GA	0.6	41	0.1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UJ	20 UJ
1,2-Dichloropropane	UG/L	0.29	0%	1	328	GA	1	0	0.13 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	20 UJ	20 UJ
1,3-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.25 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	20 UJ	20 UJ
1,4-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.28 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	20 UJ	20 UJ
Acetone	UG/L	2600	16%	49	315				16	7 U	26	7 U	7 U	7.8 J	9.3 J	2,500 J	2,600 J
Benzene	UG/L	0.48	2%	5	328	GA	1	0	0.26 J	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	20 UJ	20 UJ
Bromodichloromethane	UG/L	0	0%	0	328	MCL	80	0	0.25 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	20 UJ	20 UJ
Bromoform	UG/L	0	0%	0	328	MCL	80	0	0.5 U	0.43 UJ	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	20 UJ	20 UJ
Carbon disulfide	UG/L	2.3	0%	1	328				0.6 U	1 U	1 U	1 U	1 U	1 U	1 U	20 UJ	20 UJ
Carbon tetrachloride	UG/L	0	0%	0	328	GA	5	0	0.5 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	20 UJ	20 UJ
Chlorobenzene	UG/L	0	0%	0	328	GA	5	0	0.25 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	20 UJ	20 UJ
Chlorodibromomethane	UG/L	0	0%	0	328	MCL	80	0	0.1 U	0.32 UJ	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	20 UJ	20 UJ
Chloroethane	UG/L	1.1	2%	7	328	GA	5	0	2 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	20 UJ	20 UJ
Chloroform	UG/L	71	8%	25	328	GA	7	7	0.14 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 UJ	20 UJ
Cis-1,2-Dichloroethene	UG/L	820	88%	290	328	GA	5	199	0.63 J	0.67 J	0.87 J	2.3	2.5	2.4	2.5	20 UJ	20 UJ
Cis-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	0.11 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	20 UJ	20 UJ
Cyclohexane	UG/L	0.3	0%	1	328				0.25 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	20 UJ	20 UJ
Dichlorodifluoromethane	UG/L	0.3	0%	1	321	GA	5	0	0.25 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	20 UJ	20 UJ
Ethyl benzene	UG/L	9.2	6%	19	328	GA	5	1	0.11 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	20 UJ	20 UJ
Isopropylbenzene	UG/L	0.1	0%	1	328	GA	5	0	0.1 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	20 UJ	20 UJ
Methyl Acetate	UG/L	6	1%	2	313				0.19 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	20 UJ	20 UJ
Methyl bromide	UG/L	2.1	0%	1	322	GA	5	0	2 U*	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	20 UJ	20 UJ
Methyl butyl ketone	UG/L	0	0%	0	328				1 U	2 U	2 U	2 U	2 U	2 U	2 U	100 UJ	100 UJ
Methyl chloride	UG/L	0	0%	0	328	GA	5	0	0.33 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	20 UJ	20 UJ
Methyl cyclohexane	UG/L	0.17	0%	1	328				0.1 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	20 UJ	20 UJ
Methyl ethyl ketone	UG/L	4900	7%	22	321				1 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	4,900 J	4,900 J
Methyl isobutyl ketone	UG/L	1.9	0%	1	328				1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	100 UJ	100 UJ
Methyl Tertbutyl Ether	UG/L	0	0%	0	328				0.2 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	20 UJ	20 UJ
Methylene chloride	UG/L	18	4%	12	328	GA	5	7	1 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	**13 J**	**14 J**
Styrene	UG/L	0	0%	0	328	GA	5	0	0.11 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	20 UJ	20 UJ
Tetrachloroethene	UG/L	27	1%	2	328	GA	5	1	0.15 U	0.74 U	0.74 U	0.74 U	0.74 U	0.74 U	0.74 U	20 UJ	20 UJ
Toluene	UG/L	590	10%	32	328	GA	5	18	0.33 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	**330 J**	**350 J**
Total Xylenes	UG/L	60	1%	2	328	GA	5	1	0.2 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	60 UJ	60 UJ
Trans-1,2-Dichloroethene	UG/L	22	51%	168	328	GA	5	17	0.2 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	20 UJ	20 UJ
Trans-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	0.21 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	20 UJ	20 UJ
Trichloroethene	UG/L	3800	68%	223	328	GA	5	104	0.13 U	0.48 UJ	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	20 UJ	20 UJ
Trichlorofluoromethane	UG/L	0	0%	0	328	GA	5	0	0.25 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	20 UJ	20 UJ
Vinyl chloride	UG/L	180	65%	213	328	GA	2	161	1.1	0.5 U	0.5 U	**2.7**	**3.5**	**4.5**	**4.2**	20 UJ	20 UJ
Other																	
Iron	UG/L	296,000	100%	12	12	GA	300	11								**278,000 J**	**271,000 J**
Iron+Manganese	UG/L	352,900	100%	12	12	GA	500	12								**309,800 J**	**301,800 J**
Manganese	UG/L	56,900	100%	12	12	GA	300	12								**31,800**	**30,800**
Ethane	UG/L	98	96%	161	168				2.1	4	1.4	4.4	4.5	0.84	0.84	10,000 UJ	10,000 UJ
Ethene	UG/L	200	88%	148	168				0.32	0.56	0.18 J	0.93	1	1.1	1.1	10,000 UJ	10,000 UJ
Methane	UG/L	23,000	98%	165	168				12,000	16,000	16,000	18,000	16,000	14,000	17,000	12,000 J	13,000 J
Sulfate	MG/L	1060	86%	144	168	GA	250	26	36	5.7	7.9	12	10	31 *	33 *	2 U	2.3
Total Organic Carbon	MG/L	2050	100%	168	168				38	37	28	26	27	36	36	1,820 J	1,730 J

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 10
Seneca Army Depot Activity

Area									ASH LANDFILL	ASH LANDFILL	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	MWT-28	MWT-28
Matrix									GW	GW	GW	GW	GW	GW	GW	GW	GW
Sample ID									ALBW20083	ALBW20098	ALBW20113	ALBW20128	ALBW20144	ALBW20158	ALBW20159	ALBW20174	ALBW20188
Sample Date									3/16/2007	6/5/2007	11/15/2007	6/25/2008	12/15/2008	6/3/2009	6/3/2009	12/18/2009	6/29/2010
QC Type									SA	SA	SA	SA	SA	SA	DU	SA	SA
Study ID									LTM	LTM	LTM	LTM	LTM	LTM	LTM	LTM	LTM
Sample Round									2	3	4	5	6	7	7	8	9
Filtered									Total	Total	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	Num of Detects Above Standard-1	Value Qual	Value Qual	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	328	GA	5	1	20 U	20 U	5 U	4 U	2.6 U	0.26 U	0.26 U	1.3 U	0.5 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	0	328	GA	5	0	20 U	20 U	5 U	4 U	2.1 U	0.21 U	0.21 U	1.1 U	0.18 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	0	328	GA	5	0	20 U	20 UJ	5 U	4 U	3.1 U	0.31 U	0.31 U	1.5 UJ	0.5 UJ
1,1,2-Trichloroethane	UG/L	0	0%	0	328	GA	1	0	20 U	20 U	5 U	4 U	2.3 U	0.23 U	0.23 U	1.2 U	0.13 U
1,1-Dichloroethane	UG/L	62	12%	40	328	GA	5	1	20 U	20 U	5 U	4 U	7.5 U	0.75 U	0.75 U	1.9 U	0.25 U
1,1-Dichloroethene	UG/L	2.6	11%	36	328	GA	5	0	20 U	20 U	5 U	4 U	2.9 U	0.29 U	0.29 U	1.5 U	0.11 U
1,2,4-Trichlorobenzene	UG/L	0	0%	0	327	GA	5	0	20 U	20 U	5 U	4 U	4.1 U	0.41 U	0.41 U	2 U	0.25 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0	328	GA	0.04	0	20 U	20 U	5 U	4 U	10 UJ	1 UJ	1 UJ	2 U	0.44 U
1,2-Dibromoethane	UG/L	0	0%	0	328	GA	0.0006	0	20 U	20 U	5 U	4 U	1.7 U	0.17 U	0.17 U	0.83 U	0.25 U
1,2-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	20 U	20 U	5 U	4 U	2 U	0.2 U	0.2 U	1 U	0.21 U
1,2-Dichloroethane	UG/L	5.6	15%	49	328	GA	0.6	41	20 U	20 U	5 U	4 U	2.1 U	0.21 U	0.21 U	1.1 U	0.1 U
1,2-Dichloropropane	UG/L	0.29	0%	1	328	GA	1	0	20 U	20 U	5 U	4 U	1.4 U	0.14 U	0.14 U	1.6 U	0.13 U
1,3-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	20 U	20 U	5 U	4 U	1.6 U	0.16 U	0.16 U	1.8 U	0.25 U
1,4-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	20 U	20 U	5 U	4 U	1.6 U	0.16 U	0.16 U	2 U	0.28 U
Acetone	UG/L	2600	16%	49	315				170	520	25 U	20 U	13 U	1.9 J	1.9 J	6.7 U	6.2 J
Benzene	UG/L	0.48	2%	5	328	GA	1	0	20 U	20 U	5 U	4 U	1.6 U	0.16 U	0.16 U	2 U	0.25 U
Bromodichloromethane	UG/L	0	0%	0	328	MCL	80	0	20 U	20 U	5 U	4 U	3.8 U	0.39 U	0.39 U	1.9 U	0.25 U
Bromoform	UG/L	0	0%	0	328	MCL	80	0	20 U	20 U	5 U	4 U	2.6 U	0.26 UJ	0.26 UJ	1.3 U	0.5 U
Carbon disulfide	UG/L	2.3	0%	1	328				20 U	20 U	5 U	4 U	1.9 U	0.19 UJ	0.19 UJ	0.97 U	0.6 U
Carbon tetrachloride	UG/L	0	0%	0	328	GA	5	0	20 U	20 U	5 U	4 U	2.7 U	0.27 U	0.27 U	1.3 U	0.5 U
Chlorobenzene	UG/L	0	0%	0	328	GA	5	0	20 U	20 U	5 U	4 U	1.8 U	0.32 U	0.32 U	1.6 U	0.25 U
Chlorodibromomethane	UG/L	0	0%	0	328	MCL	80	0	20 U	20 U	5 U	4 U	3.2 U	0.32 U	0.32 U	1.6 U	0.1 U
Chloroethane	UG/L	1.1	2%	7	328	GA	5	0	20 U	20 U	5 U	4 UJ	3.2 U	0.32 U	0.32 U	1.6 UJ	1 U
Chloroform	UG/L	71	8%	25	328	GA	7	7	20 U	20 U	5 U	4 U	3.4 U	0.34 U	0.34 U	1.7 U	0.14 U
Cis-1,2-Dichloroethene	UG/L	820	88%	290	328	GA	5	199	20 U	20 U	5 U	4 U	1.6 U	0.16 U	0.16 U	1.9 U	0.15 U
Cis-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	20 U	20 U	5 U	4 U	3.6 U	0.36 U	0.36 U	1.8 U	0.11 U
Cyclohexane	UG/L	0.3	0%	1	328				20 U	20 U	5 U	4 U	2.2 U	0.53 U	0.53 U	2.7 U	0.25 U
Dichlorodifluoromethane	UG/L	0.3	0%	1	321	GA	5	0	20 U	20 U	5 U	4 U	2.8 U	0.29 U	0.29 U	1.4 U	0.25 U
Ethyl benzene	UG/L	9.2	6%	19	328	GA	5	1	20 U	20 U	5 U	4 U	1.8 U	0.18 U	0.18 U	0.92 U	0.17 J
Isopropylbenzene	UG/L	0.1	0%	1	328	GA	5	0	20 U	20 U	5 U	4 U	1.9 U	0.19 U	0.19 U	0.96 U	0.1 U
Methyl Acetate	UG/L	6	1%	2	313				20 UJ	20 U	5 UJ	4 UJ	1.7 U	0.17 UJ	0.17 UJ	2.5 U	0.19 UJ
Methyl bromide	UG/L	2.1	0%	1	322	GA	5	0	20 U	20 U	5 U	4 UJ	2.8 U	0.28 U	0.28 U	1.4 UJ	0.8 UJ
Methyl butyl ketone	UG/L	0	0%	0	328				100 U	100 U	25 UJ	20 UJ	12 U	1.2 U	1.2 U	6.2 U	1 UJ
Methyl chloride	UG/L	0	0%	0	328	GA	5	0	20 U	20 U	5 U	4 U	3.4 U	0.35 U	0.35 U	1.7 U	0.33 U
Methyl cyclohexane	UG/L	0.17	0%	1	328				20 U	20 U	5 U	4 U	2.2 U	0.5 U	0.5 U	2.5 U	0.1 U
Methyl ethyl ketone	UG/L	4900	7%	22	321				180	510	25 U	20 U	13 U	1.3 U	1.3 U	6.6 U	1 U
Methyl isobutyl ketone	UG/L	1.9	0%	1	328				100 U	100 U	25 U	20 U	9.1 U	0.91 U	0.91 U	4.5 U	1 U
Methyl Tertbutyl Ether	UG/L	0	0%	0	328				20 U	20 U	5 U	4 U	1.6 U	0.16 U	0.16 U	0.8 U	0.2 U
Methylene chloride	UG/L	18	4%	12	328	GA	5	7	20 U	**9.3 J**	5 U	4 U	4.4 UJ	0.44 U	0.44 U	2.2 U	1 U
Styrene	UG/L	0	0%	0	328	GA	5	0	20 U	20 U	5 U	4 U	1.8 U	0.18 U	0.18 U	0.92 U	0.11 U
Tetrachloroethene	UG/L	27	1%	2	328	GA	5	1	20 U	20 U	5 U	4 U	3.6 U	0.36 U	0.36 U	1.8 U	0.15 U
Toluene	UG/L	590	10%	32	328	GA	5	18	**160**	**500**	**210**	**53**	5.1 U	0.57 J	0.6 J	2.6 U	0.52 J
Total Xylenes	UG/L	60	1%	2	328	GA	5	1	60 U	60 U	15 U	12 U	9.3 U	0.66 U	0.66 U	3.3 U	0.2 U
Trans-1,2-Dichloroethene	UG/L	22	51%	168	328	GA	5	17	20 U	20 U	5 U	4 U	1.3 U	0.13 U	0.13 U	2.1 U	0.2 U
Trans-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	20 U	20 U	5 U	4 U	3.7 U	0.37 U	0.37 U	1.8 U	0.21 U
Trichloroethene	UG/L	3800	68%	223	328	GA	5	104	20 U	20 U	5 U	4 U	1.8 U	0.18 U	0.18 U	2.3 U	0.13 U
Trichlorofluoromethane	UG/L	0	0%	0	328	GA	5	0	20 U	20 UJ	5 U	4 UJ	1.5 U	0.15 U	0.15 U	0.76 UJ	0.25 U
Vinyl chloride	UG/L	180	65%	213	328	GA	2	161	20 U	20 U	5 U	4 U	2.4 U	0.24 U	0.24 U	1.2 U	0.18 U
Other																	
Iron	UG/L	296,000	100%	12	12	GA	300	11	**33,000**								
Iron+Manganese	UG/L	352,900	100%	12	12	GA	500	12	**37,450**								
Manganese	UG/L	56,900	100%	12	12	GA	300	12	**4,450**								
Ethane	UG/L	98	96%	161	168				0.67	0.01 J	0.014 J	0.65	2	1.9	1.7	1.6	1.6
Ethene	UG/L	200	88%	148	168				0.48	0.057	0.025 U	0.044	0.12	0.062	0.066	0.12	0.057
Methane	UG/L	23,000	98%	165	168				19,000	11,000	11,000	12,000	19,000	14,000	12,000	15,000	14,000
Sulfate	MG/L	1060	86%	144	168	GA	250	26	2 U	2 U	2 U	2 U	48.3	0.35 U	0.35 U	3.16	0.5 U
Total Organic Carbon	MG/L	2050	100%	168	168				171	309	92	49.2	27.9	28.7	27.6	25.5	21

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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
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Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 10
Seneca Army Depot Activity

Area									ASH LANDFILL	ASH LANDFILL	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	MWT-28	MWT-28
Matrix									GW	GW	GW	GW	GW	GW	GW	GW	GW
Sample ID									ALBW20189	ALBW20204	ALBW20219	ALBW20234	ALBW20248	ALBW20249	ALBW20264	ALBW20277	ALBW20291
Sample Date									6/29/2010	12/18/2010	7/19/2011	12/14/2011	6/20/2012	6/20/2012	12/14/2012	7/11/2013	12/14/2013
QC Type									DU	SA	SA	SA	SA	DU	SA	SA	SA
Study ID									LTM	LTM	LTM	LTM	LTM	LTM	LTM	LTM	LTM
Sample Round									9	10	11	12	13	13	14	15	16
Filtered									Total	Total	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	Num of Detects Above Standard-1	Value Qual	Value Qual	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	328	GA	5	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	0	328	GA	5	0	0.18 U	0.18 U	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	328	GA	5	0	0.5 UJ	0.5 U	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	328	GA	1	0	0.13 U	0.13 U	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%	40	328	GA	5	1	0.25 U	0.25 U	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%	36	328	GA	5	0	0.11 U	0.11 U	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	327	GA	5	0	0.25 U	0.25 U	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	328	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	0.44 U	0.44 U
1,2-Dibromoethane	UG/L	0	0%	0	328	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	0.25 U	0.25 U
1,2-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.21 U	0.21 U	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%	49	328	GA	0.6	41	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 U	0.1 U
1,2-Dichloropropane	UG/L	0.29	0%	1	328	GA	1	0	0.13 U	0.13 U	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	328	GA	3	0	0.25 U	0.25 U	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	328	GA	3	0	0.28 U	0.28 U	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%	49	315				5.9 J	5 UJ	5 UR	5 U	5 UJ	5 UJ	5 U	5 U	5 UJ
Benzene	UG/L	0.48	2%	5	328	GA	1	0	0.25 U	0.25 U	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	328	MCL	80	0	0.25 U	0.25 U	0.25 U	0.25 U	0.25 UJ	0.25 UJ	0.25 U	0.25 U	0.25 U
Bromoform	UG/L	0	0%	0	328	MCL	80	0	0.5 U	0.5 U	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	2.3	0%	1	328				0.6 U	0.6 U	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	328	GA	5	0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U
Chlorobenzene	UG/L	0	0%	0	328	GA	5	0	0.25 U	0.25 U	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	328	MCL	80	0	0.1 U	0.1 U	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	328	GA	5	0	1 U	1 U	1 UJ	1 U	1 UJ	1 UJ	1 U	2 U	2 U
Chloroform	UG/L	71	8%	25	328	GA	7	7	0.14 U	0.14 U	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%	290	328	GA	5	199	0.15 U	0.51 J	0.15 U	0.28 J	0.15 U	0.15 U	0.15 U	0.15 U	0.39 J
Cis-1,3-Dichloropropene	UG/L	0	0%	0	328	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	0.11 U	0.11 U
Cyclohexane	UG/L	0.3	0%	1	328				0.25 U	0.25 U	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	321	GA	5	0	0.25 U	0.25 U	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	328	GA	5	1	0.17 J	0.11 U	0.11 U	0.11 U	0.11 J	0.13 J	0.12 J	0.11 U	0.11 U
Isopropylbenzene	UG/L	0.1	0%	1	328	GA	5	0	0.1 U	0.1 U	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	313				0.19 UJ	0.19 U	0.19 UJ	0.19 U	0.19 UR	0.19 UR	0.19 UJ	0.19 U	0.19 U
Methyl bromide	UG/L	2.1	0%	1	322	GA	5	0	0.8 UJ	0.8 UJ	0.8 UJ	0.8 UJ	0.8 UJ	0.8 UJ	0.8 UJ	2 U	2 U
Methyl butyl ketone	UG/L	0	0%	0	328				1 UJ	1 U	1 UJ	1 U	1 UJ	1 UJ	1 U	1 U	1 U
Methyl chloride	UG/L	0	0%	0	328	GA	5	0	0.33 U	0.33 U	0.33 U	0.33 UJ	0.33 U	0.33 U	0.33 U	0.33 UJ	0.33 U
Methyl cyclohexane	UG/L	0.17	0%	1	328				0.1 U	0.1 U	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	7%	22	321				1 U	1 U	1 U	1 U	1 UJ	1 UJ	1 U	1 U	1 U
Methyl isobutyl ketone	UG/L	1.9	0%	1	328				1 U	1 U	1 U	1 U	1 UJ	1 UJ	1 U	1 U	1 U
Methyl Tertbutyl Ether	UG/L	0	0%	0	328				0.2 U	0.2 U	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	328	GA	5	7	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	UG/L	0	0%	0	328	GA	5	0	0.11 U	0.11 U	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	328	GA	5	1	0.15 U	0.15 U	0.15 U	0.15 UJ	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
Toluene	UG/L	590	10%	32	328	GA	5	18	0.48 J	0.33 U	1 U	0.33 U	0.6 J	0.68 J	0.33 U	0.38 J	0.33 U
Total Xylenes	UG/L	60	1%	2	328	GA	5	1	0.2 U	0.2 U	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	51%	168	328	GA	5	17	0.2 U	0.2 U	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	328	GA	0.4	0	0.21 U	0.21 U	0.21 U	0.21 U	0.21 UJ	0.21 UJ	0.21 U	0.21 U	0.21 U
Trichloroethene	UG/L	3800	68%	223	328	GA	5	104	0.13 U	0.13 U	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	328	GA	5	0	0.25 U	0.25 U	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%	213	328	GA	2	161	0.18 U	0.64 J	0.18 U	0.56 J	0.18 U	0.18 U	0.31 J	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	96%	161	168				1.5	1.4	0.9	1.6	3.3	2.9	0.38	1.6	1.7
Ethene	UG/L	200	88%	148	168				0.061	0.17	0.0085 J	0.425 U	0.053	0.086	0.074	0.2 U	0.27 J
Methane	UG/L	23,000	98%	165	168				13,000	12,000	8,800	12,000	15,000	13,000	11,000	14,000	20,000
Sulfate	MG/L	1060	86%	144	168	GA	250	26	0.5 U	4.8	0.63 J	19	0.5 J	0.67 J	1.1	1.1 J	2.5 U
Total Organic Carbon	MG/L	2050	100%	168	168				21	12	17	12	18	18	25	25	24 J

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 10
Seneca Army Depot Activity

Area									ASH LANDFILL	ASH LANDFILL	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	MWT-28	MWT-29
Matrix									GW	GW	GW	GW	GW	GW	GW	GW	GW
Sample ID									ALBW20292	ALBW20308	ALBW20324	ALBW20339	ALBW20340	ALBW20356	ALBW20372	ALBW20388	ALBW20070
Sample Date									12/14/2013	6/19/2014	12/17/2014	6/3/2015	6/3/2015	12/17/2015	6/14/2016	12/7/2016	1/3/2007
QC Type									DU	SA	SA	SA	DU	SA	SA	SA	SA
Study ID									LTM	LTM	LTM	LTM	LTM	LTM	LTM	LTM	LTM
Sample Round									16	17	18	19	19	20	21	22	1
Filtered									Total	Total	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	Num of Detects Above Standard-1	Value Qual	Value Qual	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	328	GA	5	1	0.5 U	0.5 U	0.5 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	2 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	0	328	GA	5	0	0.18 U	0.18 U	0.18 U	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U	2 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	0	328	GA	5	0	0.5 U	0.5 U	0.5 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	2 U
1,1,2-Trichloroethane	UG/L	0	0%	0	328	GA	1	0	0.13 U	0.13 U	0.13 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	2 U
1,1-Dichloroethane	UG/L	62	12%	40	328	GA	5	1	0.25 U	0.25 U	0.25 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	2 U
1,1-Dichloroethene	UG/L	2.6	11%	36	328	GA	5	0	0.11 U	0.11 U	0.11 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	2 U
1,2,4-Trichlorobenzene	UG/L	0	0%	0	327	GA	5	0	0.25 U	0.25 U	0.25 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0	328	GA	0.04	0	0.44 U	0.44 U	0.44 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	2 U
1,2-Dibromoethane	UG/L	0	0%	0	328	GA	0.0006	0	0.25 U	0.25 U	0.25 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	2 U
1,2-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.21 U	0.21 U	0.21 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	2 U
1,2-Dichloroethane	UG/L	5.6	15%	49	328	GA	0.6	41	0.1 U	0.1 U	0.1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U
1,2-Dichloropropane	UG/L	0.29	0%	1	328	GA	1	0	0.13 U	0.13 U	0.13 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	2 U
1,3-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.25 U	0.25 U	0.25 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	2 U
1,4-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.28 U	0.28 U	0.28 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	2 U
Acetone	UG/L	2600	16%	49	315				5 UJ	5 U	5 U	7 U	7 U	7 U	7 U	12	10 U
Benzene	UG/L	0.48	2%	5	328	GA	1	0	0.25 U	0.25 U	0.25 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	2 U
Bromodichloromethane	UG/L	0	0%	0	328	MCL	80	0	0.25 U	0.25 U	0.25 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	2 U
Bromoform	UG/L	0	0%	0	328	MCL	80	0	0.5 U	0.5 U	0.5 U	0.43 UJ	0.43 UJ	0.43 U	0.43 U	0.43 U	2 U
Carbon disulfide	UG/L	2.3	0%	1	328				0.6 U	0.6 U	0.6 U	1 U	1 U	1 U	1 U	1 U	2 U
Carbon tetrachloride	UG/L	0	0%	0	328	GA	5	0	0.5 U	0.5 UJ	0.5 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	2 U
Chlorobenzene	UG/L	0	0%	0	328	GA	5	0	0.25 U	0.25 U	0.25 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	2 U
Chlorodibromomethane	UG/L	0	0%	0	328	MCL	80	0	0.1 U	0.1 U	0.1 U	0.32 UJ	0.32 UJ	0.32 U	0.32 U	0.32 U	2 U
Chloroethane	UG/L	1.1	2%	7	328	GA	5	0	2 U	2 U	2 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2 U
Chloroform	UG/L	71	8%	25	328	GA	7	7	0.14 U	0.14 U	0.14 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U
Cis-1,2-Dichloroethene	UG/L	820	88%	290	328	GA	5	199	0.35 J	0.15 U	0.19 J	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	**280**
Cis-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	0.11 U	0.11 U	0.11 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	2 U
Cyclohexane	UG/L	0.3	0%	1	328				0.25 U	0.25 U	0.25 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	2 U
Dichlorodifluoromethane	UG/L	0.3	0%	1	321	GA	5	0	0.25 U	0.25 U	0.25 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	2 U
Ethyl benzene	UG/L	9.2	6%	19	328	GA	5	1	0.11 U	0.11 U	0.11 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	2 U
Isopropylbenzene	UG/L	0.1	0%	1	328	GA	5	0	0.1 U	0.1 U	0.1 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	2 U
Methyl Acetate	UG/L	6	1%	2	313				0.19 UJ	0.19 U	0.19 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	2 U
Methyl bromide	UG/L	2.1	0%	1	322	GA	5	0	2 UJ	2 UJ	2 U*	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2 U
Methyl butyl ketone	UG/L	0	0%	0	328				1 U	1 U	1 U	2 U	2 U	2 U	2 U	2 U	10 U
Methyl chloride	UG/L	0	0%	0	328	GA	5	0	0.33 U	0.33 U	0.33 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	2 U
Methyl cyclohexane	UG/L	0.17	0%	1	328				0.1 U	0.1 U	0.1 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	2 U
Methyl ethyl ketone	UG/L	4900	7%	22	321				1 U	1 U	1 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	10 U
Methyl isobutyl ketone	UG/L	1.9	0%	1	328				1 U	1 U	1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	10 U
Methyl Tertbutyl Ether	UG/L	0	0%	0	328				0.2 U	0.2 U	0.2 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	2 U
Methylene chloride	UG/L	18	4%	12	328	GA	5	7	1 U	1 U	1 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2 U
Styrene	UG/L	0	0%	0	328	GA	5	0	0.11 U	0.11 U	0.11 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	2 U
Tetrachloroethene	UG/L	27	1%	2	328	GA	5	1	0.15 U	0.15 U	0.15 U	0.74 U	0.74 U	0.74 U	0.74 U	0.74 U	2 U
Toluene	UG/L	590	10%	32	328	GA	5	18	0.33 U	0.33 U	0.33 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	2.6
Total Xylenes	UG/L	60	1%	2	328	GA	5	1	0.2 U	0.2 U	0.2 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	6 U
Trans-1,2-Dichloroethene	UG/L	22	51%	168	328	GA	5	17	0.2 U	0.2 U	0.2 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	**6.5**
Trans-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	0.21 U	0.21 U	0.21 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	2 U
Trichloroethene	UG/L	3800	68%	223	328	GA	5	104	0.13 U	0.13 U	0.13 U	0.48 UJ	0.48 UJ	0.48 U	0.48 U	0.48 U	**22**
Trichlorofluoromethane	UG/L	0	0%	0	328	GA	5	0	0.25 U	0.25 U	0.25 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	2 U
Vinyl chloride	UG/L	180	65%	213	328	GA	2	161	0.18 U	0.18 U	0.18 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**140**
Other																	
Iron	UG/L	296,000	100%	12	12	GA	300	11									**1,370 J**
Iron+Manganese	UG/L	352,900	100%	12	12	GA	500	12									**8,620 J**
Manganese	UG/L	56,900	100%	12	12	GA	300	12									**7,250**
Ethane	UG/L	98	96%	161	168				1.2	2.8	0.35	1.6	1.5	0.29	1.7	0.18 J	2,000 U
Ethene	UG/L	200	88%	148	168				0.2	0.0068 J	0.049 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2,000 U
Methane	UG/L	23,000	98%	165	168				19,000	15,000	12,000	15,000	14,000	14,000	15,000	7,800	2,000 U
Sulfate	MG/L	1060	86%	144	168	GA	250	26	2.5 U	1.3 U	11	0.58 J	1.1	0.4 U	0.77 J	1.9 *	113
Total Organic Carbon	MG/L	2050	100%	168	168				24 J	19	18	24	24	19	16	28	25.1 J

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 10
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Num of Detects Above Standard-1	ASH LANDFILL MWT-29 GW ALBW20084 3/16/2007 SA LTM 2 Total Value Qual	ASH LANDFILL MWT-29 GW ALBW20085 3/16/2007 DU LTM 2 Total Value Qual	ASH LANDFILL MWT-29 GW ALBW20099 6/5/2007 SA LTM 3 Total Value Qual	ASH LANDFILL MWT-29 GW ALBW20114 11/14/2007 SA LTM 4 Total Value Qual	ASH LANDFILL MWT-29 GW ALBW20129 6/25/2008 SA LTM 5 Total Value Qual	ASH LANDFILL MWT-29 GW ALBW20130 6/25/2008 DU LTM 5 Total Value Qual	ASH LANDFILL MWT-29 GW ALBW20145 12/15/2008 SA LTM 6 Total Value Qual	ASH LANDFILL MWT-29 GW ALBW20160 6/3/2009 SA LTM 7 Total Value Qual	ASH LANDFILL MWT-29 GW ALBW20175 12/16/2009 SA LTM 8 Total Value Qual
Volatile Organic Compounds																	
1,1,1-Trichloroethane	UG/L	15	2%	5	328	GA	5	1	5 U	4 U	2 U	1 U	1 U	1 U	0.26 UJ	0.26 U	0.26 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	0	328	GA	5	0	5 U	4 U	2 U	1 U	1 U	1 U	0.21 UJ	0.21 U	0.21 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	0	328	GA	5	0	5 U	4 U	2 UJ	1 U	1 U	1 U	0.31 UJ	0.31 U	0.31 U
1,1,2-Trichloroethane	UG/L	0	0%	0	328	GA	1	0	5 U	4 U	2 U	1 U	1 U	1 U	0.23 UJ	0.23 U	0.23 U
1,1-Dichloroethane	UG/L	62	12%	40	328	GA	5	1	5 U	4 U	2 U	1 U	1 U	1 U	0.75 U	0.75 U	0.38 U
1,1-Dichloroethene	UG/L	2.6	11%	36	328	GA	5	0	5 U	4 U	2 U	1 U	1 U	1 U	0.29 U	0.29 U	0.29 U
1,2,4-Trichlorobenzene	UG/L	0	0%	0	327	GA	5	0	5 U	4 U	2 U	1 U	1 U	1 U	0.41 UJ	0.41 U	0.41 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0	328	GA	0.04	0	5 U	4 U	2 U	1 U	1 U	1 U	1 UJ	1 UJ	0.39 U
1,2-Dibromoethane	UG/L	0	0%	0	328	GA	0.0006	0	5 U	4 U	2 U	1 U	1 U	1 U	0.17 UJ	0.17 U	0.17 U
1,2-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	5 U	4 U	2 U	1 U	1 U	1 U	0.2 U	0.2 U	0.2 U
1,2-Dichloroethane	UG/L	5.6	15%	49	328	GA	0.6	41	5 U	4 U	2 U	1 U	1 U	1 U	0.21 U	0.21 U	0.21 U
1,2-Dichloropropane	UG/L	0.29	0%	1	328	GA	1	0	5 U	4 U	2 U	1 U	1 U	1 U	0.14 U	0.14 U	0.32 U
1,3-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	5 U	4 U	2 U	1 U	1 U	1 U	0.16 U	0.16 U	0.36 U
1,4-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	5 U	4 U	2 U	1 U	1 U	1 U	0.16 U	0.16 U	0.39 U
Acetone	UG/L	2600	16%	49	315				15 J	14 J	5.7 J	5 U	5 U	5 U	1.3 UJ	1.3 U	1.3 U
Benzene	UG/L	0.48	2%	5	328	GA	1	0	5 U	4 U	2 U	1 U	1 U	1 U	0.16 U	0.16 U	0.41 U
Bromodichloromethane	UG/L	0	0%	0	328	MCL	80	0	5 U	4 U	2 U	1 U	1 U	1 U	0.38 U	0.39 U	0.39 U
Bromoform	UG/L	0	0%	0	328	MCL	80	0	5 U	4 U	2 U	1 U	1 U	1 U	0.26 UJ	0.26 UJ	0.26 U
Carbon disulfide	UG/L	2.3	0%	1	328				5 U	4 U	2 U	1 U	1 U	1 U	0.19 U	0.19 UJ	0.19 U
Carbon tetrachloride	UG/L	0	0%	0	328	GA	5	0	5 U	4 U	2 U	1 U	1 U	1 U	0.27 UJ	0.27 U	0.27 U
Chlorobenzene	UG/L	0	0%	0	328	GA	5	0	5 U	4 U	2 U	1 U	1 U	1 U	0.18 U	0.32 U	0.32 U
Chlorodibromomethane	UG/L	0	0%	0	328	MCL	80	0	5 U	4 U	2 U	1 U	1 U	1 U	0.32 U	0.32 U	0.32 U
Chloroethane	UG/L	1.1	2%	7	328	GA	5	0	5 U	4 U	2 U	1 U	1 UJ	1 UJ	0.32 U	0.32 U	0.32 U
Chloroform	UG/L	71	8%	25	328	GA	7	7	5 U	4 U	2 U	1 U	1 U	1 U	0.34 U	0.34 U	0.34 U
Cis-1,2-Dichloroethene	UG/L	820	88%	290	328	GA	5	199	**220**	**220**	**100**	**96**	**83**	**85**	**91**	**61**	**37**
Cis-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	5 U	4 U	2 U	1 U	1 U	1 U	0.36 U	0.36 U	0.36 U
Cyclohexane	UG/L	0.3	0%	1	328				5 U	4 U	2 U	1 U	1 U	1 U	0.22 UJ	0.53 U	0.53 U
Dichlorodifluoromethane	UG/L	0.3	0%	1	321	GA	5	0	5 U	4 U	2 U	1 U	1 U	1 U	0.28 U	0.29 U	0.29 U
Ethyl benzene	UG/L	9.2	6%	19	328	GA	5	1	5 U	4 U	2 U	1 U	1 U	1 U	0.18 U	0.18 U	0.18 U
Isopropylbenzene	UG/L	0.1	0%	1	328	GA	5	0	5 U	4 U	2 U	1 U	1 U	1 U	0.19 U	0.19 U	0.19 U
Methyl Acetate	UG/L	6	1%	2	313				5 UJ	4 UJ	2 U	1 UJ	1 UJ	1 UJ	0.17 UJ	0.17 UJ	0.5 U
Methyl bromide	UG/L	2.1	0%	1	322	GA	5	0	5 U	4 U	2 U	1 U	1 UJ	1 UJ	0.28 U	0.28 U	0.28 U
Methyl butyl ketone	UG/L	0	0%	0	328				25 U	20 U	10 U	5 UJ	5 UJ	5 UJ	1.2 U	1.2 U	1.2 U
Methyl chloride	UG/L	0	0%	0	328	GA	5	0	5 U	4 U	2 U	1 U	1 U	1 U	0.34 U	0.35 U	0.35 U
Methyl cyclohexane	UG/L	0.17	0%	1	328				5 U	4 U	2 U	1 U	1 U	1 U	0.22 UJ	0.5 U	0.5 U
Methyl ethyl ketone	UG/L	4900	7%	22	321				25 U	20 U	10 U	5 U	5 U	5 U	1.3 UJ	1.3 U	1.3 U
Methyl isobutyl ketone	UG/L	1.9	0%	1	328				25 U	20 U	10 U	5 U	5 U	5 U	0.91 UJ	0.91 U	0.91 U
Methyl Tertbutyl Ether	UG/L	0	0%	0	328				5 U	4 U	2 U	1 U	1 U	1 U	0.16 UJ	0.16 U	0.16 U
Methylene chloride	UG/L	18	4%	12	328	GA	5	7	2.5 J	4 U	2 U	1 U	1 U	1 U	0.44 UJ	0.44 U	0.44 U
Styrene	UG/L	0	0%	0	328	GA	5	0	5 U	4 U	2 U	1 U	1 U	1 U	0.18 U	0.18 U	0.18 U
Tetrachloroethene	UG/L	27	1%	2	328	GA	5	1	5 U	4 U	2 U	1 U	1 U	1 U	0.36 U	0.36 U	0.36 U
Toluene	UG/L	590	10%	32	328	GA	5	18	5 U	2.2 J	2 U	2.1	1 U	1 U	0.51 U	0.51 U	0.51 U
Total Xylenes	UG/L	60	1%	2	328	GA	5	1	15 U	12 U	6 U	3 U	3 U	3 U	0.93 U	0.66 U	0.66 U
Trans-1,2-Dichloroethene	UG/L	22	51%	168	328	GA	5	17	**7.5**	**8**	2.1	0.83 J	0.62 J	0.68 J	0.6 J	0.67 J	0.65 J
Trans-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	5 U	4 U	2 U	1 U	1 U	1 U	0.37 U	0.37 U	0.37 U
Trichloroethene	UG/L	3800	68%	223	328	GA	5	104	**19**	**19**	**7.6**	4.4	3.2	3.3	**6.6**	4.5	3.5
Trichlorofluoromethane	UG/L	0	0%	0	328	GA	5	0	5 U	4 U	2 UJ	1 U	1 UJ	1 UJ	0.15 UJ	0.15 U	0.15 U
Vinyl chloride	UG/L	180	65%	213	328	GA	2	161	**160**	**170**	**81**	**74**	**73**	**74**	**80**	**43**	**29**
Other																	
Iron	UG/L	296,000	100%	12	12	GA	300	11	**2,470**	**2,550**							
Iron+Manganese	UG/L	352,900	100%	12	12	GA	500	12	**8,750**	**9,050**							
Manganese	UG/L	56,900	100%	12	12	GA	300	12	**6,280**	**6,500**							
Ethane	UG/L	98	96%	161	168				20	25	13	19	15	14	14	10	6.7
Ethene	UG/L	200	88%	148	168				120	150	160	200	140	140	19	47	12
Methane	UG/L	23,000	98%	165	168				6,500	8,100	2,800	2,600	3,200	3,000	2,700	3,000	1,500
Sulfate	MG/L	1060	86%	144	168	GA	250	26	179	173	151	**289**	173	174	**312**	**300**	**644 J**
Total Organic Carbon	MG/L	2050	100%	168	168				35	36.7	15.7	20.9	14.2	14	13.6	11.8	8.2

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 10
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Num of Detects Above Standard-1	ASH LANDFILL MWT-29 GW ALBW20190 6/30/2010 SA LTM 9 Total Value Qual	ASH LANDFILL MWT-29 GW ALBW20205 12/19/2010 SA LTM 10 Total Value Qual	ASH LANDFILL MWT-29 GW ALBW20220 7/20/2011 SA LTM 11 Total Value Qual	ASH LANDFILL MWT-29 GW ALBW20235 12/14/2011 SA LTM 12 Total Value Qual	ASH LANDFILL MWT-29 GW ALBW20250 6/20/2012 SA LTM 13 Total Value Qual	ASH LANDFILL MWT-29 GW ALBW20263 12/13/2012 SA LTM 14 Total Value Qual	ASH LANDFILL MWT-29 GW ALBW20278 7/10/2013 SA LTM 15 Total Value Qual	ASH LANDFILL MWT-29 GW ALBW20293 12/12/2013 SA LTM 16 Total Value Qual	ASH LANDFILL MWT-29 GW ALBW20309 6/19/2014 SA LTM 17 Total Value Qual
Volatile Organic Compounds																	
1,1,1-Trichloroethane	UG/L	15	2%	5	328	GA	5	1	0.5 U	0.5 U	0.5 U	0.5 U	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	328	GA	5	0	0.18 U	0.18 U	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	328	GA	5	0	0.5 UJ	0.5 U	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	328	GA	1	0	0.13 U	0.13 U	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%	40	328	GA	5	1	0.25 U	0.25 U	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%	36	328	GA	5	0	0.26 J	0.4 J	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.13 J
1,2,4-Trichlorobenzene	UG/L	0	0%	0	327	GA	5	0	0.25 U	0.25 U	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	328	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	0.44 U	0.44 U
1,2-Dibromoethane	UG/L	0	0%	0	328	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	0.25 U	0.25 U
1,2-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.21 U	0.21 U	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%	49	328	GA	0.6	41	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.1 U	0.1 U
1,2-Dichloropropane	UG/L	0.29	0%	1	328	GA	1	0	0.13 U	0.13 U	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	328	GA	3	0	0.25 U	0.25 U	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	328	GA	3	0	0.28 U	0.28 U	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%	49	315				5 U	5 UJ	5 UR	5 U	5 UJ	5 U	5 U	5 U	5 U
Benzene	UG/L	0.48	2%	5	328	GA	1	0	0.25 U	0.25 U	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	328	MCL	80	0	0.25 U	0.25 U	0.25 U	0.25 U	0.25 UJ	0.25 U	0.25 U	0.25 U	0.25 U
Bromoform	UG/L	0	0%	0	328	MCL	80	0	0.5 U	0.5 U	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	2.3	0%	1	328				0.6 U	0.6 U	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	328	GA	5	0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 UJ
Chlorobenzene	UG/L	0	0%	0	328	GA	5	0	0.25 U	0.25 U	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	328	MCL	80	0	0.1 U	0.1 U	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	328	GA	5	0	1 U	1 U	1 UJ	1 U	1 UJ	1 U	2 U	2 U	2 U
Chloroform	UG/L	71	8%	25	328	GA	7	7	0.14 U	0.14 J	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%	290	328	GA	5	199	**78**	**38**	**33**	**8.5**	**36**	**25**	**80**	**28**	**49**
Cis-1,3-Dichloropropene	UG/L	0	0%	0	328	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	0.11 U	0.11 U
Cyclohexane	UG/L	0.3	0%	1	328				0.25 U	0.25 U	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	321	GA	5	0	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 UJ	0.25 U
Ethyl benzene	UG/L	9.2	6%	19	328	GA	5	1	0.11 U	0.11 U	0.11 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	328	GA	5	0	0.1 U	0.1 U	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	313				0.19 UJ	0.19 U	0.19 UJ	0.19 U	0.19 UR	0.19 UJ	0.19 U	0.19 U	0.19 U
Methyl bromide	UG/L	2.1	0%	1	322	GA	5	0	0.8 UJ	0.8 UJ	0.8 UJ	0.8 UJ	0.8 UJ	0.8 UJ	2 U	2 UJ	2 UJ
Methyl butyl ketone	UG/L	0	0%	0	328				1 UJ	1 U	1 UJ	1 U	1 UJ	1 U	1 U	1 U	1 U
Methyl chloride	UG/L	0	0%	0	328	GA	5	0	0.33 U	0.33 U	0.33 U	0.33 UJ	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Methyl cyclohexane	UG/L	0.17	0%	1	328				0.1 U	0.1 U	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	7%	22	321				1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U
Methyl isobutyl ketone	UG/L	1.9	0%	1	328				1 U	1 U	1 U	1 U	1 UJ	1 U	1 UJ	1 U	1 U
Methyl Tertbutyl Ether	UG/L	0	0%	0	328				0.2 U	0.2 U	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	328	GA	5	7	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	UG/L	0	0%	0	328	GA	5	0	0.11 U	0.11 U	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	328	GA	5	1	0.15 U	0.15 U	0.15 U	0.15 UJ	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
Toluene	UG/L	590	10%	32	328	GA	5	18	0.33 U	0.33 U	0.33 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	328	GA	5	1	0.2 U	0.2 U	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	51%	168	328	GA	5	17	1.1	0.77 J	1.6	0.26 J	0.59 J	0.44 J	1.1	0.42 J	1.1
Trans-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	0.21 U	0.21 U	0.21 U	0.21 U	0.21 UJ	0.21 U	0.21 UJ	0.21 UJ	0.21 U
Trichloroethene	UG/L	3800	68%	223	328	GA	5	104	1.3	2.1	0.79 J	2.4	0.69 J	3.3	3.7	2.1	0.71 J
Trichlorofluoromethane	UG/L	0	0%	0	328	GA	5	0	0.25 U	0.25 U	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%	213	328	GA	2	161	**69**	**27**	**43**	**5.9**	**49**	**11**	**32**	**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	96%	161	168				18	5.1	8.3	1.7	10	0.58	2.9	1.5	9.1
Ethene	UG/L	200	88%	148	168				88	7.9	47	7.3	38	0.8	6.6	3.8	45
Methane	UG/L	23,000	98%	165	168				5,400	3,100	3,100	760	5,200	180	2,500	1,700	6,100
Sulfate	MG/L	1060	86%	144	168	GA	250	26	170	**300**	170	210	95	130	84	130	97
Total Organic Carbon	MG/L	2050	100%	168	168				10	7.4	7.7	4.9	8.2	4.8	5.8	6.2	5.7

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 10
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Num of Detects Above Standard-1	ASH LANDFILL MWT-29 GW ALBW20309RA 6/19/2014 SA LTM 17 Total Value Qual	ASH LANDFILL MWT-29 GW ALBW20325 12/17/2014 SA LTM 18 Total Value Qual	ASH LANDFILL MWT-29 GW ALBW20341 6/3/2015 SA LTM 19 Total Value Qual	ASH LANDFILL MWT-29 GW ALBW20357 12/17/2015 SA LTM 20 Total Value Qual	ASH LANDFILL MWT-29 GW ALBW20373 6/15/2016 SA LTM 21 Total Value Qual	ASH LANDFILL MWT-29 GW ALBW20389 12/7/2016 SA LTM 22 Total Value Qual
Volatile Organic Compounds														
1,1,1-Trichloroethane	UG/L	15	2%	5	328	GA	5	1		0.5 U	0.37 U	0.37 U	0.37 U	0.37 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	0	328	GA	5	0		0.18 U	0.62 U	0.62 U	0.62 U	0.62 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	0	328	GA	5	0		0.5 U	0.36 U	0.36 U	0.36 U	0.36 U
1,1,2-Trichloroethane	UG/L	0	0%	0	328	GA	1	0		0.13 U	0.33 U	0.33 U	0.33 U	0.33 U
1,1-Dichloroethane	UG/L	62	12%	40	328	GA	5	1		0.25 U	0.38 U	0.38 U	0.38 U	0.38 U
1,1-Dichloroethene	UG/L	2.6	11%	36	328	GA	5	0		0.11 U	0.36 U	0.36 U	0.36 U	0.36 U
1,2,4-Trichlorobenzene	UG/L	0	0%	0	327	GA	5	0		0.25 U	2.5 U	2.5 U	2.5 UJ	2.5 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0	328	GA	0.04	0		0.44 U	1.1 U	1.1 U	1.1 U	1.1 U
1,2-Dibromoethane	UG/L	0	0%	0	328	GA	0.0006	0		0.25 U	0.44 U	0.44 U	0.44 U	0.44 U
1,2-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0		0.21 U	0.37 U	0.37 U	0.37 U	0.37 U
1,2-Dichloroethane	UG/L	5.6	15%	49	328	GA	0.6	41		0.1 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	UG/L	0.29	0%	1	328	GA	1	0		0.13 U	0.67 U	0.67 U	0.67 U	0.67 U
1,3-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0		0.25 U	0.43 U	0.43 U	0.43 U	0.43 U
1,4-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0		0.28 U	0.46 U	0.46 U	0.46 U	0.46 U
Acetone	UG/L	2600	16%	49	315					5 U	7 U	7 U	7 U	7 U
Benzene	UG/L	0.48	2%	5	328	GA	1	0		0.25 U	0.43 U	0.43 U	0.43 U	0.43 U
Bromodichloromethane	UG/L	0	0%	0	328	MCL	80	0		0.25 U	0.44 U	0.44 U	0.44 U	0.44 U
Bromoform	UG/L	0	0%	0	328	MCL	80	0		0.5 U	0.43 UJ	0.43 U	0.43 UJ	0.43 U
Carbon disulfide	UG/L	2.3	0%	1	328					0.6 U	1 U	1 U	1 U	1 U
Carbon tetrachloride	UG/L	0	0%	0	328	GA	5	0		0.5 U	0.33 U	0.33 U	0.33 U	0.33 U
Chlorobenzene	UG/L	0	0%	0	328	GA	5	0		0.25 U	0.26 U	0.26 U	0.26 U	0.26 U
Chlorodibromomethane	UG/L	0	0%	0	328	MCL	80	0		0.1 U	0.32 UJ	0.32 U	0.32 U	0.32 U
Chloroethane	UG/L	1.1	2%	7	328	GA	5	0		2 U	2.5 U	2.5 U	2.5 U	2.5 U
Chloroform	UG/L	71	8%	25	328	GA	7	7		0.14 U	0.5 U	0.5 U	0.5 U	0.5 U
Cis-1,2-Dichloroethene	UG/L	820	88%	290	328	GA	5	199		**18**	**94**	**35**	**72**	1.2
Cis-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0		0.11 U	0.4 U	0.4 U	0.4 U	0.4 U
Cyclohexane	UG/L	0.3	0%	1	328					0.25 U	0.39 U	0.39 U	0.39 U	0.39 U
Dichlorodifluoromethane	UG/L	0.3	0%	1	321	GA	5	0		0.25 U	0.6 U	0.6 U	0.6 U	0.6 U
Ethyl benzene	UG/L	9.2	6%	19	328	GA	5	1		0.11 U	0.33 U	0.33 U	0.33 U	0.33 U
Isopropylbenzene	UG/L	0.1	0%	1	328	GA	5	0		0.1 U	0.35 U	0.35 U	0.35 U	0.35 U
Methyl Acetate	UG/L	6	1%	2	313					0.19 U	1.8 U	1.8 U	1.8 U	1.8 U
Methyl bromide	UG/L	2.1	0%	1	322	GA	5	0		2 U*	2.5 U	2.5 U	2.5 U	2.5 U
Methyl butyl ketone	UG/L	0	0%	0	328					1 U	2 U	2 U	2 U	2 U
Methyl chloride	UG/L	0	0%	0	328	GA	5	0		0.33 U	0.4 U	0.4 U	0.4 U	0.4 U
Methyl cyclohexane	UG/L	0.17	0%	1	328					0.1 U	0.43 U	0.43 U	0.43 U	0.43 U
Methyl ethyl ketone	UG/L	4900	7%	22	321					1 U	3.4 U	3.4 U	3.4 U	3.4 U
Methyl isobutyl ketone	UG/L	1.9	0%	1	328					1 U	2.1 U	2.1 U	2.1 U	2.1 U
Methyl Tertbutyl Ether	UG/L	0	0%	0	328					0.2 U	0.3 U	0.3 U	0.3 U	0.3 U
Methylene chloride	UG/L	18	4%	12	328	GA	5	7		1 U	2.5 U	2.5 U	2.5 U	2.5 U
Styrene	UG/L	0	0%	0	328	GA	5	0		0.11 U	0.27 U	0.27 U	0.27 U	0.27 U
Tetrachloroethene	UG/L	27	1%	2	328	GA	5	1		0.15 U	0.74 U	0.74 U	0.74 U	0.74 U
Toluene	UG/L	590	10%	32	328	GA	5	18		0.33 U	0.48 U	0.48 U	0.48 U	0.48 U
Total Xylenes	UG/L	60	1%	2	328	GA	5	1		0.2 U	0.23 U	0.23 U	0.23 U	0.23 U
Trans-1,2-Dichloroethene	UG/L	22	51%	168	328	GA	5	17		0.2 U	1.3	0.43 J	1.2	0.37 U
Trans-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0		0.21 U	0.42 U	0.42 U	0.42 U	0.42 U
Trichloroethene	UG/L	3800	68%	223	328	GA	5	104		2.3	1.1 J	2	1.8	2.1
Trichlorofluoromethane	UG/L	0	0%	0	328	GA	5	0		0.25 U	0.42 U	0.42 U	0.42 U	0.42 U
Vinyl chloride	UG/L	180	65%	213	328	GA	2	161	**130**	**7.5**	**86**	**45**	**120**	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	96%	161	168					0.34	8.3	2.3	5.6	0.01 J
Ethene	UG/L	200	88%	148	168					0.87	27	7.4	17	0.0083 J
Methane	UG/L	23,000	98%	165	168					160	5,400	1,600	6,200	1.4
Sulfate	MG/L	1060	86%	144	168	GA	250	26		120	84	180	90	100
Total Organic Carbon	MG/L	2050	100%	168	168					4.7	8.6	6.1	6.5	5.4

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 10
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Num of Detects Above Standard-1	ASH LANDFILL PT-18A GW ALBW20059 1/3/2007 SA LTM 1 Total Value Qual	ASH LANDFILL PT-18A GW ALBW20074 3/17/2007 SA LTM 2 Total Value Qual	ASH LANDFILL PT-18A GW ALBW20088 6/5/2007 SA LTM 3 Total Value Qual	ASH LANDFILL PT-18A GW ALBW20103 11/15/2007 SA LTM 4 Total Value Qual	ASH LANDFILL PT-18A GW ALBW20117 6/24/2008 SA LTM 5 Total Value Qual	ASH LANDFILL PT-18A GW ALBW20132 12/12/2008 SA LTM 6 Total Value Qual	ASH LANDFILL PT-18A GW ALBW20147 6/4/2009 SA LTM 7 Total Value Qual	ASH LANDFILL PT-18A GW ALBW20162 12/17/2009 SA LTM 8 Total Value Qual	ASH LANDFILL PT-18A GW ALBW20177 7/1/2010 SA LTM 9 Total Value Qual
Volatile Organic Compounds																	
1,1,1-Trichloroethane	UG/L	15	2%	5	328	GA	5	1	1 U	1 U	1 U	1 U	1 U	0.26 UJ	0.26 U	1.1 U	0.5 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	0	328	GA	5	0	1 U	1 U	1 U	1 U	1 U	0.21 U	0.21 U	0.85 U	0.18 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	0	328	GA	5	0	1 U	1 U	1 UJ	1 U	1 UJ	0.31 U	0.31 U	1.2 UJ	0.5 U
1,1,2-Trichloroethane	UG/L	0	0%	0	328	GA	1	0	1 U	1 U	1 U	1 U	1 U	0.23 U	0.23 U	0.92 U	0.13 U
1,1-Dichloroethane	UG/L	62	12%	40	328	GA	5	1	1 U	1 U	1 U	1 U	1 U	0.75 U	0.75 U	1.5 U	0.25 U
1,1-Dichloroethene	UG/L	2.6	11%	36	328	GA	5	0	0.64 J	0.73 J	1.4	2.1	1 U	1.3	0.8 J	2 J	0.11 U
1,2,4-Trichlorobenzene	UG/L	0	0%	0	327	GA	5	0	1 U	1 U	1 U	1 U	1 U	0.41 U	0.41 U	1.6 U	0.25 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0	328	GA	0.04	0	1 U	1 U	1 U	1 U	1 UJ	1 UJ	1 U	1.6 U	0.44 U
1,2-Dibromoethane	UG/L	0	0%	0	328	GA	0.0006	0	1 U	1 U	1 U	1 U	1 U	0.17 U	0.17 U	0.66 U	0.25 U
1,2-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	1 U	1 U	1 U	1 U	1 U	0.2 U	0.2 U	0.81 U	0.21 U
1,2-Dichloroethane	UG/L	5.6	15%	49	328	GA	0.6	41	1 U	1 U	1 U	1 U	1 U	0.21 U	0.21 U	0.86 U	0.1 U
1,2-Dichloropropane	UG/L	0.29	0%	1	328	GA	1	0	1 U	1 U	1 U	1 U	1 U	0.14 U	0.14 U	1.3 U	0.13 U
1,3-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	1 U	1 U	1 U	1 U	1 U	0.16 U	0.16 U	1.4 U	0.25 U
1,4-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	1 U	1 U	1 U	1 U	1 U	0.16 U	0.16 U	1.6 U	0.28 U
Acetone	UG/L	2600	16%	49	315				5 U	2 J	7	5 U	5 U	1.3 U	1.3 UJ	5.4 U	5 U
Benzene	UG/L	0.48	2%	5	328	GA	1	0	1 U	1 U	1 U	1 U	1 U	0.16 U	0.16 U	1.6 U	0.25 U
Bromodichloromethane	UG/L	0	0%	0	328	MCL	80	0	1 U	1 U	1 U	1 U	1 U	0.38 U	0.39 U	1.5 U	0.25 U
Bromoform	UG/L	0	0%	0	328	MCL	80	0	1 U	1 U	1 U	1 U	1 U	0.26 U	0.26 U	1 U	0.5 U
Carbon disulfide	UG/L	2.3	0%	1	328				1 U	1 U	1 U	1 U	1 U	0.19 U	0.19 U	0.78 U	0.6 U
Carbon tetrachloride	UG/L	0	0%	0	328	GA	5	0	1 U	1 U	1 U	1 U	1 U	0.27 UJ	0.27 U	1.1 U	0.5 U
Chlorobenzene	UG/L	0	0%	0	328	GA	5	0	1 U	1 U	1 U	1 U	1 U	0.18 U	0.32 U	1.3 U	0.25 U
Chlorodibromomethane	UG/L	0	0%	0	328	MCL	80	0	1 U	1 U	1 U	1 U	1 U	0.32 U	0.32 U	1.3 U	0.1 U
Chloroethane	UG/L	1.1	2%	7	328	GA	5	0	1 U	1 U	1 U	1 U	1 UJ	0.32 U	0.32 U	1.3 UJ	1 U
Chloroform	UG/L	71	8%	25	328	GA	7	7	**27**	13 U	**14**	**8.7**	1 U	2.2	**9**	3.1 J	2.1
Cis-1,2-Dichloroethene	UG/L	820	88%	290	328	GA	5	199	**220**	**170**	**430**	**720**	**200**	**510**	**260**	**630**	**28**
Cis-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	1 U	1 U	1 U	1 U	1 U	0.36 U	0.36 U	1.4 U	0.11 U
Cyclohexane	UG/L	0.3	0%	1	328				1 U	1 U	1 U	1 U	1 U	0.22 U	0.53 U	2.1 U	0.25 U
Dichlorodifluoromethane	UG/L	0.3	0%	1	321	GA	5	0	1 U	1 U	1 U	1 U	1 U	0.28 UJ	0.29 U	1.1 U	0.25 U
Ethyl benzene	UG/L	9.2	6%	19	328	GA	5	1	1 U	1 U	1 U	1 U	1 U	0.18 U	0.18 U	0.74 U	0.11 U
Isopropylbenzene	UG/L	0.1	0%	1	328	GA	5	0	1 U	1 U	1 U	1 U	1 U	0.19 U	0.19 U	0.77 U	0.1 U
Methyl Acetate	UG/L	6	1%	2	313				1 U	1 UJ	1 U	1 UJ	1 UJ	0.17 U	0.17 U	2 U	0.19 U
Methyl bromide	UG/L	2.1	0%	1	322	GA	5	0	1 U	1 U	1 U	1 U	1 UJ	0.28 U	0.28 U	1.1 UJ	0.8 U
Methyl butyl ketone	UG/L	0	0%	0	328				5 U	5 U	5 U	5 UJ	5 UJ	1.2 U	1.2 U	5 U	1 U
Methyl chloride	UG/L	0	0%	0	328	GA	5	0	1 U	1 U	1 U	1 U	1 UJ	0.34 U	0.35 U	1.4 U	0.33 U
Methyl cyclohexane	UG/L	0.17	0%	1	328				1 U	1 U	1 U	1 U	1 U	0.22 U	0.5 U	2 U	0.1 U
Methyl ethyl ketone	UG/L	4900	7%	22	321				5 U	5 U	5 U	5 U	5 UJ	1.3 U	1.3 U	5.3 U	1 U
Methyl isobutyl ketone	UG/L	1.9	0%	1	328				5 U	5 U	5 U	5 U	5 UJ	0.91 U	0.91 U	3.6 U	1 U
Methyl Tertbutyl Ether	UG/L	0	0%	0	328				1 U	1 U	1 U	1 U	1 U	0.16 U	0.16 U	0.64 U	0.2 U
Methylene chloride	UG/L	18	4%	12	328	GA	5	7	1 UJ	1 U	1 U	1 U	1 U	0.44 UJ	0.44 U	1.8 U	1 U
Styrene	UG/L	0	0%	0	328	GA	5	0	1 U	1 U	1 U	1 U	1 U	0.18 U	0.18 U	0.74 U	0.11 U
Tetrachloroethene	UG/L	27	1%	2	328	GA	5	1	1 U	1 U	1 U	1 U	1 U	0.36 U	0.36 U	1.5 U	0.15 U
Toluene	UG/L	590	10%	32	328	GA	5	18	1 U	1 U	1 U	1 U	1 U	0.51 U	0.51 U	2 U	0.33 U
Total Xylenes	UG/L	60	1%	2	328	GA	5	1	3 U	3 U	3 U	3 U	3 U	0.93 U	0.66 U	2.6 U	0.2 U
Trans-1,2-Dichloroethene	UG/L	22	51%	168	328	GA	5	17	1.6	1.4	3.3	3.4	0.9 J	2.4	1.8	3.5 J	0.2 U
Trans-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	1 U	1 U	1 U	1 U	1 U	0.37 U	0.37 U	1.5 U	0.21 U
Trichloroethene	UG/L	3800	68%	223	328	GA	5	104	**2,000**	**1,000**	**1,100**	**2,700**	**220**	**1,400**	**810 J**	**2,100**	**120**
Trichlorofluoromethane	UG/L	0	0%	0	328	GA	5	0	1 U	1 U	1 UJ	1 U	1 UJ	0.15 UJ	0.15 U	0.61 UJ	0.25 U
Vinyl chloride	UG/L	180	65%	213	328	GA	2	161	**2.4**	**2.9**	**3.3**	**8.2**	1.4	**4.6**	**2.6**	**7.1**	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	96%	161	168												
Ethene	UG/L	200	88%	148	168												
Methane	UG/L	23,000	98%	165	168												
Sulfate	MG/L	1060	86%	144	168	GA	250	26									
Total Organic Carbon	MG/L	2050	100%	168	168												

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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
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Appendix B

Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 10
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Num of Detects Above Standard-1	Value Qual	Value Qual	Value Qual	Value Qual	Value Qual	Value Qual	Value Qual	Value Qual	Value Qual
Area									ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	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	PT-18A	PT-18A	PT-18A
Matrix									GW	GW	GW	GW	GW	GW	GW	GW	GW
Sample ID									ALBW20192	ALBW20207	ALBW20222	ALBW20237	ALBW20252	ALBW20265A	ALBW20280	ALBW20296	ALBW20312
Sample Date									12/19/2010	7/22/2011	12/15/2011	6/21/2012	12/12/2012	7/11/2013	12/13/2013	6/21/2014	12/19/2014
QC Type									SA	SA	SA	SA	SA	SA	SA	SA	SA
Study ID									LTM	LTM	LTM	LTM	LTM	LTM	LTM	LTM	LTM
Sample Round									10	11	12	13	14	15	16	17	18
Filtered									Total	Total	Total	Total	Total	Total	Total	Total	Total
Volatile Organic Compounds																	
1,1,1-Trichloroethane	UG/L	15	2%	5	328	GA	5	1	0.5 U	**15**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	10 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	0	328	GA	5	0	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	3.6 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	0	328	GA	5	0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	10 U
1,1,2-Trichloroethane	UG/L	0	0%	0	328	GA	1	0	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	2.6 U
1,1-Dichloroethane	UG/L	62	12%	40	328	GA	5	1	0.25 U	**62**	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	5 U
1,1-Dichloroethene	UG/L	2.6	11%	36	328	GA	5	0	0.11 U	1.5	0.11 U	2.6	0.11 U	0.11 U	0.11 U	0.77 J	2.2 U
1,2,4-Trichlorobenzene	UG/L	0	0%	0	327	GA	5	0	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	5 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0	328	GA	0.04	0	0.44 U	0.44 UJ	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	8.8 U
1,2-Dibromoethane	UG/L	0	0%	0	328	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	0.25 U	5 U
1,2-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	4.2 U
1,2-Dichloroethane	UG/L	5.6	15%	49	328	GA	0.6	41	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.1 U	0.1 U	2 U
1,2-Dichloropropane	UG/L	0.29	0%	1	328	GA	1	0	0.13 U	0.29 J	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	2.6 U
1,3-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	5 U
1,4-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	5.6 U
Acetone	UG/L	2600	16%	49	315				5 UJ	8.1 J	5 UJ	5 U	5 U	5 U	5 U	5 U	100 U
Benzene	UG/L	0.48	2%	5	328	GA	1	0	0.25 U	0.38 J	0.25 U	0.48 J	0.25 U	0.25 U	0.25 U	0.25 U	5 U
Bromodichloromethane	UG/L	0	0%	0	328	MCL	80	0	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	5 U
Bromoform	UG/L	0	0%	0	328	MCL	80	0	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	10 U
Carbon disulfide	UG/L	2.3	0%	1	328				0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	12 U
Carbon tetrachloride	UG/L	0	0%	0	328	GA	5	0	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	10 U
Chlorobenzene	UG/L	0	0%	0	328	GA	5	0	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	5 U
Chlorodibromomethane	UG/L	0	0%	0	328	MCL	80	0	0.1 U	0.1 UJ	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	2 U
Chloroethane	UG/L	1.1	2%	7	328	GA	5	0	1 U	1 U	1 UJ	1 U	1 U	2 U	2 U	2 U	40 U
Chloroform	UG/L	71	8%	25	328	GA	7	7	0.27 J	0.14 U	0.14 U	**71**	0.14 U	0.62 J	0.14 U	**8.5**	**15 J**
Cis-1,2-Dichloroethene	UG/L	820	88%	290	328	GA	5	199	0.54 J	**15**	0.53 J	**820**	0.8 J	**8.1**	1.4	**240**	**420**
Cis-1,3-Dichloropropene	UG/L	0	0%	0	328	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	0.11 U	2.2 U
Cyclohexane	UG/L	0.3	0%	1	328				0.25 U	0.25 U	0.25 U	0.3 J	0.25 U	0.25 U	0.25 U	0.25 U	5 U
Dichlorodifluoromethane	UG/L	0.3	0%	1	321	GA	5	0	0.25 U	0.25 U	0.25 U	0.3 J	0.25 U	0.25 U	0.25 UJ	0.25 U	5 U
Ethyl benzene	UG/L	9.2	6%	19	328	GA	5	1	0.11 U	**9.2**	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	2.2 U
Isopropylbenzene	UG/L	0.1	0%	1	328	GA	5	0	0.1 U	0.1 J	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	2 U
Methyl Acetate	UG/L	6	1%	2	313				0.19 U	0.19 U	0.19 U	0.19 UR	0.19 UJ	0.19 U	0.19 U	0.19 U	3.8 U
Methyl bromide	UG/L	2.1	0%	1	322	GA	5	0	0.8 UJ	0.8 UJ	0.8 UJ	0.8 UJ	0.8 UJ	2 U	2 UJ	2 U	40 U
Methyl butyl ketone	UG/L	0	0%	0	328				1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	20 U
Methyl chloride	UG/L	0	0%	0	328	GA	5	0	0.33 U	0.33 U	0.33 U	0.33 UJ	0.33 U	0.33 UJ	0.33 U	0.33 U	6.6 U
Methyl cyclohexane	UG/L	0.17	0%	1	328				0.1 U	0.17 J	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	2 U
Methyl ethyl ketone	UG/L	4900	7%	22	321				1 U	5.1 J	1 U	1 U	1 U	1 U	1 U	1 U	20 U
Methyl isobutyl ketone	UG/L	1.9	0%	1	328				1 U	1.9 J	1 U	1 U	1 U	1 U	1 U	1 U	20 U
Methyl Tertbutyl Ether	UG/L	0	0%	0	328				0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	4 U
Methylene chloride	UG/L	18	4%	12	328	GA	5	7	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U
Styrene	UG/L	0	0%	0	328	GA	5	0	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	2.2 U
Tetrachloroethene	UG/L	27	1%	2	328	GA	5	1	0.15 U	1 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	**27**
Toluene	UG/L	590	10%	32	328	GA	5	18	0.33 U	**130**	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	6.6 U
Total Xylenes	UG/L	60	1%	2	328	GA	5	1	0.2 U	**60**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	4 U
Trans-1,2-Dichloroethene	UG/L	22	51%	168	328	GA	5	17	0.2 U	0.2 U	0.2 U	4.7	0.2 U	0.2 U	0.2 U	1.2	5 J
Trans-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 UJ	0.21 U	4.2 U
Trichloroethene	UG/L	3800	68%	223	328	GA	5	104	**6.3**	0.13 U	**7.3**	**3,800**	**8**	**47**	**9.4**	**1,200**	**1,800**
Trichlorofluoromethane	UG/L	0	0%	0	328	GA	5	0	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	5 U
Vinyl chloride	UG/L	180	65%	213	328	GA	2	161	0.18 U	**120**	0.18 U	**10**	0.18 U	0.18 U	0.18 U	**2.2**	3.6 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	96%	161	168												
Ethene	UG/L	200	88%	148	168												
Methane	UG/L	23,000	98%	165	168												
Sulfate	MG/L	1060	86%	144	168	GA	250	26									
Total Organic Carbon	MG/L	2050	100%	168	168												

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 10
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Num of Detects Above Standard-1	ASH LANDFILL PT-18A GW ALBW20328 6/6/2015 SA LTM 19 Total Value Qual	ASH LANDFILL PT-18A GW ALBW20344 12/18/2015 SA LTM 20 Total Value Qual	ASH LANDFILL PT-18A GW ALBW20360 6/16/2016 SA LTM 21 Total Value Qual	ASH LANDFILL PT-18A GW ALBW20376 12/10/2016 SA LTM 22 Total Value Qual	ASH LANDFILL MWT-25 GW ALBW20064 1/3/2007 SA LTM 1 Total Value Qual	ASH LANDFILL MWT-25 GW ALBW20079 3/17/2007 SA LTM 2 Total Value Qual	ASH LANDFILL MWT-25 GW ALBW20093 6/6/2007 SA LTM 3 Total Value Qual	ASH LANDFILL MWT-25 GW ALBW20108 11/15/2007 SA LTM 4 Total Value Qual	ASH LANDFILL MWT-25 GW ALBW20123 6/24/2008 SA LTM 5 Total Value Qual
Volatile Organic Compounds																	
1,1,1-Trichloroethane	UG/L	15	2%	5	328	GA	5	1	0.37 U	0.37 U	0.37 U	0.37 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	0	328	GA	5	0	0.62 U	0.62 U	0.62 U	0.62 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	0	328	GA	5	0	0.36 U	0.36 U	0.36 U	0.36 U	1 U	1 U	1 UJ	1 U	1 UJ
1,1,2-Trichloroethane	UG/L	0	0%	0	328	GA	1	0	0.33 U	0.33 U	0.33 U	0.33 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	UG/L	62	12%	40	328	GA	5	1	0.38 U	0.38 U	0.38 U	0.38 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	UG/L	2.6	11%	36	328	GA	5	0	0.36 U	0.36 U	0.36 U	0.36 U	1 U	1 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene	UG/L	0	0%	0	327	GA	5	0	2.5 U	2.5 U	2.5 U	2.5 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0	328	GA	0.04	0	1.1 U	1.1 U	1.1 U	1.1 U	1 U	1 U	1 U	1 U	1 UJ
1,2-Dibromoethane	UG/L	0	0%	0	328	GA	0.0006	0	0.44 U	0.44 U	0.44 U	0.44 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.37 U	0.37 U	0.37 U	0.37 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	UG/L	5.6	15%	49	328	GA	0.6	41	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	UG/L	0.29	0%	1	328	GA	1	0	0.67 U	0.67 U	0.67 U	0.67 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.43 U	0.43 U	0.43 U	0.43 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.46 U	0.46 U	0.46 U	0.46 U	1 U	1 U	1 U	1 U	1 U
Acetone	UG/L	2600	16%	49	315				7 U	7 UR	7 U	7 U	5 U	5 U	4.5 J	5 U	5 U
Benzene	UG/L	0.48	2%	5	328	GA	1	0	0.43 U	0.43 U	0.43 U	0.43 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	UG/L	0	0%	0	328	MCL	80	0	0.44 U	0.44 U	0.44 U	0.44 U	1 U	1 U	1 U	1 U	1 U
Bromoform	UG/L	0	0%	0	328	MCL	80	0	0.43 UJ	0.43 U	0.43 UJ	0.43 U	1 U	1 U	1 U	1 U	1 U
Carbon disulfide	UG/L	2.3	0%	1	328				1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Carbon tetrachloride	UG/L	0	0%	0	328	GA	5	0	0.33 U	0.33 U	0.33 U	0.33 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	UG/L	0	0%	0	328	GA	5	0	0.26 U	0.26 U	0.26 U	0.26 U	1 U	1 U	1 U	1 U	1 U
Chlorodibromomethane	UG/L	0	0%	0	328	MCL	80	0	0.32 UJ	0.32 U	0.32 U	0.32 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	UG/L	1.1	2%	7	328	GA	5	0	2.5 U	2.5 U	2.5 U	2.5 U	1 U	1 U	1 U	1 U	1 UJ
Chloroform	UG/L	71	8%	25	328	GA	7	7	1.1	1.5	2.3	0.5 U	1 U	1 U	1 U	1 U	1 U
Cis-1,2-Dichloroethene	UG/L	820	88%	290	328	GA	5	199	**28**	**31**	**66**	1.1	**41**	**84**	**36**	**17**	**17**
Cis-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	0.4 U	0.4 U	0.4 U	0.4 U	1 U	1 U	1 U	1 U	1 U
Cyclohexane	UG/L	0.3	0%	1	328				0.39 U	0.39 U	0.39 U	0.39 U	1 U	1 U	1 U	1 U	1 U
Dichlorodifluoromethane	UG/L	0.3	0%	1	321	GA	5	0	0.6 U	0.6 U	0.6 U	0.6 U*	1 U	1 U	1 U	1 U	1 U
Ethyl benzene	UG/L	9.2	6%	19	328	GA	5	1	0.33 U	0.33 U	0.33 U	0.33 U	1 U	1 U	1 U	1 U	1 U
Isopropylbenzene	UG/L	0.1	0%	1	328	GA	5	0	0.35 U	0.35 U	0.35 U	0.35 U	1 U	1 U	1 U	1 U	1 U
Methyl Acetate	UG/L	6	1%	2	313				1.8 U	1.8 U	1.8 U	1.8 U	1 U	1 UJ	1 U	1 UJ	1 UJ
Methyl bromide	UG/L	2.1	0%	1	322	GA	5	0	2.5 U	2.5 UJ	2.5 U	2.5 U	1 U	1 U	1 U	1 U	1 UJ
Methyl butyl ketone	UG/L	0	0%	0	328				2 U	2 U	2 U	2 U	5 U	5 U	5 U	5 UJ	5 UJ
Methyl chloride	UG/L	0	0%	0	328	GA	5	0	0.4 U	0.4 U	0.4 U	0.4 U	1 U	1 U	1 U	1 U	1 UJ
Methyl cyclohexane	UG/L	0.17	0%	1	328				0.43 U	0.43 U	0.43 U	0.43 U	1 U	1 U	1 U	1 U	1 U
Methyl ethyl ketone	UG/L	4900	7%	22	321				3.4 U	3.4 UR	3.4 U	3.4 U	5 U	5 U	5 U	5 U	5 UJ
Methyl isobutyl ketone	UG/L	1.9	0%	1	328				2.1 U	2.1 U	2.1 U	2.1 U	5 U	5 U	5 U	5 U	5 UJ
Methyl Tertbutyl Ether	UG/L	0	0%	0	328				0.3 U	0.3 U	0.3 U	0.3 U	1 U	1 U	1 U	1 U	1 U
Methylene chloride	UG/L	18	4%	12	328	GA	5	7	2.5 U	2.5 U	2.5 U	2.5 U	1 U	1 U	1 U	1 U	1 U
Styrene	UG/L	0	0%	0	328	GA	5	0	0.27 U	0.27 U	0.27 U	0.27 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	UG/L	27	1%	2	328	GA	5	1	0.74 U	0.74 U	0.74 U	0.74 U	1 U	1 U	1 U	1 U	1 U
Toluene	UG/L	590	10%	32	328	GA	5	18	0.48 U	0.48 U	0.48 U	0.48 U	1 U	1 U	4.6	1 U	1 U
Total Xylenes	UG/L	60	1%	2	328	GA	5	1	0.23 U	0.23 U	0.23 U	0.23 U	3 U	3 U	3 U	3 U	3 U
Trans-1,2-Dichloroethene	UG/L	22	51%	168	328	GA	5	17	0.37 U	0.37 U	0.39 J	0.37 U	0.56 J	1.2	0.5 J	1 U	1 U
Trans-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	0.42 U	0.42 U	0.42 U	0.42 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	UG/L	3800	68%	223	328	GA	5	104	**180 J**	**160**	**280**	**9.7**	**50**	**55**	**28**	**26**	**19**
Trichlorofluoromethane	UG/L	0	0%	0	328	GA	5	0	0.42 U	0.42 U	0.42 U	0.42 U	1 U	1 U	1 UJ	1 U	1 UJ
Vinyl chloride	UG/L	180	65%	213	328	GA	2	161	0.5 U	0.5 U	0.76 J	0.5 U	1.6	**9.6**	**2.1**	0.64 J	1 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	96%	161	168												
Ethene	UG/L	200	88%	148	168												
Methane	UG/L	23,000	98%	165	168												
Sulfate	MG/L	1060	86%	144	168	GA	250	26									
Total Organic Carbon	MG/L	2050	100%	168	168												

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)
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Appendix B

Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 10
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Num of Detects Above Standard-1	ASH LANDFILL MWT-25 GW ALBW20138 12/15/2008 SA LTM 6 Total Value Qual	ASH LANDFILL MWT-25 GW ALBW20153 6/3/2009 SA LTM 7 Total Value Qual	ASH LANDFILL MWT-25 GW ALBW20168 12/17/2009 SA LTM 8 Total Value Qual	ASH LANDFILL MWT-25 GW ALBW20183 6/30/2010 SA LTM 9 Total Value Qual	ASH LANDFILL MWT-25 GW ALBW20198 12/19/2010 SA LTM 10 Total Value Qual	ASH LANDFILL MWT-25 GW ALBW20213 7/20/2011 SA LTM 11 Total Value Qual	ASH LANDFILL MWT-25 GW ALBW20228 12/15/2011 SA LTM 12 Total Value Qual	ASH LANDFILL MWT-25 GW ALBW20243 6/21/2012 SA LTM 13 Total Value Qual	ASH LANDFILL MWT-25 GW ALBW20258 12/12/2012 SA LTM 14 Total Value Qual
Volatile Organic Compounds																	
1,1,1-Trichloroethane	UG/L	15	2%	5	328	GA	5	1	0.26 U	0.26 U	0.26 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	0	328	GA	5	0	0.21 U	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	328	GA	5	0	0.31 U	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	328	GA	1	0	0.23 U	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%	40	328	GA	5	1	0.75 U	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%	36	328	GA	5	0	0.29 U	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	327	GA	5	0	0.41 U	0.41 U	0.41 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 UJ	0.25 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0	328	GA	0.04	0	1 UJ	1 UJ	0.39 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	328	GA	0.0006	0	0.17 U	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	328	GA	3	0	0.2 U	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%	49	328	GA	0.6	41	0.21 U	0.21 U	0.21 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 U
1,2-Dichloropropane	UG/L	0.29	0%	1	328	GA	1	0	0.14 U	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	328	GA	3	0	0.16 U	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	328	GA	3	0	0.16 U	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%	49	315				1.3 U	1.3 U	1.3 U	5 U	5 UJ	21 J	5 UJ	5 UJ	5 U
Benzene	UG/L	0.48	2%	5	328	GA	1	0	0.16 U	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	328	MCL	80	0	0.38 U	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	328	MCL	80	0	0.26 U	0.26 UJ	0.26 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon disulfide	UG/L	2.3	0%	1	328				0.19 U	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	328	GA	5	0	0.27 U	0.27 U	0.27 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U
Chlorobenzene	UG/L	0	0%	0	328	GA	5	0	0.18 U	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	328	MCL	80	0	0.32 U	0.32 U	0.32 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	328	GA	5	0	0.32 U	0.32 U	0.32 U	1 U	1 UJ	1 UJ	1 UJ	1 UJ	1 U
Chloroform	UG/L	71	8%	25	328	GA	7	7	0.34 U	0.34 U	0.34 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%	290	328	GA	5	199	0.63 J	**10**	3.3	**13**	0.97 J	**14**	0.3 J	**6.8**	0.39 J
Cis-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	0.36 U	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	328				0.22 U	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	321	GA	5	0	0.28 U	0.29 U	0.29 U	0.25 U	0.25 U	0.25 U	0.25 UJ	0.25 U	0.25 U
Ethyl benzene	UG/L	9.2	6%	19	328	GA	5	1	0.18 U	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	328	GA	5	0	0.19 U	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	313				0.17 U	0.17 UJ	0.5 U	0.19 UJ	0.19 U	0.19 UJ	0.19 U	0.19 UR	0.19 UJ
Methyl bromide	UG/L	2.1	0%	1	322	GA	5	0	0.28 U	0.28 U	0.28 UR	0.8 UJ	0.8 U	0.8 UJ	0.8 UJ	0.8 UJ	0.8 UJ
Methyl butyl ketone	UG/L	0	0%	0	328				1.2 U	1.2 U	1.2 U	1 UJ	1 U	1 UJ	1 UJ	1 UJ	1 U
Methyl chloride	UG/L	0	0%	0	328	GA	5	0	0.34 U	0.35 U	0.35 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Methyl cyclohexane	UG/L	0.17	0%	1	328				0.22 U	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	7%	22	321				1.3 U	1.3 U	1.3 U	1 U	1 U	1 U	1 U	1 UJ	1 U
Methyl isobutyl ketone	UG/L	1.9	0%	1	328				0.91 U	0.91 U	0.91 U	1 U	1 U	1 U	1 U	1 UJ	1 U
Methyl Tertbutyl Ether	UG/L	0	0%	0	328				0.16 U	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	328	GA	5	7	0.44 UJ	0.44 U	0.44 U	1 U	1 U	1 U	1 U	1 UJ	1 U
Styrene	UG/L	0	0%	0	328	GA	5	0	0.18 U	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	328	GA	5	1	0.36 U	0.36 U	0.36 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
Toluene	UG/L	590	10%	32	328	GA	5	18	0.51 U	0.51 U	0.51 U	0.33 U	0.33 U	1 U	0.33 U	0.33 U	0.33 U
Total Xylenes	UG/L	60	1%	2	328	GA	5	1	0.93 U	0.66 U	0.66 U	0.2 U	0.2 U	0.28 J	0.2 U	0.2 U	0.2 U
Trans-1,2-Dichloroethene	UG/L	22	51%	168	328	GA	5	17	0.13 U	0.13 U	0.42 U	0.49 J	0.2 U	0.45 J	0.2 U	0.2 U	0.2 U
Trans-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	0.37 U	0.37 U	0.37 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 UJ	0.21 U
Trichloroethene	UG/L	3800	68%	223	328	GA	5	104	3.2	**12**	4.2	**7.7**	1.9	4.4	1.6	**6.1**	1.3
Trichlorofluoromethane	UG/L	0	0%	0	328	GA	5	0	0.15 U	0.15 U	0.15 UJ	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Vinyl chloride	UG/L	180	65%	213	328	GA	2	161	0.24 U	0.24 U	0.24 U	0.18 U	0.18 U	0.72 J	0.18 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	96%	161	168												
Ethene	UG/L	200	88%	148	168												
Methane	UG/L	23,000	98%	165	168												
Sulfate	MG/L	1060	86%	144	168	GA	250	26									
Total Organic Carbon	MG/L	2050	100%	168	168												

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 10
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Num of Detects Above Standard-1	ASH LANDFILL MWT-25 GW ALBW20271 7/11/2013 SA LTM 15 Total		ASH LANDFILL MWT-25 GW ALBW20286 12/13/2013 SA LTM 16 Total		ASH LANDFILL MWT-25 GW ALBW20302 6/21/2014 SA LTM 17 Total		ASH LANDFILL MWT-25 GW ALBW20318 12/19/2014 SA LTM 18 Total		ASH LANDFILL MWT-25 GW ALBW20334 6/4/2015 SA LTM 19 Total		ASH LANDFILL MWT-25 GW ALBW20350 12/18/2015 SA LTM 20 Total		ASH LANDFILL MWT-25 GW ALBW20366 6/16/2016 SA LTM 21 Total		ASH LANDFILL MWT-25 GW ALBW20382 12/10/2016 SA LTM 22 Total	
									Value	Qual	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	328	GA	5	1	0.5	U	0.5	U	0.5	U	0.5	U	0.37	U	0.37	U	0.37	U	0.37	U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	0	328	GA	5	0	0.18	U	0.18	U	0.18	U	0.18	U	0.62	U	0.62	U	0.62	U	0.62	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	0	328	GA	5	0	0.5	U	0.5	U	0.5	U	0.5	U	0.36	U	0.36	U	0.36	U	0.36	U
1,1,2-Trichloroethane	UG/L	0	0%	0	328	GA	1	0	0.13	U	0.13	U	0.13	U	0.13	U	0.33	U	0.33	U	0.33	U	0.33	U
1,1-Dichloroethane	UG/L	62	12%	40	328	GA	5	1	0.25	U	0.25	U	0.25	U	0.25	U	0.38	U	0.38	U	0.38	U	0.38	U
1,1-Dichloroethene	UG/L	2.6	11%	36	328	GA	5	0	0.11	U	0.11	U	0.11	U	0.11	U	0.36	U	0.36	U	0.36	U	0.36	U
1,2,4-Trichlorobenzene	UG/L	0	0%	0	327	GA	5	0	0.25	U	0.25	U	0.25	U	0.25	U	2.5	U	2.5	U	2.5	U	2.5	U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0	328	GA	0.04	0	0.44	U	0.44	U	0.44	U	0.44	U	1.1	U	1.1	U	1.1	U	1.1	U
1,2-Dibromoethane	UG/L	0	0%	0	328	GA	0.0006	0	0.25	U	0.25	U	0.25	U	0.25	U	0.44	U	0.44	U	0.44	U	0.44	U
1,2-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.21	U	0.21	U	0.21	U	0.21	U	0.37	U	0.37	U	0.37	U	0.37	U
1,2-Dichloroethane	UG/L	5.6	15%	49	328	GA	0.6	41	0.1	U	0.1	U	0.1	U	0.1	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloropropane	UG/L	0.29	0%	1	328	GA	1	0	0.13	U	0.13	U	0.13	U	0.13	U	0.67	U	0.67	U	0.67	U	0.67	U
1,3-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.25	U	0.25	U	0.25	U	0.25	U	0.43	U	0.43	U	0.43	U	0.43	U
1,4-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.28	U	0.28	U	0.28	U	0.28	U	0.46	U	0.46	U	0.46	U	0.46	U
Acetone	UG/L	2600	16%	49	315				5	U	5	U	5	U	5	U	7	U	7	UR	7	U	7	U
Benzene	UG/L	0.48	2%	5	328	GA	1	0	0.25	U	0.25	U	0.25	U	0.25	U	0.43	U	0.43	U	0.43	U	0.43	U
Bromodichloromethane	UG/L	0	0%	0	328	MCL	80	0	0.25	U	0.25	U	0.25	U	0.25	U	0.44	U	0.44	U	0.44	U	0.44	U
Bromoform	UG/L	0	0%	0	328	MCL	80	0	0.5	U	0.5	U	0.5	U	0.5	U	0.43	UJ	0.43	U	0.43	UJ	0.43	U
Carbon disulfide	UG/L	2.3	0%	1	328				0.6	U	0.6	U	0.6	U	0.6	U	1	U	1	U	1	U	1	U
Carbon tetrachloride	UG/L	0	0%	0	328	GA	5	0	0.5	U	0.5	U	0.5	U	0.5	U	0.33	U	0.33	U	0.33	U	0.33	U
Chlorobenzene	UG/L	0	0%	0	328	GA	5	0	0.25	U	0.25	U	0.25	U	0.25	U	0.26	U	0.26	U	0.26	U	0.26	U
Chlorodibromomethane	UG/L	0	0%	0	328	MCL	80	0	0.1	U	0.1	U	0.1	U	0.1	U	0.32	UJ	0.32	U	0.32	U	0.32	U
Chloroethane	UG/L	1.1	2%	7	328	GA	5	0	2	U	2	U	2	U	2	U	2.5	U	2.5	U	2.5	U	2.5	U
Chloroform	UG/L	71	8%	25	328	GA	7	7	0.14	U	0.14	U	0.14	U	0.14	U	0.5	U	0.5	U	0.5	U	0.5	U
Cis-1,2-Dichloroethene	UG/L	820	88%	290	328	GA	5	199	**5.8**		3.3		**21**		1.7		4.9		1.7		**5.7**		2.8	
Cis-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	0.11	U	0.11	U	0.11	U	0.11	U	0.4	U	0.4	U	0.4	U	0.4	U
Cyclohexane	UG/L	0.3	0%	1	328				0.25	U	0.25	U	0.25	U	0.25	U	0.39	U	0.39	U	0.39	U	0.39	U
Dichlorodifluoromethane	UG/L	0.3	0%	1	321	GA	5	0	0.25	U	0.25	UJ	0.25	U	0.25	U	0.6	U	0.6	U	0.6	U	0.6	U*
Ethyl benzene	UG/L	9.2	6%	19	328	GA	5	1	0.11	U	0.11	U	0.11	U	0.11	U	0.33	U	0.33	U	0.33	U	0.33	U
Isopropylbenzene	UG/L	0.1	0%	1	328	GA	5	0	0.1	U	0.1	U	0.1	U	0.1	U	0.35	U	0.35	U	0.35	U	0.35	U
Methyl Acetate	UG/L	6	1%	2	313				0.19	U	0.19	U	0.19	U	0.19	U	1.8	U	1.8	U	1.8	U	1.8	U
Methyl bromide	UG/L	2.1	0%	1	322	GA	5	0	2	U	2.1	J	2	U	2	U	2.5	U	2.5	UJ	2.5	U	2.5	U
Methyl butyl ketone	UG/L	0	0%	0	328				1	U	1	U	1	U	1	U	2	U	2	U	2	U	2	U
Methyl chloride	UG/L	0	0%	0	328	GA	5	0	0.33	UJ	0.33	U	0.33	U	0.33	U	0.4	U	0.4	U	0.4	U	0.4	U
Methyl cyclohexane	UG/L	0.17	0%	1	328				0.1	U	0.1	U	0.1	U	0.1	U	0.43	U	0.43	U	0.43	U	0.43	U
Methyl ethyl ketone	UG/L	4900	7%	22	321				1	U	1	U	1	U	1	U	3.4	U	3.4	UR	3.4	U	3.4	U
Methyl isobutyl ketone	UG/L	1.9	0%	1	328				1	U	1	U	1	U	1	U	2.1	U	2.1	U	2.1	U	2.1	U
Methyl Tertbutyl Ether	UG/L	0	0%	0	328				0.2	U	0.2	U	0.2	U	0.2	U	0.3	U	0.3	U	0.3	U	0.3	U
Methylene chloride	UG/L	18	4%	12	328	GA	5	7	1	U	1	U	1	U	1	U	2.5	U	2.5	U	2.5	U	2.5	U
Styrene	UG/L	0	0%	0	328	GA	5	0	0.11	U	0.11	U	0.11	U	0.11	U	0.27	U	0.27	U	0.27	U	0.27	U
Tetrachloroethene	UG/L	27	1%	2	328	GA	5	1	0.15	U	0.15	U	0.15	U	0.15	U	0.74	U	0.74	U	0.74	U	0.74	U
Toluene	UG/L	590	10%	32	328	GA	5	18	0.33	U	0.33	U	0.33	U	0.33	U	0.48	U	0.48	U	0.48	U	0.48	U
Total Xylenes	UG/L	60	1%	2	328	GA	5	1	0.2	U	0.2	U	0.2	U	0.2	U	0.23	U	0.23	U	0.23	U	0.23	U
Trans-1,2-Dichloroethene	UG/L	22	51%	168	328	GA	5	17	0.2	U	0.2	U	0.42	J	0.2	U	0.37	U	0.37	U	0.37	U	0.37	U
Trans-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	0.21	U	0.21	UJ	0.21	U	0.21	U	0.42	U	0.42	U	0.42	U	0.42	U
Trichloroethene	UG/L	3800	68%	223	328	GA	5	104	**8.3**		4.6		**24**		2.5		**7.9 J**		2.6		**6.9**		3.5	
Trichlorofluoromethane	UG/L	0	0%	0	328	GA	5	0	0.25	U	0.25	U	0.25	U	0.25	U	0.42	U	0.42	U	0.42	U	0.42	U
Vinyl chloride	UG/L	180	65%	213	328	GA	2	161	0.18	U	0.47	J	**2.6**		0.18	U	0.5	U	0.5	U	0.73	J	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	96%	161	168																			
Ethene	UG/L	200	88%	148	168																			
Methane	UG/L	23,000	98%	165	168																			
Sulfate	MG/L	1060	86%	144	168	GA	250	26																
Total Organic Carbon	MG/L	2050	100%	168	168																			

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 10
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Num of Detects Above Standard-1	ASH LANDFILL PT-17 GW ALBW20058 1/2/2007 SA LTM 1 Total	ASH LANDFILL PT-17 GW ALBW20073 3/15/2007 SA LTM 2 Total	ASH LANDFILL PT-17 GW ALBW20087 6/5/2007 SA LTM 3 Total	ASH LANDFILL PT-17 GW ALBW20102 11/13/2007 SA LTM 4 Total	ASH LANDFILL PT-17 GW ALBW20116 6/26/2008 SA LTM 5 Total	ASH LANDFILL PT-17 GW ALBW20131 12/11/2008 SA LTM 6 Total	ASH LANDFILL PT-17 GW ALBW20146 6/2/2009 SA LTM 7 Total	ASH LANDFILL PT-17 GW ALBW20161 12/15/2009 SA LTM 8 Total	ASH LANDFILL PT-17 GW ALBW20176 7/1/2010 SA LTM 9 Total
									Value Qual	Value Qual	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	328	GA	5	1	1 U	2 U	1 U	1 U	1 U	0.26 UJ	0.26 U	0.26 U	0.5 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	0	328	GA	5	0	1 U	2 U	1 U	1 U	1 U	0.21 U	0.21 U	0.21 U	0.18 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	0	328	GA	5	0	1 U	2 U	1 UJ	1 U	1 UJ	0.31 U	0.31 U	0.31 U	0.5 U
1,1,2-Trichloroethane	UG/L	0	0%	0	328	GA	1	0	1 U	2 U	1 U	1 U	1 U	0.23 U	0.23 U	0.23 U	0.13 U
1,1-Dichloroethane	UG/L	62	12%	40	328	GA	5	1	1 U	2 U	1 U	1 U	1 U	0.75 U	0.75 U	0.38 U	0.25 U
1,1-Dichloroethene	UG/L	2.6	11%	36	328	GA	5	0	1 U	2 U	1 U	1 U	1 U	0.29 U	0.29 U	0.29 U	0.24 J
1,2,4-Trichlorobenzene	UG/L	0	0%	0	327	GA	5	0	1 U	2 U	1 U	1 U	1 U	0.41 U	0.41 U	0.41 U	0.25 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0	328	GA	0.04	0	1 U	2 U	1 U	1 U	1 UJ	1 UJ	1 UJ	0.39 U	0.44 U
1,2-Dibromoethane	UG/L	0	0%	0	328	GA	0.0006	0	1 U	2 U	1 U	1 U	1 U	0.17 U	0.17 U	0.17 U	0.25 U
1,2-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	1 U	2 U	1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	0.21 U
1,2-Dichloroethane	UG/L	5.6	15%	49	328	GA	0.6	41	1 U	2 U	1 U	1 U	1 U	0.21 U	0.21 U	0.21 U	0.1 U
1,2-Dichloropropane	UG/L	0.29	0%	1	328	GA	1	0	1 U	2 U	1 U	1 U	1 U	0.14 U	0.14 U	0.32 U	0.13 U
1,3-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	1 U	2 U	1 U	1 U	1 U	0.16 U	0.16 U	0.36 U	0.25 U
1,4-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	1 U	2 U	1 U	1 U	1 U	0.16 U	0.16 U	0.39 U	0.28 U
Acetone	UG/L	2600	16%	49	315				9.3 U	22	5 U	5 U	5 U	1.3 U	1.3 U	1.3 U	5 U
Benzene	UG/L	0.48	2%	5	328	GA	1	0	1 U	2 U	1 U	1 U	1 U	0.16 U	0.16 U	0.41 U	0.25 U
Bromodichloromethane	UG/L	0	0%	0	328	MCL	80	0	1 U	2 U	1 U	1 U	1 U	0.38 U	0.39 U	0.39 U	0.25 U
Bromoform	UG/L	0	0%	0	328	MCL	80	0	1 U	2 U	1 U	1 U	1 U	0.26 U	0.26 UJ	0.26 UJ	0.5 U
Carbon disulfide	UG/L	2.3	0%	1	328				1 U	2 U	1 U	1 U	1 U	0.19 U	0.19 UJ	0.19 UJ	0.6 U
Carbon tetrachloride	UG/L	0	0%	0	328	GA	5	0	1 U	2 U	1 U	1 U	1 U	0.27 UJ	0.27 U	0.27 U	0.5 U
Chlorobenzene	UG/L	0	0%	0	328	GA	5	0	1 U	2 U	1 U	1 U	1 U	0.18 U	0.32 U	0.32 U	0.25 U
Chlorodibromomethane	UG/L	0	0%	0	328	MCL	80	0	1 U	2 U	1 U	1 U	1 U	0.32 U	0.32 U	0.32 U	0.1 U
Chloroethane	UG/L	1.1	2%	7	328	GA	5	0	1 U	2 U	1 U	1 U	1 UJ	0.32 U	0.49 J	0.32 UJ	1 U
Chloroform	UG/L	71	8%	25	328	GA	7	7	1 U	2 U	1 U	1 U	1 U	0.34 U	0.34 U	0.34 U	0.14 U
Cis-1,2-Dichloroethene	UG/L	820	88%	290	328	GA	5	199	**62**	**26**	**43**	**27**	**21**	**24**	**56**	**65**	**81**
Cis-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	1 U	2 U	1 U	1 U	1 U	0.36 U	0.36 U	0.36 U	0.11 U
Cyclohexane	UG/L	0.3	0%	1	328				1 U	2 U	1 U	1 U	1 U	0.22 U	0.53 U	0.53 U	0.25 U
Dichlorodifluoromethane	UG/L	0.3	0%	1	321	GA	5	0	1 U	2 U	1 U	1 U	1 U	0.28 UJ	0.29 U	0.29 U	0.25 UJ
Ethyl benzene	UG/L	9.2	6%	19	328	GA	5	1	1 U	2 U	1 U	1 U	1 U	0.18 U	0.18 U	0.18 U	0.11 U
Isopropylbenzene	UG/L	0.1	0%	1	328	GA	5	0	1 U	2 U	1 U	1 U	1 U	0.19 U	0.19 U	0.19 U	0.1 U
Methyl Acetate	UG/L	6	1%	2	313				1 U	2 UJ	1 U	1 UJ	1 UJ	0.17 U	0.17 UJ	0.5 U	0.19 U
Methyl bromide	UG/L	2.1	0%	1	322	GA	5	0	1 U	2 U	1 U	1 U	1 UJ	0.28 U	0.28 U	0.28 U	0.8 U
Methyl butyl ketone	UG/L	0	0%	0	328				5 U	10 U	5 U	5 UJ	5 UJ	1.2 U	1.2 U	1.2 U	1 U
Methyl chloride	UG/L	0	0%	0	328	GA	5	0	1 U	2 U	1 U	1 U	1 UJ	0.34 U	0.35 U	0.35 UJ	0.33 U
Methyl cyclohexane	UG/L	0.17	0%	1	328				1 U	2 U	1 U	1 U	1 U	0.22 U	0.5 U	0.5 U	0.1 U
Methyl ethyl ketone	UG/L	4900	7%	22	321				5.4	11	5 U	5 U	5 UJ	1.3 U	1.3 U	1.3 U	1 U
Methyl isobutyl ketone	UG/L	1.9	0%	1	328				5 U	10 U	5 U	5 U	5 UJ	0.91 U	0.91 U	0.91 U	1 U
Methyl Tertbutyl Ether	UG/L	0	0%	0	328				1 U	2 U	1 U	1 U	1 U	0.16 U	0.16 U	0.16 U	0.2 U
Methylene chloride	UG/L	18	4%	12	328	GA	5	7	1 U	1.2 J	1 U	1 U	1 U	0.44 UJ	0.44 U	0.44 U	1 U
Styrene	UG/L	0	0%	0	328	GA	5	0	1 U	2 U	1 U	1 U	1 U	0.18 U	0.18 U	0.18 U	0.11 U
Tetrachloroethene	UG/L	27	1%	2	328	GA	5	1	1 U	2 U	1 U	1 U	1 U	0.36 U	0.36 U	0.36 U	0.15 U
Toluene	UG/L	590	10%	32	328	GA	5	18	1 U	2 U	1 U	1 U	1 U	0.51 U	0.51 U	0.51 U	0.33 U
Total Xylenes	UG/L	60	1%	2	328	GA	5	1	3 U	6 U	3 U	3 U	3 U	0.93 U	0.66 U	0.66 U	0.2 U
Trans-1,2-Dichloroethene	UG/L	22	51%	168	328	GA	5	17	1 U	2 U	0.77 J	0.54 J	1 U	0.46 J	1.1	1.8	3.2
Trans-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	1 U	2 U	1 U	1 U	1 U	0.37 U	0.37 U	0.37 U	0.21 U
Trichloroethene	UG/L	3800	68%	223	328	GA	5	104	**6**	**11**	3.4	**15**	**8.5**	**9.2**	**8**	**7.8**	3
Trichlorofluoromethane	UG/L	0	0%	0	328	GA	5	0	1 U	2 U	1 UJ	1 U	1 UJ	0.15 UJ	0.15 U	0.15 U	0.25 U
Vinyl chloride	UG/L	180	65%	213	328	GA	2	161	**21**	**21**	**9.9**	**22**	**23**	**10**	**55**	**20**	**53**
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	96%	161	168								98	6.9	50	9.9	16
Ethene	UG/L	200	88%	148	168								66	6.6	56	5	20
Methane	UG/L	23,000	98%	165	168								5,700	380	8,300	1,500	4,300
Sulfate	MG/L	1060	86%	144	168	GA	250	26					15.2	45.8	28	46.2 J	36
Total Organic Carbon	MG/L	2050	100%	168	168								6	2.6	4.9	2.4	2.4

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
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Appendix B

Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 10
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Num of Detects Above Standard-1	ASH LANDFILL PT-17 GW ALBW20191 12/18/2010 SA LTM 10 Total	ASH LANDFILL PT-17 GW ALBW20206 7/21/2011 SA LTM 11 Total	ASH LANDFILL PT-17 GW ALBW20221 12/13/2011 SA LTM 12 Total	ASH LANDFILL PT-17 GW ALBW20236 6/19/2012 SA LTM 13 Total	ASH LANDFILL PT-17 GW ALBW20251 12/13/2012 SA LTM 14 Total	ASH LANDFILL PT-17 GW ALBW20264A 7/10/2013 SA LTM 15 Total	ASH LANDFILL PT-17 GW ALBW20279 12/13/2013 SA LTM 16 Total	ASH LANDFILL PT-17 GW ALBW20295 6/20/2014 SA LTM 17 Total	ASH LANDFILL PT-17 GW ALBW20295RA 6/20/2014 SA LTM 17 Total
									Value Qual	Value Qual	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	328	GA	5	1	0.5 U	0.5 U	0.5 U	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	328	GA	5	0	0.18 U	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	328	GA	5	0	0.5 U	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	328	GA	1	0	0.13 U	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%	40	328	GA	5	1	0.25 U	0.25 UJ	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%	36	328	GA	5	0	0.42 J	0.11 U	0.11 U	0.37 J	0.18 J	0.11 U	0.16 J	0.32 J	
1,2,4-Trichlorobenzene	UG/L	0	0%	0	327	GA	5	0	0.25 U	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	328	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	0.44 U	
1,2-Dibromoethane	UG/L	0	0%	0	328	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	0.25 U	
1,2-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.21 U	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%	49	328	GA	0.6	41	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.1 U	0.1 U	
1,2-Dichloropropane	UG/L	0.29	0%	1	328	GA	1	0	0.13 U	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	328	GA	3	0	0.25 U	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	328	GA	3	0	0.28 U	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%	49	315				5 UJ	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	
Benzene	UG/L	0.48	2%	5	328	GA	1	0	0.25 U	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	328	MCL	80	0	0.25 U	0.25 U	0.25 U	0.25 UJ	0.25 U	0.25 U	0.25 U	0.25 U	
Bromoform	UG/L	0	0%	0	328	MCL	80	0	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
Carbon disulfide	UG/L	2.3	0%	1	328				0.6 U	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	328	GA	5	0	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 UJ	
Chlorobenzene	UG/L	0	0%	0	328	GA	5	0	0.25 U	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	328	MCL	80	0	0.1 U	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	328	GA	5	0	1 U	1 U	1 UJ	1 UJ	1 U	2 U	2 U	2 U	
Chloroform	UG/L	71	8%	25	328	GA	7	7	0.15 J	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%	290	328	GA	5	199	**39**	**94**	**25**	**170**	**68**	**38**	**64**		**130**
Cis-1,3-Dichloropropene	UG/L	0	0%	0	328	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	0.11 U	
Cyclohexane	UG/L	0.3	0%	1	328				0.25 U	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	321	GA	5	0	0.25 U	0.25 U	0.25 UJ	0.25 U	0.25 U	0.25 U	0.25 UJ	0.25 U	
Ethyl benzene	UG/L	9.2	6%	19	328	GA	5	1	0.11 U	0.11 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	328	GA	5	0	0.1 U	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	313				0.19 U	0.19 U	0.19 U	0.19 UR	0.19 UJ	0.19 U	0.19 U	0.19 U	
Methyl bromide	UG/L	2.1	0%	1	322	GA	5	0	0.8 UJ	0.8 UJ	0.8 U	0.8 UJ	0.8 UJ	2 U	2 UJ	2 UJ	
Methyl butyl ketone	UG/L	0	0%	0	328				1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	
Methyl chloride	UG/L	0	0%	0	328	GA	5	0	0.33 U	0.33 UJ	0.33 UJ	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	
Methyl cyclohexane	UG/L	0.17	0%	1	328				0.1 U	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	7%	22	321				1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	
Methyl isobutyl ketone	UG/L	1.9	0%	1	328				1 U	1 U	1 U	1 UJ	1 U	1 UJ	1 U	1 U	
Methyl Tertbutyl Ether	UG/L	0	0%	0	328				0.2 U	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	328	GA	5	7	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
Styrene	UG/L	0	0%	0	328	GA	5	0	0.11 U	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	328	GA	5	1	0.15 U	1 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	
Toluene	UG/L	590	10%	32	328	GA	5	18	0.33 U	0.33 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	328	GA	5	1	0.2 U	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	51%	168	328	GA	5	17	2.2	**7**	1.8	**18**	**8.3**	**5.2**	**11**	**18**	
Trans-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	0.21 U	0.21 U	0.21 U	0.21 UJ	0.21 U	0.21 UJ	0.21 UJ	0.21 U	
Trichloroethene	UG/L	3800	68%	223	328	GA	5	104	**8.1**	4.5	**11**	**6.9**	**12**	**14**	**8.4**	3.4	
Trichlorofluoromethane	UG/L	0	0%	0	328	GA	5	0	0.25 U	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%	213	328	GA	2	161	**16**	**56**	**12**	**66**	**21**	**7.9**	**17**	**55**	
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	96%	161	168				4.8	1.8	1.7	10	2.2	1.1	1.5	4.5	
Ethene	UG/L	200	88%	148	168				3.5	3.8	2.4	12	2.4	0.69	1.4	6.5	
Methane	UG/L	23,000	98%	165	168				900	780	810	8,200	810	780	960	5,700	
Sulfate	MG/L	1060	86%	144	168	GA	250	26	31	24	27	25	35	27	31	20	
Total Organic Carbon	MG/L	2050	100%	168	168				1.5	3.4	1.6	2.8	1.7	1.2	2	2.9	

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  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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Appendix B

Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 10
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Num of Detects Above Standard-1	ASH LANDFILL PT-17 Value Qual	ASH LANDFILL PT-17 Value Qual	ASH LANDFILL PT-17 Value Qual	ASH LANDFILL PT-17 Value Qual	ASH LANDFILL PT-17 Value Qual	ASH LANDFILL MWT-7 Value Qual	ASH LANDFILL MWT-7 Value Qual	ASH LANDFILL MWT-7 Value Qual	ASH LANDFILL MWT-7 Value Qual
Area									ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID									PT-17	PT-17	PT-17	PT-17	PT-17	MWT-7	MWT-7	MWT-7	MWT-7
Matrix									GW	GW	GW	GW	GW	GW	GW	GW	GW
Sample ID									ALBW20311	ALBW20327	ALBW20343	ALBW20359	ALBW20375	ALBW20062	ALBW20077	ALBW20091	ALBW20106
Sample Date									12/16/2014	6/5/2015	12/17/2015	6/15/2016	12/8/2016	1/4/2007	3/15/2007	6/5/2007	11/13/2007
QC Type									SA	SA	SA	SA	SA	SA	SA	SA	SA
Study ID									LTM	LTM	LTM	LTM	LTM	LTM	LTM	LTM	LTM
Sample Round									18	19	20	21	22	1	2	3	4
Filtered									Total	Total	Total	Total	Total	Total	Total	Total	Total
Volatile Organic Compounds																	
1,1,1-Trichloroethane	UG/L	15	2%	5	328	GA	5	1	0.5 U	0.37 U	0.37 U	0.37 U	0.37 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	0	328	GA	5	0	0.18 U	0.62 U	0.62 U	0.62 U	0.62 U	1 U	1 U	1 U	1 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	0	328	GA	5	0	0.5 U	0.36 U	0.36 U	0.36 U	0.36 U	1 U	1 U	1 UJ	1 U
1,1,2-Trichloroethane	UG/L	0	0%	0	328	GA	1	0	0.13 U	0.33 U	0.33 U	0.33 U	0.33 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	UG/L	62	12%	40	328	GA	5	1	0.25 U	0.38 U	0.38 U	0.38 U	0.38 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	UG/L	2.6	11%	36	328	GA	5	0	0.31 J	0.36 U	0.36 U	0.36 U	0.36 U	1 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene	UG/L	0	0%	0	327	GA	5	0	0.25 U	2.5 U	2.5 U	2.5 UJ	2.5 U	1 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0	328	GA	0.04	0	0.44 U	1.1 U	1.1 U	1.1 U	1.1 U	1 U	1 U	1 U	1 U
1,2-Dibromoethane	UG/L	0	0%	0	328	GA	0.0006	0	0.25 U	0.44 U	0.44 U	0.44 U	0.44 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.21 U	0.37 U	0.37 U	0.37 U	0.37 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	UG/L	5.6	15%	49	328	GA	0.6	41	0.1 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	UG/L	0.29	0%	1	328	GA	1	0	0.13 U	0.67 U	0.67 U	0.67 U	0.67 U	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.25 U	0.43 U	0.43 U	0.43 U	0.43 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.28 U	0.46 U	0.46 U	0.46 U	0.46 U	1 U	1 U	1 U	1 U
Acetone	UG/L	2600	16%	49	315				5 U	7 U	7 U	7 U	7 U	5 U	5 U	5 U	5 U
Benzene	UG/L	0.48	2%	5	328	GA	1	0	0.25 U	0.43 U	0.43 U	0.43 U	0.43 U	1 U	1 U	1 U	1 U
Bromodichloromethane	UG/L	0	0%	0	328	MCL	80	0	0.25 U	0.44 U	0.44 U	0.44 U	0.44 U	1 U	1 U	1 U	1 U
Bromoform	UG/L	0	0%	0	328	MCL	80	0	0.5 U	0.43 UJ	0.43 U	0.43 UJ	0.43 U	1 U	1 U	1 U	1 U
Carbon disulfide	UG/L	2.3	0%	1	328				0.6 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Carbon tetrachloride	UG/L	0	0%	0	328	GA	5	0	0.5 U	0.33 U	0.33 U	0.33 U	0.33 U	1 U	1 U	1 U	1 U
Chlorobenzene	UG/L	0	0%	0	328	GA	5	0	0.25 U	0.26 U	0.26 U	0.26 U	0.26 U	1 U	1 U	1 U	1 U
Chlorodibromomethane	UG/L	0	0%	0	328	MCL	80	0	0.1 U	0.32 UJ	0.32 U	0.32 U	0.32 U	1 U	1 U	1 U	1 U
Chloroethane	UG/L	1.1	2%	7	328	GA	5	0	2 U	2.5 U	2.5 U	2.5 U	2.5 U	1 U	1 U	1 U	0.65 J
Chloroform	UG/L	71	8%	25	328	GA	7	7	0.14 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U
Cis-1,2-Dichloroethene	UG/L	820	88%	290	328	GA	5	199	**120**	**57**	**27**	**61**	**59**	**35**	**42**	**61**	**90**
Cis-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	0.11 U	0.4 U	0.4 U	0.4 U	0.4 U	1 U	1 U	1 U	1 U
Cyclohexane	UG/L	0.3	0%	1	328				0.25 U	0.39 U	0.39 U	0.39 U	0.39 U	1 U	1 U	1 U	1 U
Dichlorodifluoromethane	UG/L	0.3	0%	1	321	GA	5	0	0.25 U	0.6 U	0.6 U	0.6 U	0.6 U	1 U	1 U	1 U	1 U
Ethyl benzene	UG/L	9.2	6%	19	328	GA	5	1	0.11 U	0.33 U	0.33 U	0.33 U	0.33 U	1 U	1 U	1 U	1 U
Isopropylbenzene	UG/L	0.1	0%	1	328	GA	5	0	0.1 U	0.35 U	0.35 U	0.35 U	0.35 U	1 U	1 U	1 U	1 U
Methyl Acetate	UG/L	6	1%	2	313				0.19 U	1.8 U	1.8 U	1.8 U	1.8 U	1 U	1 UJ	1 U	1 UJ
Methyl bromide	UG/L	2.1	0%	1	322	GA	5	0	2 U*	2.5 U	2.5 U	2.5 U	2.5 U	1 U	1 U	1 U	1 U
Methyl butyl ketone	UG/L	0	0%	0	328				1 U	2 U	2 U	2 U	2 U	5 U	5 U	5 U	5 UJ
Methyl chloride	UG/L	0	0%	0	328	GA	5	0	0.33 U	0.4 U	0.4 U	0.4 U	0.4 U	1 U	1 U	1 U	1 U
Methyl cyclohexane	UG/L	0.17	0%	1	328				0.1 U	0.43 U	0.43 U	0.43 U	0.43 U	1 U	1 U	1 U	1 U
Methyl ethyl ketone	UG/L	4900	7%	22	321				1 U	3.4 U	3.4 U	3.4 U	3.4 U	5 U	5 U	5 U	5 U
Methyl isobutyl ketone	UG/L	1.9	0%	1	328				1 U	2.1 U	2.1 U	2.1 U	2.1 U	5 U	5 U	5 U	5 U
Methyl Tertbutyl Ether	UG/L	0	0%	0	328				0.2 U	0.3 U	0.3 U	0.3 U	0.3 U	1 U	1 U	1 U	1 U
Methylene chloride	UG/L	18	4%	12	328	GA	5	7	1 U	2.5 U	2.5 U	2.5 U	2.5 U	1 U	1 U	1 U	1 U
Styrene	UG/L	0	0%	0	328	GA	5	0	0.11 U	0.27 U	0.27 U	0.27 U	0.27 U	1 U	1 U	1 U	1 U
Tetrachloroethene	UG/L	27	1%	2	328	GA	5	1	0.15 U	0.74 U	0.74 U	0.74 U	0.74 U	1 U	1 U	1 U	1 U
Toluene	UG/L	590	10%	32	328	GA	5	18	0.33 U	0.48 U	0.48 U	0.48 U	0.48 U	1 U	1 U	1 U	1 U
Total Xylenes	UG/L	60	1%	2	328	GA	5	1	0.2 U	0.23 U	0.23 U	0.23 U	0.23 U	3 U	3 U	3 U	3 U
Trans-1,2-Dichloroethene	UG/L	22	51%	168	328	GA	5	17	**22**	**13**	4.4	**11**	**12**	1 U	1 U	1 U	1 U
Trans-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	0.21 U	0.42 U	0.42 U	0.42 U	0.42 U	1 U	1 U	1 U	1 U
Trichloroethene	UG/L	3800	68%	223	328	GA	5	104	**7.4**	**9 J**	**13**	**5.4**	**9.9**	**490**	**440**	**410**	**510**
Trichlorofluoromethane	UG/L	0	0%	0	328	GA	5	0	0.25 U	0.42 U	0.42 U	0.42 U	0.42 U	1 U	1 U	1 UJ	1 U
Vinyl chloride	UG/L	180	65%	213	328	GA	2	161	**38**	**15**	0.5 U	**25**	**22**	0.51 J	**9.7**	**18**	**24**
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	96%	161	168				2.5	1.6	0.13 J	1.9	1.2				
Ethene	UG/L	200	88%	148	168				2	1.8	0.044 J	1.5	1.4				
Methane	UG/L	23,000	98%	165	168				1,600	1,600	21	3,400	870				
Sulfate	MG/L	1060	86%	144	168	GA	250	26	29	25	42	18	22				
Total Organic Carbon	MG/L	2050	100%	168	168				1.7	1.6	1.7	2.9	2.7				

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 10
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Num of Detects Above Standard-1	ASH LANDFILL MWT-7 GW ALBW20120 6/25/2008 SA LTM 5 Total Value Qual	ASH LANDFILL MWT-7 GW ALBW20135 12/15/2008 SA LTM 6 Total Value Qual	ASH LANDFILL MWT-7 GW ALBW20150 6/2/2009 SA LTM 7 Total Value Qual	ASH LANDFILL MWT-7 GW ALBW20165 12/15/2009 SA LTM 8 Total Value Qual	ASH LANDFILL MWT-7 GW ALBW20180 7/1/2010 SA LTM 9 Total Value Qual	ASH LANDFILL MWT-7 GW ALBW20195 12/18/2010 SA LTM 10 Total Value Qual	ASH LANDFILL MWT-7 GW ALBW20210 7/22/2011 SA LTM 11 Total Value Qual	ASH LANDFILL MWT-7 GW ALBW20225 12/13/2011 SA LTM 12 Total Value Qual	ASH LANDFILL MWT-7 GW ALBW20240 6/19/2012 SA LTM 13 Total Value Qual
Volatile Organic Compounds																	
1,1,1-Trichloroethane	UG/L	15	2%	5	328	GA	5	1	1 U	0.26 U	0.26 U	0.26 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ
1,1,2,2-Tetrachloroethane	UG/L	0	0%	0	328	GA	5	0	1 U	0.21 U	0.21 U	0.21 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	328	GA	5	0	1 UJ	0.31 U	0.31 U	0.31 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	328	GA	1	0	1 U	0.23 U	0.23 U	0.23 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
1,1-Dichloroethane	UG/L	62	12%	40	328	GA	5	1	1 U	0.75 U	0.75 U	0.38 U	0.25 U	0.25 U	0.94 J	1.2	0.25 U
1,1-Dichloroethene	UG/L	2.6	11%	36	328	GA	5	0	1 U	0.29 U	0.29 U	0.48 J	0.78 J	0.98 J	0.11 U	0.11 U	0.59 J
1,2,4-Trichlorobenzene	UG/L	0	0%	0	327	GA	5	0	1 U	0.41 U	0.41 U	0.41 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	328	GA	0.04	0	1 UJ	1 UJ	1 UJ	0.39 U	0.44 U	0.44 U	0.44 UJ	0.44 U	0.44 U
1,2-Dibromoethane	UG/L	0	0%	0	328	GA	0.0006	0	1 U	0.17 U	0.17 U	0.17 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	1 U	0.2 U	0.2 U	0.2 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U
1,2-Dichloroethane	UG/L	5.6	15%	49	328	GA	0.6	41	1 U	0.21 U	0.21 U	0.21 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ
1,2-Dichloropropane	UG/L	0.29	0%	1	328	GA	1	0	1 U	0.14 U	0.14 U	0.32 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
1,3-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	1 U	0.16 U	0.16 U	0.36 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,4-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	1 U	0.16 U	0.16 U	0.39 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U
Acetone	UG/L	2600	16%	49	315				5 U	1.3 U	1.3 U	1.3 U	5 U	5 UJ	5 U	5 U	5 UJ
Benzene	UG/L	0.48	2%	5	328	GA	1	0	1 U	0.16 U	0.16 U	0.41 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Bromodichloromethane	UG/L	0	0%	0	328	MCL	80	0	1 U	0.38 U	0.39 U	0.39 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 UJ
Bromoform	UG/L	0	0%	0	328	MCL	80	0	1 U	0.26 U	0.26 UJ	0.26 UJ	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U
Carbon disulfide	UG/L	2.3	0%	1	328				1 U	0.19 U	0.19 UJ	0.19 UJ	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
Carbon tetrachloride	UG/L	0	0%	0	328	GA	5	0	1 U	0.27 U	0.27 U	0.27 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 UJ
Chlorobenzene	UG/L	0	0%	0	328	GA	5	0	1 U	0.18 U	0.32 U	0.32 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Chlorodibromomethane	UG/L	0	0%	0	328	MCL	80	0	1 U	0.32 U	0.32 U	0.32 U	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U
Chloroethane	UG/L	1.1	2%	7	328	GA	5	0	1 UJ	0.93 J	0.61 J	0.32 UJ	1 U	1 U	1 U	1 UJ	1 UJ
Chloroform	UG/L	71	8%	25	328	GA	7	7	1 U	0.34 U	0.34 U	0.34 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
Cis-1,2-Dichloroethene	UG/L	820	88%	290	328	GA	5	199	**90**	**79**	**68**	**140**	**170**	**120**	**12**	**56**	**140**
Cis-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	1 U	0.36 U	0.36 U	0.36 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
Cyclohexane	UG/L	0.3	0%	1	328				1 U	0.22 U	0.53 U	0.53 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Dichlorodifluoromethane	UG/L	0.3	0%	1	321	GA	5	0	1 U	0.28 U	0.29 U	0.29 U	0.25 UJ	0.25 U	0.25 U	0.25 UJ	0.25 U
Ethyl benzene	UG/L	9.2	6%	19	328	GA	5	1	1 U	0.18 U	0.18 U	0.18 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
Isopropylbenzene	UG/L	0.1	0%	1	328	GA	5	0	1 U	0.19 U	0.19 U	0.19 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Methyl Acetate	UG/L	6	1%	2	313				1 UJ	0.17 U	0.17 UJ	0.5 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 UR
Methyl bromide	UG/L	2.1	0%	1	322	GA	5	0	1 UJ	0.28 U	0.28 U	0.28 U	0.8 U	0.8 UJ	0.8 UJ	0.8 U	0.8 UJ
Methyl butyl ketone	UG/L	0	0%	0	328				5 UJ	1.2 U	1.2 U	1.2 U	1 U	1 U	1 U	1 U	1 UJ
Methyl chloride	UG/L	0	0%	0	328	GA	5	0	1 UJ	0.34 U	0.35 U	0.35 UJ	0.33 U	0.33 U	0.33 U	0.33 UJ	0.33 U
Methyl cyclohexane	UG/L	0.17	0%	1	328				1 U	0.22 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Methyl ethyl ketone	UG/L	4900	7%	22	321				5 UJ	1.3 U	1.3 U	1.3 U	1 U	1 U	1 U	1 U	1 UJ
Methyl isobutyl ketone	UG/L	1.9	0%	1	328				5 UJ	0.91 U	0.91 U	0.91 U	1 U	1 U	1 U	1 U	1 UJ
Methyl Tertbutyl Ether	UG/L	0	0%	0	328				1 U	0.16 U	0.16 U	0.16 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Methylene chloride	UG/L	18	4%	12	328	GA	5	7	1 U	0.44 UJ	0.44 U	0.44 U	1 U	1 U	1 U	1 U	1 U
Styrene	UG/L	0	0%	0	328	GA	5	0	1 U	0.18 U	0.18 U	0.18 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
Tetrachloroethene	UG/L	27	1%	2	328	GA	5	1	1 U	0.36 U	0.36 U	0.36 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
Toluene	UG/L	590	10%	32	328	GA	5	18	1 U	0.51 U	0.51 U	0.51 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Total Xylenes	UG/L	60	1%	2	328	GA	5	1	3 U	0.93 U	0.66 U	0.66 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Trans-1,2-Dichloroethene	UG/L	22	51%	168	328	GA	5	17	1 U	0.13 U	0.13 U	0.55 J	0.91 J	0.75 J	0.34 J	0.24 J	0.64 J
Trans-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	1 U	0.37 U	0.37 U	0.37 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 UJ
Trichloroethene	UG/L	3800	68%	223	328	GA	5	104	**440**	**410**	**330**	**350**	**330**	**310**	0.52 J	2.3	**280**
Trichlorofluoromethane	UG/L	0	0%	0	328	GA	5	0	1 UJ	0.15 U	0.15 U	0.15 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Vinyl chloride	UG/L	180	65%	213	328	GA	2	161	**12**	**13**	**9.3**	**21**	**15**	**15**	**2.6**	**4.3**	**11**
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	96%	161	168				6.7	11	7.8	17	9	4.5	4.9	0.84	3.1
Ethene	UG/L	200	88%	148	168				2	0.27	0.76	0.52	0.55	0.2	0.21	0.425 U	0.33
Methane	UG/L	23,000	98%	165	168				400	670	1,100	2,900	1,700	400	1,600	79	1,600
Sulfate	MG/L	1060	86%	144	168	GA	250	26	29.1	29.1	27	29.3 J	29	31	39	26	28
Total Organic Carbon	MG/L	2050	100%	168	168				2.3	3	3.1	4.5 J	1.5	1.3	2	1.7	1.6

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 10
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Num of Detects Above Standard-1	ASH LANDFILL MWT-7 GW ALBW20255 12/13/2012 SA LTM 14 Total Value Qual	ASH LANDFILL MWT-7 GW ALBW20268 7/10/2013 SA LTM 15 Total Value Qual	ASH LANDFILL MWT-7 GW ALBW20283 12/13/2013 SA LTM 16 Total Value Qual	ASH LANDFILL MWT-7 GW ALBW20299 6/20/2014 SA LTM 17 Total Value Qual	ASH LANDFILL MWT-7 GW ALBW20315 12/16/2014 SA LTM 18 Total Value Qual	ASH LANDFILL MWT-7 GW ALBW20331 6/5/2015 SA LTM 19 Total Value Qual	ASH LANDFILL MWT-7 GW ALBW20347 12/17/2015 SA LTM 20 Total Value Qual	ASH LANDFILL MWT-7 GW ALBW20363 6/15/2016 SA LTM 21 Total Value Qual	ASH LANDFILL MWT-7 GW ALBW20379 12/8/2016 SA LTM 22 Total Value Qual
Volatile Organic Compounds																	
1,1,1-Trichloroethane	UG/L	15	2%	5	328	GA	5	1	0.5 U	0.5 U	1 U	0.5 U	2.5 U	0.37 U	0.37 U	0.37 U	0.37 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	0	328	GA	5	0	0.18 U	0.18 U	0.36 U	0.18 U	0.9 U	0.62 U	0.62 U	0.62 U	0.62 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	0	328	GA	5	0	0.5 U	0.5 U	1 U	0.5 U	2.5 U	0.36 U	0.36 U	0.36 U	0.36 U
1,1,2-Trichloroethane	UG/L	0	0%	0	328	GA	1	0	0.13 U	0.13 U	0.26 U	0.13 U	0.65 U	0.33 U	0.33 U	0.33 U	0.33 U
1,1-Dichloroethane	UG/L	62	12%	40	328	GA	5	1	0.25 U	0.25 U	0.5 U	0.25 U	1.3 U	0.38 U	0.38 U	0.38 U	0.38 U
1,1-Dichloroethene	UG/L	2.6	11%	36	328	GA	5	0	0.5 J	0.5 J	0.22 U	0.69 J	1.8 J	0.63 J	0.36 U	0.51 J	0.44 J
1,2,4-Trichlorobenzene	UG/L	0	0%	0	327	GA	5	0	0.25 UJ	0.25 U	0.5 U	0.25 U	1.3 U	2.5 U	2.5 U	2.5 UJ	2.5 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0	328	GA	0.04	0	0.44 U	0.44 U	0.88 U	0.44 U	2.2 U	1.1 U	1.1 U	1.1 U	1.1 U
1,2-Dibromoethane	UG/L	0	0%	0	328	GA	0.0006	0	0.25 U	0.25 U	0.5 U	0.25 U	1.3 U	0.44 U	0.44 U	0.44 U	0.44 U
1,2-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.21 U	0.21 U	0.42 U	0.21 U	1.1 U	0.37 U	0.37 U	0.37 U	0.37 U
1,2-Dichloroethane	UG/L	5.6	15%	49	328	GA	0.6	41	0.1 U	0.1 U	0.2 U	0.1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	UG/L	0.29	0%	1	328	GA	1	0	0.13 U	0.13 U	0.26 U	0.13 U	0.65 U	0.67 U	0.67 U	0.67 U	0.67 U
1,3-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.25 U	0.25 U	0.5 U	0.25 U	1.3 U	0.43 U	0.43 U	0.43 U	0.43 U
1,4-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.28 U	0.28 U	0.56 U	0.28 U	1.4 U	0.46 U	0.46 U	0.46 U	0.46 U
Acetone	UG/L	2600	16%	49	315				5 U	5 U	10 UJ	5 U	25 U	7 U	7 U	7 U	7 U
Benzene	UG/L	0.48	2%	5	328	GA	1	0	0.25 U	0.25 U	0.5 U	0.25 U	1.3 U	0.43 U	0.43 U	0.43 U	0.43 U
Bromodichloromethane	UG/L	0	0%	0	328	MCL	80	0	0.25 UJ	0.25 U	0.5 U	0.25 U	1.3 U	0.44 U	0.44 U	0.44 U	0.44 U
Bromoform	UG/L	0	0%	0	328	MCL	80	0	0.5 U	0.5 U	1 U	0.5 U	2.5 U	0.43 UJ	0.43 U	0.43 UJ	0.43 U
Carbon disulfide	UG/L	2.3	0%	1	328				0.6 U	0.6 U	1.2 U	0.6 U	3 U	1 U	1 U	1 U	1 U
Carbon tetrachloride	UG/L	0	0%	0	328	GA	5	0	0.5 U	0.5 U	1 U	0.5 UJ	2.5 U	0.33 U	0.33 U	0.33 U	0.33 U
Chlorobenzene	UG/L	0	0%	0	328	GA	5	0	0.25 U	0.25 U	0.5 U	0.25 U	1.3 U	0.26 U	0.26 U	0.26 U	0.26 U
Chlorodibromomethane	UG/L	0	0%	0	328	MCL	80	0	0.1 U	0.1 U	0.2 U	0.1 U	0.5 U	0.32 UJ	0.32 U	0.32 U	0.32 U
Chloroethane	UG/L	1.1	2%	7	328	GA	5	0	1 U	2 U	4 U	2 U	10 U	2.5 U	2.5 U	2.5 U	2.5 U
Chloroform	UG/L	71	8%	25	328	GA	7	7	0.14 U	0.14 U	0.53 J	0.14 U	0.95 J	0.5 U	0.5 U	0.5 U	0.5 U
Cis-1,2-Dichloroethene	UG/L	820	88%	290	328	GA	5	199	**100**	**110**	**140**	**110**	**150**	**100**	**150**	**95**	**81**
Cis-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	0.11 UJ	0.11 U	0.22 U	0.11 U	0.55 U	0.4 U	0.4 U	0.4 U	0.4 U
Cyclohexane	UG/L	0.3	0%	1	328				0.25 UJ	0.25 U	0.5 U	0.25 U	1.3 U	0.39 U	0.39 U	0.39 U	0.39 U
Dichlorodifluoromethane	UG/L	0.3	0%	1	321	GA	5	0	0.25 U	0.25 U	0.5 U	0.25 U	1.3 U	0.6 U	0.6 U	0.6 U	0.6 U
Ethyl benzene	UG/L	9.2	6%	19	328	GA	5	1	0.11 U	0.11 U	0.22 U	0.11 U	0.55 U	0.33 U	0.33 U	0.33 U	0.33 U
Isopropylbenzene	UG/L	0.1	0%	1	328	GA	5	0	0.1 U	0.1 U	0.2 U	0.1 U	0.5 U	0.35 U	0.35 U	0.35 U	0.35 U
Methyl Acetate	UG/L	6	1%	2	313				0.19 UJ	0.19 U	0.38 U	0.19 U	0.95 U	1.8 U	1.8 U	1.8 U	1.8 U
Methyl bromide	UG/L	2.1	0%	1	322	GA	5	0	0.8 UJ	2 U	4 U	2 UJ	10 U	2.5 U	2.5 U	2.5 U	2.5 U
Methyl butyl ketone	UG/L	0	0%	0	328				1 U	1 U	2 U	1 U	5 U	2 U	2 U	2 U	2 U
Methyl chloride	UG/L	0	0%	0	328	GA	5	0	0.33 U	0.33 U	0.66 U	0.33 U	1.7 U	0.4 U	0.4 U	0.4 U	0.4 U
Methyl cyclohexane	UG/L	0.17	0%	1	328				0.1 U	0.1 U	0.2 U	0.1 U	0.5 U	0.43 U	0.43 U	0.43 U	0.43 U
Methyl ethyl ketone	UG/L	4900	7%	22	321				1 U	1 U	2 U	1 U	5 U	3.4 U	3.4 U	3.4 U	3.4 U
Methyl isobutyl ketone	UG/L	1.9	0%	1	328				1 UJ	1 UJ	2 U	1 U	5 U	2.1 U	2.1 U	2.1 U	2.1 U
Methyl Tertbutyl Ether	UG/L	0	0%	0	328				0.2 U	0.2 U	0.4 U	0.2 U	1 U	0.3 U	0.3 U	0.3 U	0.3 U
Methylene chloride	UG/L	18	4%	12	328	GA	5	7	1 U	1 U	2 U	1 U	5 U	2.5 U	2.5 U	2.5 U	2.5 U
Styrene	UG/L	0	0%	0	328	GA	5	0	0.11 U	0.11 U	0.22 U	0.11 U	0.55 U	0.27 U	0.27 U	0.27 U	0.27 U
Tetrachloroethene	UG/L	27	1%	2	328	GA	5	1	0.15 U	0.15 U	0.3 U	0.15 U	0.75 U	0.74 U	0.74 U	0.74 U	0.74 U
Toluene	UG/L	590	10%	32	328	GA	5	18	0.33 U	0.33 U	0.66 U	0.33 U	**7.1**	0.48 U	0.48 U	0.48 U	0.48 U
Total Xylenes	UG/L	60	1%	2	328	GA	5	1	0.2 U	0.2 U	0.4 U	0.2 U	1 U	0.23 U	0.23 U	0.23 U	0.23 U
Trans-1,2-Dichloroethene	UG/L	22	51%	168	328	GA	5	17	0.33 J	0.46 J	0.4 U	0.73 J	1.8 J	0.57 J	0.9 J	0.5 J	0.37 U
Trans-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	0.21 UJ	0.21 UJ	0.42 U	0.21 U	1.1 U	0.42 U	0.42 U	0.42 U	0.42 U
Trichloroethene	UG/L	3800	68%	223	328	GA	5	104	**280**	**300**	**370**	**190**	**260**	**200 J**	**170**	**170**	**190**
Trichlorofluoromethane	UG/L	0	0%	0	328	GA	5	0	0.25 U	0.25 U	0.5 U	0.25 U	1.3 U	0.42 U	0.42 U	0.42 U	0.42 U
Vinyl chloride	UG/L	180	65%	213	328	GA	2	161	**5.9**	**2.6**	**9.6**	**9.6**	**16**	**6.1**	**11**	**5.5**	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	96%	161	168				0.64	0.5	1.2	1.2	1.1	0.74 J	0.84	0.36	0.018 J
Ethene	UG/L	200	88%	148	168				0.067	0.2 U	0.18 J	0.19 J	0.095 J	0.084 J	0.13 J	0.054 J	0.2 U
Methane	UG/L	23,000	98%	165	168				96	160	1,000	510	1,300	160	440	160	1.7
Sulfate	MG/L	1060	86%	144	168	GA	250	26	29	31	26	23	23	23	22	26	35 *
Total Organic Carbon	MG/L	2050	100%	168	168				1.6	0.89 J	2	1.4	2	0.86 J	1.8	2	1.8

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 10
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Num of Detects Above Standard-1	ASH LANDFILL PT-24 GW ALBW20061 1/2/2007 SA LTM 1 Total	ASH LANDFILL PT-24 GW ALBW20076 3/15/2007 SA LTM 2 Total	ASH LANDFILL PT-24 GW ALBW20090 6/5/2007 SA LTM 3 Total	ASH LANDFILL PT-24 GW ALBW20105 11/13/2007 SA LTM 4 Total	ASH LANDFILL PT-24 GW ALBW20119 6/26/2008 SA LTM 5 Total	ASH LANDFILL PT-24 GW ALBW20134 12/12/2008 SA LTM 6 Total	ASH LANDFILL PT-24 GW ALBW20149 6/2/2009 SA LTM 7 Total	ASH LANDFILL PT-24 GW ALBW20164 12/15/2009 SA LTM 8 Total	ASH LANDFILL PT-24 GW ALBW20179 6/30/2010 SA LTM 9 Total	ASH LANDFILL PT-24 GW ALBW20194 12/17/2010 SA LTM 10 Total
									Value Qual	Value Qual	Value Qual	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	328	GA	5	1	1 U	1 U	1 U	1 U	1 U	0.26 U	0.26 U	0.26 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	0	328	GA	5	0	1 U	1 U	1 U	1 U	1 U	0.21 U	0.21 U	0.21 U	0.18 U	0.18 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	0	328	GA	5	0	1 U	1 U	1 UJ	1 U	1 UJ	0.31 U	0.31 U	0.31 U	0.5 UJ	0.5 U
1,1,2-Trichloroethane	UG/L	0	0%	0	328	GA	1	0	1 U	1 U	1 U	1 U	1 U	0.23 U	0.23 U	0.23 U	0.13 U	0.13 U
1,1-Dichloroethane	UG/L	62	12%	40	328	GA	5	1	0.68 J	1 U	0.75 J	0.56 J	0.69 J	0.75 U	0.75 U	0.38 U	0.54 J	0.54 J
1,1-Dichloroethene	UG/L	2.6	11%	36	328	GA	5	0	1 U	1 U	1 U	1 U	1 U	0.29 U	0.29 U	0.29 U	0.11 U	0.11 U
1,2,4-Trichlorobenzene	UG/L	0	0%	0	327	GA	5	0	1 U	1 U	1 U	1 U	1 U	0.41 U	0.41 U	0.41 U	0.25 U	0.25 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0	328	GA	0.04	0	1 U	1 U	1 U	1 U	1 UJ	1 UJ	1 UJ	0.39 U	0.44 U	0.44 U
1,2-Dibromoethane	UG/L	0	0%	0	328	GA	0.0006	0	1 U	1 U	1 U	1 U	1 U	0.17 U	0.17 U	0.17 U	0.25 U	0.25 U
1,2-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	1 U	1 U	1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	0.21 U	0.21 U
1,2-Dichloroethane	UG/L	5.6	15%	49	328	GA	0.6	41	1 U	1 U	1 U	1 U	1 U	0.21 U	0.21 U	0.21 U	0.1 U	0.1 U
1,2-Dichloropropane	UG/L	0.29	0%	1	328	GA	1	0	1 U	1 U	1 U	1 U	1 U	0.14 U	0.14 U	0.32 U	0.13 U	0.13 U
1,3-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	1 U	1 U	1 U	1 U	1 U	0.16 U	0.16 U	0.36 U	0.25 U	0.25 U
1,4-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	1 U	1 U	1 U	1 U	1 U	0.16 U	0.16 U	0.39 U	0.28 U	0.28 U
Acetone	UG/L	2600	16%	49	315				5 U	5 U	5 U	5 U	5 U	1.3 U	1.3 U	1.3 U	5 U	5 UJ
Benzene	UG/L	0.48	2%	5	328	GA	1	0	1 U	1 U	1 U	1 U	1 U	0.16 U	0.16 U	0.41 U	0.25 U	0.25 U
Bromodichloromethane	UG/L	0	0%	0	328	MCL	80	0	1 U	1 U	1 U	1 U	1 U	0.38 U	0.39 U	0.39 U	0.25 U	0.25 U
Bromoform	UG/L	0	0%	0	328	MCL	80	0	1 U	1 U	1 U	1 U	1 U	0.26 U	0.26 UJ	0.26 UJ	0.5 U	0.5 U
Carbon disulfide	UG/L	2.3	0%	1	328				1 U	1 U	1 U	1 U	1 U	0.19 U	0.19 UJ	0.19 UJ	0.6 U	0.6 U
Carbon tetrachloride	UG/L	0	0%	0	328	GA	5	0	1 U	1 U	1 U	1 U	1 U	0.27 U	0.27 U	0.27 U	0.5 U	0.5 U
Chlorobenzene	UG/L	0	0%	0	328	GA	5	0	1 U	1 U	1 U	1 U	1 U	0.18 U	0.32 U	0.32 U	0.25 U	0.25 U
Chlorodibromomethane	UG/L	0	0%	0	328	MCL	80	0	1 U	1 U	1 U	1 U	1 U	0.32 U	0.32 U	0.32 U	0.1 U	0.1 U
Chloroethane	UG/L	1.1	2%	7	328	GA	5	0	1 U	1 U	1 U	1 U	1 UJ	0.32 U	0.32 U	0.32 UJ	1 U	1 U
Chloroform	UG/L	71	8%	25	328	GA	7	7	1 U	1 U	1 U	1 U	1 U	0.34 U	0.34 U	0.34 U	0.14 U	0.16 J
Cis-1,2-Dichloroethene	UG/L	820	88%	290	328	GA	5	199	**54**	**38**	**60**	**39**	**48**	**34**	**32**	**28**	**33**	**30**
Cis-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	1 U	1 U	1 U	1 U	1 U	0.36 U	0.36 U	0.36 U	0.11 U	0.11 U
Cyclohexane	UG/L	0.3	0%	1	328				1 U	1 U	1 U	1 U	1 U	0.22 U	0.53 U	0.53 U	0.25 U	0.25 U
Dichlorodifluoromethane	UG/L	0.3	0%	1	321	GA	5	0	1 U	1 U	1 U	1 U	1 U	0.28 U	0.29 U	0.29 U	0.25 U	0.25 U
Ethyl benzene	UG/L	9.2	6%	19	328	GA	5	1	1 U	1 U	1 U	1 U	1 U	0.18 U	0.18 U	0.18 U	0.11 U	0.11 U
Isopropylbenzene	UG/L	0.1	0%	1	328	GA	5	0	1 U	1 U	1 U	1 U	1 U	0.19 U	0.19 U	0.19 U	0.1 U	0.1 U
Methyl Acetate	UG/L	6	1%	2	313				1 U	1 UJ	1 U	1 UJ	1 UJ	0.17 U	0.17 UJ	0.5 U	0.19 UJ	0.19 U
Methyl bromide	UG/L	2.1	0%	1	322	GA	5	0	1 U	1 U	1 U	1 U	1 UJ	0.28 U	0.28 U	0.28 U	0.8 UJ	0.8 UJ
Methyl butyl ketone	UG/L	0	0%	0	328				5 U	5 U	5 U	5 UJ	5 UJ	1.2 U	1.2 U	1.2 U	1 UJ	1 U
Methyl chloride	UG/L	0	0%	0	328	GA	5	0	1 U	1 U	1 U	1 U	1 UJ	0.34 U	0.35 U	0.35 UJ	0.33 U	0.33 U
Methyl cyclohexane	UG/L	0.17	0%	1	328				1 U	1 U	1 U	1 U	1 U	0.22 U	0.5 U	0.5 U	0.1 U	0.1 U
Methyl ethyl ketone	UG/L	4900	7%	22	321				5 U	5 U	5 U	5 U	5 UJ	1.3 U	1.3 U	1.3 U	1 U	1 U
Methyl isobutyl ketone	UG/L	1.9	0%	1	328				5 U	5 U	5 U	5 U	5 UJ	0.91 U	0.91 U	0.91 U	1 U	1 U
Methyl Tertbutyl Ether	UG/L	0	0%	0	328				1 U	1 U	1 U	1 U	1 U	0.16 U	0.16 U	0.16 U	0.2 U	0.2 U
Methylene chloride	UG/L	18	4%	12	328	GA	5	7	1 U	1 U	1 U	1 U	1 U	0.44 UJ	0.44 U	0.44 U	1 U	1 U
Styrene	UG/L	0	0%	0	328	GA	5	0	1 U	1 U	1 U	1 U	1 U	0.18 U	0.18 U	0.18 U	0.11 U	0.11 U
Tetrachloroethene	UG/L	27	1%	2	328	GA	5	1	1 U	1 U	1 U	1 U	1 U	0.36 U	0.36 U	0.36 U	0.15 U	0.15 U
Toluene	UG/L	590	10%	32	328	GA	5	18	1 U	1 U	1 U	1 U	1 U	0.51 U	0.51 U	0.51 U	0.33 U	0.33 U
Total Xylenes	UG/L	60	1%	2	328	GA	5	1	3 U	3 U	3 U	3 U	3 U	0.93 U	0.66 U	0.66 U	0.2 U	0.2 U
Trans-1,2-Dichloroethene	UG/L	22	51%	168	328	GA	5	17	0.86 J	0.81 J	1.6	1 U	1.1	0.36 J	0.83 J	0.61 J	1.1	1.4
Trans-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	1 U	1 U	1 U	1 U	1 U	0.37 U	0.37 U	0.37 U	0.21 U	0.21 U
Trichloroethene	UG/L	3800	68%	223	328	GA	5	104	4	2.8	3.1	3.8	2.4	2.2	1.7	1.7	0.39 J	0.53 J
Trichlorofluoromethane	UG/L	0	0%	0	328	GA	5	0	1 U	1 U	1 UJ	1 U	1 UJ	0.15 U	0.15 U	0.15 U	0.25 U	0.25 U
Vinyl chloride	UG/L	180	65%	213	328	GA	2	161	0.6 J	1 U	**2.6**	1 U	1.9	0.26 J	2	1.6	**3.8**	**7.7**
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	96%	161	168													
Ethene	UG/L	200	88%	148	168													
Methane	UG/L	23,000	98%	165	168													
Sulfate	MG/L	1060	86%	144	168	GA	250	26										
Total Organic Carbon	MG/L	2050	100%	168	168													

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 10
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Num of Detects Above Standard-1	ASH LANDFILL PT-24 GW ALBW20209 7/21/2011 SA LTM 11 Total Value Qual	ASH LANDFILL PT-24 GW ALBW20224 12/13/2011 SA LTM 12 Total Value Qual	ASH LANDFILL PT-24 GW ALBW20239 6/19/2012 SA LTM 13 Total Value Qual	ASH LANDFILL PT-24 GW ALBW20254 12/12/2012 SA LTM 14 Total Value Qual	ASH LANDFILL PT-24 GW ALBW20267 7/9/2013 SA LTM 15 Total Value Qual	ASH LANDFILL PT-24 GW ALBW20282 12/11/2013 SA LTM 16 Total Value Qual	ASH LANDFILL PT-24 GW ALBW20298 6/20/2014 SA LTM 17 Total Value Qual	ASH LANDFILL PT-24 GW ALBW20314 12/19/2014 SA LTM 18 Total Value Qual	ASH LANDFILL PT-24 GW ALBW20330 6/6/2015 SA LTM 19 Total Value Qual
Volatile Organic Compounds																	
1,1,1-Trichloroethane	UG/L	15	2%	5	328	GA	5	1	0.5 U	0.5 U	0.5 UJ	0.5 U	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	328	GA	5	0	0.18 U	0.18 U	0.18 U	0.18 U	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	328	GA	5	0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.36 U
1,1,2-Trichloroethane	UG/L	0	0%	0	328	GA	1	0	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.33 U
1,1-Dichloroethane	UG/L	62	12%	40	328	GA	5	1	0.78 J	0.48 J	0.57 J	0.32 J	0.51 J	0.52 J	0.25 U	0.29 J	0.41 J
1,1-Dichloroethene	UG/L	2.6	11%	36	328	GA	5	0	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.36 U
1,2,4-Trichlorobenzene	UG/L	0	0%	0	327	GA	5	0	0.25 U	0.25 U	0.25 U	0.25 U	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	328	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	0.44 U	1.1 U
1,2-Dibromoethane	UG/L	0	0%	0	328	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	0.25 U	0.44 U
1,2-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.37 U
1,2-Dichloroethane	UG/L	5.6	15%	49	328	GA	0.6	41	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U
1,2-Dichloropropane	UG/L	0.29	0%	1	328	GA	1	0	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.67 U
1,3-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.43 U
1,4-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.46 U
Acetone	UG/L	2600	16%	49	315				5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	7 U
Benzene	UG/L	0.48	2%	5	328	GA	1	0	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.43 U
Bromodichloromethane	UG/L	0	0%	0	328	MCL	80	0	0.25 U	0.25 U	0.25 UJ	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.44 U
Bromoform	UG/L	0	0%	0	328	MCL	80	0	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.43 UJ
Carbon disulfide	UG/L	2.3	0%	1	328				0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	1 U
Carbon tetrachloride	UG/L	0	0%	0	328	GA	5	0	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.33 U
Chlorobenzene	UG/L	0	0%	0	328	GA	5	0	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.26 U
Chlorodibromomethane	UG/L	0	0%	0	328	MCL	80	0	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.32 UJ
Chloroethane	UG/L	1.1	2%	7	328	GA	5	0	1 U	1 UJ	1 UJ	1 U	2 U	2 U	2 U	2 U	2.5 U
Chloroform	UG/L	71	8%	25	328	GA	7	7	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.5 U
Cis-1,2-Dichloroethene	UG/L	820	88%	290	328	GA	5	199	**37**	**21**	**30**	**18**	**24**	**23**	**23**	**13**	**18**
Cis-1,3-Dichloropropene	UG/L	0	0%	0	328	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	0.11 U	0.4 U
Cyclohexane	UG/L	0.3	0%	1	328				0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.39 U
Dichlorodifluoromethane	UG/L	0.3	0%	1	321	GA	5	0	0.25 U	0.25 UJ	0.25 U	0.25 U	0.25 U	0.25 UJ	0.25 U	0.25 U	0.6 U
Ethyl benzene	UG/L	9.2	6%	19	328	GA	5	1	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.33 U
Isopropylbenzene	UG/L	0.1	0%	1	328	GA	5	0	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.35 U
Methyl Acetate	UG/L	6	1%	2	313				0.19 U	0.19 U	0.19 UR	0.19 UJ	0.19 U	0.19 U	0.19 U	0.19 U	1.8 U
Methyl bromide	UG/L	2.1	0%	1	322	GA	5	0	0.8 UJ	0.8 U	0.8 UJ	0.8 UJ	2 U	2 UJ	2 UJ	2 U	2.5 U
Methyl butyl ketone	UG/L	0	0%	0	328				1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	2 U
Methyl chloride	UG/L	0	0%	0	328	GA	5	0	0.33 UJ	0.33 UJ	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.4 U
Methyl cyclohexane	UG/L	0.17	0%	1	328				0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.43 U
Methyl ethyl ketone	UG/L	4900	7%	22	321				1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	3.4 U
Methyl isobutyl ketone	UG/L	1.9	0%	1	328				1 U	1 U	1 UJ	1 U	1 UJ	1 U	1 U	1 U	2.1 U
Methyl Tertbutyl Ether	UG/L	0	0%	0	328				0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.3 U
Methylene chloride	UG/L	18	4%	12	328	GA	5	7	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2.5 U
Styrene	UG/L	0	0%	0	328	GA	5	0	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.27 U
Tetrachloroethene	UG/L	27	1%	2	328	GA	5	1	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.74 U
Toluene	UG/L	590	10%	32	328	GA	5	18	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.48 U
Total Xylenes	UG/L	60	1%	2	328	GA	5	1	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.23 U
Trans-1,2-Dichloroethene	UG/L	22	51%	168	328	GA	5	17	1.4	0.63 J	0.84 J	0.38 J	0.8 J	0.86 J	1	0.53 J	1.2
Trans-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	0.21 U	0.21 U	0.21 UJ	0.21 U	0.21 UJ	0.21 UJ	0.21 U	0.21 U	0.42 U
Trichloroethene	UG/L	3800	68%	223	328	GA	5	104	0.38 J	0.82 J	0.87 J	1.1	1.6	1.3	1.3	0.85 J	0.48 J
Trichlorofluoromethane	UG/L	0	0%	0	328	GA	5	0	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.42 U
Vinyl chloride	UG/L	180	65%	213	328	GA	2	161	**7.9**	**2.9**	**2.8**	0.18 U	0.83 J	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	96%	161	168												
Ethene	UG/L	200	88%	148	168												
Methane	UG/L	23,000	98%	165	168												
Sulfate	MG/L	1060	86%	144	168	GA	250	26									
Total Organic Carbon	MG/L	2050	100%	168	168												

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 10
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Num of Detects Above Standard-1	ASH LANDFILL PT-24	ASH LANDFILL PT-24	ASH LANDFILL PT-24	ASH LANDFILL MW-56	ASH LANDFILL MW-56	ASH LANDFILL MW-56	ASH LANDFILL MW-56	ASH LANDFILL MW-56	ASH LANDFILL MW-56
Area									ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID									PT-24	PT-24	PT-24	MW-56	MW-56	MW-56	MW-56	MW-56	MW-56
Matrix									GW	GW	GW	GW	GW	GW	GW	GW	GW
Sample ID									ALBW20346	ALBW20362	ALBW20378	ALBW20072	ALBW20101	ALBW20124	ALBW20139	ALBW20154	ALBW20169
Sample Date									12/18/2015	6/15/2016	12/9/2016	1/4/2007	6/6/2007	6/26/2008	12/11/2008	6/4/2009	12/18/2009
QC Type									SA	SA	SA	SA	SA	SA	SA	SA	SA
Study ID									LTM	LTM	LTM	LTM	LTM	LTM	LTM	LTM	LTM
Sample Round									20	21	22	1	3	5	6	7	8
Filtered									Total	Total	Total	Total	Total	Total	Total	Total	Total
Volatile Organic Compounds									Value Qual	Value Qual	Value Qual	Value Qual	Value Qual	Value Qual	Value Qual	Value Qual	Value Qual
1,1,1-Trichloroethane	UG/L	15	2%	5	328	GA	5	1	0.37 U	0.37 U	0.37 U	1 U	1 U	1 U	0.26 UJ	0.26 U	0.26 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	0	328	GA	5	0	0.62 U	0.62 U	0.62 U	1 U	1 U	1 U	0.21 U	0.21 U	0.21 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	0	328	GA	5	0	0.36 U	0.36 U	0.36 U	1 U	1 UJ	1 UJ	0.31 U	0.31 U	0.31 UJ
1,1,2-Trichloroethane	UG/L	0	0%	0	328	GA	1	0	0.33 U	0.33 U	0.33 U	1 U	1 U	1 U	0.23 U	0.23 U	0.23 U
1,1-Dichloroethane	UG/L	62	12%	40	328	GA	5	1	0.38 U	0.42 J	0.38 U	1 U	1 U	1 U	0.75 U	0.75 U	0.38 U
1,1-Dichloroethene	UG/L	2.6	11%	36	328	GA	5	0	0.36 U	0.36 U	0.36 U	1 U	1 U	1 U	0.29 U	0.29 U	0.29 U
1,2,4-Trichlorobenzene	UG/L	0	0%	0	327	GA	5	0	2.5 U	2.5 UJ	2.5 U	1 U	1 U	1 U	0.41 U	0.41 U	0.41 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0	328	GA	0.04	0	1.1 U	1.1 U	1.1 U	1 U	1 U	1 UJ	1 UJ	1 U	0.39 U
1,2-Dibromoethane	UG/L	0	0%	0	328	GA	0.0006	0	0.44 U	0.44 U	0.44 U	1 U	1 U	1 U	0.17 U	0.17 U	0.17 U
1,2-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.37 U	0.37 U	0.37 U	1 U	1 U	1 U	0.2 U	0.2 U	0.2 U
1,2-Dichloroethane	UG/L	5.6	15%	49	328	GA	0.6	41	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.21 U	0.21 U	0.21 U
1,2-Dichloropropane	UG/L	0.29	0%	1	328	GA	1	0	0.67 U	0.67 U	0.67 U	1 U	1 U	1 U	0.14 U	0.14 U	0.32 U
1,3-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.43 U	0.43 U	0.43 U	1 U	1 U	1 U	0.16 U	0.16 U	0.36 U
1,4-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.46 U	0.46 U	0.46 U	1 U	1 U	1 U	0.16 U	0.16 U	0.39 U
Acetone	UG/L	2600	16%	49	315				7 UR	7 U	7 U	5 U	5 U	5 U	1.3 U	1.3 UJ	1.3 U
Benzene	UG/L	0.48	2%	5	328	GA	1	0	0.43 U	0.43 U	0.43 U	1 U	1 U	1 U	0.16 U	0.16 U	0.41 U
Bromodichloromethane	UG/L	0	0%	0	328	MCL	80	0	0.44 U	0.44 U	0.44 U	1 U	1 U	1 U	0.38 U	0.39 U	0.39 U
Bromoform	UG/L	0	0%	0	328	MCL	80	0	0.43 U	0.43 UJ	0.43 U	1 U	1 U	1 U	0.26 U	0.26 U	0.26 U
Carbon disulfide	UG/L	2.3	0%	1	328				1 U	1 U	1 U	1 U	1 U	1 U	0.19 U	0.19 U	0.19 U
Carbon tetrachloride	UG/L	0	0%	0	328	GA	5	0	0.33 U	0.33 U	0.33 U	1 U	1 U	1 U	0.27 UJ	0.27 U	0.27 U
Chlorobenzene	UG/L	0	0%	0	328	GA	5	0	0.26 U	0.26 U	0.26 U	1 U	1 U	1 U	0.18 U	0.32 U	0.32 U
Chlorodibromomethane	UG/L	0	0%	0	328	MCL	80	0	0.32 U	0.32 U	0.32 U	1 U	1 U	1 U	0.32 U	0.32 U	0.32 U
Chloroethane	UG/L	1.1	2%	7	328	GA	5	0	2.5 U	2.5 U	2.5 U	1 U	1 U	1 UJ	0.32 U	0.32 U	0.32 UJ
Chloroform	UG/L	71	8%	25	328	GA	7	7	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.34 U	0.34 U	0.34 U
Cis-1,2-Dichloroethene	UG/L	820	88%	290	328	GA	5	199	**18**	**18**	**12**	1.2	1.7	1.3	0.4 J	1	0.56 J
Cis-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	0.4 U	0.4 U	0.4 U	1 U	1 U	1 U	0.36 U	0.36 U	0.36 U
Cyclohexane	UG/L	0.3	0%	1	328				0.39 U	0.39 U	0.39 U	1 U	1 U	1 U	0.22 U	0.53 U	0.53 U
Dichlorodifluoromethane	UG/L	0.3	0%	1	321	GA	5	0	0.6 U	0.6 U	0.6 U*	1 U	1 U	1 U	0.28 UJ	0.29 U	0.29 U
Ethyl benzene	UG/L	9.2	6%	19	328	GA	5	1	0.33 U	0.33 U	0.33 U	1 U	1 U	1 U	0.18 U	0.18 U	0.18 U
Isopropylbenzene	UG/L	0.1	0%	1	328	GA	5	0	0.35 U	0.35 U	0.35 U	1 U	1 U	1 U	0.19 U	0.19 U	0.19 U
Methyl Acetate	UG/L	6	1%	2	313				1.8 U	1.8 U	1.8 U	1 U	1 U	1 UJ	0.17 U	0.17 U	0.5 U
Methyl bromide	UG/L	2.1	0%	1	322	GA	5	0	2.5 UJ	2.5 U	2.5 U	1 U	1 U	1 UJ	0.28 U	0.28 U	0.28 UJ
Methyl butyl ketone	UG/L	0	0%	0	328				2 U	2 U	2 U	5 U	5 U	5 UJ	1.2 U	1.2 U	1.2 U
Methyl chloride	UG/L	0	0%	0	328	GA	5	0	0.4 U	0.4 U	0.4 U	1 U	1 U	1 UJ	0.34 U	0.35 U	0.35 U
Methyl cyclohexane	UG/L	0.17	0%	1	328				0.43 U	0.43 U	0.43 U	1 U	1 U	1 U	0.22 U	0.5 U	0.5 U
Methyl ethyl ketone	UG/L	4900	7%	22	321				3.4 UR	3.4 U	3.4 U	5 U	5 U	5 UJ	1.3 U	1.3 U	1.3 U
Methyl isobutyl ketone	UG/L	1.9	0%	1	328				2.1 U	2.1 U	2.1 U	5 U	5 U	5 UJ	0.91 U	0.91 U	0.91 U
Methyl Tertbutyl Ether	UG/L	0	0%	0	328				0.3 U	0.3 U	0.3 U	1 U	1 U	1 U	0.16 U	0.16 U	0.16 U
Methylene chloride	UG/L	18	4%	12	328	GA	5	7	2.5 U	2.5 U	2.5 U	1 U	1 U	1 U	0.44 UJ	0.44 U	0.44 U
Styrene	UG/L	0	0%	0	328	GA	5	0	0.27 U	0.27 U	0.27 U	1 U	1 U	1 U	0.18 U	0.18 U	0.18 U
Tetrachloroethene	UG/L	27	1%	2	328	GA	5	1	0.74 U	0.74 U	0.74 U	1 U	1 U	1 U	0.36 U	0.36 U	0.36 U
Toluene	UG/L	590	10%	32	328	GA	5	18	0.48 U	0.48 U	0.48 U	1 U	1 U	1 U	0.51 U	0.51 U	0.51 U
Total Xylenes	UG/L	60	1%	2	328	GA	5	1	0.23 U	0.23 U	0.23 U	3 U	3 U	3 U	0.93 U	0.66 U	0.66 U
Trans-1,2-Dichloroethene	UG/L	22	51%	168	328	GA	5	17	0.75 J	1.1	0.45 J	1 U	1 U	1 U	0.13 U	0.13 U	0.42 U
Trans-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	0.42 U	0.42 U	0.42 U	1 U	1 U	1 U	0.37 U	0.37 U	0.37 U
Trichloroethene	UG/L	3800	68%	223	328	GA	5	104	0.74 J	0.48 U	1.2	1 U	1 U	1 U	0.33 J	0.18 U	0.46 U
Trichlorofluoromethane	UG/L	0	0%	0	328	GA	5	0	0.42 U	0.42 U	0.42 U	1 U	1 UJ	1 UJ	0.15 UJ	0.15 U	0.15 UJ
Vinyl chloride	UG/L	180	65%	213	328	GA	2	161	1.2	**3.6**	0.5 U	1 U	1 U	1 U	0.24 U	0.24 U	0.24 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	96%	161	168												
Ethene	UG/L	200	88%	148	168												
Methane	UG/L	23,000	98%	165	168												
Sulfate	MG/L	1060	86%	144	168	GA	250	26									
Total Organic Carbon	MG/L	2050	100%	168	168												

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 10
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Num of Detects Above Standard-1	ASH LANDFILL MW-56 GW ALBW20184 7/1/2010 SA LTM 9 Total Value Qual	ASH LANDFILL MW-56 GW ALBW20199 12/19/2010 SA LTM 10 Total Value Qual	ASH LANDFILL MW-56 GW ALBW20214 10/4/2011 SA LTM 11 Total Value Qual	ASH LANDFILL MW-56 GW ALBW20229 12/12/2011 SA LTM 12 Total Value Qual	ASH LANDFILL MW-56 GW ALBW20244 6/18/2012 SA LTM 13 Total Value Qual	ASH LANDFILL MW-56 GW ALBW20259 12/14/2012 SA LTM 14 Total Value Qual	ASH LANDFILL MW-56 GW ALBW20272 7/9/2013 SA LTM 15 Total Value Qual	ASH LANDFILL MW-56 GW ALBW20287 12/11/2013 SA LTM 16 Total Value Qual	ASH LANDFILL MW-56 GW ALBW20303 6/22/2014 SA LTM 17 Total Value Qual
Volatile Organic Compounds																	
1,1,1-Trichloroethane	UG/L	15	2%	5	328	GA	5	1	0.5 U	0.5 U	0.5 U	0.5 U	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	328	GA	5	0	0.18 U	0.18 U	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	328	GA	5	0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ
1,1,2-Trichloroethane	UG/L	0	0%	0	328	GA	1	0	0.13 U	0.13 U	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%	40	328	GA	5	1	0.25 U	0.25 U	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%	36	328	GA	5	0	0.11 U	0.11 U	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	327	GA	5	0	0.25 U	0.25 U	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	328	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	0.44 U	0.44 U
1,2-Dibromoethane	UG/L	0	0%	0	328	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	0.25 U	0.25 U
1,2-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.21 U	0.21 U	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%	49	328	GA	0.6	41	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.1 U	0.1 U
1,2-Dichloropropane	UG/L	0.29	0%	1	328	GA	1	0	0.13 U	0.13 U	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	328	GA	3	0	0.25 U	0.25 U	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	328	GA	3	0	0.28 U	0.28 U	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%	49	315				5 U	5 UJ	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U
Benzene	UG/L	0.48	2%	5	328	GA	1	0	0.25 U	0.25 U	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	328	MCL	80	0	0.25 U	0.25 U	0.25 U	0.25 U	0.25 UJ	0.25 U	0.25 U	0.25 U	0.25 U
Bromoform	UG/L	0	0%	0	328	MCL	80	0	0.5 U	0.5 U	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	2.3	0%	1	328				0.6 U	0.6 U	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	328	GA	5	0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	UG/L	0	0%	0	328	GA	5	0	0.25 U	0.25 U	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	328	MCL	80	0	0.1 U	0.1 U	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	328	GA	5	0	1 U	1 UJ	1 U	1 U	1 UJ	1 U	2 U	2 U	2 UJ
Chloroform	UG/L	71	8%	25	328	GA	7	7	0.14 U	0.24 J	1	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%	290	328	GA	5	199	0.61 J	0.86 J	2.3	0.95 J	2.2	0.85 J	2.2	1.7	0.98 J
Cis-1,3-Dichloropropene	UG/L	0	0%	0	328	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	0.11 U	0.11 U
Cyclohexane	UG/L	0.3	0%	1	328				0.25 U	0.25 U	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	321	GA	5	0	0.25 UJ	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 UJ	0.25 U
Ethyl benzene	UG/L	9.2	6%	19	328	GA	5	1	0.11 U	0.11 U	0.11 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	328	GA	5	0	0.1 U	0.1 U	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	313				0.19 U	0.19 U	0.19 U	0.19 U	0.19 UR	0.19 UJ	0.19 U	0.19 U	0.19 U
Methyl bromide	UG/L	2.1	0%	1	322	GA	5	0	0.8 U	0.8 U	0.8 U	0.8 U	0.8 UJ	0.8 UJ	2 U	2 UJ	2 U
Methyl butyl ketone	UG/L	0	0%	0	328				1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U
Methyl chloride	UG/L	0	0%	0	328	GA	5	0	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Methyl cyclohexane	UG/L	0.17	0%	1	328				0.1 U	0.1 U	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	7%	22	321				1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U
Methyl isobutyl ketone	UG/L	1.9	0%	1	328				1 U	1 U	1 U	1 U	1 UJ	1 U	1 UJ	1 U	1 U
Methyl Tertbutyl Ether	UG/L	0	0%	0	328				0.2 U	0.2 U	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	328	GA	5	7	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	UG/L	0	0%	0	328	GA	5	0	0.11 U	0.11 U	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	328	GA	5	1	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
Toluene	UG/L	590	10%	32	328	GA	5	18	0.33 U	0.33 U	0.33 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	328	GA	5	1	0.2 U	0.2 U	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	51%	168	328	GA	5	17	0.2 U	0.2 U	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	328	GA	0.4	0	0.21 U	0.21 U	0.21 U	0.21 U	0.21 UJ	0.21 U	0.21 UJ	0.21 UJ	0.21 U
Trichloroethene	UG/L	3800	68%	223	328	GA	5	104	0.13 U	0.13 U	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	328	GA	5	0	0.25 U	0.25 U	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%	213	328	GA	2	161	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 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	96%	161	168												
Ethene	UG/L	200	88%	148	168												
Methane	UG/L	23,000	98%	165	168												
Sulfate	MG/L	1060	86%	144	168	GA	250	26									
Total Organic Carbon	MG/L	2050	100%	168	168												

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 10
Seneca Army Depot Activity

Parameter	Unit	Max Detected Value	Frequency of Detects	Num of Detects	Num of Analyses	Source Criteria	Action Level	Num of Detects Above Standard-1	ASH LANDFILL MW-56 GW ALBW20319 12/19/2014 SA LTM 18 Total	ASH LANDFILL MW-56 GW ALBW20335 6/6/2015 SA LTM 19 Total	ASH LANDFILL MW-56 GW ALBW20351 12/19/2015 SA LTM 20 Total	ASH LANDFILL MW-56 GW ALBW20367 6/17/2016 SA LTM 21 Total	ASH LANDFILL MW-56 GW ALBW20383 12/10/2016 SA LTM 22 Total
									Value Qual	Value Qual	Value Qual	Value Qual	Value Qual
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/L	15	2%	5	328	GA	5	1	0.5 U	0.37 U	0.37 U	0.37 U	0.37 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	0	328	GA	5	0	0.18 U	0.62 U	0.62 U	0.62 U	0.62 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	0	328	GA	5	0	0.5 U	0.36 U	0.36 U	0.36 U	0.36 U
1,1,2-Trichloroethane	UG/L	0	0%	0	328	GA	1	0	0.13 U	0.33 U	0.33 U	0.33 U	0.33 U
1,1-Dichloroethane	UG/L	62	12%	40	328	GA	5	1	0.25 U	0.38 U	0.38 U	0.38 U	0.38 U
1,1-Dichloroethene	UG/L	2.6	11%	36	328	GA	5	0	0.11 U	0.36 U	0.36 U	0.36 U	0.36 U
1,2,4-Trichlorobenzene	UG/L	0	0%	0	327	GA	5	0	0.25 U	2.5 U	2.5 U	2.5 U	2.5 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0	328	GA	0.04	0	0.44 U	1.1 U	1.1 U	1.1 U	1.1 U
1,2-Dibromoethane	UG/L	0	0%	0	328	GA	0.0006	0	0.25 U	0.44 U	0.44 U	0.44 U	0.44 U
1,2-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.21 U	0.37 U	0.37 U	0.37 U	0.37 U
1,2-Dichloroethane	UG/L	5.6	15%	49	328	GA	0.6	41	0.1 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	UG/L	0.29	0%	1	328	GA	1	0	0.13 U	0.67 U	0.67 U	0.67 U	0.67 U
1,3-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.25 U	0.43 U	0.43 U	0.43 U	0.43 U
1,4-Dichlorobenzene	UG/L	0	0%	0	328	GA	3	0	0.28 U	0.46 U	0.46 U	0.46 U	0.46 U
Acetone	UG/L	2600	16%	49	315				5 U	7 U	7 UR	7 U	7 U
Benzene	UG/L	0.48	2%	5	328	GA	1	0	0.25 U	0.43 U	0.43 U	0.43 U	0.43 U
Bromodichloromethane	UG/L	0	0%	0	328	MCL	80	0	0.25 U	0.44 U	0.44 U	0.44 U	0.44 U
Bromoform	UG/L	0	0%	0	328	MCL	80	0	0.5 U	0.43 UJ	0.43 U	0.43 U	0.43 U
Carbon disulfide	UG/L	2.3	0%	1	328				0.6 U	1 U	1 U	2.3	1 U
Carbon tetrachloride	UG/L	0	0%	0	328	GA	5	0	0.5 U	0.33 U	0.33 U	0.33 U	0.33 U
Chlorobenzene	UG/L	0	0%	0	328	GA	5	0	0.25 U	0.26 U	0.26 U	0.26 U	0.26 U
Chlorodibromomethane	UG/L	0	0%	0	328	MCL	80	0	0.1 U	0.32 UJ	0.32 U	0.32 U	0.32 U
Chloroethane	UG/L	1.1	2%	7	328	GA	5	0	2 U	2.5 U	2.5 U	2.5 U	2.5 U
Chloroform	UG/L	71	8%	25	328	GA	7	7	0.14 U	0.5 U	0.5 U	0.5 U	0.5 U
Cis-1,2-Dichloroethene	UG/L	820	88%	290	328	GA	5	199	0.89 J	1.1	1.4	2.8	2.1
Cis-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	0.11 U	0.4 U	0.4 U	0.4 U	0.4 U
Cyclohexane	UG/L	0.3	0%	1	328				0.25 U	0.39 U	0.39 U	0.39 U	0.39 U
Dichlorodifluoromethane	UG/L	0.3	0%	1	321	GA	5	0	0.25 U	0.6 U	0.6 U	0.6 U	0.6 U*
Ethyl benzene	UG/L	9.2	6%	19	328	GA	5	1	0.11 U	0.33 U	0.33 U	0.33 U	0.33 U
Isopropylbenzene	UG/L	0.1	0%	1	328	GA	5	0	0.1 U	0.35 U	0.35 U	0.35 U	0.35 U
Methyl Acetate	UG/L	6	1%	2	313				0.19 U	1.8 U	1.8 U	1.8 U	1.8 U
Methyl bromide	UG/L	2.1	0%	1	322	GA	5	0	2 U	2.5 U	2.5 UJ	2.5 UJ	2.5 U
Methyl butyl ketone	UG/L	0	0%	0	328				1 U	2 U	2 U	2 U	2 U
Methyl chloride	UG/L	0	0%	0	328	GA	5	0	0.33 U	0.4 U	0.4 U	0.4 U	0.4 U
Methyl cyclohexane	UG/L	0.17	0%	1	328				0.1 U	0.43 U	0.43 U	0.43 U	0.43 U
Methyl ethyl ketone	UG/L	4900	7%	22	321				1 U	3.4 U	3.4 UR	3.4 U	3.4 U
Methyl isobutyl ketone	UG/L	1.9	0%	1	328				1 U	2.1 U	2.1 U	2.1 U	2.1 U
Methyl Tertbutyl Ether	UG/L	0	0%	0	328				0.2 U	0.3 U	0.3 U	0.3 U	0.3 U
Methylene chloride	UG/L	18	4%	12	328	GA	5	7	1 U	2.5 U	2.5 U	2.5 U	2.5 U
Styrene	UG/L	0	0%	0	328	GA	5	0	0.11 U	0.27 U	0.27 U	0.27 U	0.27 U
Tetrachloroethene	UG/L	27	1%	2	328	GA	5	1	0.15 U	0.74 U	0.74 U	0.74 U	0.74 U
Toluene	UG/L	590	10%	32	328	GA	5	18	0.33 U	0.48 U	0.48 U	0.48 U	0.48 U
Total Xylenes	UG/L	60	1%	2	328	GA	5	1	0.2 U	0.23 U	0.23 U	0.23 U	0.23 U
Trans-1,2-Dichloroethene	UG/L	22	51%	168	328	GA	5	17	0.2 U	0.37 U	0.37 U	0.37 U	0.37 U
Trans-1,3-Dichloropropene	UG/L	0	0%	0	328	GA	0.4	0	0.21 U	0.42 U	0.42 U	0.42 U	0.42 U
Trichloroethene	UG/L	3800	68%	223	328	GA	5	104	0.13 U	0.48 UJ	0.48 U	0.48 U	0.48 U
Trichlorofluoromethane	UG/L	0	0%	0	328	GA	5	0	0.25 U	0.42 U	0.42 U	0.42 U	0.42 U
Vinyl chloride	UG/L	180	65%	213	328	GA	2	161	0.18 U	0.5 U	0.5 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	96%	161	168								
Ethene	UG/L	200	88%	148	168								
Methane	UG/L	23,000	98%	165	168								
Sulfate	MG/L	1060	86%	144	168	GA	250	26					
Total Organic Carbon	MG/L	2050	100%	168	168								

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 C

REGRESSION PLOTS

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

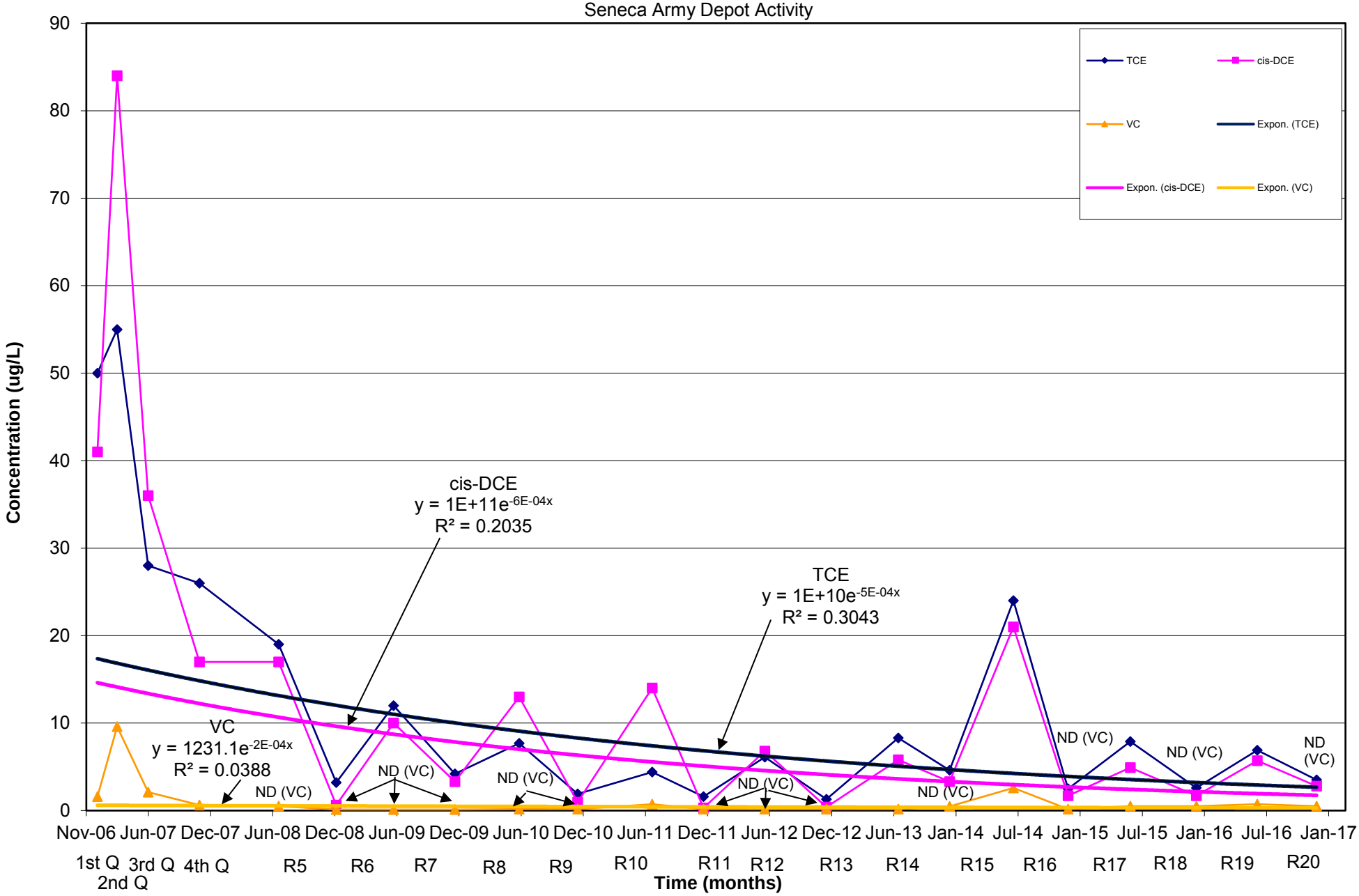

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Figure C-2
Regression Plot of Well Concentrations At MWT-26
Ash Landfill Annual Report
Seneca Army Depot Activity

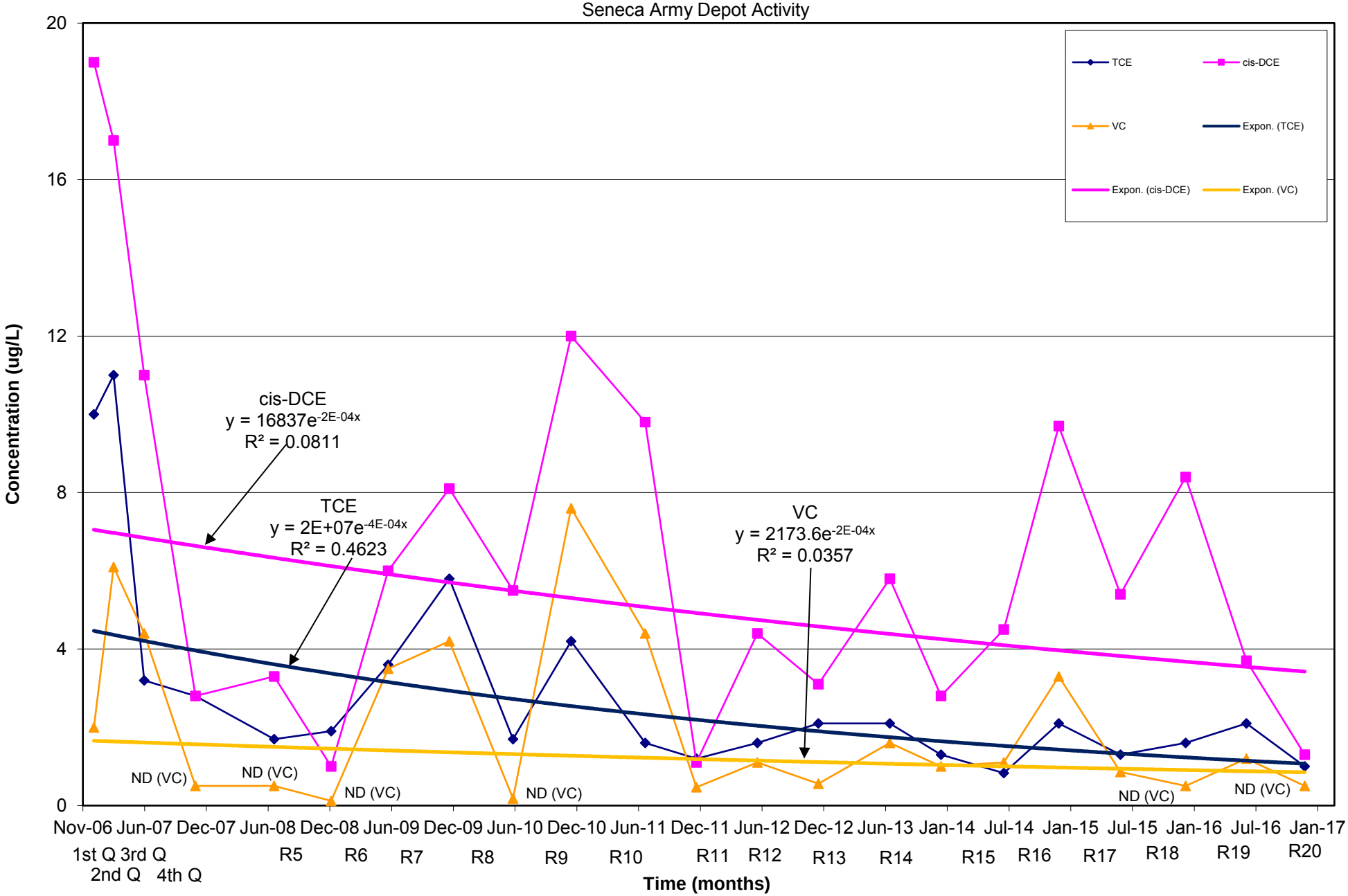

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Figure C-3
Regression Plot of Well Concentrations At MWT-27
Ash Landfill Annual Report
Seneca Army Depot Activity

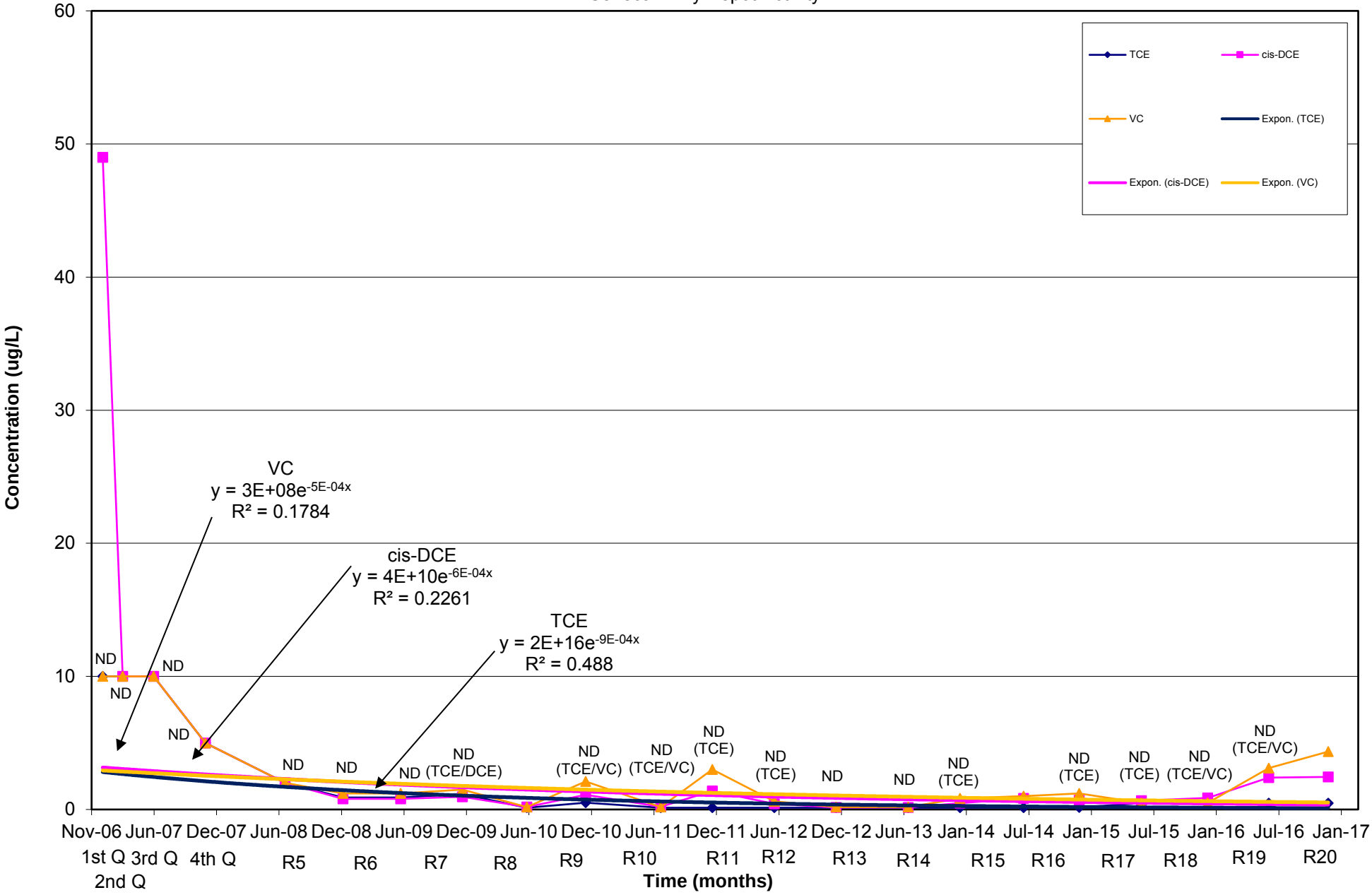

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Figure C-4
Regression Plot of Well Concentrations At MWT-28
Ash Landfill Annual Report
Seneca Army Depot Activity

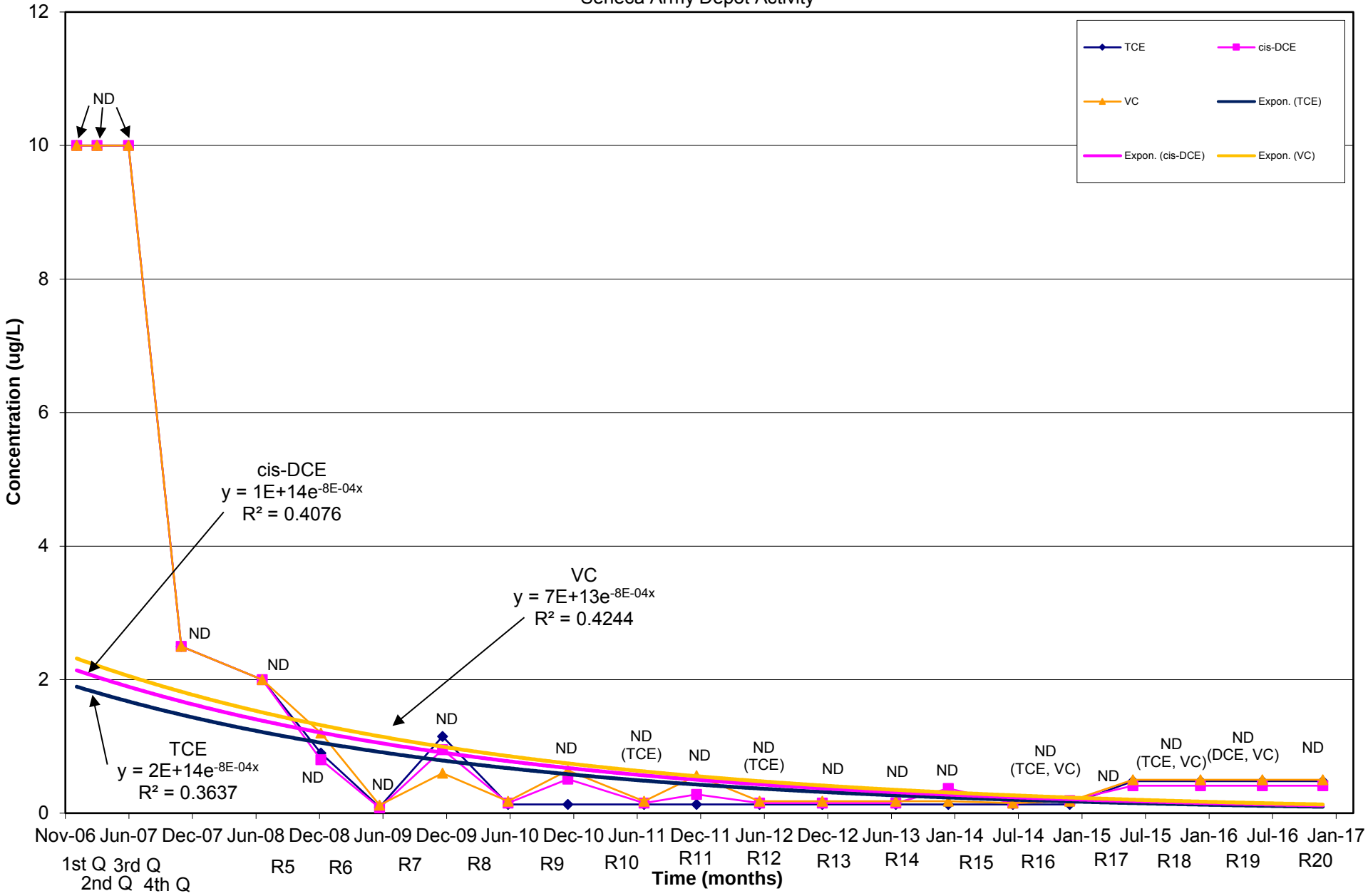

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Figure C-5
Regression Plot of Well Concentrations At MWT-29
Ash Landfill Annual Report
Seneca Army Depot Activity

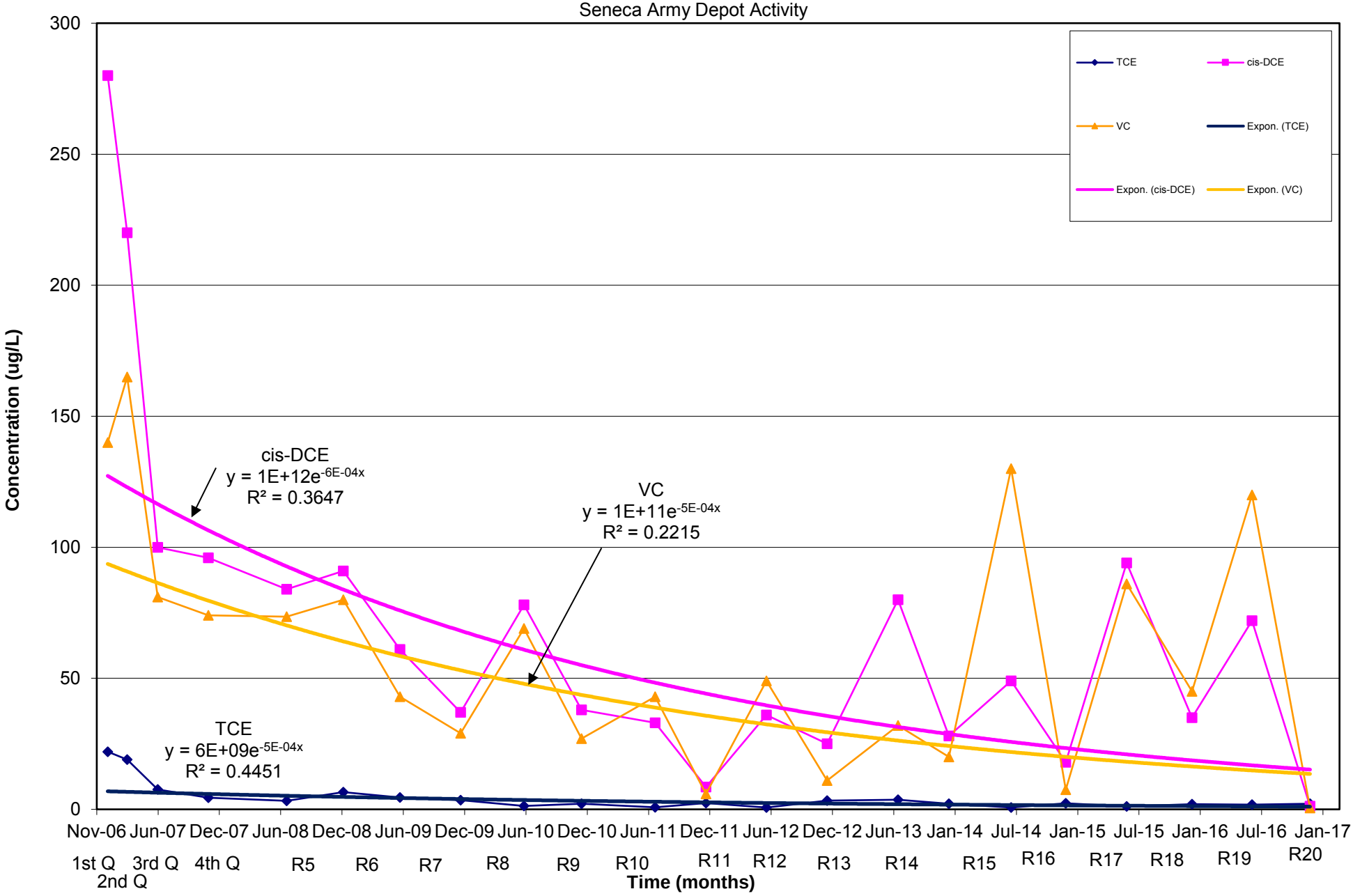

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Figure C-6
Regression Plot of Well Concentrations At MWT-22
Ash Landfill Annual Report
Seneca Army Depot Activity

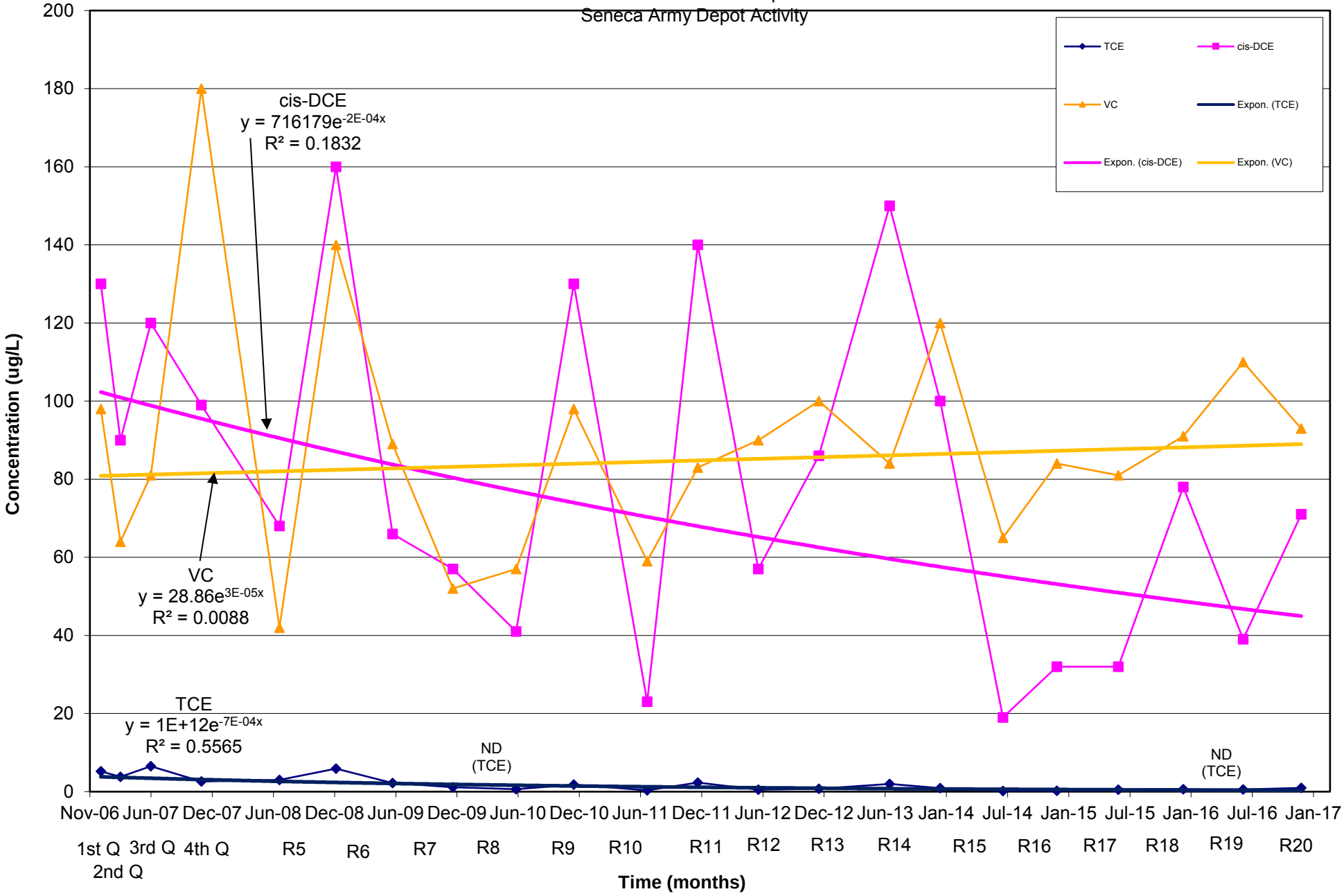

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Figure C-7
Regression Plot of Well Concentrations At PT-22
Ash Landfill Annual Report
Seneca Army Depot Activity

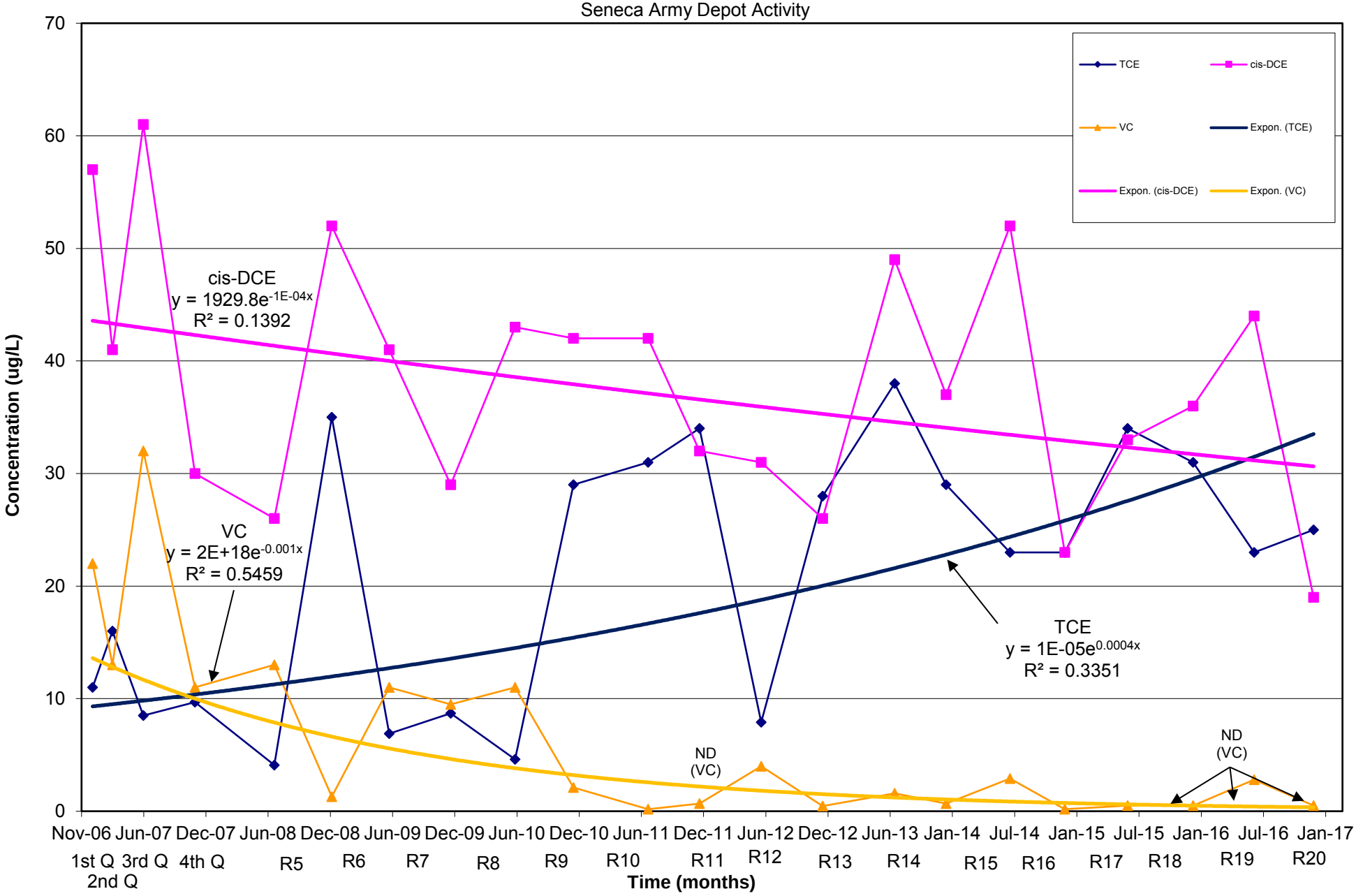

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Figure C-8
Regression Plot of Well Concentrations At MWT-23
Ash Landfill Annual Report
Seneca Army Depot Activity

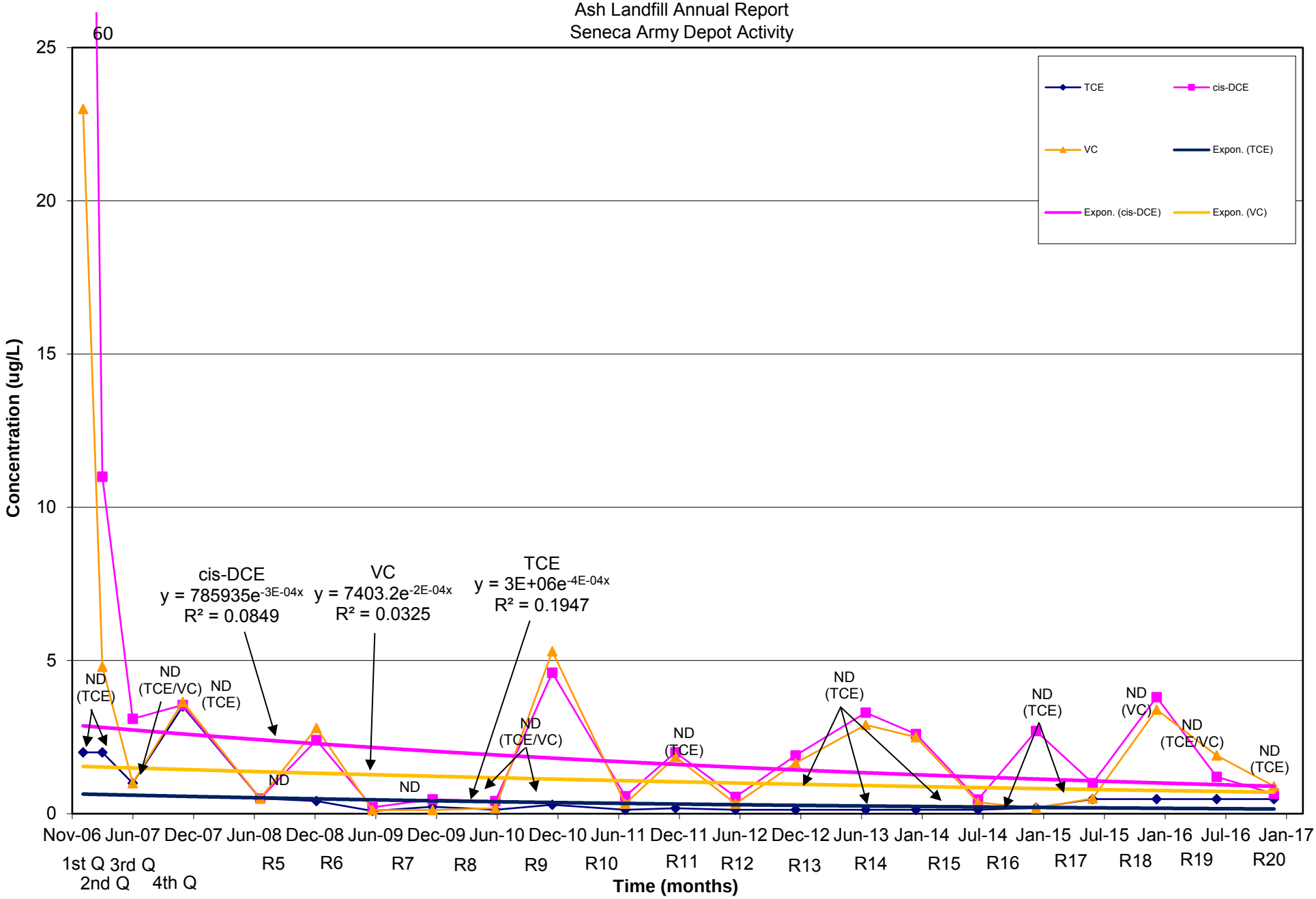

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Figure C-9
Regression Plot of Well Concentrations At MWT-24
Ash Landfill Annual Report
Seneca Army Depot Activity

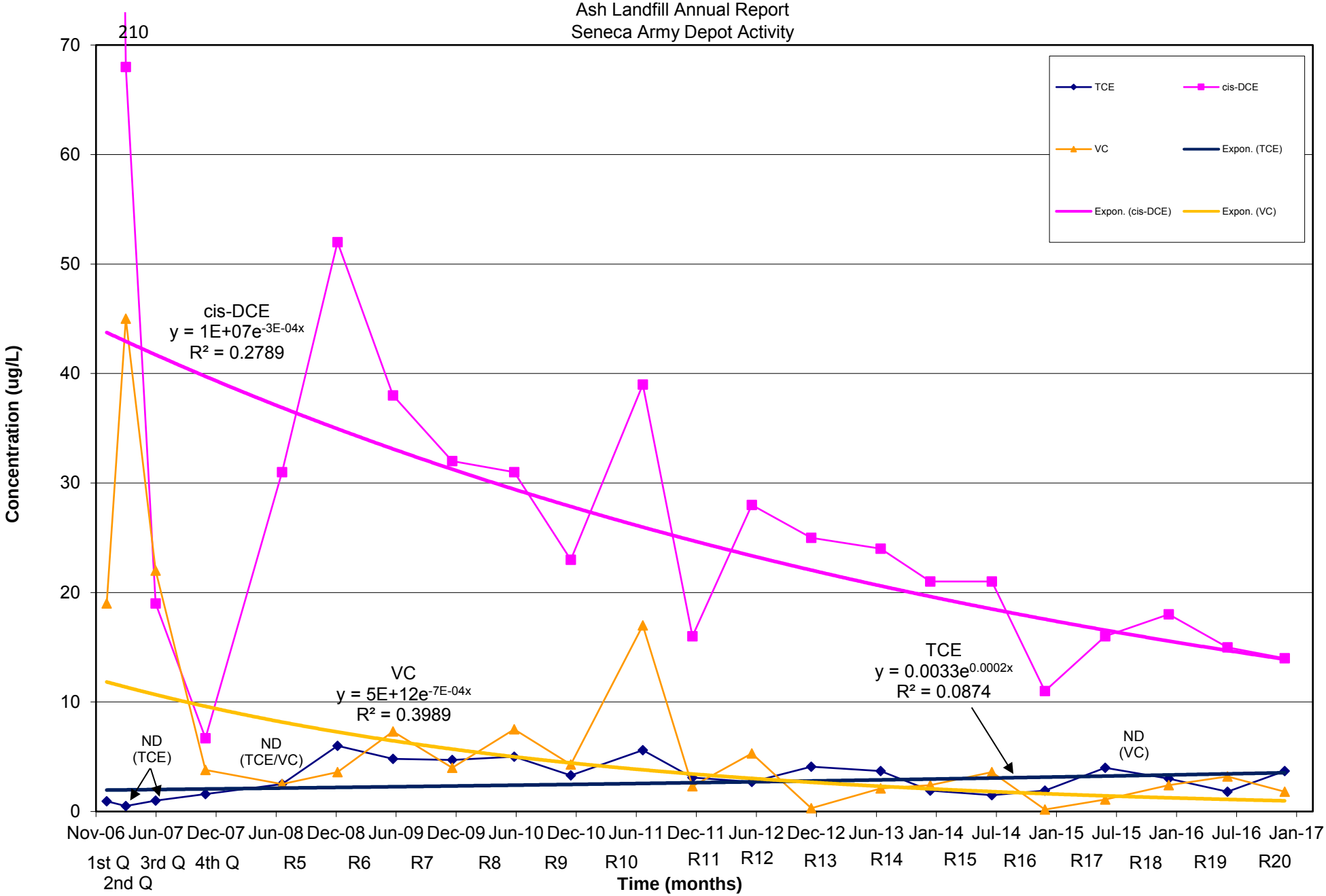

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Figure C-10
Regression Plot of Well Comcentrations At PT-24
Ash Landfill Annual Report
Seneca Army Depot Activity

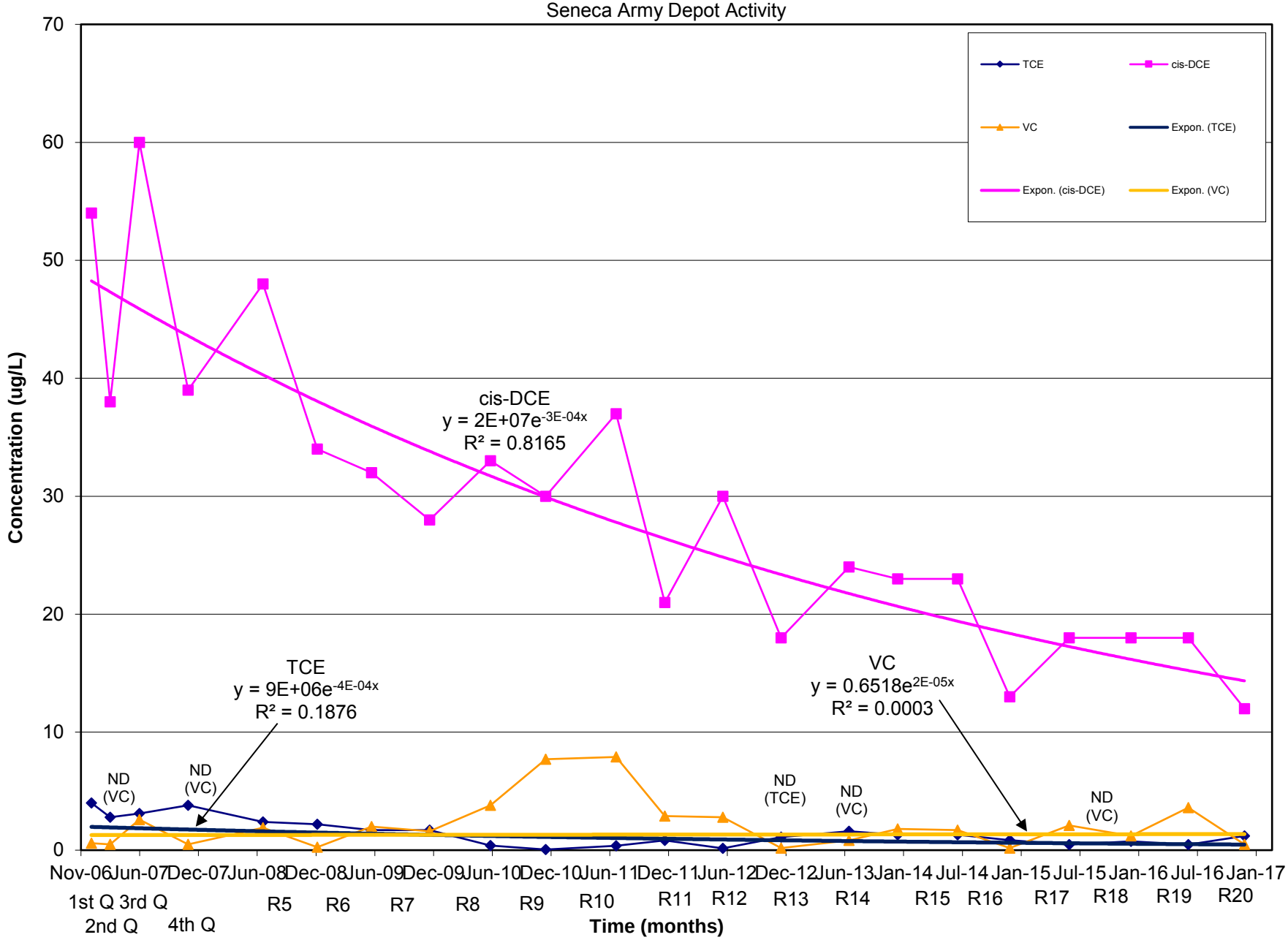

Figure C-11
Regression Plot of Well Concentrations At PT-18A
Ash Landfill Annual Report
Seneca Army Depot Activity

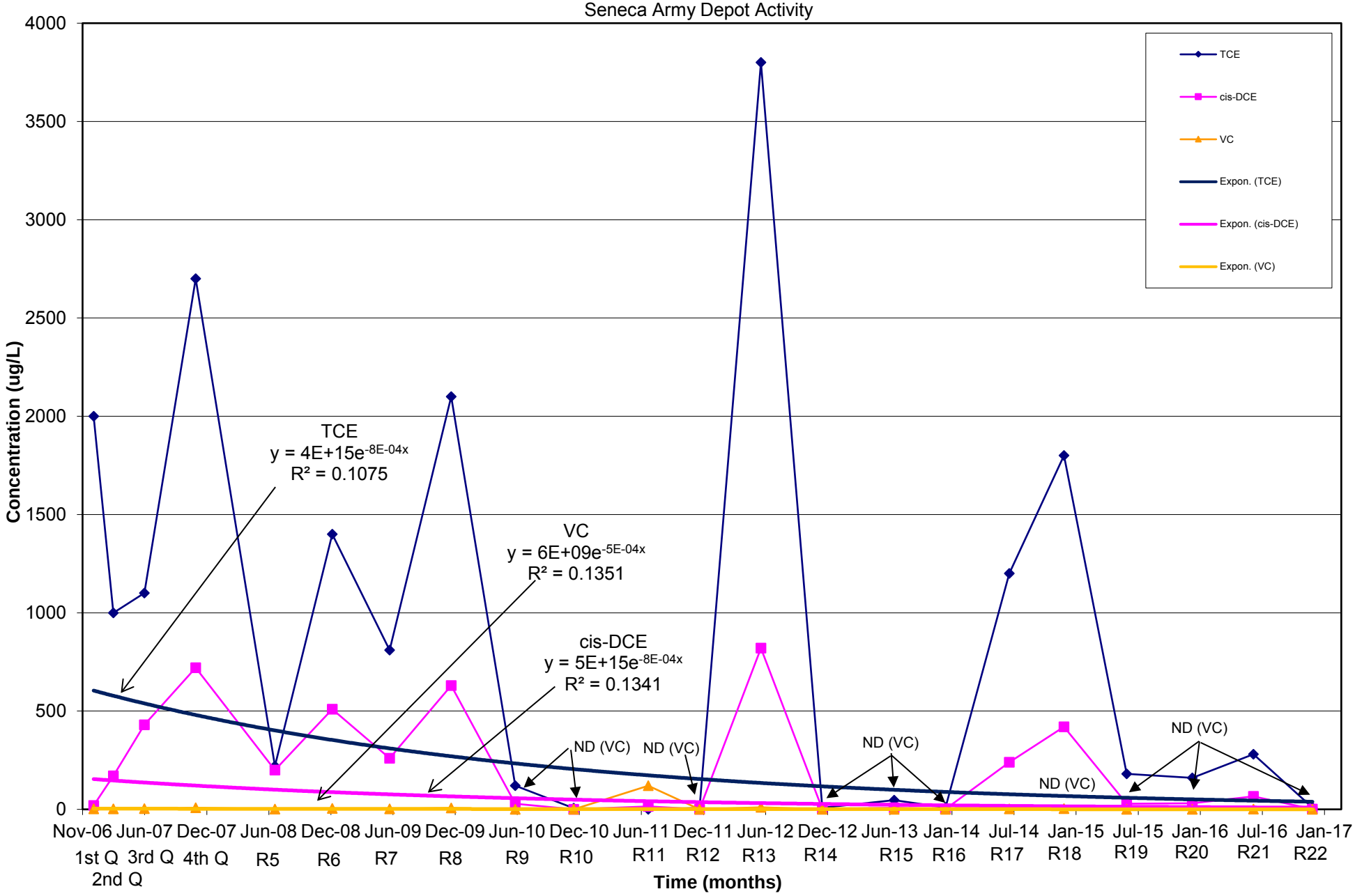

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Figure C-12
Regression Plot of Well Concentrations At PT-17
Ash Landfill Annual Report
Seneca Army Depot Activity

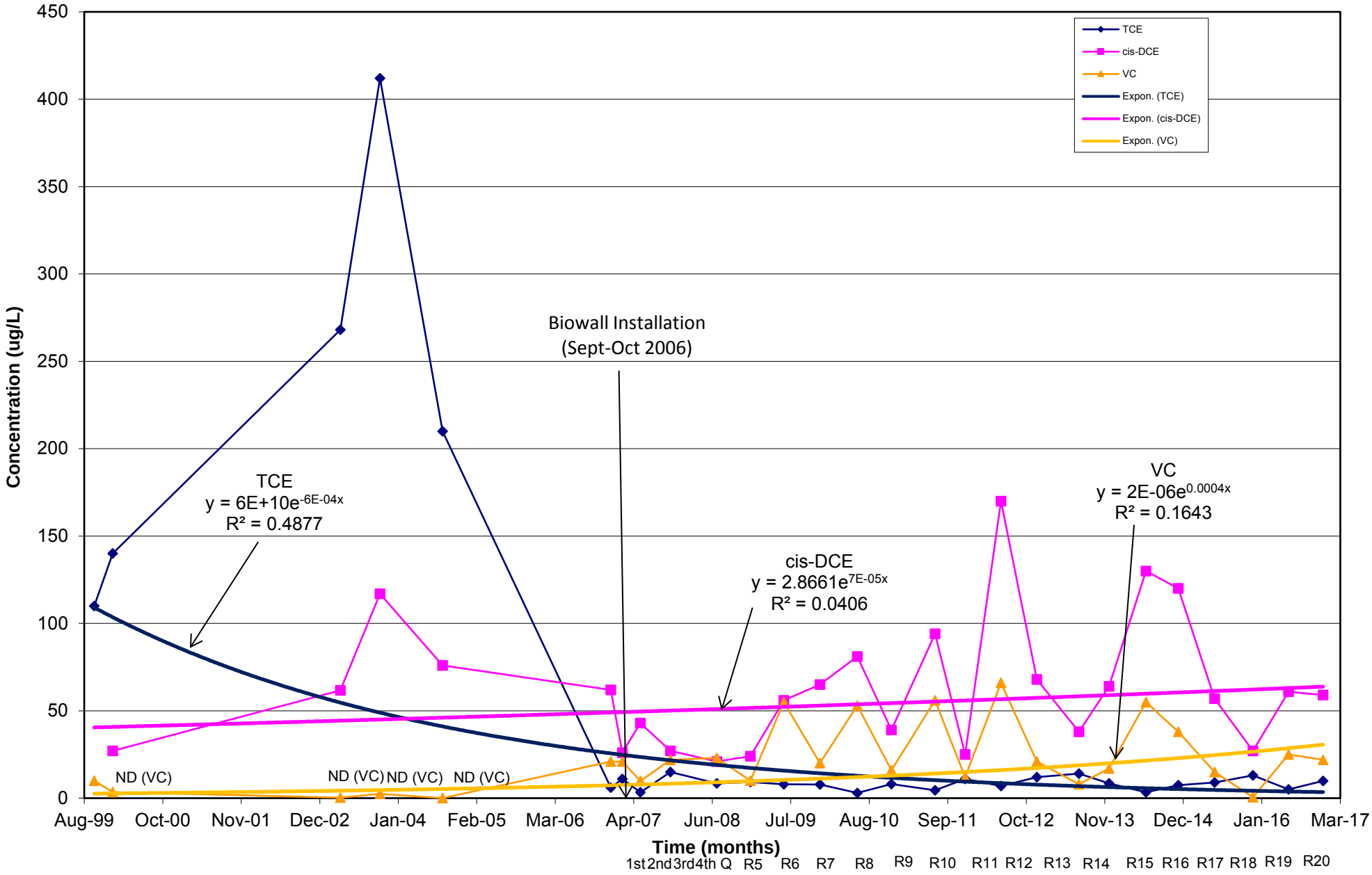

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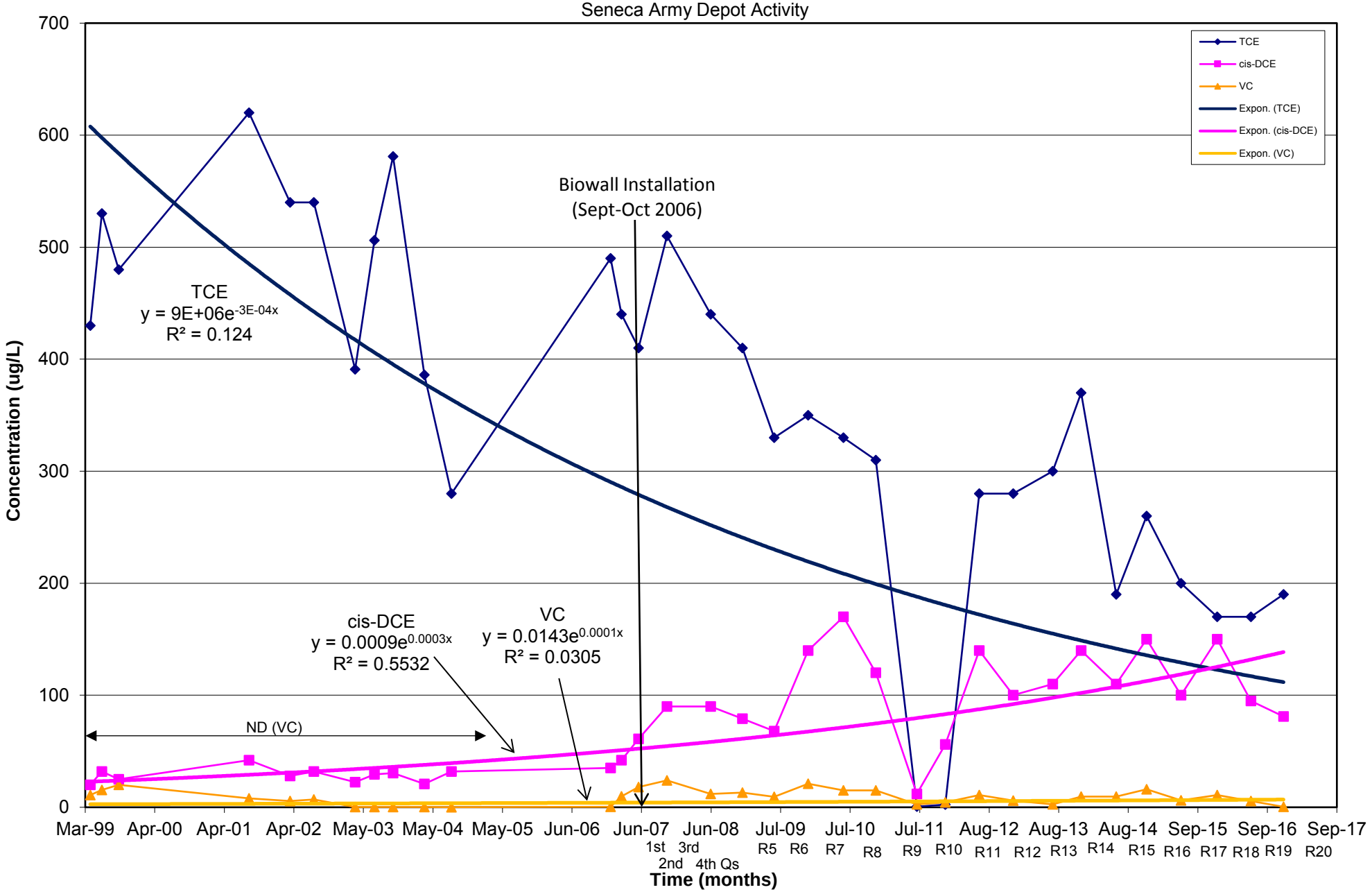
Figure C-13
Regression Plot of Well Concentrations At MWT-7
Ash Landfill Annual Report
Seneca Army Depot Activity



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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

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

Table of Contents

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 3.5º C and 4.7º 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.

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

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.
¤	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.

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.

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.

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

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

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

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

Date Collected: 06/05/15 13:08
Date Received: 06/06/15 10:12

Lab Sample ID: 680-113295-2

Matrix: Water

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

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

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

Date Collected: 06/05/15 11:15
Date Received: 06/06/15 10:12

Lab Sample ID: 680-113295-3

Matrix: Water

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

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

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*
Toluene-d8 (Surr)	*105*		*70 - 130*		*06/14/15 14:39*	*1*
1,2-Dichloroethane-d4 (Surr)	*90*		*70 - 130*		*06/14/15 14:39*	*1*
Dibromofluoromethane (Surr)	*103*		*70 - 130*		*06/14/15 14:39*	*1*
4-Bromofluorobenzene (Surr)	*89*		*70 - 130*		*06/14/15 14:39*	*1*

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

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

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

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

Date Collected: 06/04/15 16:25
Date Received: 06/06/15 10:12

Lab Sample ID: 680-113295-5

Matrix: Water

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

Client Sample ID: ALBW20334

Date Collected: 06/04/15 16:25
Date Received: 06/06/15 10:12

Lab Sample ID: 680-113295-5

Matrix: Water

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

Date Collected: 06/04/15 13:06
Date Received: 06/06/15 10:12

Lab Sample ID: 680-113295-6

Matrix: Water

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

Client Sample ID: ALBW20336

Date Collected: 06/04/15 13:06
Date Received: 06/06/15 10:12

Lab Sample ID: 680-113295-6

Matrix: Water

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*
Toluene-d8 (Surr)	*106*		*70 - 130*		*06/14/15 15:42*	*1*
1,2-Dichloroethane-d4 (Surr)	*90*		*70 - 130*		*06/14/15 15:42*	*1*
Dibromofluoromethane (Surr)	*102*		*70 - 130*		*06/14/15 15:42*	*1*
4-Bromofluorobenzene (Surr)	*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

Date Collected: 06/04/15 12:25
Date Received: 06/06/15 10:12

Lab Sample ID: 680-113295-7

Matrix: Water

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

Client Sample ID: ALBW20337

Date Collected: 06/04/15 12:25
Date Received: 06/06/15 10:12

Lab Sample ID: 680-113295-7

Matrix: Water

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 ID: ALBW20337

Date Collected: 06/04/15 12:25
Date Received: 06/06/15 10:12

Lab Sample ID: 680-113295-7
Matrix: Water

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

Date Collected: 06/03/15 15:40
Date Received: 06/06/15 10:12

Lab Sample ID: 680-113295-8
Matrix: Water

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

Client Sample ID: ALBW20338

Date Collected: 06/03/15 15:40
Date Received: 06/06/15 10:12

Lab Sample ID: 680-113295-8

Matrix: Water

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

Date Collected: 06/03/15 14:22
Date Received: 06/06/15 10:12

Lab Sample ID: 680-113295-9

Matrix: Water

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
1,1,2,2-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

Client Sample ID: ALBW20339

Date Collected: 06/03/15 14:22
Date Received: 06/06/15 10:12

Lab Sample ID: 680-113295-9
Matrix: Water

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

Date Collected: 06/03/15 14:31
Date Received: 06/06/15 10:12

Lab Sample ID: 680-113295-12
Matrix: Water

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

Client Sample ID: ALBW20340
Date Collected: 06/03/15 14:31
Date Received: 06/06/15 10:12

Lab Sample ID: 680-113295-12
Matrix: Water

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*

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

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

Client Sample ID: ALBW00123
Date Collected: 06/05/15 15:29
Date Received: 06/06/15 10:12

Lab Sample ID: 680-113295-14
Matrix: Water

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 ID: ALBW00043
Date Collected: 06/05/15 16:10
Date Received: 06/06/15 10:12

Lab Sample ID: 680-113295-15
Matrix: Water

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 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

Client Sample ID: ALBW20328

Date Collected: 06/06/15 13:43
Date Received: 06/09/15 09:34

Lab Sample ID: 680-113338-1

Matrix: Water

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*
Toluene-d8 (Surr)	*106*		*70 - 130*		*06/14/15 12:32*	*1*
1,2-Dichloroethane-d4 (Surr)	*89*		*70 - 130*		*06/14/15 12:32*	*1*
Dibromofluoromethane (Surr)	*103*		*70 - 130*		*06/14/15 12:32*	*1*
4-Bromofluorobenzene (Surr)	*92*		*70 - 130*		*06/14/15 12:32*	*1*

Client Sample ID: ALBW20329

Date Collected: 06/06/15 16:00
Date Received: 06/09/15 09:34

Lab Sample ID: 680-113338-2

Matrix: Water

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
1,1,2,2-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

Client Sample ID: ALBW20329

Date Collected: 06/06/15 16:00
Date Received: 06/09/15 09:34

Lab Sample ID: 680-113338-2
Matrix: Water

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*
Toluene-d8 (Surr)	*105*		*70 - 130*		*06/14/15 12:53*	*1*
1,2-Dichloroethane-d4 (Surr)	*89*		*70 - 130*		*06/14/15 12:53*	*1*
Dibromofluoromethane (Surr)	*101*		*70 - 130*		*06/14/15 12:53*	*1*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*		*06/14/15 12:53*	*1*

Client Sample ID: ALBW20330

Date Collected: 06/06/15 13:50
Date Received: 06/09/15 09:34

Lab Sample ID: 680-113338-3
Matrix: Water

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

Client Sample ID: ALBW20330

Date Collected: 06/06/15 13:50
Date Received: 06/09/15 09:34

Lab Sample ID: 680-113338-3

Matrix: Water

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*
Toluene-d8 (Surr)	*107*		*70 - 130*		*06/14/15 13:14*	*1*
1,2-Dichloroethane-d4 (Surr)	*88*		*70 - 130*		*06/14/15 13:14*	*1*
Dibromofluoromethane (Surr)	*102*		*70 - 130*		*06/14/15 13:14*	*1*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*		*06/14/15 13:14*	*1*

Client Sample ID: ALBW20335

Date Collected: 06/06/15 11:00
Date Received: 06/09/15 09:34

Lab Sample ID: 680-113338-4

Matrix: Water

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

Client Sample ID: ALBW20335
Date Collected: 06/06/15 11:00
Date Received: 06/09/15 09:34

Lab Sample ID: 680-113338-4
Matrix: Water

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*

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

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 ID: ALBW00044
Date Collected: 06/06/15 17:46
Date Received: 06/09/15 09:34

Lab Sample ID: 680-113338-5
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		70 - 130		06/15/15 16:38	1
1,2-Dichloroethane-d4 (Surr)	100		70 - 130		06/15/15 16:38	1
Dibromofluoromethane (Surr)	100		70 - 130		06/15/15 16:38	1
4-Bromofluorobenzene (Surr)	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)			
		TOL	12DCE	DBFM	BFB
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)	(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)

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

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

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
1,1,2,2-Tetrachloroethane	50.0	53.8		ug/L		108	72 - 128	4	20
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

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*	*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

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
1,1,2,2-Tetrachloroethane	ND		50.0	52.9		ug/L		106	72 - 128	1	20

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

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

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

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
1,1,2,2-Tetrachloroethane	50.0	54.3		ug/L		109	72 - 128
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

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

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*	*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
1,1,2,2-Tetrachloroethane	ND		1.0	0.62	ug/L			06/15/15 16:16	1

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

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

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

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*	*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

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

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

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

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	

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

Date Collected: 06/04/15 16:25
Date Received: 06/06/15 10:12

Lab Sample ID: 680-113295-5

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 15:21	JD1	TAL SAV
	Instrument ID: CMSO2									

Client Sample ID: ALBW20336

Date Collected: 06/04/15 13:06
Date Received: 06/06/15 10:12

Lab Sample ID: 680-113295-6

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 15:42	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

Date Collected: 06/04/15 12:25
Date Received: 06/06/15 10:12

Lab Sample ID: 680-113295-7

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 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

Date Collected: 06/03/15 15:40
Date Received: 06/06/15 10:12

Lab Sample ID: 680-113295-8

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 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									

Client Sample ID: ALBW20339

Date Collected: 06/03/15 14:22
Date Received: 06/06/15 10:12

Lab Sample ID: 680-113295-9

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 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

Date Collected: 06/03/15 14:31
Date Received: 06/06/15 10:12

Lab Sample ID: 680-113295-12

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 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

Date Collected: 06/03/15 12:40
Date Received: 06/06/15 10:12

Lab Sample ID: 680-113295-13

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 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

Date Collected: 06/05/15 15:29
Date Received: 06/06/15 10:12

Lab Sample ID: 680-113295-14

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 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									

Client Sample ID: ALBW00043
Date Collected: 06/05/15 16:10
Date Received: 06/06/15 10:12

Lab Sample ID: 680-113295-15
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 18:11	JD1	TAL SAV
	Instrument ID: CMSO2									

Client Sample ID: ALBW20328
Date Collected: 06/06/15 13:43
Date Received: 06/09/15 09:34

Lab Sample ID: 680-113338-1
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 12:32	JD1	TAL SAV
	Instrument ID: CMSO2									

Client Sample ID: ALBW20329
Date Collected: 06/06/15 16:00
Date Received: 06/09/15 09:34

Lab Sample ID: 680-113338-2
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 12:53	JD1	TAL SAV
	Instrument ID: CMSO2									

Client Sample ID: ALBW20330
Date Collected: 06/06/15 13:50
Date Received: 06/09/15 09:34

Lab Sample ID: 680-113338-3
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 13:14	JD1	TAL SAV
	Instrument ID: CMSO2									

Client Sample ID: ALBW20335
Date Collected: 06/06/15 11:00
Date Received: 06/09/15 09:34

Lab Sample ID: 680-113338-4
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 13:35	JD1	TAL SAV
	Instrument ID: CMSO2									

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

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									

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

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 REFERENCE/NAME: Ash Landfill Long Term Monitoring	PROJECT NO.: 748662-03300	Project State: NY
LAB PROJECT MANAGER: Linda Wolfe	P.O. 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:		

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:

SAMPLED ON DATE	SAMPLED ON TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	Sample Information	SAMPLE TYPE	FIELD FILTERED	MATRIX	Method 8260B - VOCs	Method 9060A - TOC	EPA 300.1 - sulfate	REMARKS
								1	1	8	
								NUMBER OF CONTAINERS SUBMITTED			
6/5/2015	1041	ALBW20327			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 #.**
6/5/2015	1308	ALBW20331			N	GW		3	3	1	
6/5/2015	1115	ALBW20332			N	GW		3			
6/5/2015	1350	ALBW20333			N	GW		3			
6/4/2015	1625	ALBW20334			N	GW		3			
6/4/2015	1306	ALBW20336			N	GW		3	3	1	
6/4/2015	1225	ALBW20337			N	GW		3	3	1	
6/3/2015	1540	ALBW20338			N	GW		3	3	1	Preservative
6/3/2015	1422	ALBW20339			N	GW		3	3	1	1 HCl
6/3/2015	1422	ALBW20339MS			N	GW		3	3	1	
6/3/2015	1422	ALBW20339MSD			N	GW		3	3	1	8 Ice

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
	6/5/15	1638						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY. (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES NO	CUSTODY SEAL NO.	LABORATORY REMARKS:
Barnda	060615	1012	8	680-113295	3.0 (CF) 3.5c

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

PAGE 2 OF 2

PROJECT & CLIENT INFORMATION		Project State
PROJECT REFERENCE/NAME: Ash Landfill Long Term Monitoring	PROJECT NO.: 748662-03300	NY
LAB PROJECT MANAGER: Linda Wolfe	P.O 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:		

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:

SAMPLED ON DATE	SAMPLED ON TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	Sample Information	SAMPLE TYPE	FIELD FILTERED	MATRIX	REQUIRED ANALYSES: Method 8260B - VOCs	Method 9060A - TOC	EPA 300.1 - sulfate								REMARKS
								1	1	8								
								NUMBER OF CONTAINERS SUBMITTED										
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	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
	6/5/15	1638						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	LABORATORY REMARKS:
	06/06/15	1012	YES NO	6801132955	3.0(CF)3.5°c

FCU036:12.20.00:2

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 REFERENCE/NAME: Ash Landfill Long Term Monitoring	PROJECT NO.: 748662-03300	Project State: NY
LAB PROJECT MANAGER: Linda Wolfe	P.O. 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:		

PAGE 1 OF 1

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:

SAMPLED ON DATE	SAMPLED ON TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID		SAMPLE TYPE	FIELD FILTERED	MATRIX	Method 8260B - VOCs	Method 9060A - TOC	EPA 300.1 - sulfate	REMARKS
								1	1	8	NUMBER OF CONTAINERS SUBMITTED
6/6/2015	1343	ALBW20328			N	GW		3			1.Run straight sample analysis (without dilution) for every sample. 2.Use ALBW20339 as QA/QC sample for all analyses.
6/6/2015	1600	ALBW20329			N	GW		3			
6/6/2015	1350	ALBW20330			N	GW		3			
6/6/2015	1100	ALBW20335			N	GW		3			
6/6/2015	1746	ALBW00044			N	GW		2			
											Preservative
											1 HCl
											8 Ice

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
	6/8/15	926			
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

680-113338 Chain of Custody

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	LABORATORY REMARKS:
	6/9/15	0934	YES NO	680-113338	4.2 / 4.7 °C

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6/25/2015

Original - Return to Laboratory with Sample(s)

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 </= 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 <6mm (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 </= 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 <6mm (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

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

CERTIFICATE OF ANALYSIS

Pace Analytical Energy Services, LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

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).

Pace Analytical Energy Services, LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

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

Pace Analytical Energy Services, LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

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.

Pace Analytical Energy Services, LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

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	

Pace Analytical Energy Services, LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

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	

Pace Analytical Energy Services, LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

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	D1

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Fax: (412) 826-3433

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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Phone: (412) 826-5245
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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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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 Quanitation 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

Chain of Custody Documents

WO 15779

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

15779

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

PROJECT & CLIENT INFORMATION		Project State
PROJECT REFERENCE/NAME Ash Landfill Long Term Monitoring	PROJECT NO. 748662-03300	NY
LAB PROJECT MANAGER Robbin Robl	P.O. 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:		

PAGE 1 OF 2

Final Report Type (Circle at least one):
ASP2000 Category B
EDD Project-Specified

TAT/ DATE DUE 15 calendar days
Per QAP/Quote
EXPEDITED REPORT (circle one)
FAX EMAIL POST Other
TAT/ DATE DUE_____
or Per QAP/Project

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

	SAMPLED ON DATE	SAMPLED ON TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	Sample Information: SAMPLE TYPE	FIELD FILTERED	MATRIX	REQUIRED ANALYSES: RSK-175 - MEE	NUMBER OF CONTAINERS SUBMITTED	REMARKS
								1		
1	6/5/2015	1041	ALBW20327		SA	N	GW	3		1.Run straight sample analysis (without dilution) for every sample. 2.Use ALBW20339 as QA/QC sample for MEE analysis.
2	6/5/2015	1308	ALBW20331		SA	N	GW	3		
3	6/4/2015	1306	ALBW20336		SA	N	GW	3		
4	6/4/2015	1225	ALBW20337		SA	N	GW	3		
5	6/3/2015	1540	ALBW20338		SA	N	GW	3		
6	6/3/2015	1422	ALBW20339		SA	N	GW	3		
7	6/3/2015	1422	ALBW20339MS		SA	N	GW	3		Preservative
8	6/3/2015	1422	ALBW20339MSD		SA	N	GW	3		1 trisodium phosphate
9	6/3/2015	1431	ALBW20340		SA	N	GW	3		

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
	6/5/15	1644						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
			PACE 6.8.14 0830					

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES ○ NO ○	CUSTODY SEAL NO.	LABORATORY REMARKS:

4.8°C

Original - Return to Laboratory with Sample(s)

15779

 Serial or COC #: 15-06-05-2

WO 15779

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

PROJECT & CLIENT INFORMATION

PROJECT REFERENCE/NAME: Ash Landfill Long Term Monitoring	PROJECT NO.: 748662-03300	Project State: NY
LAB PROJECT MANAGER: Robbin Robl	P.O. 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:		

PAGE 2 OF 2

Final Report Type (Circle at least one):
ASP2000 Category B
EDD Project-Specified

TAT/ DATE DUE 15 calendar days Per QAP/Quote
EXPEDITED REPORT (circle one)
FAX EMAIL POST Other
TAT/ DATE DUE
or Per QAP/Project

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

	SAMPLED ON DATE	SAMPLED ON TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	RSK-175 - MEE	REMARKS
								NUMBER OF CONTAINERS SUBMITTED	
10	6/3/2015	1240	ALBW20341		SA	N	GW	2	1.Run straight sample analysis (without dilution) for every sample. 2.Use ALBW20339 as QA/QC sample for MEE analysis.
11	6/5/2015	1529	ALBW00123		RB	N	W	2	

Preservative
1 trisodium phosphate

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
	6/5/15	1644						
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
PAES	6.8.14	0830						

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES / NO	CUSTODY SEAL NO.	LABORATORY REMARKS:
			NO		

4. 8°C

Original - Return to Laboratory with Sample(s)

Cooler Receipt Form

Client Name: Parsons 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 0384 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) ½ 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 : RK Date: 6/9/15

Sample Tracking Record

Client Name: Parsons Boston MA

Page 1 of 1

Client Project Number: Ash Landfill

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	Returned or Placed in Storage		
	By	Date	Time	Type	By	Date	Time
15779/1-11				see above	LG	6.8.15	0830
15779/1-5,9,10	MM	061115	0900	Diss Gas	MM	061115	1600
15779/6-8,1,3,5,9,10,11	MM	061515	0900	Diss Gas	MM	061515	1600
15779/6-8	MM	061715	0900	Diss Gas	MM	061715	1600

Enter Bottle Type From List Above In Proper Column

F-PAE-Q-015-rev.00, 20 Nov2014

Light Hydrocarbon Data

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	LHCV081711	LHC060915	Finished	6/9/2015 9:33:44 AM	1.0000	
2	Insturment Blank	Unknown	LHCV081711	LHC060915	Finished	6/9/2015 9:52:08 AM	1.0000	
3	ICAL LHC L7	Standard	LHCV081711	LHC060915	Finished	6/9/2015 11:04:10 AM	1.0000	
4	ICAL LHC L6	Standard	LHCV081711	LHC060915	Finished	6/9/2015 11:19:03 AM	1.0000	
5	ICAL LHC L5	Standard	LHCV081711	LHC060915	Finished	6/9/2015 11:29:54 AM	1.0000	
6	ICAL LHC L4	Standard	LHCV081711	LHC060915	Finished	6/9/2015 11:43:29 AM	1.0000	
7	ICAL LHC L3	Standard	LHCV081711	LHC060915	Finished	6/9/2015 11:57:56 AM	1.0000	
8	ICAL LHC L2	Standard	LHCV081711	LHC060915	Finished	6/9/2015 12:08:47 PM	1.0000	
9	ICAL LHC L1	Standard	LHCV081711	LHC060915	Finished	6/9/2015 12:31:45 PM	1.0000	
10	ICV/CCV 060915	Unknown	LHCV081711	LHC060915	Finished	6/9/2015 1:00:03 PM	1.0000	RA-13-03
11	ICB/CCB 060915	Unknown	LHCV081711	LHC060915	Finished	6/9/2015 1:10:20 PM	1.0000	
12	35394-MB	Unknown	LHCV081711	LHC060915	Finished	6/9/2015 2:09:20 PM	1.0000	
13	35395-LCS	Unknown	LHCV081711	LHC060915	Finished	6/9/2015 3:04:28 PM	1.0000	RA-11-09 5X
14	35396-LCSD	Unknown	LHCV081711	LHC060915	Finished	6/9/2015 3:32:58 PM	1.0000	RA-11-09 5X
15	156700001-2 5X DIL	Unknown	LHCV081711	LHC060915	Finished	6/9/2015 4:18:50 PM	1.0000	
16	157230001-1	Unknown	LHCV081711	LHC060915	Finished	6/9/2015 4:29:24 PM	1.0000	
17	157230002-1	Unknown	LHCV081711	LHC060915	Finished	6/9/2015 4:39:46 PM	1.0000	
18	157230003-1	Unknown	LHCV081711	LHC060915	Finished	6/9/2015 5:02:11 PM	1.0000	
19	157230004-1	Unknown	LHCV081711	LHC060915	Finished	6/9/2015 5:20:03 PM	1.0000	
20	157770001-1	Unknown	LHCV081711	LHC060915	Finished	6/9/2015 5:37:36 PM	1.0000	
21	157900001-1	Unknown	LHCV081711	LHC060915	Finished	6/9/2015 5:48:47 PM	1.0000	
22	157230002-2 re check	Unknown	LHCV081711	LHC060915	Finished	6/9/2015 6:07:25 PM	1.0000	
23	157230003-2 DUP	Unknown	LHCV081711	LHC060915	Finished	6/9/2015 6:22:34 PM	1.0000	
24	35397-157230004-2 DUP	Unknown	LHCV081711	LHC060915	Finished	6/9/2015 6:39:20 PM	1.0000	
25	CCV2 FID 060915	Unknown	LHCV081711	LHC060915	Finished	6/9/2015 6:58:51 PM	1.0000	
26	CCB2 060915	Unknown	LHCV081711	LHC060915	Finished	6/9/2015 7:14:25 PM	1.0000	
27	Insturment Blank	Unknown	LHCV081711	LHC060915	Finished	6/10/2015 9:48:21 AM	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
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	

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
55	157860002-1	Unknown	LHCV081711	LHC060915	Finished	6/11/2015 2:06:04	1.0000	
56	157860005-1	Unknown	LHCV081711	LHC060915	Finished	6/11/2015 2:23:07	1.0000	
57	157480004-2 DUP	Unknown	LHCV081711	LHC060915	Finished	6/11/2015 2:33:44	1.0000	
58	35439-157860002-2 DU	Unknown	LHCV081711	LHC060915	Finished	6/11/2015 2:44:44	1.0000	
59	CCV2 FID 061115	Unknown	LHCV081711	LHC060915	Finished	6/11/2015 3:10:10	1.0000	RA-13-03 5X
60	CCB2 061115	Unknown	LHCV081711	LHC060915	Finished	6/11/2015 3:21:37	1.0000	
61	157860008-1	Unknown	LHCV081711	LHC060915	Finished	6/11/2015 3:35:30	1.0000	
62	157680002-1	Unknown	LHCV081711	LHC060915	Finished	6/11/2015 3:49:31	1.0000	
63	157680004-1	Unknown	LHCV081711	LHC060915	Finished	6/11/2015 4:05:31	1.0000	
64	157790001-1	Unknown	LHCV081711	LHC060915	Finished	6/11/2015 4:24:11	1.0000	
65	157790002-1	Unknown	LHCV081711	LHC060915	Finished	6/11/2015 4:35:20	1.0000	
66	157790003-1	Unknown	LHCV081711	LHC060915	Finished	6/11/2015 4:53:11	1.0000	
67	157790004-1	Unknown	LHCV081711	LHC060915	Finished	6/11/2015 5:05:23	1.0000	
68	157790005-1	Unknown	LHCV081711	LHC060915	Finished	6/11/2015 5:15:35	1.0000	
69	157790009-1	Unknown	LHCV081711	LHC060915	Finished	6/11/2015 5:28:24	1.0000	
70	157790010-1	Unknown	LHCV081711	LHC060915	Finished	6/11/2015 5:39:54	1.0000	
71	35438-157790004-2 DU	Unknown	LHCV081711	LHC060915	Finished	6/11/2015 5:50:45	1.0000	
72	CCV3 FID 061115	Unknown	LHCV081711	LHC060915	Finished	6/11/2015 6:03:42	1.0000	RA-13-03 2X
73	CCB3 061115	Unknown	LHCV081711	LHC060915	Finished	6/11/2015 6:13:50	1.0000	
74	Insturment Blank	Unknown	LHCV081711	LHC060915	Finished	6/15/2015 11:03:38	1.0000	
75	CCV FID 061515	Unknown	LHCV081711	LHC060915	Finished	6/15/2015 11:20:59	1.0000	RA-13-03 2X
76	CCB 061515	Unknown	LHCV081711	LHC060915	Finished	6/15/2015 11:31:05	1.0000	
77	35508-MB	Unknown	LHCV081711	LHC060915	Finished	6/15/2015 11:41:26	1.0000	
78	35509-LCS	Unknown	LHCV081711	LHC060915	Finished	6/15/2015 12:56:37	1.0000	RA-11-09 5X
79	35510-LCSD	Unknown	LHCV081711	LHC060915	Finished	6/15/2015 1:12:34	1.0000	RA-11-09 5X
80	157790001-2 100X DIL	Unknown	LHCV081711	LHC060915	Finished	6/15/2015 1:45:41	1.0000	
81	157790003-2 100X DIL	Unknown	LHCV081711	LHC060915	Finished	6/15/2015 2:02:16	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
82	157790005-2 100X DIL	Unknown	LHCV081711	LHC060915	Finished	6/15/2015 2:12:41	1.0000	
83	157790009-2 100X DIL	Unknown	LHCV081711	LHC060915	Finished	6/15/2015 2:27:24	1.0000	
84	157790010-2 100X DIL	Unknown	LHCV081711	LHC060915	Finished	6/15/2015 2:41:02	1.0000	
85	35511-155790007-1 MS	Unknown	LHCV081711	LHC060915	Finished	6/15/2015 2:54:51	1.0000	
86	157790006-1 ORIG	Unknown	LHCV081711	LHC060915	Finished	6/15/2015 3:05:56	1.0000	
87	35512-157790008-1 MS	Unknown	LHCV081711	LHC060915	Finished	6/15/2015 3:19:01	1.0000	
88	157790011-1	Unknown	LHCV081711	LHC060915	Finished	6/15/2015 3:30:21	1.0000	
89	157930001-1	Unknown	LHCV081711	LHC060915	Finished	6/15/2015 3:43:45	1.0000	
90	35513-157790011-2 DU	Unknown	LHCV081711	LHC060915	Finished	6/15/2015 3:56:38	1.0000	
91	CCV2 FID 061515	Unknown	LHCV081711	LHC060915	Finished	6/15/2015 4:10:42	1.0000	RA-13-03 5X
92	CCB2 061515	Unknown	LHCV081711	LHC060915	Finished	6/15/2015 4:21:03	1.0000	
93	157920002-1	Unknown	LHCV081711	LHC060915	Finished	6/15/2015 4:34:58	1.0000	
94	158160002-1	Unknown	LHCV081711	LHC060915	Finished	6/15/2015 4:46:46	1.0000	
95	158170001-1	Unknown	LHCV081711	LHC060915	Finished	6/15/2015 5:09:43	1.0000	
96	158170002-1	Unknown	LHCV081711	LHC060915	Finished	6/15/2015 5:20:12	1.0000	
97	158170003-1	Unknown	LHCV081711	LHC060915	Finished	6/15/2015 5:37:27	1.0000	
98	35514-157920002-2 DU	Unknown	LHCV081711	LHC060915	Finished	6/15/2015 5:47:56	1.0000	
99	Insturment Blank	Unknown	LHCV081711	LHC060915	Finished	6/15/2015 6:04:43	1.0000	
100	CCV3 FID 061515	Unknown	LHCV081711	LHC060915	Finished	6/15/2015 6:16:06	1.0000	RA-13-03 2X
101	CCB 061515	Unknown	LHCV081711	LHC060915	Finished	6/15/2015 6:28:04	1.0000	
102	Insturment Blank	Unknown	LHCV081711	LHC060915	Finished	6/17/2015 10:03:12	1.0000	
103	CCV FID 061715	Unknown	LHCV081711	LHC060915	Finished	6/17/2015 10:15:02	1.0000	RA-13-03 2X
104	CCB 061715	Unknown	LHCV081711	LHC060915	Finished	6/17/2015 10:25:09	1.0000	
105	35564-MB	Unknown	LHCV081711	LHC060915	Finished	6/17/2015 10:43:28	1.0000	
106	35565-LCS	Unknown	LHCV081711	LHC060915	Finished	6/17/2015 10:58:10	1.0000	RA-11-09 5X
107	35566-LCSD	Unknown	LHCV081711	LHC060915	Finished	6/17/2015 11:21:07	1.0000	RA-11-09 5X
108	157790006-2 ORIG 100	Unknown	LHCV081711	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	Unknown	LHCV081711	LHC060915	Finished	6/17/2015 12:11:35	1.0000	
110	157790008-2 MSD 100X	Unknown	LHCV081711	LHC060915	Finished	6/17/2015 12:21:54	1.0000	
111	157930001-2 100X DIL	Unknown	LHCV081711	LHC060915	Finished	6/17/2015 12:35:42	1.0000	
112	158170002-2 100X DIL	Unknown	LHCV081711	LHC060915	Finished	6/17/2015 12:45:56	1.0000	
113	158140002-1	Unknown	LHCV081711	LHC060915	Finished	6/17/2015 12:56:20	1.0000	
114	158140004-1	Unknown	LHCV081711	LHC060915	Finished	6/17/2015 1:06:38	1.0000	
115	158260002-1	Unknown	LHCV081711	LHC060915	Finished	6/17/2015 1:27:23	1.0000	
116	Insturment Blank	Unknown	LHCV081711	LHC060915	Finished	6/17/2015 1:49:28	1.0000	
117	158340001-1	Unknown	LHCV081711	LHC060915	Finished	6/17/2015 1:59:54	1.0000	
118	158340002-1	Unknown	LHCV081711	LHC060915	Finished	6/17/2015 2:10:17	1.0000	
119	35567-158140002-2 DU	Unknown	LHCV081711	LHC060915	Finished	6/17/2015 2:23:11	1.0000	
120	35568-158340002-2 DU	Unknown	LHCV081711	LHC060915	Finished	6/17/2015 2:33:29	1.0000	
121	CCV2 FID 061715	Unknown	LHCV081711	LHC060915	Finished	6/17/2015 2:46:23	1.0000	RA-13-03 5X
122	CCB2 061715	Unknown	LHCV081711	LHC060915	Finished	6/17/2015 2:56:32	1.0000	
123	158340003-1	Unknown	LHCV081711	LHC060915	Finished	6/17/2015 3:06:54	1.0000	
124	158340004-1	Unknown	LHCV081711	LHC060915	Finished	6/17/2015 3:20:30	1.0000	
125	158660001-1	Unknown	LHCV081711	LHC060915	Finished	6/17/2015 3:30:49	1.0000	
126	158660002-1	Unknown	LHCV081711	LHC060915	Finished	6/17/2015 3:41:11	1.0000	
127	158660003-1	Unknown	LHCV081711	LHC060915	Finished	6/17/2015 3:54:35	1.0000	
128	158660004-1	Unknown	LHCV081711	LHC060915	Finished	6/17/2015 4:07:04	1.0000	
129	158660005-1	Unknown	LHCV081711	LHC060915	Finished	6/17/2015 4:18:10	1.0000	
130	158660006-1	Unknown	LHCV081711	LHC060915	Finished	6/17/2015 4:32:28	1.0000	
131	158660007-1	Unknown	LHCV081711	LHC060915	Finished	6/17/2015 4:43:14	1.0000	
132	158660008-1	Unknown	LHCV081711	LHC060915	Finished	6/17/2015 5:01:56	1.0000	
133	35511-157790007-2 MS	Unknown	LHCV081711	LHC060915	Finished	6/17/2015 5:36:39	1.0000	RA-10-14 2.5X
134	35512-157790008-2 MS	Unknown	LHCV081711	LHC060915	Finished	6/17/2015 5:52:53	1.0000	RA-10-14 2.5X
135	CCV3 FID 061715	Unknown	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	Unknown	LHCV081711	LHC060915	Finished	6/17/2015 6:28:48	1.0000	
137	Insturment Blank	Unknown	LHCV081711	LHC060915	Finished	6/18/2015 1:09:16	1.0000	
138	CCV FID 061815	Unknown	LHCV081711	LHC060915	Finished	6/18/2015 1:28:42	1.0000	RA-13-03 2X
139	CCB 061815	Unknown	LHCV081711	LHC060915	Finished	6/18/2015 1:38:49	1.0000	
140	35572-MB	Unknown	LHCV081711	LHC060915	Finished	6/18/2015 1:49:17	1.0000	
141	35573-LCS	Unknown	LHCV081711	LHC060915	Finished	6/18/2015 2:01:28	1.0000	RA-11-09 5X
142	35574-LCSD	Unknown	LHCV081711	LHC060915	Finished	6/18/2015 2:11:54	1.0000	RA-11-09 5X
143	158660009-1	Unknown	LHCV081711	LHC060915	Finished	6/18/2015 2:28:58	1.0000	
144	158660010-1	Unknown	LHCV081711	LHC060915	Finished	6/18/2015 2:39:17	1.0000	
145	158660011-1	Unknown	LHCV081711	LHC060915	Finished	6/18/2015 2:49:58	1.0000	
146	158660012-1	Unknown	LHCV081711	LHC060915	Finished	6/18/2015 3:02:03	1.0000	
147	158660013-1	Unknown	LHCV081711	LHC060915	Finished	6/18/2015 3:14:13	1.0000	
148	158660014-1	Unknown	LHCV081711	LHC060915	Finished	6/18/2015 3:24:32	1.0000	
149	158660015-1	Unknown	LHCV081711	LHC060915	Finished	6/18/2015 3:35:21	1.0000	
150	158660016-1	Unknown	LHCV081711	LHC060915	Finished	6/18/2015 4:16:12	1.0000	
151	158660017-1	Unknown	LHCV081711	LHC060915	Finished	6/18/2015 4:27:15	1.0000	
152	158660018-1	Unknown	LHCV081711	LHC060915	Finished	6/18/2015 4:37:28	1.0000	
153	CCV2 FID 061815	Unknown	LHCV081711	LHC060915	Finished	6/18/2015 4:50:29	1.0000	RA-13-03 5X
154	CCB2 061815	Unknown	LHCV081711	LHC060915	Finished	6/18/2015 5:01:34	1.0000	
155	158660019-1	Unknown	LHCV081711	LHC060915	Finished	6/18/2015 5:12:24	1.0000	
156	158660020-1	Unknown	LHCV081711	LHC060915	Finished	6/18/2015 5:23:39	1.0000	
157	158660021-1	Unknown	LHCV081711	LHC060915	Finished	6/18/2015 5:36:08	1.0000	
158	158660022-1	Unknown	LHCV081711	LHC060915	Finished	6/18/2015 5:49:45	1.0000	
159	158660023-1	Unknown	LHCV081711	LHC060915	Finished	6/18/2015 6:01:27	1.0000	
160	158660024-1	Unknown	LHCV081711	LHC060915	Finished	6/18/2015 6:15:22	1.0000	
161	158660025-1	Unknown	LHCV081711	LHC060915	Finished	6/18/2015 6:27:04	1.0000	
162	158440001-1	Unknown	LHCV081711	LHC060915	Finished	6/18/2015 6:39:06	1.0000	

060915,SL Temp Min - 22°C max - 23°C

ICAL RSK175 R9 Seq Water060915SEL

Stock RA-11-09 Lot # 109-26-08686
Instrument Settings: He 12 psI
H2 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	38 cc
6	0.50	5cc W/S 2	45 cc
5	2.00	2.5cc 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 GRH 06/10/15
CCV1 RA-13-3 2X Temp 23 24
CCV2: RA-13-3 5X
Samples: 157240001 → 4
PH: 15724 0001 at PH 8, 15724 0002→4 at PH ≥10
Dilutions: 15724 0001 at 100X DIL
LCS/LCSD: RA-11-9 5X

06/11/15, SL

RSK 175	RA	Water	Temp
CCV1 + CCV3	RA-13-03		2x
CCV2	RA-13-03		5x
LCS/LCSD	RA-11-09		5x
MS/MSD	RA-11-09		5x

Min - 22°C Max 24°C

Samples: 15711-(2), 15727-(2,4,5,6), 15748-(2,4)
15765-(2), 15786-(2,5,8), 15768-(2,4)
15779-(1-5,9,10)

All samples had a PH of 10 or greater

06/15/15, SL

RSK 175	RA	Water	Temp
CCV1 + CCV3	RA-13-03		2x
CCV2	RA-13-03		5x
LCS/LCSD	RA-11-09		5x
MS/MSD	RA-11-09		5x

Min - 22°C Max 25°C

Samples: 15779-(1,3,5,9,10) DIL's, (15779-(6-8,11) MS/MSD,
15793-(1), 15792-(2), 15816-(2), 15817-(1-3)

All samples had a PH of 10 or greater

06/15/15, SL

RSK 175	RA	Water	Temp
CCV1 + CCV3	RA-13-03		2x
CCV2	RA-13-03		5x
LCS/LCSD	RA-11-09		5x
MS/MSD	RA-10-14		25x

Min - 22°C Max 24°C

Samples: 15779-(6-8), 15793-(1), 15817-(2), 15814-(2,4)
15826-(2), 15834-(1-4) 15815-(1-6)

All samples had a PH of 10 or greater

DI 06/15

THE LINDE GROUP

Linde

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

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 ± 2%. NIST traceable by weights or gaseous standards.

Amanda Miller, Lab Technician — 11/5/2012 DATE

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 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		

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	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

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	Amount ICAL LHC L2	Amount ICAL LHC L1
1	*Methane*	*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

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	☒	ICAL LHC L7	3	2	1.0	1.0000	1.0000	1.0000	6/9/2015 11:04:10 AM
2	☒	ICAL LHC L6	4	3	1.0	1.0000	1.0000	1.0000	6/9/2015 11:19:03 AM
3	☒	ICAL LHC L5	5	4	1.0	1.0000	1.0000	1.0000	6/9/2015 11:29:54 AM
4	☒	ICAL LHC L4	6	5	1.0	1.0000	1.0000	1.0000	6/9/2015 11:43:29 AM
5	☒	ICAL LHC L3	7	6	1.0	1.0000	1.0000	1.0000	6/9/2015 11:57:56 AM
6	☒	ICAL LHC L2	8	7	1.0	1.0000	1.0000	1.0000	6/9/2015 12:08:47 PM
7	☒	*ICAL LHC L1*	*9*	*8*	*1.0*	*1.0000*	*1.0000*	*1.0000*	*6/9/2015 12:31:45 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	Sample Comment	Calib. Comment
1	☒	ICAL LHC L7		Ok
2	☒	ICAL LHC L6		Ok
3	☒	ICAL LHC L5		Ok
4	☒	ICAL LHC L4		Ok
5	☒	ICAL LHC L3		Ok
6	☒	ICAL LHC L2		Ok
7	☒	*ICAL LHC L1*		*Ok*

Dissolved Gases in Water **Method: RSK175**

6/9/2015 **Detection: FID**

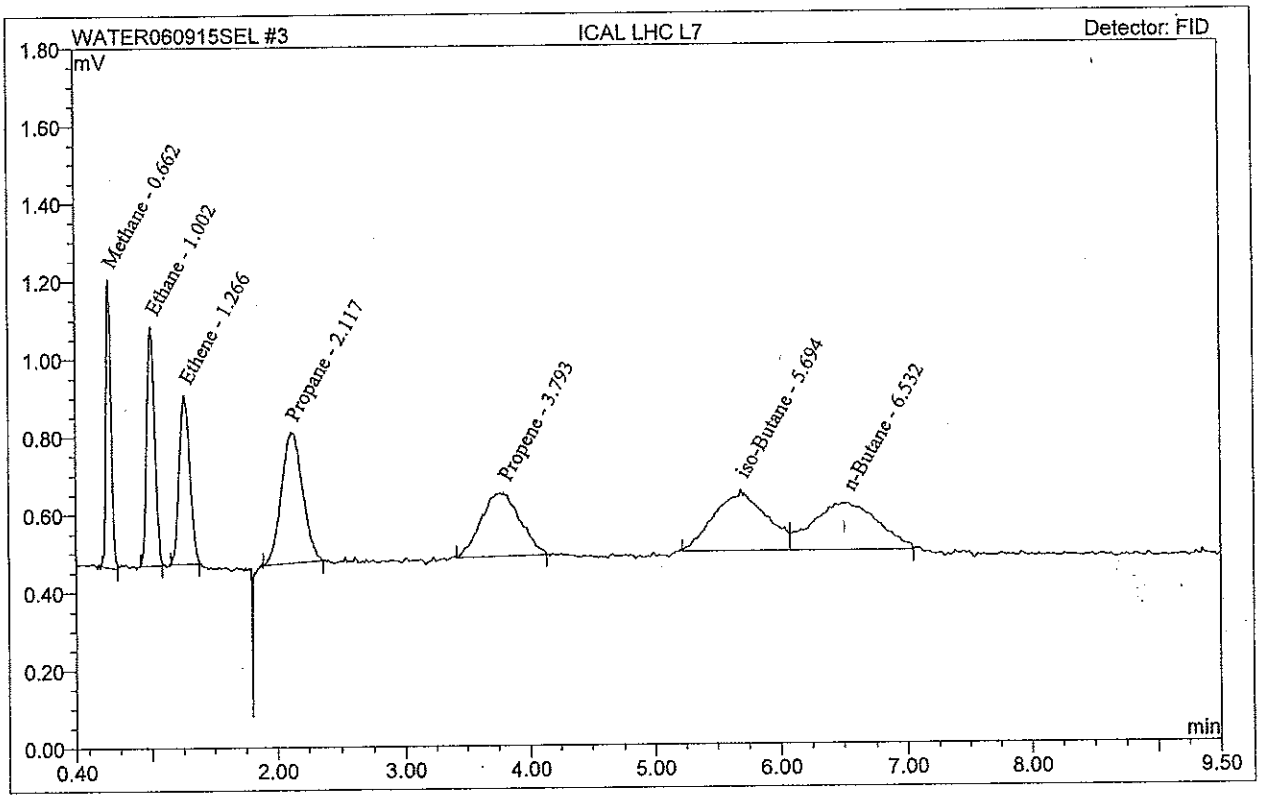
No.	Ret.Time min	Peak Name	Cal.Type	Points	Coeff.Det. %	Offset	Slope	Curve
1	0.66	Methane	Quad	7	100.0000	0.0000	0.3957	0.0001
2	1.00	Ethane	Quad	7	100.0000	0.0000	0.3922	0.0000
3	1.26	Ethene	Quad	7	100.0000	0.0000	0.3550	0.0000
4	2.12	Propane	Quad	7	100.0000	0.0000	0.3999	0.0000
5	3.70	Propene	Quad	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

MICROSEEPS

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

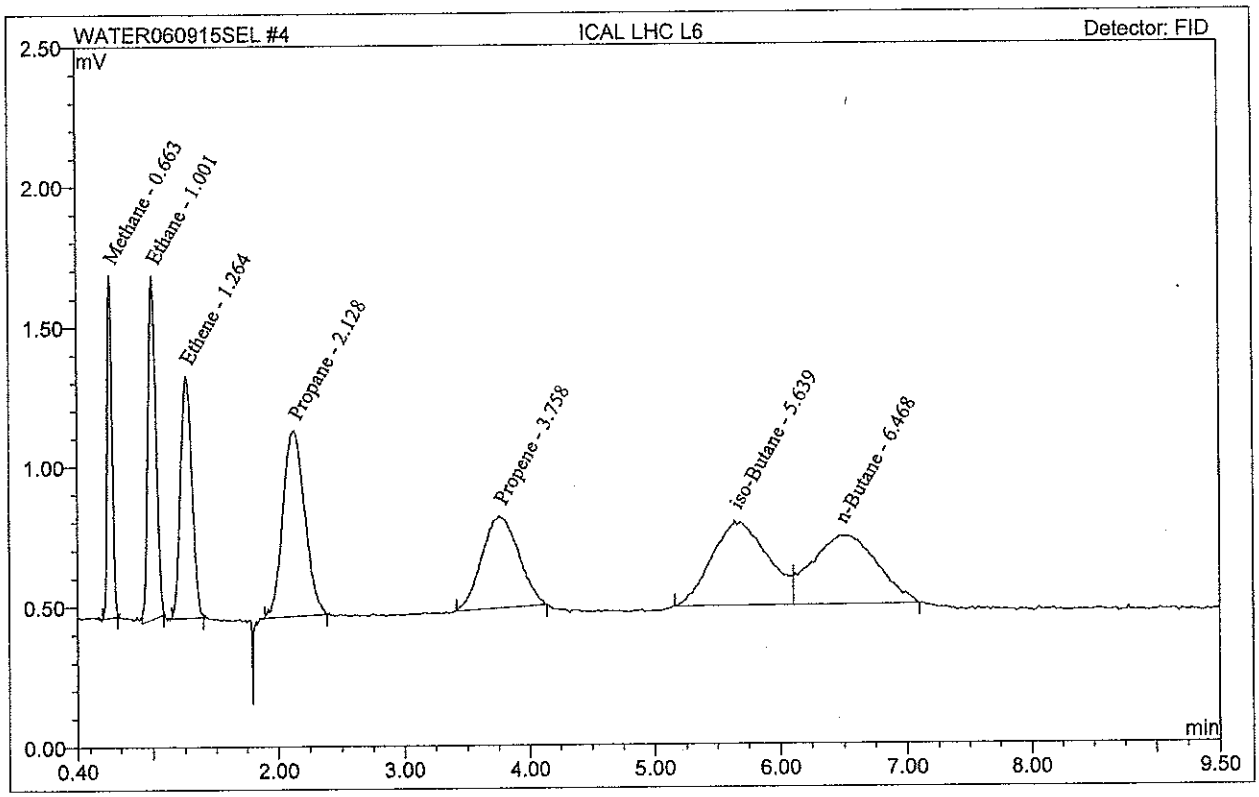


MICROSEEPS

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

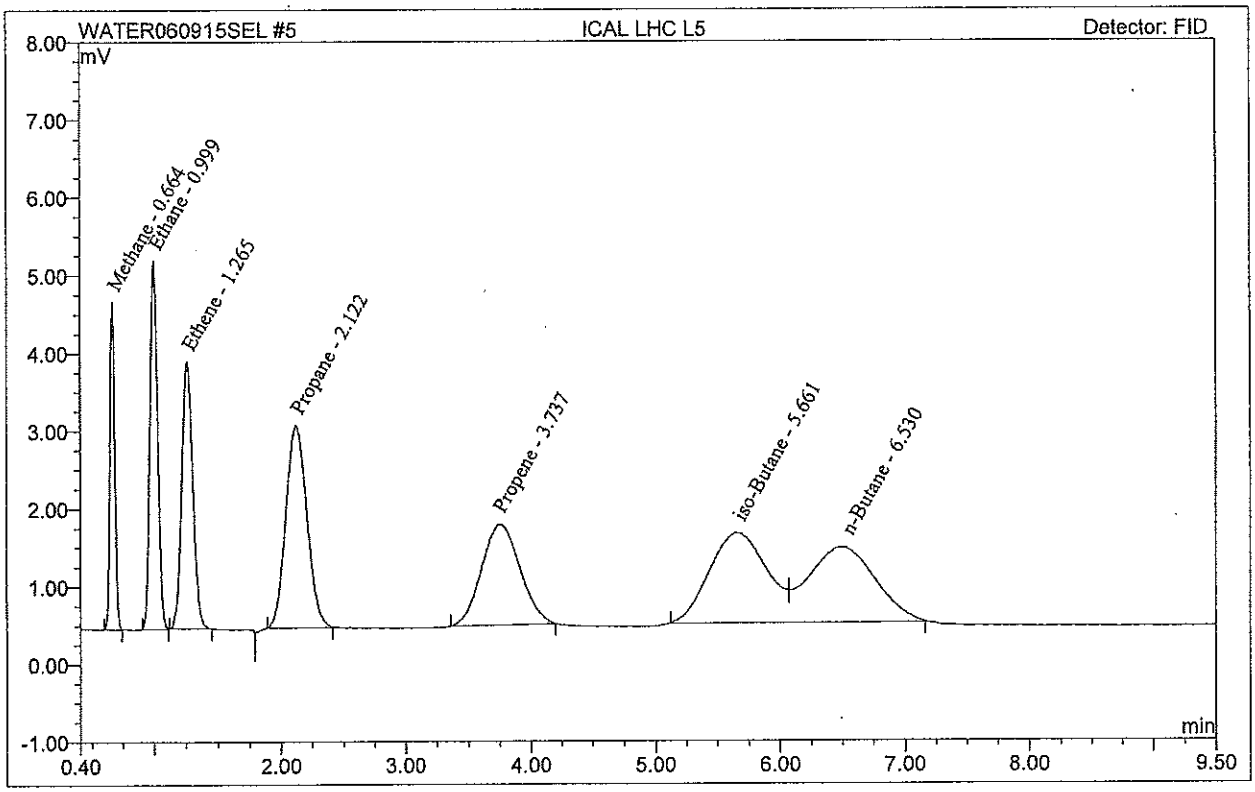


MICROSEEPS

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

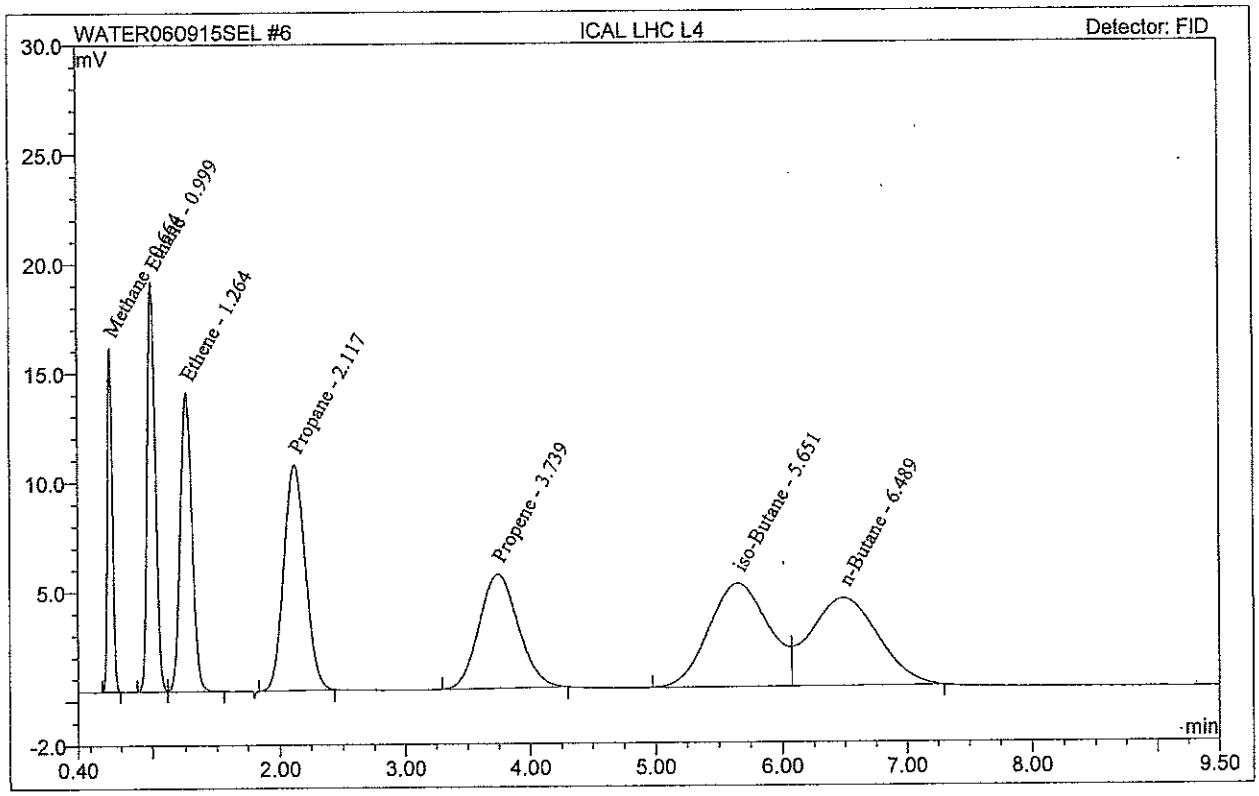


MICROSEEPS

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

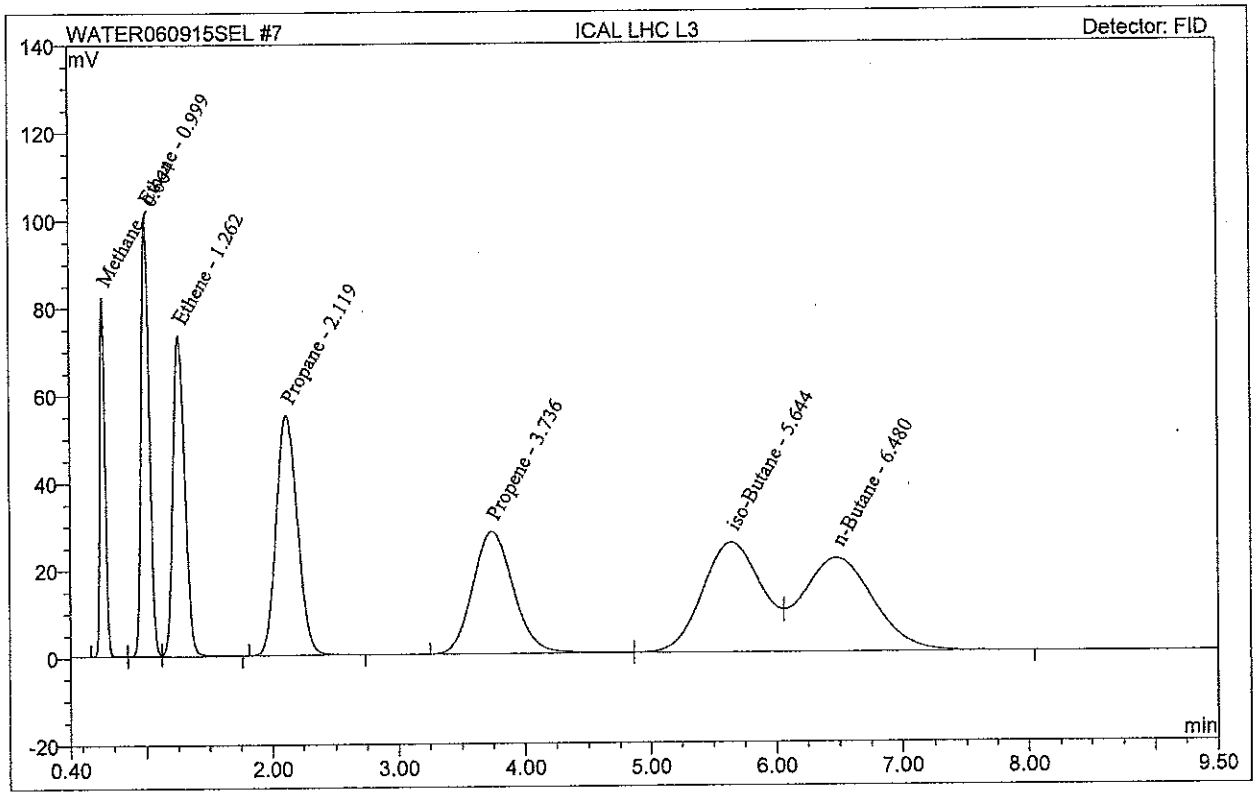


MICROSEEPS

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

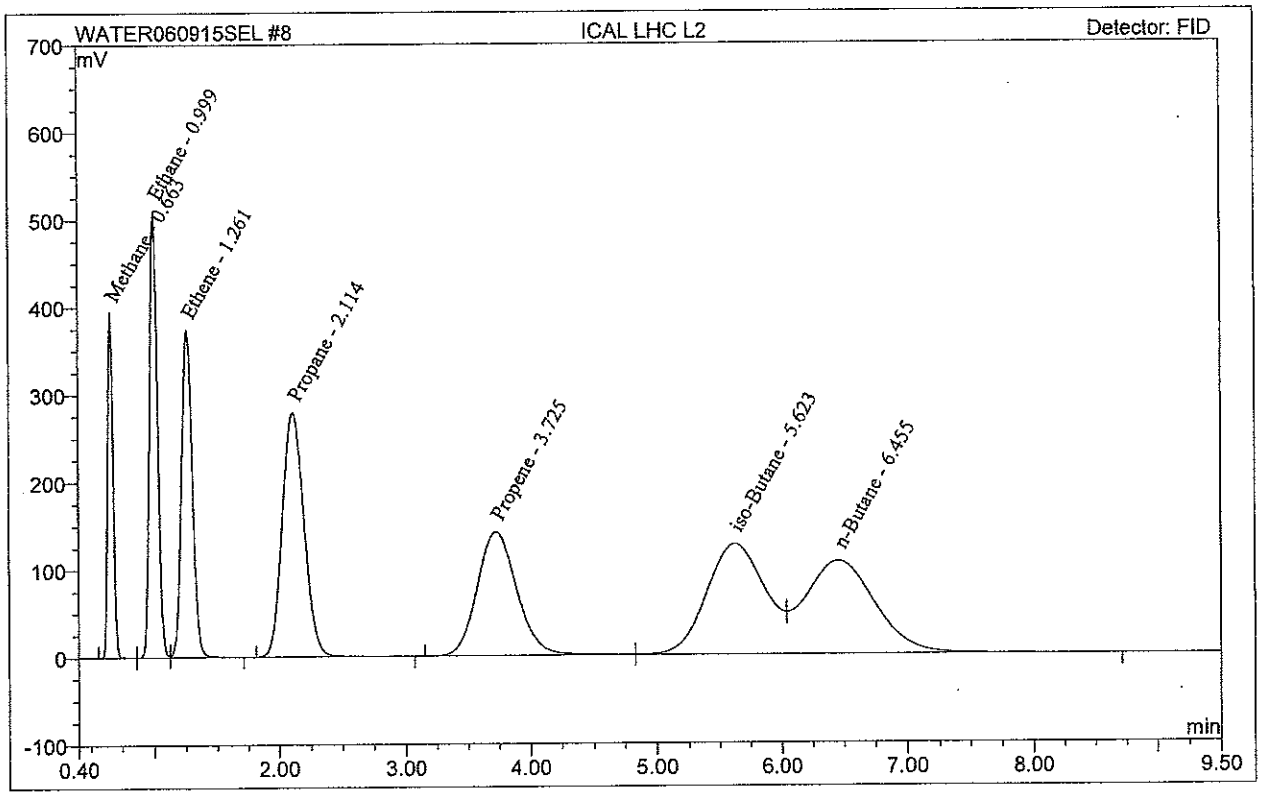


MICROSEEPS

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

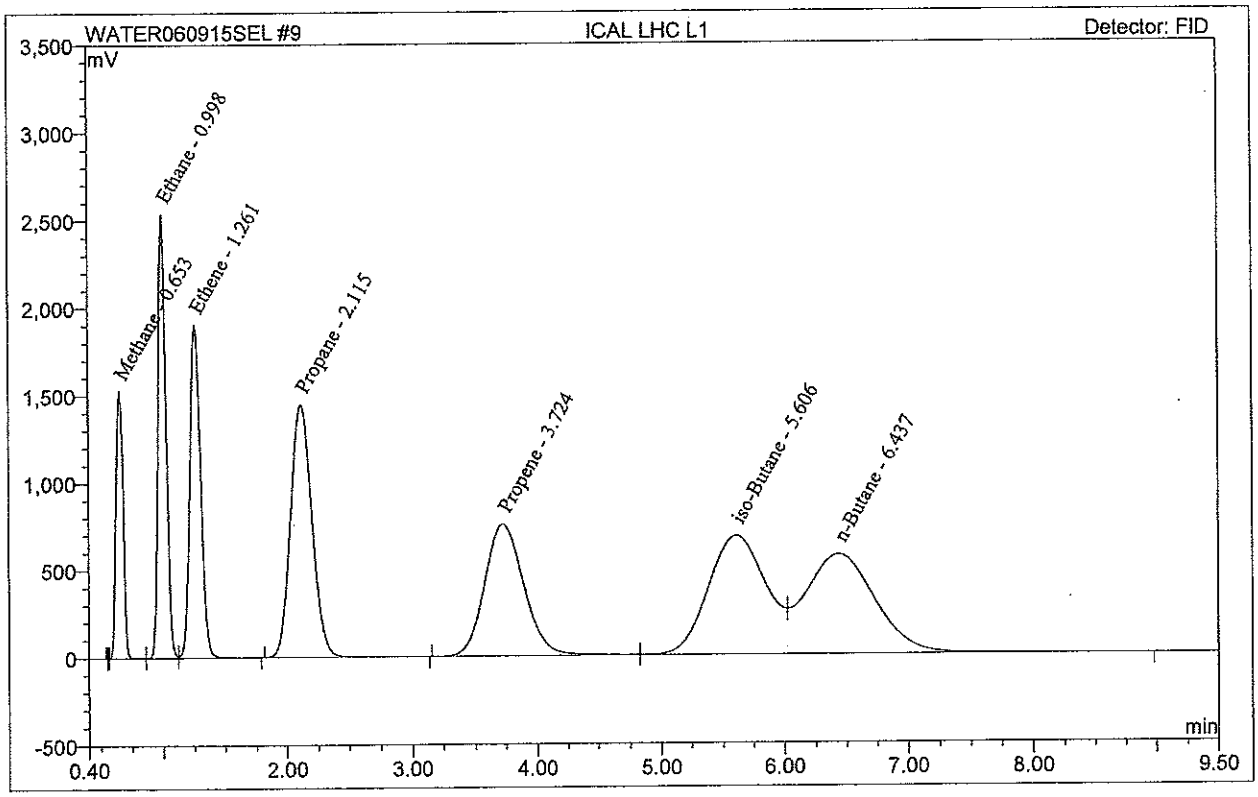


MICROSEEPS

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

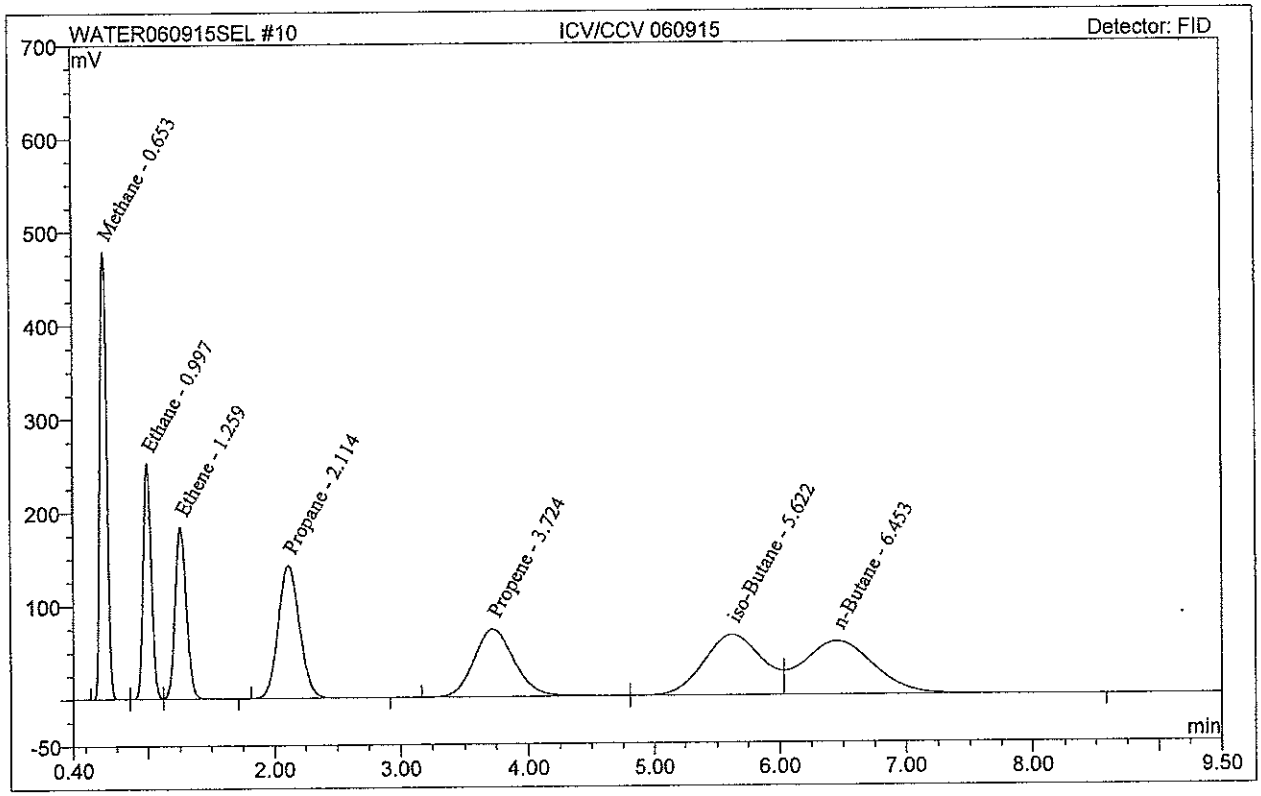


MICROSEEPS

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	Amount TV 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	74.248	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

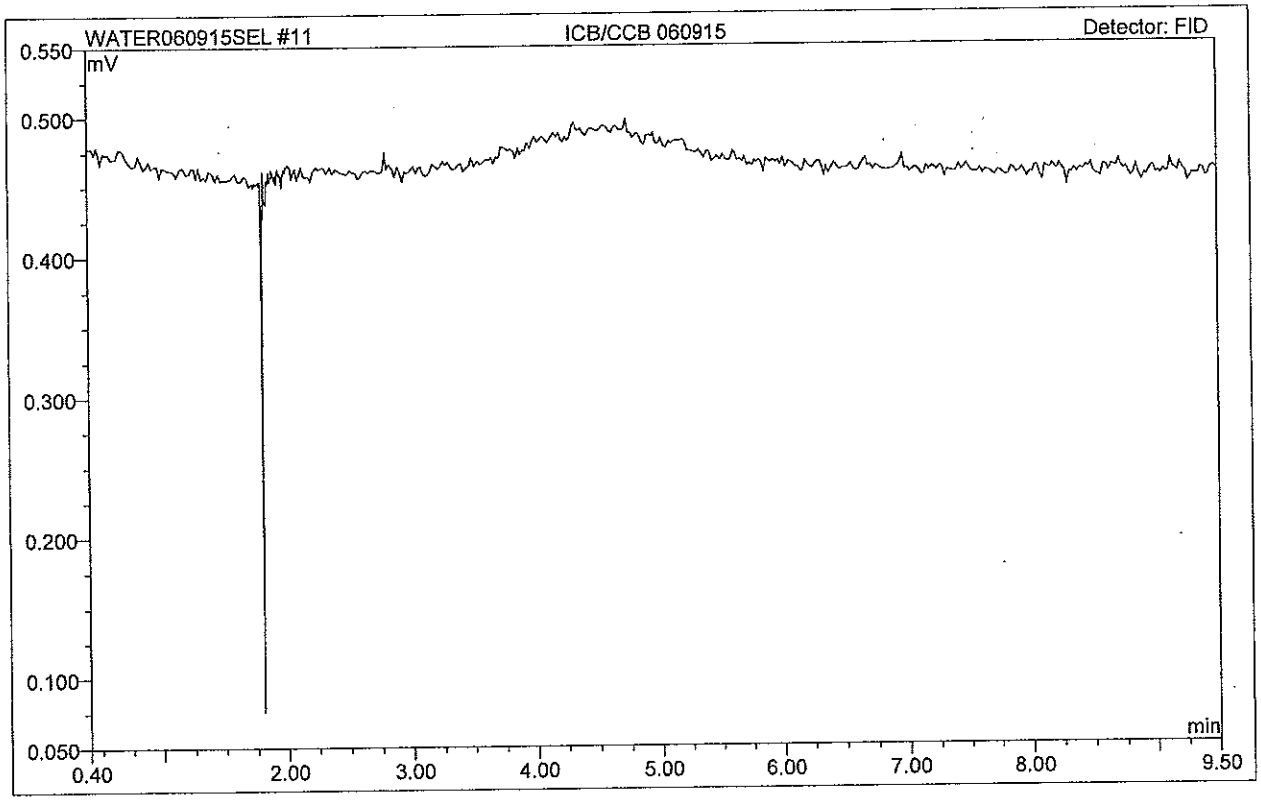


MICROSEEPS

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



Risk Department
Case Narrative

Batch number: 4629-DISS

Original Run Date: 061115

Sample numbers:
15711-(2)
15727-(2,4,5,6)
15748-(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 Pkt 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

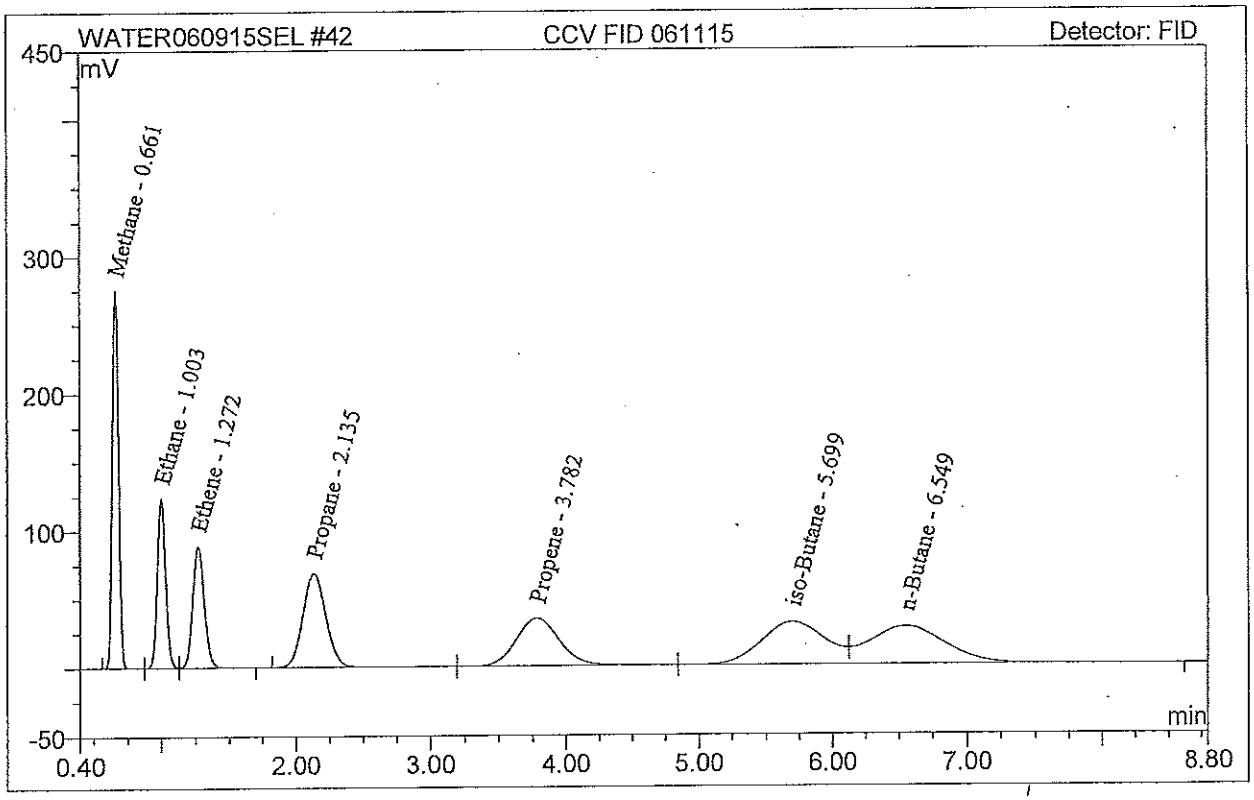
Analyzed & Reviewed by: JM **Date:** 061215
Manual Integration Conducted? (YES) NO
(Circle One)
Reviewed by: ARK **Date:** 6/12/15
Reviewed & Entered by: Upload **Date:** 061215
Reviewed by: _____ **Date:** _____
Corrected by: _____ **Date:** _____

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	TV
1	Methane	0.661	15.053	275.139	BM	37.6160	36.066
2	Ethane	1.003	9.141	123.404	M	23.2602	23.152
3	Ethene	1.272	9.052	88.501	MB	25.4356	25.568
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	

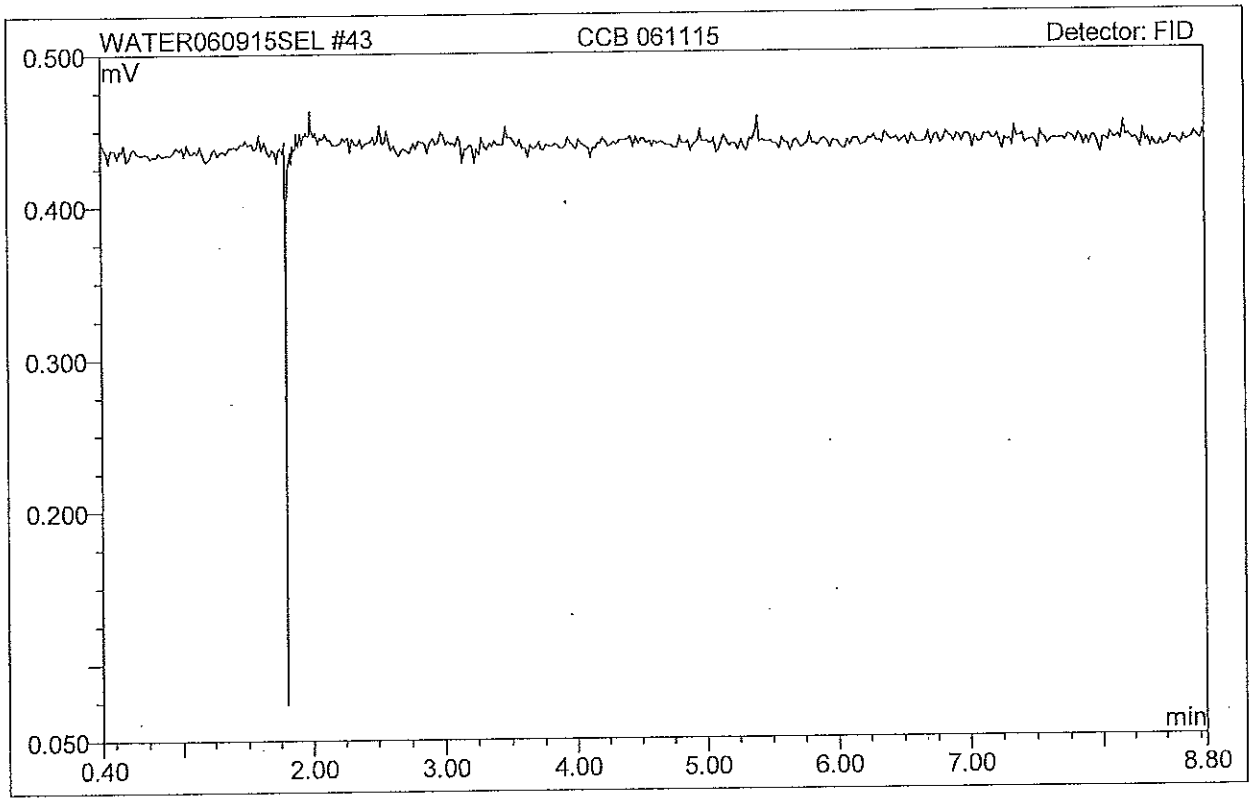


MICROSEEPS

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

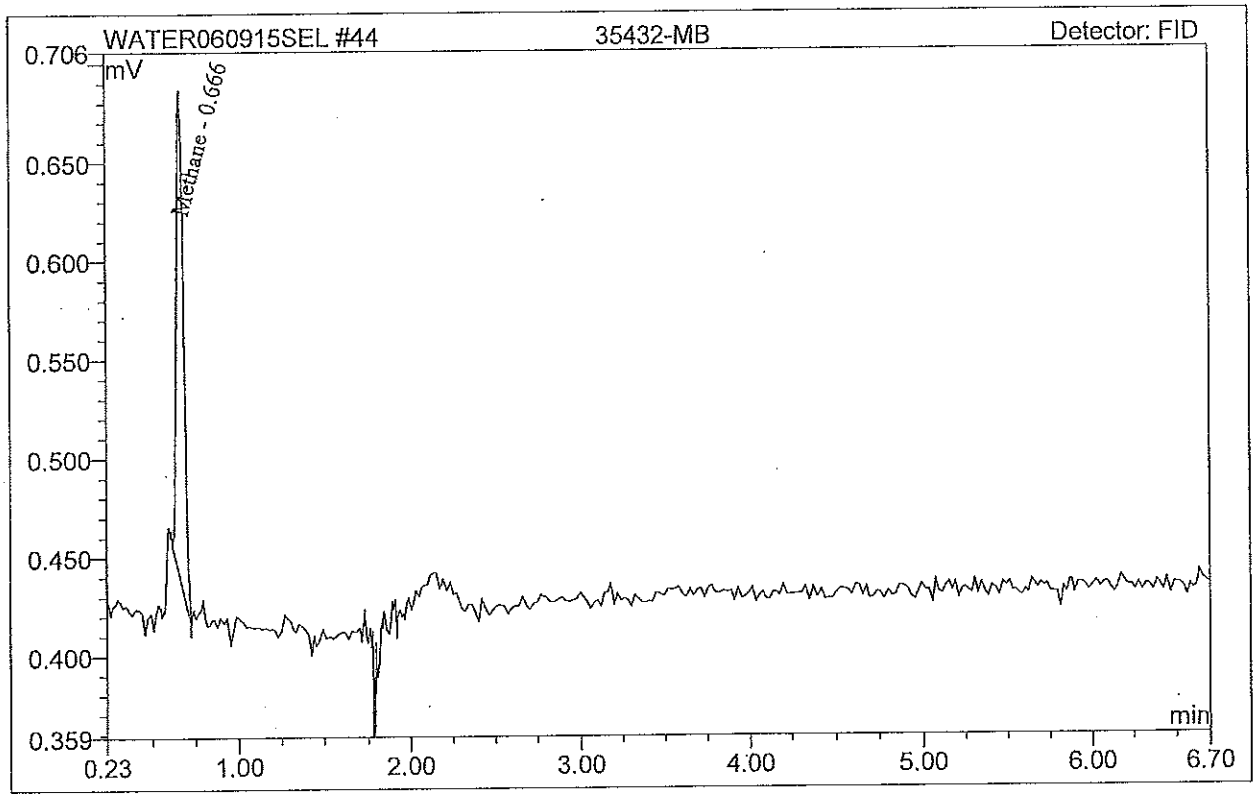


MICROSEEPS

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

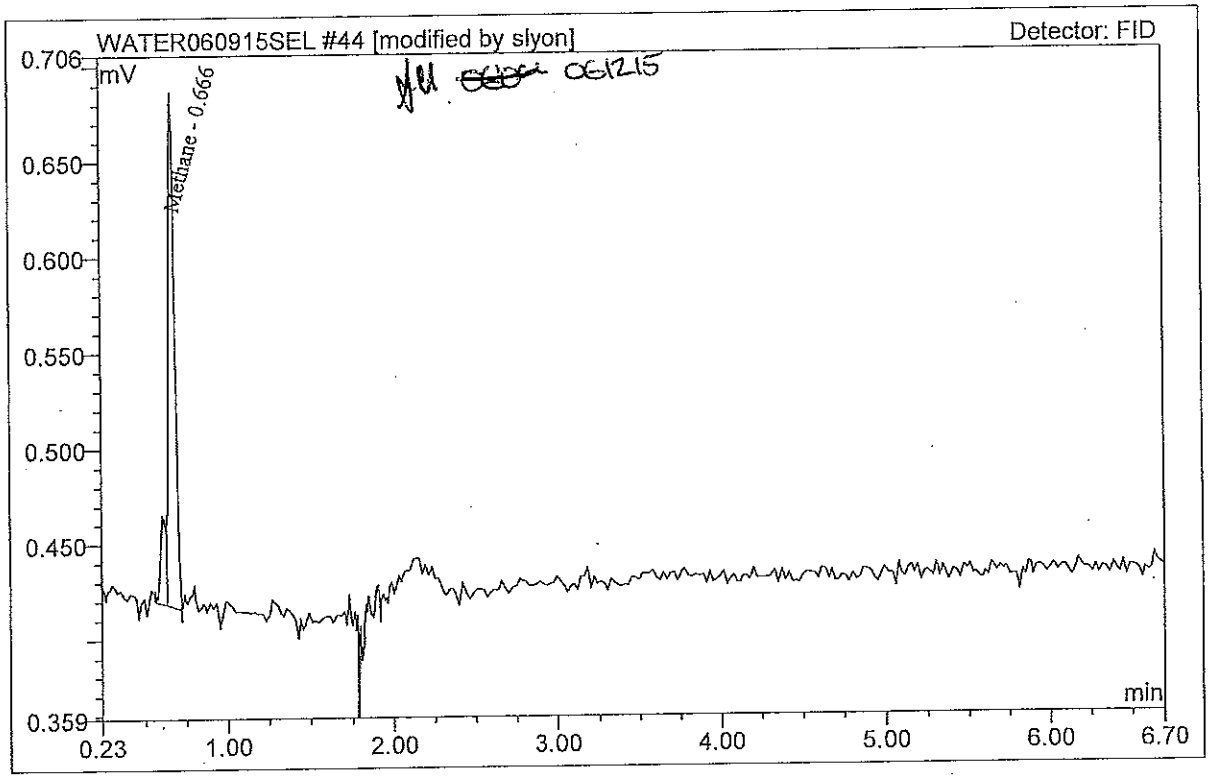


MICROSEEPS

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

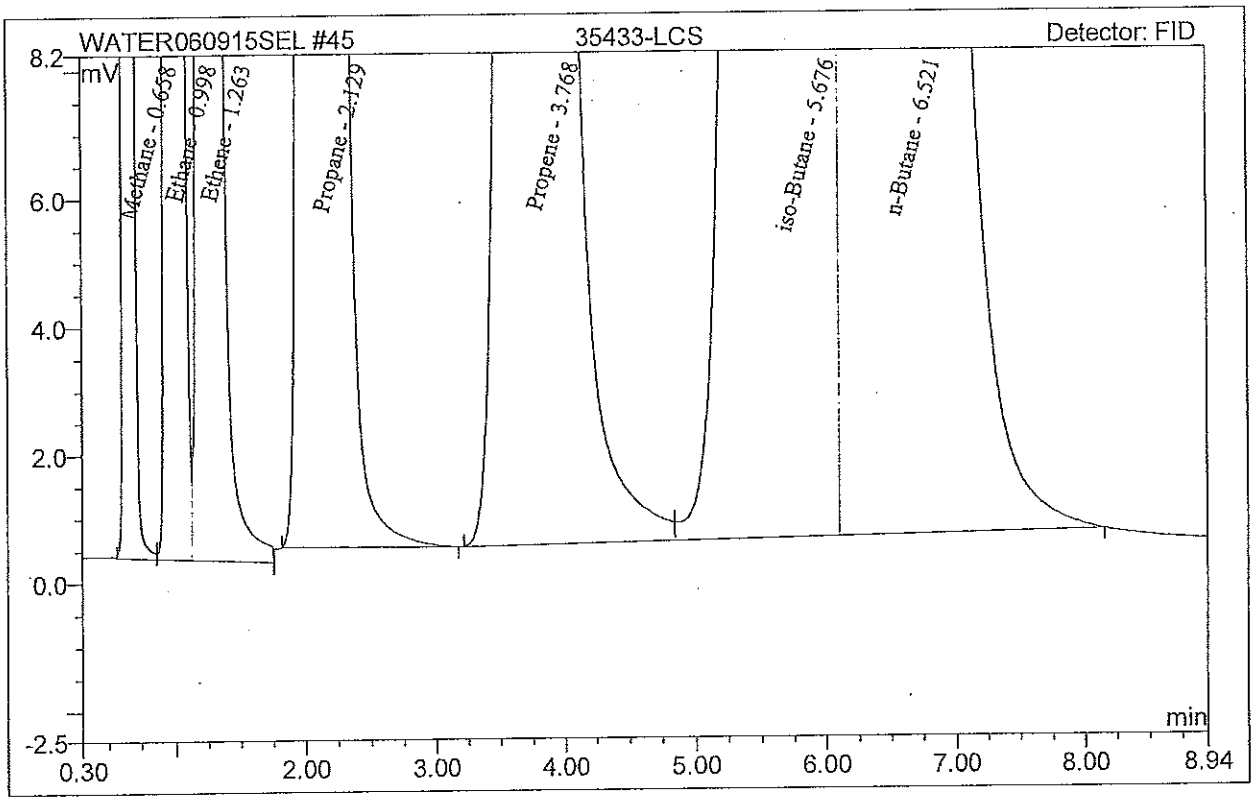


MICROSEEPS

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	17.240	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

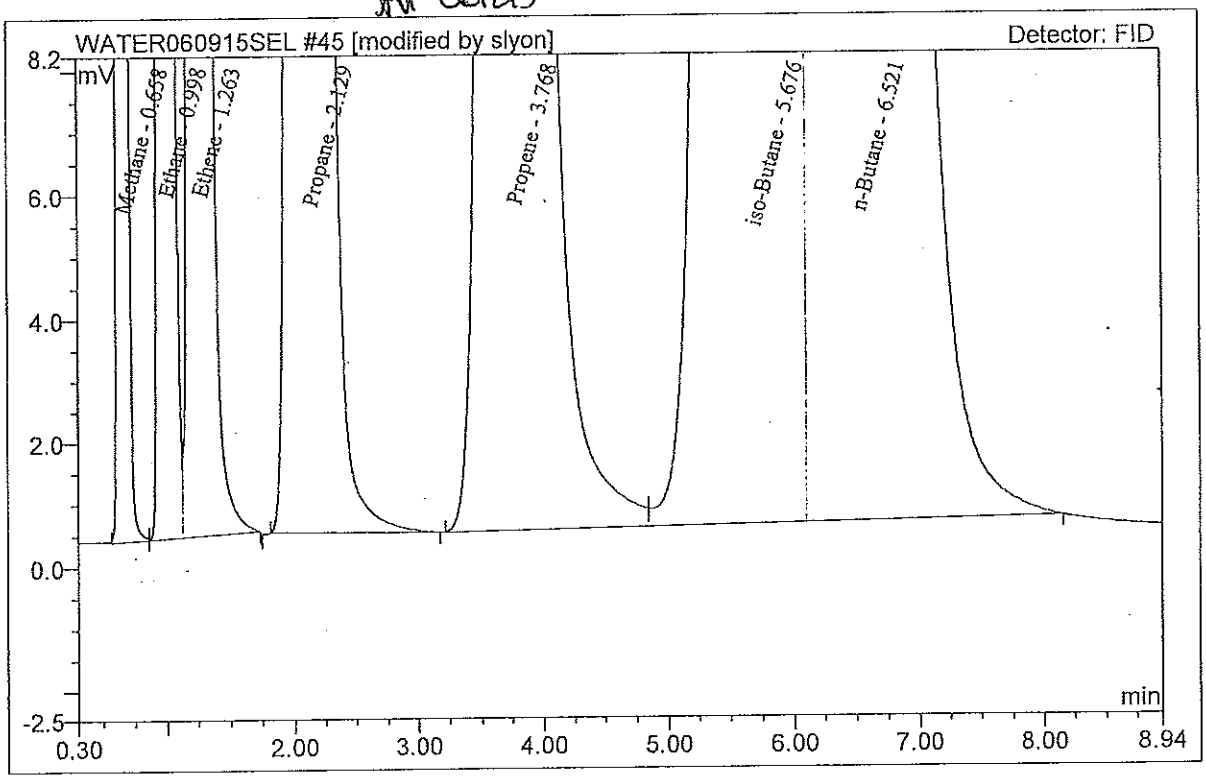
Sample Analysis Report

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

JW 060215

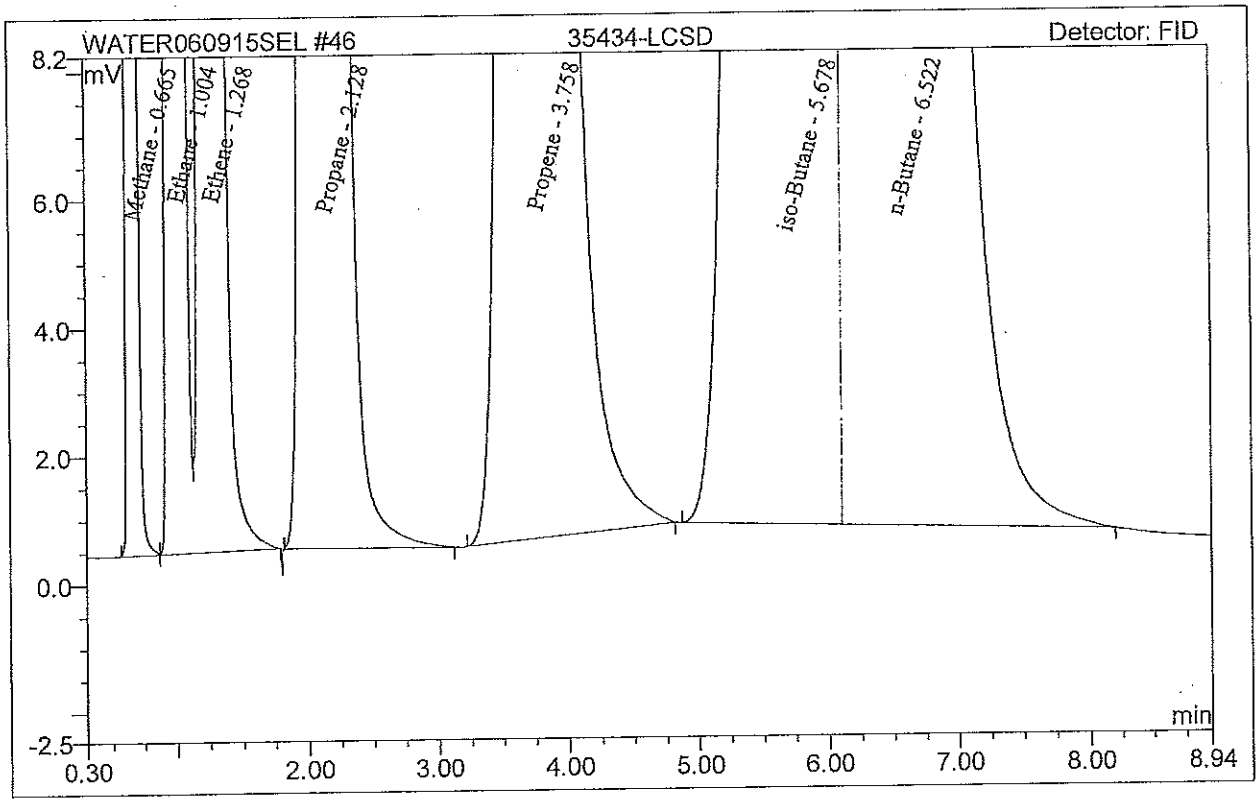


MICROSEEPS

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



MICROSEEPS

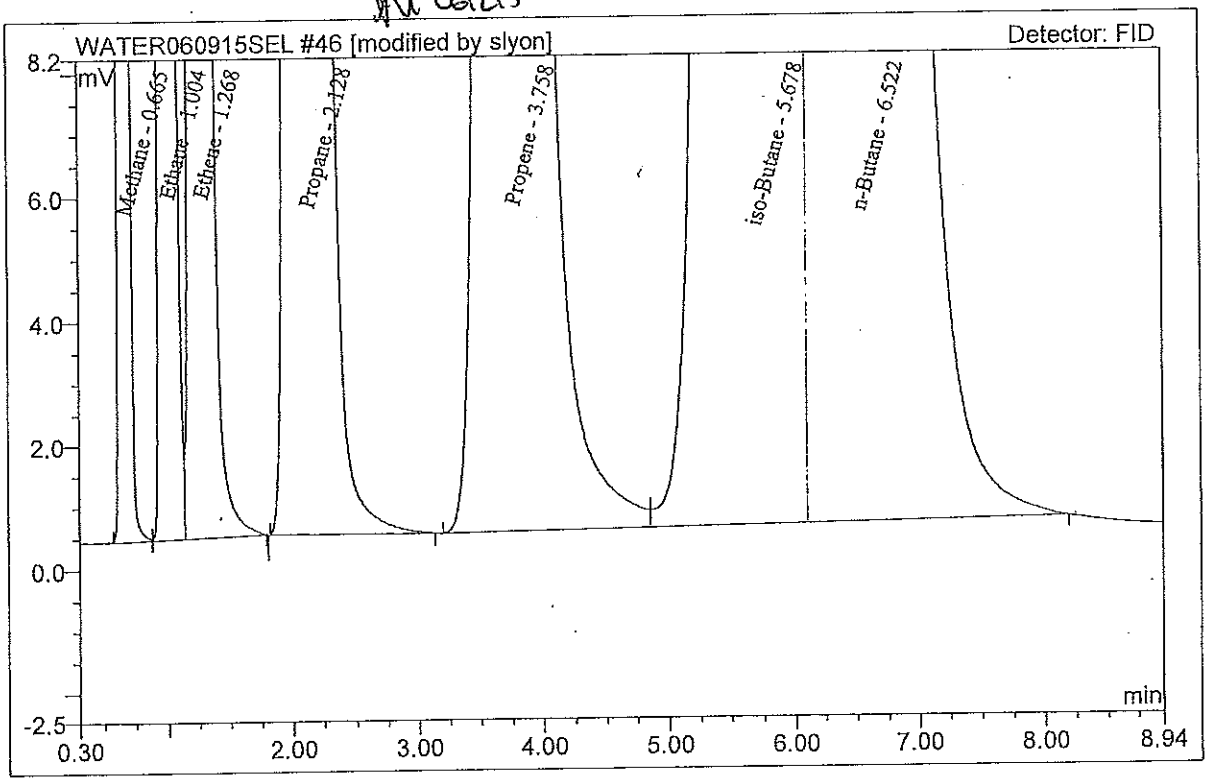
Sample Analysis Report

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	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
83.3
77.92

#1 06215

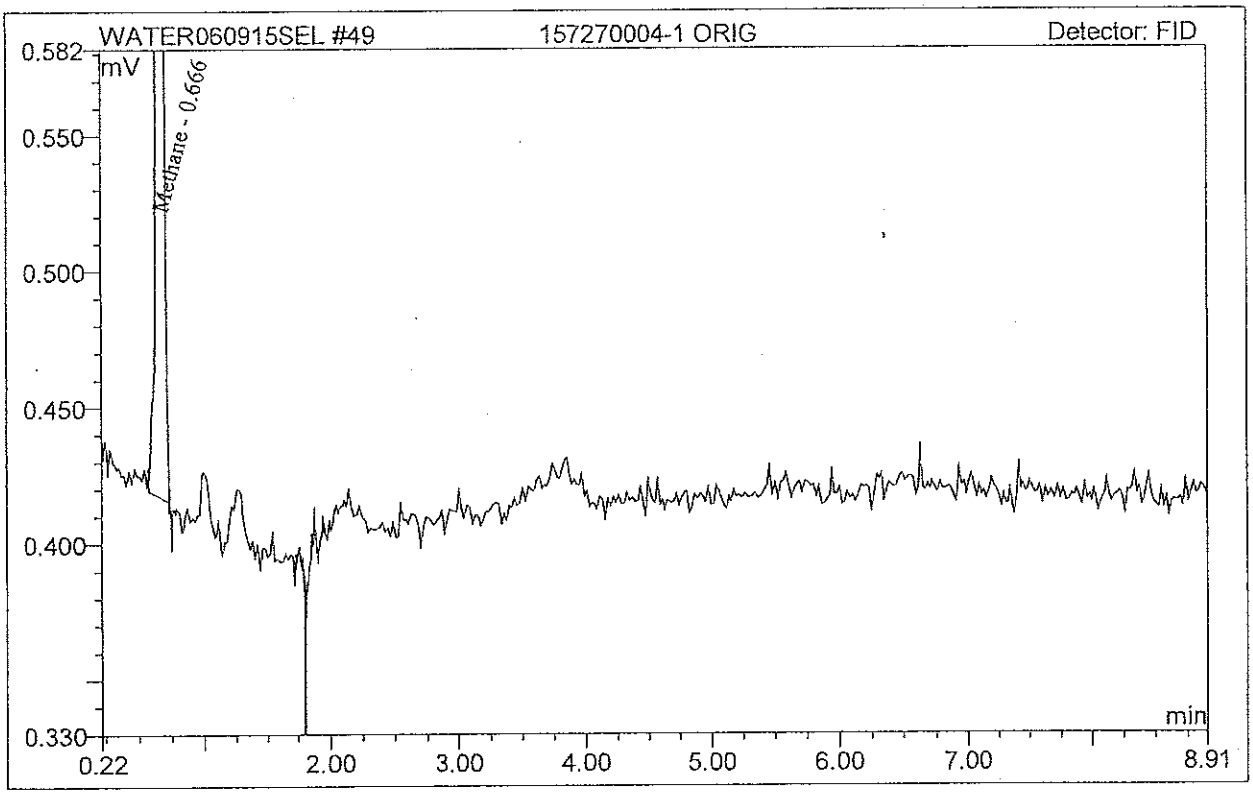


MICROSEEPS

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



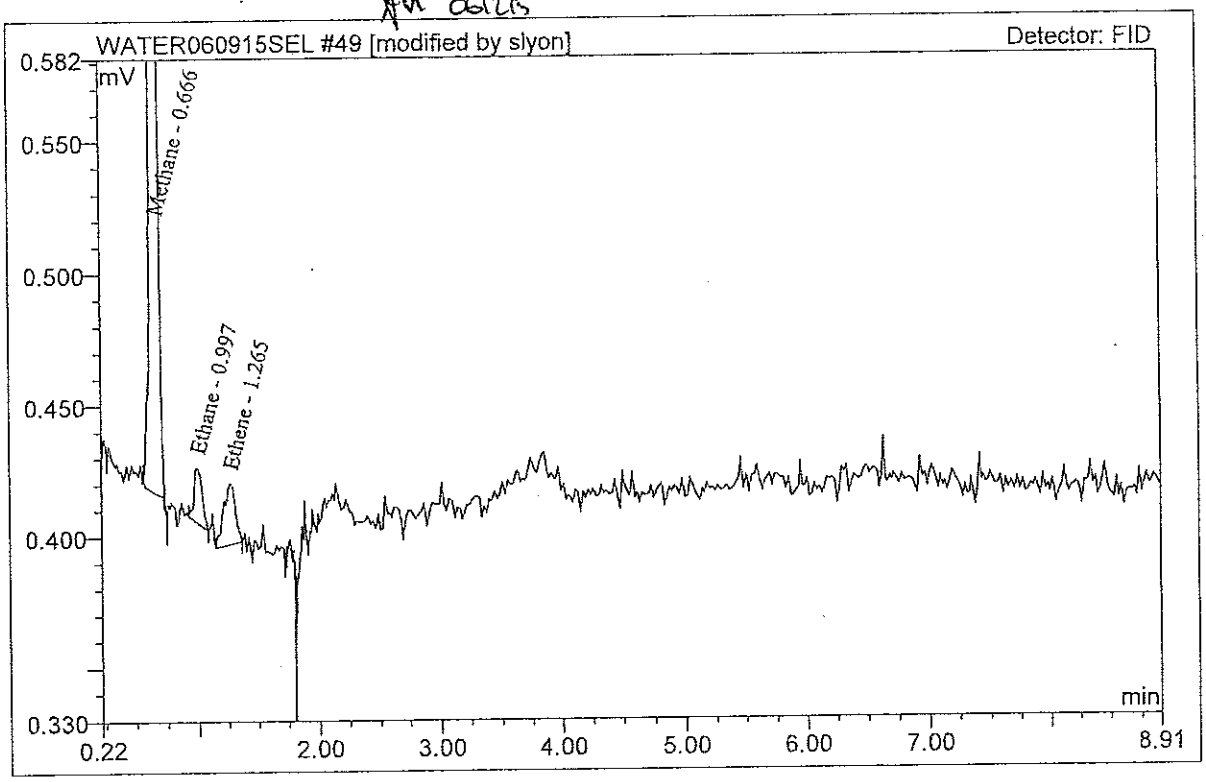
MICROSEEPS

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

AM 061215

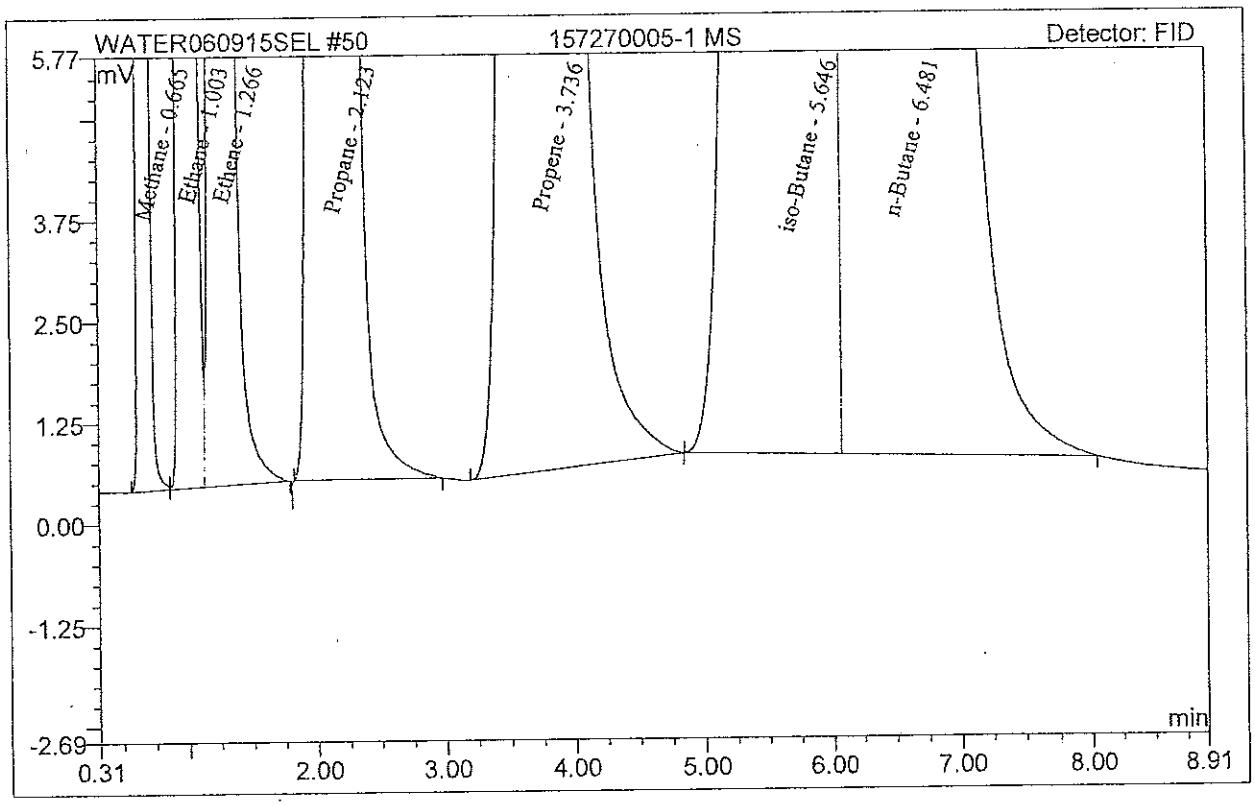


MICROSEEPS

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



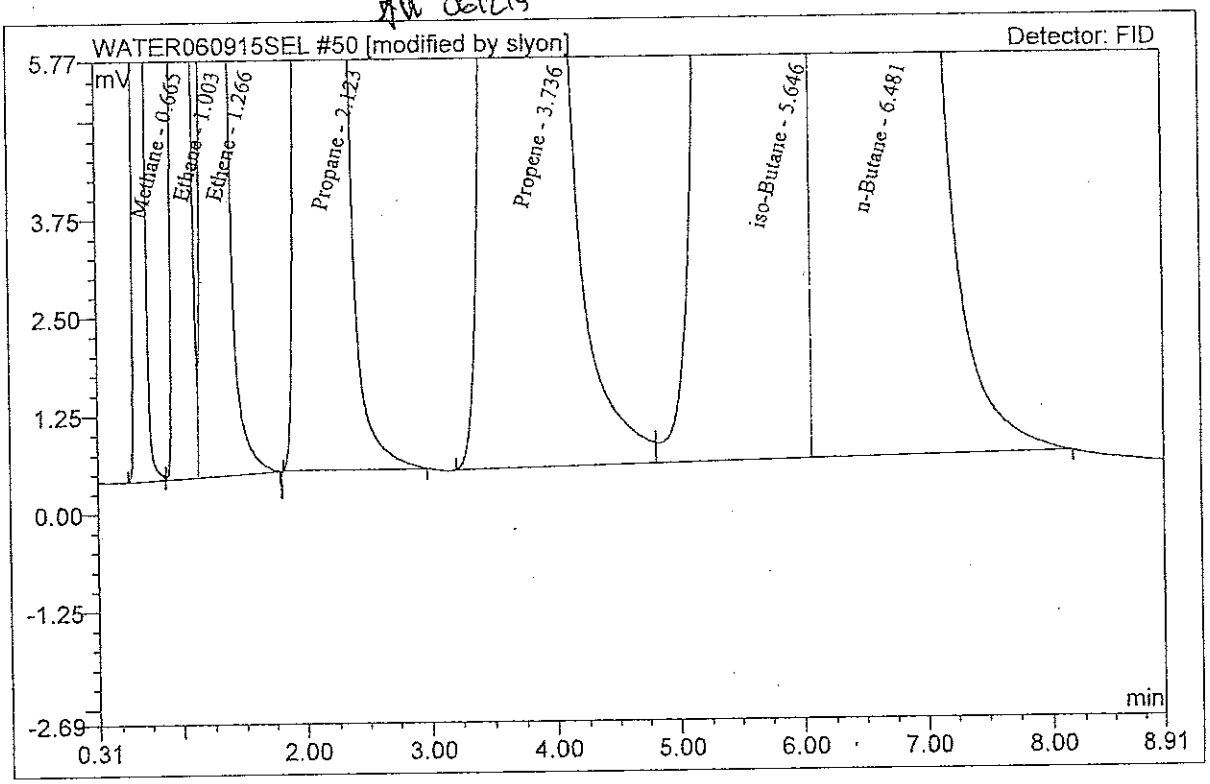
MICROSEEPS

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

AM 061215

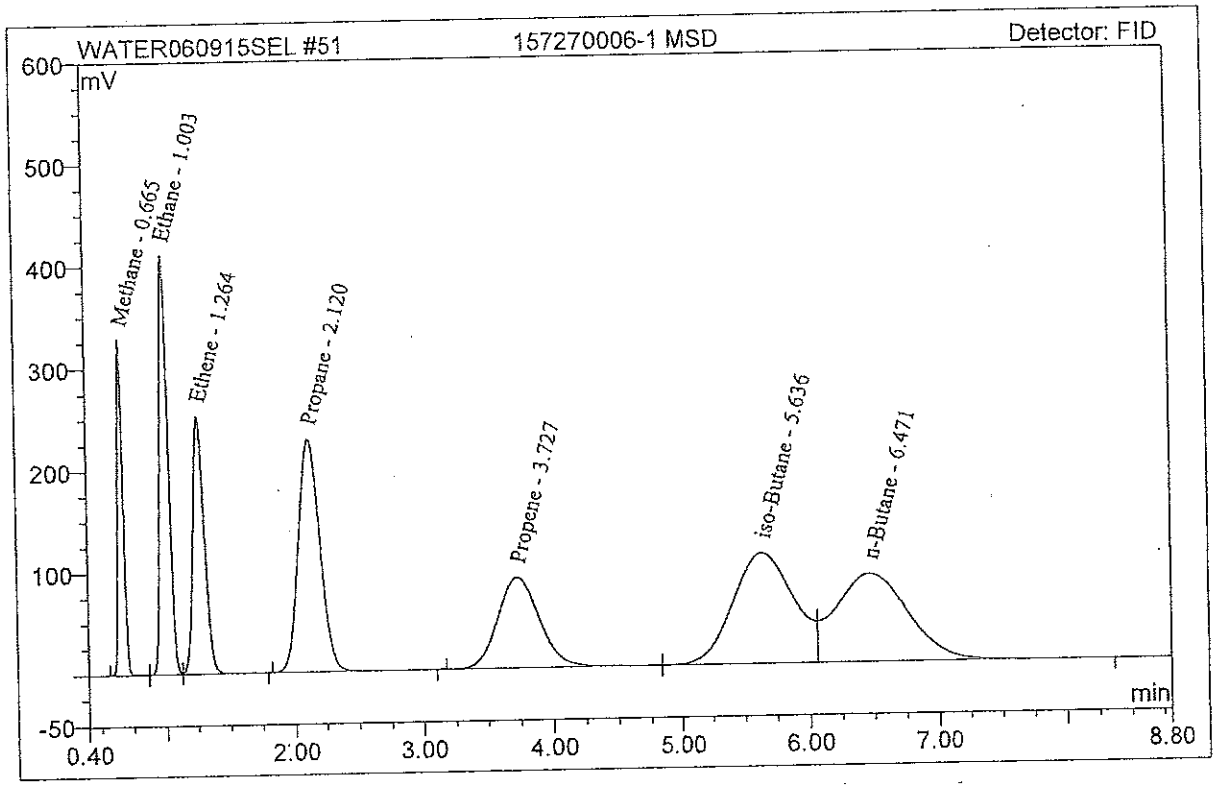


MICROSEEPS

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

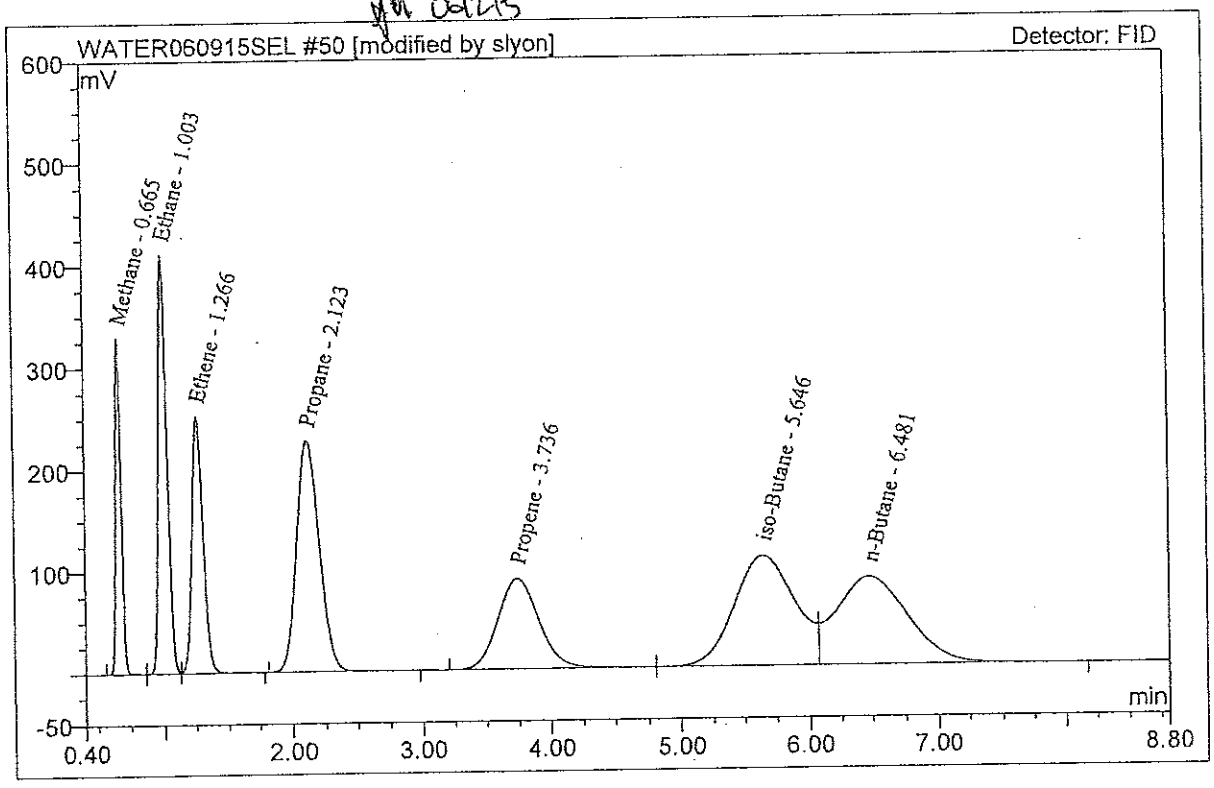


MICROSEEPS

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

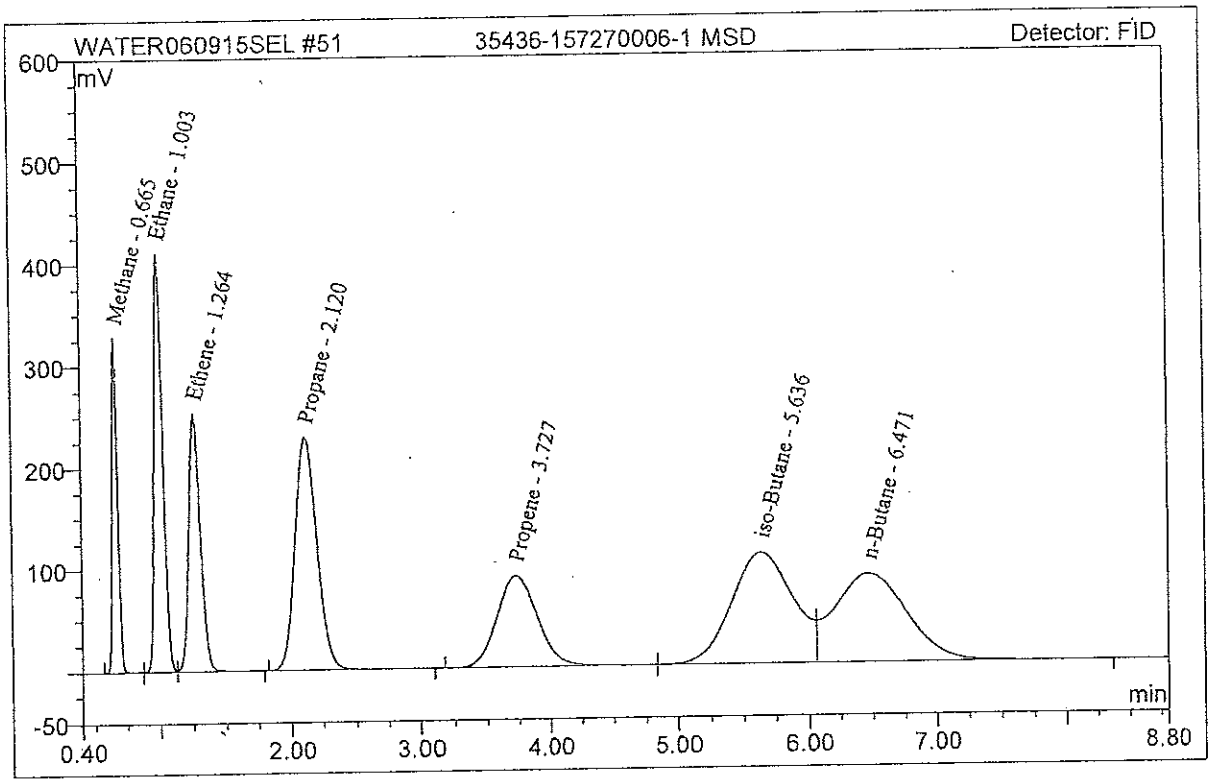


MICROSEEPS

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

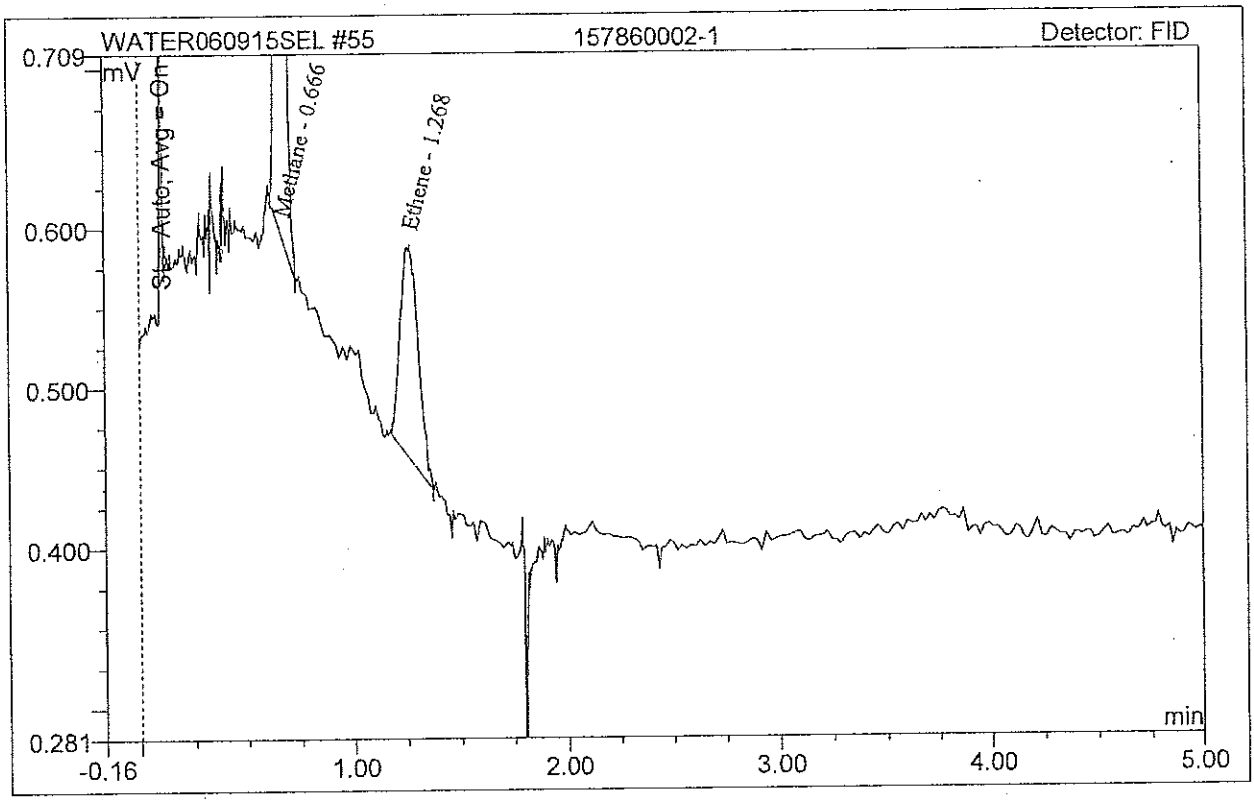


MICROSEEPS

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

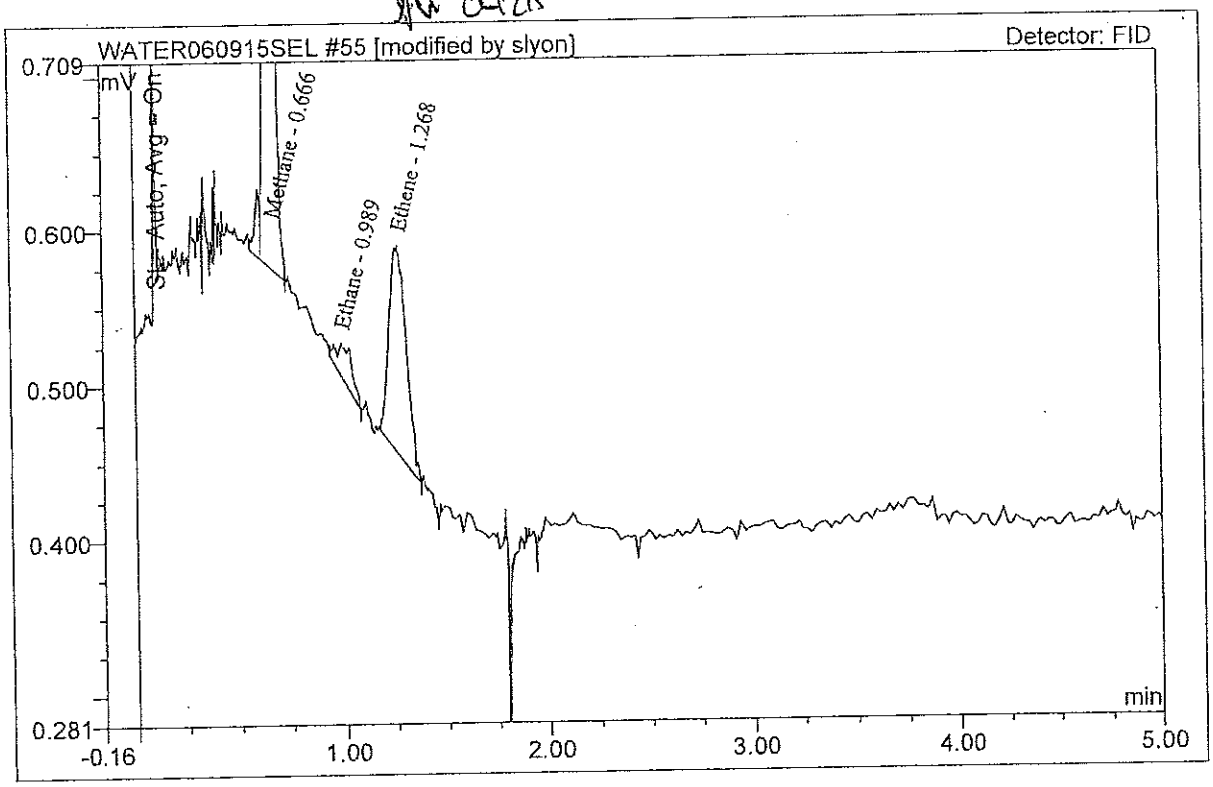


MICROSEEPS

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

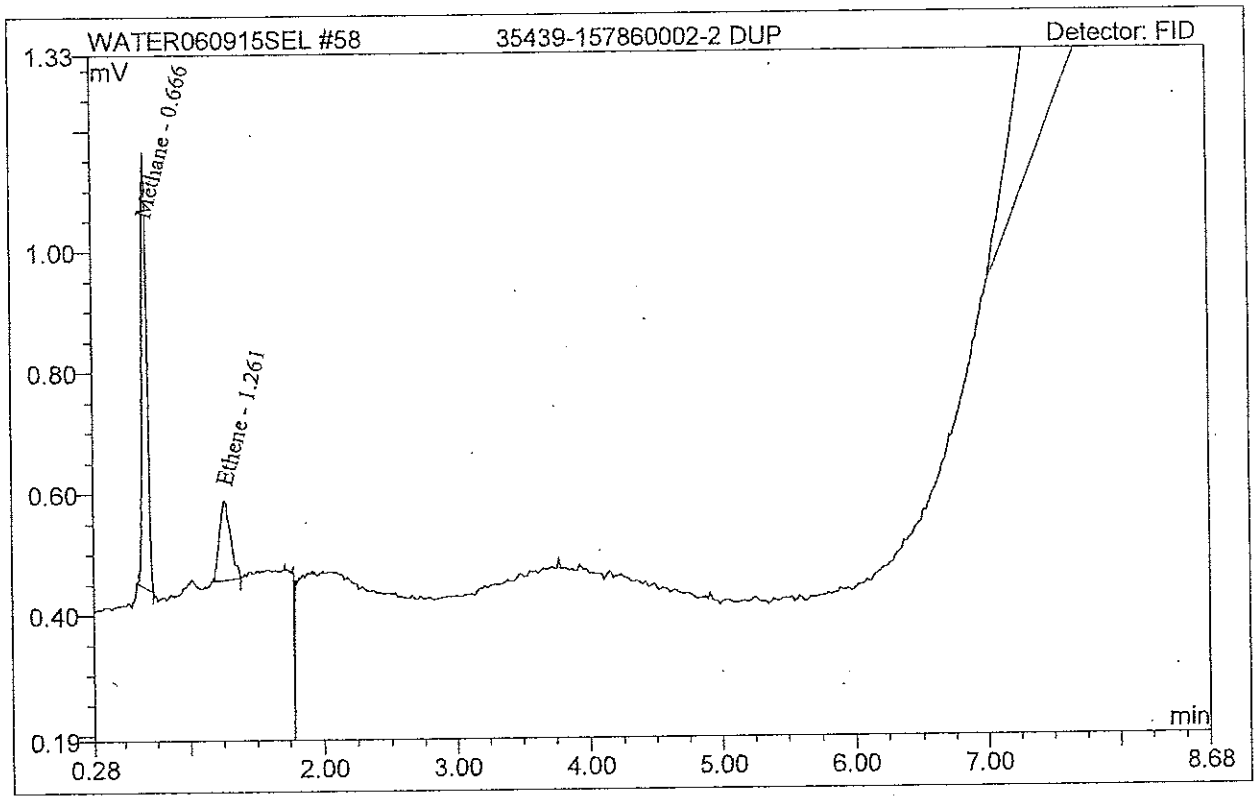


MICROSEEPS

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



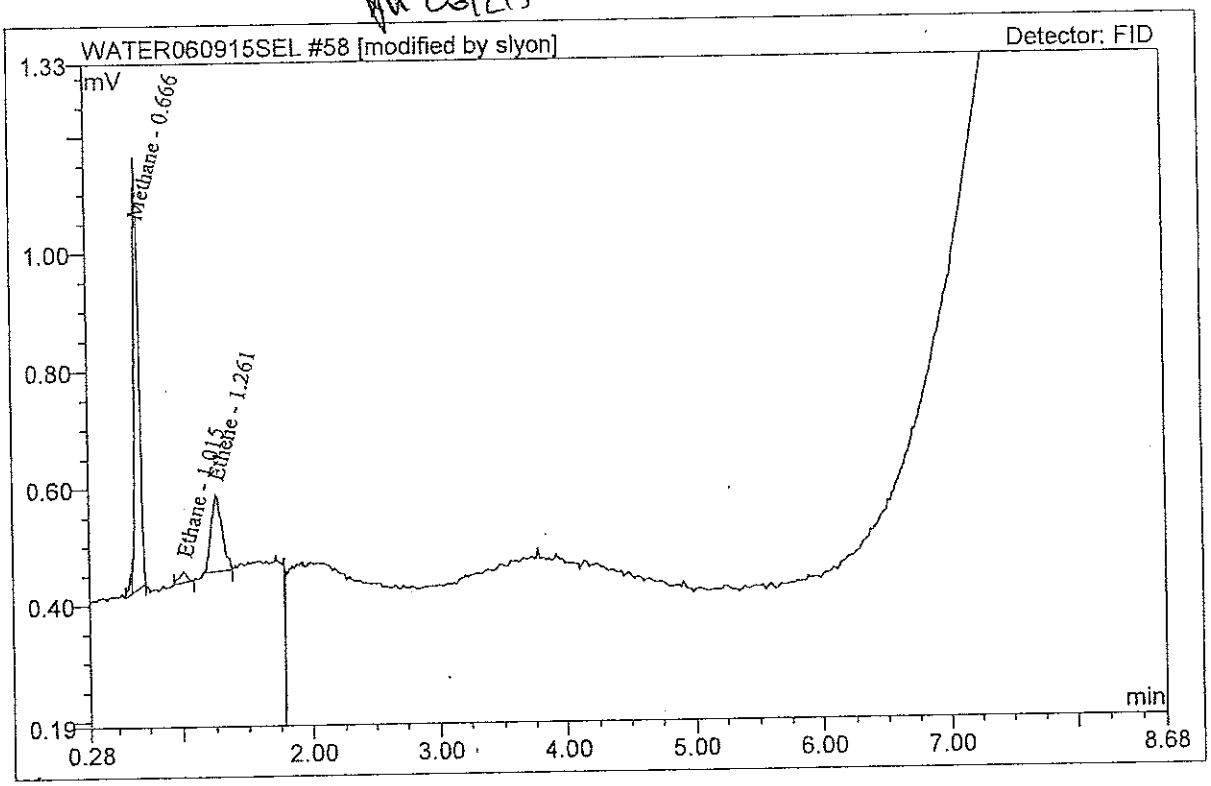
MICROSEEPS

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

KH 061215



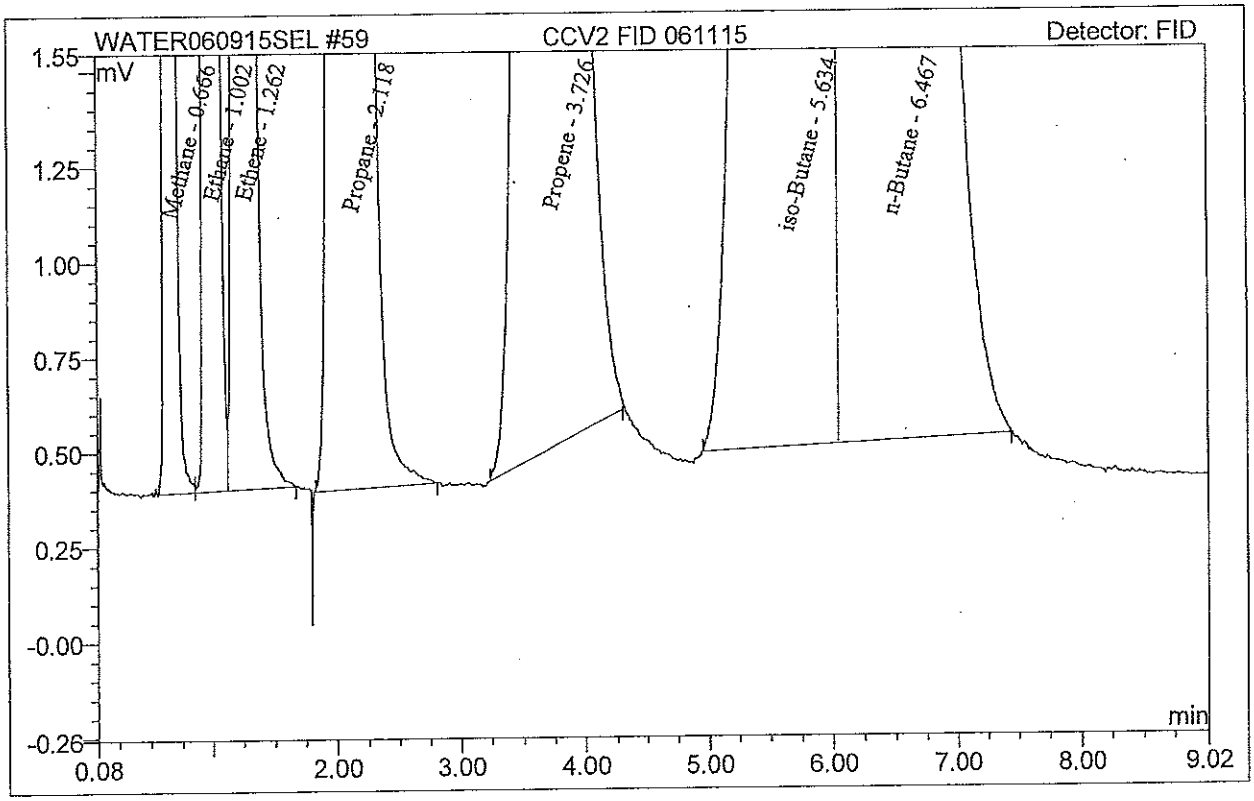
MICROSEEPS

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

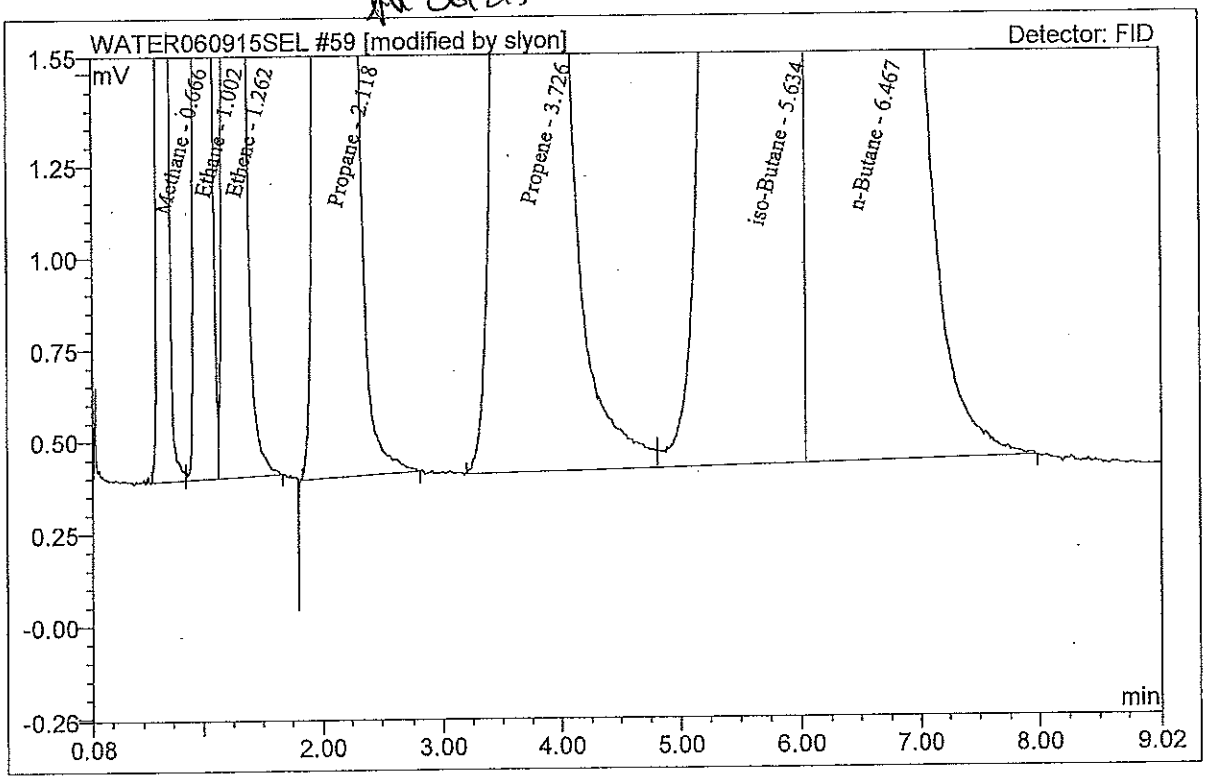
Sample Analysis Report

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

AH 06/25

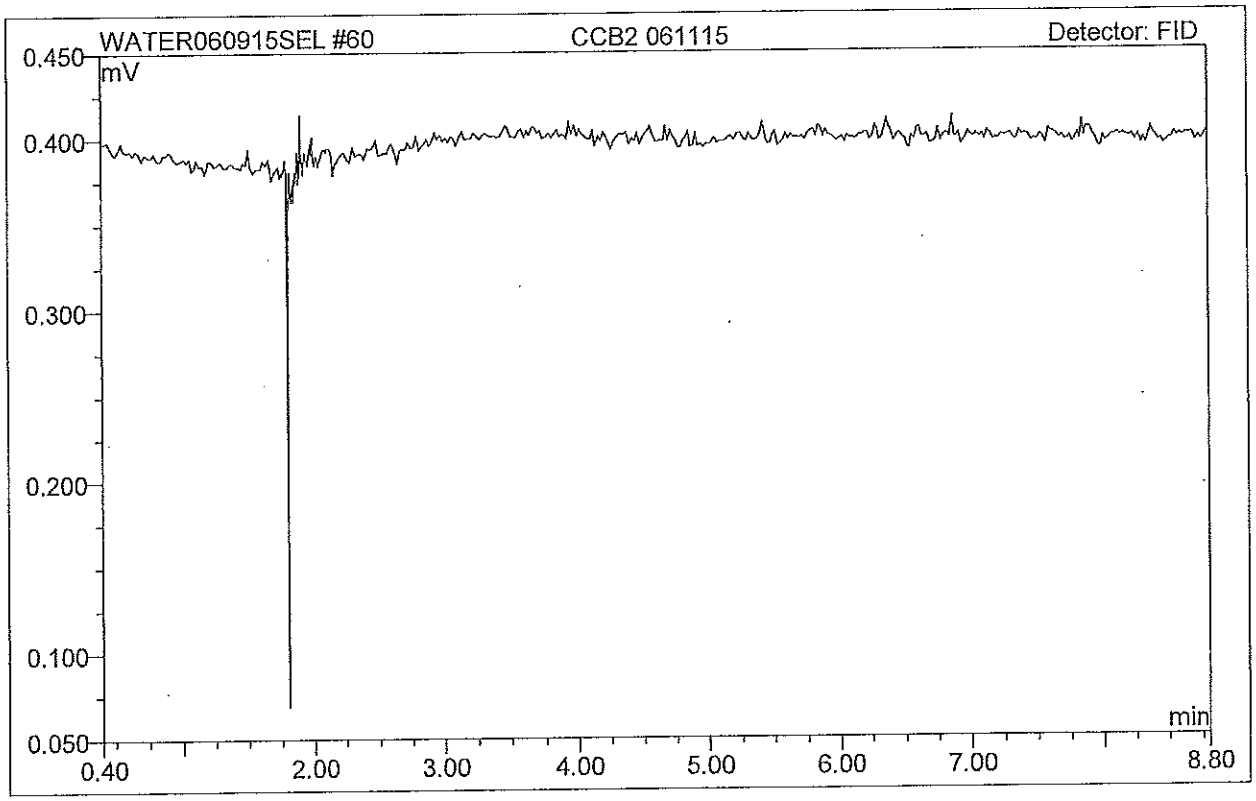


MICROSEEPS

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

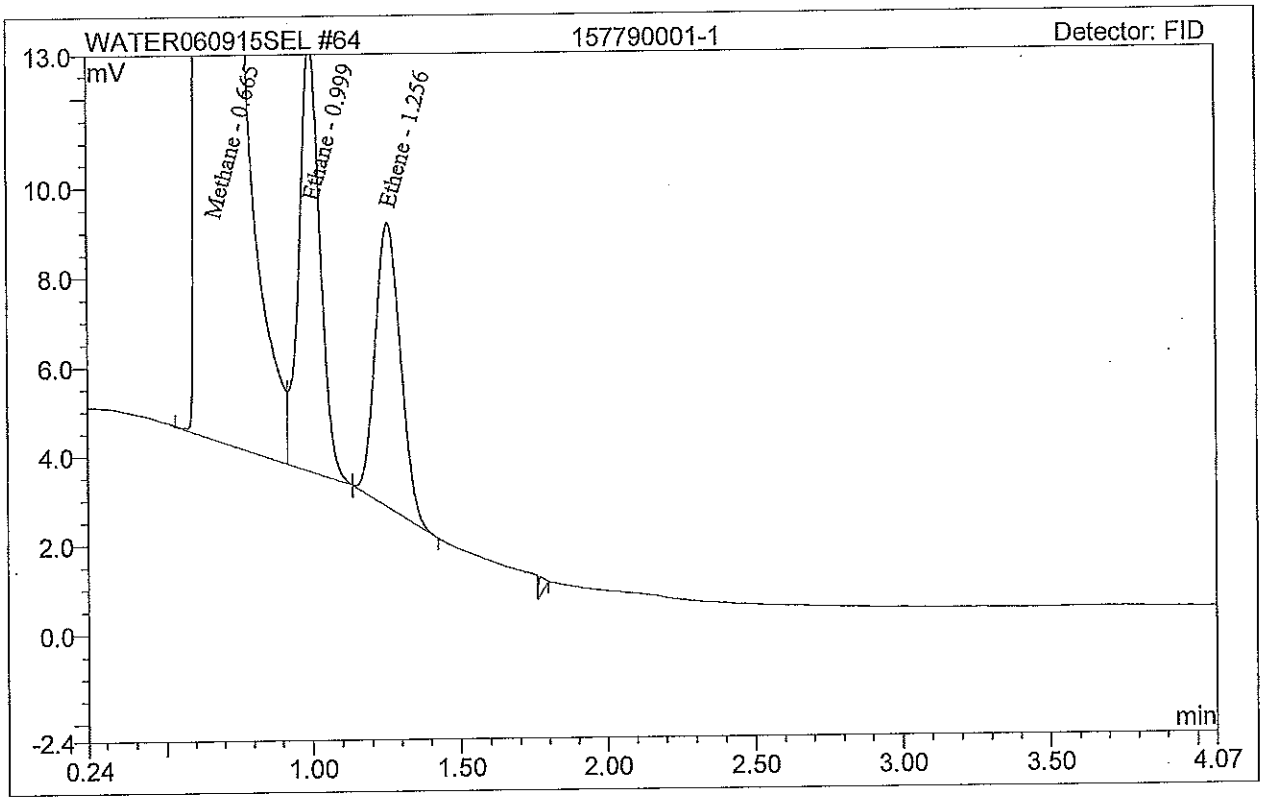


MICROSEEPS

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



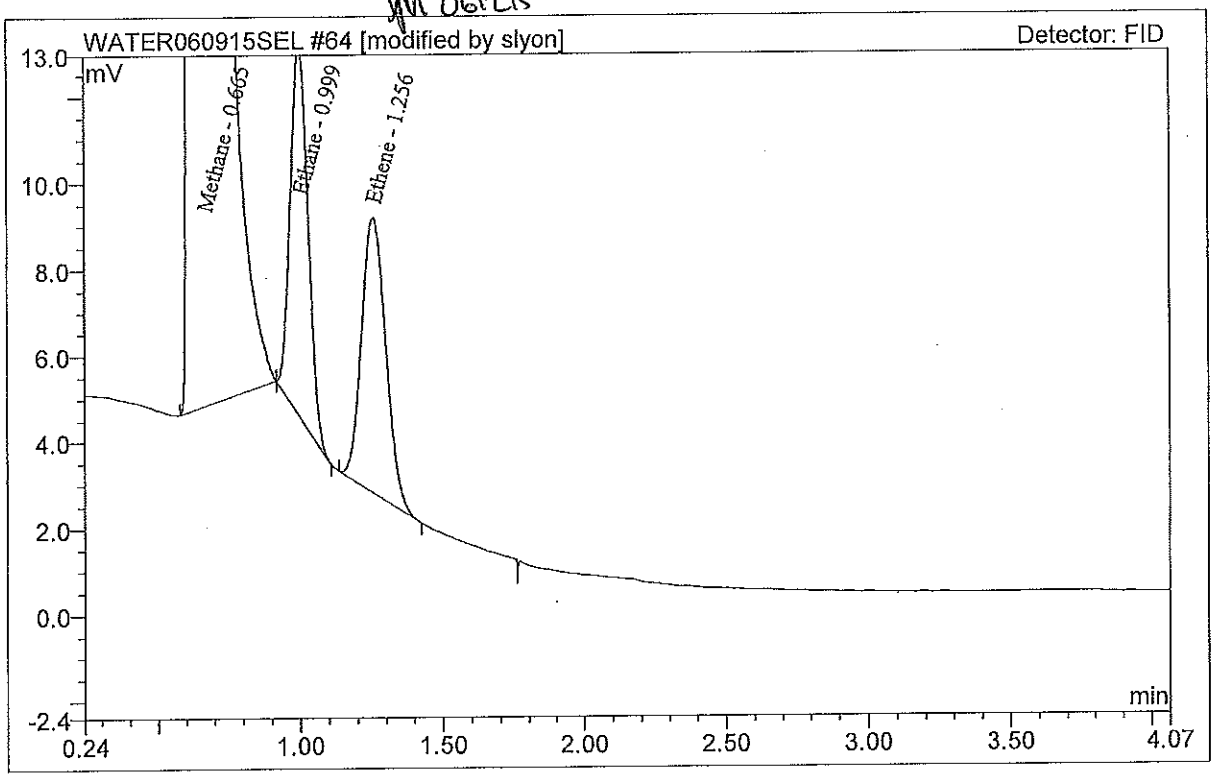
MICROSEEPS

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

JM 06/15

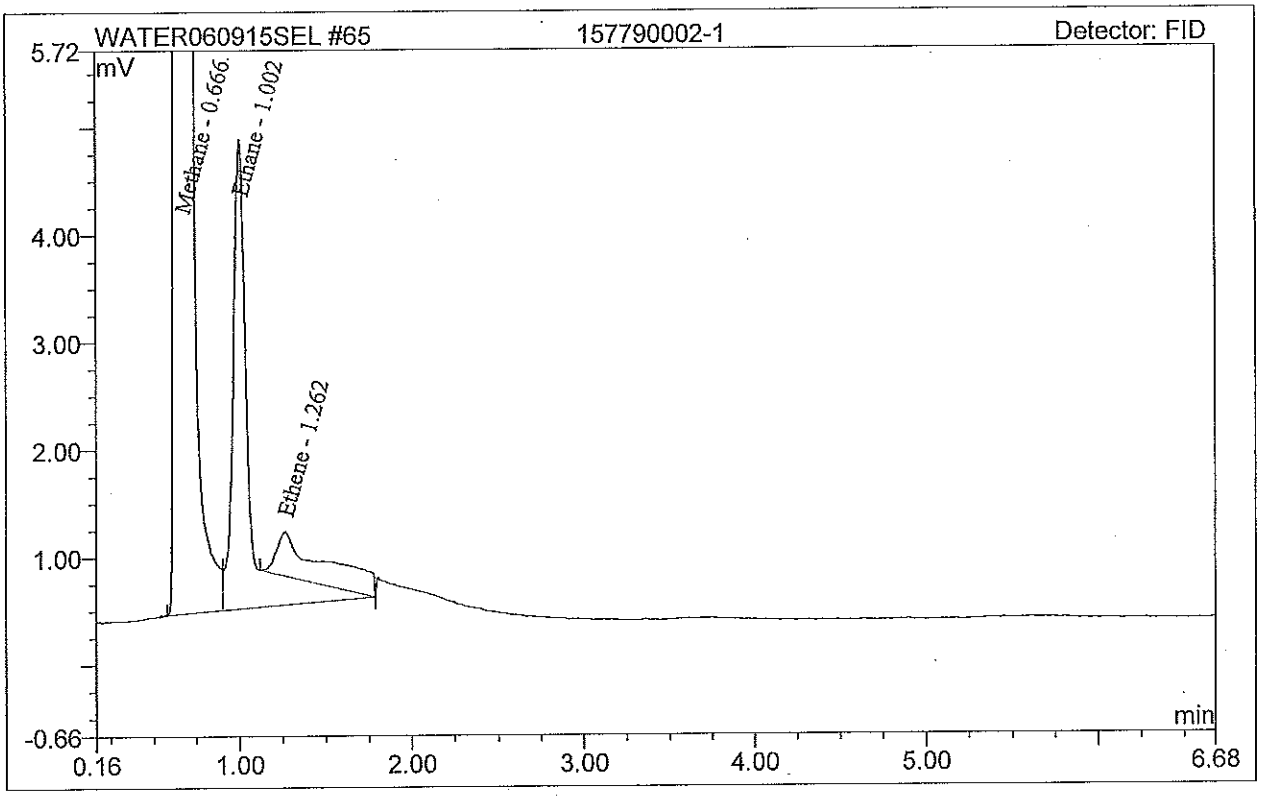


MICROSEEPS

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



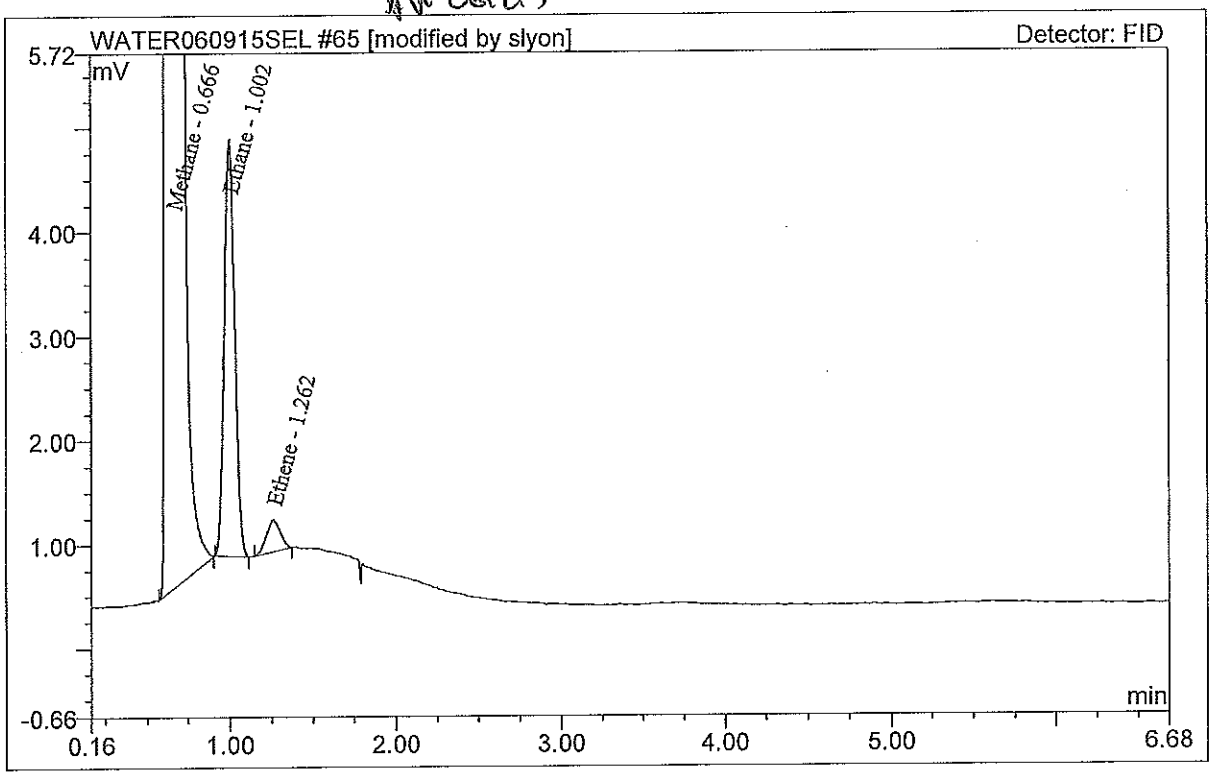
MICROSEEPS

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

JW 061215

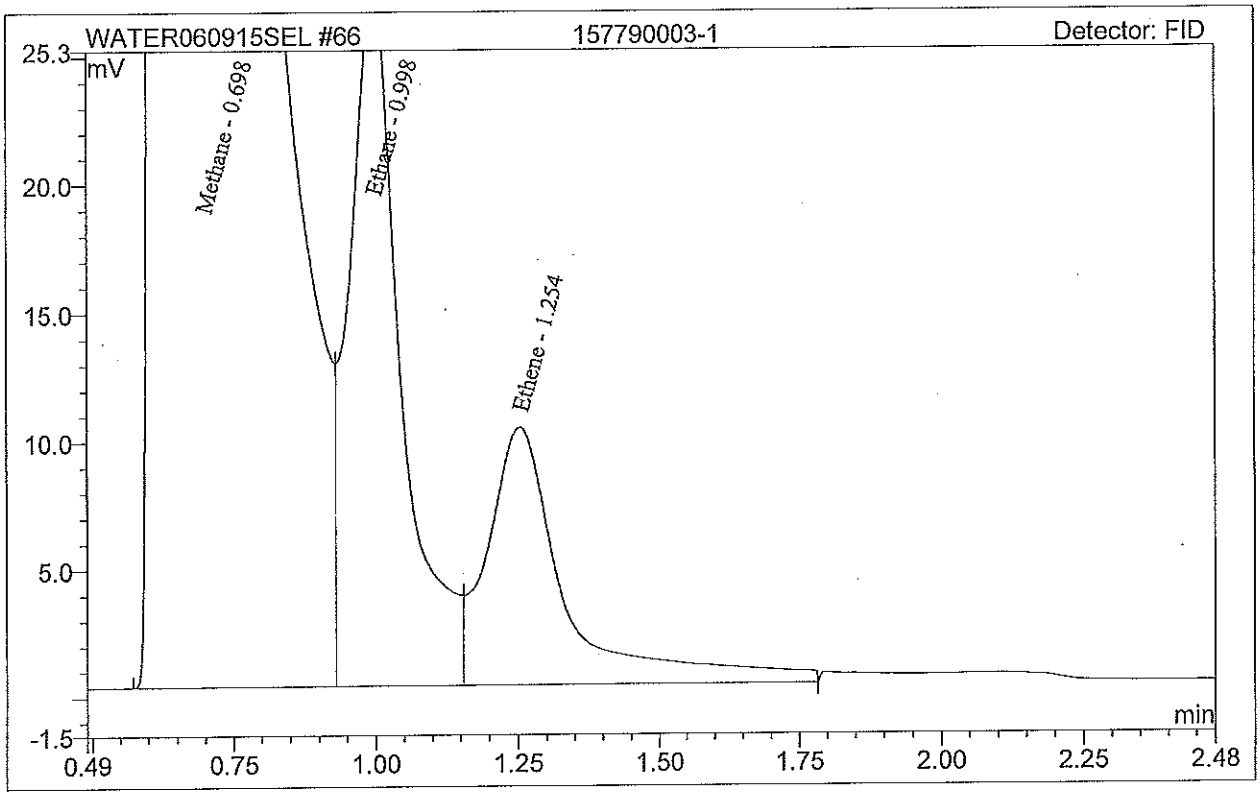


MICROSEEPS

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



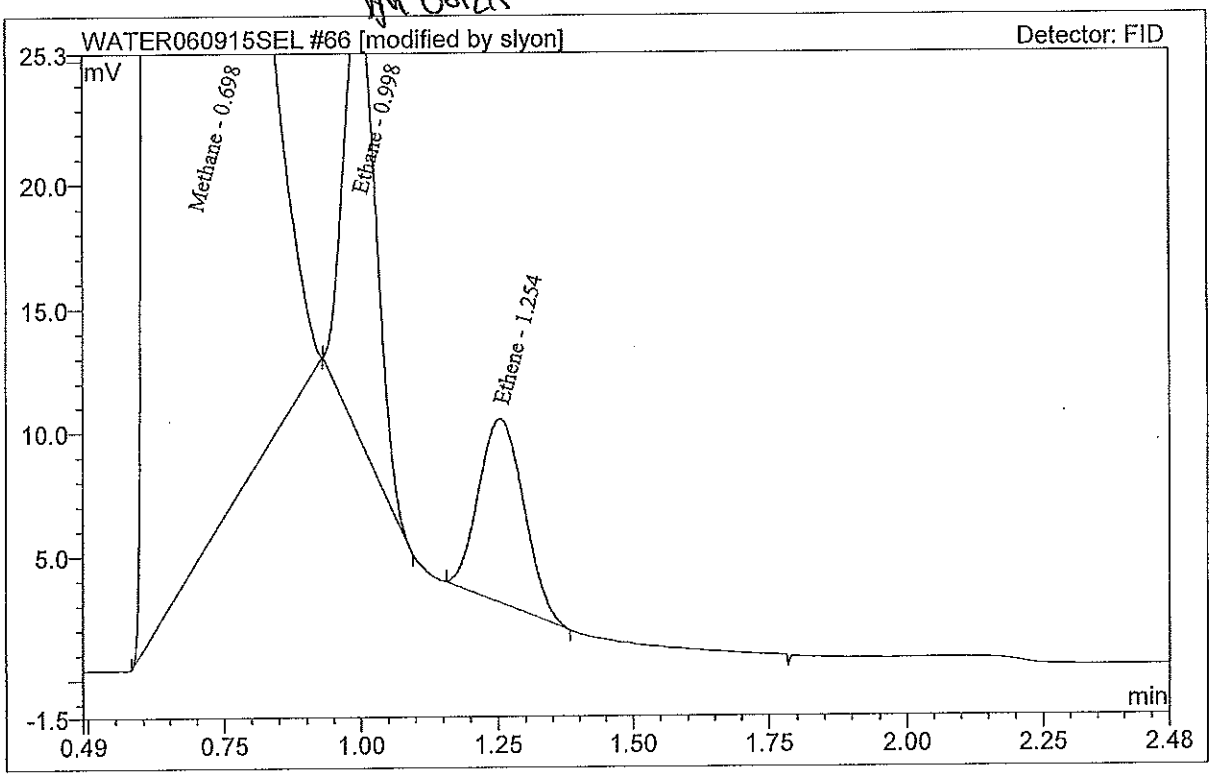
MICROSEEPS

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

MM 061215

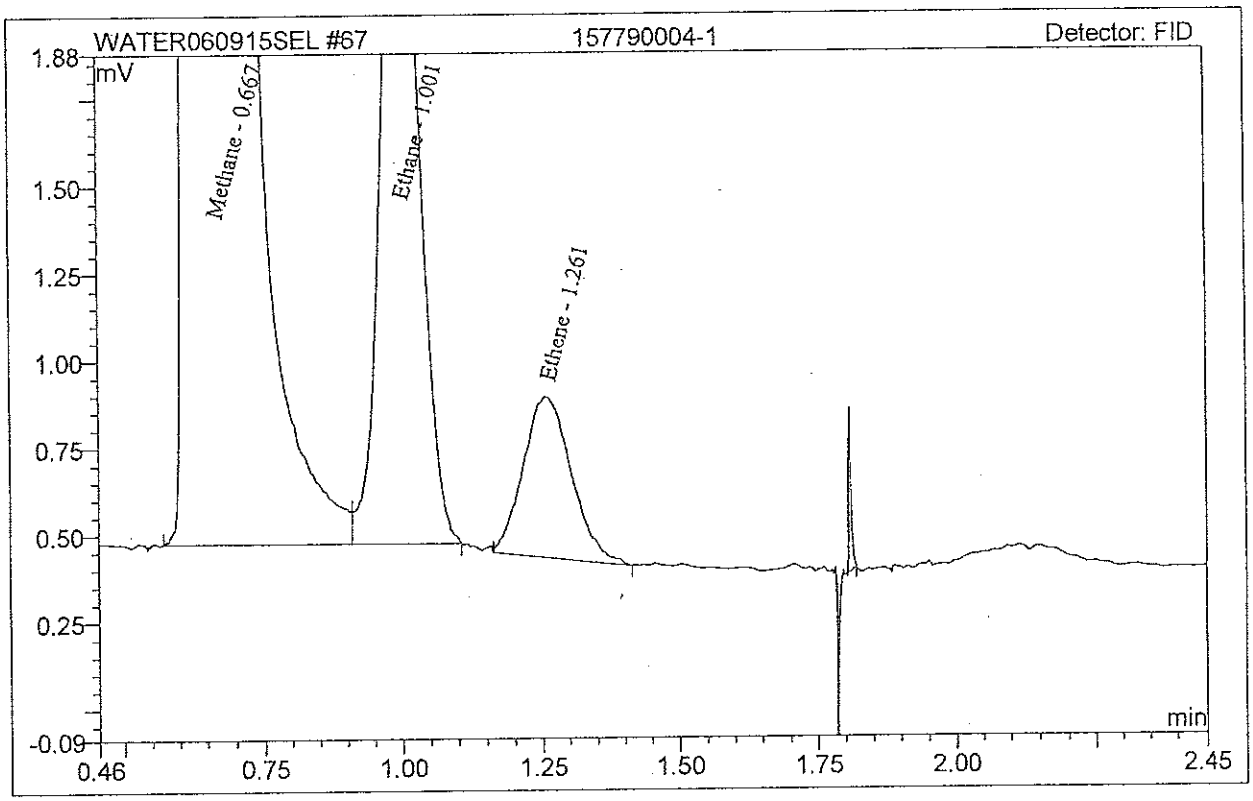


MICROSEEPS

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

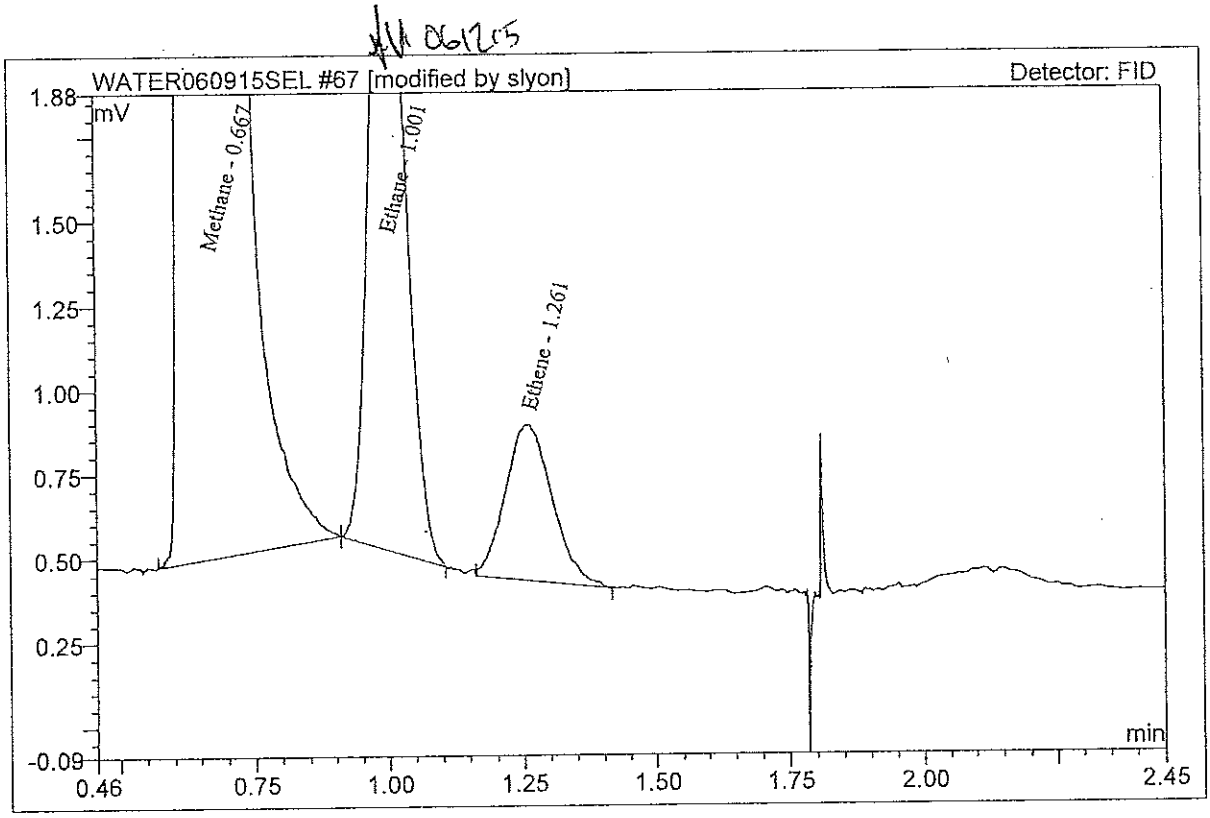


MICROSEEPS

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

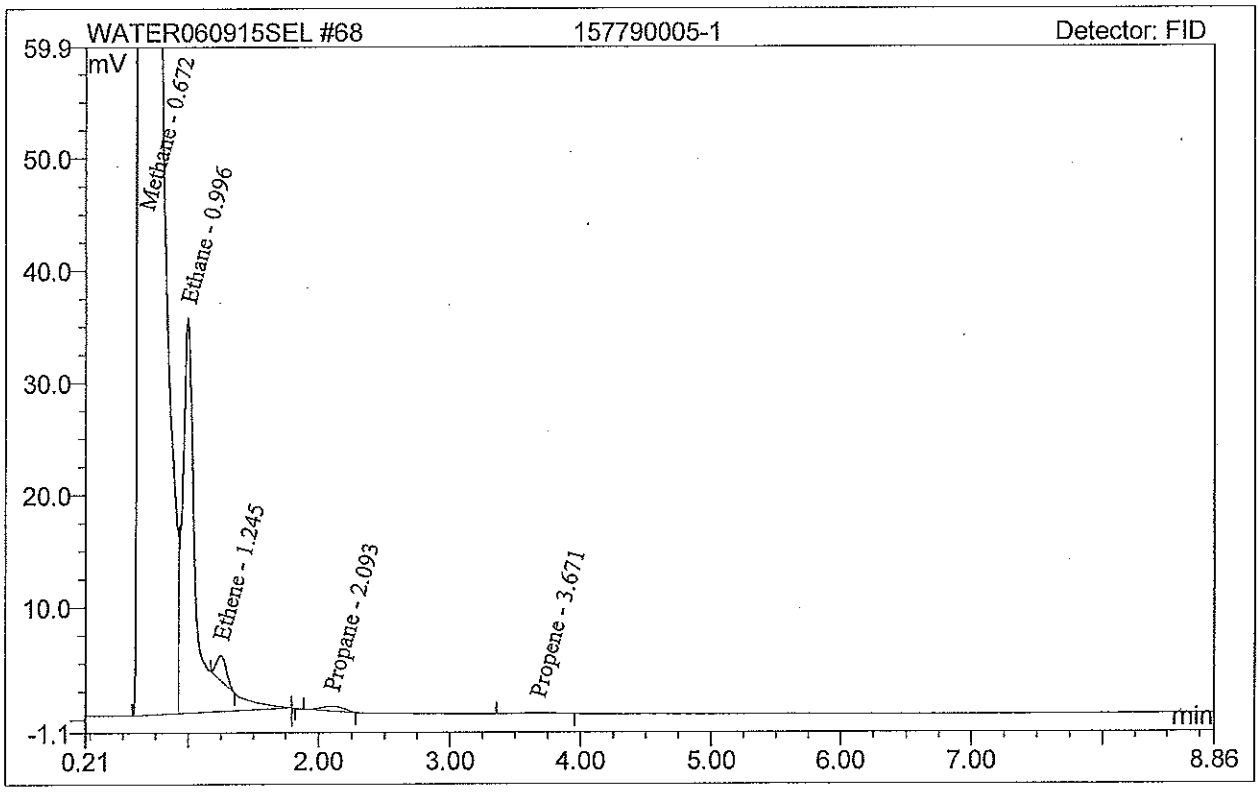


MICROSEEPS

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



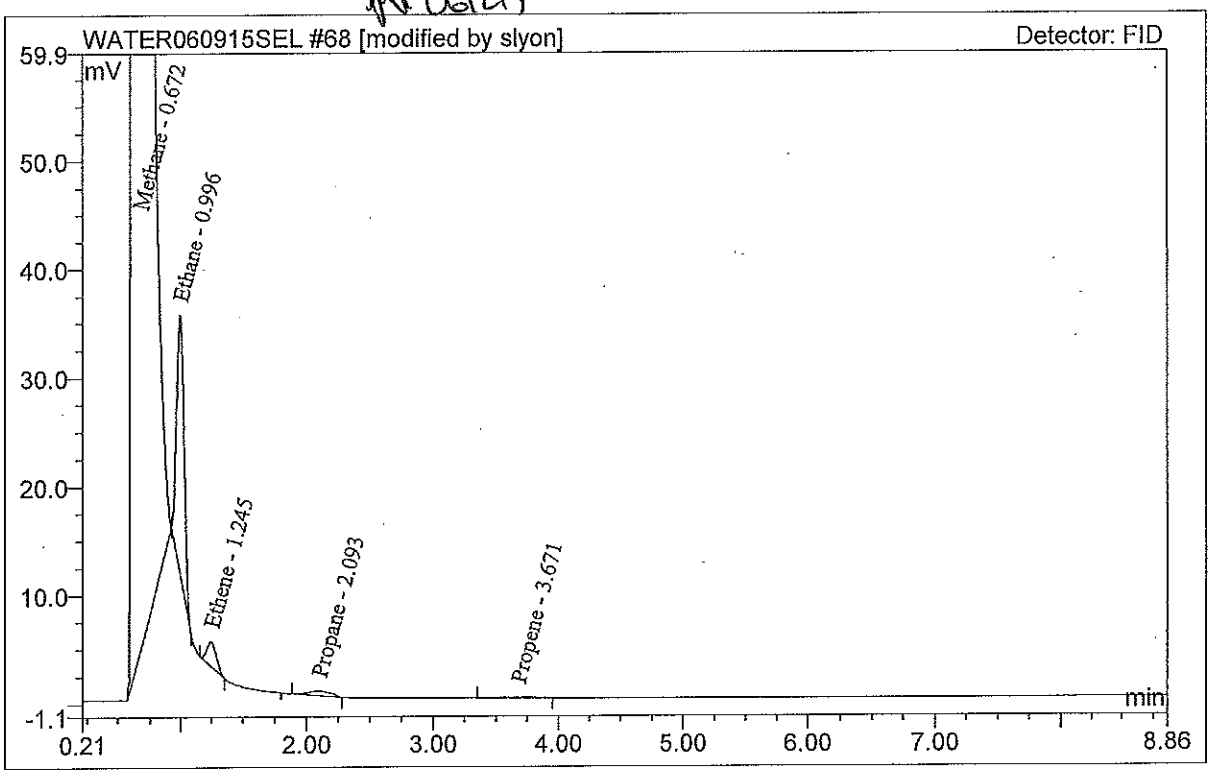
MICROSEEPS

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

#1 06/15

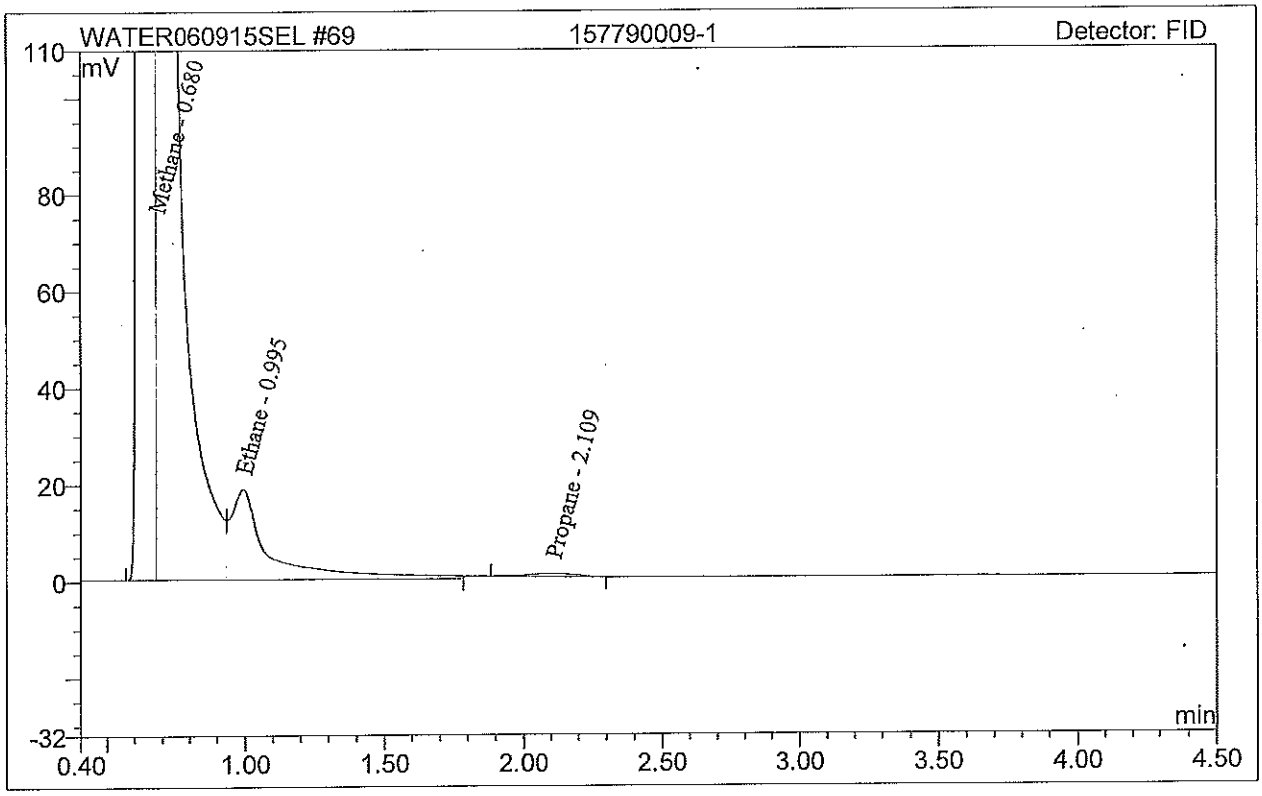


MICROSEEPS

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



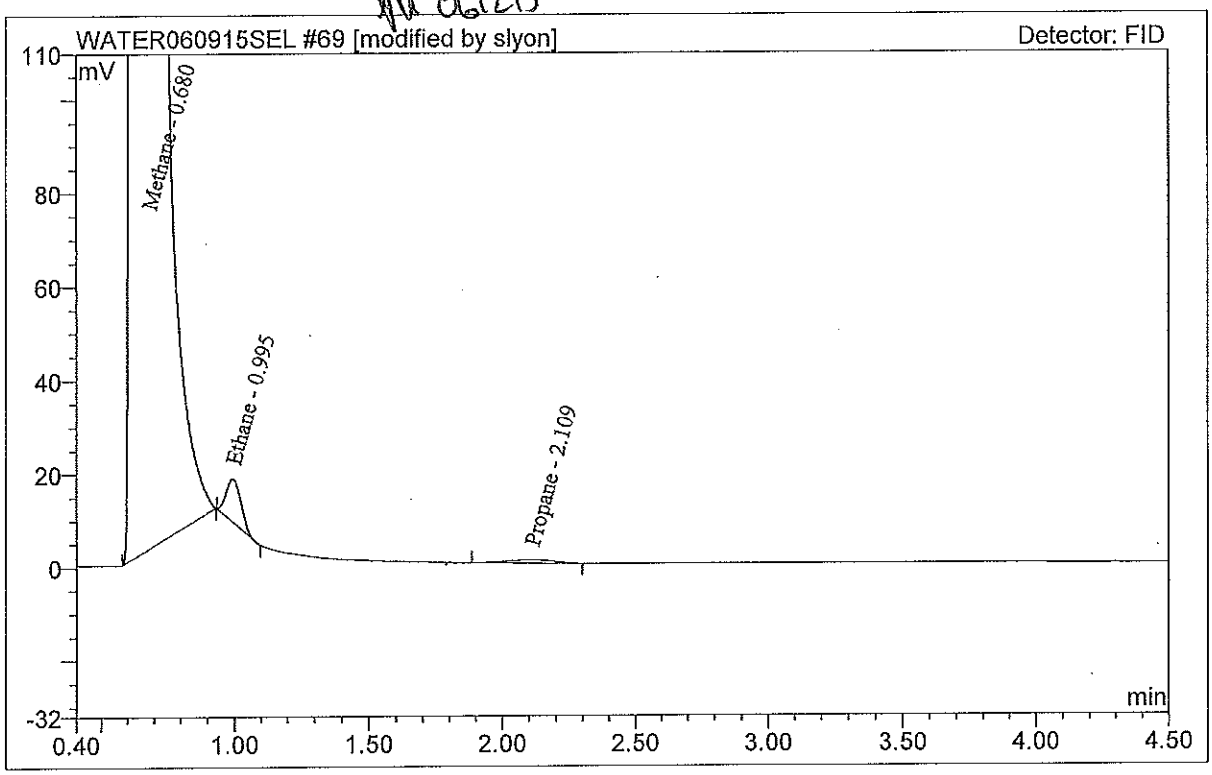
MICROSEEPS

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

6/11/2015

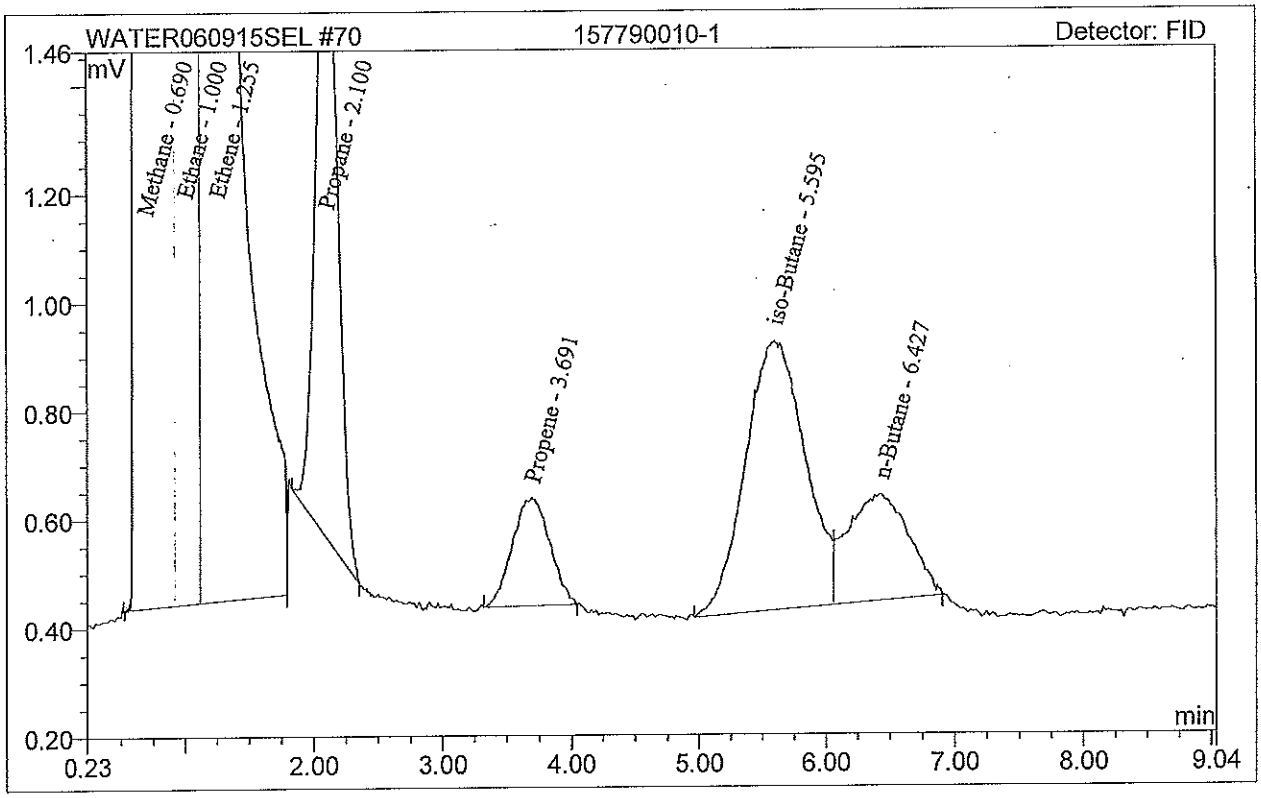


MICROSEEPS

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

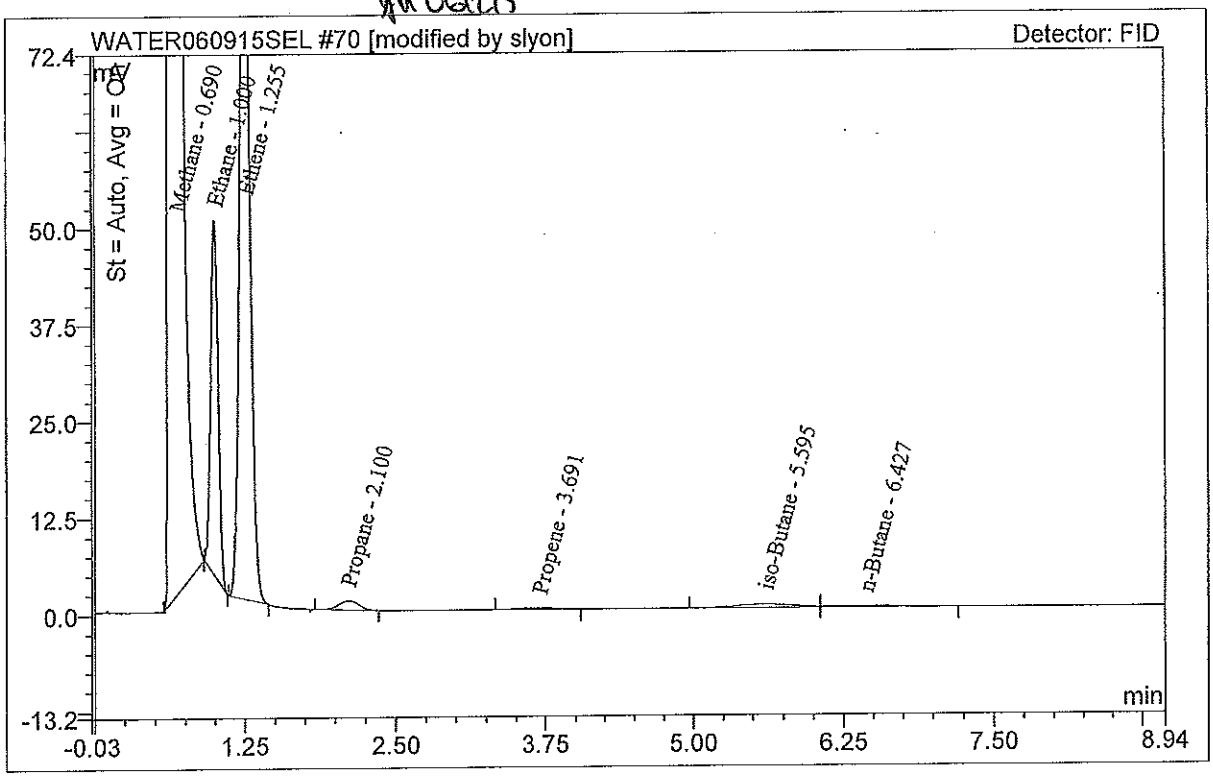


MICROSEEPS

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

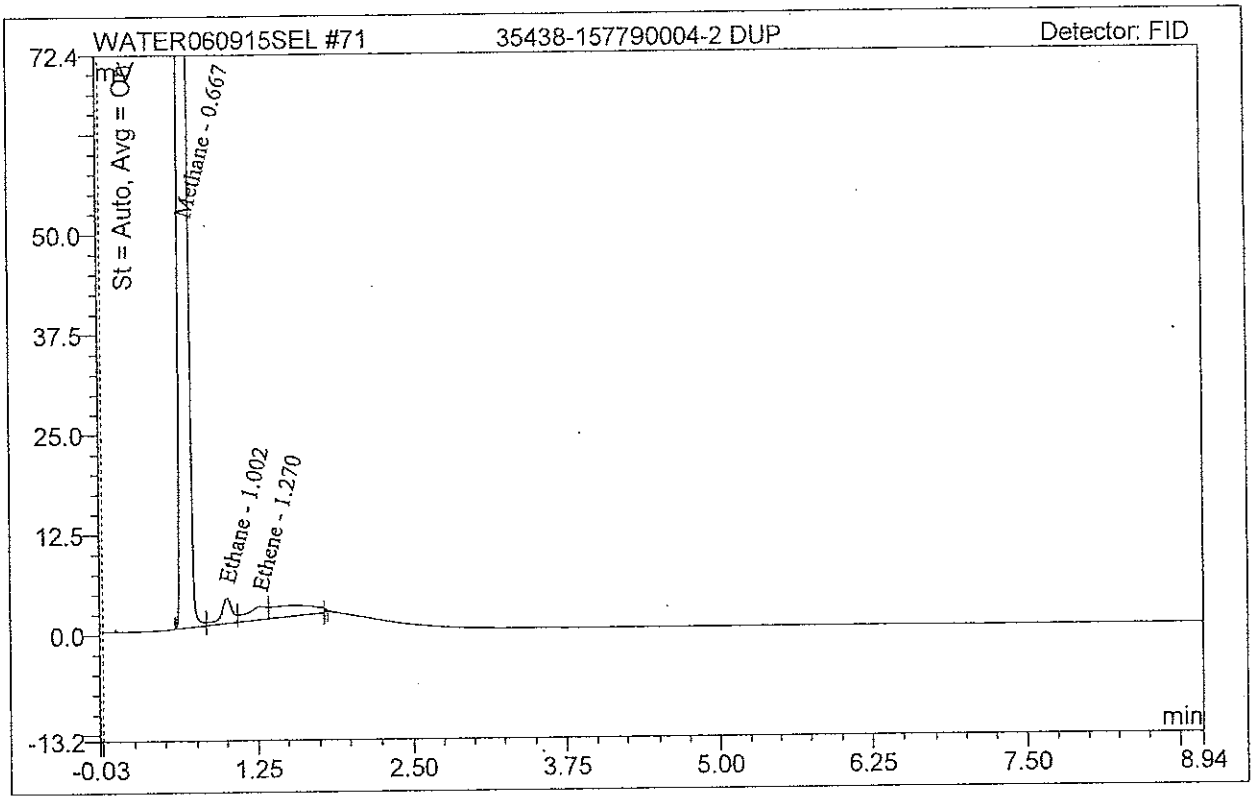


MICROSEEPS

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



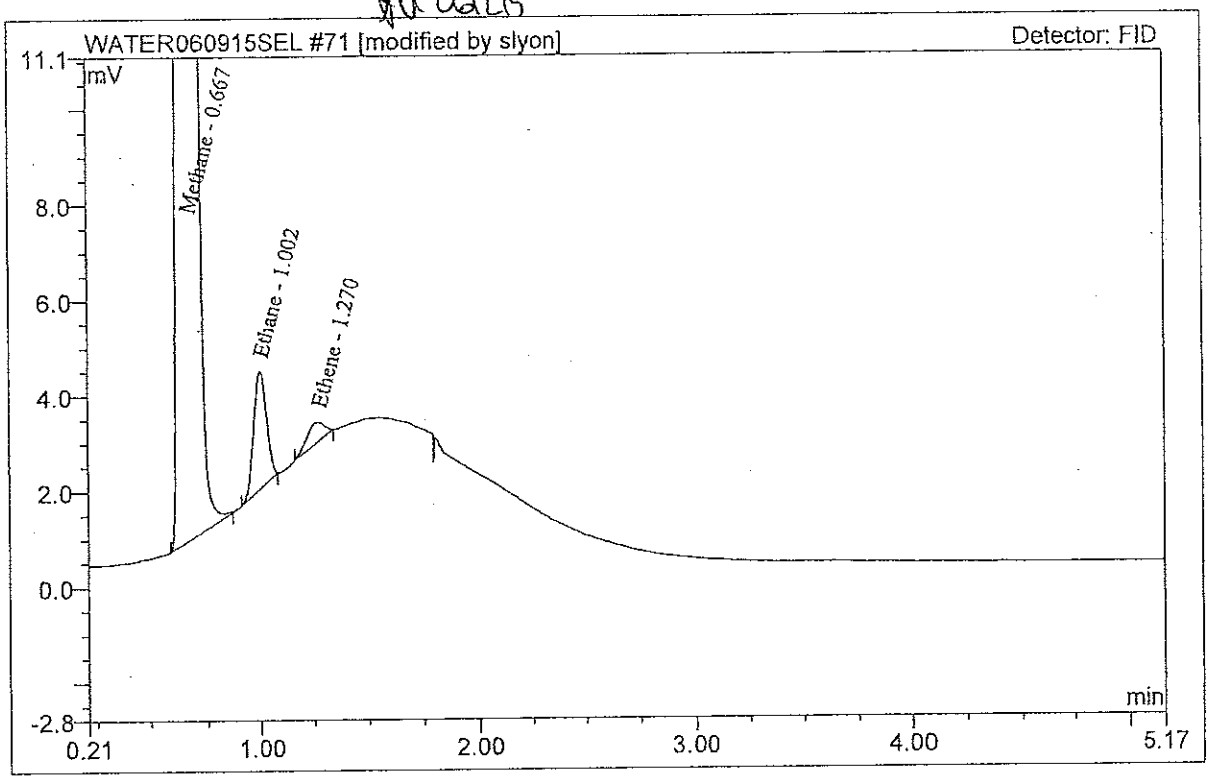
MICROSEEPS

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

#11 06/25



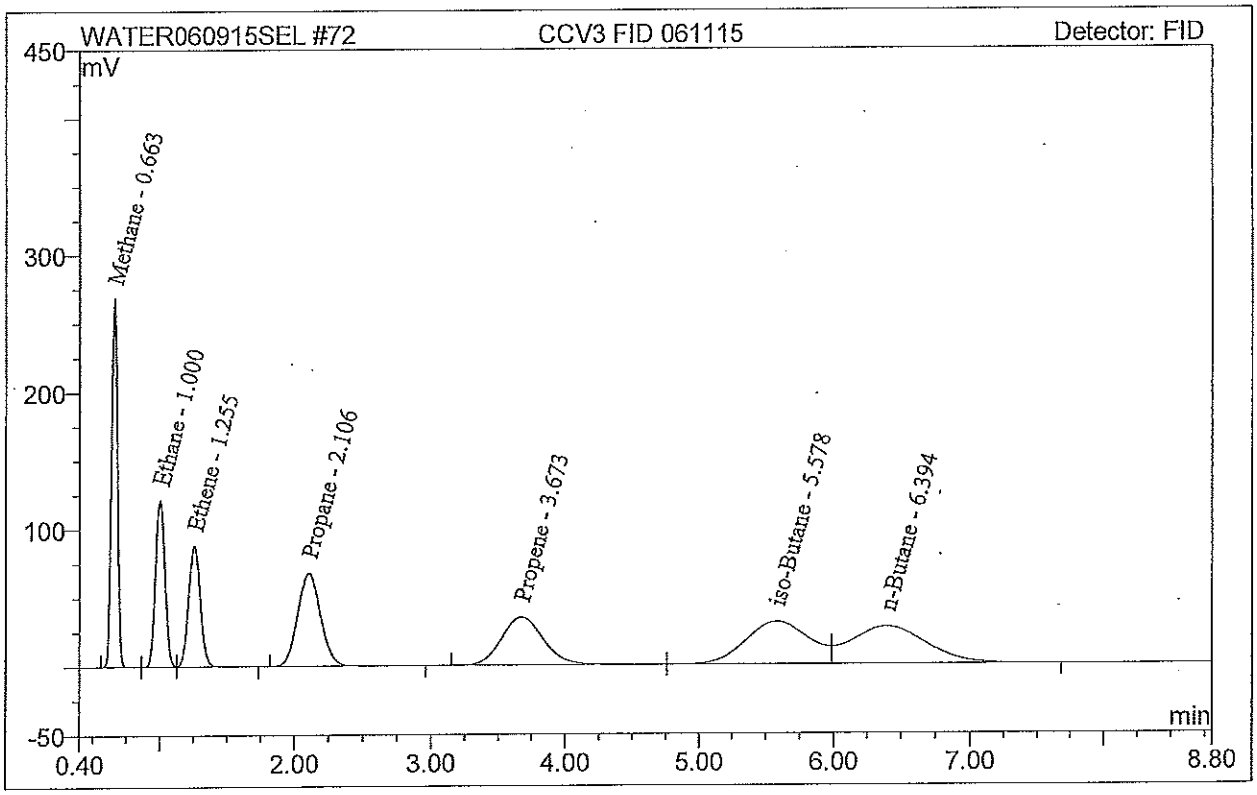
MICROSEEPS

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
36.0466
23.152
25.566

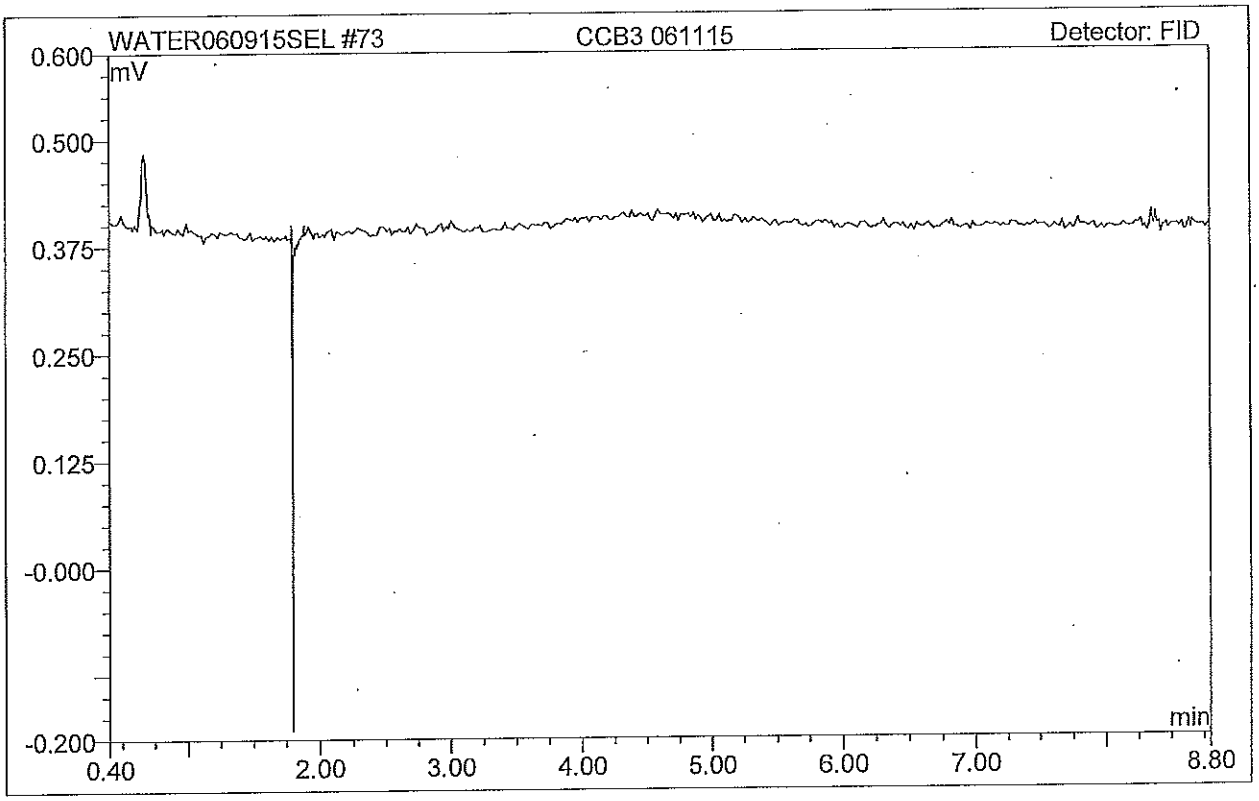


MICROSEEPS

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



Risk Department
Case Narrative

Batch number: 4637 - DISG

Original Run Date: 060515

Matrix: Water

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)

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: 060615

Manual Integration Conducted? YES NO
(Circle One)

Reviewed by: ark Date: 6/17/15

Reviewed & Entered by: Upland Date: 060605

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 _____

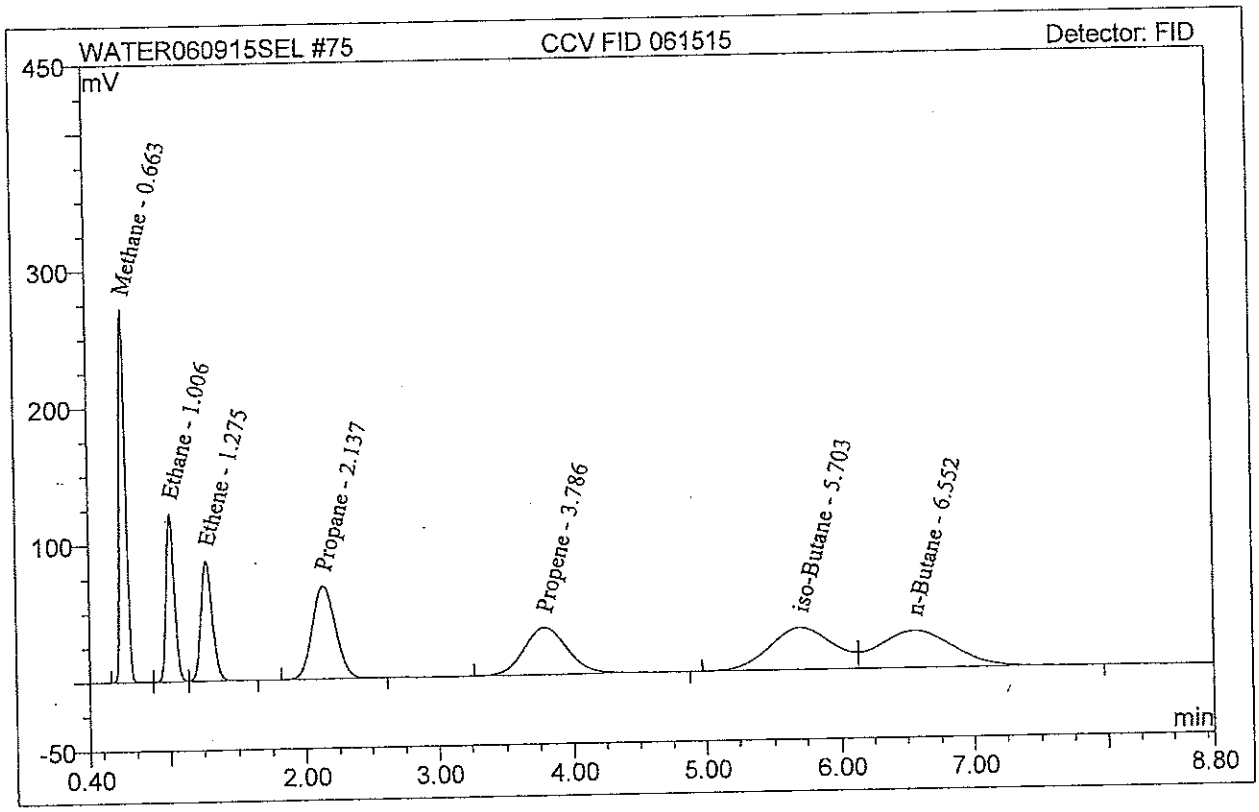
Reviewed _____ 6/17/15

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	TV
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	35.023
5	Propene	3.786	12.880	34.252	BMB	37.8672	
6	iso-Butane	5.703	16.978	30.523	BM	41.9809	41.617
7	n-Butane	6.552	17.676	26.904	MB	45.2947	45.011

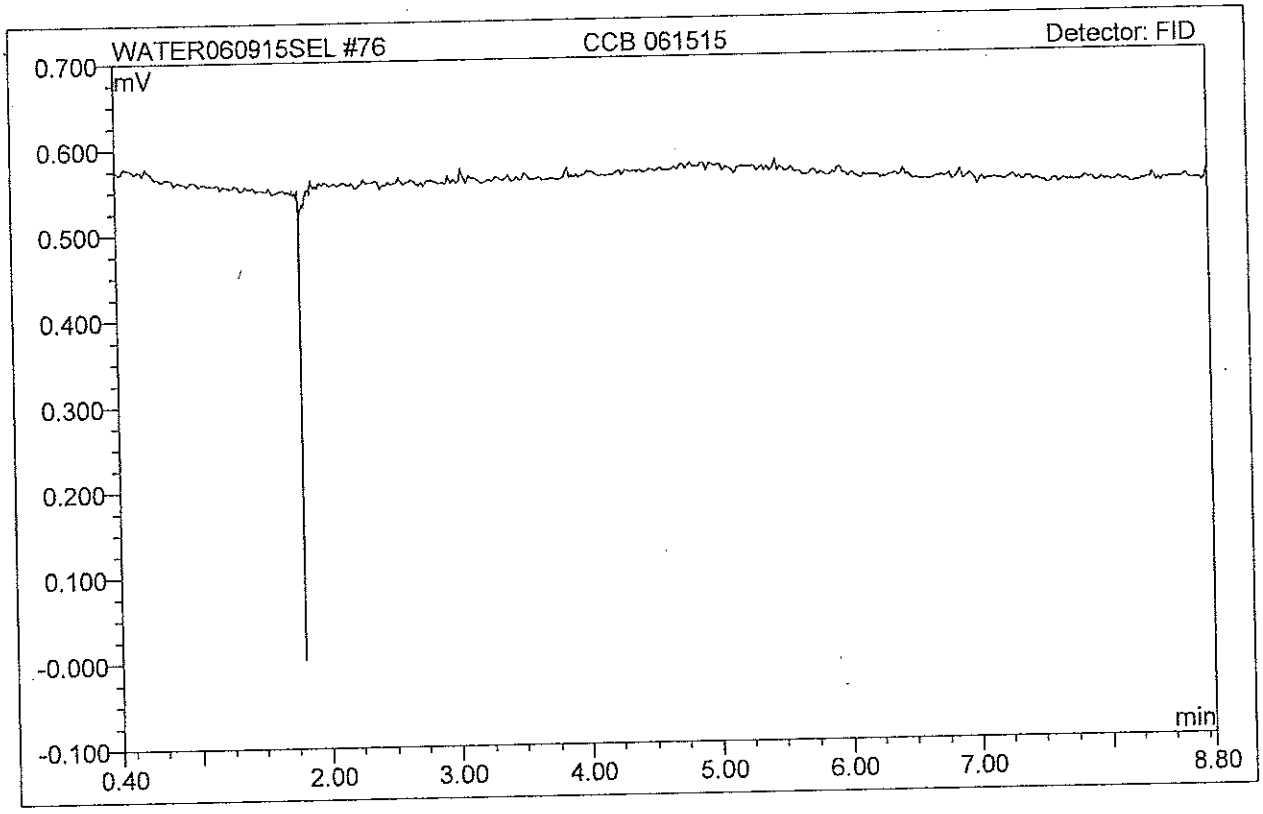


MICROSEEPS

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

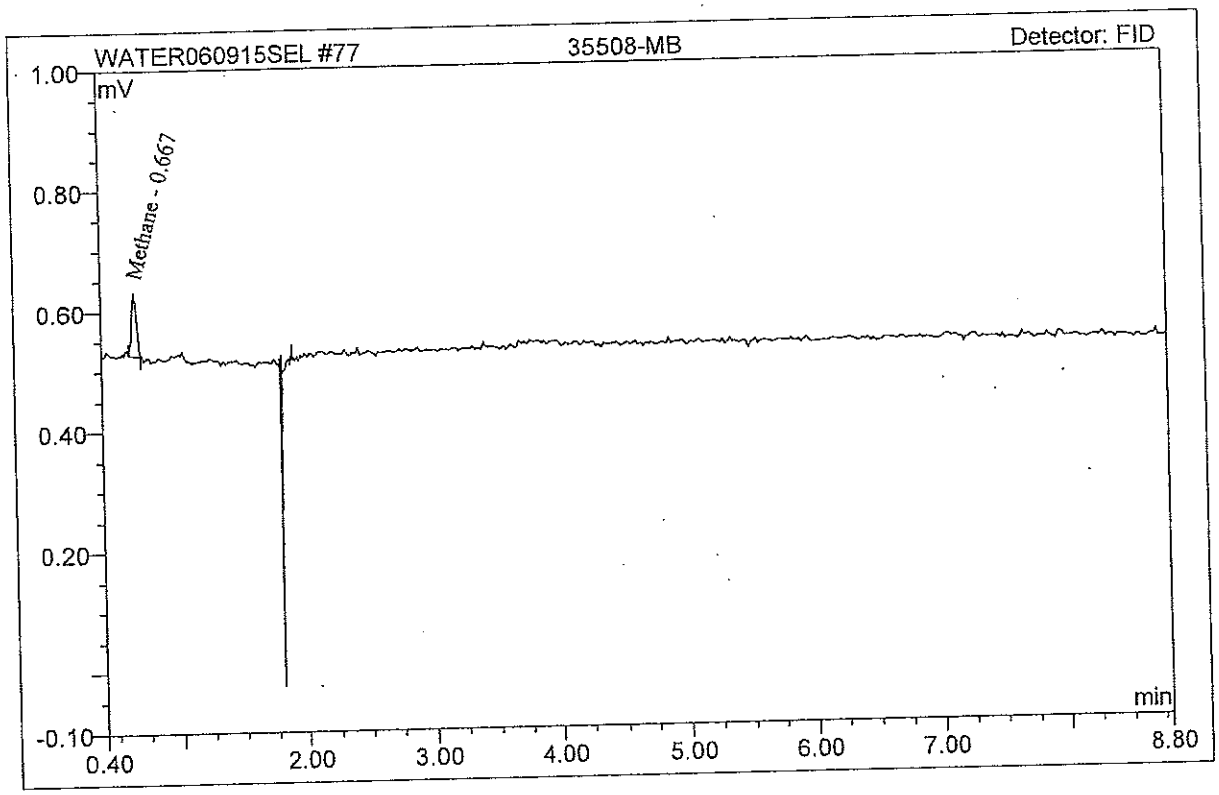


MICROSEEPS

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

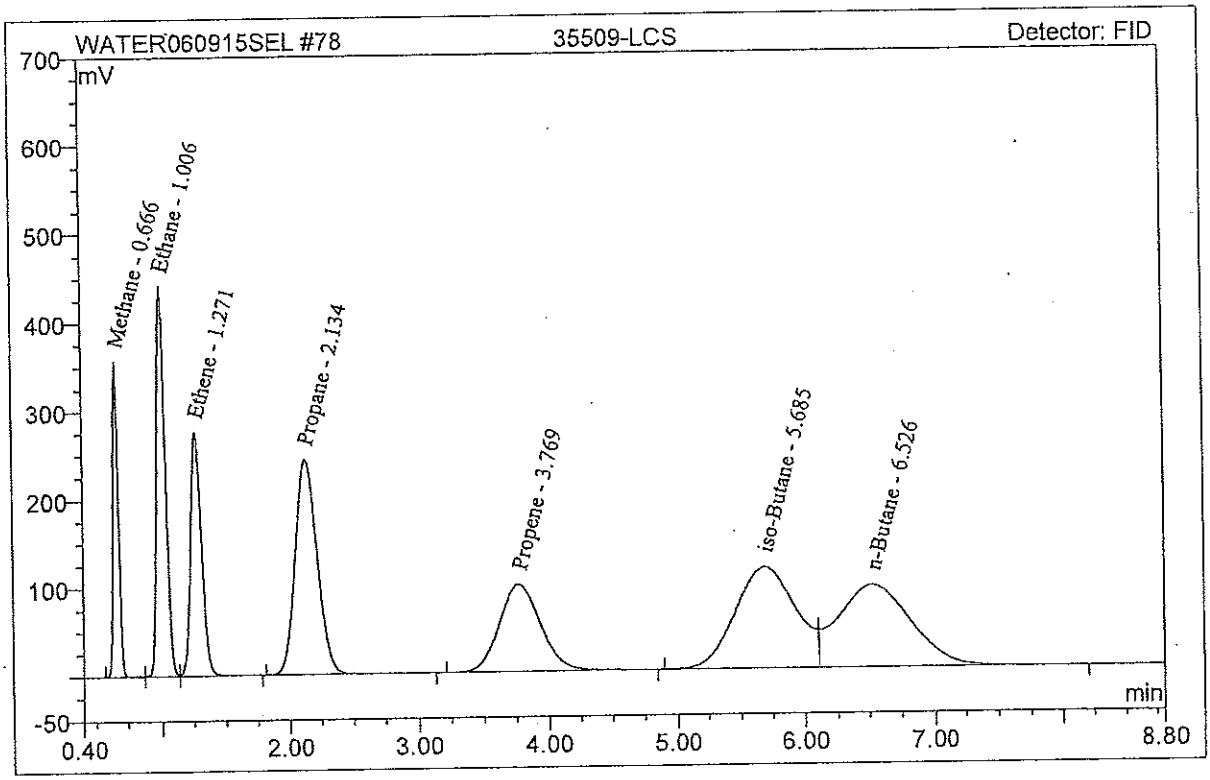


MICROSEEPS

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	TV
1	Methane	0.666	17.906	356.912	BM	44.6528	44.48
2	Ethane	1.006	32.522	441.396	M	82.3478	83.3
3	Ethene	1.271	28.080	276.304	MB	78.5213	77.92
4	Propane	2.134	48.618	244.062	BMB	120.2202	122.2
5	Propene	3.769	36.866	98.953	BMB	107.5972	
6	iso-Butane	5.685	63.234	114.911	BM	154.6320	161.02
7	n-Butane	6.526	60.591	93.297	MB	153.3889	161.16

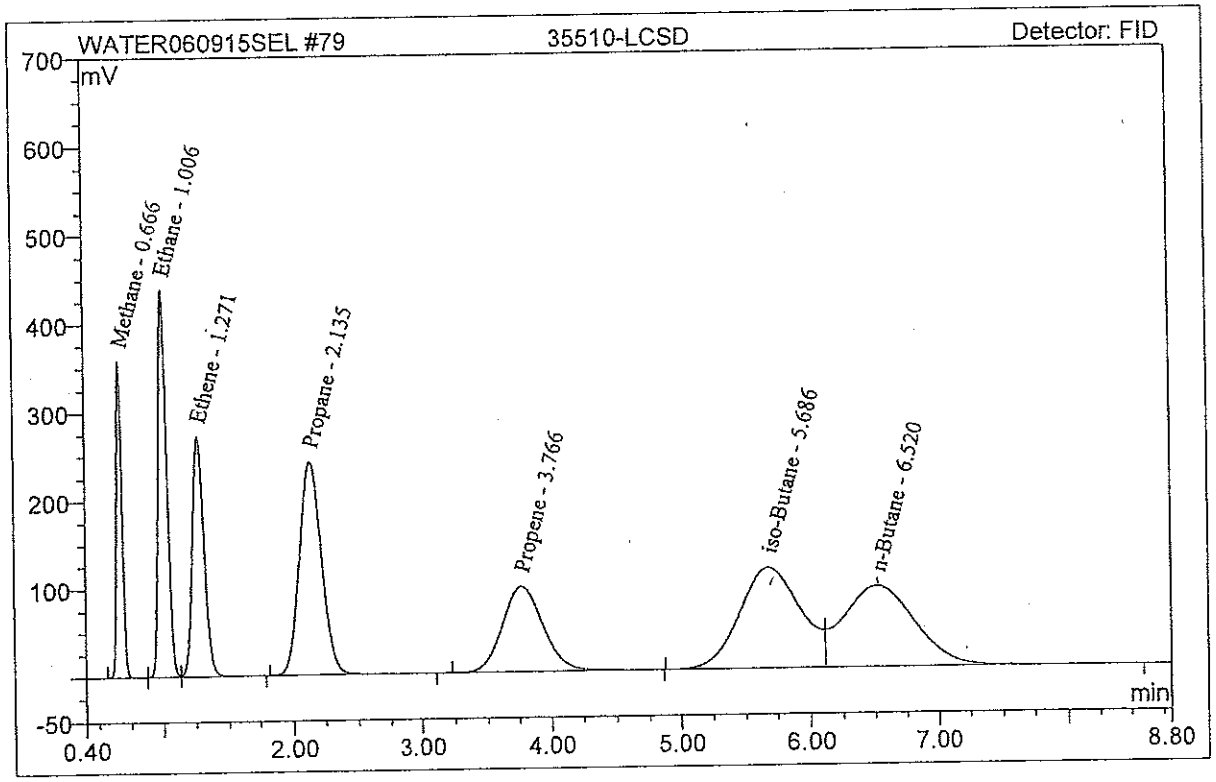


MICROSEEPS

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	TV
1	Methane	0.666	18.089	358.846	BM	45.1021	44.48
2	Ethane	1.006	32.319	438.298	M	81.8358	83.3
3	Ethene	1.271	27.715	272.463	MB	77.5094	77.92
4	Propane	2.135	48.259	242.016	BMB	119.3433	122.2
5	Propene	3.766	36.221	97.388	BMB	105.7332	
6	iso-Butane	5.686	63.015	114.448	BM	154.1036	161.02
7	n-Butane	6.520	59.850	92.364	MB	151.5457	161.16

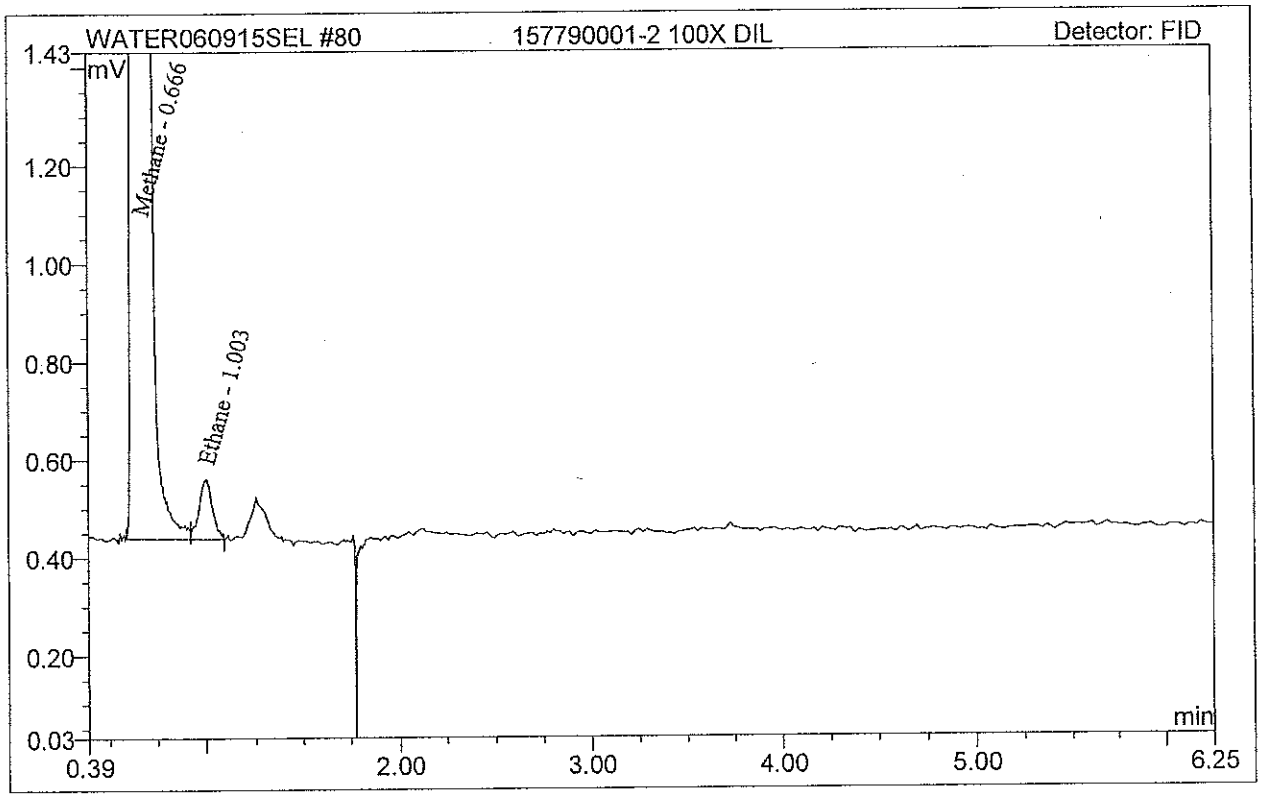


MICROSEEPS

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



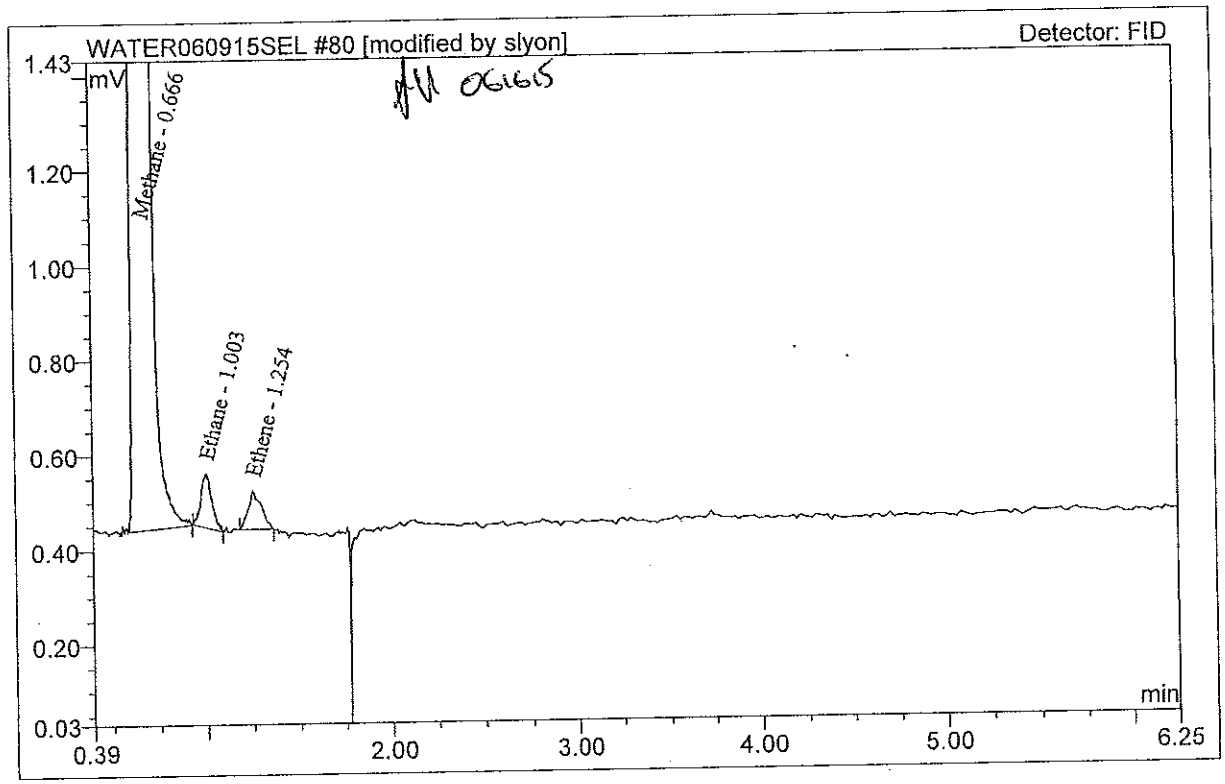
MICROSEEPS

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

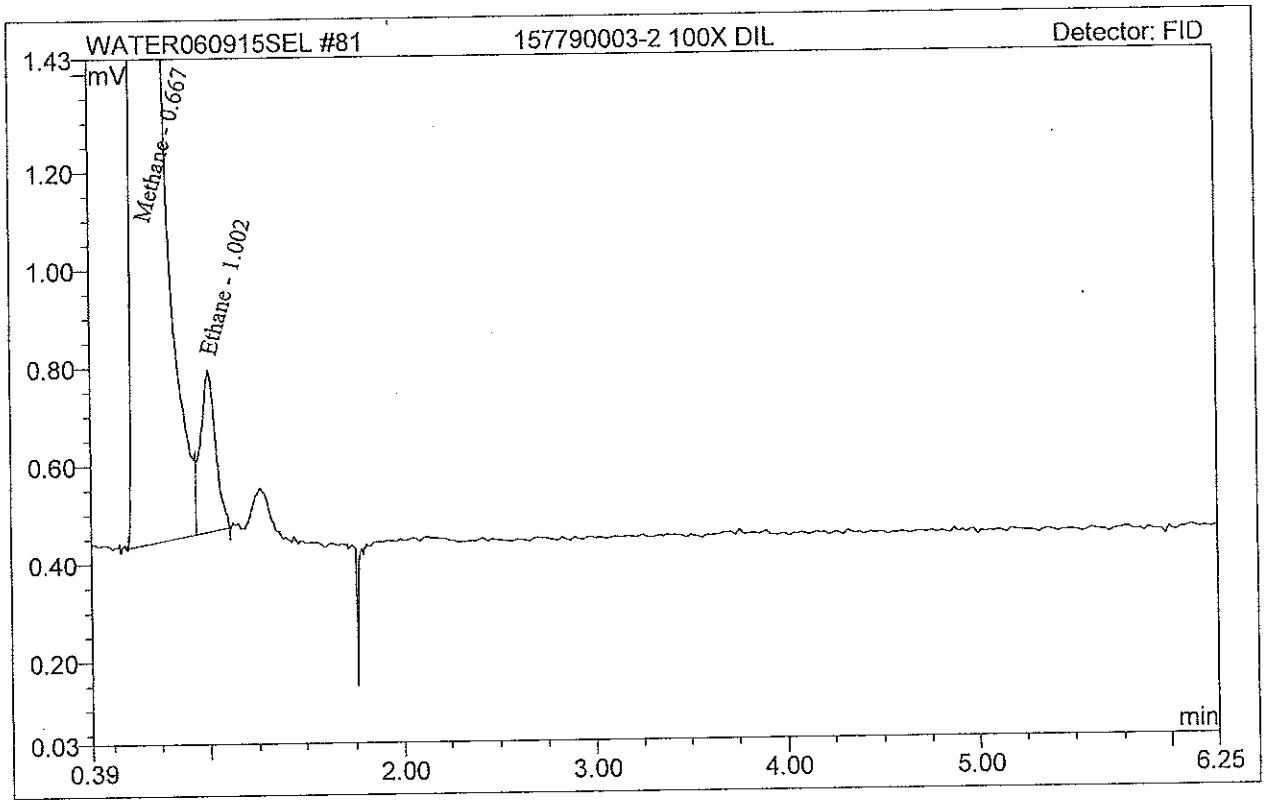


MICROSEEPS

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

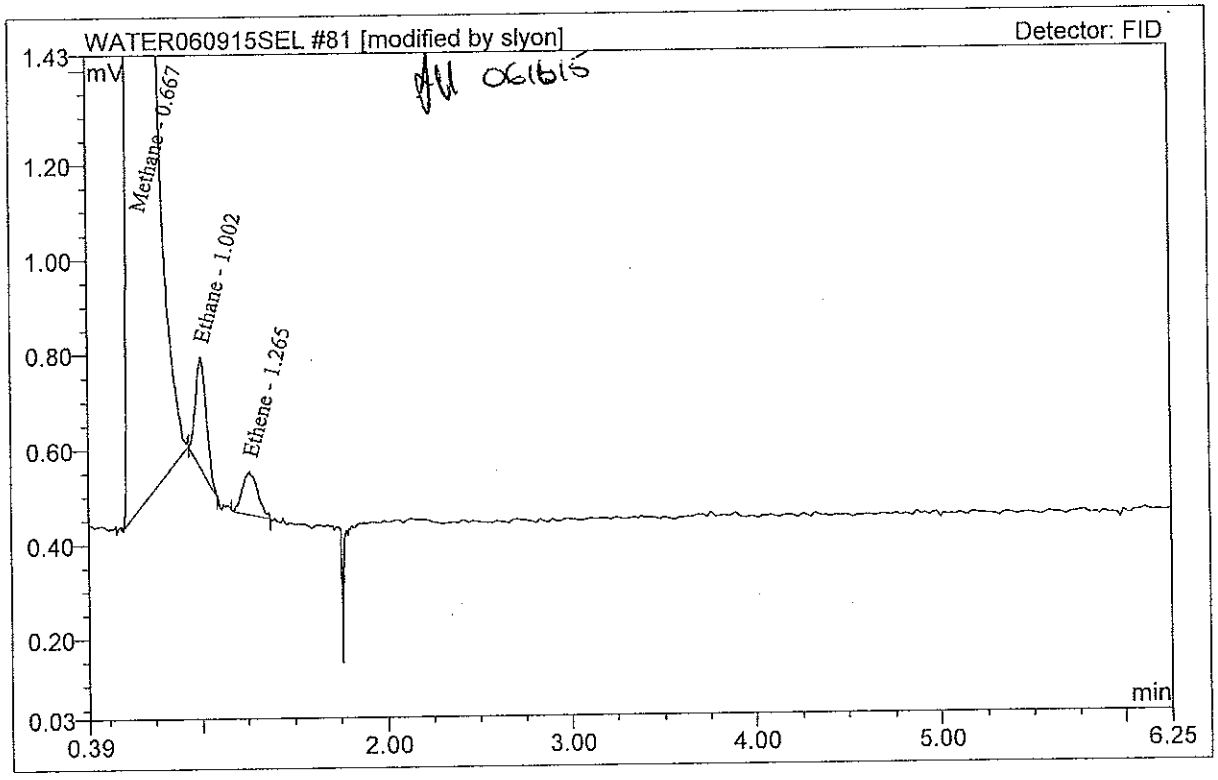


MICROSEEPS

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 X100
2	Ethane	1.002	0.016	0.233	bMB*	0.0398
3	Ethene	1.265	0.009	0.092	BMB*	0.0249

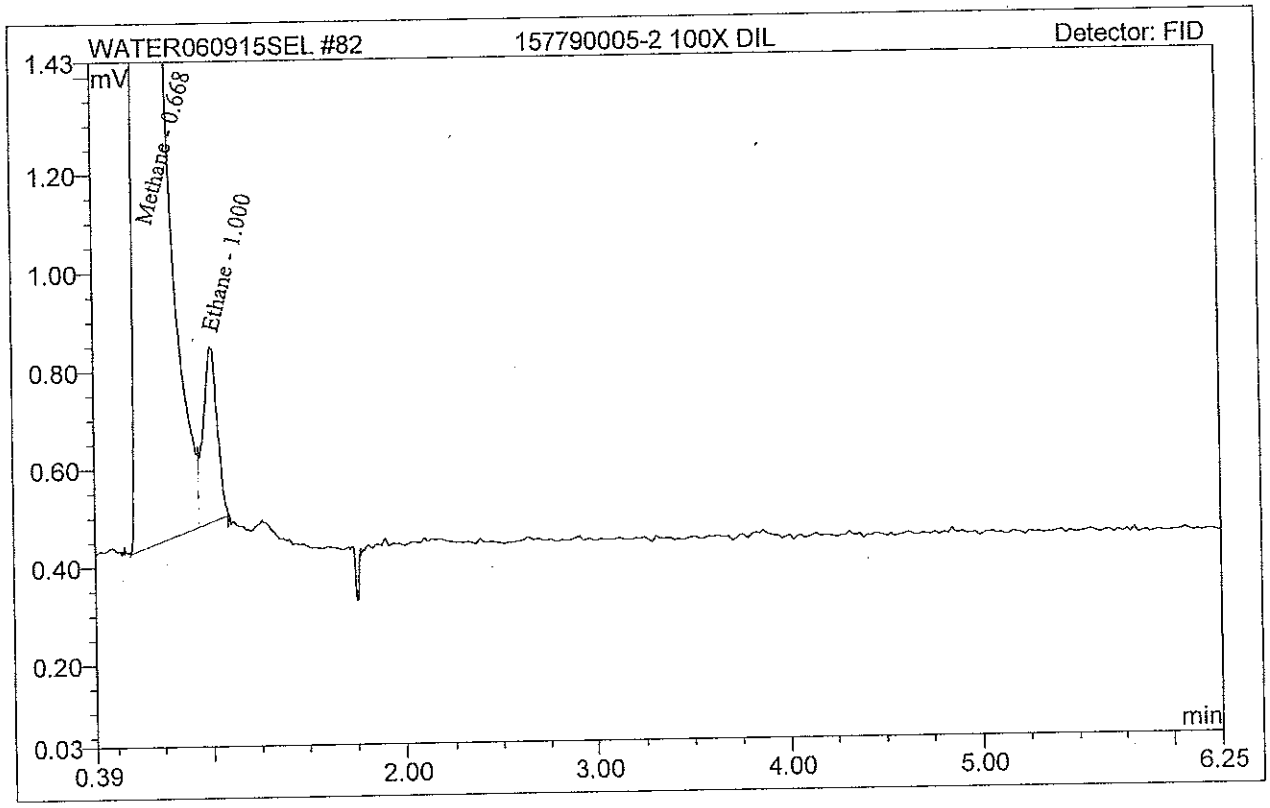


MICROSEEPS

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



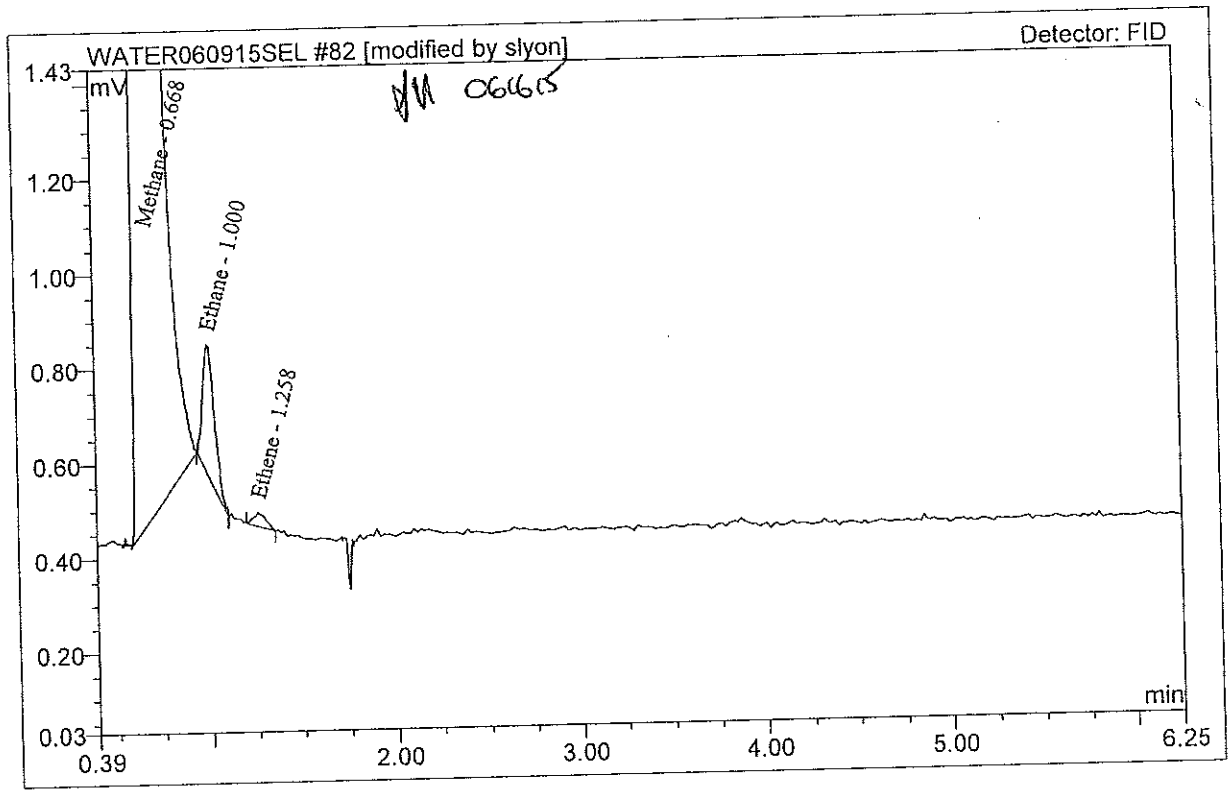
MICROSEEPS

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

X1000

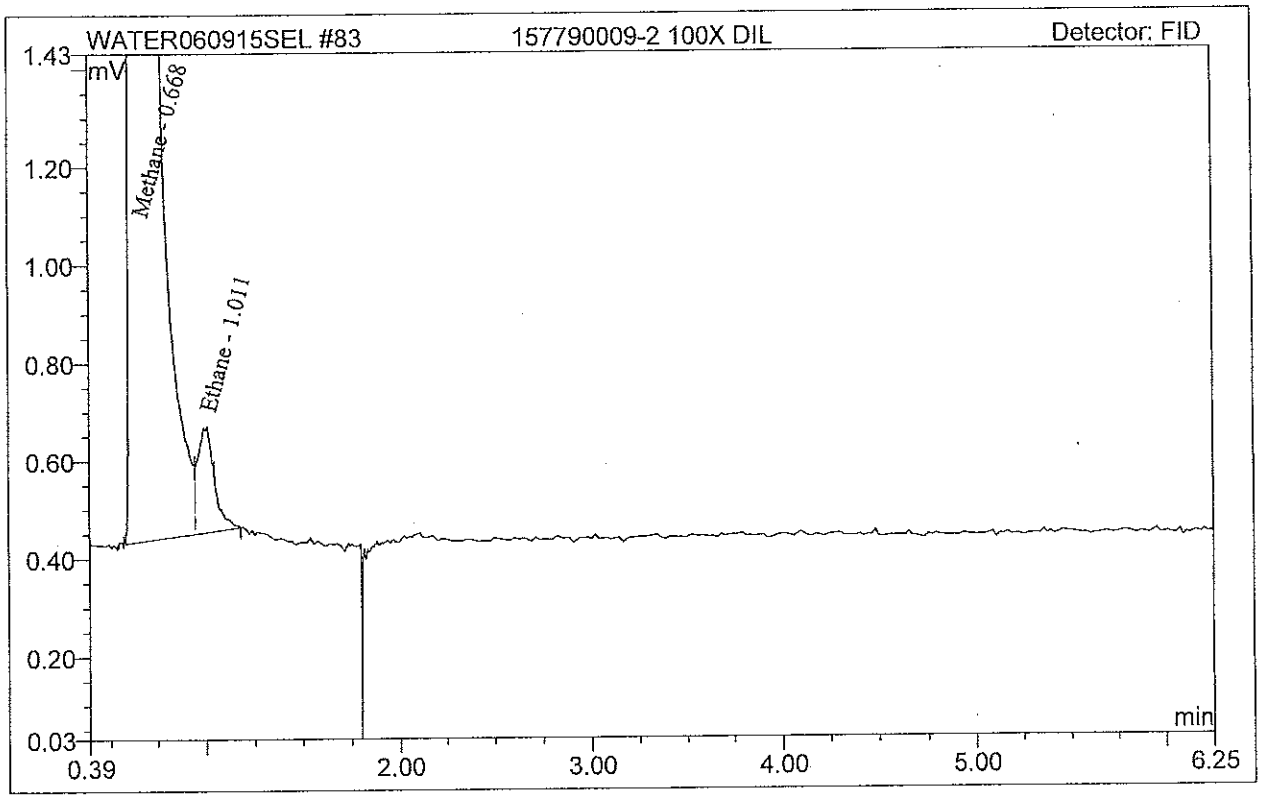


MICROSEEPS

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

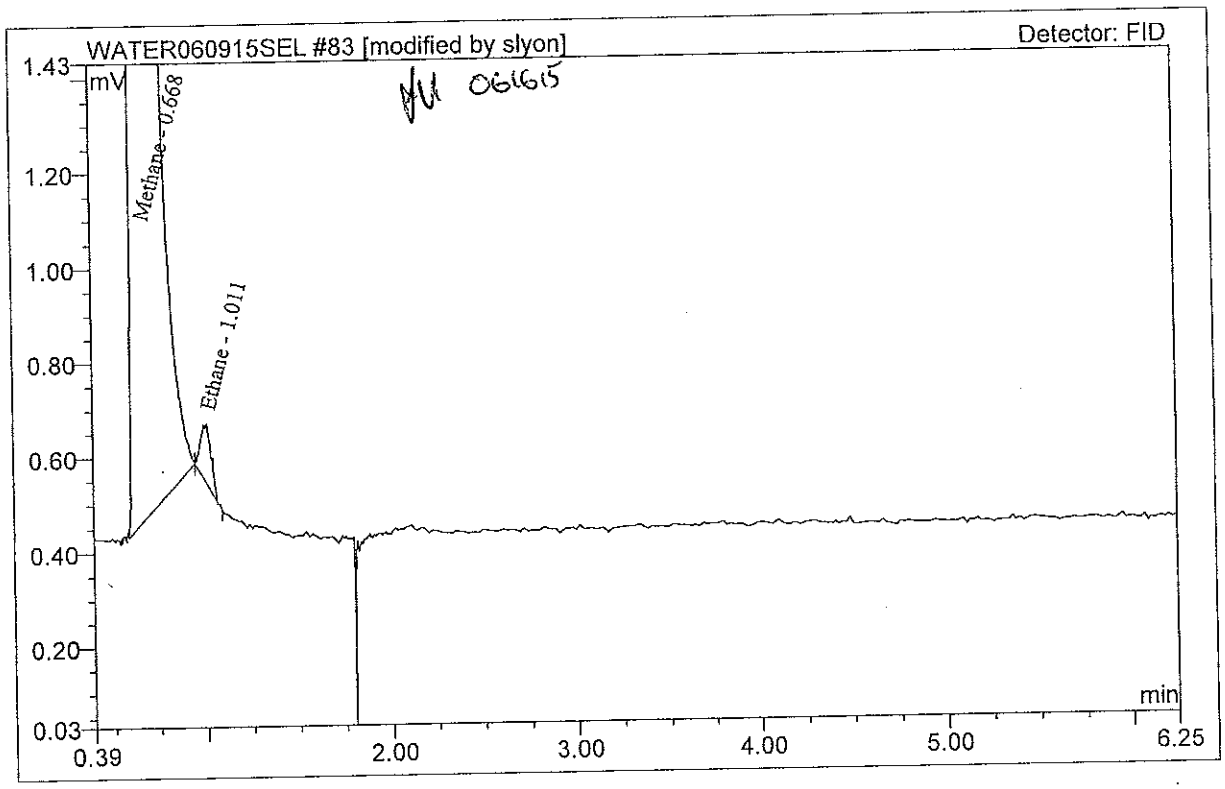


MICROSEEPS

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 X100
2	Ethane	1.011	0.008	0.126	bMB*	0.0204

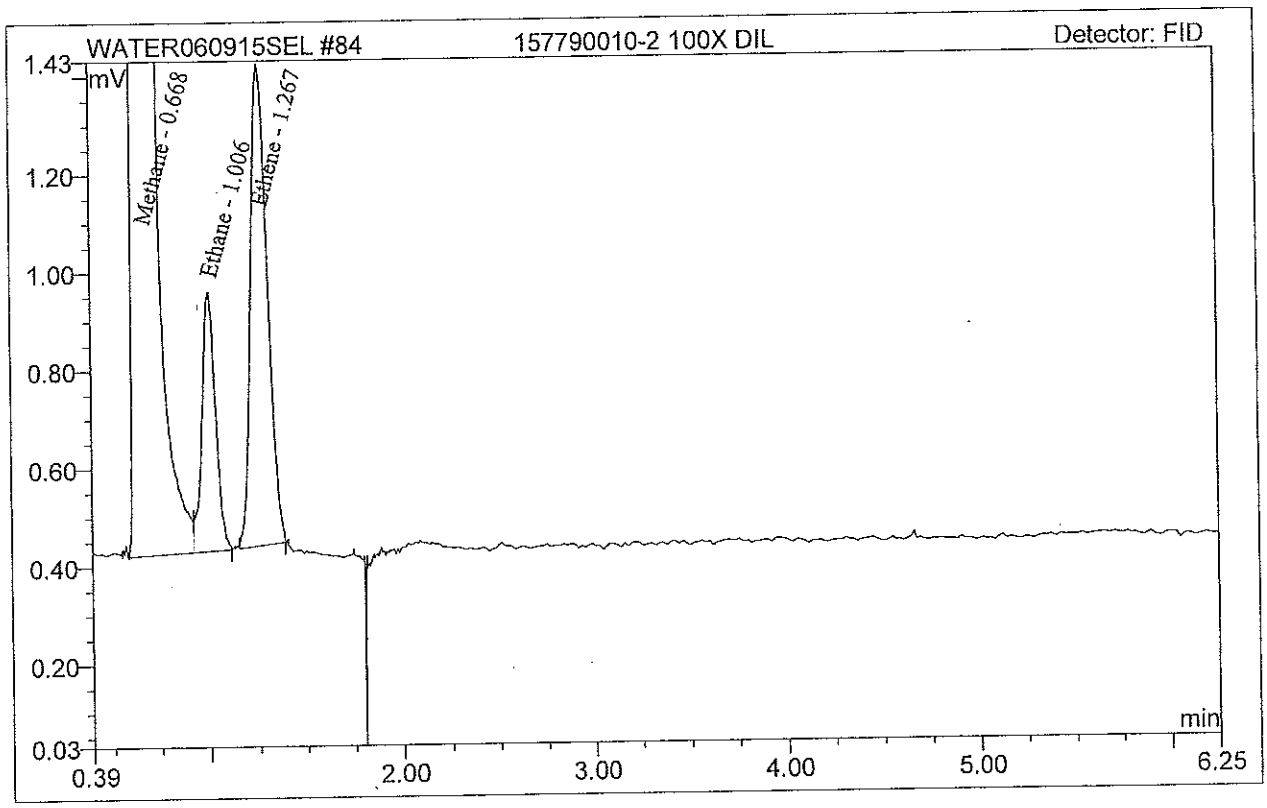


MICROSEEPS

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



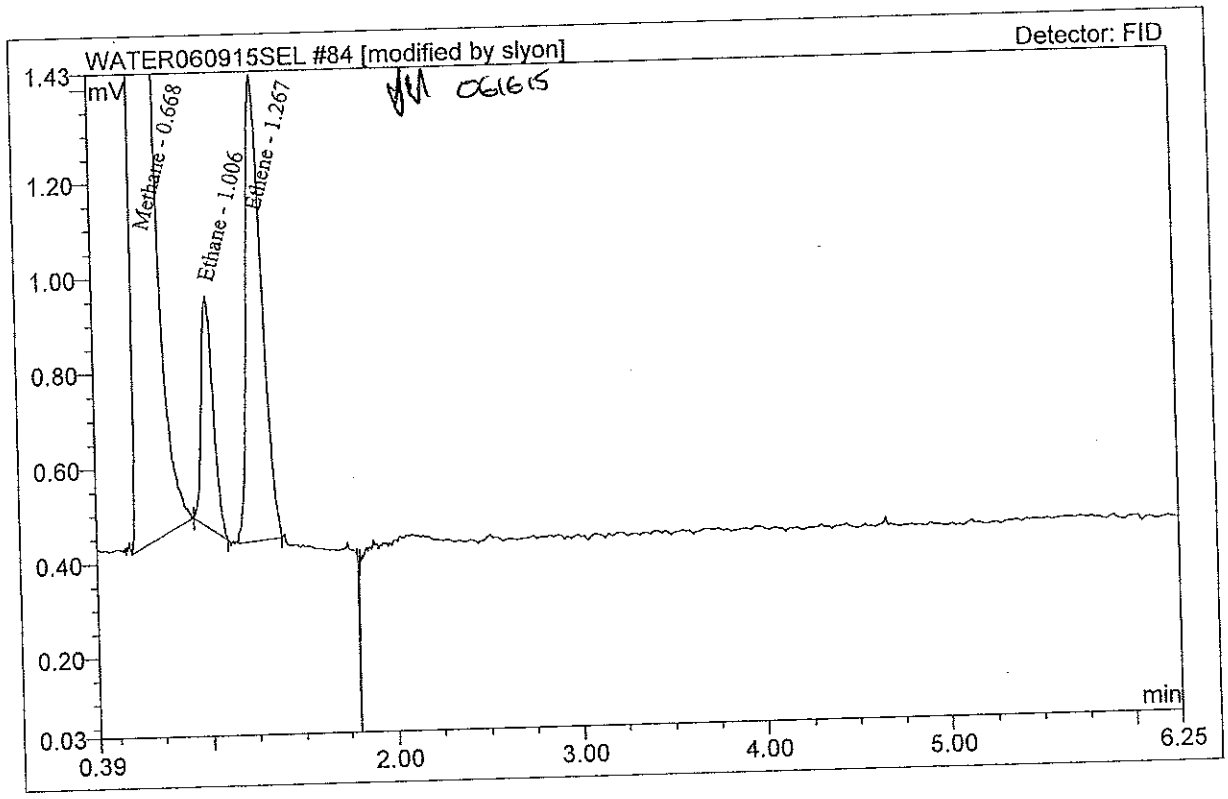
MICROSEEPS

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

X 100



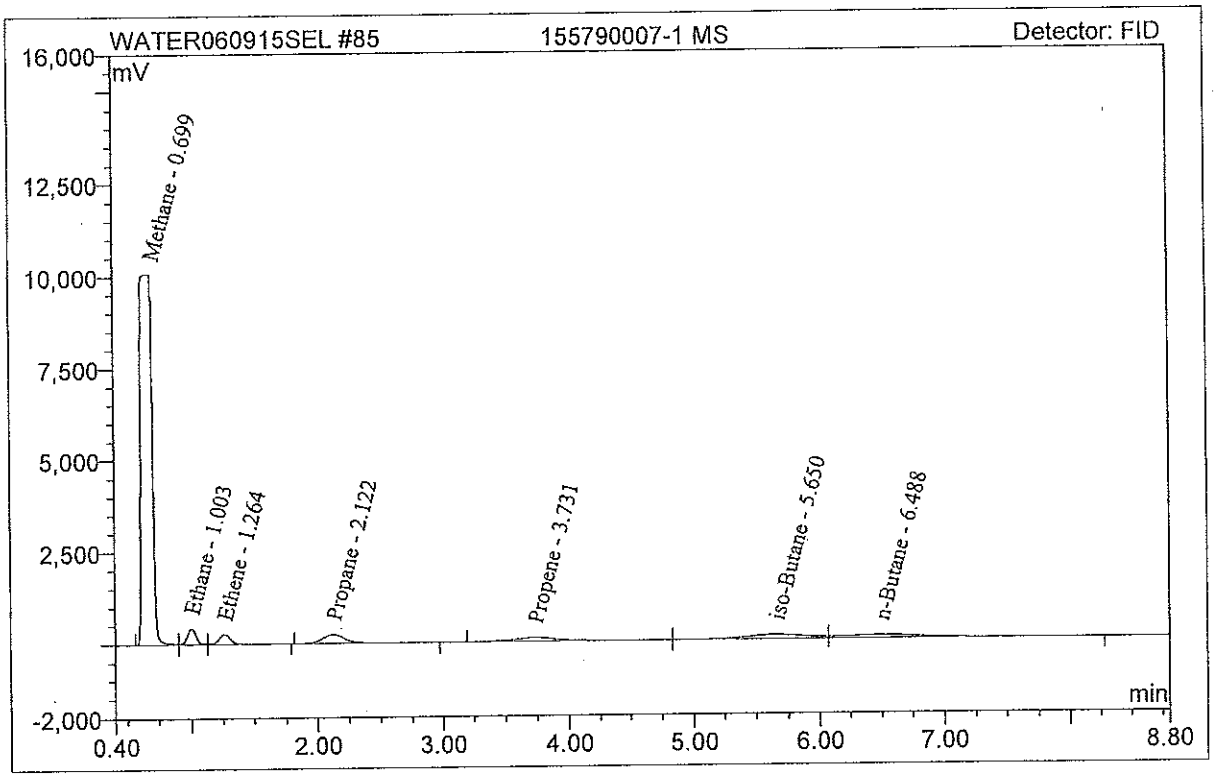
MICROSEEPS

SL 061615

Sample Analysis Report

Sample Name:	155790007 ~~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~~ (1)
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



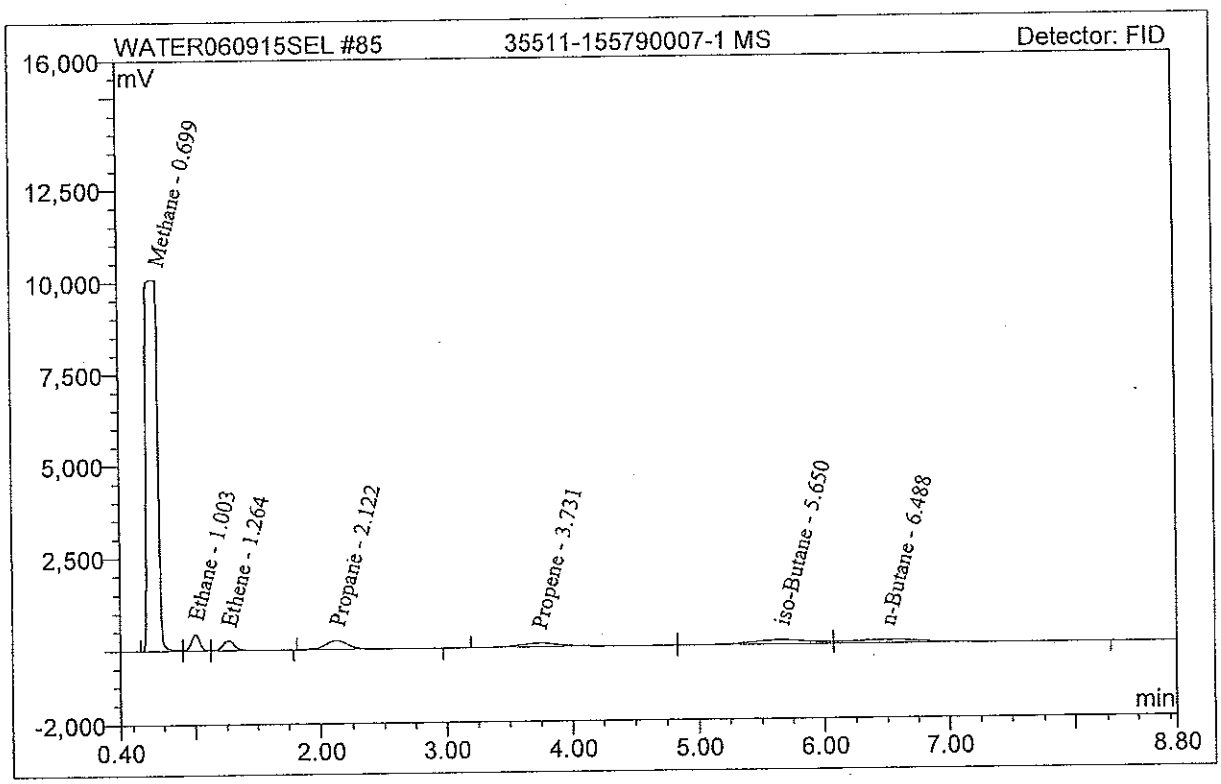
(1) Requires dilution

MICROSEEPS

Sample Analysis Report

Sample Name:	35511-1~~55790007~~-1 MS 157790007		**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~~ (1)
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

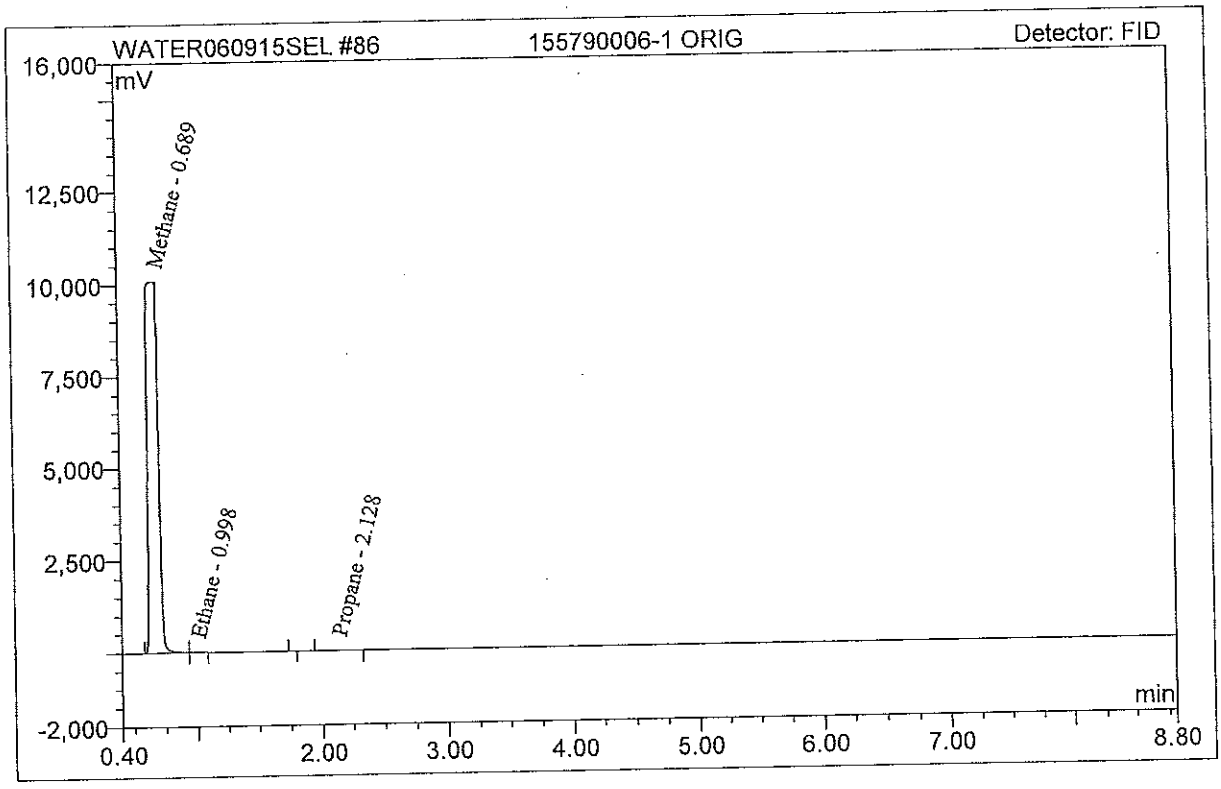


MICROSEEPS

sc Sample Analysis Report

Sample Name:	155790006 ~~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

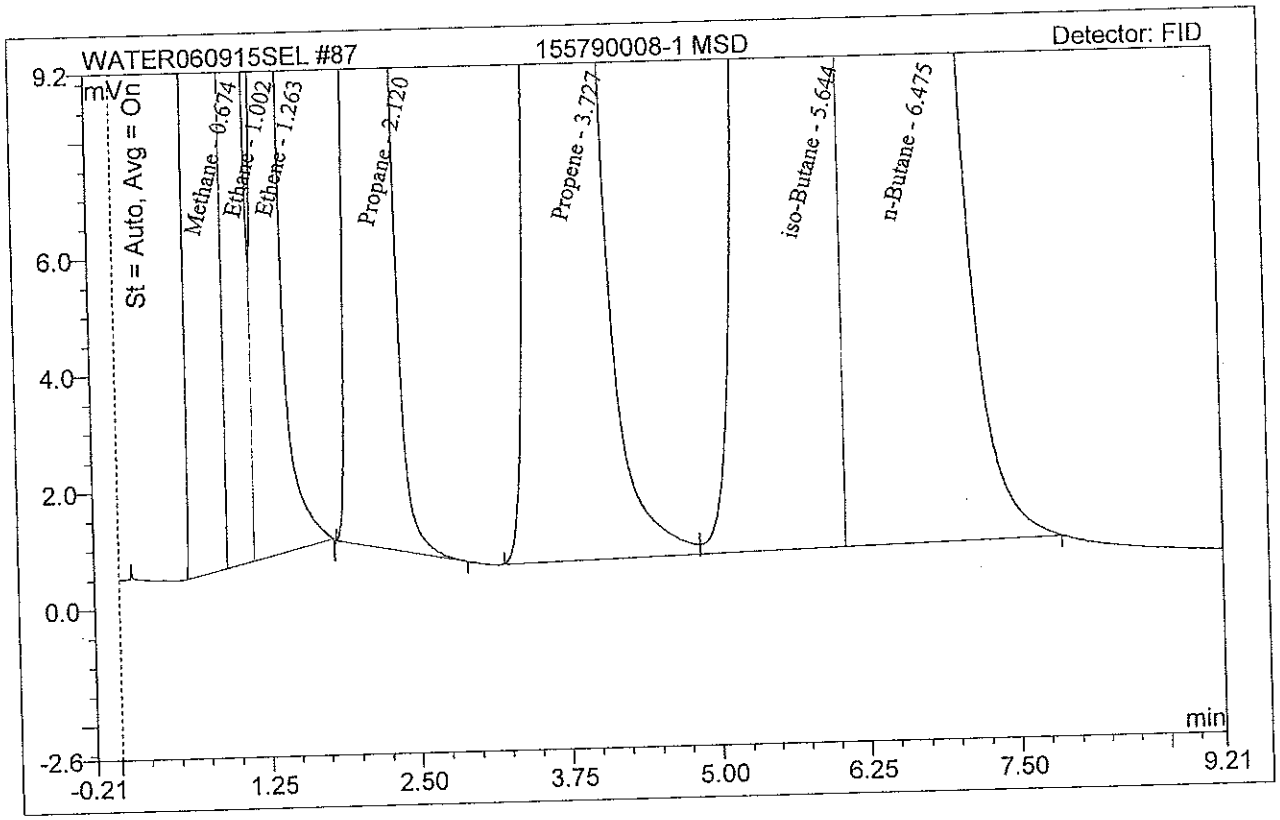


MICROSEEPS

Sample Analysis Report

Sample Name:	~~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	991.509	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

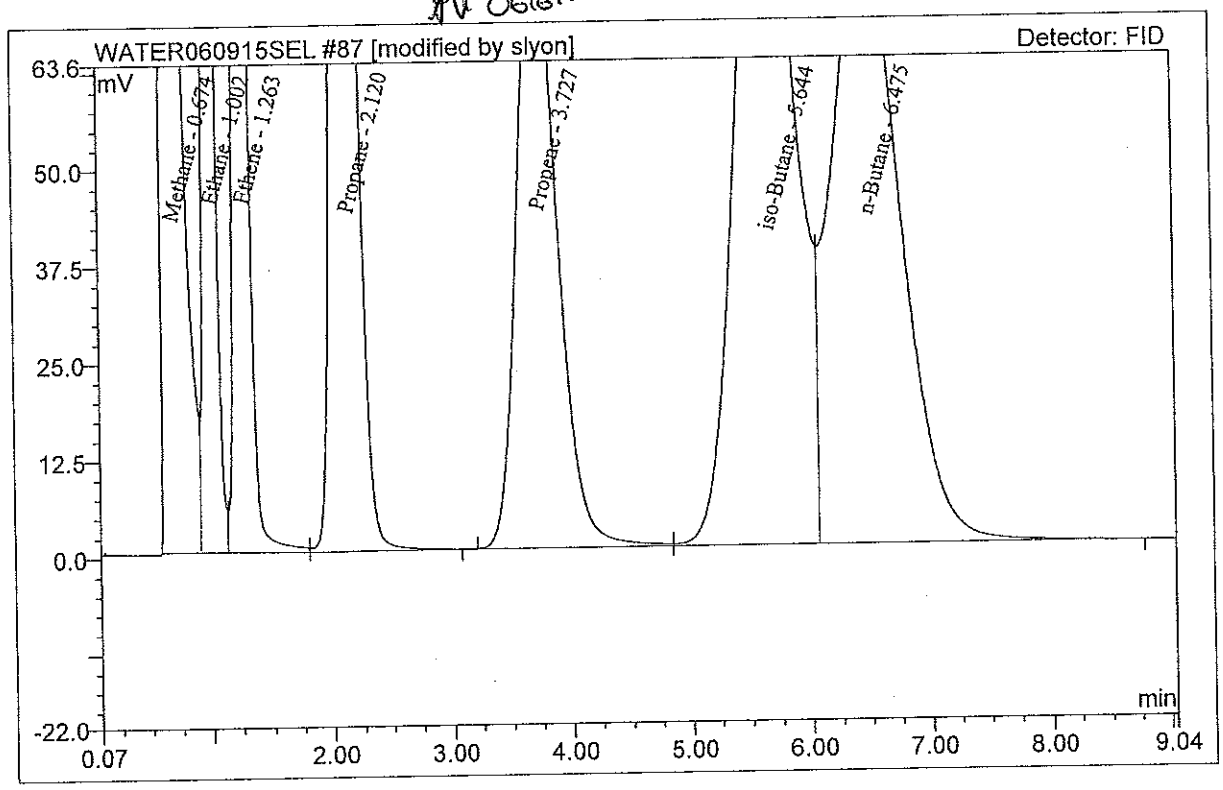


MICROSEEPS

Sample Analysis Report

Sample Name:	~~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

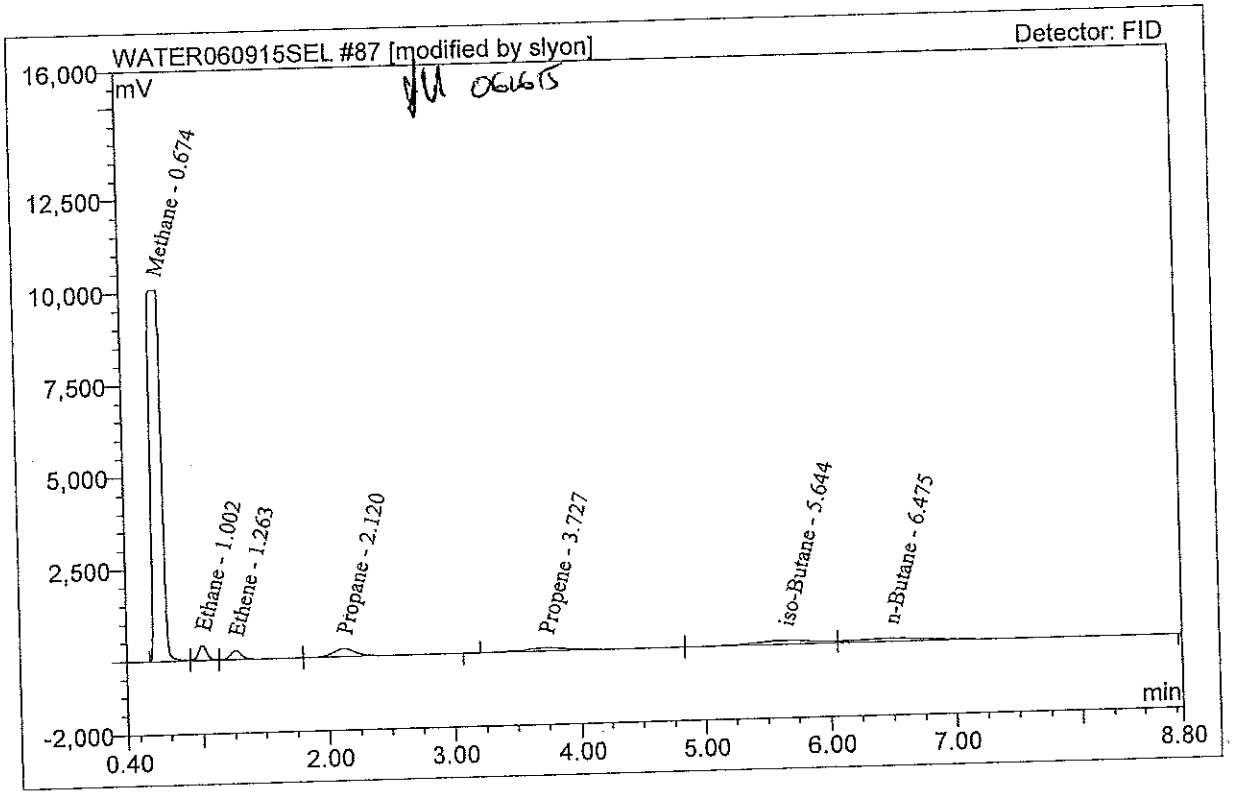


MICROSEEPS

Sample Analysis Report

Sample Name: 155790008	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 *	~~1665.6316~~ C
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

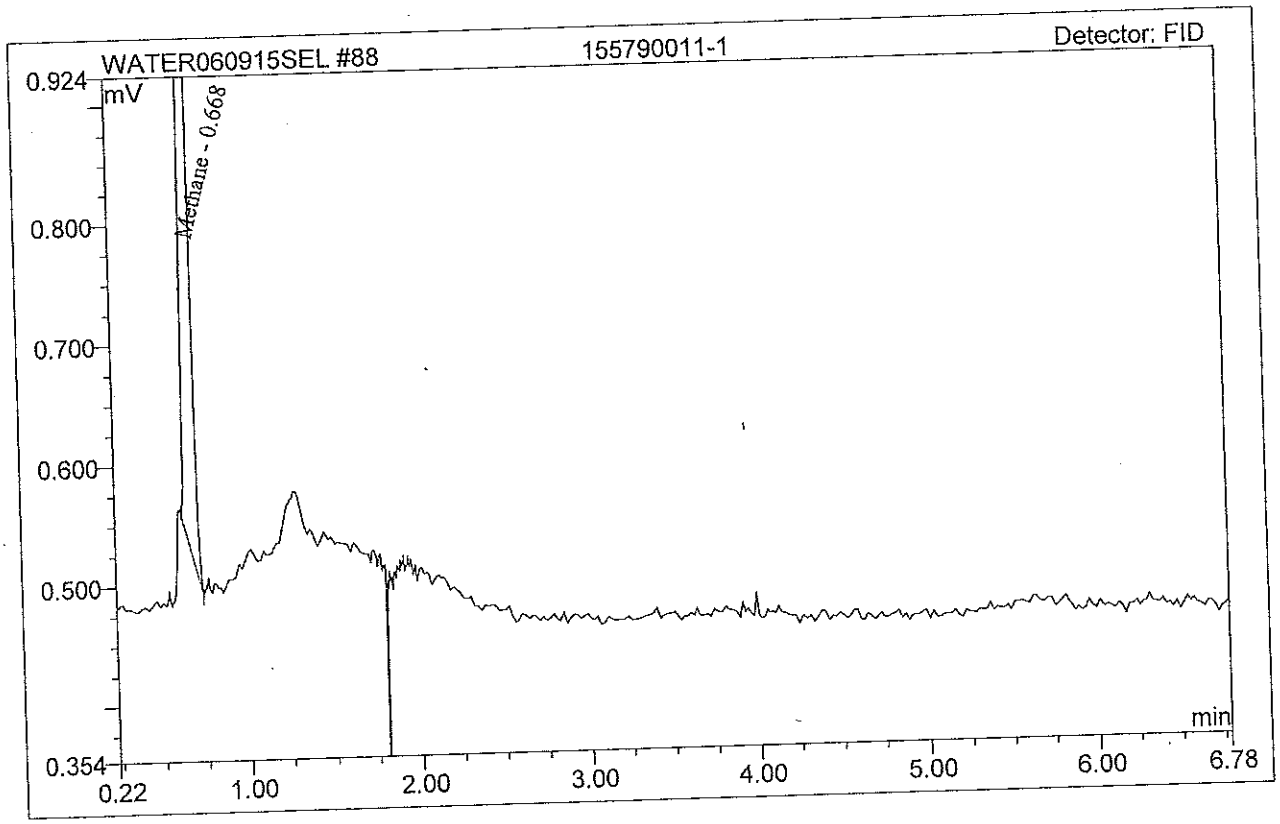


MICROSEEPS

Sample Analysis Report

Sample Name:	15 779 00 11 ~~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

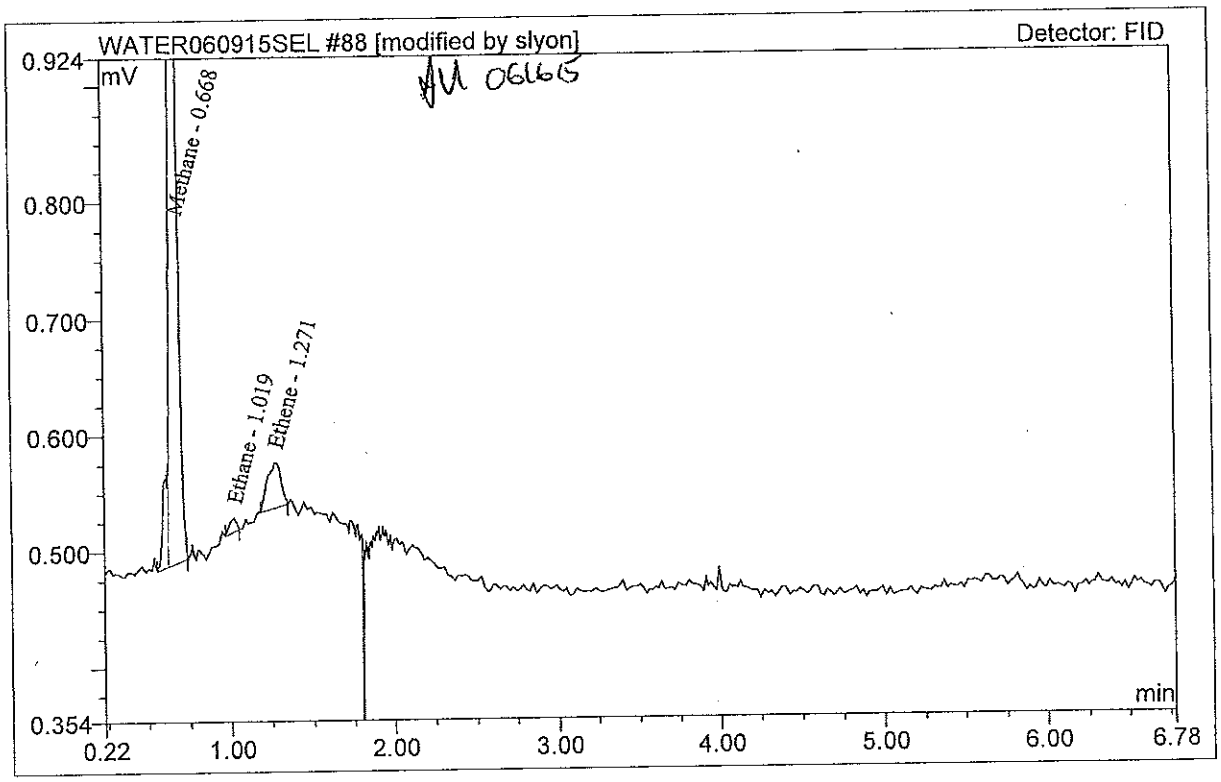


MICROSEEPS

Sample Analysis Report

Sample Name:	15779001(	~~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
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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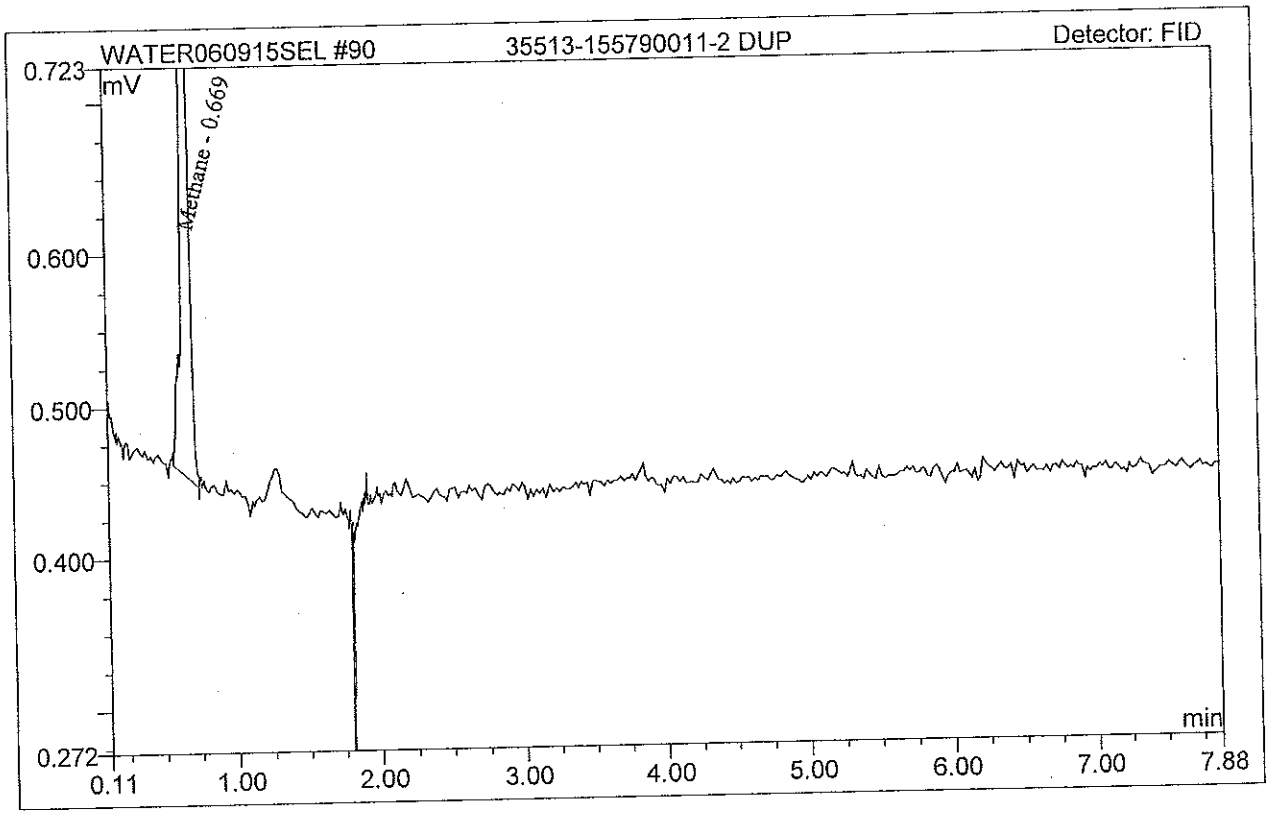
Sample Analysis Report

Sample Name: 15779011	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
1	Methane	0.669	0.034	0.640	BMB	0.0860

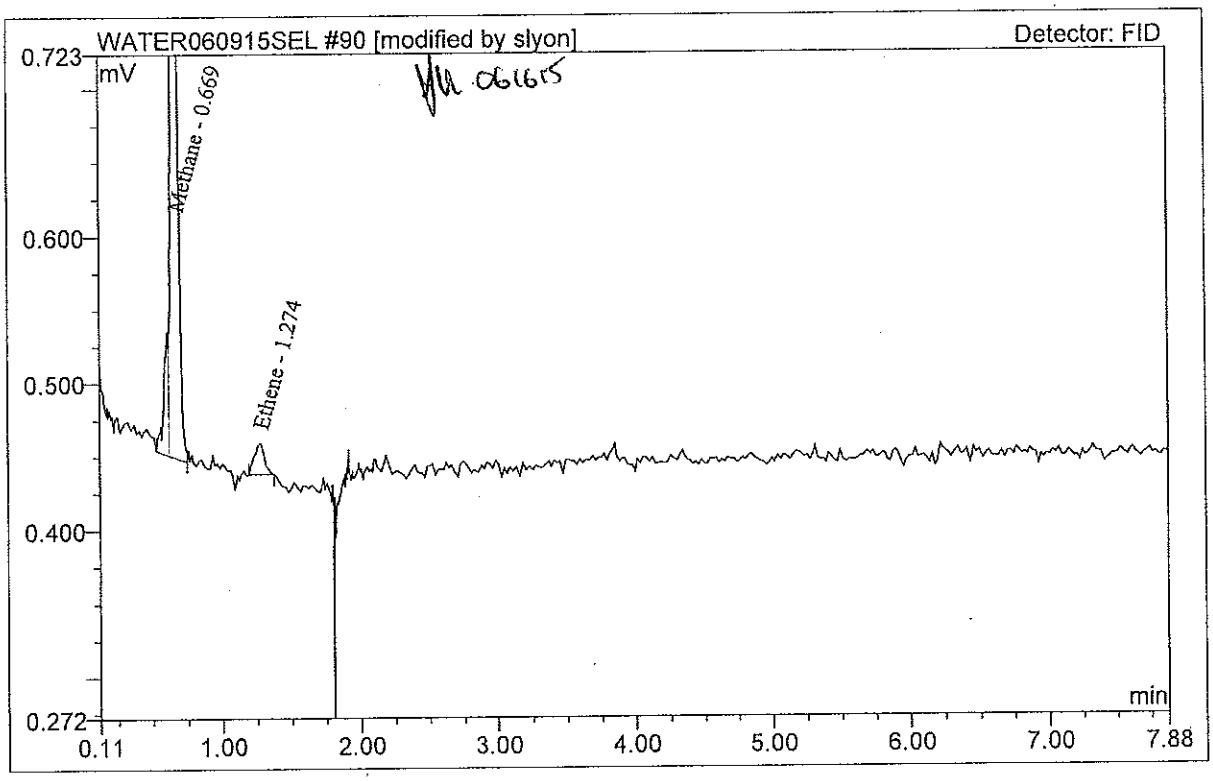


MICROSEEPS

Sample Analysis Report

Sample Name: 15779002C	35513-~~155790011~~-2 DUP SC		**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

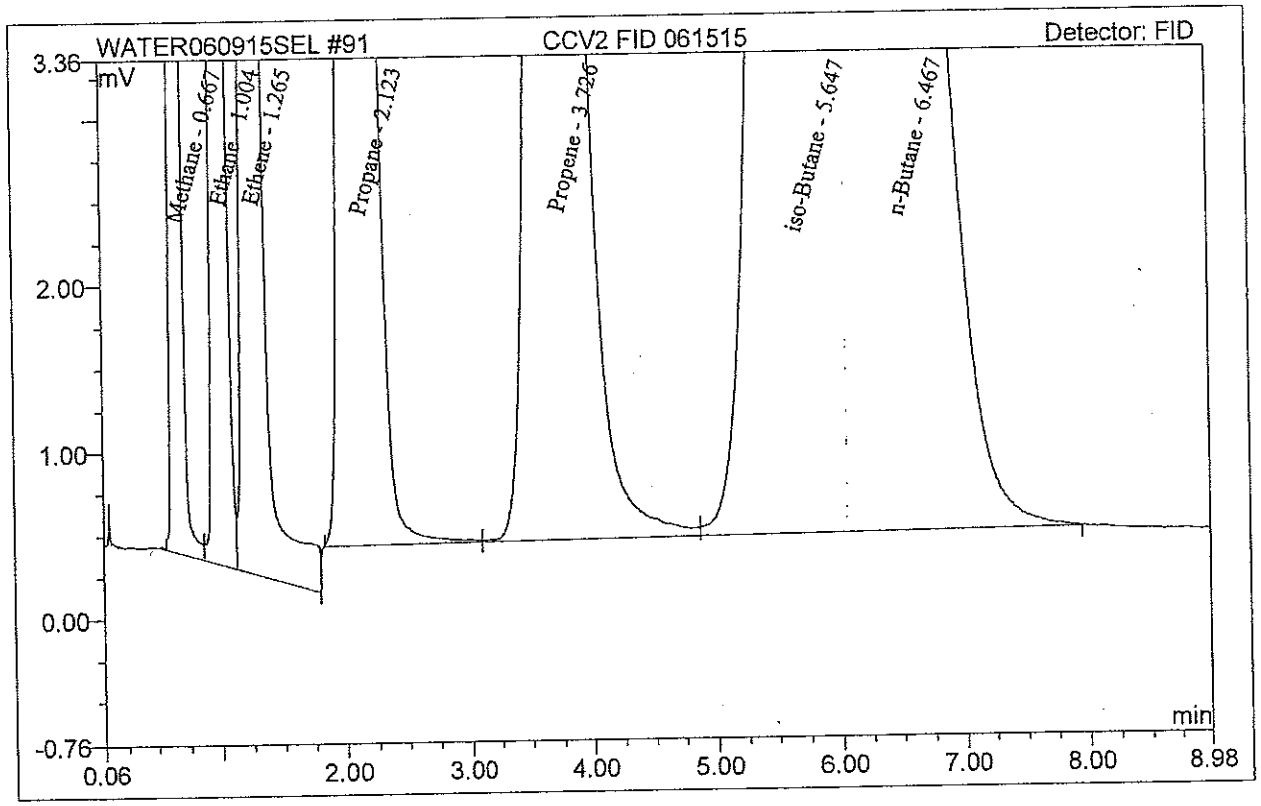


MICROSEEPS

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



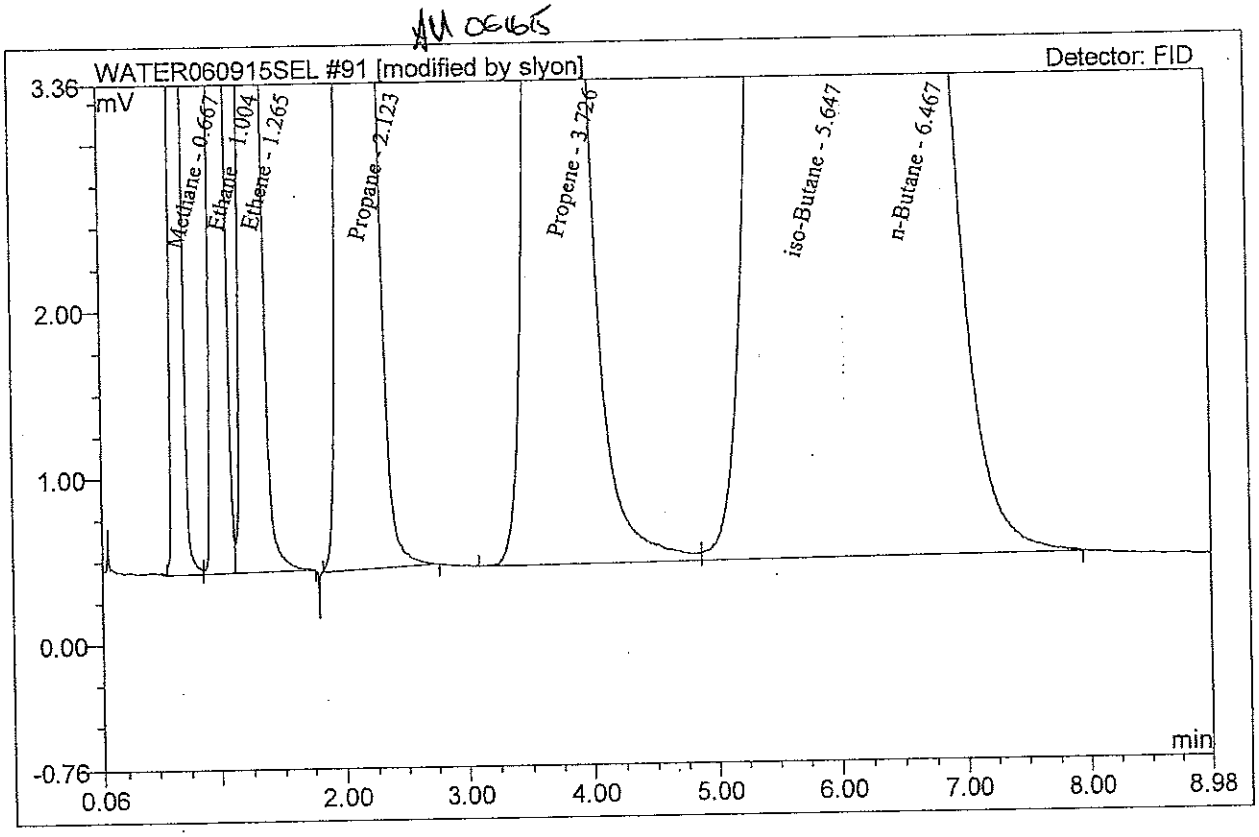
MICROSEEPS

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	TV
1	Methane	0.667	5.858	117.703	BM *	14.7394	14.434
2	Ethane	1.004	3.596	48.595	M *	9.1617	9.261
3	Ethene	1.265	3.571	35.008	MB*	10.0500	10.227
4	Propane	2.123	5.421	27.122	BMB*	13.5376	13.209
5	Propene	3.726	5.239	13.992	BM *	15.4403	
6	iso-Butane	5.647	6.828	12.446	M *	16.9262	16.647
7	n-Butane	6.467	7.151	10.935	MB*	18.3803	18.004

AU 0665

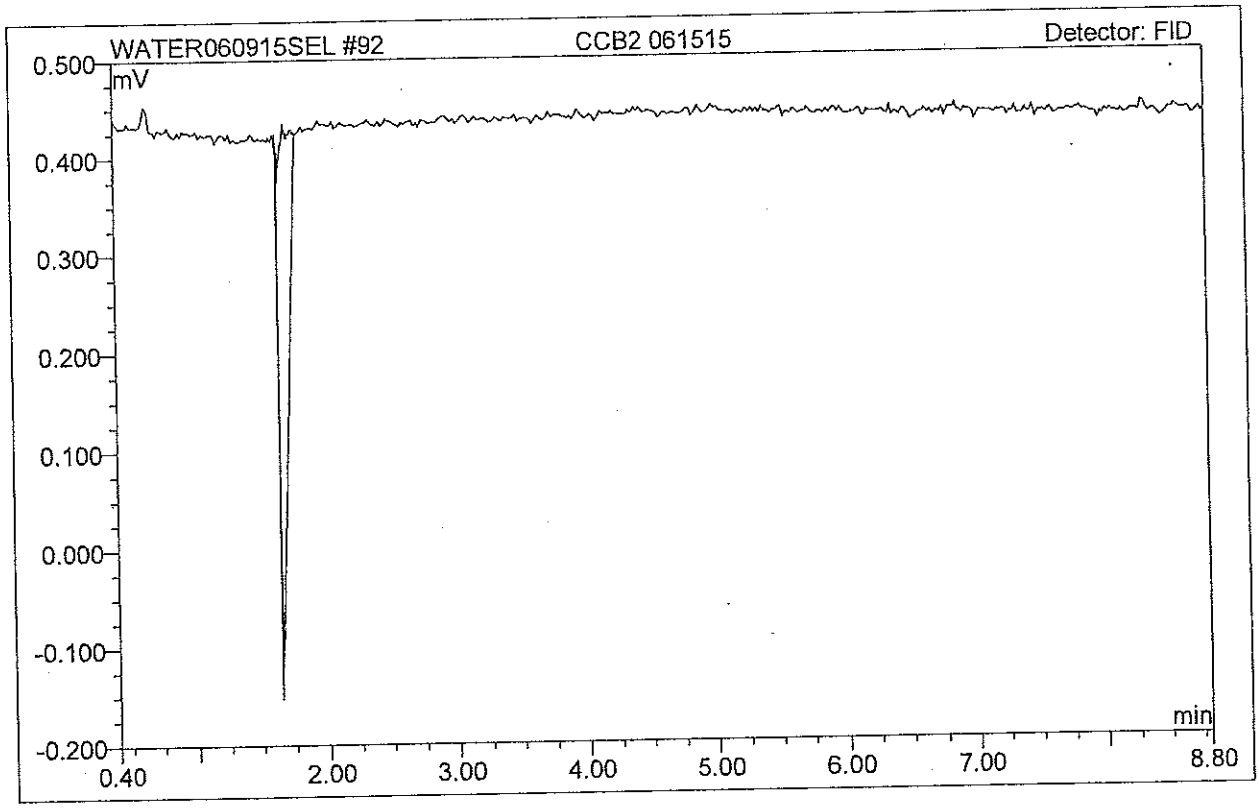


MICROSEEPS

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



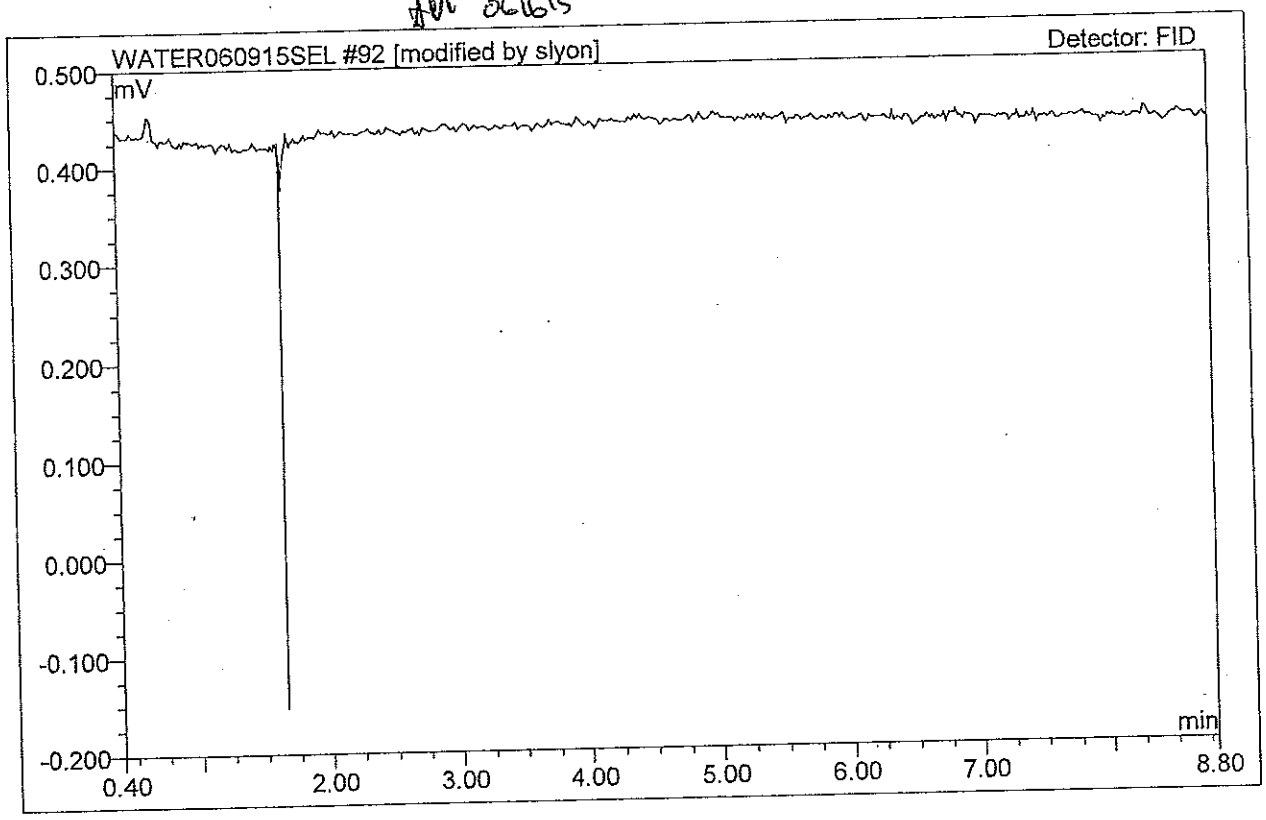
MICROSEEPS

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

JM 061615

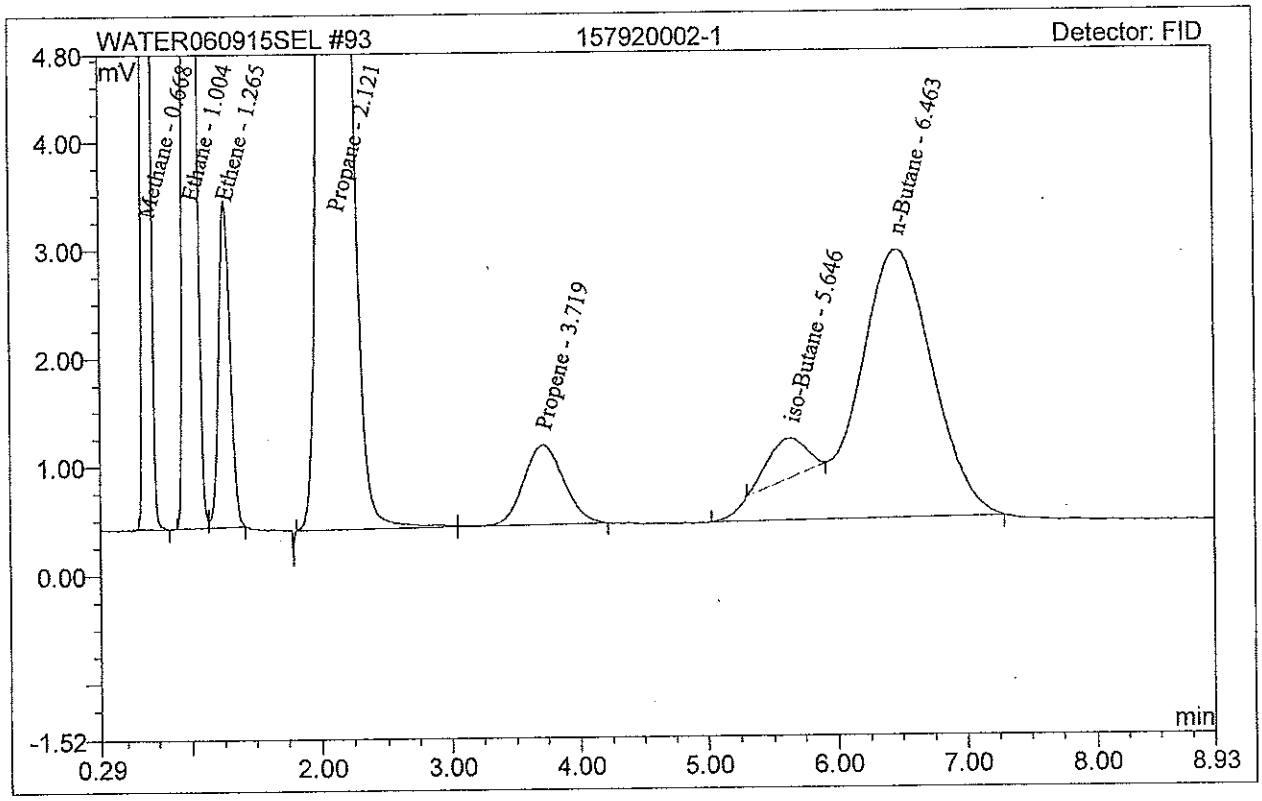


MICROSEEPS

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

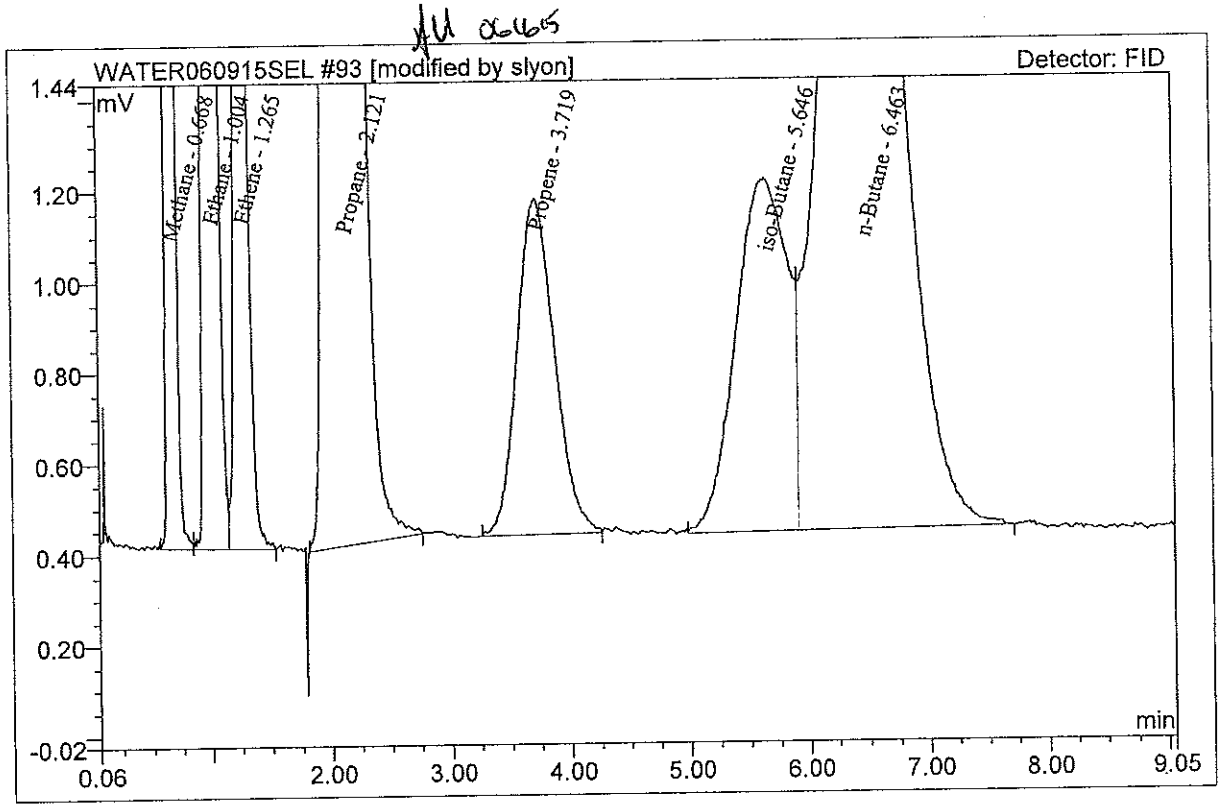


MICROSEEPS

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

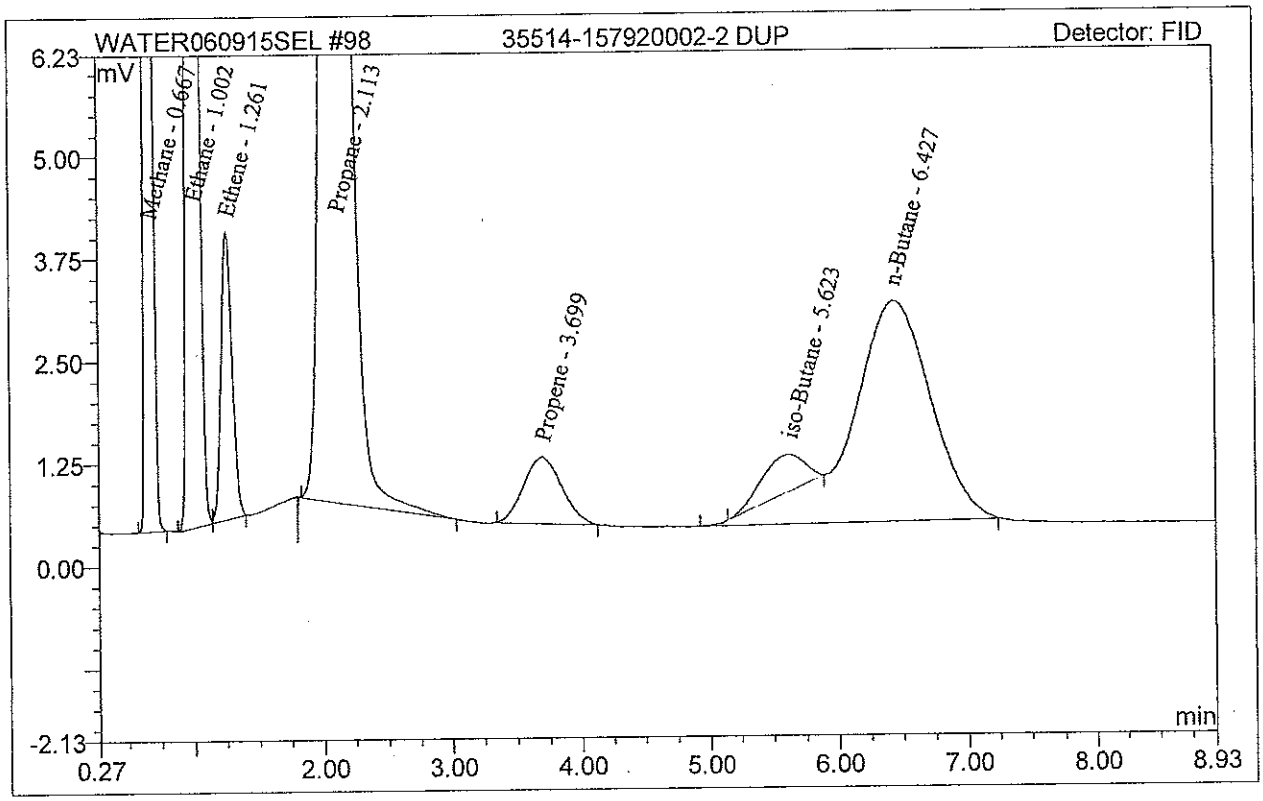


MICROSEEPS

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



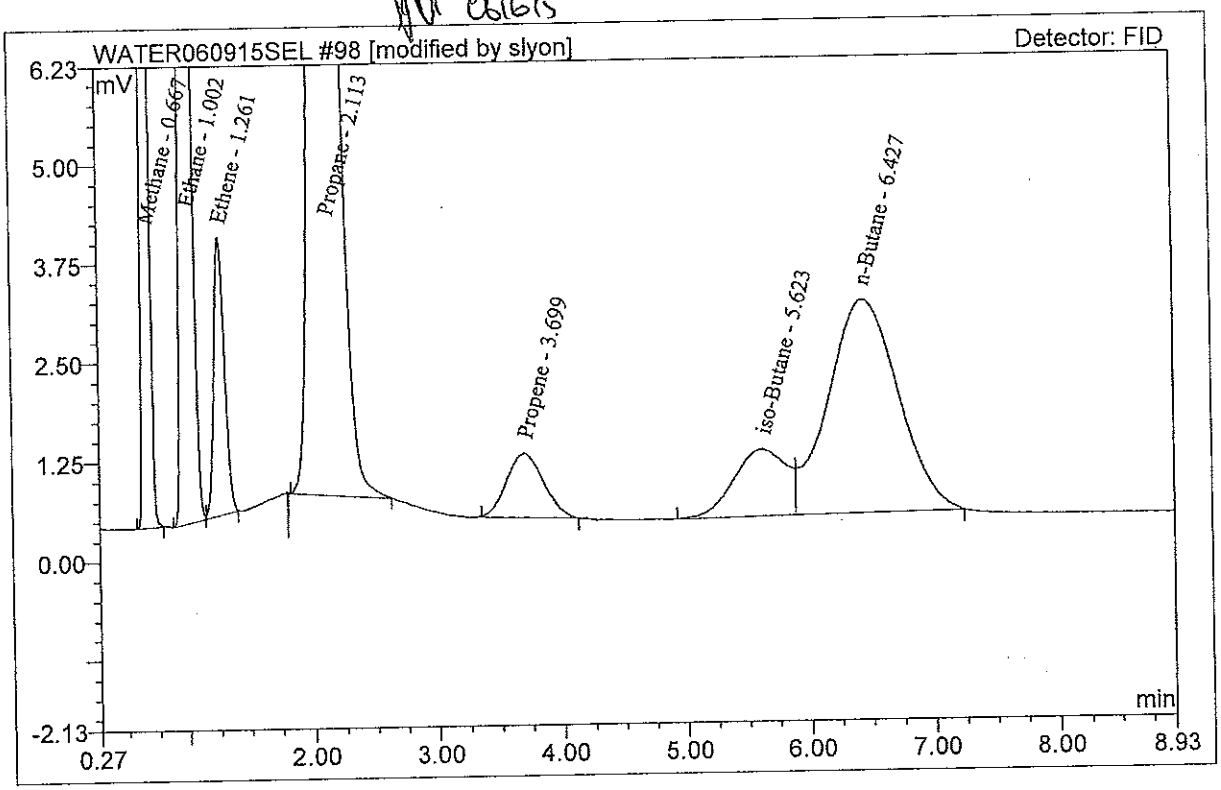
MICROSEEPS

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

MV 061615

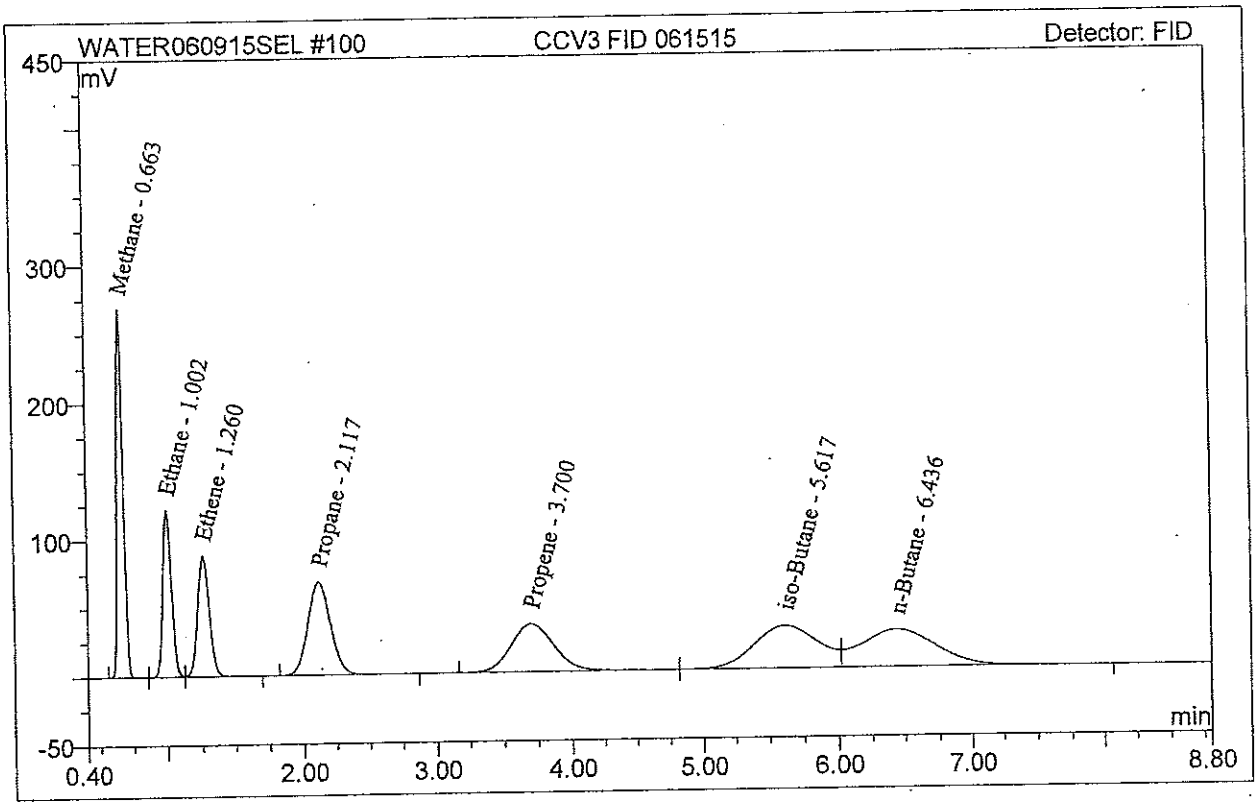


MICROSEEPS

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	TV
1	Methane	0.663	14.769	268.829	BM	36.9161	36.086
2	Ethane	1.002	9.020	121.918	M	22.9527	23.152
3	Ethene	1.260	8.928	88.294	MB	25.0902	25.568
4	Propane	2.117	13.535	68.035	BMB	33.7380	33.023
5	Propene	3.700	12.996	35.067	BM	38.2080	
6	iso-Butane	5.617	17.110	31.102	M	42.3060	41.617
7	n-Butane	6.436	17.600	27.211	MB	45.0999	45.011

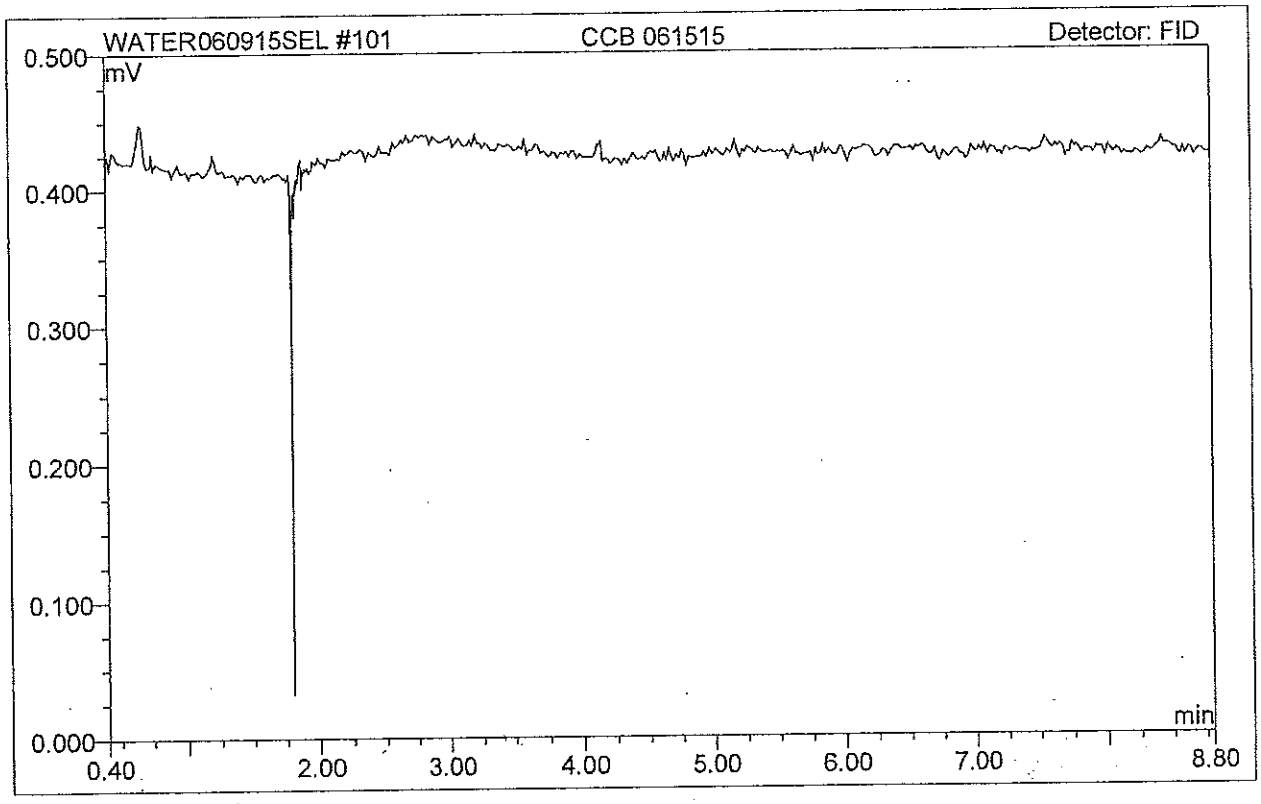


MICROSEEPS

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



Risk Department
Case Narrative

Batch number: 4644 - DISG

Original Run Date: 061715

Matrix: Water

Sample numbers:

15779-(6-8) DIL
15793-(1) DIL
15817-(2) DIL
15814-(2,4)
15826-(2)
15834-(1-4)
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:

None

Result:

(1) Repeat 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 greater than 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: [signature] **Date:** 06/17/15

Manual Integration Conducted? (YES) NO

(Circle One)

Reviewed by: [signature] **Date:** 06/29/15

Reviewed & Entered by: Upload **Date:** 061915

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

Analyst JM

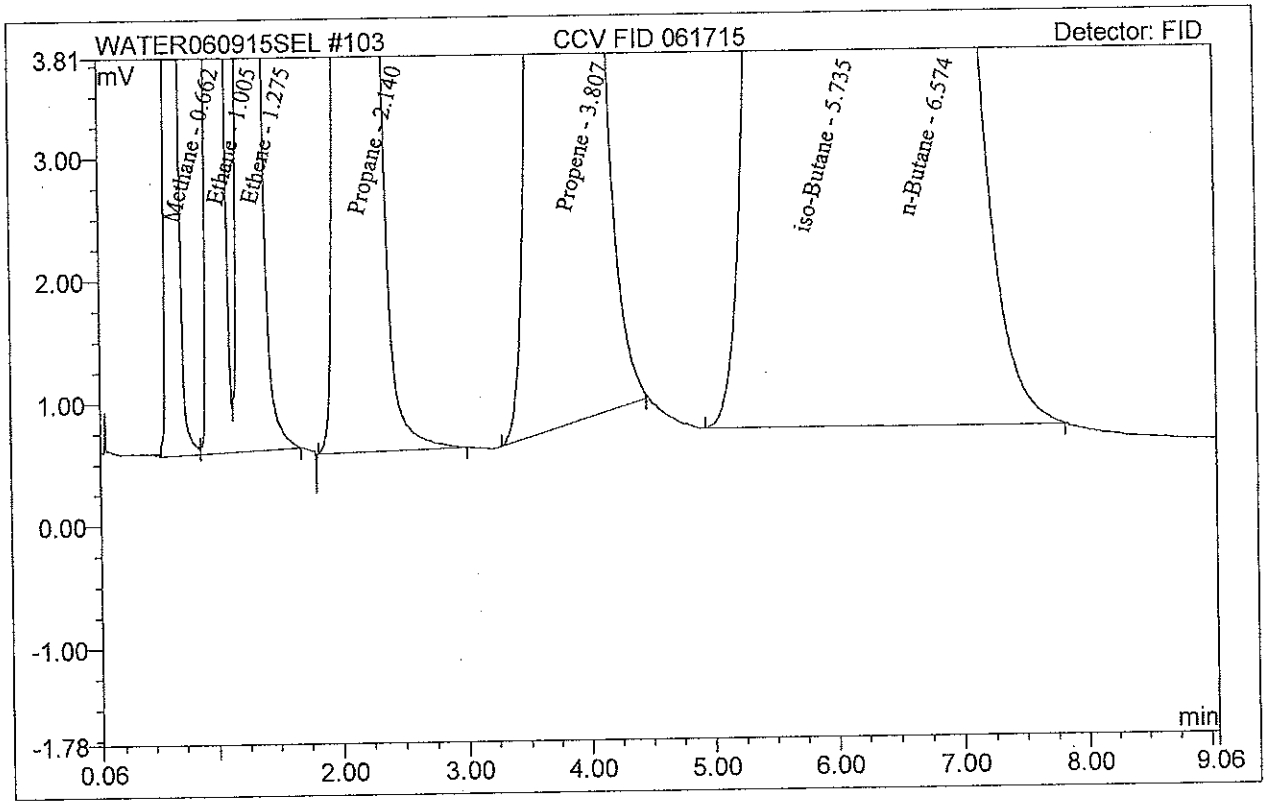
Reviewed GRK 06/20/15

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

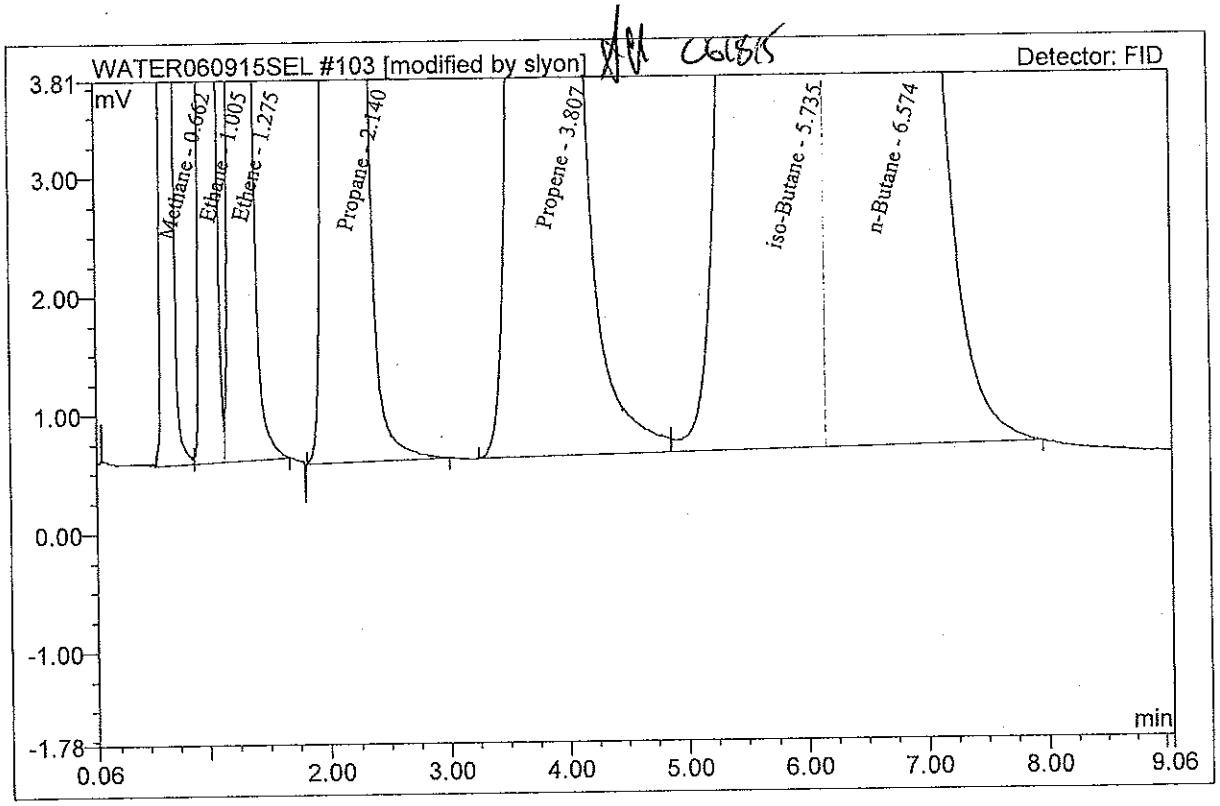


MICROSEEPS

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	TV
1	Methane	0.662	14.854	272.015	BM	37.1252	36.08
2	Ethane	1.005	9.070	122.413	M	23.0793	23.152
3	Ethene	1.275	8.974	87.607	MB	25.2182	25.568
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	

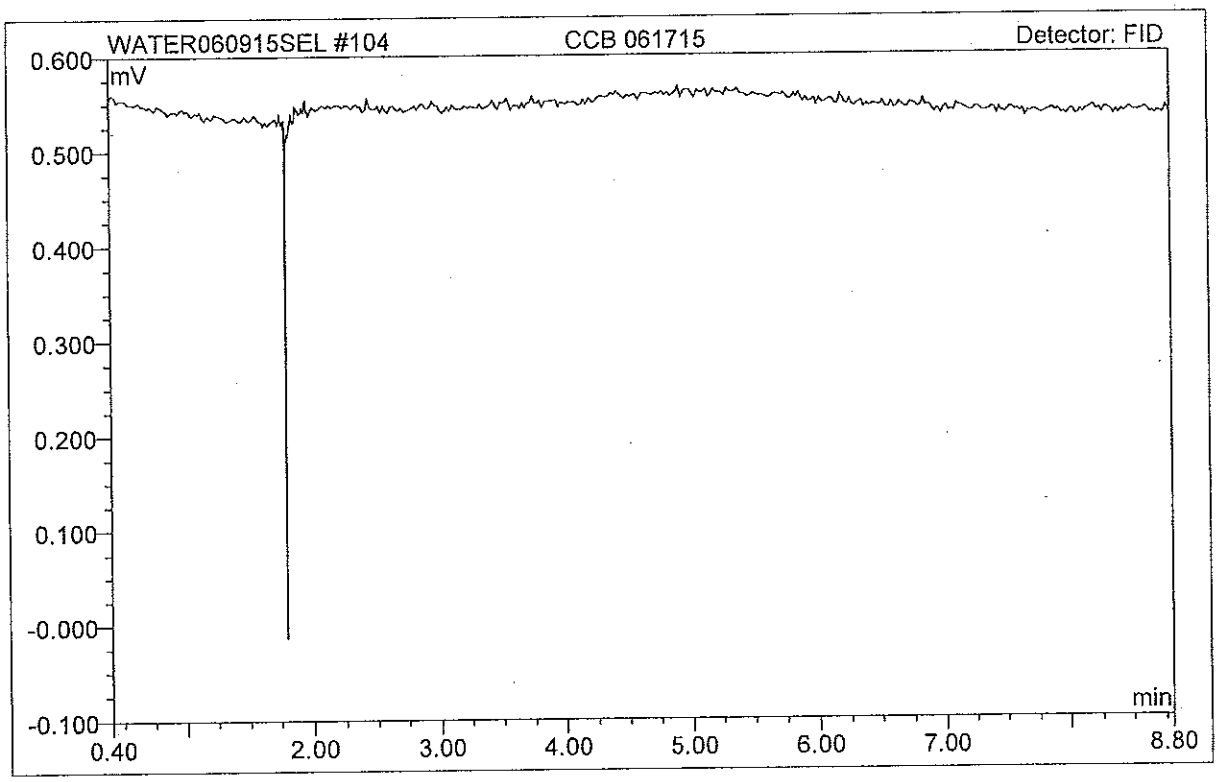


MICROSEEPS

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

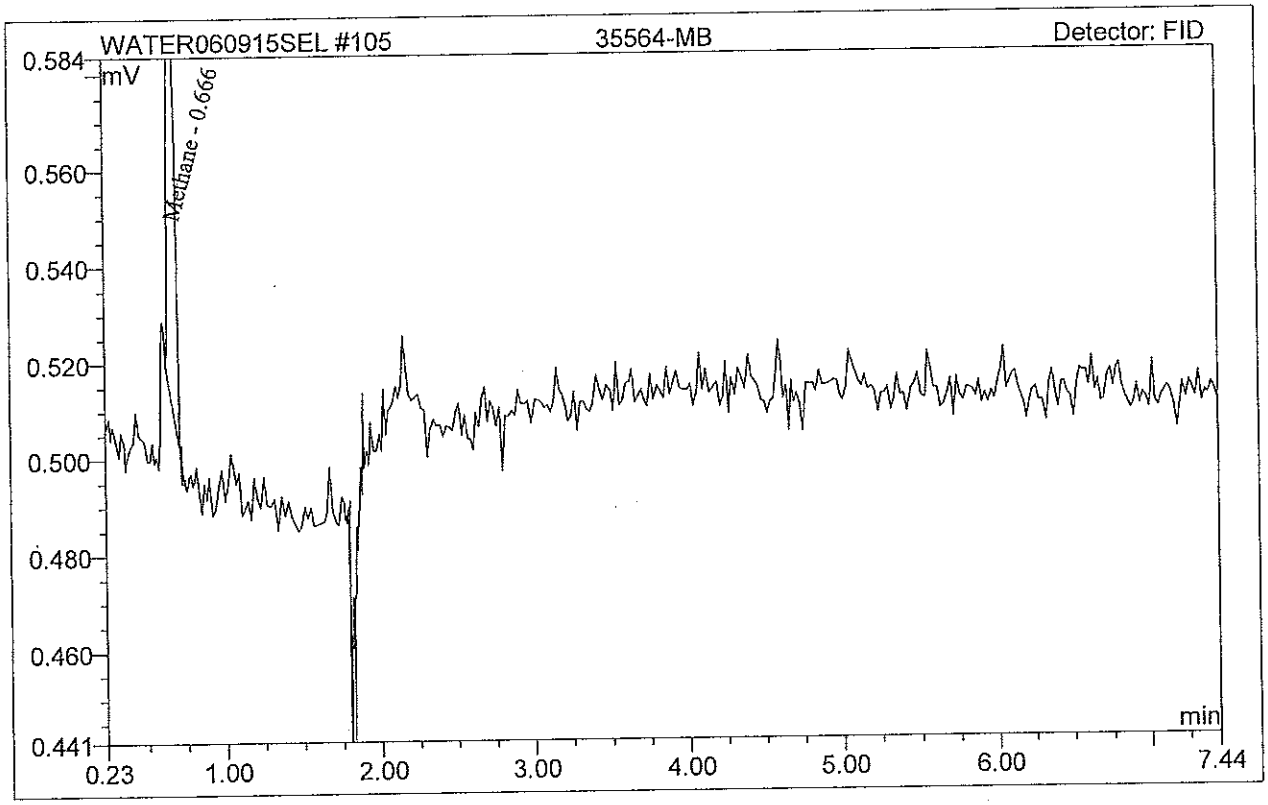


MICROSEEPS

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

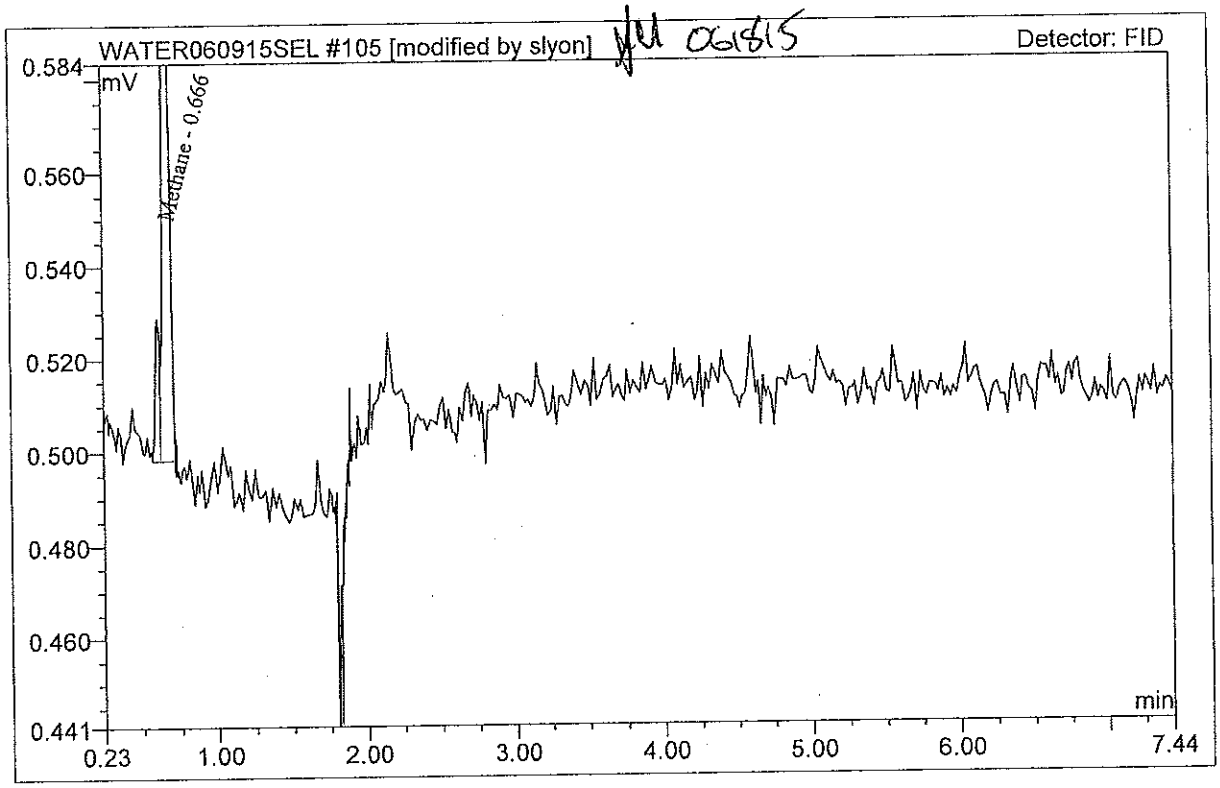


MICROSEEPS

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

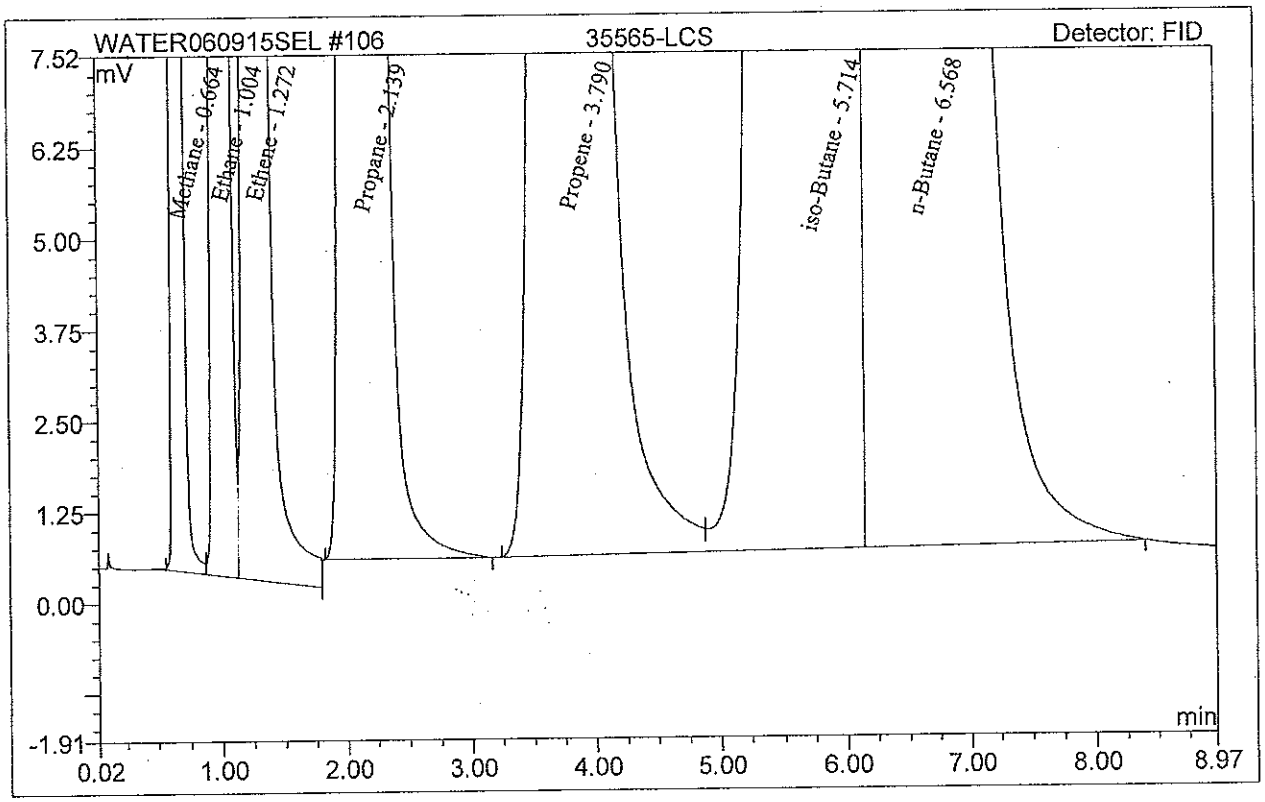


MICROSEEPS

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



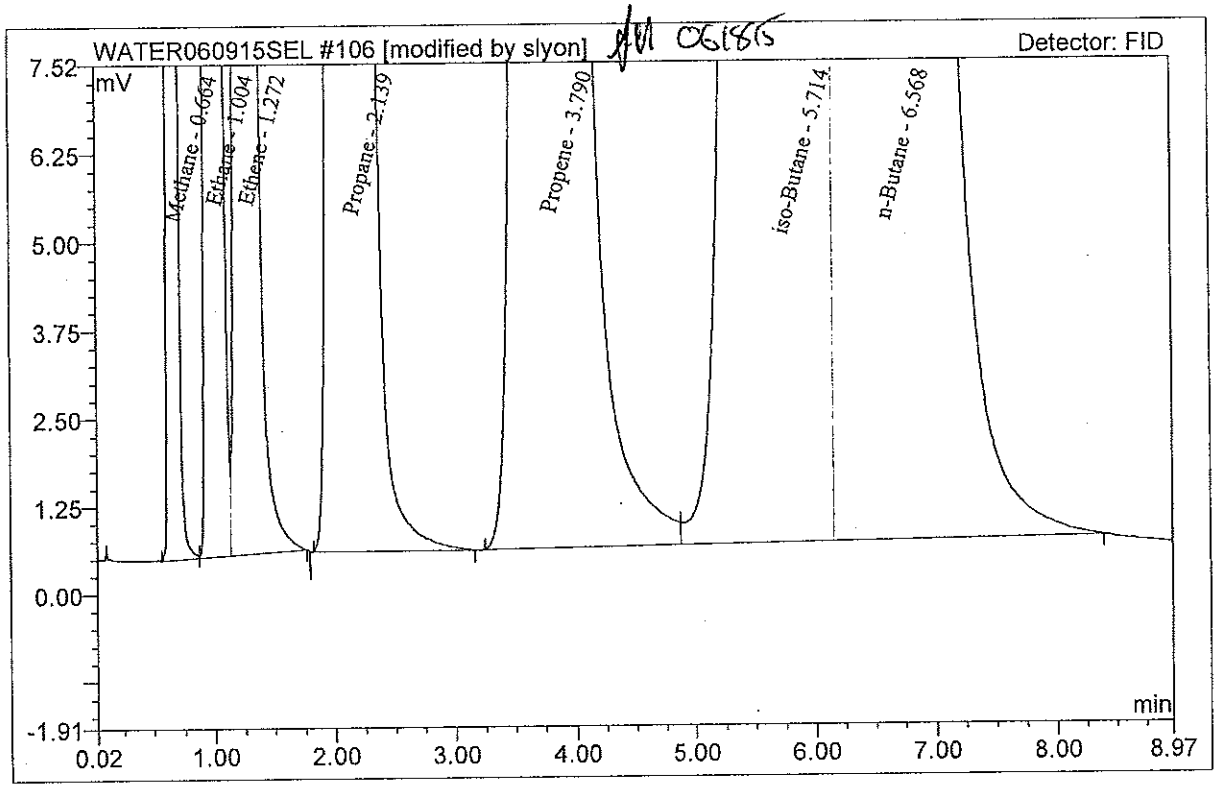
MICROSEEPS

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

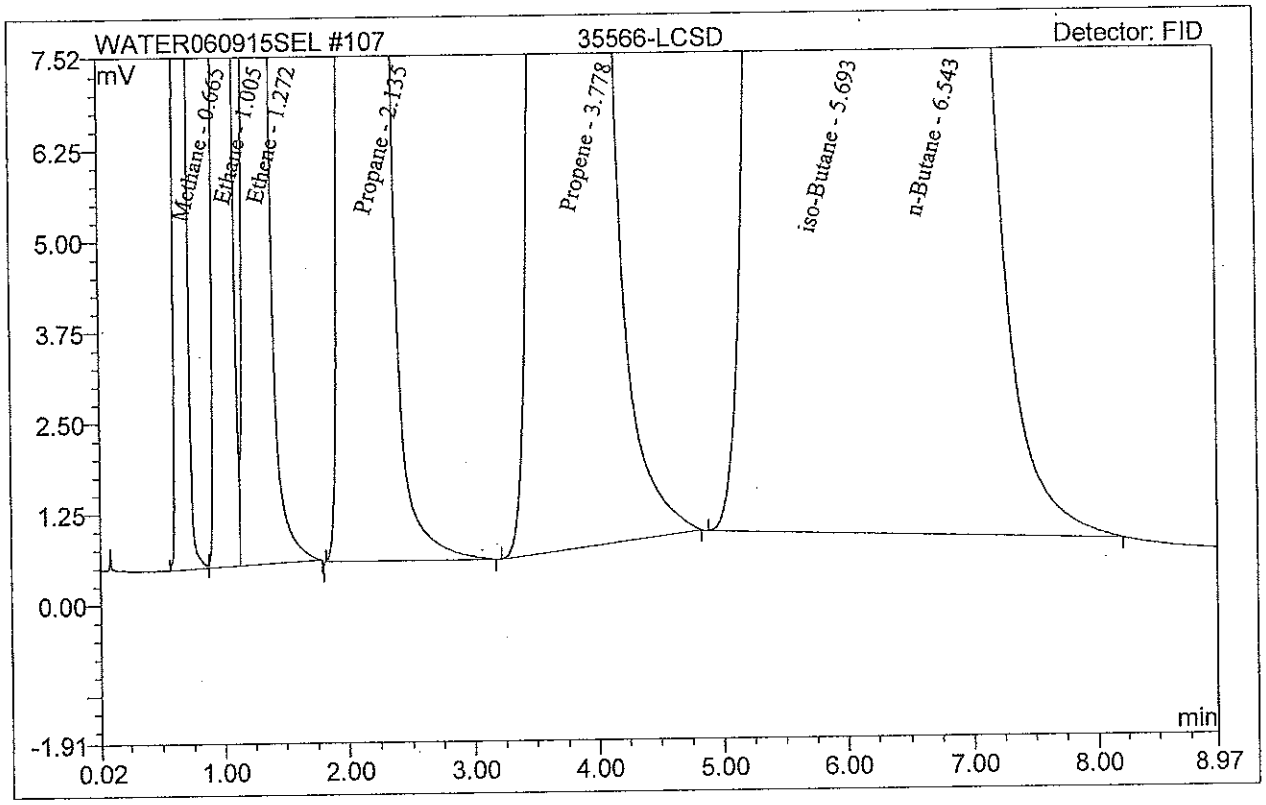


MICROSEEPS

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	35.350	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



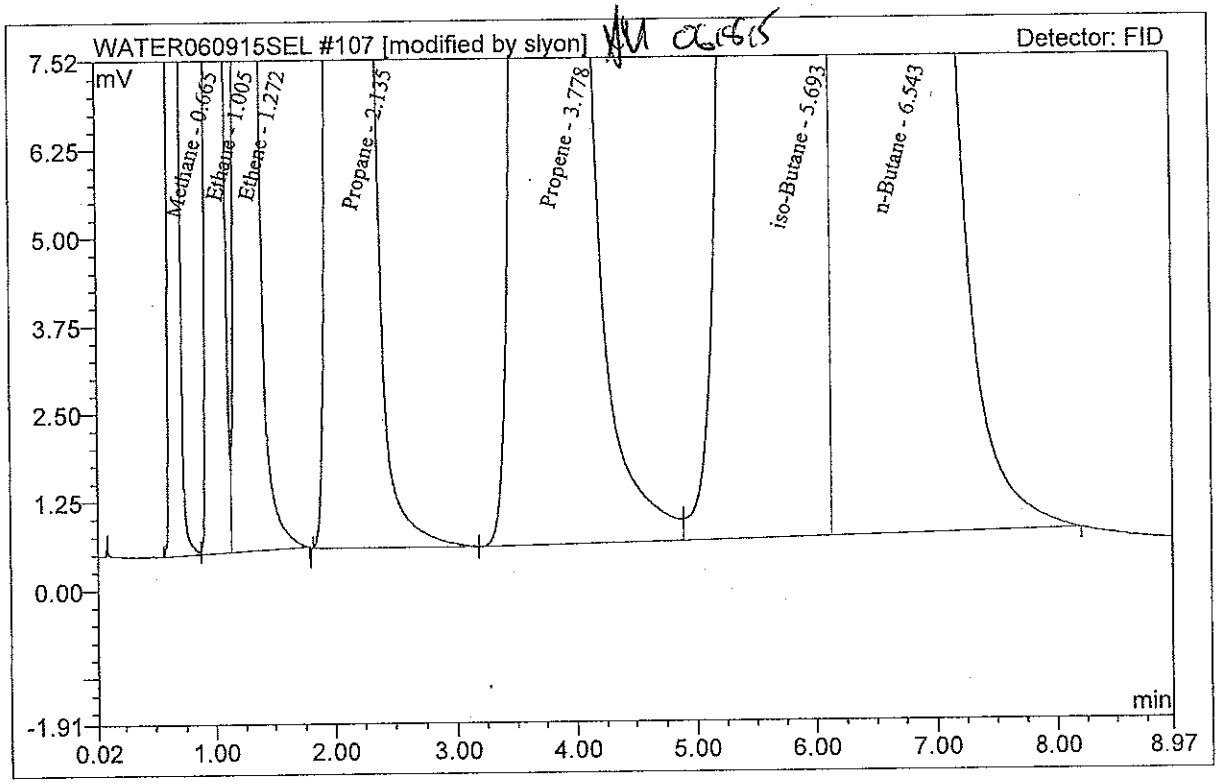
MICROSEEPS

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

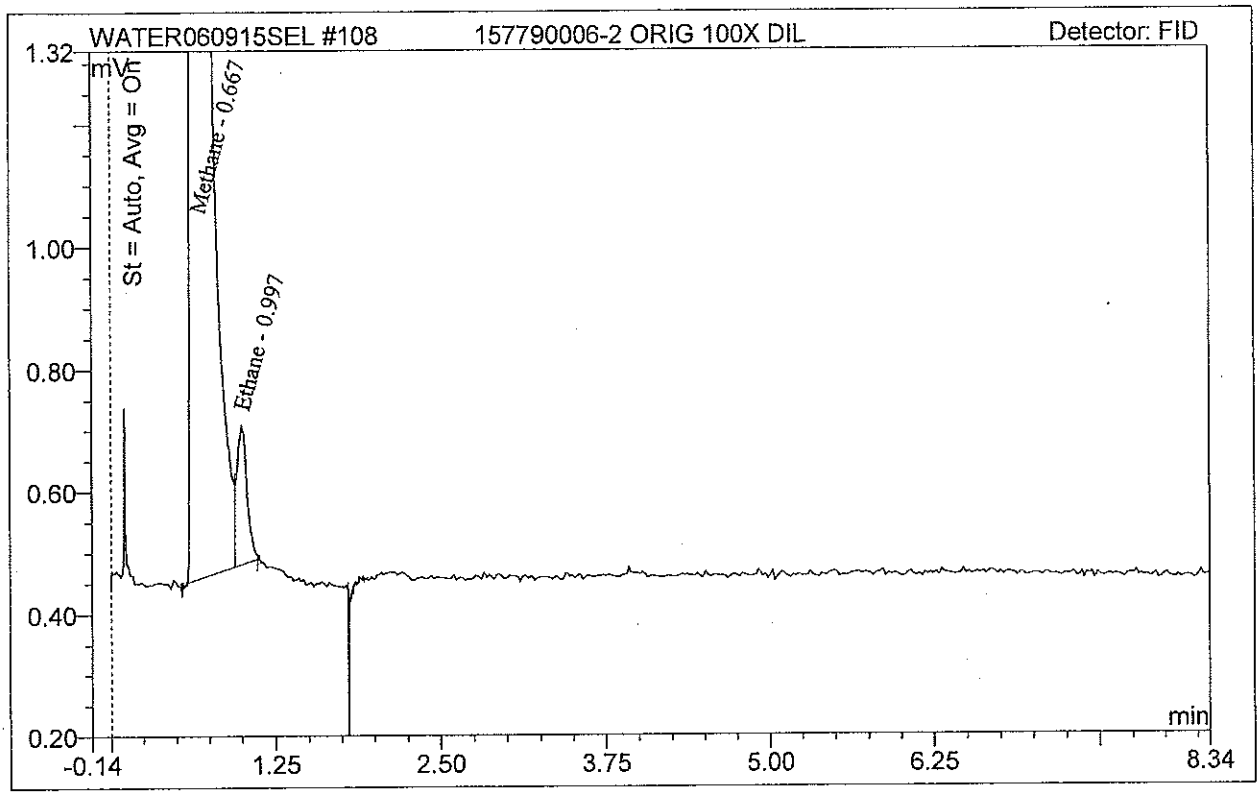


MICROSEEPS

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



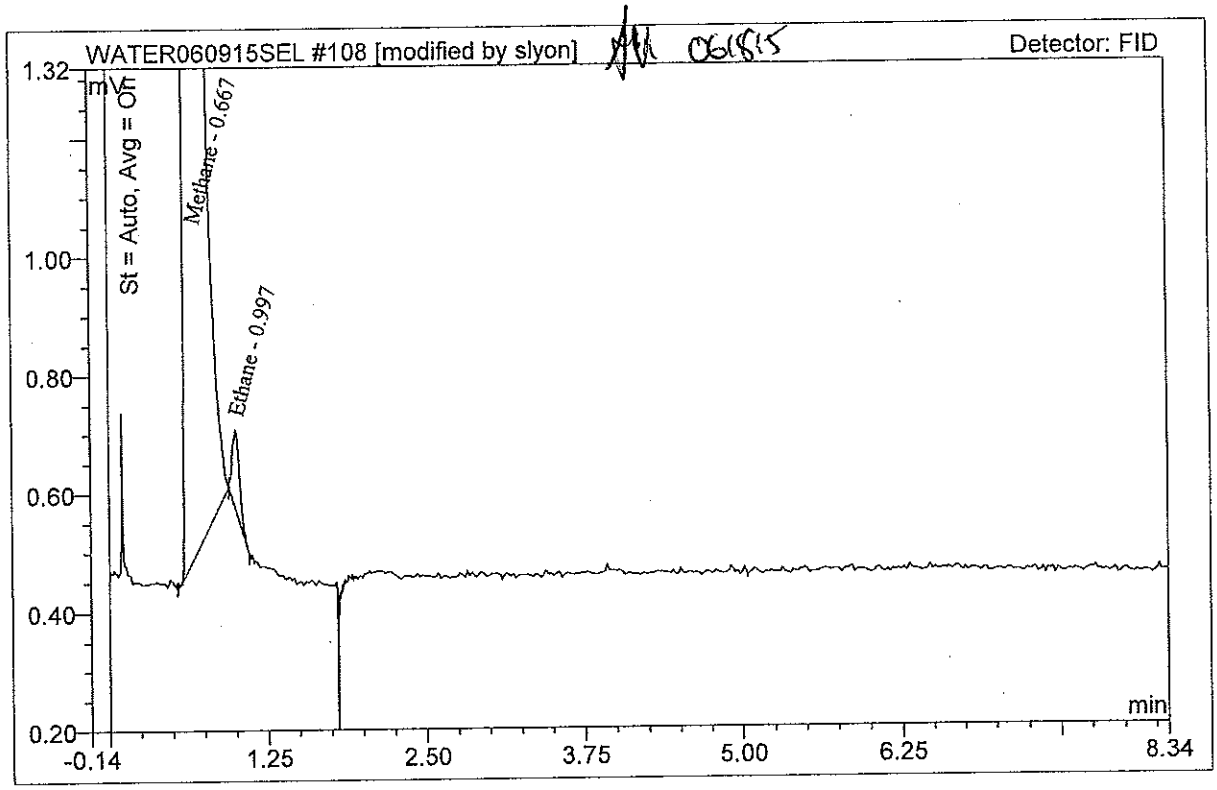
MICROSEEPS

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

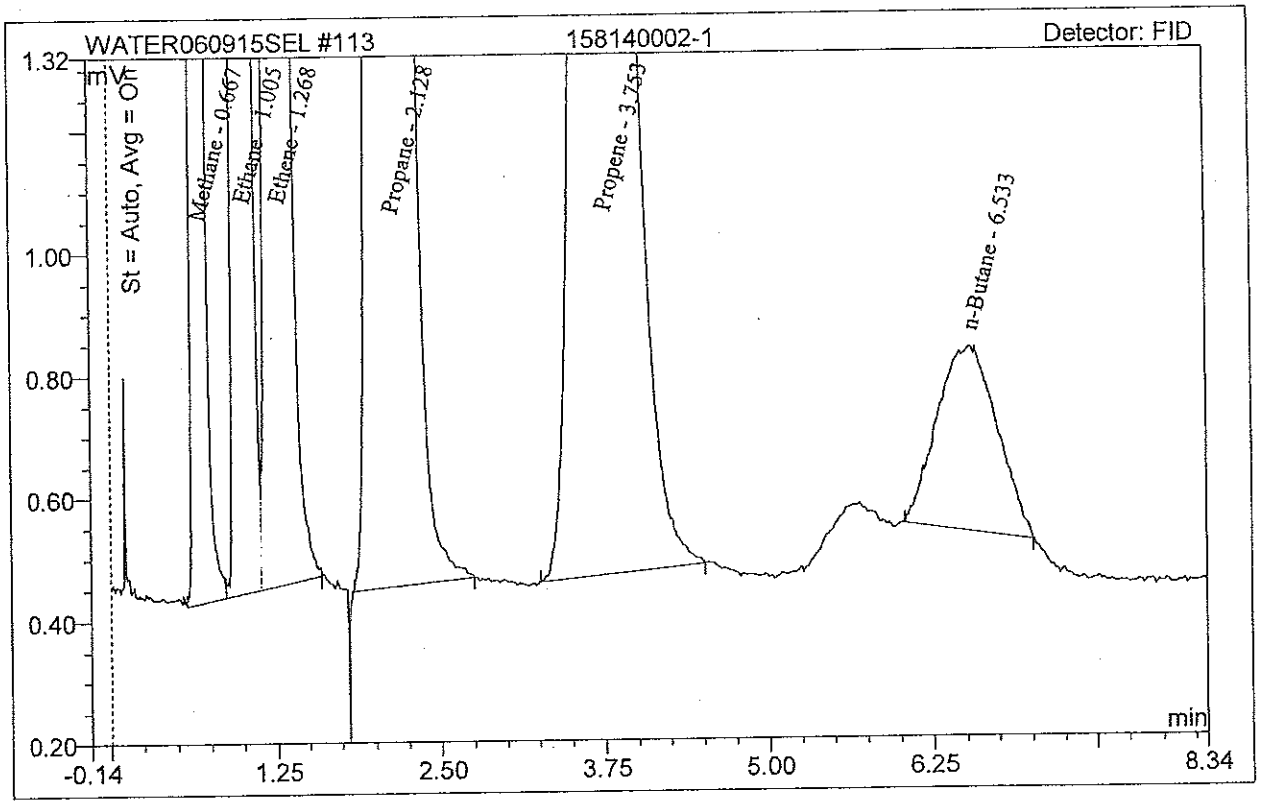


MICROSEEPS

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	6.684	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

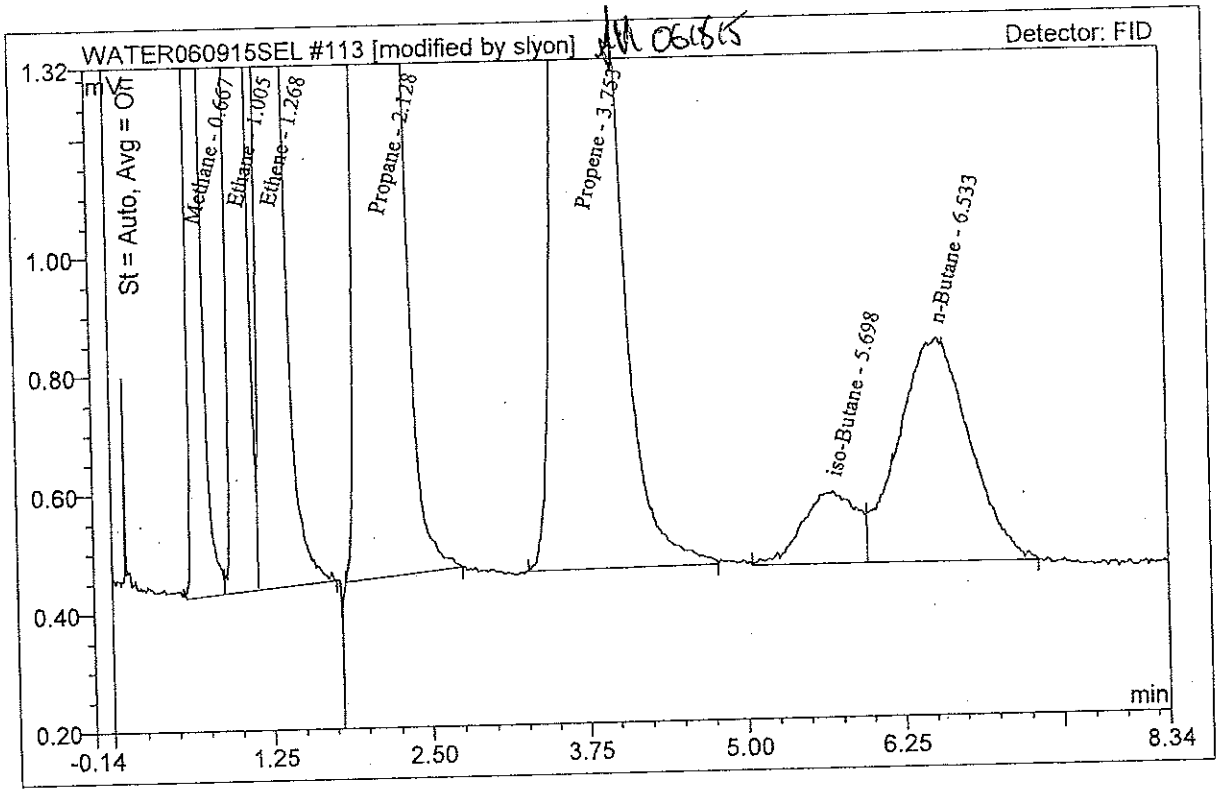


MICROSEEPS

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

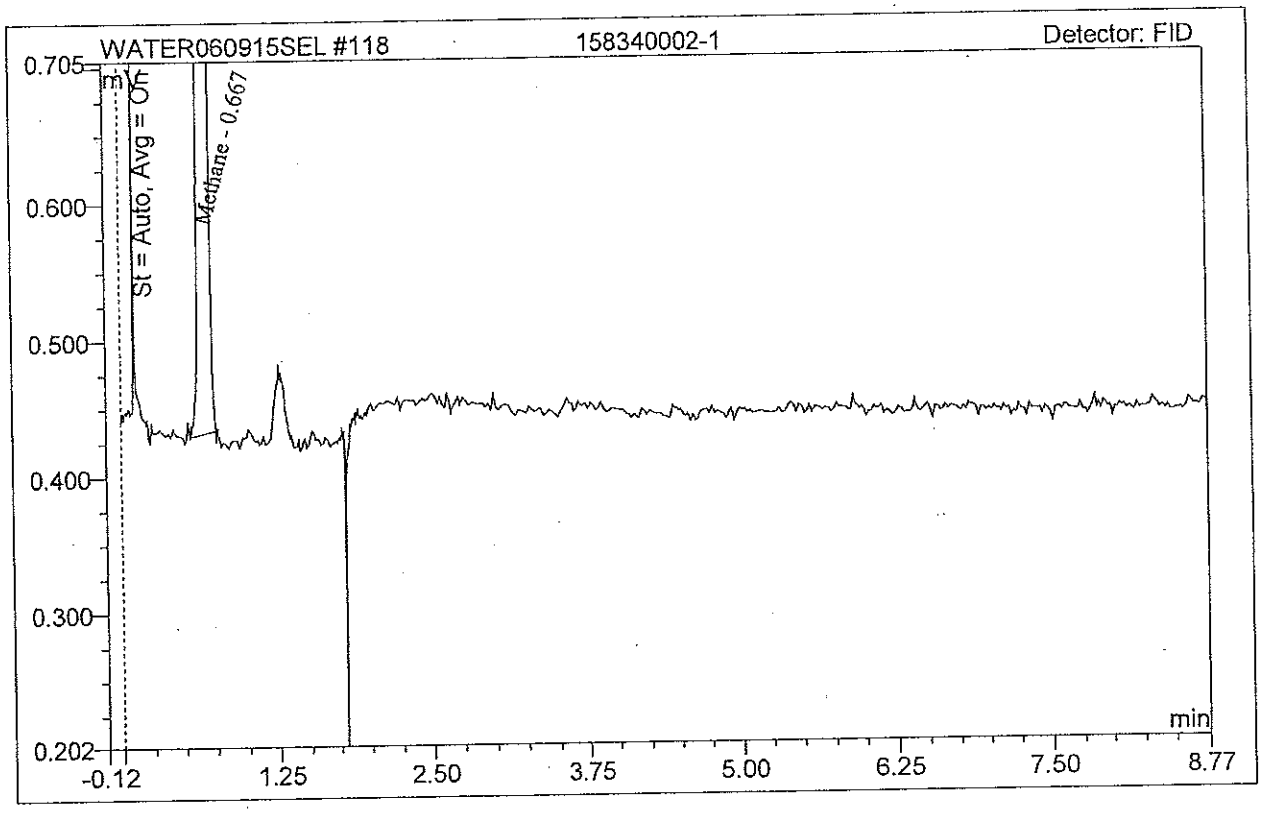


MICROSEEPS

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

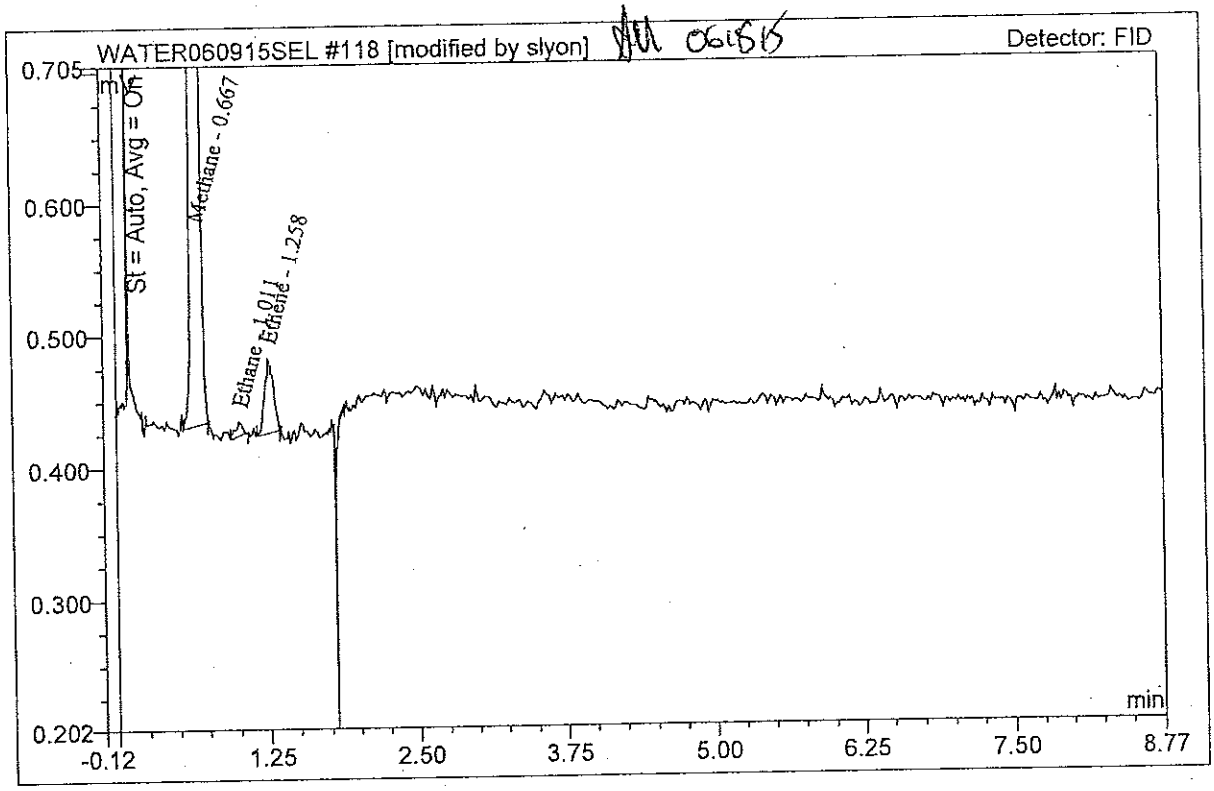


MICROSEEPS

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

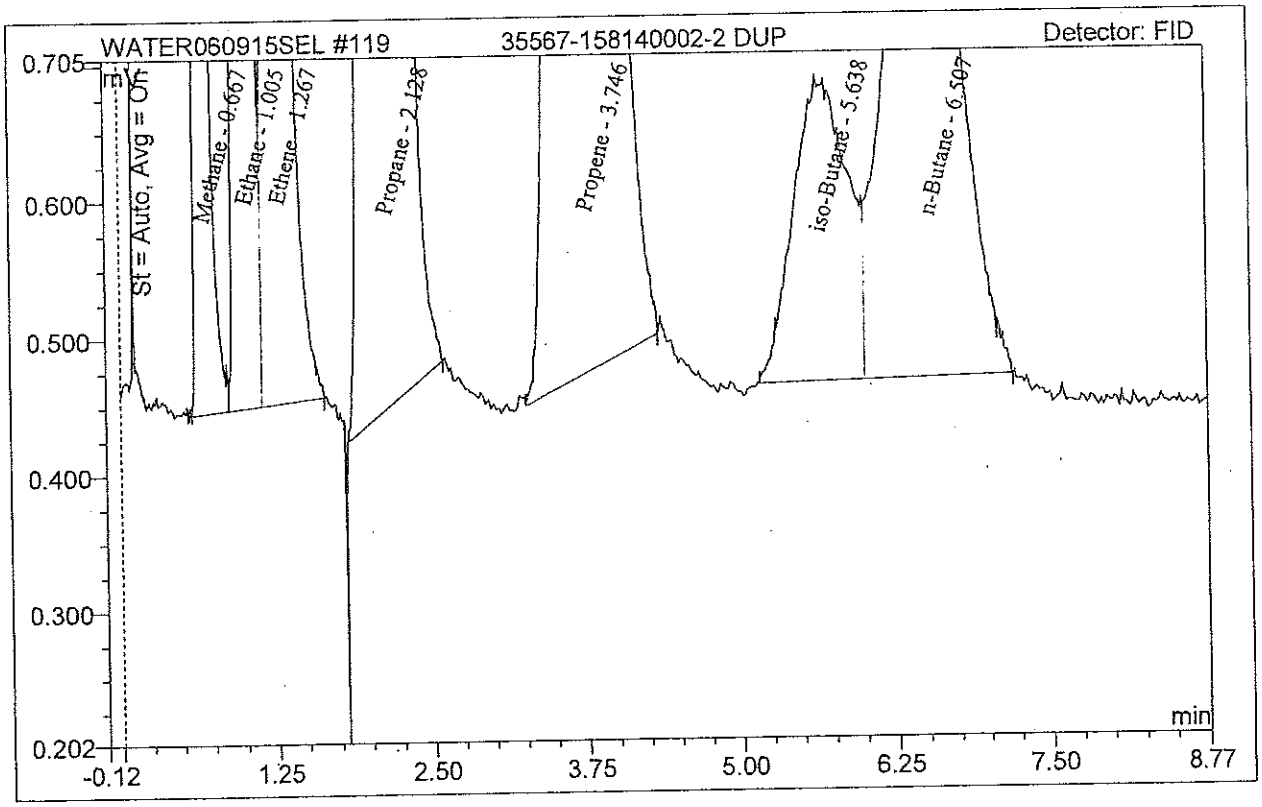


MICROSEEPS

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

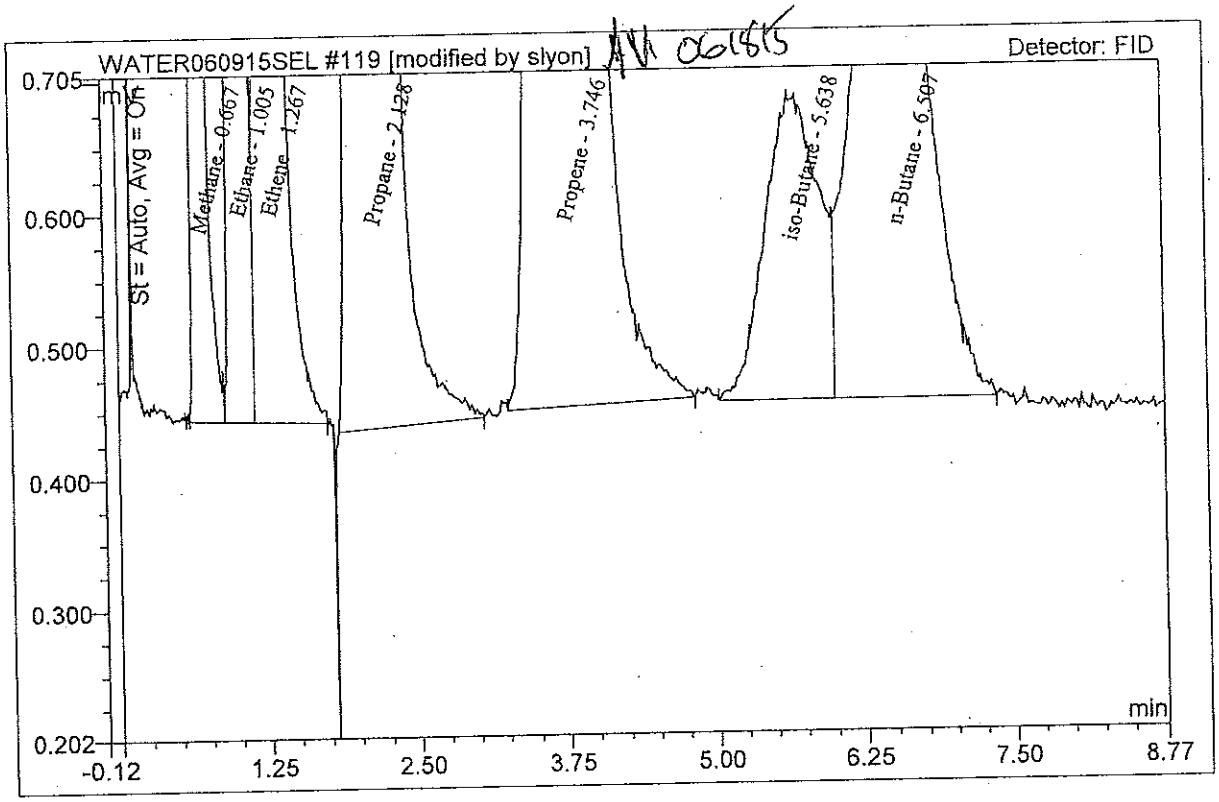


MICROSEEPS

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

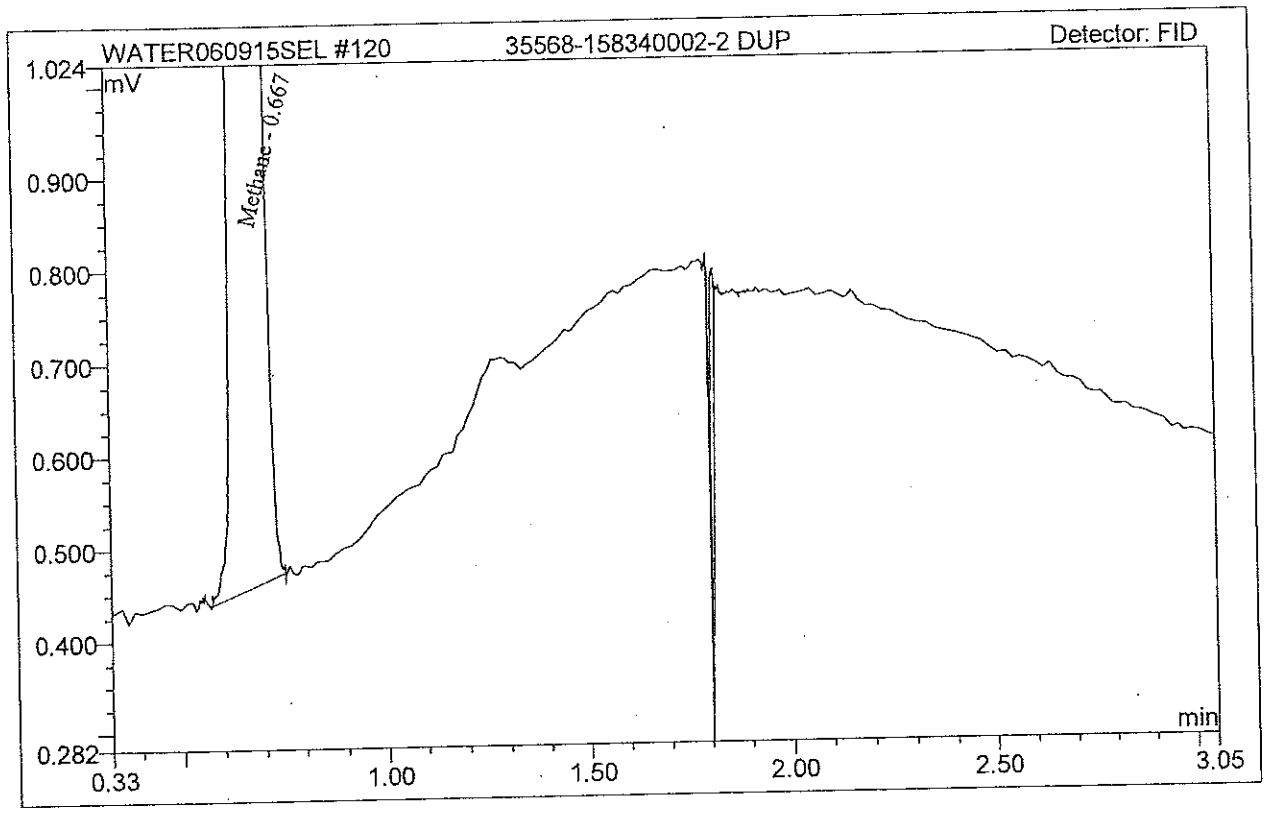


MICROSEEPS

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

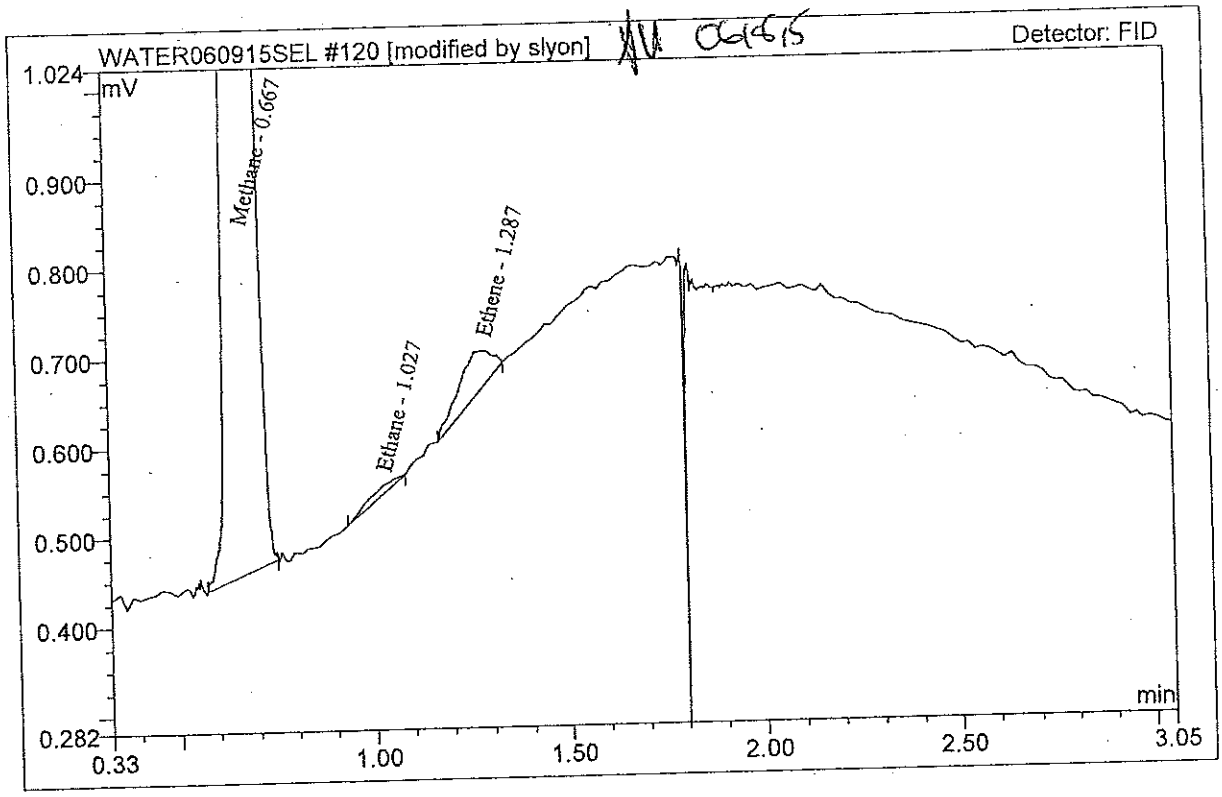


MICROSEEPS

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

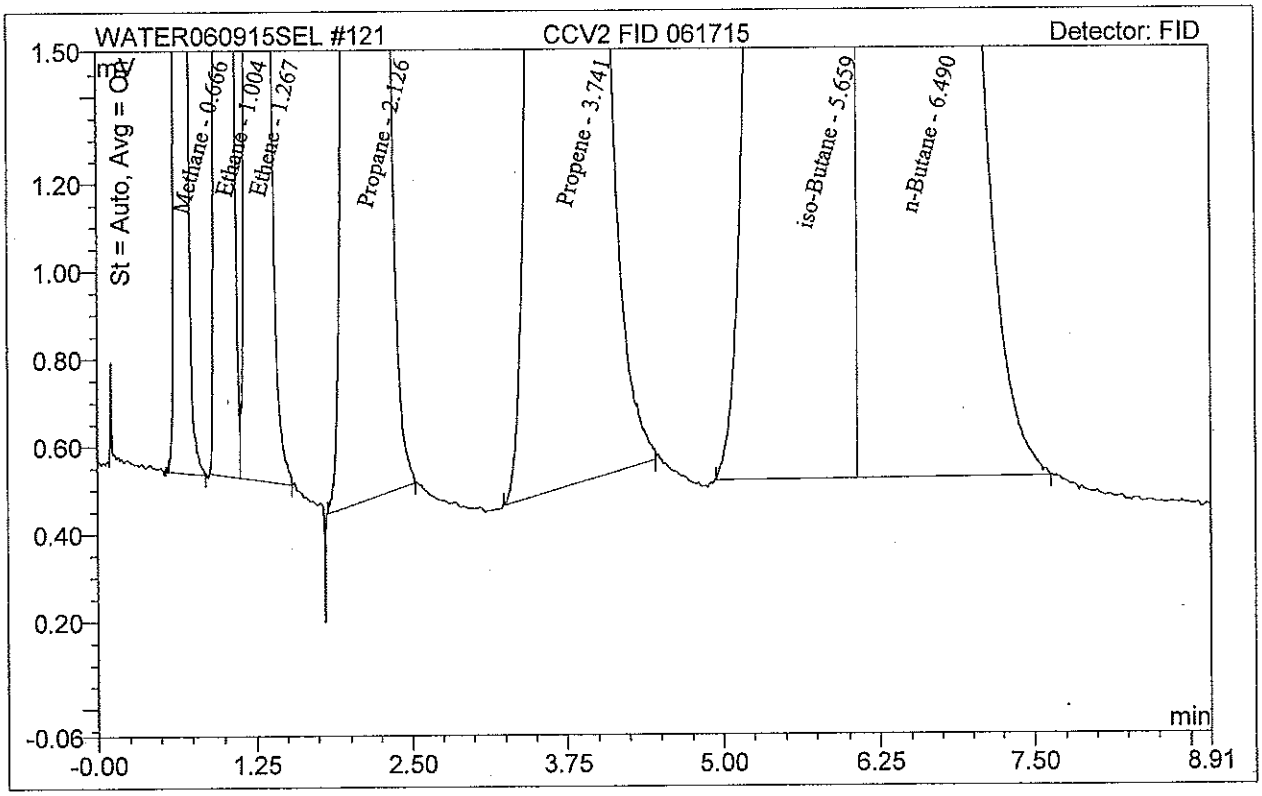


MICROSEEPS

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



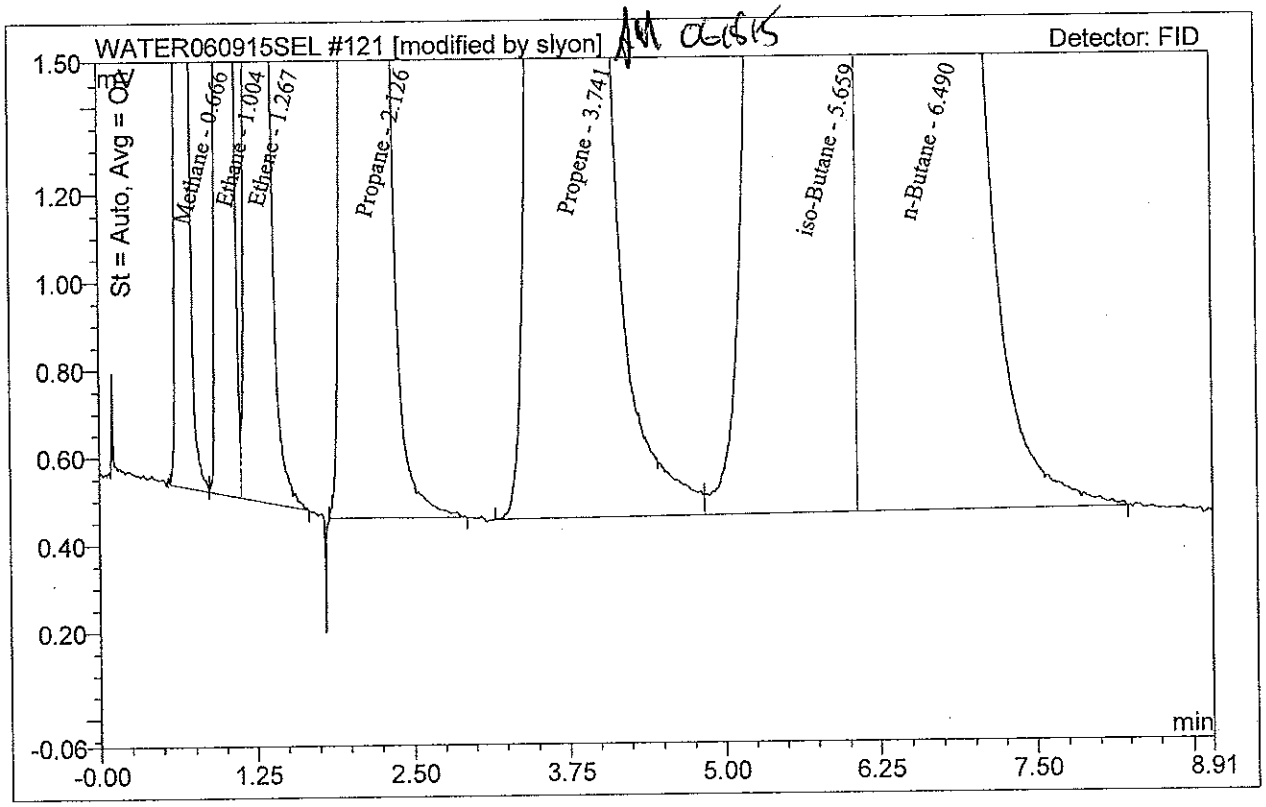
MICROSEEPS

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

JV
14.434
9.261
10.227

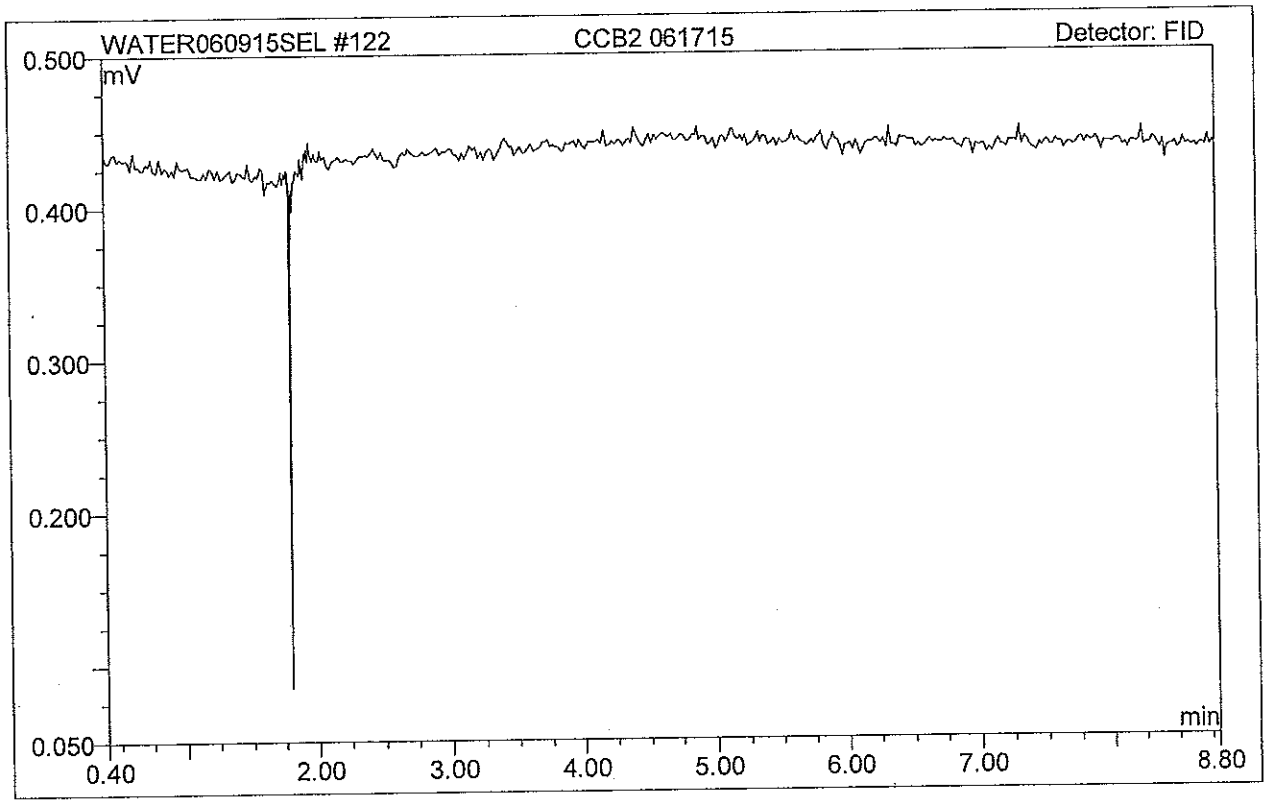


MICROSEEPS

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

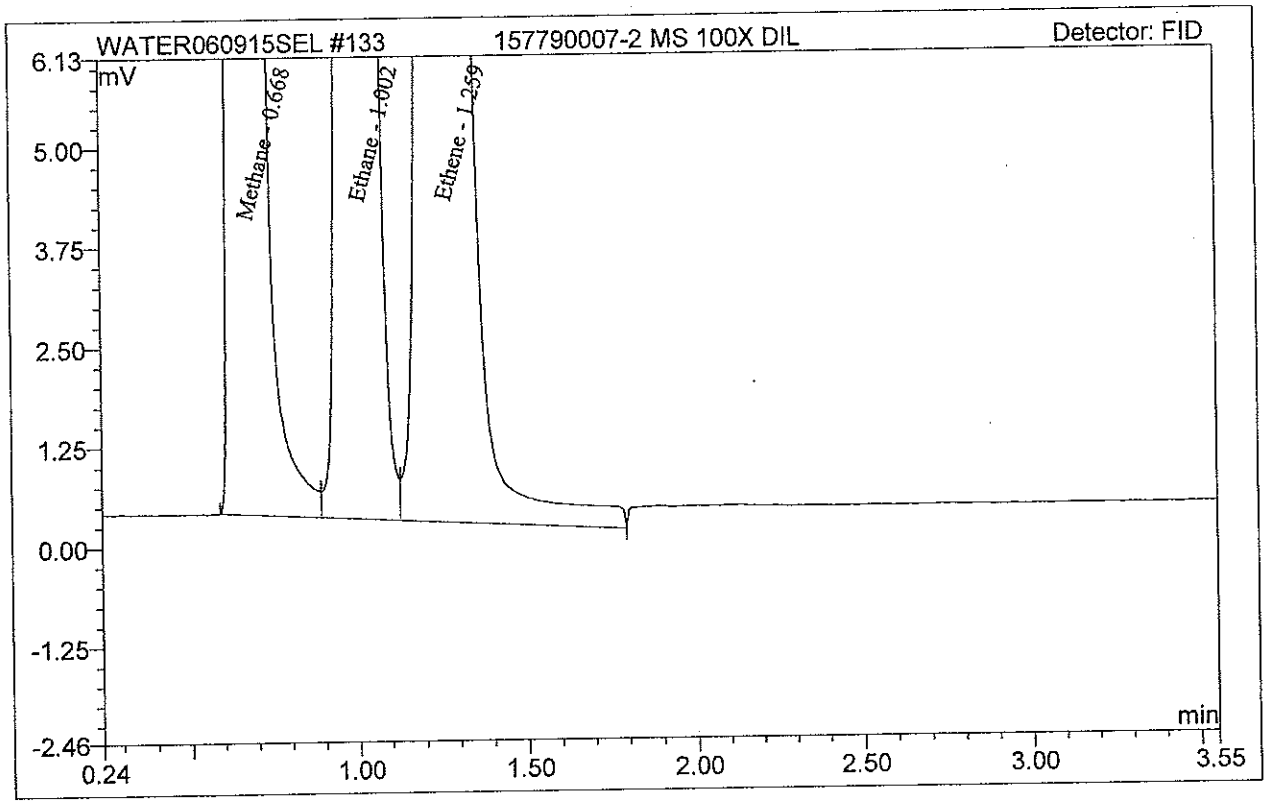


MICROSEEPS

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

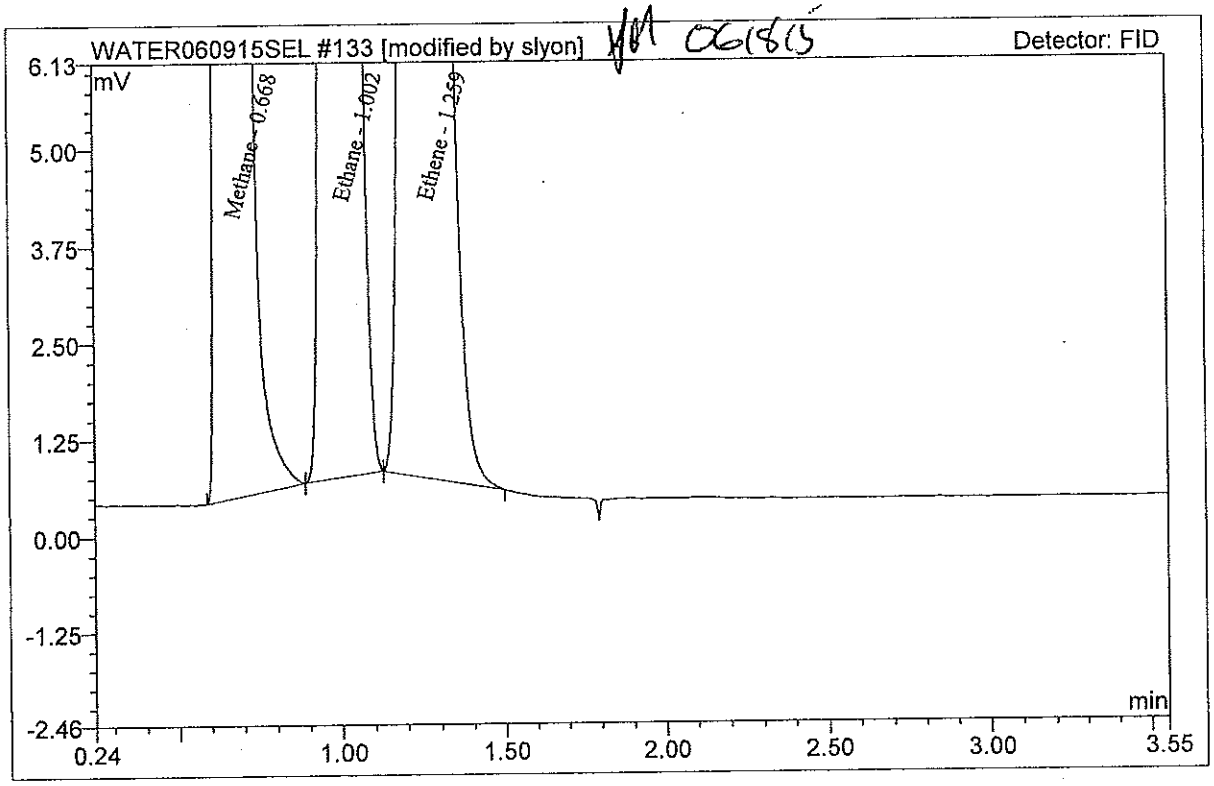


MICROSEEPS

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 X100
2	Ethane	1.002	6.604	90.393	bMb*	16.8126
3	Ethene	1.259	5.626	56.249	bMB*	15.8223



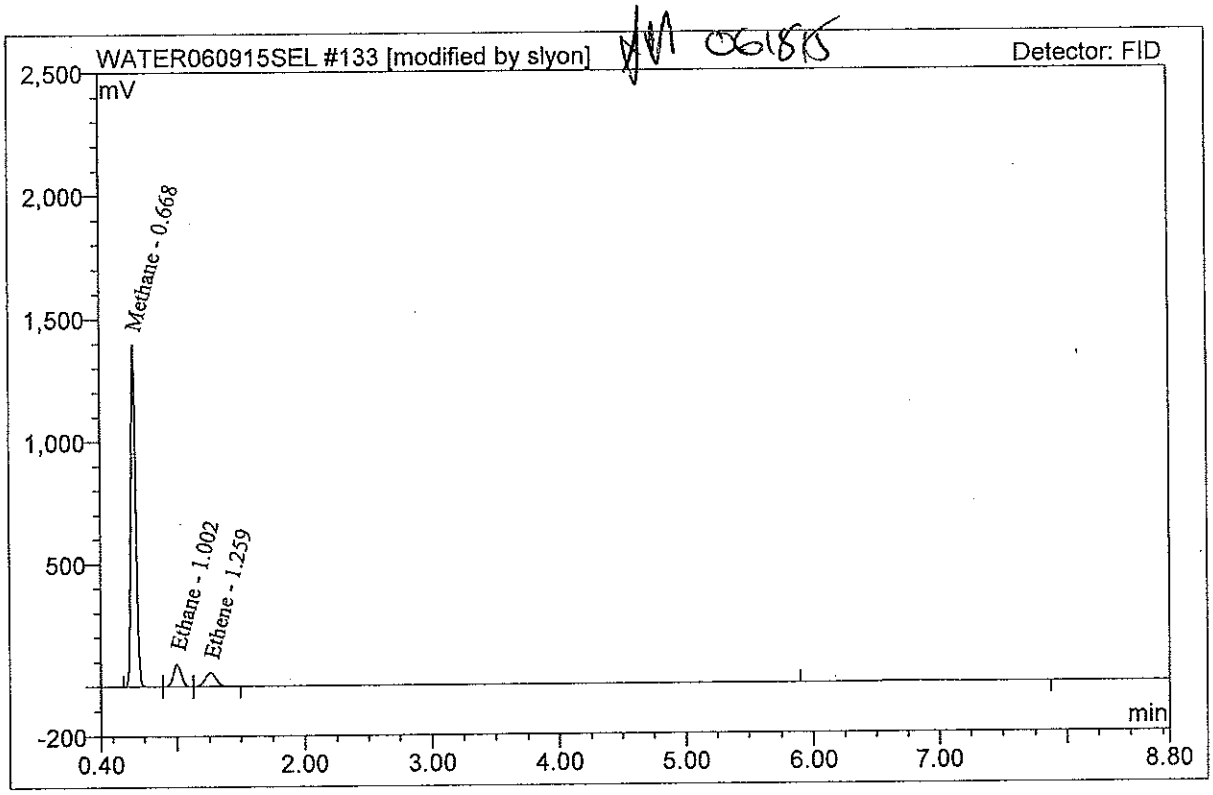
MICROSEEPS

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

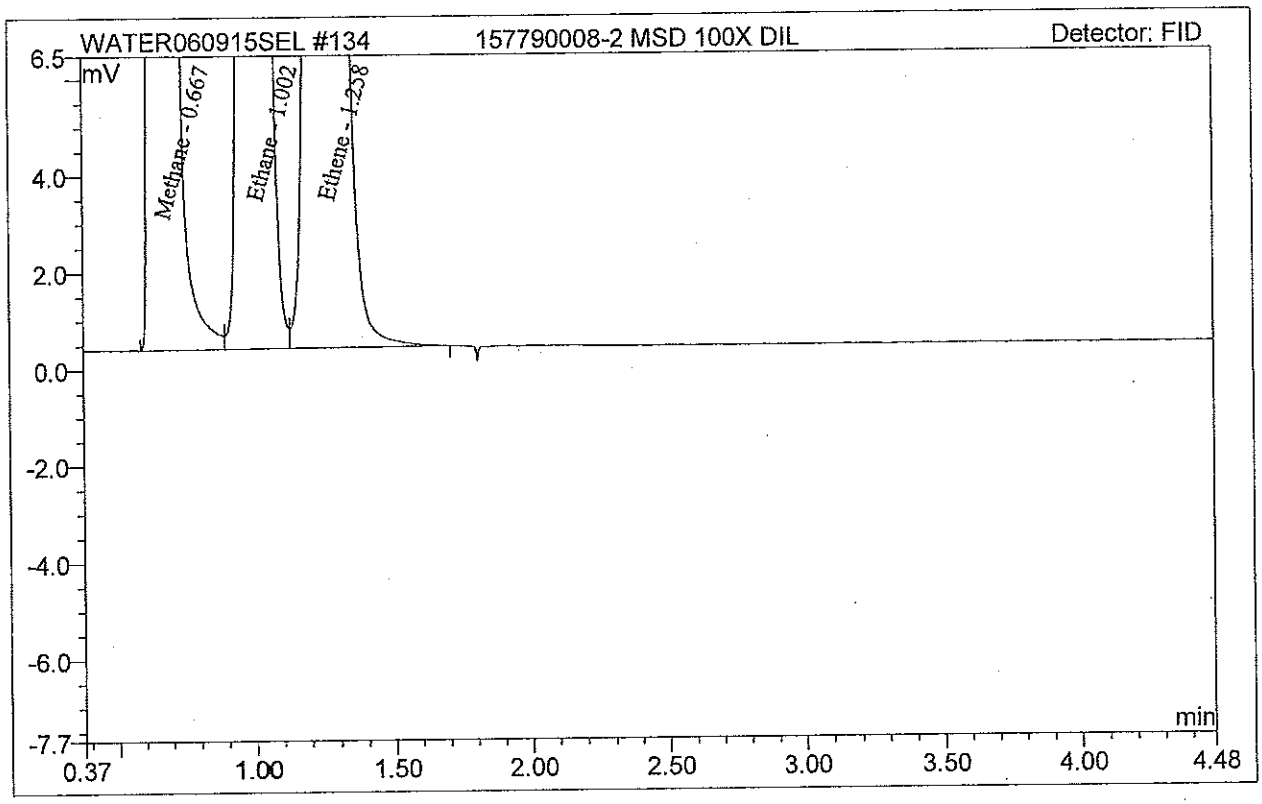


MICROSEEPS

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

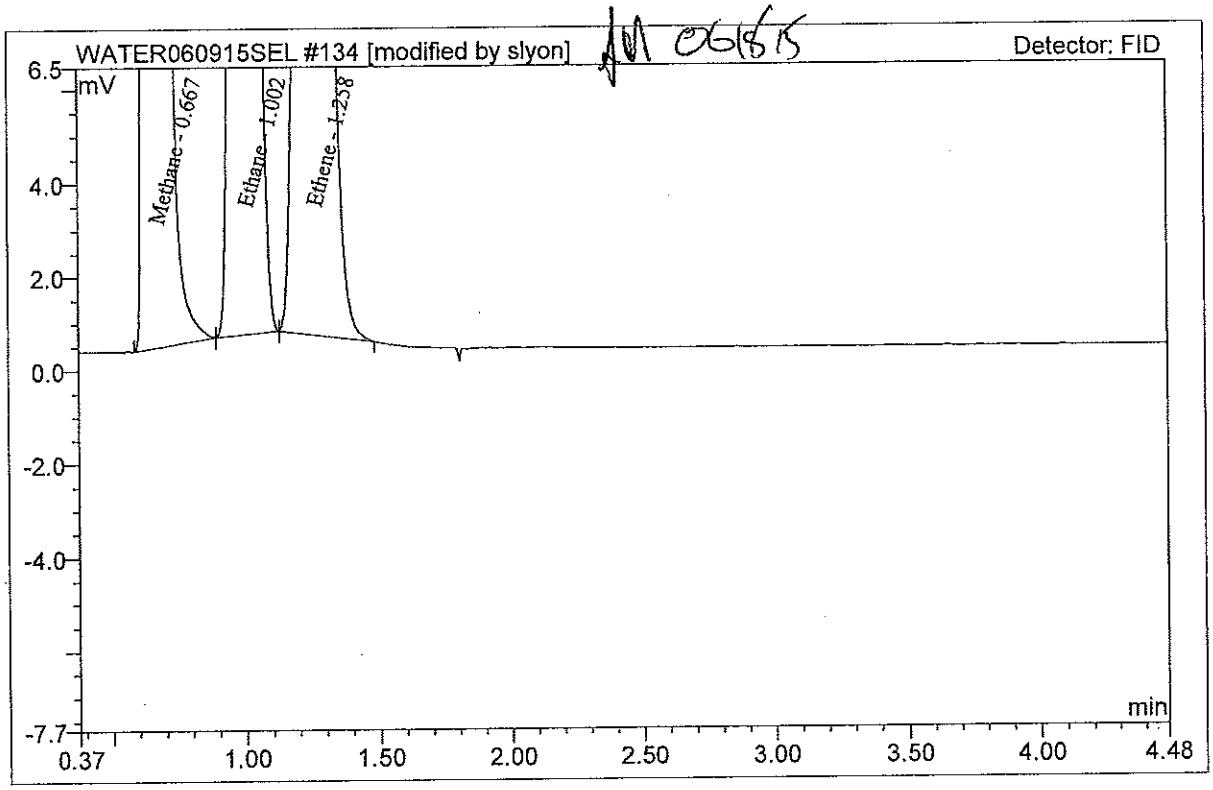


MICROSEEPS

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

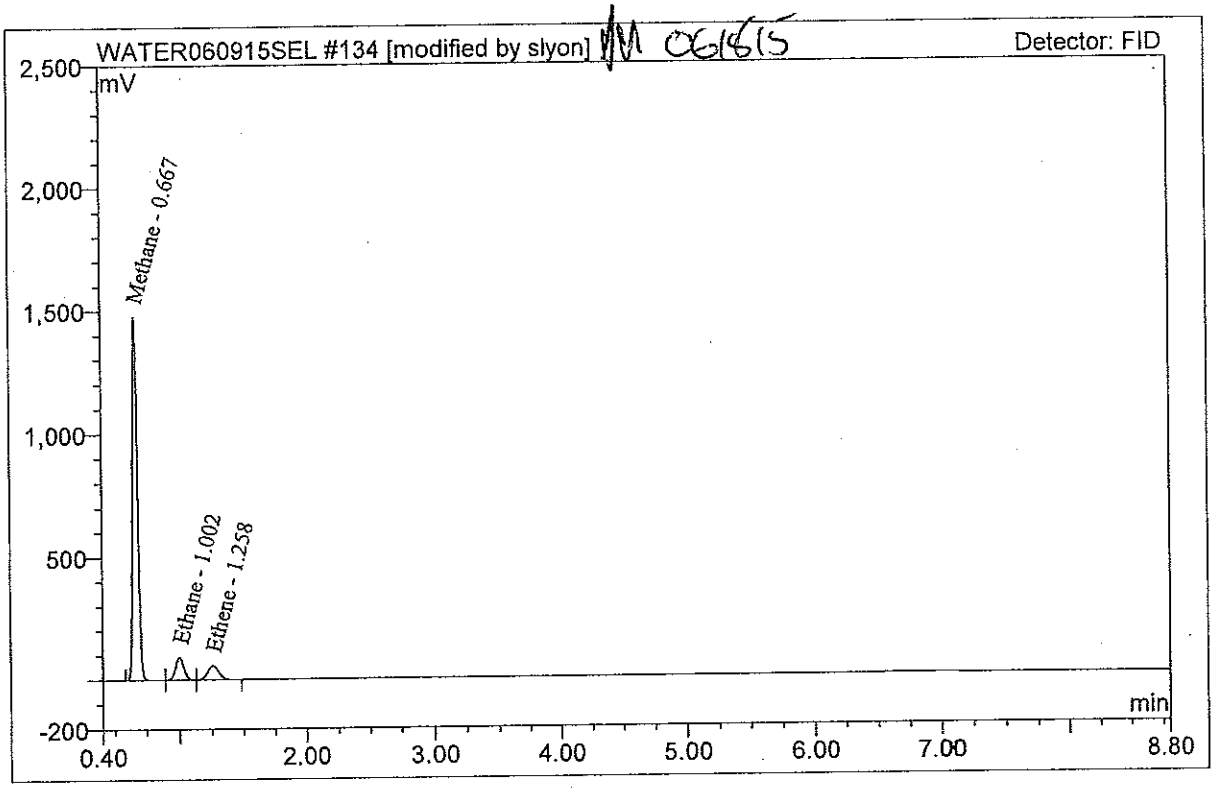


MICROSEEPS

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 X100
2	Ethane	1.002	6.667	91.357	bMb*	16.9738
3	Ethene	1.258	5.631	56.357	bMB*	15.8361

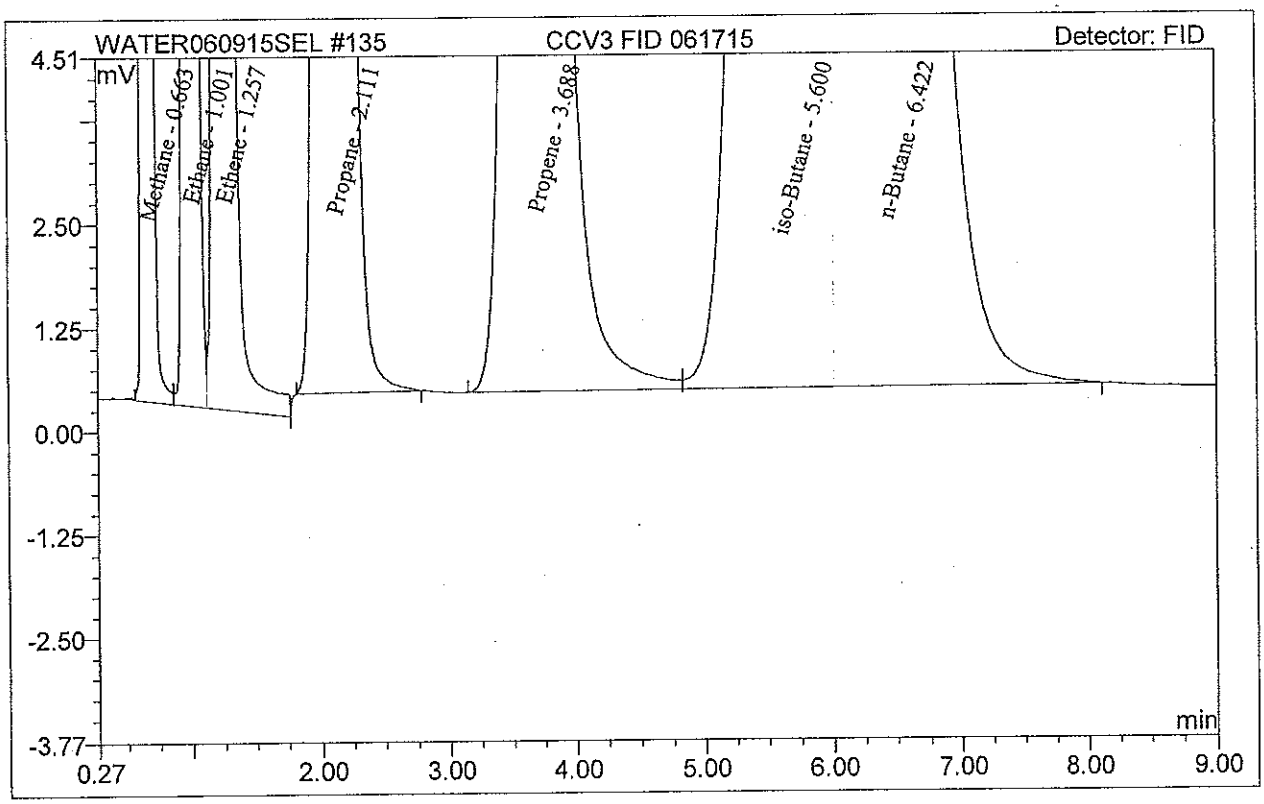


MICROSEEPS

Sample Analysis Report

Sample Name:	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



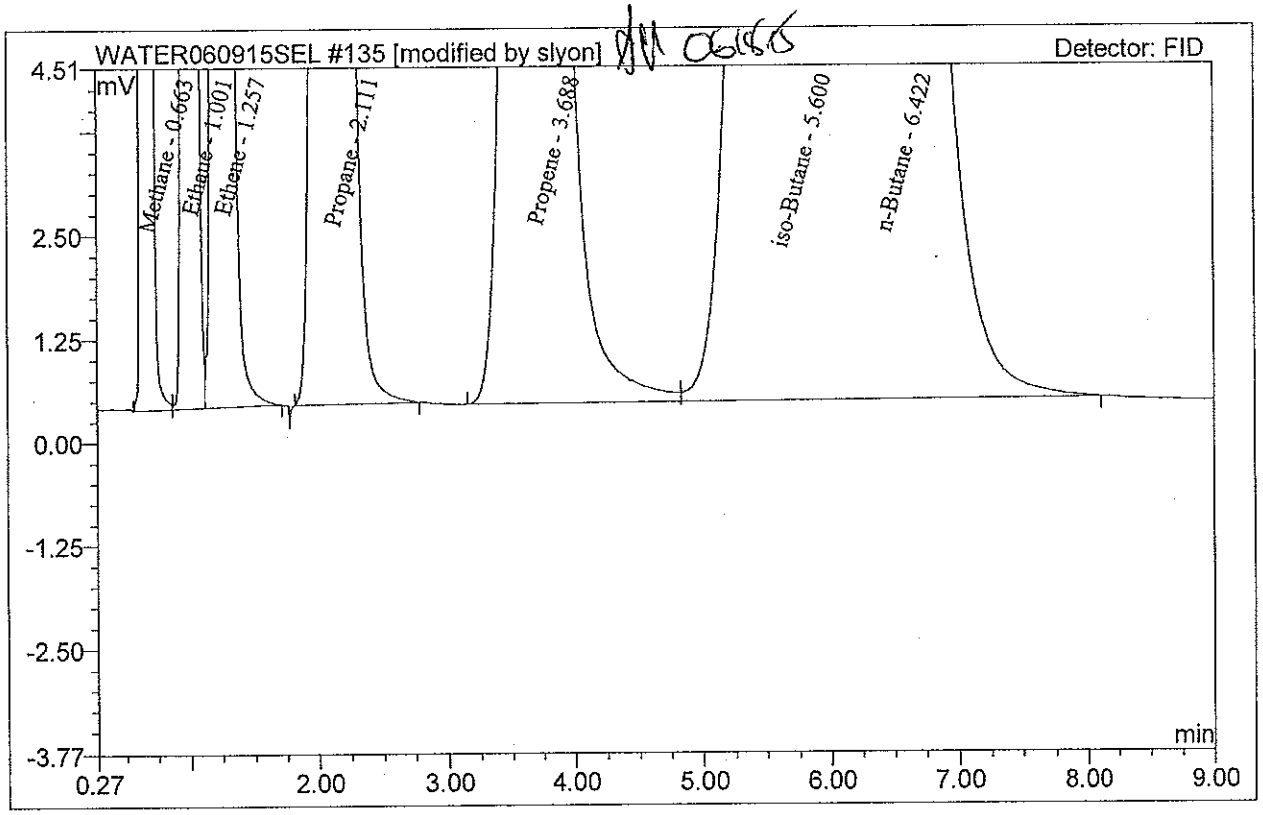
MICROSEEPS

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
25.564

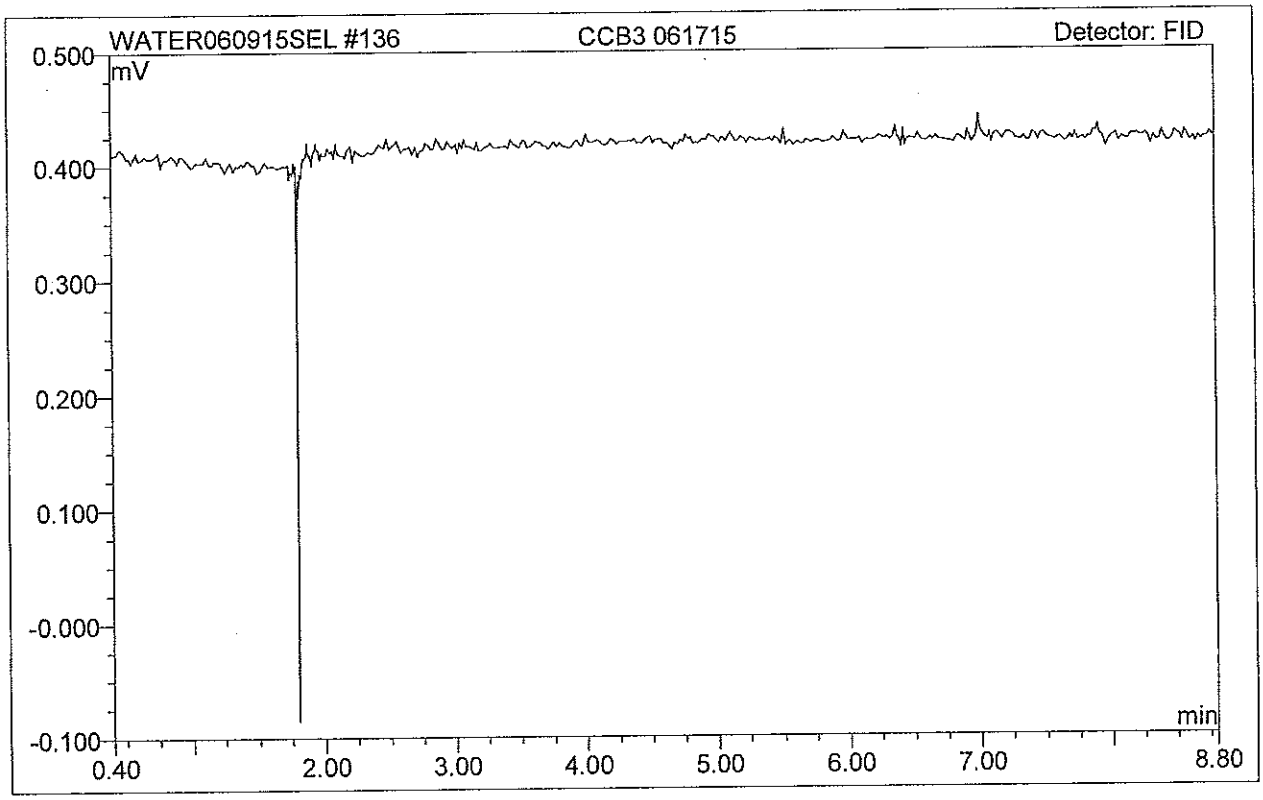


MICROSEEPS

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



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

Table of Contents

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

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.

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.
¤	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.

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.

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.

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

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

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

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

Date Collected: 12/17/15 13:55
Date Received: 12/18/15 08:35

Lab Sample ID: 680-120227-2

Matrix: Water

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

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

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

Date Collected: 12/16/15 11:02
Date Received: 12/18/15 08:35

Lab Sample ID: 680-120227-3

Matrix: Water

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
1,1,2,2-Tetrachloroethane	ND		1.0	0.62	ug/L			12/29/15 14:00	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.36	ug/L			12/29/15 14:00	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

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

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*

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

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

Client: Parsons Corporation
Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Client Sample ID: ALBW20354
Date Collected: 12/16/15 14:00
Date Received: 12/18/15 08:35

Lab Sample ID: 680-120227-5
Matrix: Water

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 ID: ALBW20355

Date Collected: 12/16/15 14:00
Date Received: 12/18/15 08:35

Lab Sample ID: 680-120227-6

Matrix: Water

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 ID: ALBW20355

Date Collected: 12/16/15 14:00
Date Received: 12/18/15 08:35

Lab Sample ID: 680-120227-6

Matrix: Water

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

Date Collected: 12/17/15 11:50
Date Received: 12/18/15 08:35

Lab Sample ID: 680-120227-7

Matrix: Water

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

Client Sample ID: ALBW20356

Date Collected: 12/17/15 11:50
Date Received: 12/18/15 08:35

Lab Sample ID: 680-120227-7
Matrix: Water

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

Date Collected: 12/17/15 12:10
Date Received: 12/18/15 08:35

Lab Sample ID: 680-120227-8
Matrix: Water

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

Client Sample ID: ALBW20357
Date Collected: 12/17/15 12:10
Date Received: 12/18/15 08:35

Lab Sample ID: 680-120227-8
Matrix: Water

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

Client Sample ID: ALBW00045
Date Collected: 12/17/15 15:05
Date Received: 12/18/15 08:35

Lab Sample ID: 680-120227-9
Matrix: Water

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

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

Client Sample ID: ALBW20344

Date Collected: 12/18/15 14:01
Date Received: 12/22/15 10:25

Lab Sample ID: 680-120339-1

Matrix: Water

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*
Toluene-d8 (Surr)	*101*		*70 - 130*		*12/30/15 16:15*	*1*
1,2-Dichloroethane-d4 (Surr)	*91*		*70 - 130*		*12/30/15 16:15*	*1*
Dibromofluoromethane (Surr)	*93*		*70 - 130*		*12/30/15 16:15*	*1*
4-Bromofluorobenzene (Surr)	*92*		*70 - 130*		*12/30/15 16:15*	*1*

Client Sample ID: ALBW20345

Date Collected: 12/18/15 11:45
Date Received: 12/22/15 10:25

Lab Sample ID: 680-120339-2

Matrix: Water

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
1,1,2,2-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

Client Sample ID: ALBW20345

Date Collected: 12/18/15 11:45
Date Received: 12/22/15 10:25

Lab Sample ID: 680-120339-2
Matrix: Water

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*
Toluene-d8 (Surr)	*100*		*70 - 130*		*12/30/15 12:51*	*1*
1,2-Dichloroethane-d4 (Surr)	*92*		*70 - 130*		*12/30/15 12:51*	*1*
Dibromofluoromethane (Surr)	*94*		*70 - 130*		*12/30/15 12:51*	*1*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*		*12/30/15 12:51*	*1*

Client Sample ID: ALBW20346

Date Collected: 12/18/15 10:16
Date Received: 12/22/15 10:25

Lab Sample ID: 680-120339-3
Matrix: Water

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

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

Client Sample ID: ALBW20348

Date Collected: 12/18/15 12:28
Date Received: 12/22/15 10:25

Lab Sample ID: 680-120339-4

Matrix: Water

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*

Client Sample ID: ALBW20349

Date Collected: 12/18/15 09:40
Date Received: 12/22/15 10:25

Lab Sample ID: 680-120339-5

Matrix: Water

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

Client Sample ID: ALBW20349

Date Collected: 12/18/15 09:40
Date Received: 12/22/15 10:25

Lab Sample ID: 680-120339-5
Matrix: Water

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

Date Collected: 12/18/15 14:10
Date Received: 12/22/15 10:25

Lab Sample ID: 680-120339-6
Matrix: Water

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

Client Sample ID: ALBW20350

Date Collected: 12/18/15 14:10
Date Received: 12/22/15 10:25

Lab Sample ID: 680-120339-6

Matrix: Water

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*
Toluene-d8 (Surr)	*100*		*70 - 130*		*12/30/15 14:21*	*1*
1,2-Dichloroethane-d4 (Surr)	*93*		*70 - 130*		*12/30/15 14:21*	*1*
Dibromofluoromethane (Surr)	*94*		*70 - 130*		*12/30/15 14:21*	*1*
4-Bromofluorobenzene (Surr)	*91*		*70 - 130*		*12/30/15 14:21*	*1*

Client Sample ID: ALBW20351

Date Collected: 12/19/15 09:10
Date Received: 12/22/15 10:25

Lab Sample ID: 680-120339-7

Matrix: Water

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
1,1,2,2-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

Client Sample ID: ALBW20351

Date Collected: 12/19/15 09:10
Date Received: 12/22/15 10:25

Lab Sample ID: 680-120339-7
Matrix: Water

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*
Toluene-d8 (Surr)	*100*		*70 - 130*		*12/30/15 14:44*	*1*
1,2-Dichloroethane-d4 (Surr)	*94*		*70 - 130*		*12/30/15 14:44*	*1*
Dibromofluoromethane (Surr)	*95*		*70 - 130*		*12/30/15 14:44*	*1*
4-Bromofluorobenzene (Surr)	*92*		*70 - 130*		*12/30/15 14:44*	*1*

Client Sample ID: ALBW00124

Date Collected: 12/18/15 15:00
Date Received: 12/22/15 10:25

Lab Sample ID: 680-120339-8
Matrix: Water

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

Client Sample ID: ALBW00124
Date Collected: 12/18/15 15:00
Date Received: 12/22/15 10:25

Lab Sample ID: 680-120339-8
Matrix: Water

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 ID: ALBW00046
Date Collected: 12/21/15 11:25
Date Received: 12/22/15 10:25

Lab Sample ID: 680-120339-9
Matrix: Water

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
1,1,2,2-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

Client Sample ID: ALBW00046
Date Collected: 12/21/15 11:25
Date Received: 12/22/15 10:25

Lab Sample ID: 680-120339-9
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		70 - 130		12/30/15 12:06	1
1,2-Dichloroethane-d4 (Surr)	92		70 - 130		12/30/15 12:06	1
Dibromofluoromethane (Surr)	94		70 - 130		12/30/15 12:06	1
4-Bromofluorobenzene (Surr)	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)			
		TOL	12DCE	DBFM	BFB
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)	(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)

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
1,1,2,2-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

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
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

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
1,1,2,2-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

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		

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

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

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
1,2-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*

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
1,1,2,2-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

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
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

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
1,1,2,2-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

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

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

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

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	

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		1	5 mL	5 mL	416359	12/29/15 13:20	CEJ	TAL SAV
	Instrument ID: CMSA2									
Total/NA	Analysis	300.0		1	5 mL	5 mL	416951	01/03/16 00:49	JRJ	TAL SAV
	Instrument ID: CICL									
Total/NA	Analysis	9060A		1			282258	01/04/16 18:45	DLG	TAL BUF
	Instrument ID: TOC10301									

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		1	5 mL	5 mL	416359	12/29/15 13:40	CEJ	TAL SAV
	Instrument ID: CMSA2									
Total/NA	Analysis	8260B	DL	2	5 mL	5 mL	416359	12/29/15 17:25	CEJ	TAL SAV
	Instrument ID: CMSA2									
Total/NA	Analysis	300.0		1	5 mL	5 mL	416952	01/03/16 02:16	JRJ	TAL SAV
	Instrument ID: CICL									
Total/NA	Analysis	9060A		1			282258	01/04/16 20:06	DLG	TAL BUF
	Instrument ID: TOC10301									

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		1	5 mL	5 mL	416359	12/29/15 14:00	CEJ	TAL SAV
	Instrument ID: CMSA2									
Total/NA	Analysis	300.0		1	5 mL	5 mL	416952	01/03/16 02:30	JRJ	TAL SAV
	Instrument ID: CICL									
Total/NA	Analysis	9060A		1			282258	01/04/16 20:32	DLG	TAL BUF
	Instrument ID: TOC10301									

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		1	5 mL	5 mL	416359	12/29/15 14:21	CEJ	TAL SAV
	Instrument ID: CMSA2									
Total/NA	Analysis	300.0		1	5 mL	5 mL	416952	01/03/16 03:14	JRJ	TAL SAV
	Instrument ID: CICL									

Lab Chronicle

Client: Parsons Corporation
Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

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	9060A		1			282258	01/04/16 21:51	DLG	TAL BUF
	Instrument ID: TOC10301									

Client Sample ID: ALBW20354
Date Collected: 12/16/15 14:00
Date Received: 12/18/15 08:35

Lab Sample ID: 680-120227-5
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	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
Date Collected: 12/16/15 14:00
Date Received: 12/18/15 08:35

Lab Sample ID: 680-120227-6
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	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
Date Collected: 12/17/15 11:50
Date Received: 12/18/15 08:35

Lab Sample ID: 680-120227-7
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	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
Date Collected: 12/17/15 12:10
Date Received: 12/18/15 08:35

Lab Sample ID: 680-120227-8
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	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
Date Collected: 12/17/15 15:05
Date Received: 12/18/15 08:35

Lab Sample ID: 680-120227-9
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	416359	12/29/15 16:03	CEJ	TAL SAV
	Instrument ID: CMSA2									

Client Sample ID: ALBW20344
Date Collected: 12/18/15 14:01
Date Received: 12/22/15 10:25

Lab Sample ID: 680-120339-1
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	416549	12/30/15 16:15	DAS	TAL SAV
	Instrument ID: CMSS									

Client Sample ID: ALBW20345
Date Collected: 12/18/15 11:45
Date Received: 12/22/15 10:25

Lab Sample ID: 680-120339-2
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	416549	12/30/15 12:51	DAS	TAL SAV
	Instrument ID: CMSS									

Client Sample ID: ALBW20346
Date Collected: 12/18/15 10:16
Date Received: 12/22/15 10:25

Lab Sample ID: 680-120339-3
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	416549	12/30/15 13:13	DAS	TAL SAV
	Instrument ID: CMSS									

Lab Chronicle

Client: Parsons Corporation
Project/Site: Seneca Army Depot: Ash Landfill

TestAmerica Job ID: 680-120227-1

Client Sample ID: ALBW20348
Date Collected: 12/18/15 12:28
Date Received: 12/22/15 10:25

Lab Sample ID: 680-120339-4
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	416549	12/30/15 13:36	DAS	TAL SAV
	Instrument ID: CMSS									

Client Sample ID: ALBW20349
Date Collected: 12/18/15 09:40
Date Received: 12/22/15 10:25

Lab Sample ID: 680-120339-5
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	416549	12/30/15 13:59	DAS	TAL SAV
	Instrument ID: CMSS									

Client Sample ID: ALBW20350
Date Collected: 12/18/15 14:10
Date Received: 12/22/15 10:25

Lab Sample ID: 680-120339-6
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	416549	12/30/15 14:21	DAS	TAL SAV
	Instrument ID: CMSS									

Client Sample ID: ALBW20351
Date Collected: 12/19/15 09:10
Date Received: 12/22/15 10:25

Lab Sample ID: 680-120339-7
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	416549	12/30/15 14:44	DAS	TAL SAV
	Instrument ID: CMSS									

Client Sample ID: ALBW00124
Date Collected: 12/18/15 15:00
Date Received: 12/22/15 10:25

Lab Sample ID: 680-120339-8
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	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

Date Collected: 12/21/15 11:25
Date Received: 12/22/15 10:25

Lab Sample ID: 680-120339-9

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	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

 Serial or COC #:

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

PAGE 1 OF 2

PROJECT & CLIENT INFORMATION

Project State: NY

PROJECT REFERENCE/NAME: Ash Landfill Long Term Monitoring	PROJECT NO.: 748662-03300	
LAB PROJECT MANAGER: Kathy Smith	P.O. NUMBER: 748662-03300	CONTRACT/Quote NO.
CLIENT (SITE) PM: Beth Badik, Todd Belanger	CLIENT PHONE: 617-449-1565	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: beth.badik@parsons.com; todd.belanger@parsons.com	
CLIENT ADDRESS: 100 High Street, 4th Floor, Boston, MA 02110		
Samplers Signature & Initials:		

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:

SAMPLED ON DATE	SAMPLED ON TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID		SAMPLE TYPE	FIELD FILTERED	MATRIX	Method 8260B - VOCs	Method 9060A - TOC	EPA 300.1 - sulfate								REMARKS
								1	1	8								NUMBER OF CONTAINERS SUBMITTED
12/17/2015	1402	ALBW20343			N	GW		3	3	1								1.Run straight sample analysis (without dilution) for every sample. 2.Use ALBW20353 as QA/QC sample for all analyses. 3. Please hold SDG open until all shipments from the project site have arrived.
		ALBW20344			N	GW		3										
		ALBW20345			N	GW		3										
		ALBW20346			N	GW		3										
12/17/2015	1355	ALBW20347			N	GW		3	3	1								
		ALBW20348			N	GW		3										
		ALBW20349			N	GW		3										
		ALBW20350			N	GW		3										Preservative
		ALBW20351			N	GW		3										1 HCl
12/16/2015	1102	ALBW20352			N	GW		3	3	1								
12/16/2015	1102	ALBW20352MS			N	GW		3	3	1								8 Ice

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
	12/17/2015	1551						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES NO	CUSTODY SEAL NO.	LABORATORY REMARKS:
	12/18/15	0835	8	680-120227	3.2(CF) 3.6c

FCU036:12 20.00:2

Original - Return to Laboratory with Sample(s)

680-120227 Chain of Custody

Serial or COC #:

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

PAGE 2 OF 2

PROJECT & CLIENT INFORMATION

PROJECT REFERENCE/NAME: Ash Landfill Long Term Monitoring	PROJECT NO.: 748662-03300	Project State: NY
LAB PROJECT MANAGER: Kathy Smith	P.O. NUMBER: 748662-03300	CONTRACT/Quote NO
CLIENT (SITE) PM: Beth Badik Todd Belanger	CLIENT PHONE: 617-449-1565	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: beth.badik@parsons.com todd.belanger@parsons.com	
CLIENT ADDRESS: 100 High Street, 4th Floor, Boston, MA 02110		
Samplers Signature & Initials:		

Sample Information / 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:

SAMPLED ON DATE	SAMPLED ON TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	Method 8260B - VOCs	Method 9060A - TOC	EPA 300.1 - sulfate	REMARKS
							1	1	8	NUMBER OF CONTAINERS SUBMITTED
12/16/2015	1102	ALBW20352MSD			N	GW	3	3	1	1.Run straight sample analysis (without dilution) for every sample.
12/16/2015	1112	ALBW20353			N	GW	3	3	1	2.Use ALBW20353 as QA/QC sample for all analyses.
12/16/2015	1400	ALBW20354			N	GW	3	3	1	3. Please hold SDG open until all shipments from the project site have arrived.
12/16/2015	1400	ALBW20355			N	GW	3	3	1	
12/17/2015	1150	ALBW20356			N	GW	3	3	1	
12/17/2015	1210	ALBW20357			N	GW	3	3	1	
		ALBW00124			N	W	3	3	1	Preservative
12/17/2015	1505	ALBW00045			N	W	3			1 HCl
		ALBW00046			N	W	3			
		ALBW00047			N	W	3			8 Ice

RELINQUISHED BY: (SIGNATURE)	12/17/2015	TIME 1551	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE / TIME
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE / TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES / NO	CUSTODY SEAL NO.	LABORATORY REMARKS:
	12/18/15	0855	NO	680-120227	3.2(CF)3.6°C

FCU036:12.20.00:2

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 State
PROJECT REFERENCE/NAME: Ash Landfill Long Term Monitoring	PROJECT NO: 748862-03300	NY
LAB PROJECT MANAGER: Kathy Smith	P.O. NUMBER: 748862-03300	CONTRACT/Quote NO
CLIENT (SITE) PM: Beth Badik, Todd Belanger	CLIENT PHONE: 617-449-1565	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: beth.badik@parsons.com; todd.belanger@parsons.com	
CLIENT ADDRESS: 100 High Street, 4th Floor, Boston, MA 02110		
Samplers Signature & Initials:		

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:

SAMPLED ON DATE	SAMPLED ON TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	Sample Information	SAMPLE TYPE	FIELD FILTERED	MATRIX	Method 8260B - VOCs	Method 9060A - TOC	EPA 300.1 - sulfate	REMARKS
								1	1	8	NUMBER OF CONTAINERS SUBMITTED
		ALBW20343			N		GW	3	3	1	1.Run straight sample analysis (without dilution) for every sample. 2.Use ALBW20353 as QA/QC sample for all analyses. 3. Please hold SDG open until all shipments from the project site have arrived.
12/18/2015	1401	ALBW20344			N		GW	3			
12/18/2015	1145	ALBW20345			N		GW	3			
12/18/2015	1016	ALBW20346			N		GW	3			
		ALBW20347			N		GW	3	3	1	
12/18/2015	1228	ALBW20348			N		GW	3			
12/18/2015	940	ALBW20349			N		GW	3			
12/18/2015	1410	ALBW20350			N		GW	3			Preservative
12/19/2015	910	ALBW20351			N		GW	3			1 HCl
		ALBW20352			N		GW	3	3	1	
		ALBW20352MS					GW	3	3	1	8 Ice

RELINQUISHED BY: (SIGNATURE)	~~12/17/2015~~ DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
	12/21/15	1130			
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

680-120339 Chain of Custody

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	LABORATORY REMARKS:
	12/22/15	10:25	YES NO		680-120339 12/16

Serial or COC #:

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 State: NY

PROJECT REFERENCE/NAME: Ash Landfill Long Term Monitoring	PROJECT NO.: 748662-03300	CONTRACT/Quote NO.:
LAB PROJECT MANAGER: Kathy Smith	P.O. NUMBER: 748662-03300	
CLIENT (SITE) PM: Beth Bedik, Todd Belanger	CLIENT PHONE: 617-449-1565	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: beth.bedik@parsons.com, todd.belanger@parsons.com	
CLIENT ADDRESS: 100 High Street, 4th Floor, Boston, MA 02110		
Samplers Signature & Initials:		

PAGE 2 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:

SAMPLED ON DATE	SAMPLED ON TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	Sample Information	SAMPLE TYPE	FIELD FILTERED	MATRIX	Method 8260B - VOCs	Method 9060A - TOC	EPA 300.1 - sulfate	REMARKS
								1	1	8	
								NUMBER OF CONTAINERS SUBMITTED			
		ALBW20352MSD			N	GW		3	3	1	1.Run straight sample analysis (without dilution) for every sample. 2.Use ALBW20353 as QA/QC sample for all analyses. 3. Please hold SDG open until all shipments from the project site have arrived.
		ALBW20353			N	GW		3	3	1	
		ALBW20354			N	GW		3	3	1	
		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		3	3	1	Preservative
		ALBW00045			N	W		2			1 HCl
12/21/2015	1125	ALBW00046			N	W		2			8 Ice

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
	~~12/17/2015~~ 12/21/15	1130						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES / NO	CUSTODY SEAL NO.	LABORATORY REMARKS:
	12/22/15	1025	YES / NO		680-120339 1.2/1.6

FCU036:12.20.00:2

Original - Return to Laboratory with Sample(s)

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Phone (912) 354-7858 Fax (912) 352-0165

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Smith, Kathryn E	Carrier Tracking No(s):	COC No: 680-416024.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: kathy.smith@testamericainc.com		Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Analysis Requested		Job #: 680-120227-1

Address: 10 Hazelwood Drive, ,	Due Date Requested: 1/8/2016
City: Amherst	TAT Requested (days):
State, Zip: NY, 14228-2298	
Phone: 716-691-2600(Tel) 716-691-7991(Fax)	PO #:
Email:	WO #:
Project Name: Seneca Army Depot: Ash Landfill	Project #: 68010612
Site:	SSOW#:

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2SO3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - ph 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9060A/ Organic Carbon, Total (TOC)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
ALBW20343 (680-120227-1)	12/17/15	14:02 Eastern		Water			X	3	Run straight /report most concentrated run
ALBW20347 (680-120227-2)	12/17/15	13:55 Eastern		Water			X	3	Run straight /report most concentrated run
ALBW20352 (680-120227-3)	12/16/15	11:02 Eastern		Water			X	3	Run straight /report most concentrated run
ALBW20352MS (680-120227-3MS)	12/16/15	11:02 Eastern	MS	Water			X	3	Run straight /report most concentrated run
ALBW20352MSD (680-120227-3MSD)	12/16/15	11:02 Eastern	MSD	Water			X	3	Run straight /report most concentrated run
ALBW20353 (680-120227-4)	12/16/15	11:12 Eastern		Water			X	3	Run straight /report most concentrated run
ALBW20354 (680-120227-5)	12/16/15	14:00 Eastern		Water			X	3	Run straight /report most concentrated run
ALBW20355 (680-120227-6)	12/16/15	14:00 Eastern		Water			X	3	Run straight /report most concentrated run
ALBW20356 (680-120227-7)	12/17/15	11:50 Eastern		Water			X	3	Run straight /report most concentrated run
ALBW20357 (680-120227-8)	12/17/15	12:10 Eastern		Water			X	3	Run straight /report most concentrated run

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For _____ Months*

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by: | Date: | Time: | Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	12/22/15 1200			12/23/15 1030	TABuf.
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: 3.7°C

Page 59 of 65

1/12/2016

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Phone (912) 354-7858 Fax (912) 352-0165

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Smith, Kathryn E	Carrier Tracking No(s):	COC No: 680-416036.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: kathy.smith@testamericainc.com		Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Analysis Requested		Job #: 680-120227-1
Address: 10 Hazelwood Drive, ,	Due Date Requested: 1/8/2016			Preservation Codes:
City: Amherst	TAT Requested (days):			A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2SO3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - ph 4-5 L - EDA Z - other (specify)
State, Zip: NY, 14228-2298				
Phone: 716-691-2600(Tel) 716-691-7991(Fax)	PO #:			
Email:	WO #:			Other:
Project Name: Seneca Army Depot: Ash Landfill	Project #: 68010612			
Site:	SSOW#:			

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9060A/ Organic Carbon, Total (TOC)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
ALBW00124 (680-120339-8)	12/18/15	15:00 Eastern		Water			X	3	Run straight /report most concentrated run

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For _____ Months*

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:	
Relinquished by:	Date/Time: 12/22/15 1700	Company TAL	Received by:		Date/Time: 12/23/15 1030	Company TAL	
Relinquished by:	Date/Time:	Company	Received by:		Date/Time:	Company	
Relinquished by:	Date/Time:	Company	Received by:		Date/Time:	Company	

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: #13.7°C

1/12/2016

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 </= 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: 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

Pace Analytical Energy Services LLC
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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

CERTIFICATE OF ANALYSIS

Pace Analytical Energy Services LLC
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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**
Sample ID: **ALBW20343**

Date Received: 12/18/2015 09:15 Matrix: Water
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**
Sample ID: **ALBW20347**

Date Received: 12/18/2015 09:15 Matrix: Water
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**
Sample ID: **ALBW20352**

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 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					d,M3,D3,M5
Methane	**12000**	ug/l	50	4.2	100	12/28/2015 15:50	SL	
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	

Report ID: 17732 - 751451

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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					d,M3,D3,M5
Methane	**13000**	ug/l	50	4.2	100	12/28/2015 16:01	SL	
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	

Report ID: 17732 - 751451

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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							d,M3,D3,M5
Methane	**13000**	ug/l	50	4.2	100	12/28/2015 16:28	SL	
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	

Report ID: 17732 - 751451

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ANALYTICAL RESULTS

Workorder: 17732 ASH LANDFILL / 748662-03300

Lab ID: **177320007** Date Received: 12/18/2015 09:15 Matrix: Water

Sample ID: **ALBW20354** 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**
Sample ID: **ALBW20355**

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	**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							d,M3,D3,M5
Methane	**1600**	ug/l	5.0	0.42	10	12/28/2015 17:01	SL	
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 Quanitation 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	

Report ID: 17732 - 751451

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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

Chain of Custody Documents

 Serial or COC #:

WO 17732

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

PAGE 1 OF 2

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PROJECT & CLIENT INFORMATION

PROJECT REFERENCE/NAME: Ash Landfill Long Term Monitoring	PROJECT NO.: 748662-03300	Project State: NY
LAB PROJECT MANAGER: Taryn Mancine	P.O. NUMBER: 748662-03300	CONTRACT/Quote NO.
CLIENT (SITE) PM: Beth Badik, Todd Belanger	CLIENT PHONE: 617-449-1565, 617-449-1428	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: beth.badik@parsons.com, todd.belanger@parsons.com	
CLIENT ADDRESS: 100 High Street, 4th Floor, Boston, MA 02110		
Samplers Signature & Initials:		

Sample Information / REQUIRED ANALYSES

SAMPLED ON DATE	SAMPLED ON TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	NUMBER OF CONTAINERS SUBMITTED (RSK-175 - MEE)
12/17/2015	1402	ALBW20343		SA	N	GW	3
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

Final Report Type (Circle at least one): ASP2000 Category B
EDD Project-Specified
TAT/ DATE DUE 15 calendar days Per QAP/Quote
EXPEDITED REPORT (circle one) FAX EMAIL POST Other
TAT/ DATE DUE
or Per QAP/Project

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 1

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

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
	12/17/15	1537						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	LABORATORY REMARKS:
PACE	12/18/15	0915	YES NO		

FCU036:12.20.00:2

Original - Return to Laboratory with Sample(s)

Serial or COC #:

JOB/LOG #:

17732

ANALYSIS REQUEST AND CHAIN OF COUSTODY RECORD

Microseeps, Inc
220 William Pitt Way
Pittsburgh, PA 15238
Phone 412 826 5245
Fax 412 826 3433
www. microseeps.com

Possible Hazards: Unknown

Sample Disposal: Lab Disposal

PAGE 2 OF 2

PROJECT & CLIENT INFORMATION

PROJECT REFERENCE/NAME: Ash Landfill Long Term Monitoring	PROJECT NO.: 748662-03300	Project State: NY
LAB PROJECT MANAGER: Taryn Mancine	P.O. NUMBER: 748662-03300	CONTRACT/Quote NO.
CLIENT (SITE) PM: Beth Badik, Todd Belanger	CLIENT PHONE: 617-449-1565, 617-449-1428	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: beth.badik@parsons.com, todd.belanger@parsons.com	
CLIENT ADDRESS: 100 High Street, 4th Floor, Boston, MA 02110		
Samplers Signature & Initials:		

Sample Information | REQUIRED ANALYSES: RSK-175 - MEE

SAMPLED ON DATE	TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	NUMBER OF CONTAINERS SUBMITTED (RSK-175 - MEE: 1)
12/17/2015	1210	ALBW20357		SA	N	GW	3
~~BC 12-18-15~~		~~ALBW00124~~		~~RB~~	~~N~~	~~W~~	~~3~~

Final Report Type (Circle at least one):
ASP2000 Category B
EDD Project-Specified
TAT/ DATE DUE 15 calendar days Per QAP/Quote
EXPEDITED REPORT (circle one)
FAX EMAIL POST Other
TAT/ DATE DUE ____
or Per QAP/Project

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

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

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
[signature]	12/17/15	1537						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	LABORATORY REMARKS:
[signature] Paes	121815	0915	YES / NO		

Original - Return to Laboratory with Sample(s)

 Serial or COC #:

WO 17732

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

JOB/LOG #:

Possible Hazards: Unknown

Sample Disposal: Lab Disposal

PAGE 1 OF 2

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PROJECT & CLIENT INFORMATION

PROJECT REFERENCE/NAME: Ash Landfill Long Term Monitoring	PROJECT NO.: 748662-03300	Project State: NY
LAB PROJECT MANAGER: Taryn Mancine	P.O. NUMBER: 748662-03300	CONTRACT/Quote NO.
CLIENT (SITE) PM: Beth Badik, Todd Belanger	CLIENT PHONE: 617-449-1565, 617-449-1428	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: beth.badik@parsons.com, todd.belanger@parsons.com	
CLIENT ADDRESS: 100 High Street, 4th Floor, Boston, MA 02110		
Samplers Signature & Initials:		

Sample Information / REQUIRED ANALYSES

SAMPLED ON DATE	SAMPLED ON TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	RSK-175 - MEE	NUMBER OF CONTAINERS SUBMITTED
12/18/2005	1500	ALBW00124	RB	N		W		3

Final Report Type (Circle at least one):
ASP2000 Category B
EDD Project-Specified

TAT/ DATE DUE 15 calendar days
Per QAP/Quote
EXPEDITED REPORT (circle one)
FAX EMAIL POST Other
TAT/ DATE DUE
or Per QAP/Project

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

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

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
	12/18/15	1519						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
			LOOSE PACK	12.21.15	0830			

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES / NO	CUSTODY SEAL NO.	LABORATORY REMARKS:
			YES NO		

5°C

FCU036:12.20.00:2

Original - Return to Laboratory with Sample(s)

NON-CONFORMANCE FORM

PAES Work Order #: 17732

Date: 12.18.15 Time of Receipt: 0915 Receiver: LY

Client: Parsons

REASON FOR NON-CONFORMANCE:

Did not receive ALBW00124

12.21.15 Received ALBW00124. COC date was 12/18/2005

ACTION TAKEN:

Date: _____ Time: _____

Client name: _____

Per attached email, left out of shipment will be sent separately

Customer Service Initials: LW 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 (direct)
412-826-5245 (main)
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)

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 LW 12.18.15	✓	✓		
PAES containers used	✓			
Are containers properly preserved for the requested testing? (as labeled)	✓			
If an unknown preservation state, were containers checked?			✓	If yes, see pH form
Exception: VOA's coliform				
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: LW Date: 12.18.15

Project Manager Review: LW Date: 12-21-15

Sample Tracking Record

Client Name: Parsons

Client Project Number: Ashland LF

Page 1 of 1

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				see above	LY	12/18/15	0915
17732/1-11	JM	12/23/15	1000	Diss. Gas	JM	12/23/15	1800
17732/2-6, 8-10	JM	12/28/15	1200	Diss-Gas	JM	12/28/15	1800

Enter Bottle Type From List Above In Proper Column

Dissolved Gases Data

Printed: 6/12/2015 12:36:44 PM

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 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

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

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
						0.060744	*0.121488*	*0.485951*	*1.943806*
1	*Methane*	*0.663 min*	*0.663 min*	*1.000000*					
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
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

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	Amount ICAL LHC L2	Amount ICAL LHC L1
1	*Methane*	*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	☒	ICAL LHC L7	3	2	1.0	1.0000	1.0000	1.0000	6/9/2015 11:04:10 AM
2	☒	ICAL LHC L6	4	3	1.0	1.0000	1.0000	1.0000	6/9/2015 11:19:03 AM
3	☒	ICAL LHC L5	5	4	1.0	1.0000	1.0000	1.0000	6/9/2015 11:29:54 AM
4	☒	ICAL LHC L4	6	5	1.0	1.0000	1.0000	1.0000	6/9/2015 11:43:29 AM
5	☒	ICAL LHC L3	7	6	1.0	1.0000	1.0000	1.0000	6/9/2015 11:57:56 AM
6	☒	ICAL LHC L2	8	7	1.0	1.0000	1.0000	1.0000	6/9/2015 12:08:47 PM
7	☒	*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: 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	Sample Comment	Calib. Comment
1	☒	ICAL LHC L7		Ok
2	☒	ICAL LHC L6		Ok
3	☒	ICAL LHC L5		Ok
4	☒	ICAL LHC L4		Ok
5	☒	ICAL LHC L3		Ok
6	☒	ICAL LHC L2		Ok
7	☒	*ICAL LHC L1*		*Ok*

Sequence: WATER060915SEL
Operator: akerr

Printed: 8/26/2015 9:18:17 AM

Title: WATER060915SEL
Datasource: 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	Insturment Blank	Unknown	LHCV081711	LHC060915	Finished	6/9/2015 9:33:44 AM	1.0000	
2	Insturment Blank	Unknown	LHCV081711	LHC060915	Finished	6/9/2015 9:52:08 AM	1.0000	
3	ICAL LHC L7	Standard	LHCV081711	LHC060915	Finished	6/9/2015 11:04:10 AM	1.0000	
4	ICAL LHC L6	Standard	LHCV081711	LHC060915	Finished	6/9/2015 11:19:03 AM	1.0000	
5	ICAL LHC L5	Standard	LHCV081711	LHC060915	Finished	6/9/2015 11:29:54 AM	1.0000	
6	ICAL LHC L4	Standard	LHCV081711	LHC060915	Finished	6/9/2015 11:43:29 AM	1.0000	
7	ICAL LHC L3	Standard	LHCV081711	LHC060915	Finished	6/9/2015 11:57:56 AM	1.0000	
8	ICAL LHC L2	Standard	LHCV081711	LHC060915	Finished	6/9/2015 12:08:47 PM	1.0000	
9	ICAL LHC L1	Standard	LHCV081711	LHC060915	Finished	6/9/2015 12:31:45 PM	1.0000	
10	ICV/CCV 060915	Unknown	LHCV081711	LHC060915	Finished	6/9/2015 1:00:03 PM	1.0000	RA-13-03
11	ICB/CCB 060915	Unknown	LHCV081711	LHC060915	Finished	6/9/2015 1:10:20 PM	1.0000	
12	35394-MB	Unknown	LHCV081711	LHC060915	Finished	6/9/2015 2:09:20 PM	1.0000	
13	35395-LCS	Unknown	LHCV081711	LHC060915	Finished	6/9/2015 3:04:28 PM	1.0000	RA-11-09 5X
14	35396-LCSD	Unknown	LHCV081711	LHC060915	Finished	6/9/2015 3:32:58 PM	1.0000	RA-11-09 5X
15	156700001-2 5X DIL	Unknown	LHCV081711	LHC060915	Finished	6/9/2015 4:18:50 PM	1.0000	
16	157230001-1	Unknown	LHCV081711	LHC060915	Finished	6/9/2015 4:29:24 PM	1.0000	
17	157230002-1	Unknown	LHCV081711	LHC060915	Finished	6/9/2015 4:39:46 PM	1.0000	
18	157230003-1	Unknown	LHCV081711	LHC060915	Finished	6/9/2015 5:02:11 PM	1.0000	
19	157230004-1	Unknown	LHCV081711	LHC060915	Finished	6/9/2015 5:20:03 PM	1.0000	
20	157770001-1	Unknown	LHCV081711	LHC060915	Finished	6/9/2015 5:37:36 PM	1.0000	
21	157900001-1	Unknown	LHCV081711	LHC060915	Finished	6/9/2015 5:48:47 PM	1.0000	
22	157230002-2 re check	Unknown	LHCV081711	LHC060915	Finished	6/9/2015 6:07:25 PM	1.0000	
23	157230003-2 DUP	Unknown	LHCV081711	LHC060915	Finished	6/9/2015 6:22:34 PM	1.0000	
24	35397-157230004-2 DUP	Unknown	LHCV081711	LHC060915	Finished	6/9/2015 6:39:20 PM	1.0000	
25	CCV2 FID 060915	Unknown	LHCV081711	LHC060915	Finished	6/9/2015 6:58:51 PM	1.0000	
26	CCB2 060915	Unknown	LHCV081711	LHC060915	Finished	6/9/2015 7:14:25 PM	1.0000	
27	Insturment Blank	Unknown	LHCV081711	LHC060915	Finished	6/10/2015 9:48:21 AM	1.0000	

Sequence: WATER060915SEL
Operator: slyon

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

Printed: 12/31/2015 2:27:09 PM

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	

060915,SL Temp Min - 22°c max - 23°C

ICAL RSK175 R9 Seq Water060915SEL

Stock RA-11-09 Lot # 109-26-08686
Instsurment settings: He 12 psI
H_2 25 psI
Air 30 psI

Standard Level	Concentration (PPMV)	Standard Volume	UHP He
		8 cc	192 cc
W/S 1	40	1 cc	199 cc
W/S 2	5	2cc W/S 2	38 cc
Level 7	0.25	5cc W/S 2	45 cc
6	0.50	25cc W/S 1	47.5 cc
5	2.00	10cc W/S 1	40 cc
4	8.00	2 cc	48 cc
3	40.00	10 cc	40 cc
2	200	From cylinder	———
1	1000		

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 Grh 06/10/15
Temp 23 24
CCV: RA-13-3 2X
CCV2: RA-13-3 5X
Sample: 15724 0001 -> 4
PH: 15724 0001 at PH 8, 15724 0002->4 at PH>10
Dilutions: 15724 0001 at 100X DIL
LCS/LCSD: RA-11-9 5X

64

R2415, 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-(17-21), 17636-(1) 17631-(2-24)
17671-(3,5)

R2205, 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)

R2215, 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-(1-5) 17713-(1)
17722-(1-2) 17723-(1)

Samples with PH less than 10 17690-(2) 17713-(1)

R2315, SL RSK 175 R9 water
CCV1 + CCV3 RA-14-12 2x
CCV2 RA-14-12 5x
LCS/LCSD/MS/MSD ~~RA-10-14 5x~~ R2315 RA-12-08 5x

Samples 17732-(1-11)

Samples with PH under 10 (17732-(6,8,9)

2245 SL RSK 175 RA water
CCV1 RA-14-12 2x
CCV2 RA-14-12 5x
LCS/LCSD RA-12-08 5x

Samples: 17820-(1-8) All samples had a PH of 10 or greater

2315 SL RSK 175 RA water
CCV1 RA-14-12 2x
CCV2 RA-14-12 5x
LCS/LCSD/MS/MSD 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

OPENED 10/30/15
EXPIRES 10/30/17

Microseeps Inc
220 William Pitt Way
Attn Pat Mcloughlin Po B130123
Pittsburgh, Pa 15238

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 ± 2%. NIST traceable by weights or gaseous standards.

Amanda Miller, Lab Technician

2/6/2013
DATE

AIR LIQUIDE Air Liquide America Specialty Gases LLC Scott

RA-14-12

Shipped From:
6141 EASTON ROAD, BLDG 1 PO BOX 310
PLUMSTEADVILLE PA 18949-0310
Phone: 800-331-4953 Fax: 215-766-7226

CERTIFICATE OF ANALYSIS

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 CONC MOLES		ANALYSIS (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 SCHAFFER

Dissolved Gases in Water

Method: RSK175

6/9/2015

Detection: FID

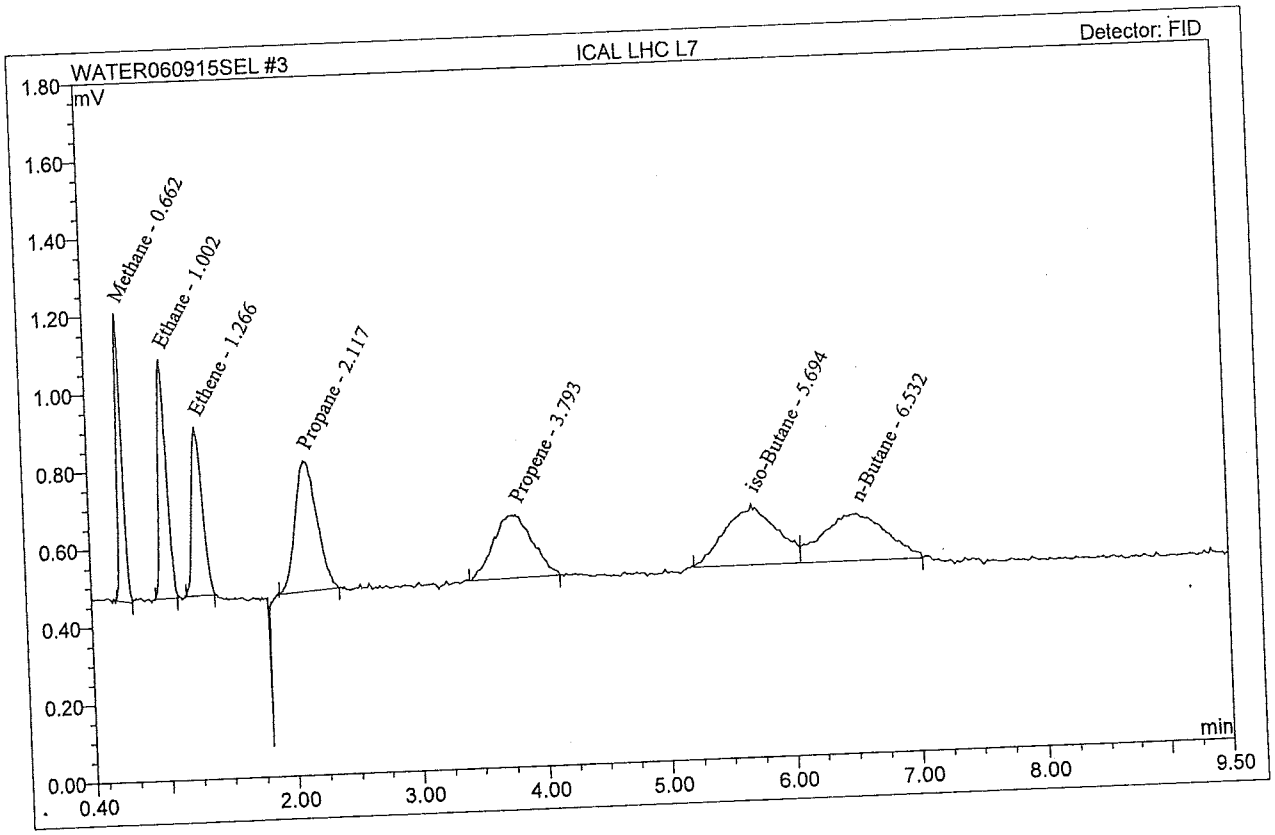
No.	Ret.Time min	Peak Name	Cal.Type	Points	Coeff.Det. %	Offset	Slope	Curve
1	0.66	Methane	Quad	7	100.0000	0.0000	0.3957	0.0001
2	1.00	Ethane	Quad	7	100.0000	0.0000	0.3922	0.0000
3	1.26	Ethene	Quad	7	100.0000	0.0000	0.3550	0.0000
4	2.12	Propane	Quad	7	100.0000	0.0000	0.3999	0.0000
5	3.70	Propene	Quad	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:	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

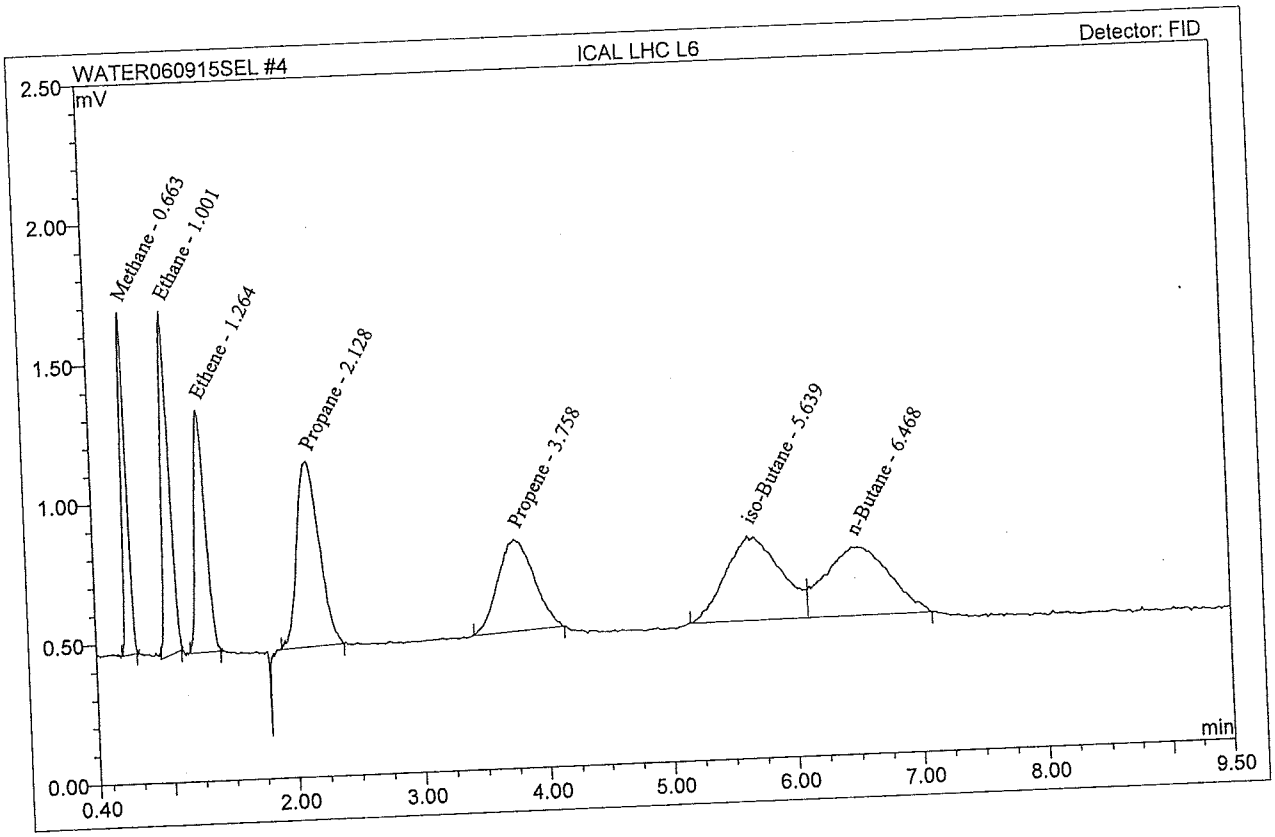


MICROSEEPS

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

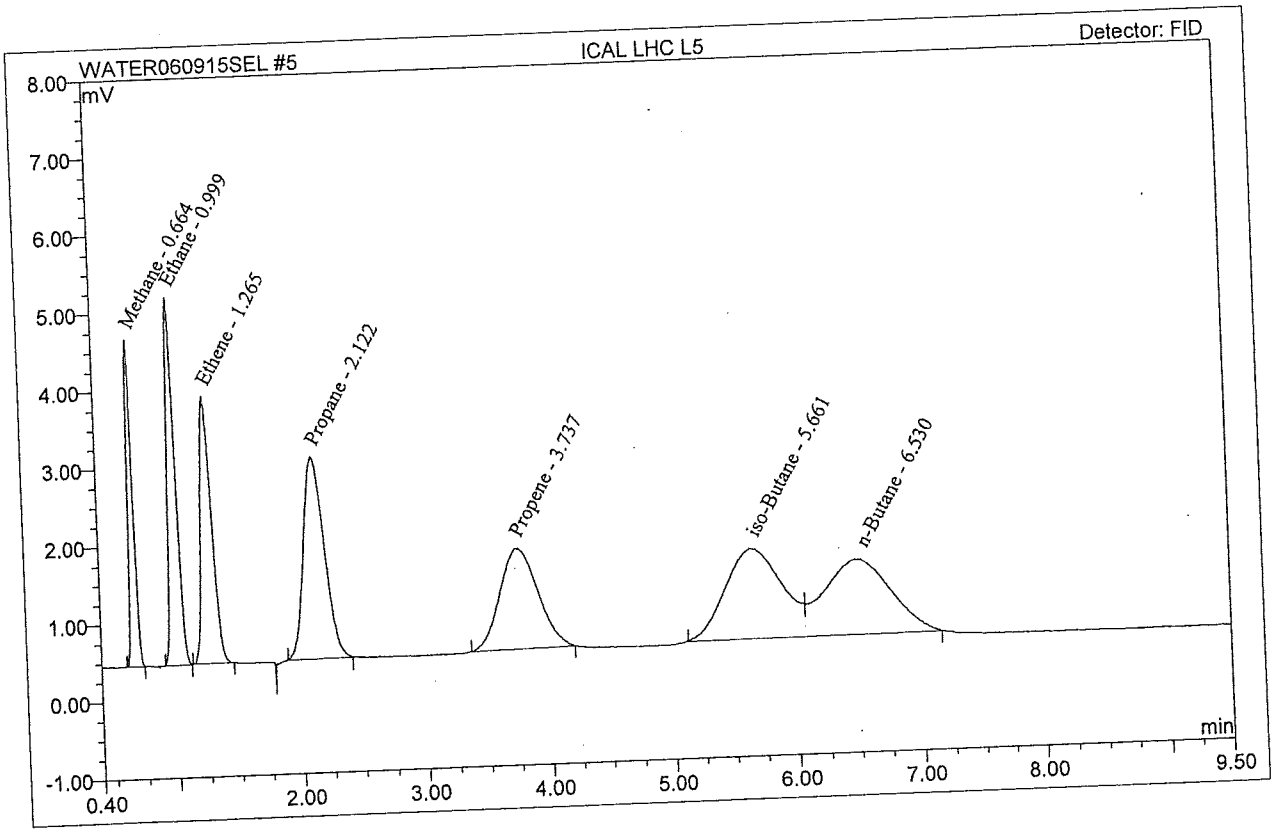


MICROSEEPS

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

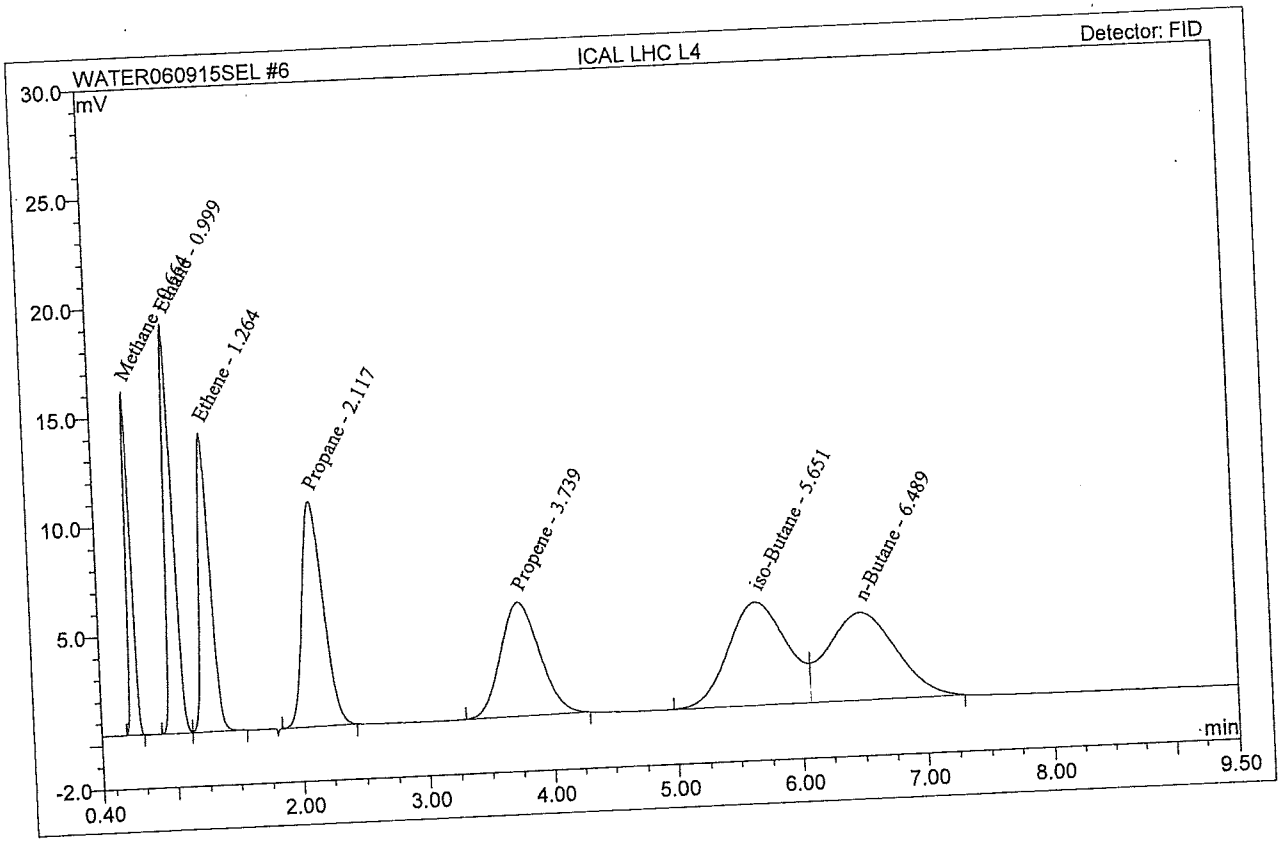


MICROSEEPS

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

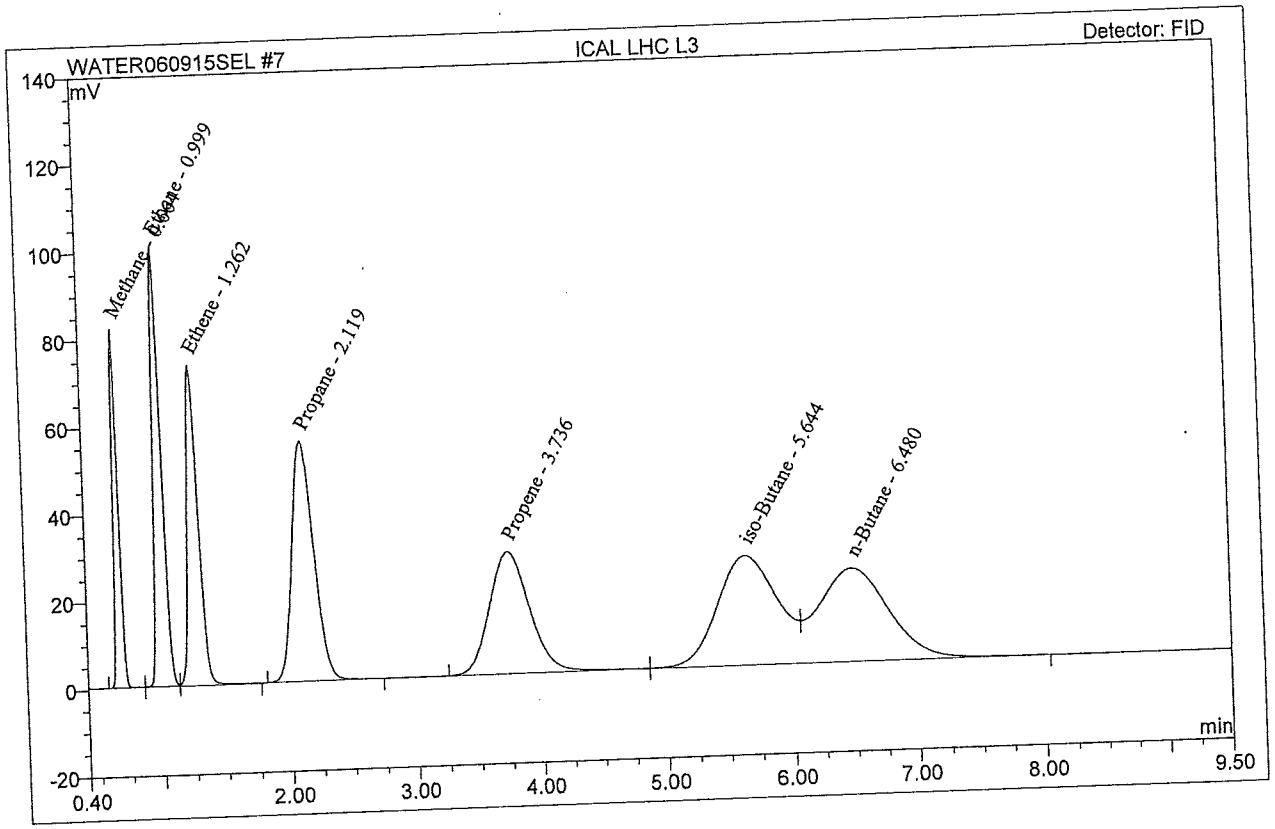


MICROSEEPS

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

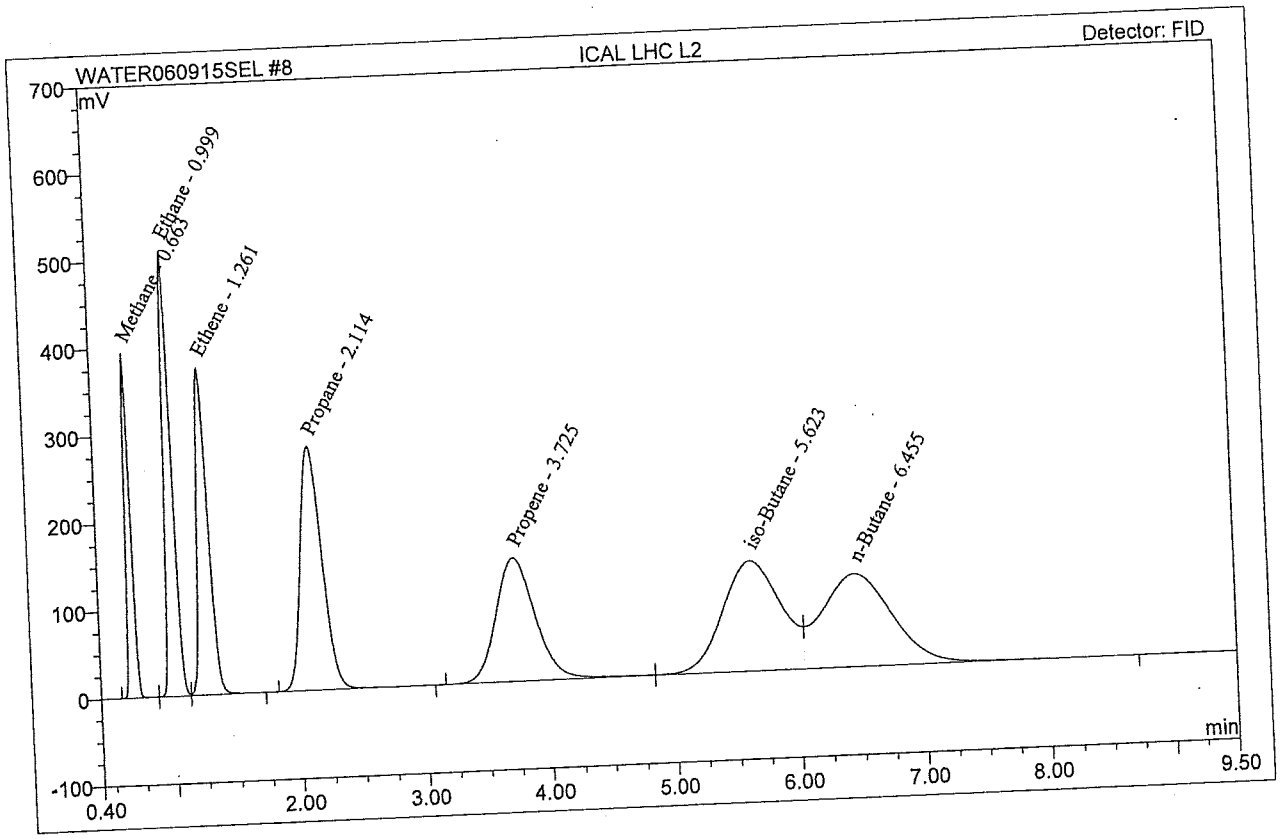


MICROSEEPS

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

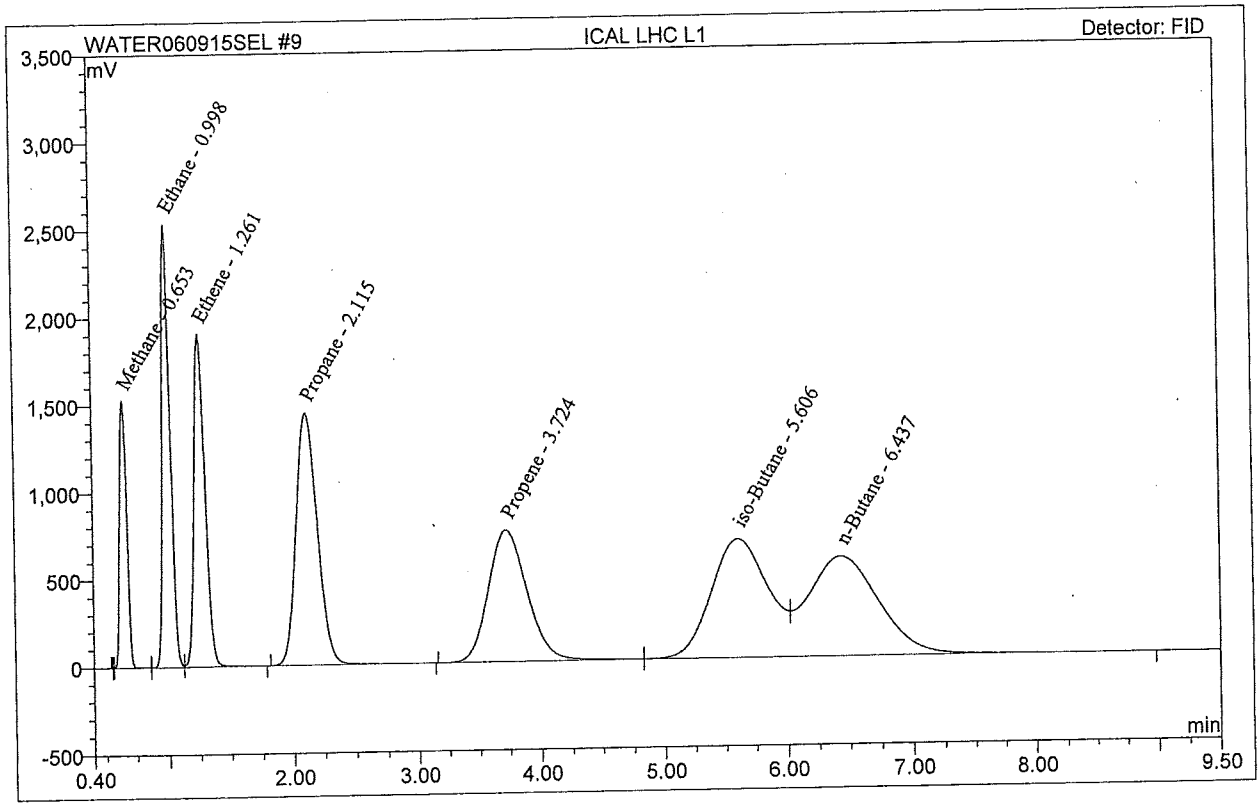


MICROSEEPS

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

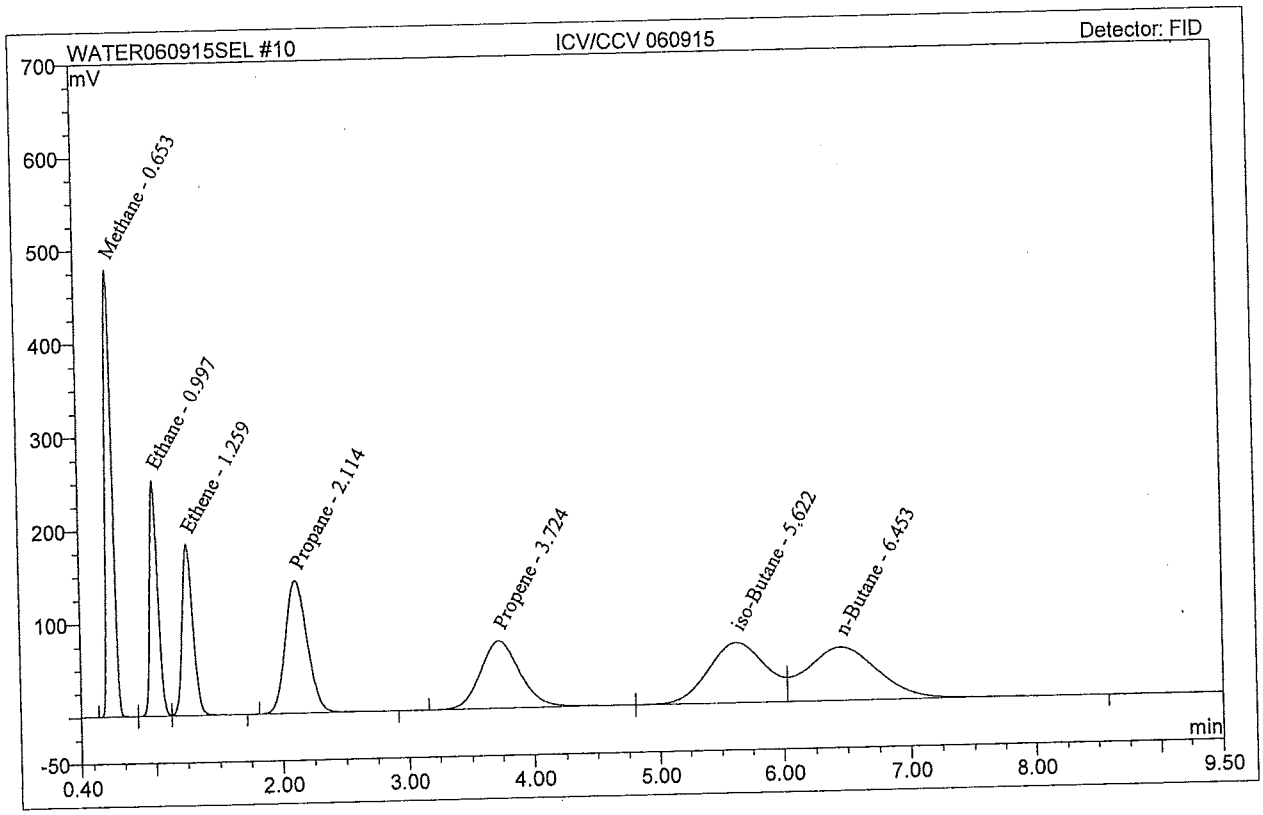


MICROSEEPS

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	Amount 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	79.248	78.8639	97
6	iso-Butane	5.622	35.485	64.799	M	93.233	87.3513	105
7	n-Butane	6.453	37.259	57.444	MB	90.022	94.9416	105

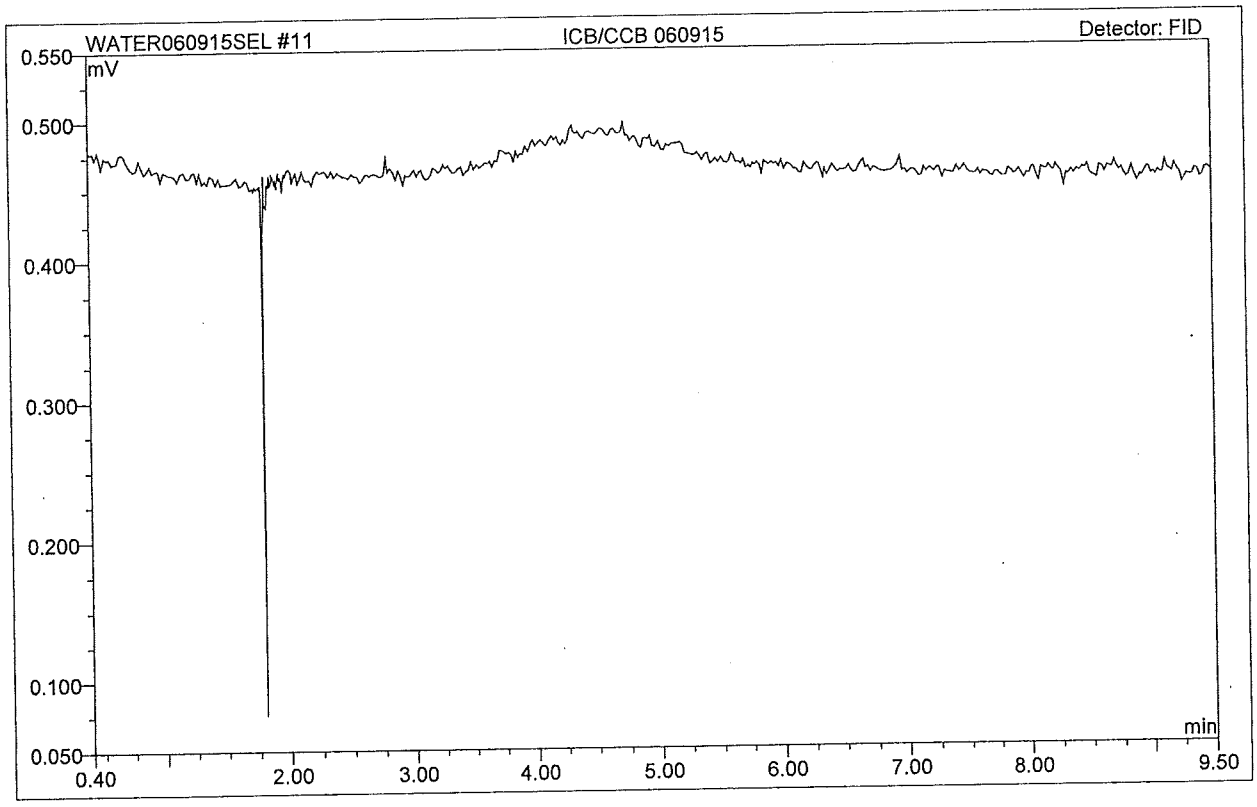


MICROSEEPS

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



PAES
Case Narrative

Batch number: 5090- PIS6

Analysis Date: 122315

Matrix: Water

Sample numbers:
17732-(1-11)

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 Lead Analyst or Lab. Mgr. 12/23/15 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

MS/MSD SAMPLE: 177320003 ORIG, 39584-177320004 MS, 39585-177320005 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	7.9907	83.30	95.165	93.286	104.65	102.40	2.18
ETHYLENE	2.5236	77.92	79.956	80.989	99.37	100.70	1.33

Methane amount is greater than 4 times the spike conc. See dilution for MS/MSD result

Analyst

Reviewed

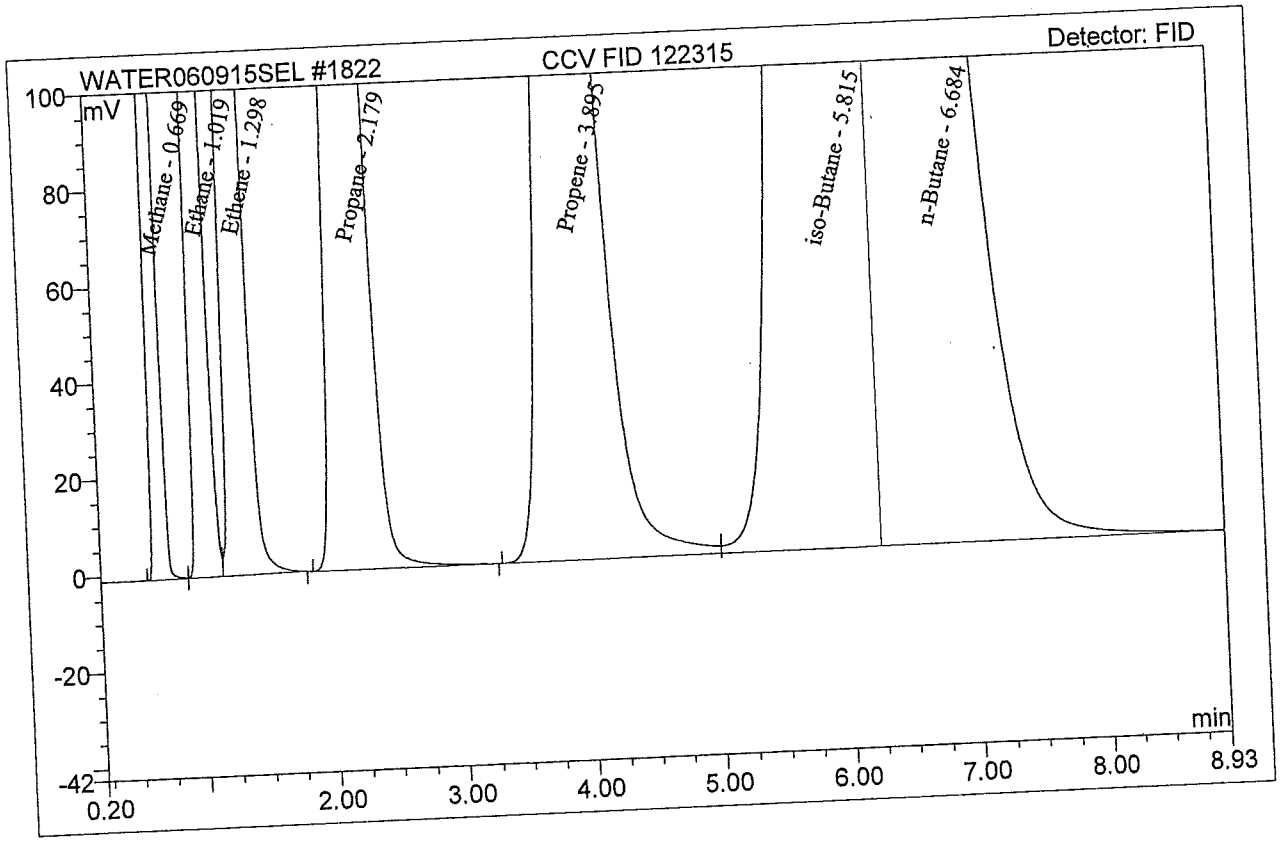
MICROSEEPS

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
265.125

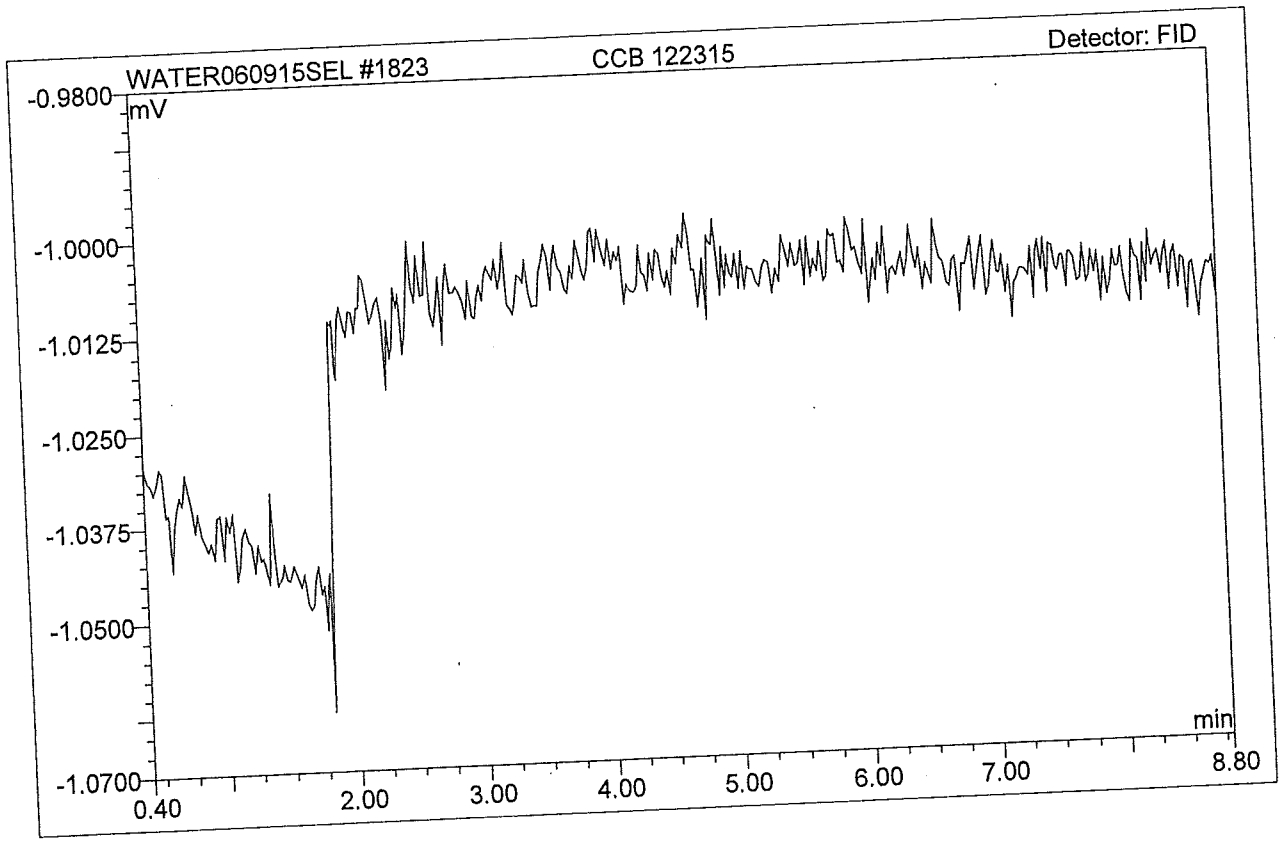


MICROSEEPS

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

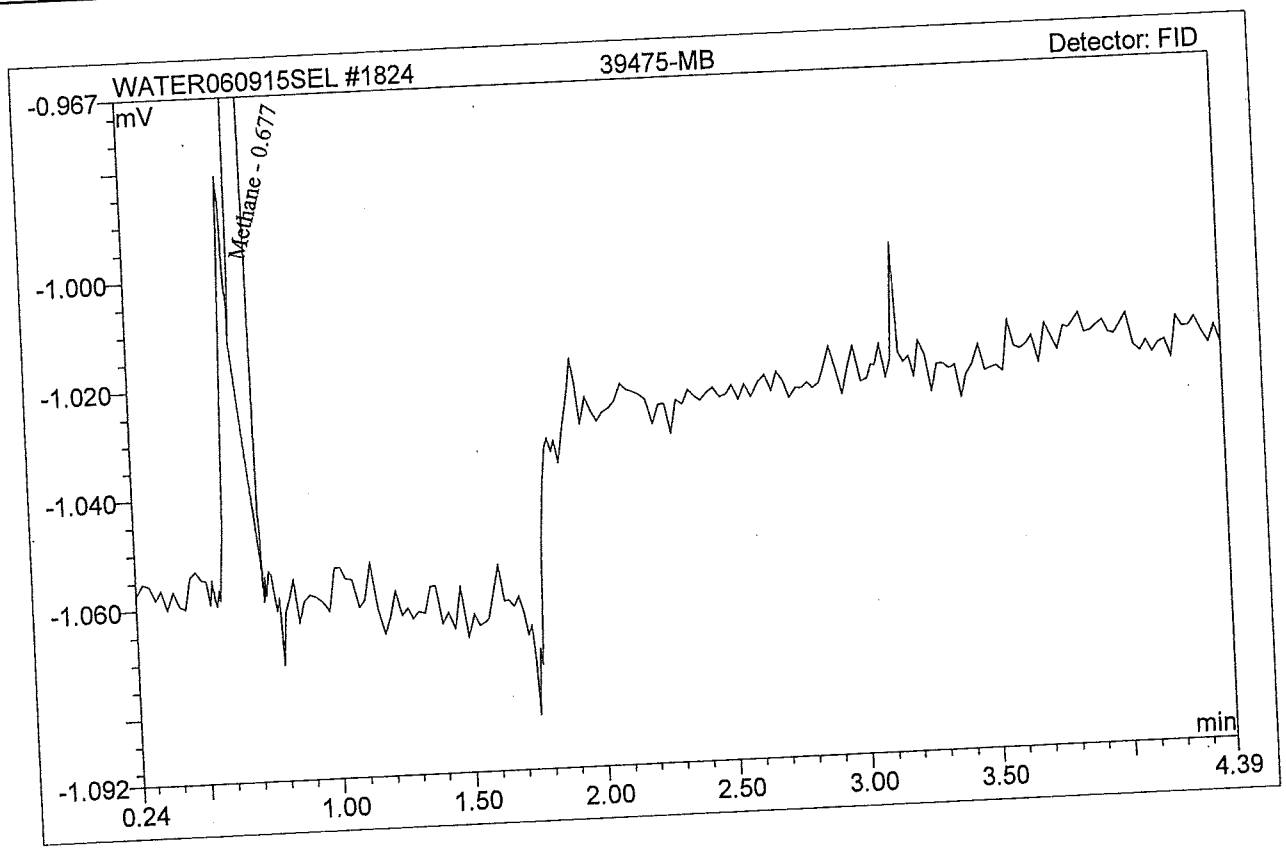


MICROSEEPS

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

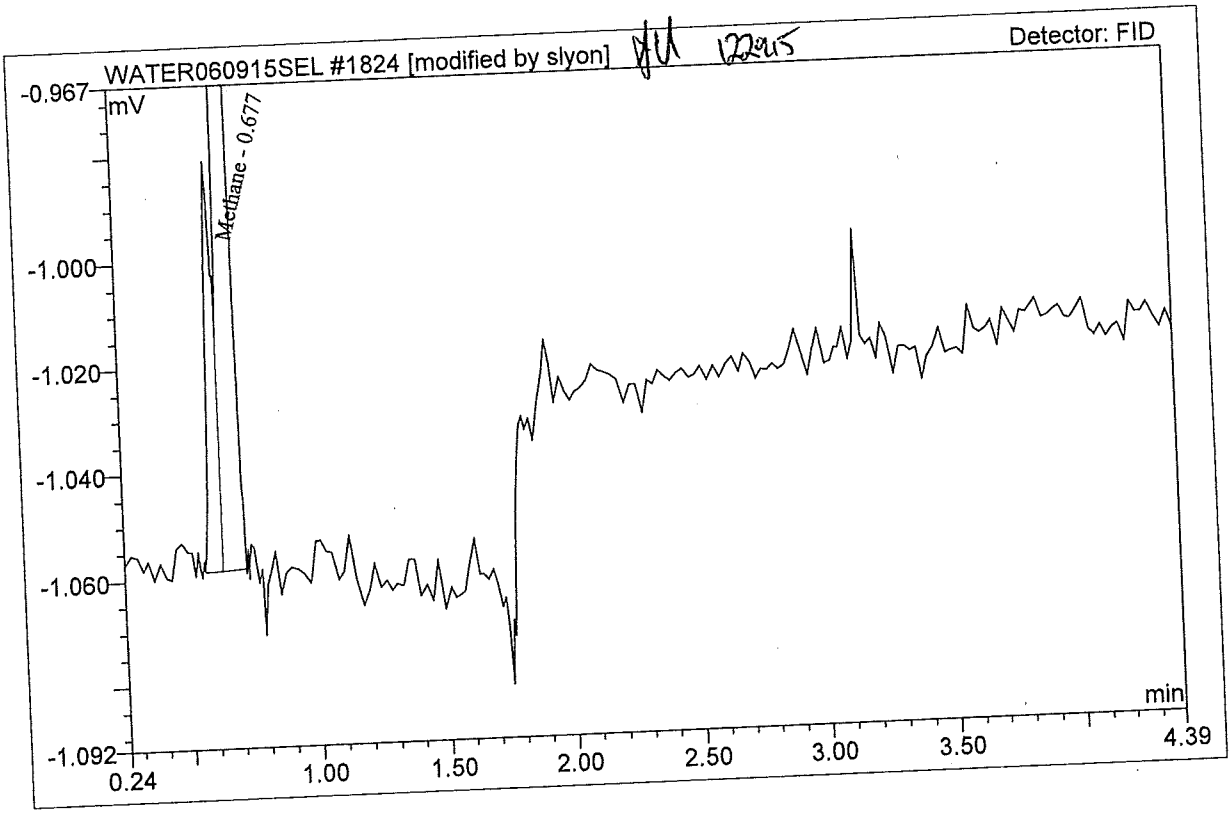


MICROSEEPS

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



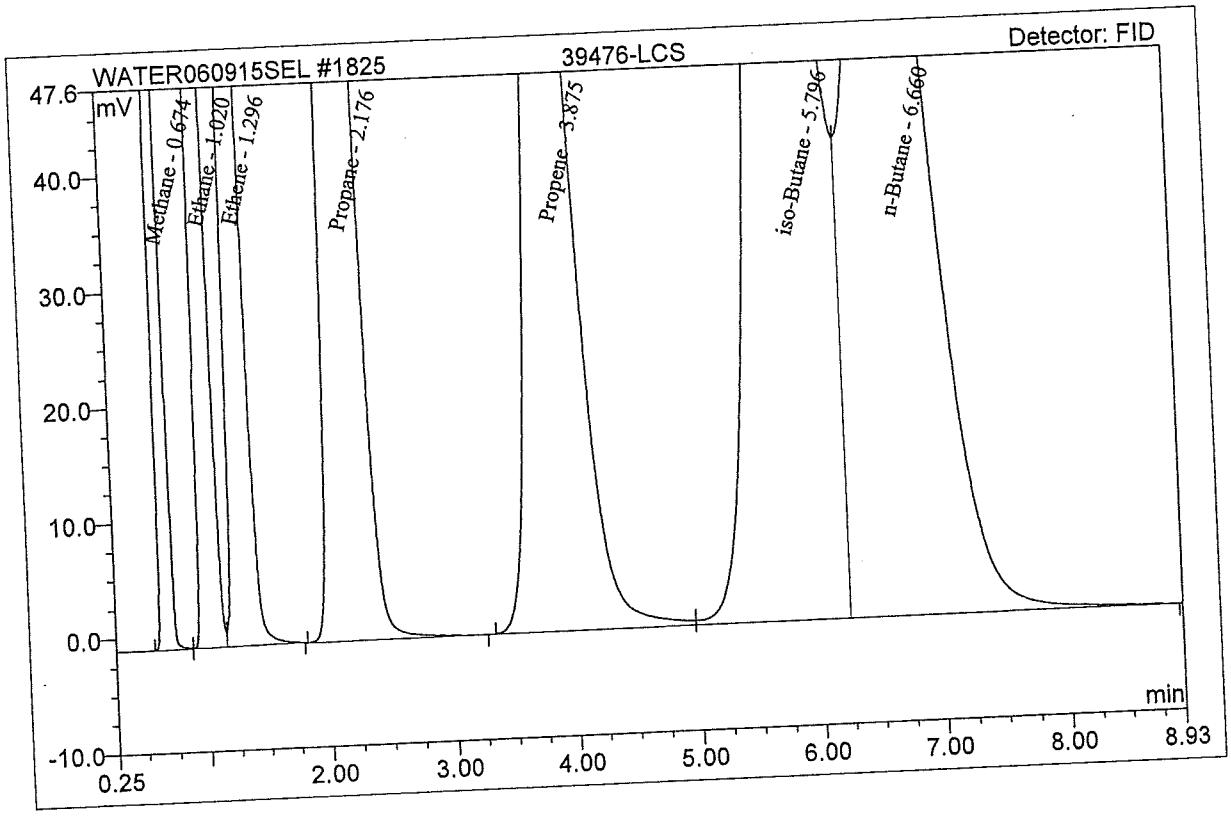
MICROSEEPS

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



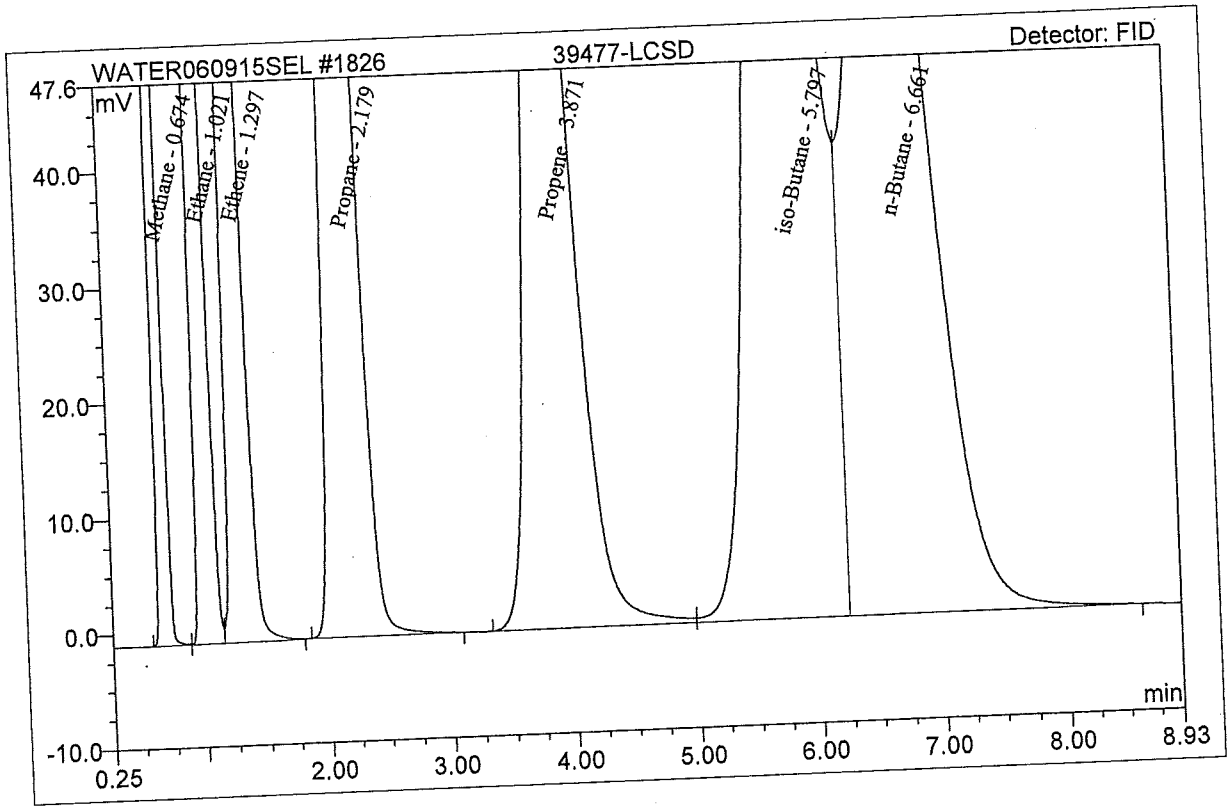
MICROSEEPS

Sample Analysis Report

Sample Name:	39477-LCSD	**Sequence No:**	1826
Sequence Name:	WATER060915SEL	**Instrument ID:**	BIOREM13F
Program Method:	LHCV081711	**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
27.92

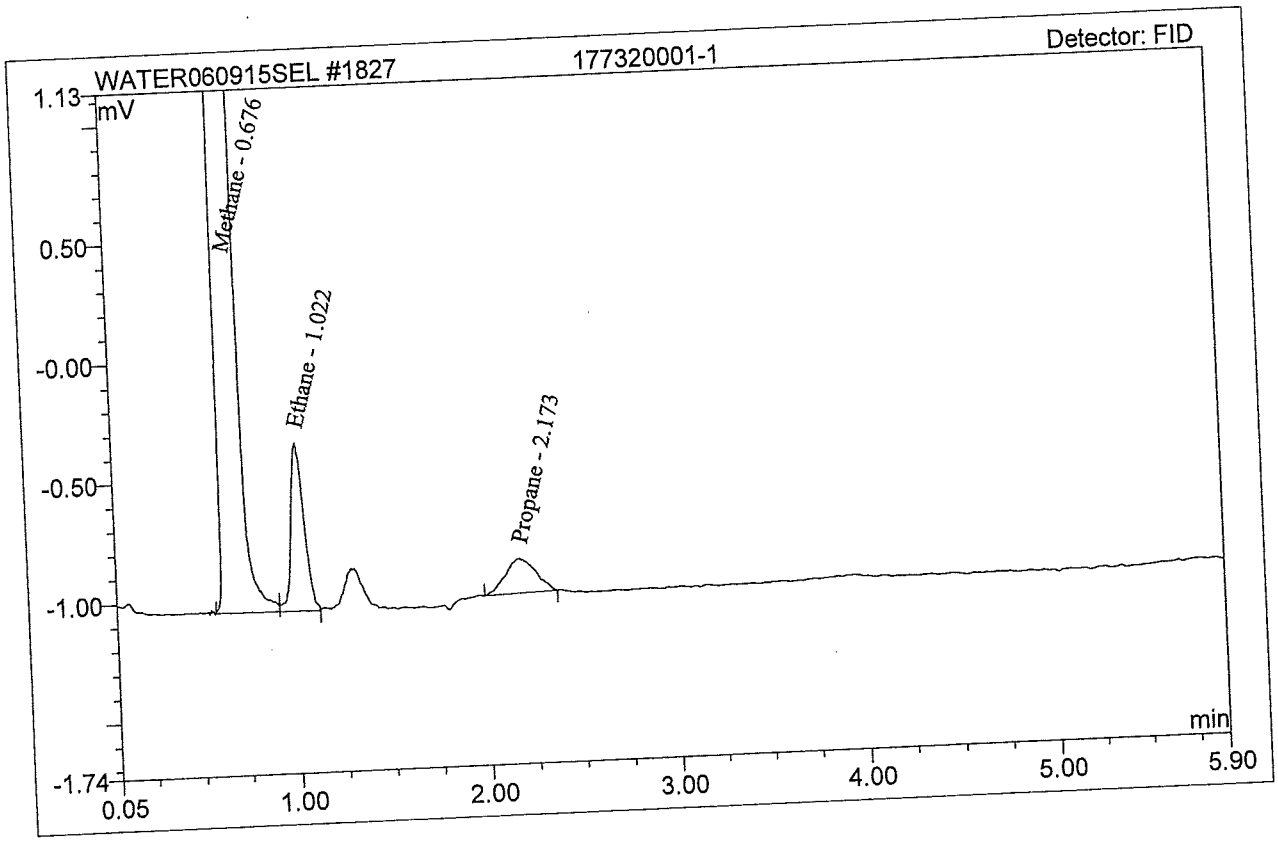


MICROSEEPS

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

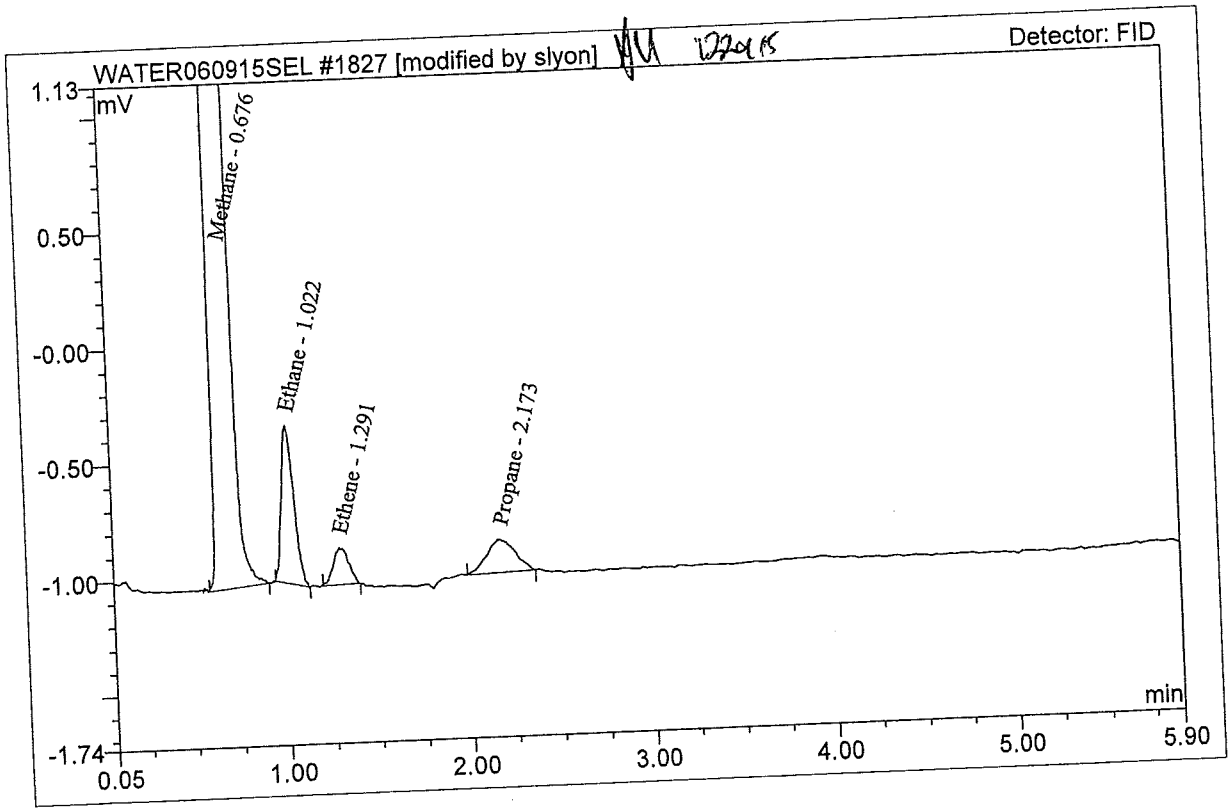


MICROSEEPS

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

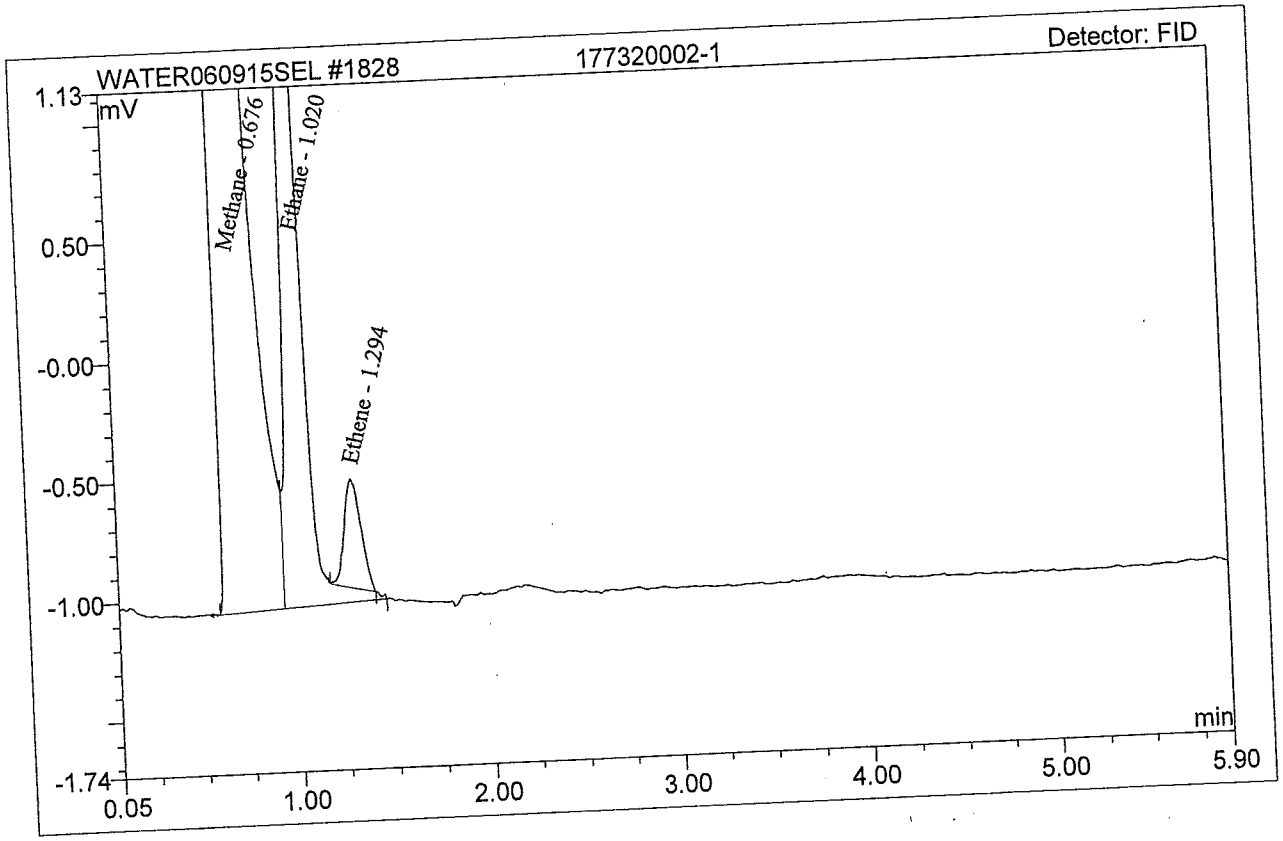


MICROSEEPS

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

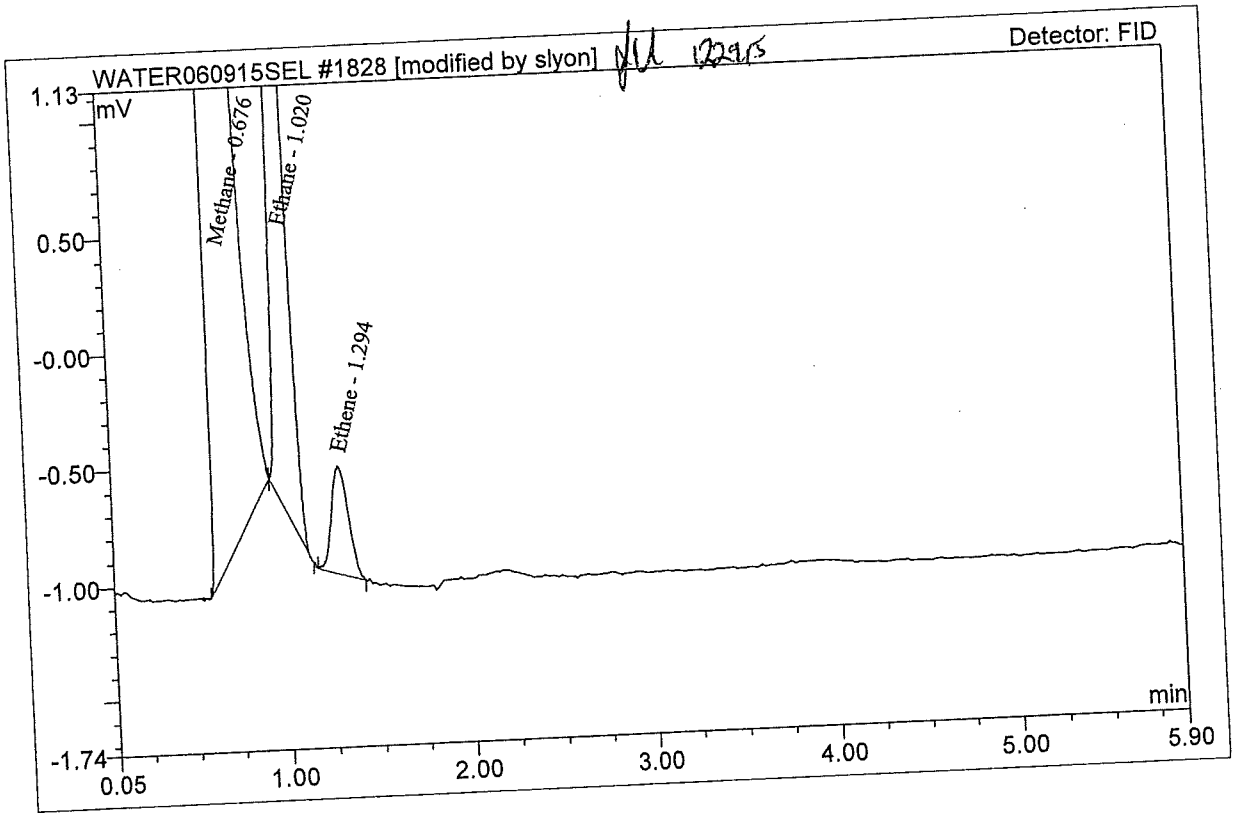


MICROSEEPS

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*	~~361.8440~~ (1)
2	Ethane	1.020	0.330	4.458	BMB*	0.8423
3	Ethene	1.294	0.047	0.462	BMB*	0.1332



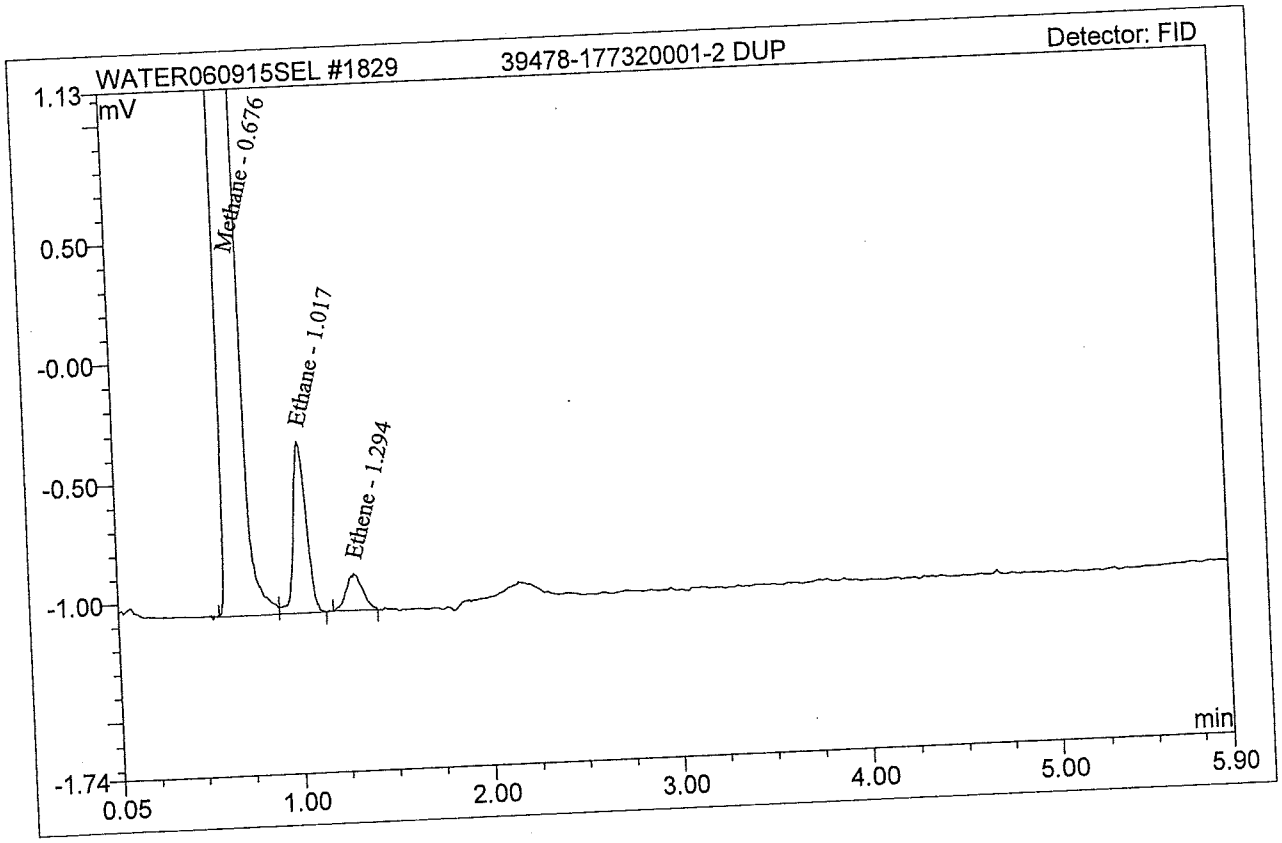
(1) Requires dilution

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

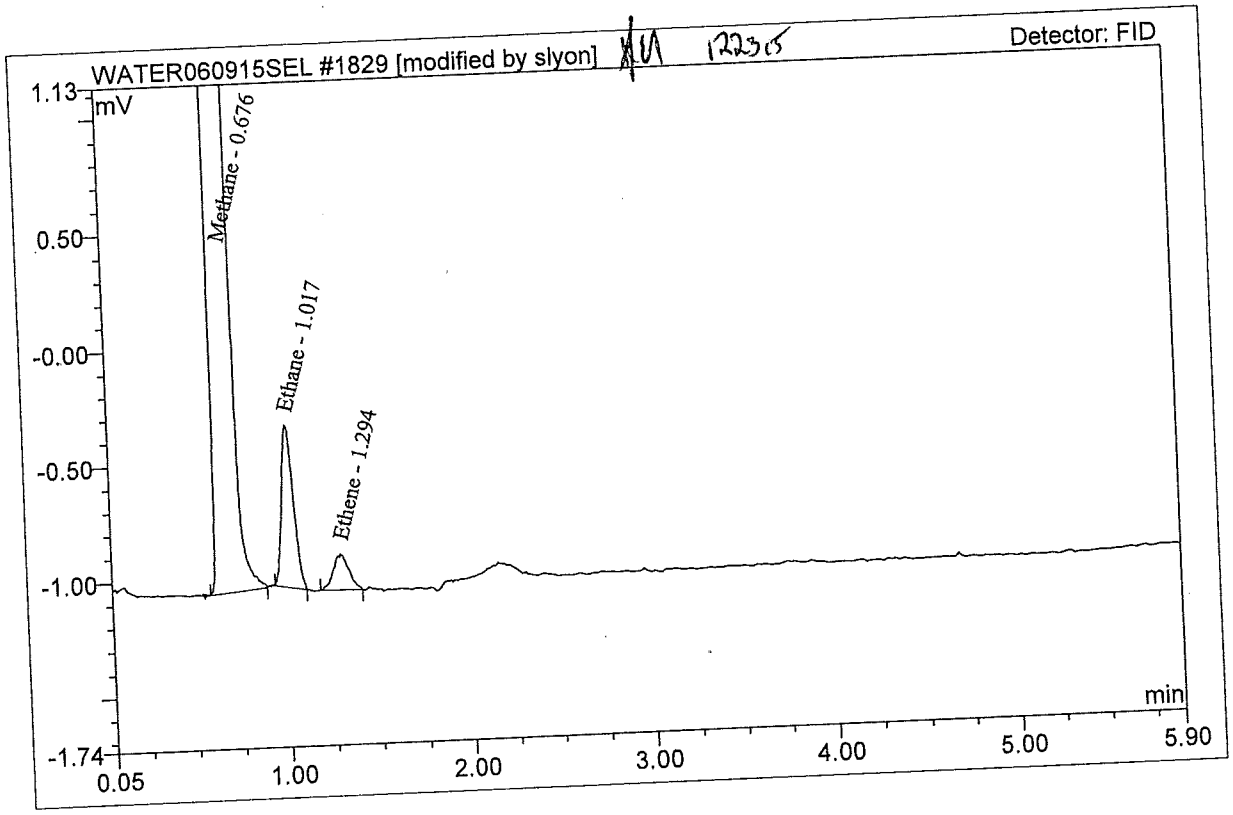


MICROSEEPS

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

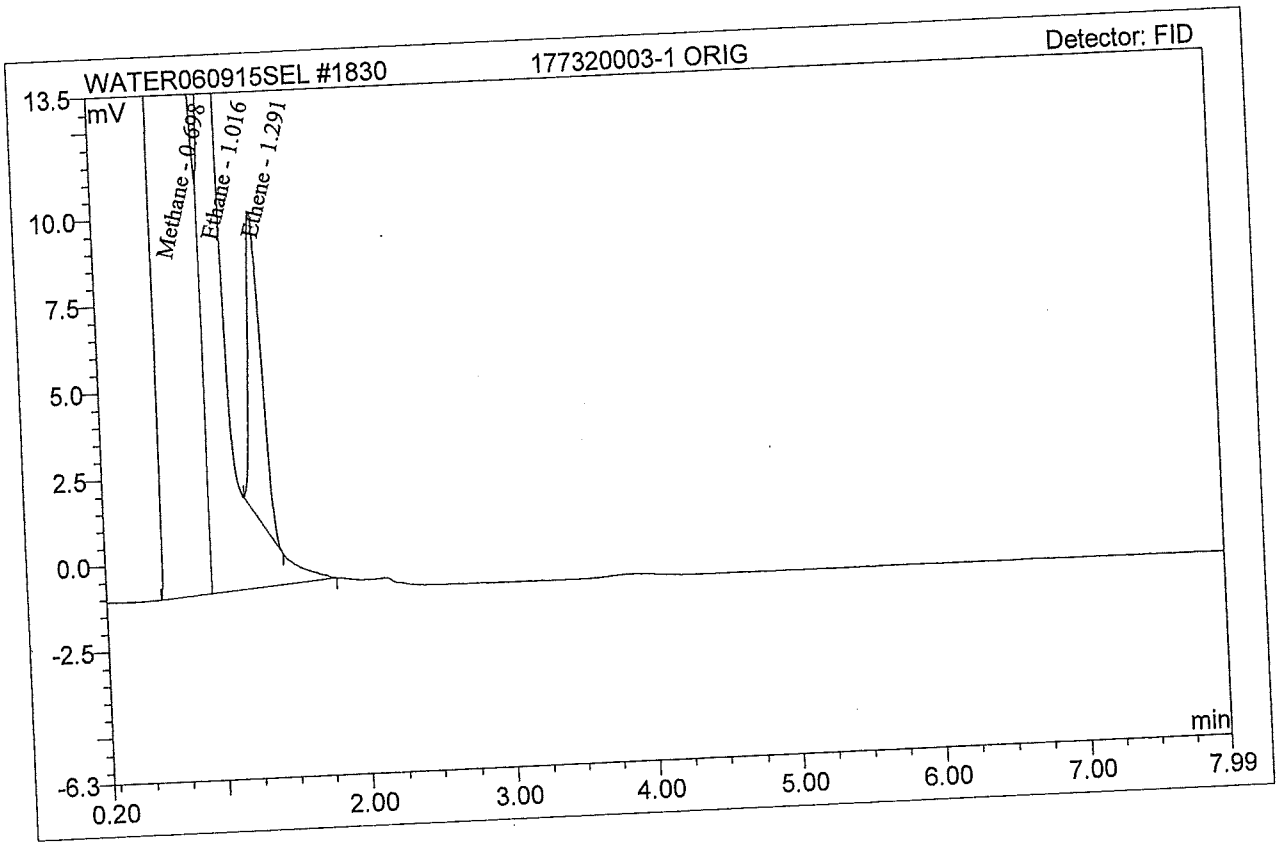


MICROSEEPS

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
1	Methane	0.698	951.570	10285.071	BM	1615.0397
3	Ethane	1.016	5.381	52.010	MB	13.7049
4	Ethene	1.291	0.897	8.949	Rd	2.5271

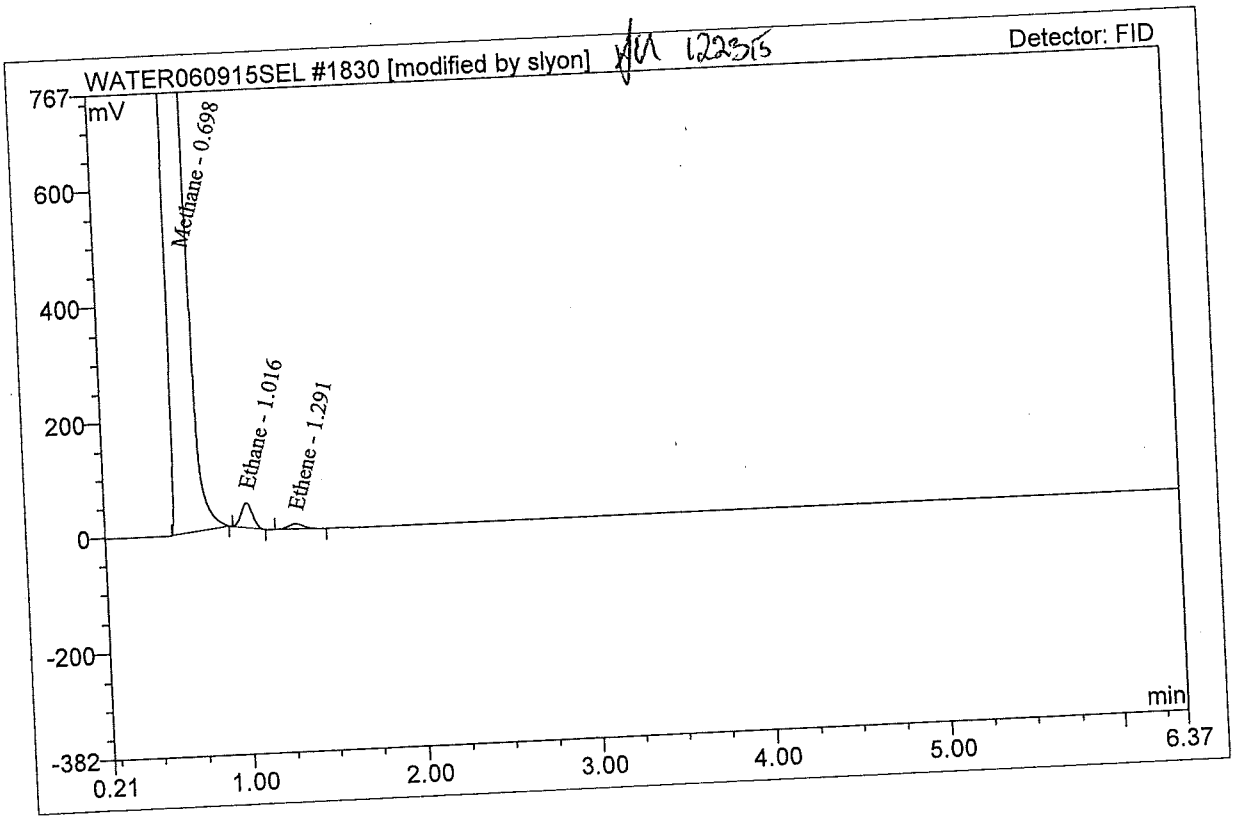


MICROSEEPS

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



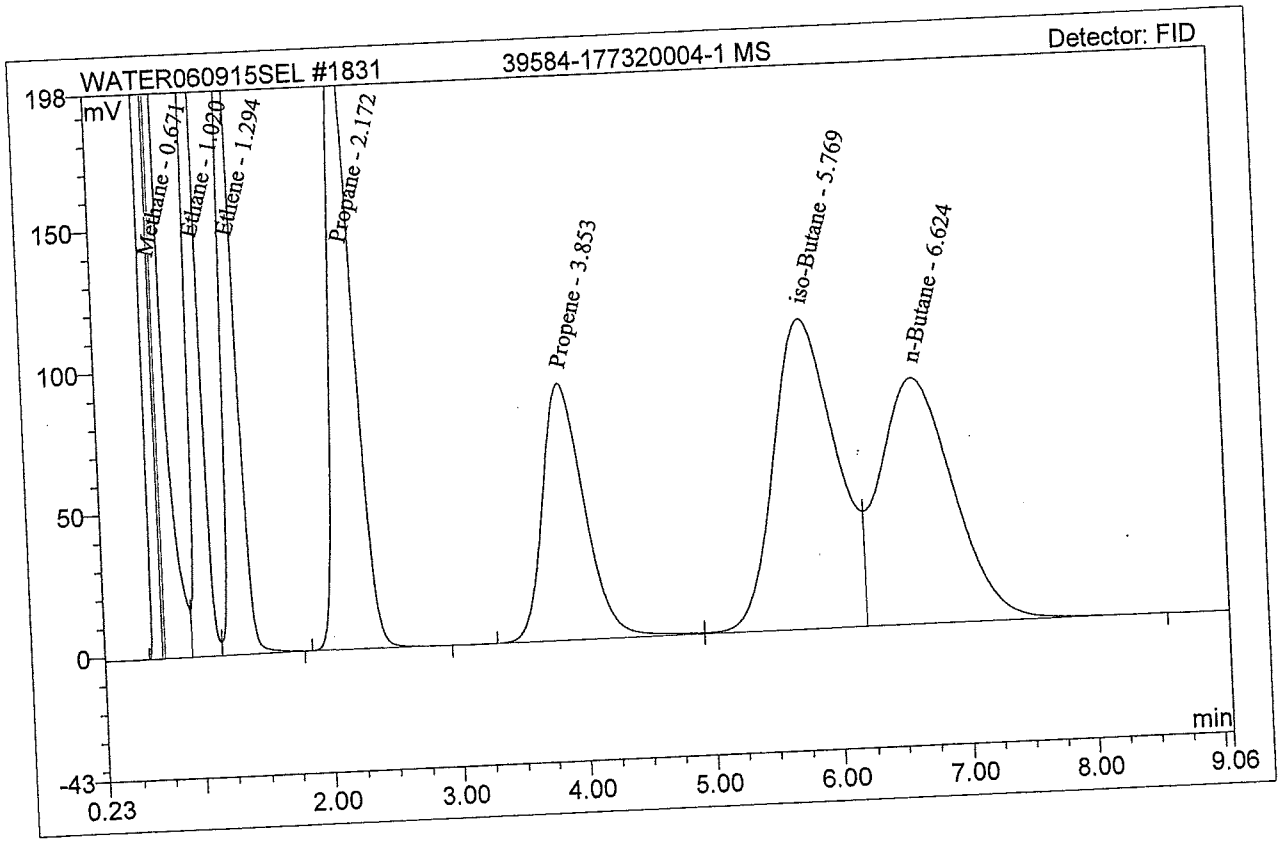
Required

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	588.846	10283.529	BM	1113.0513
7	Ethane	1.020	37.534	482.074	M	94.9366
8	Ethene	1.294	28.731	270.620	MB	80.3283
9	Propane	2.172	46.529	229.887	BMB	115.1083
10	Propene	3.853	34.900	90.528	BM	101.9173
11	iso-Butane	5.769	61.498	109.243	M	150.4473
12	n-Butane	6.624	57.578	86.929	MB	145.8850

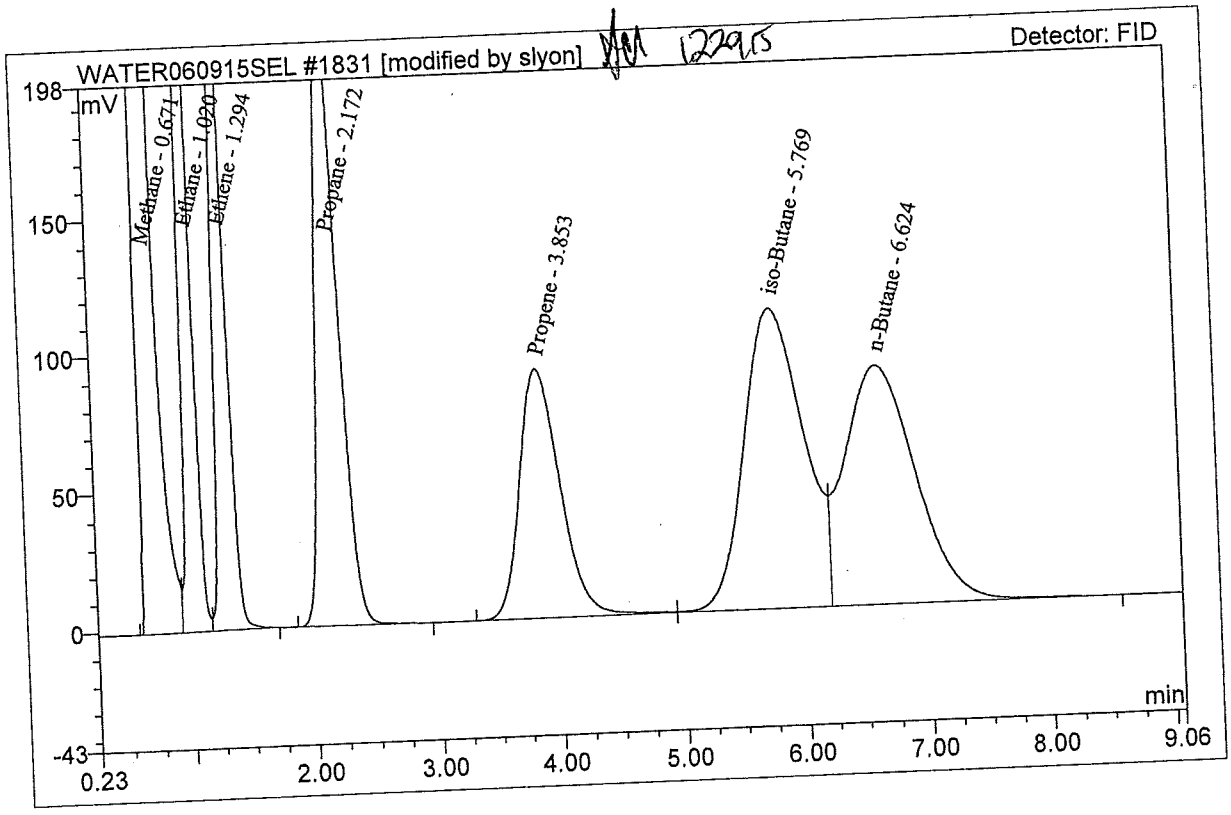


MICROSEEPS

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

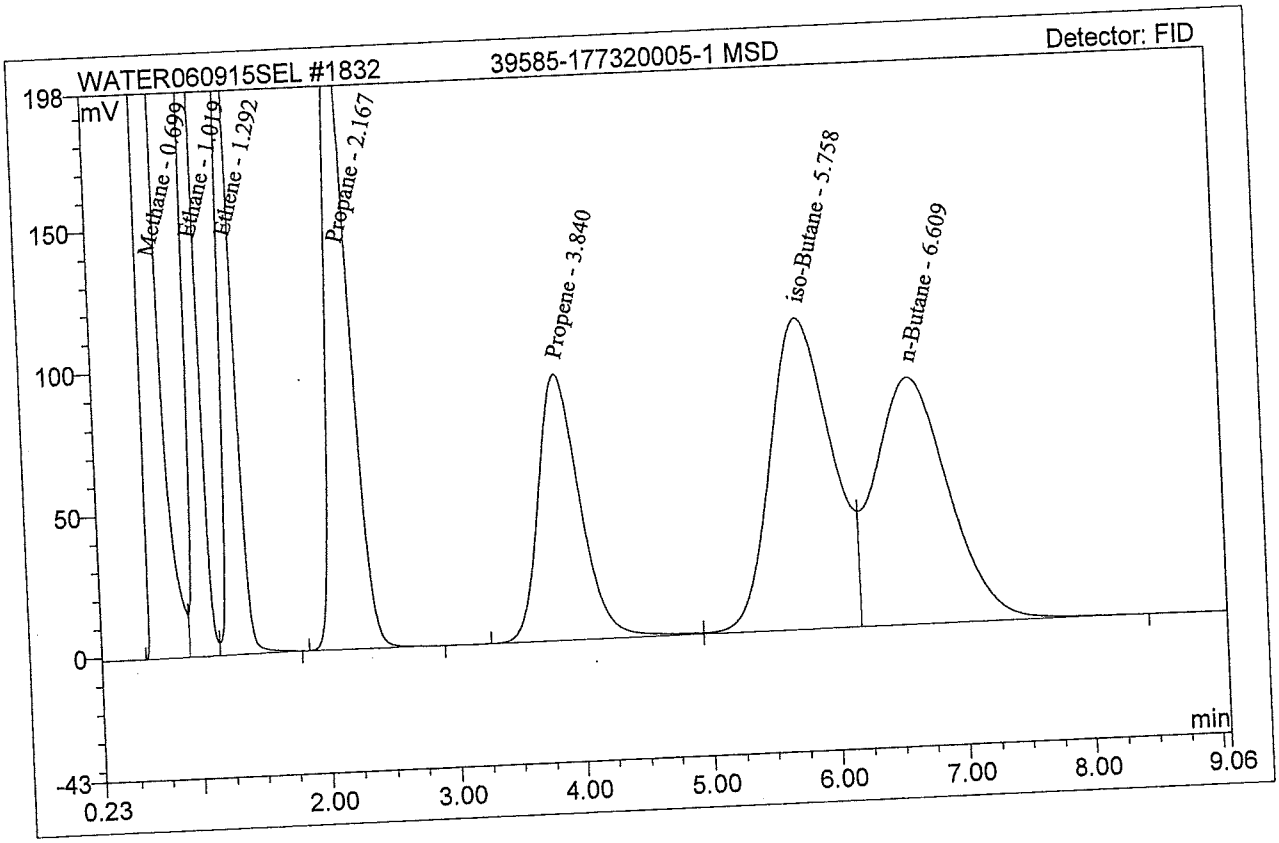


MICROSEEPS

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

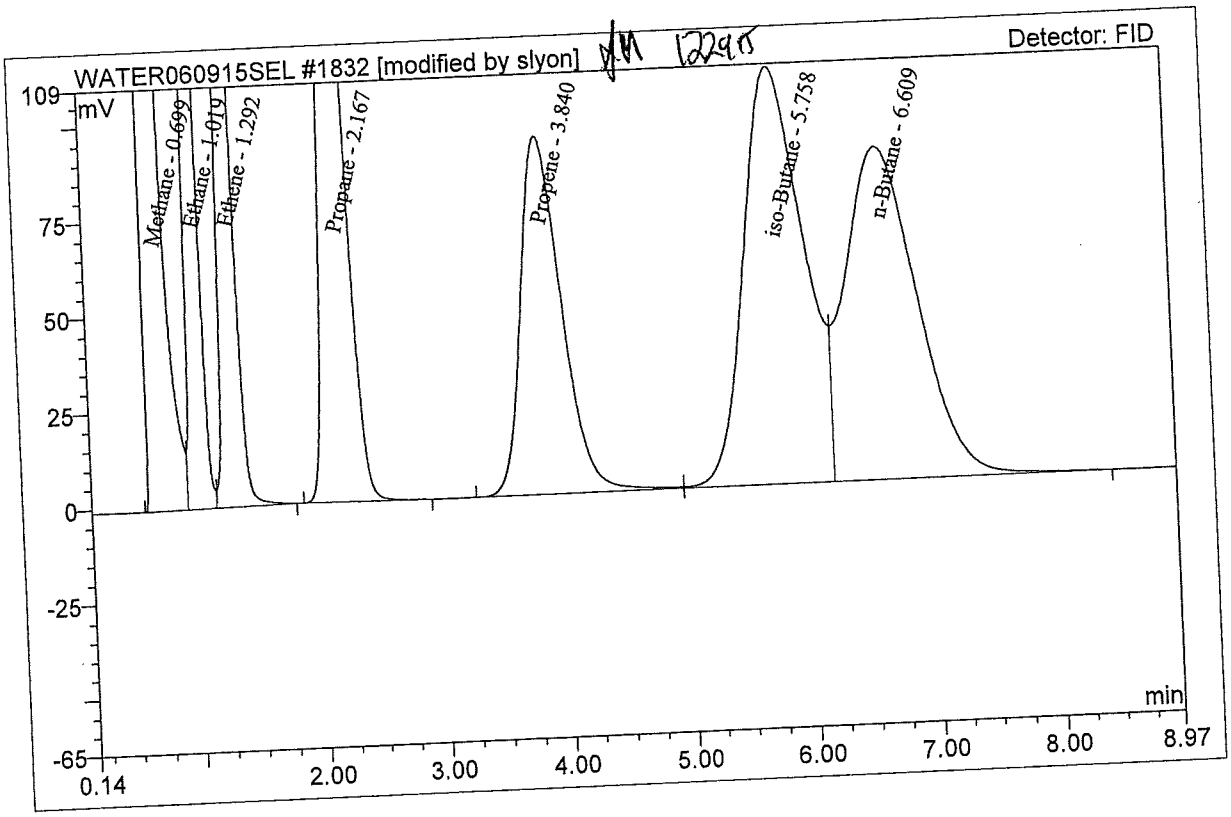


MICROSEEPS

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
1	Methane	0.699	1010.774	10110.267	BM *	~~1689.8222~~ (1)
2	Ethane	1.019	36.876	475.851	M	93.2858
3	Ethene	1.292	28.969	273.597	MB	80.9888
4	Propane	2.167	46.916	232.606	BMB	116.0565
5	Propene	3.840	36.123	93.900	BM	105.4524
6	iso-Butane	5.758	61.631	109.579	M	150.7683
7	n-Butane	6.609	57.898	87.387	MB	146.6822

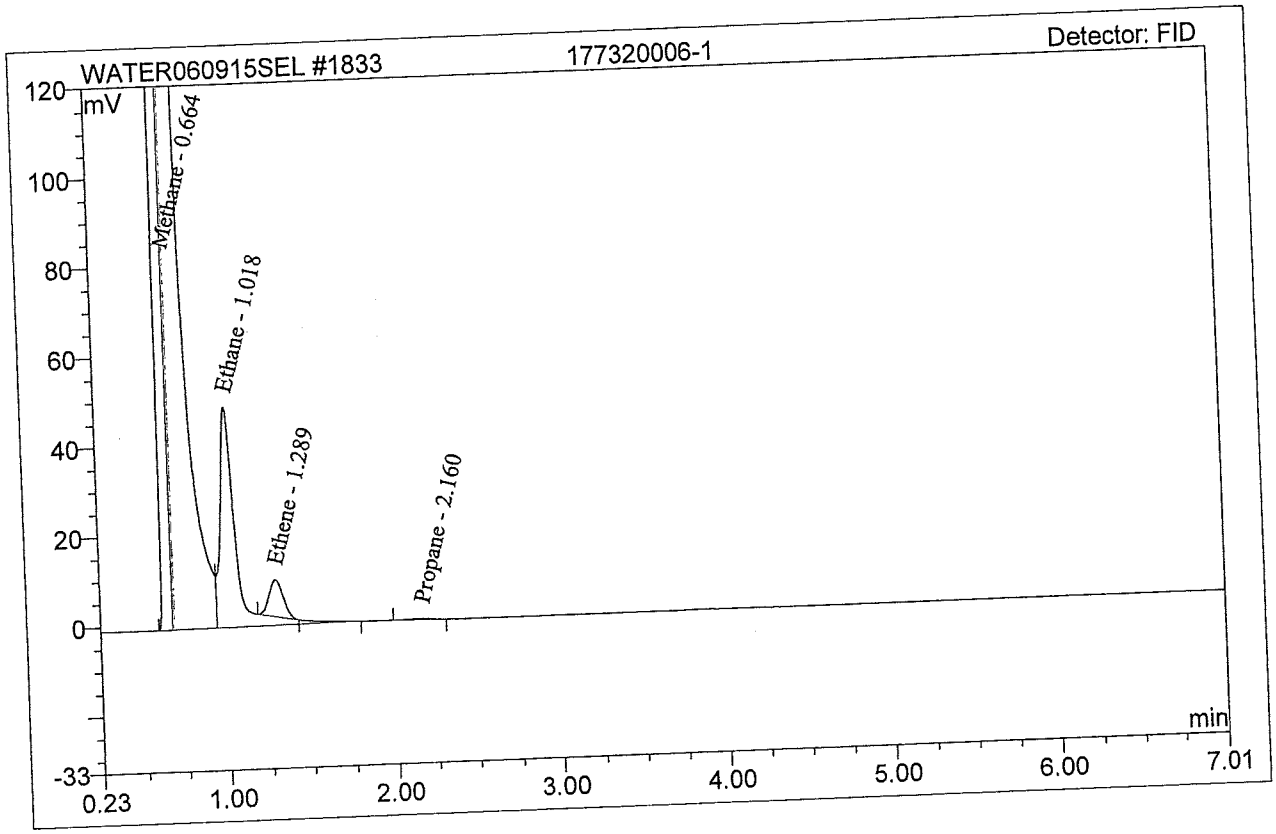


MICROSEEPS

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



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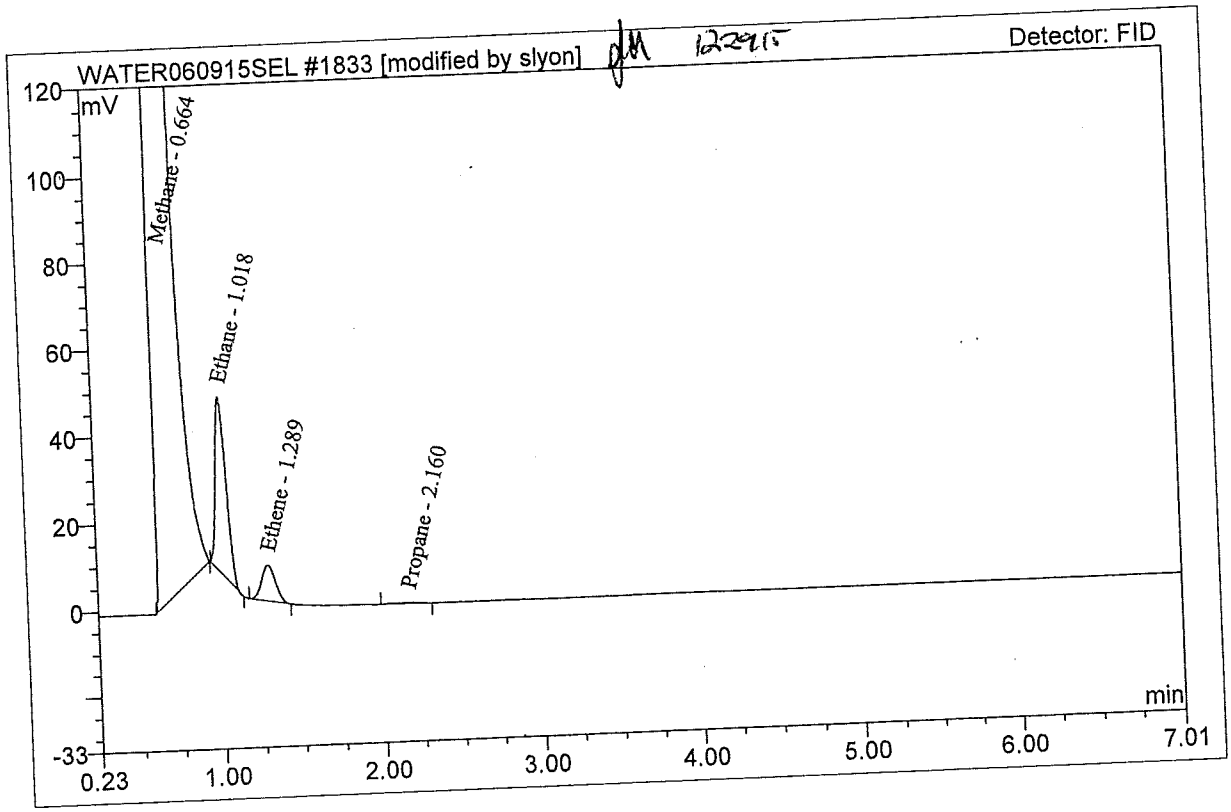
Sample Analysis Report

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*	~~1619.5337~~ (1)
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



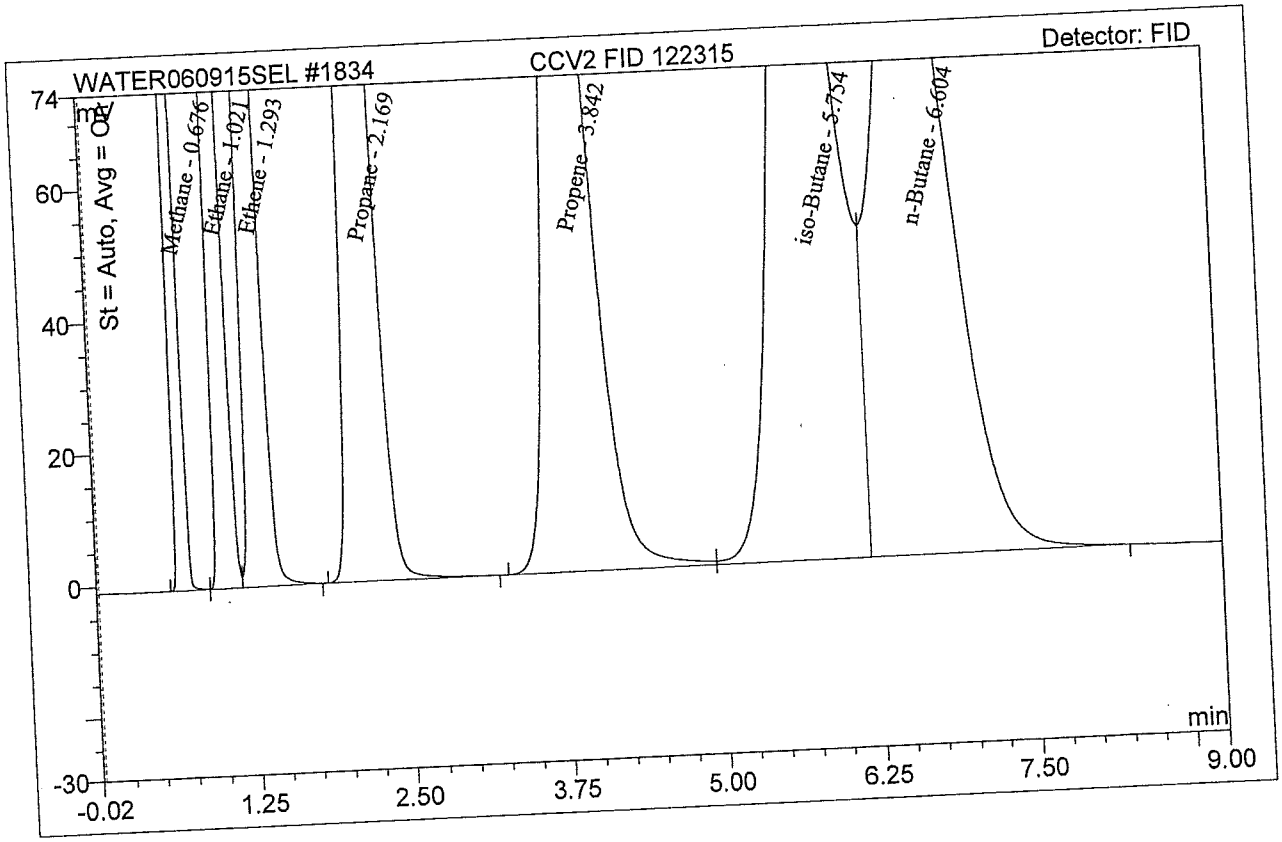
MICROSEEPS

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
48.6
95.344
102.050



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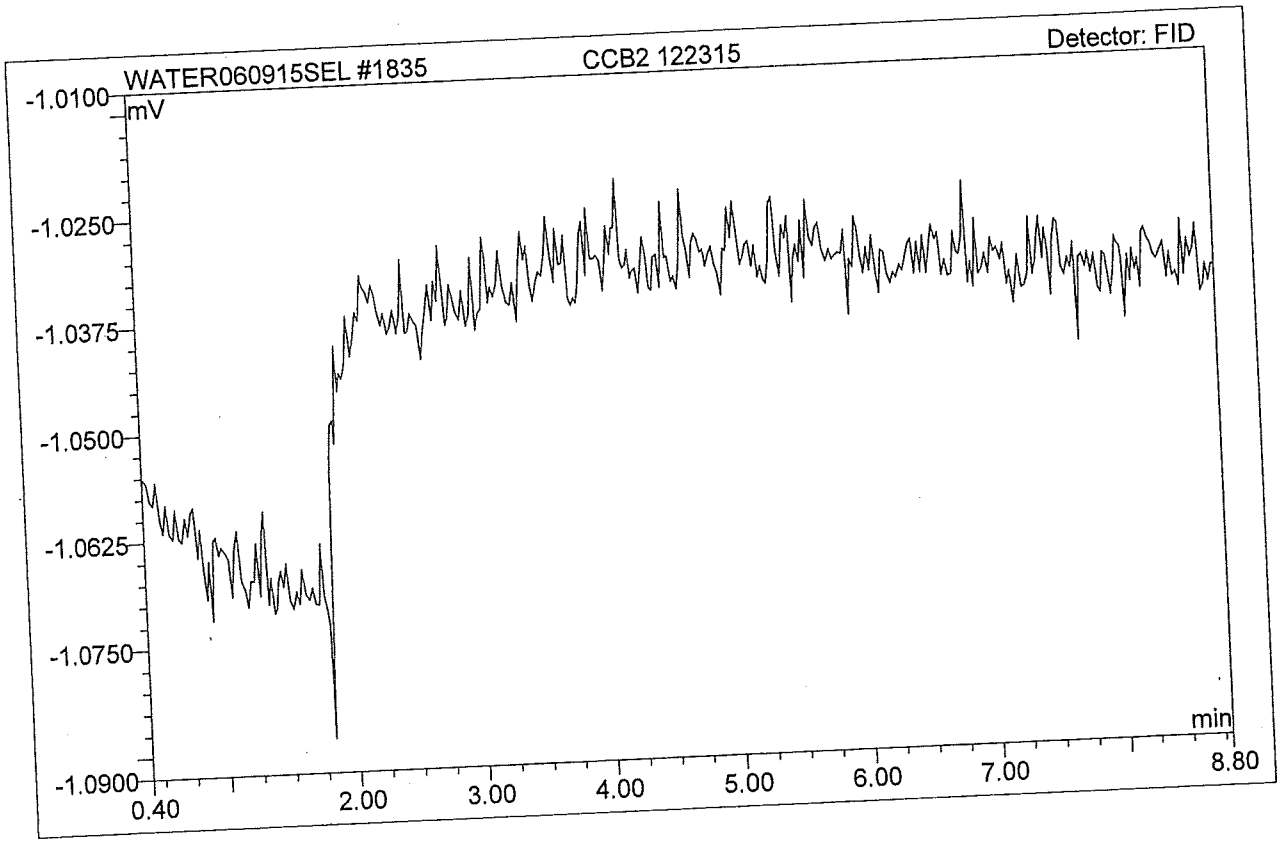
Sample Analysis Report

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

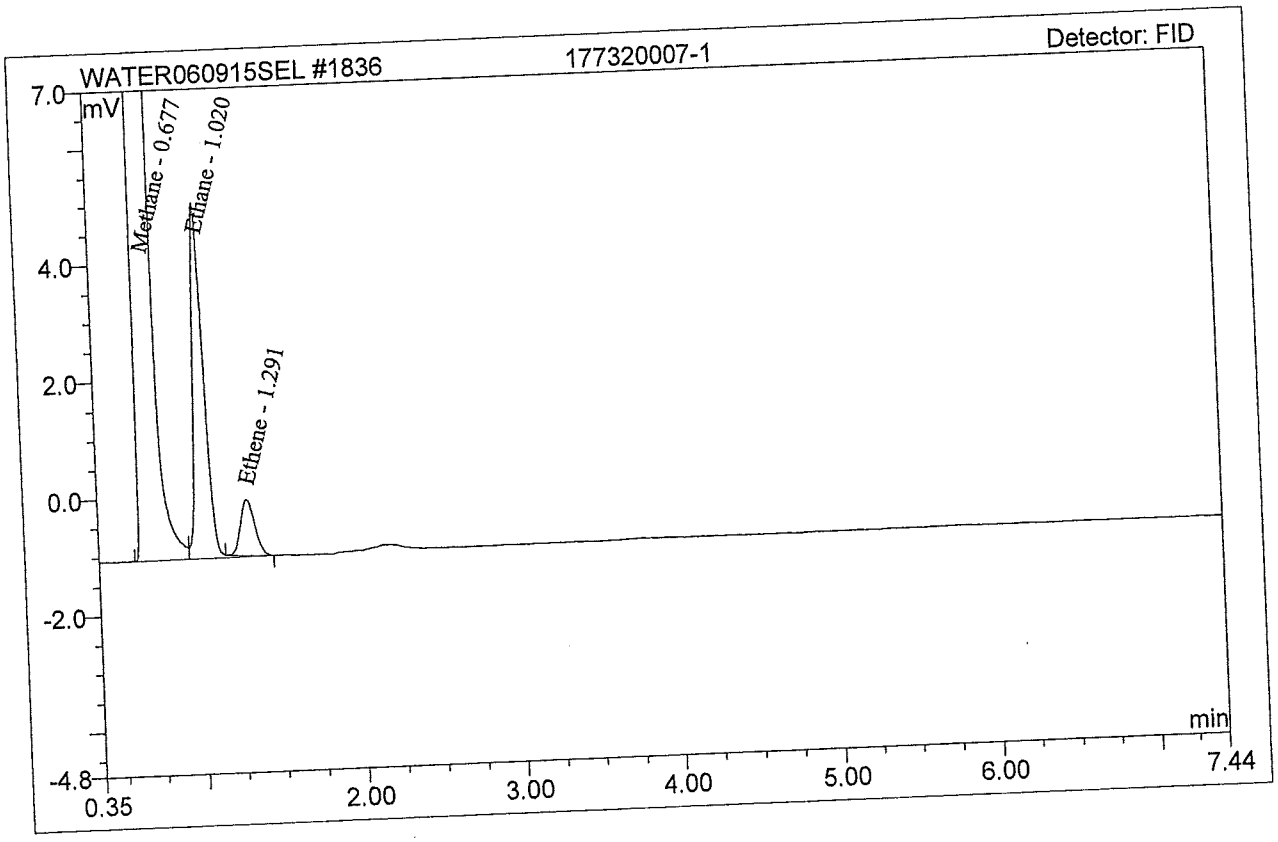


MICROSEEPS

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

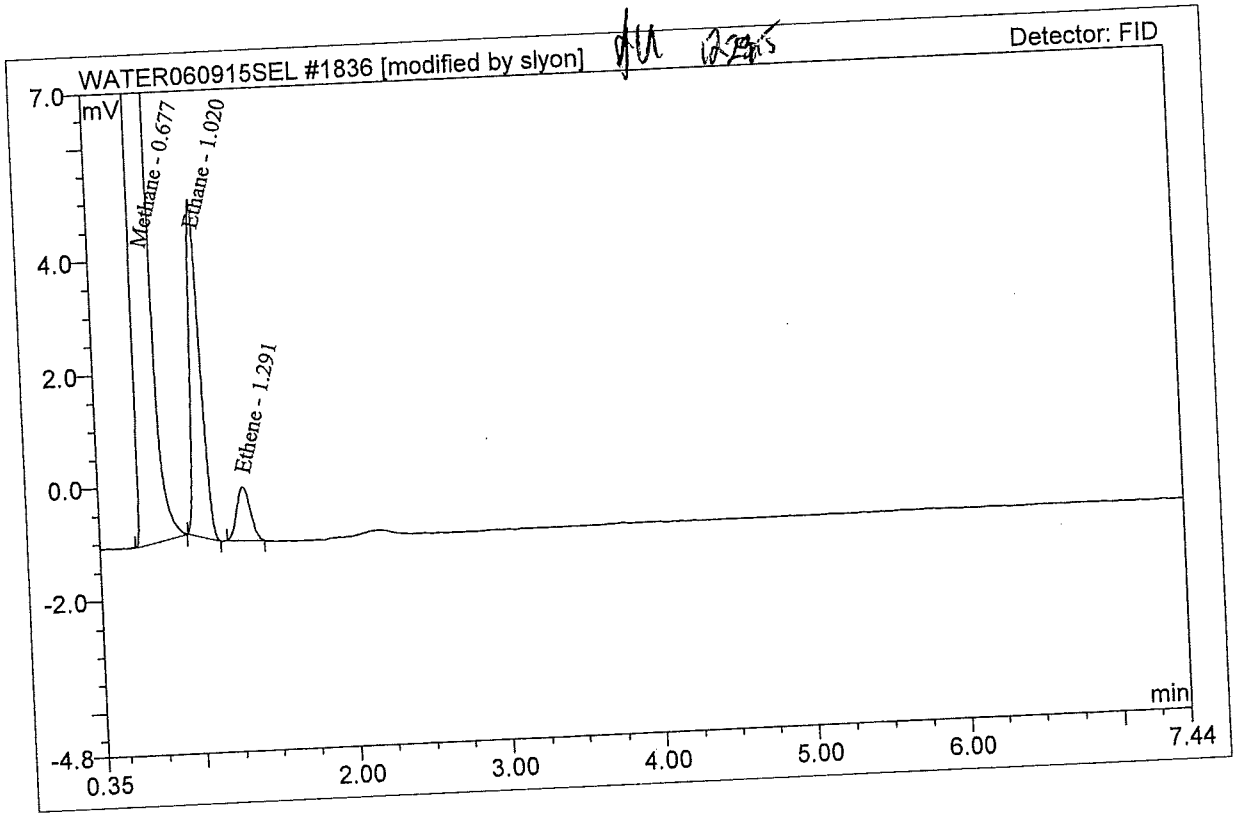


MICROSEEPS

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

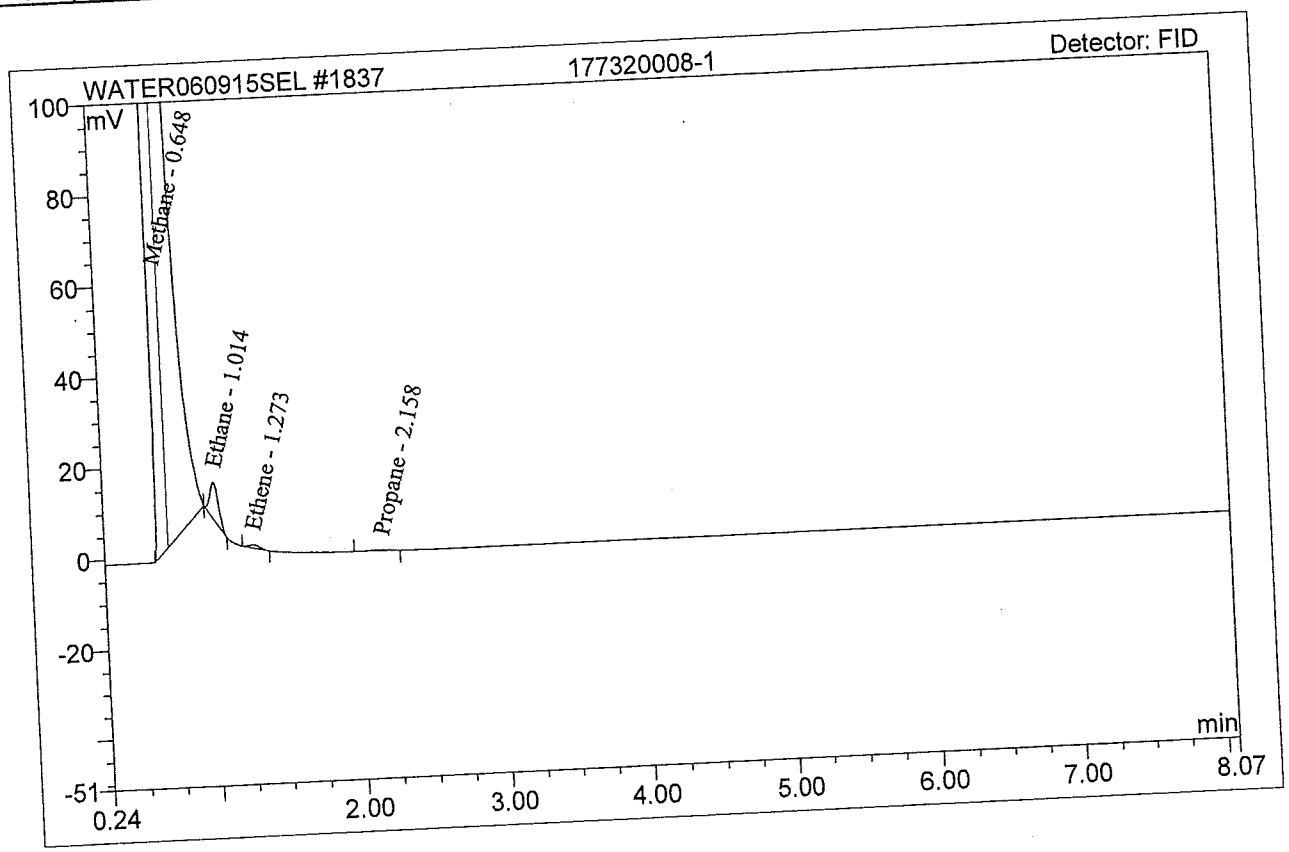


MICROSEEPS

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

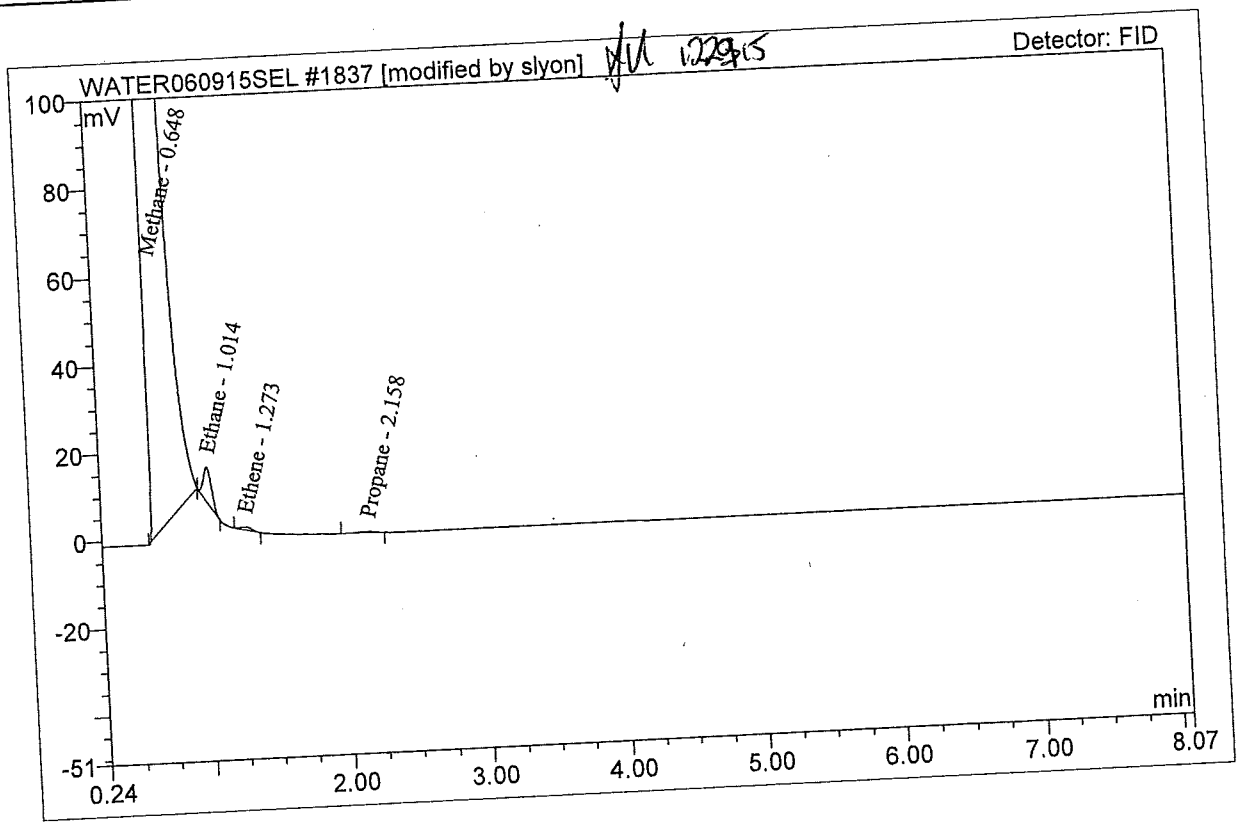


MICROSEEPS

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
1	Methane	0.648	955.690	10122.666	BMB*	~~1620.2990~~
2	Ethane	1.014	0.543	8.110	BMB*	1.3844
3	Ethene	1.273	0.065	0.676	BMB	0.1822
4	Propane	2.158	0.036	0.222	BMB	0.0911

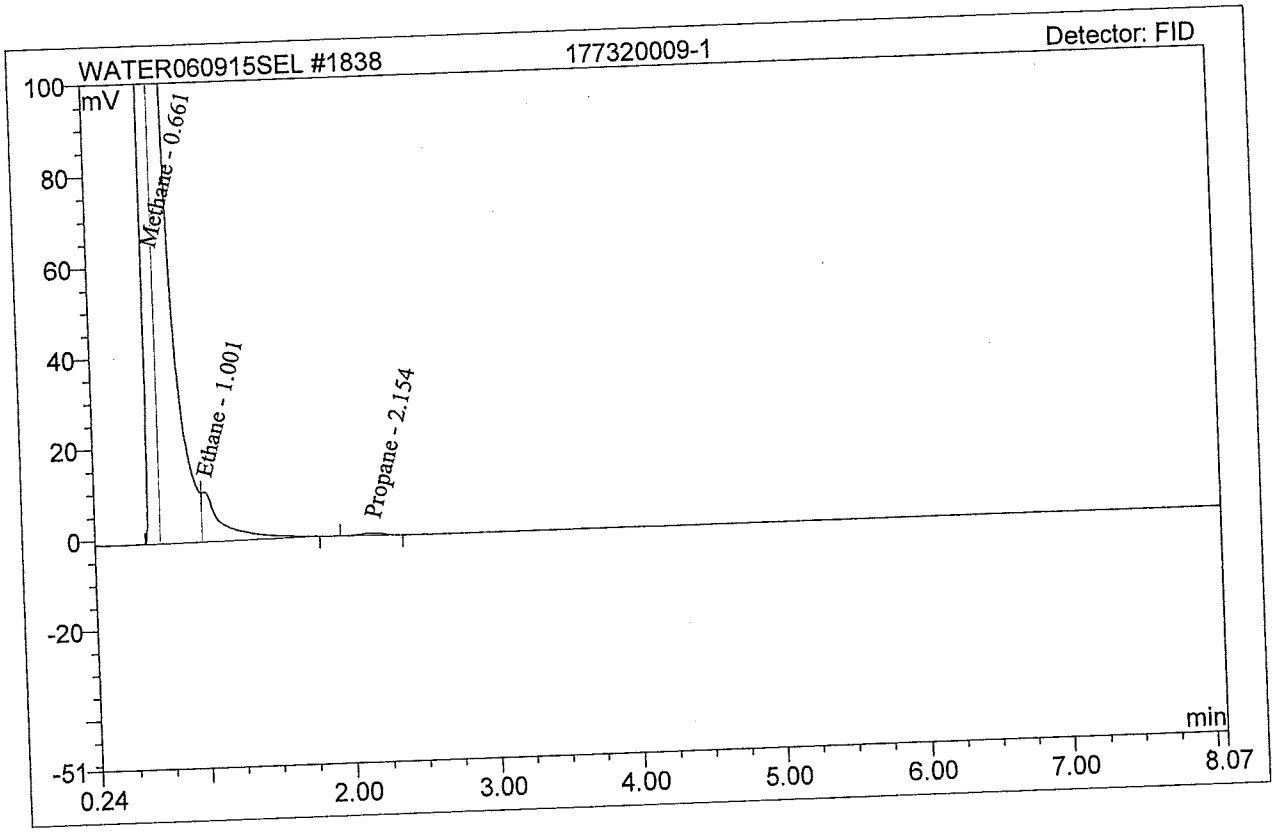


MICROSEEPS

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

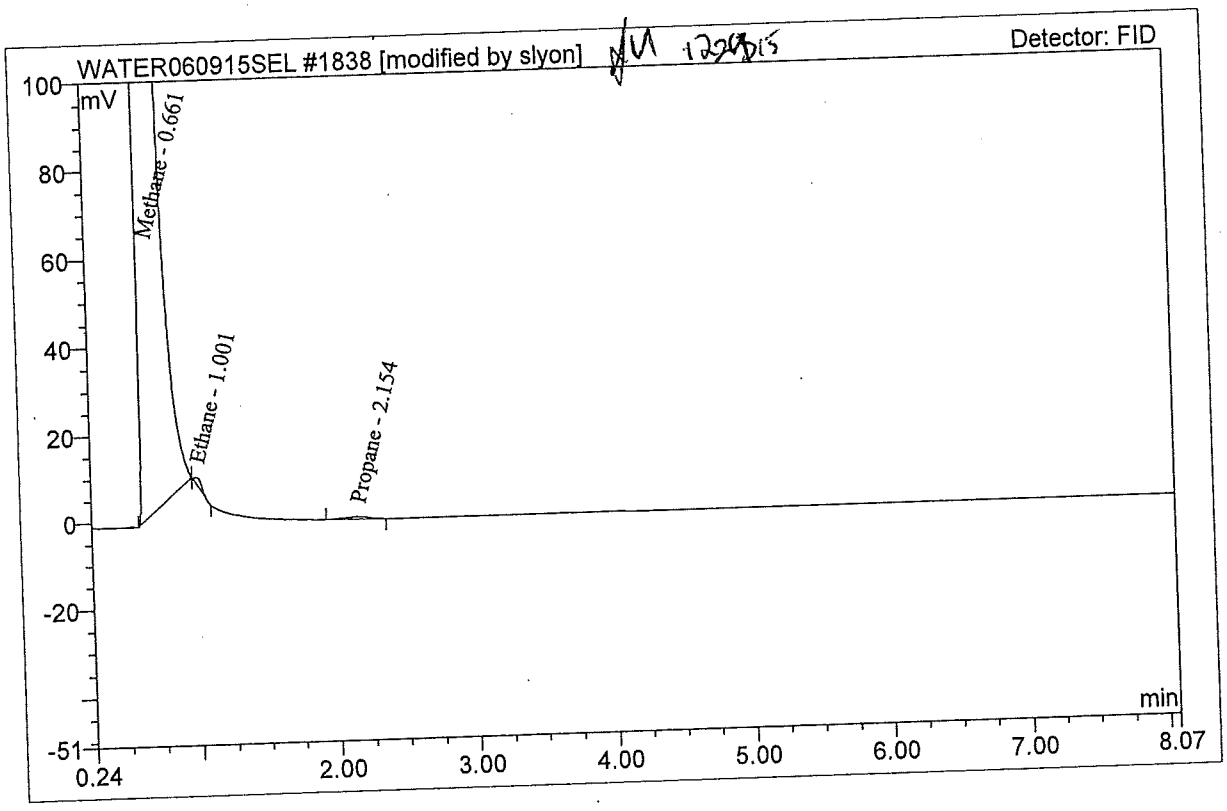


MICROSEEPS

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

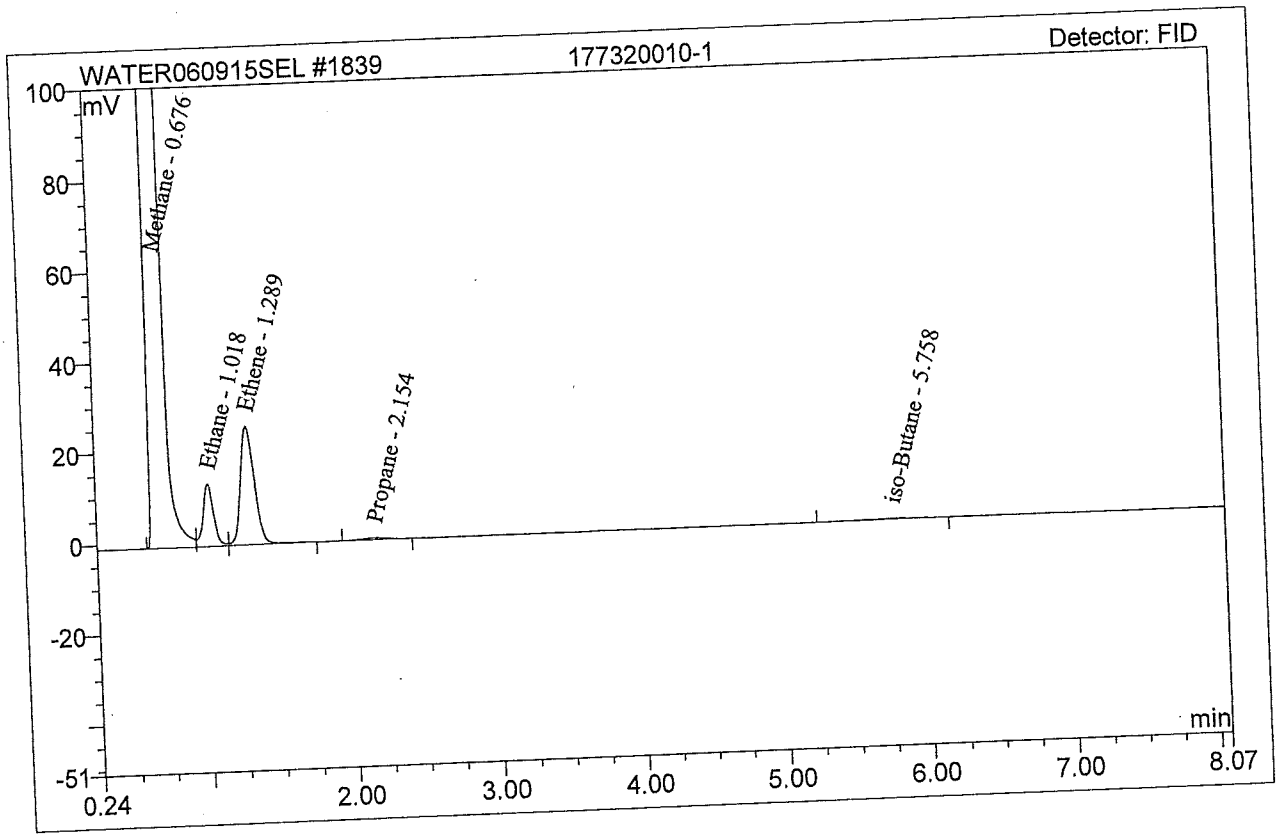


MICROSEEPS

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

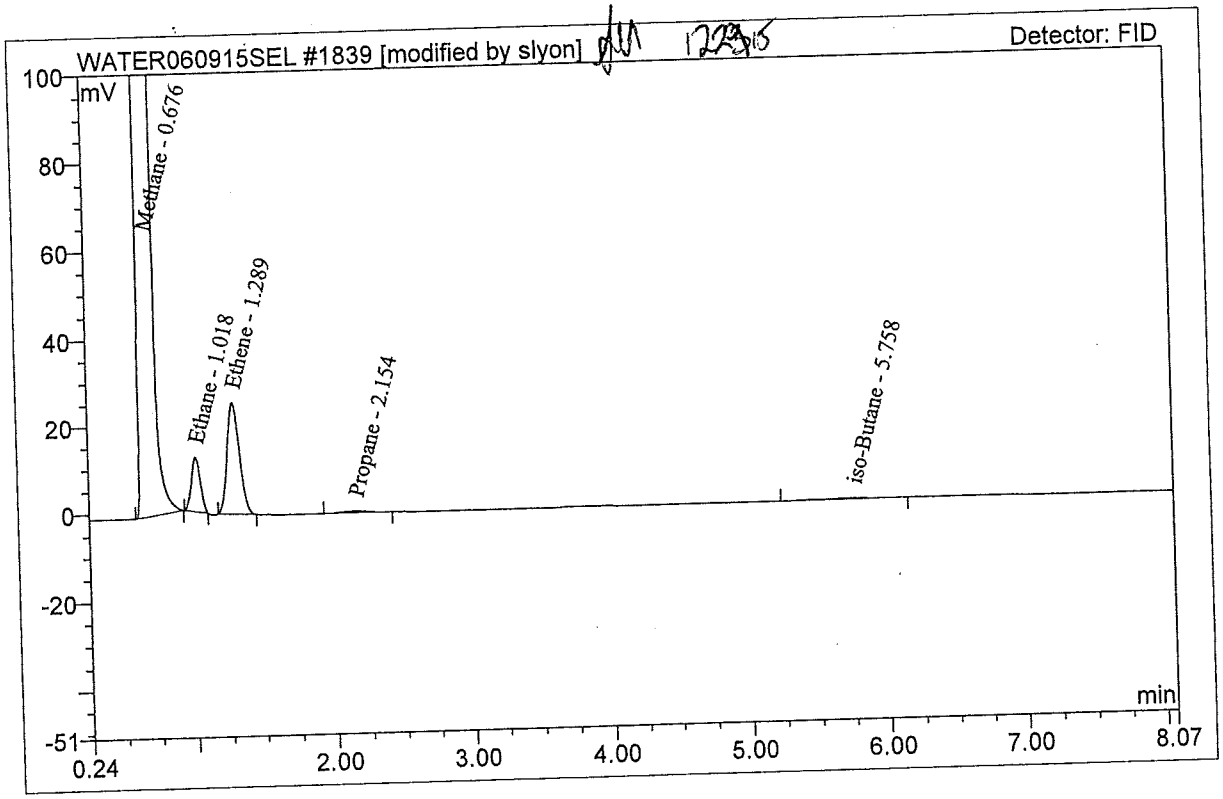


MICROSEEPS

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~~ (1)
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

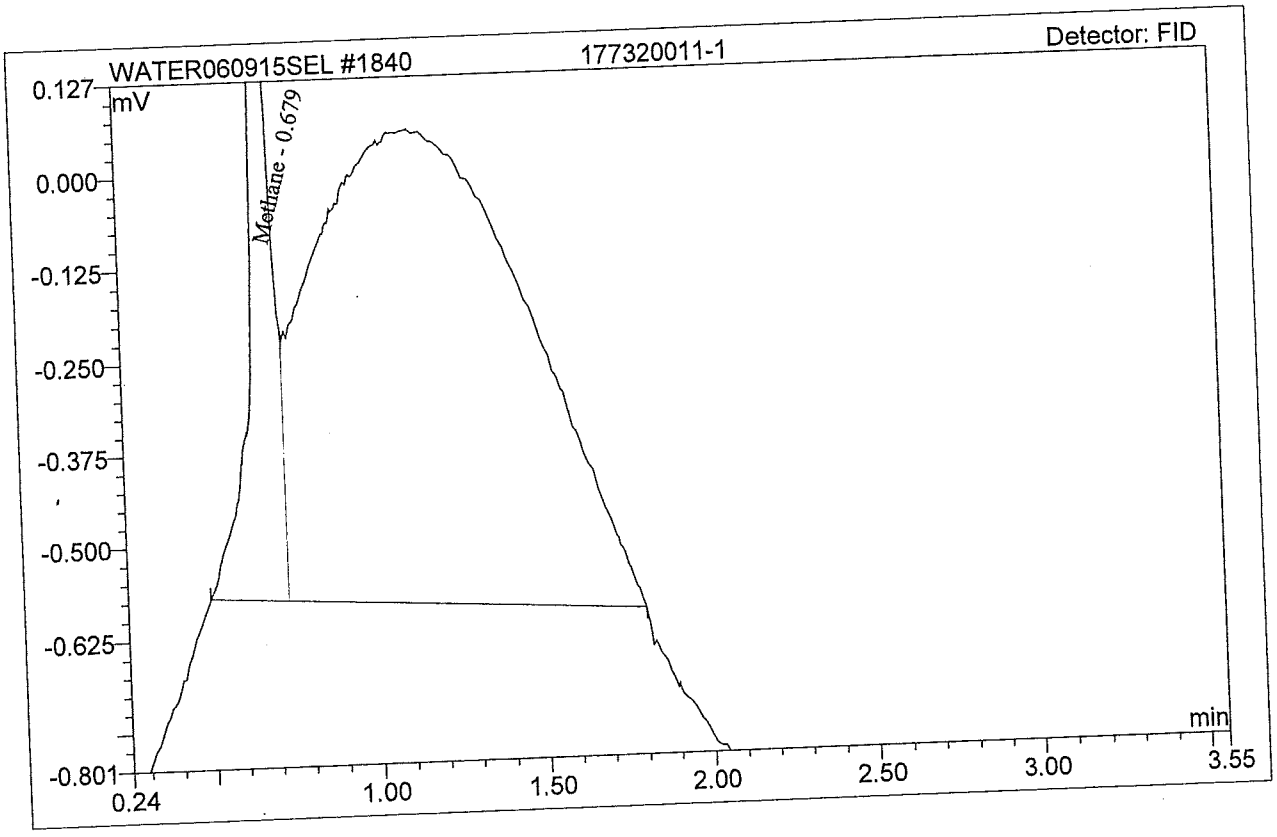


MICROSEEPS

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

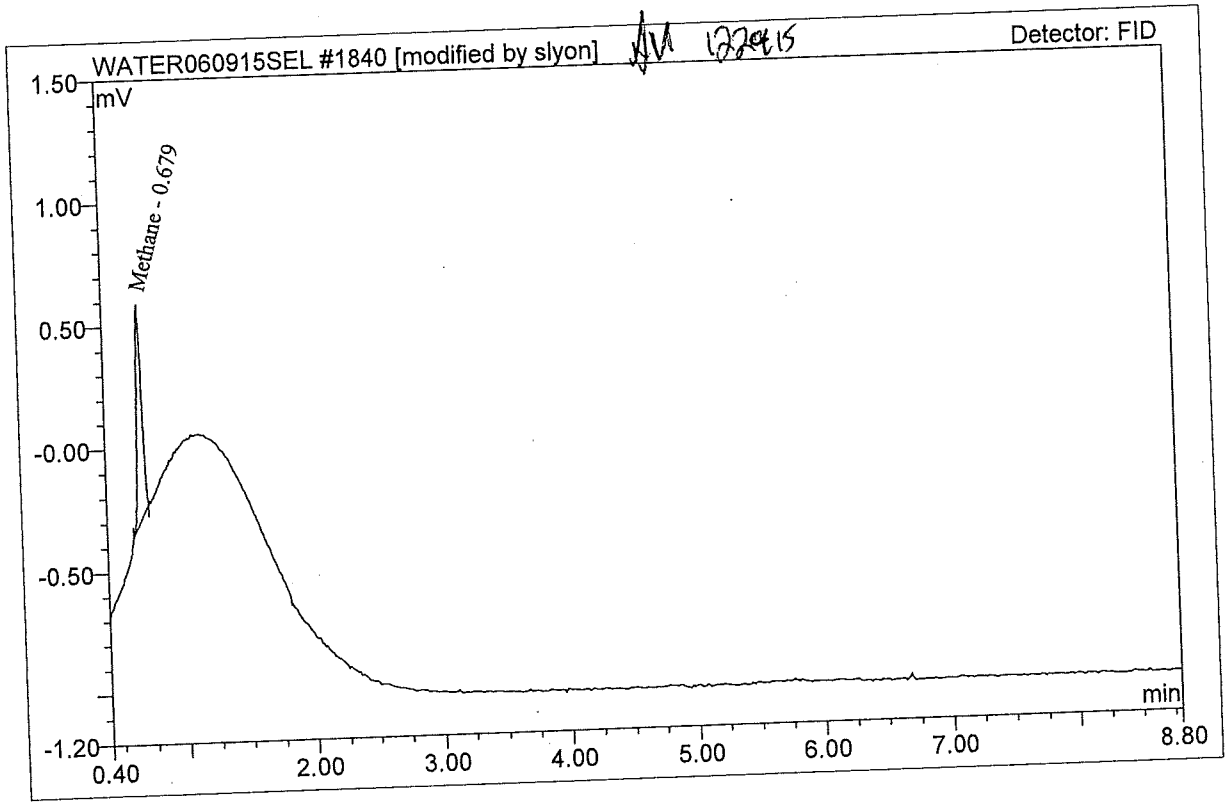


MICROSEEPS

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

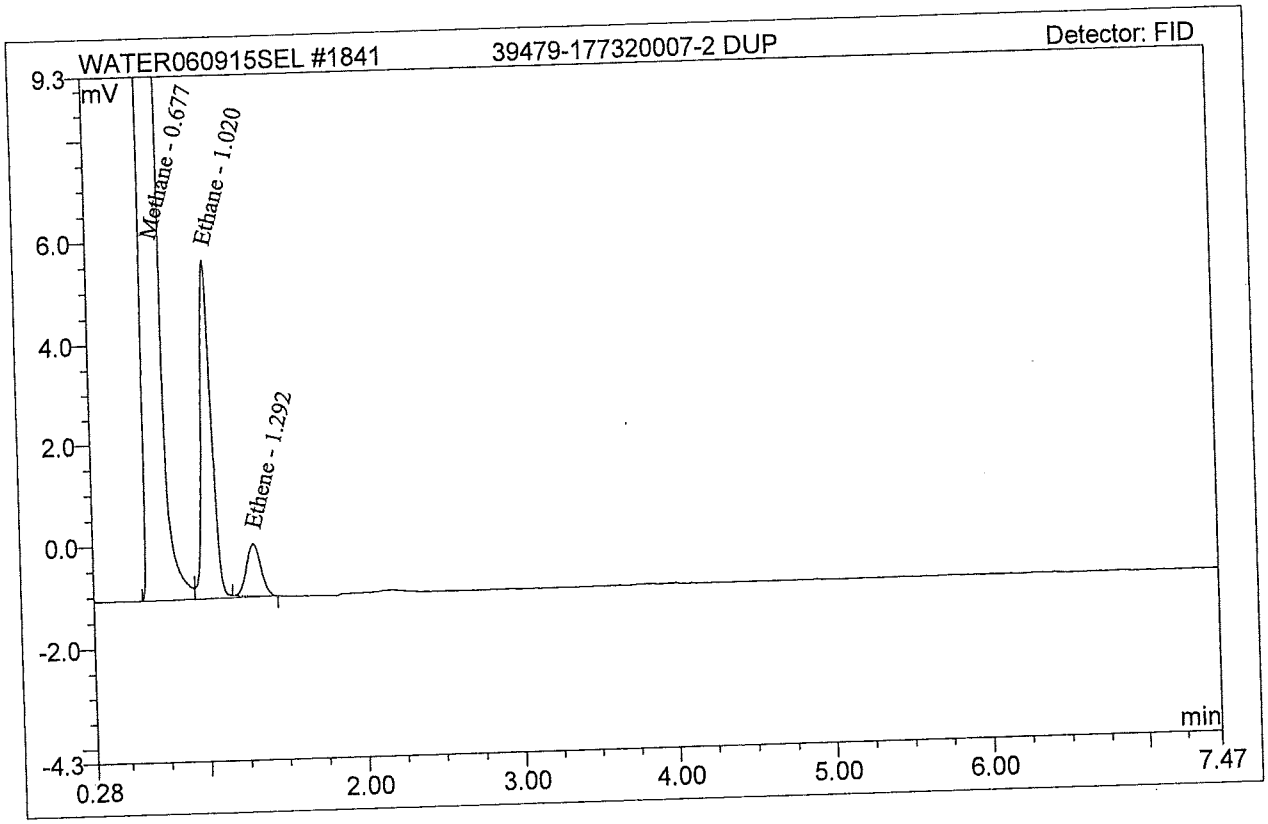


MICROSEEPS

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

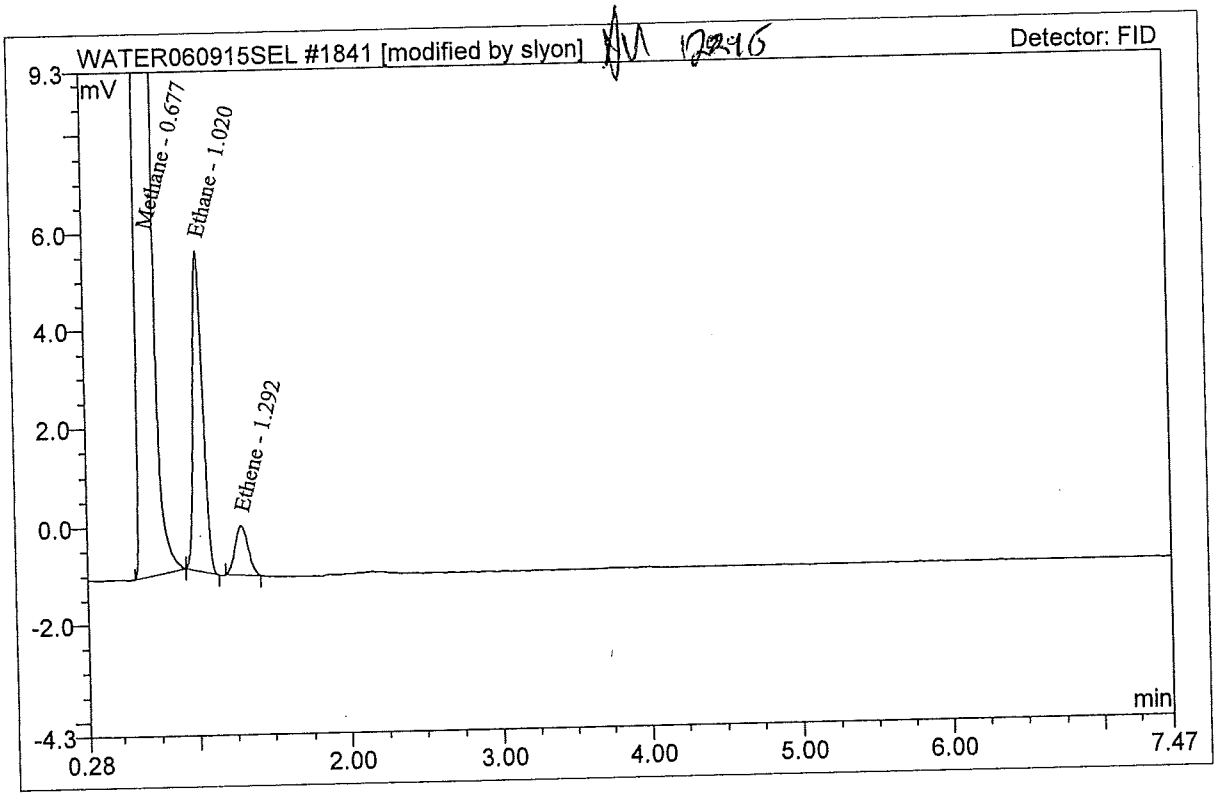


MICROSEEPS

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



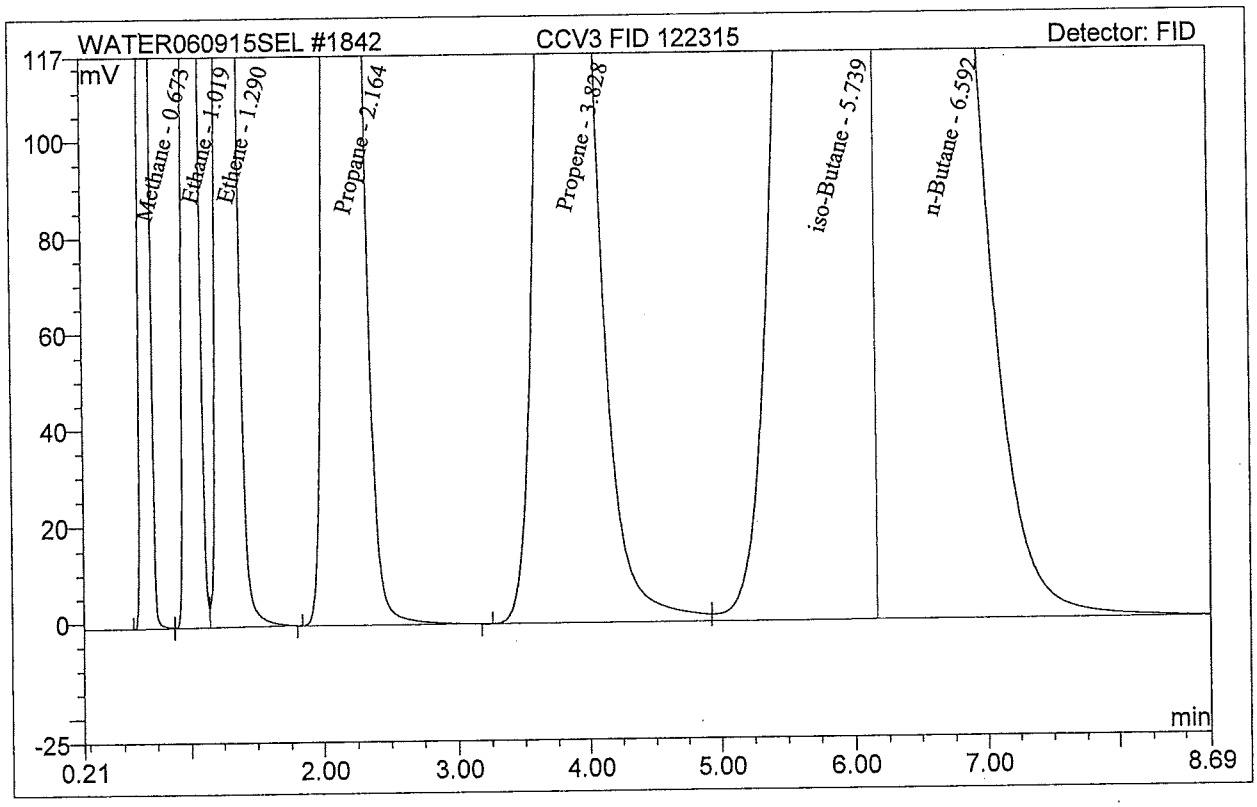
MICROSEEPS

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

TV
121.5
238.3
265.125

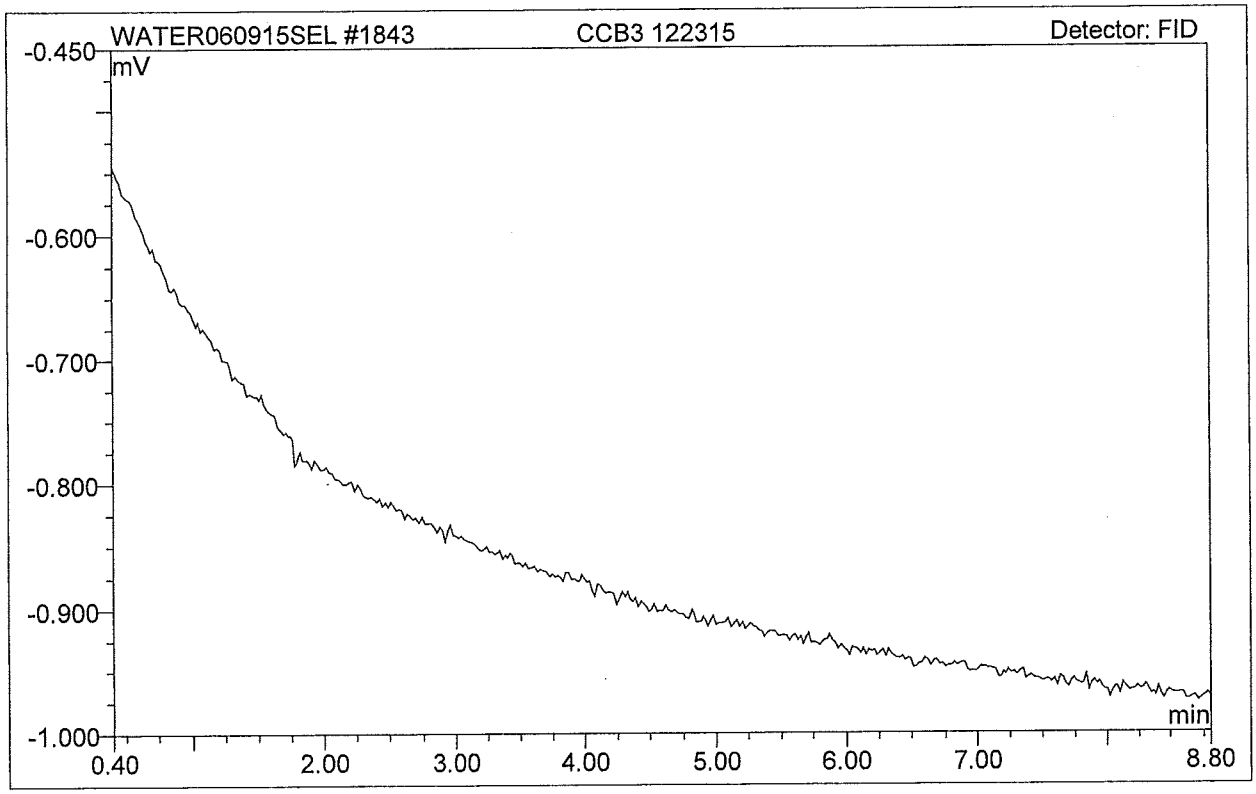


MICROSEEPS

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



PAES
Case Narrative

Batch number: 5110- DISS

Analysis Date: 12/15/15

Matrix: Water

Sample numbers:
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 Lead Analyst or Lab. Mgr. 01/04/16 Date

Analyzed & Reviewed: [signature] Date: 12/15/15

Manual Integration Conducted? (YES) NO

(Circle One)

Reviewed by: [signature] Date: 12/31/15

Reviewed & Entered by: Upload Date: 12/15

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

MS/MSD SAMPLE: 177320003 ORIG, 39584-177320004 MS, 39585-177320005 MSD

COMPOUND	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.

Analyst _____

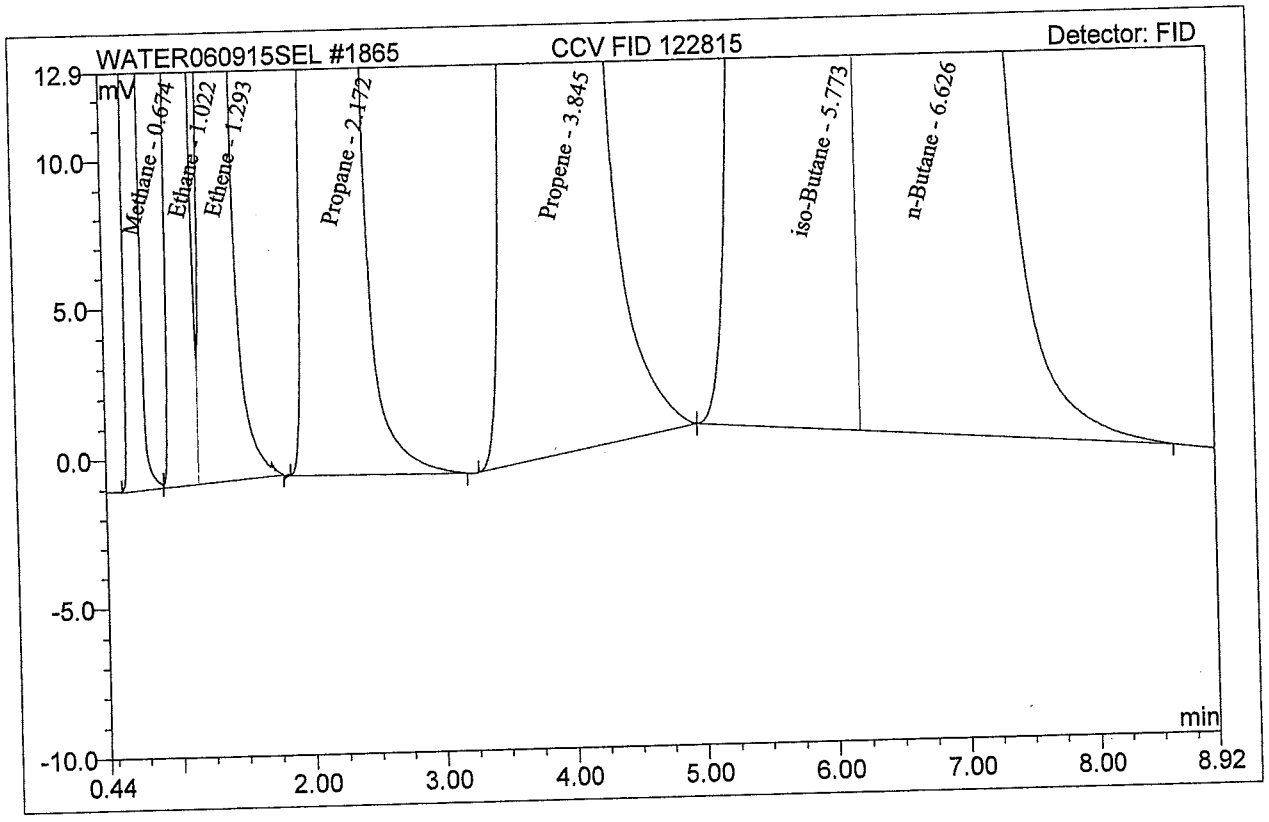
Reviewed 12/31/15

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



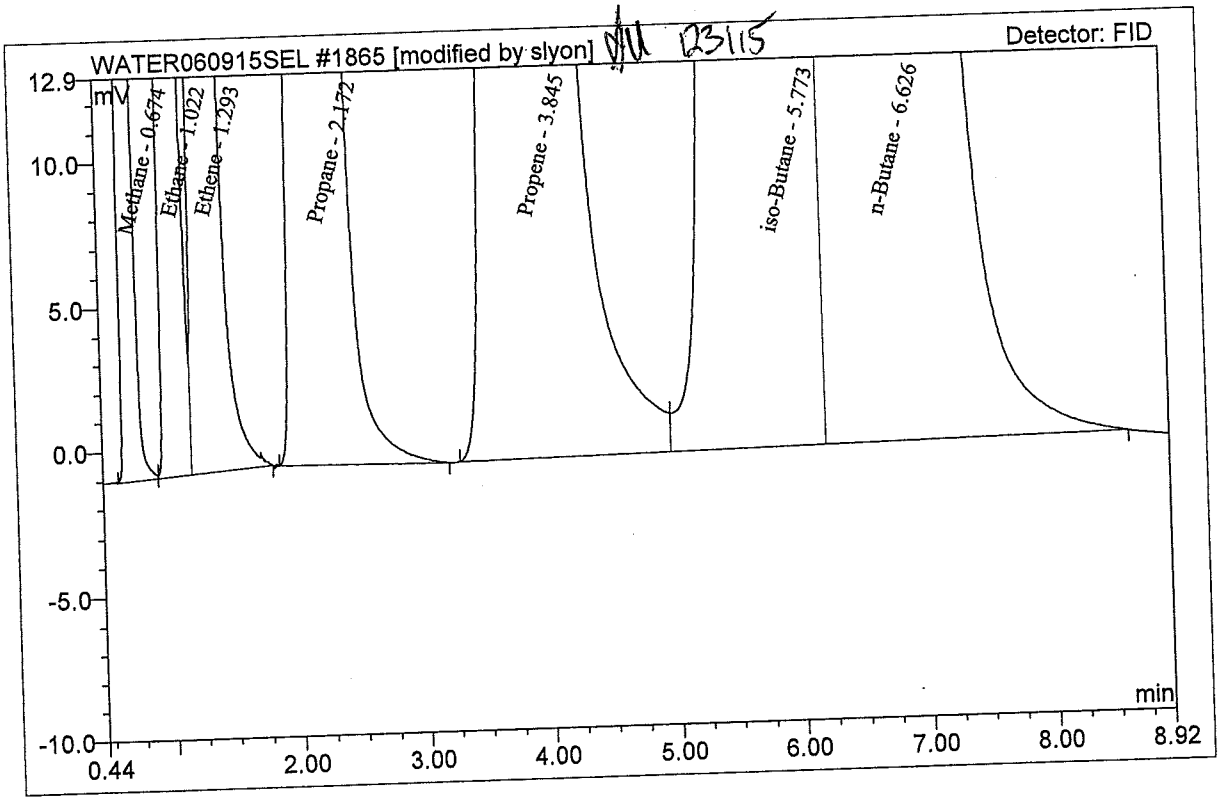
MICROSEEPS

Sample Analysis Report

Sample Name:	CCV FID 122815	**Sequence No:**	1865
Sequence Name:	WATER060915SEL	**Instrument ID:**	BIOREM13F
Program Method:	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	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

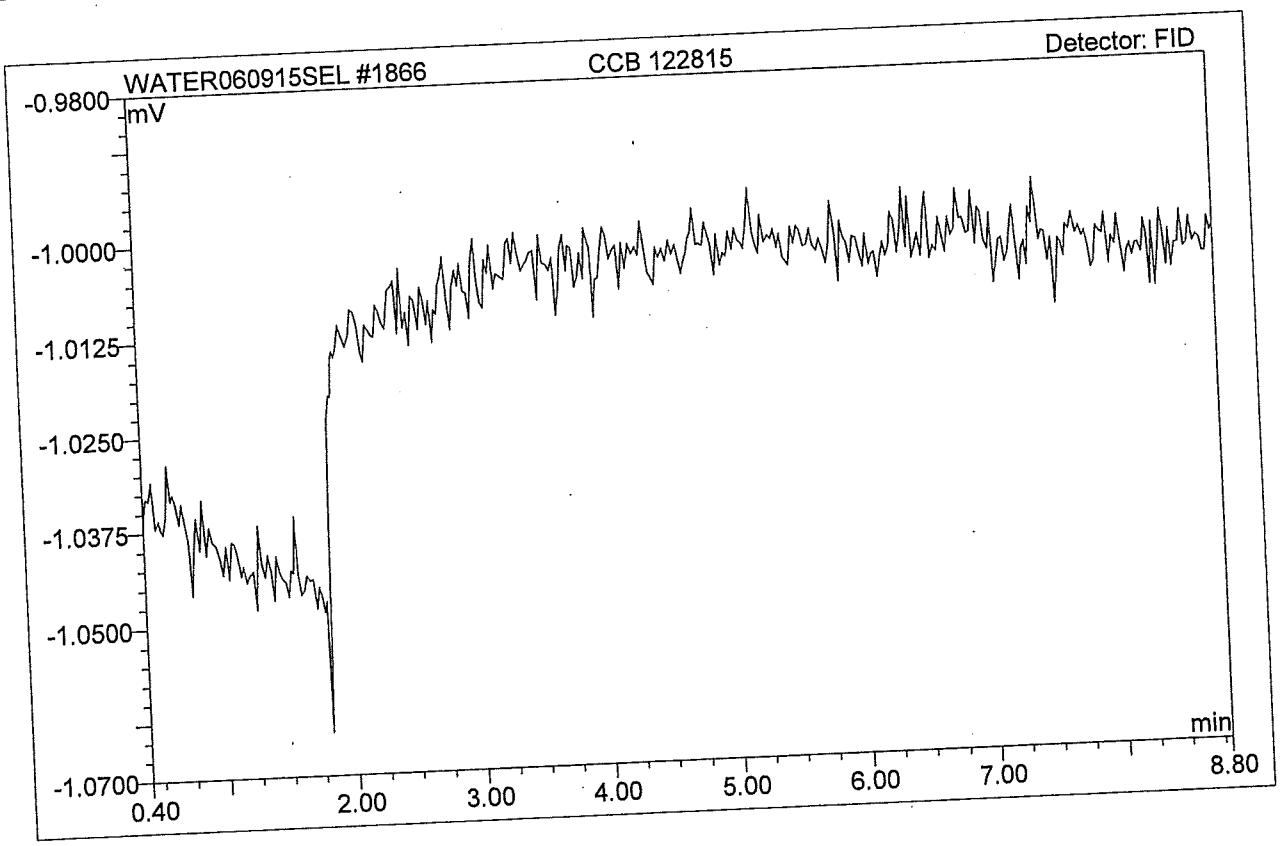


MICROSEEPS

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

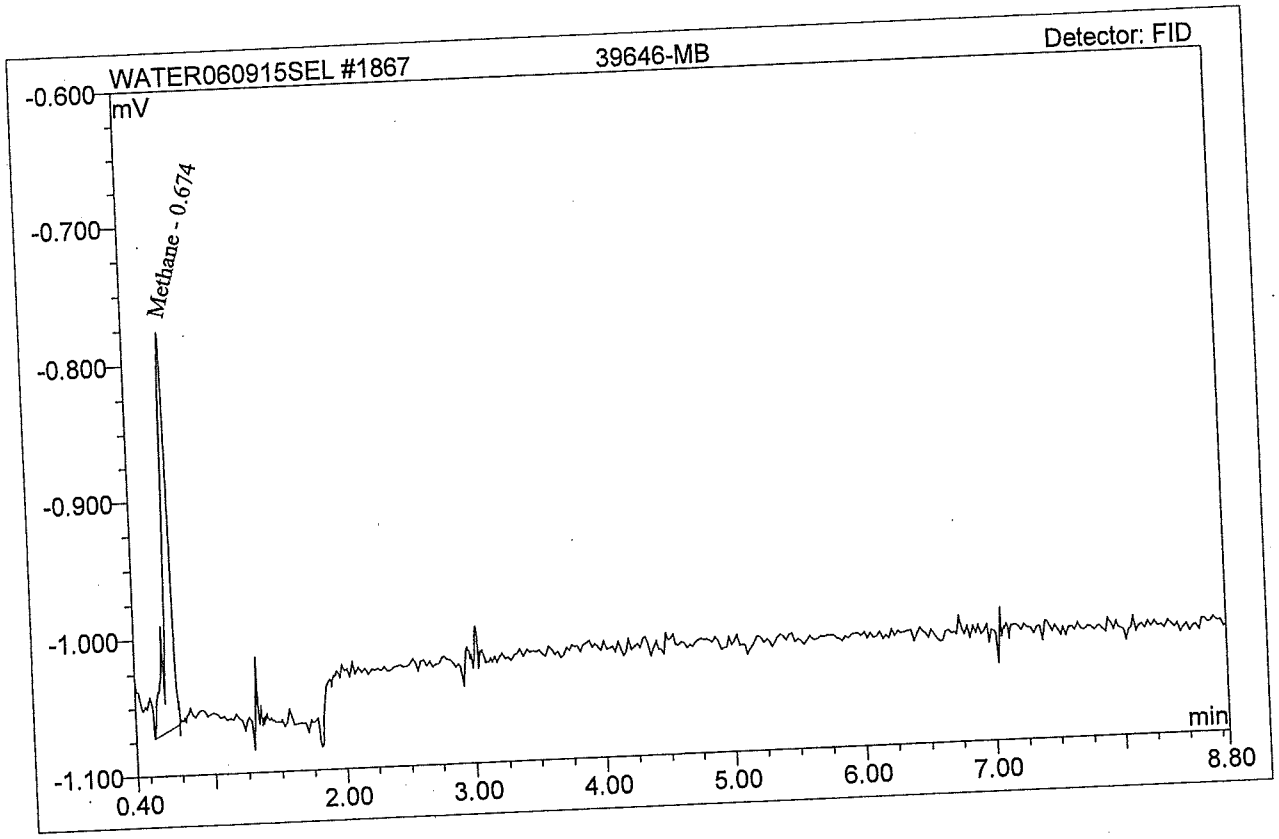


MICROSEEPS

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

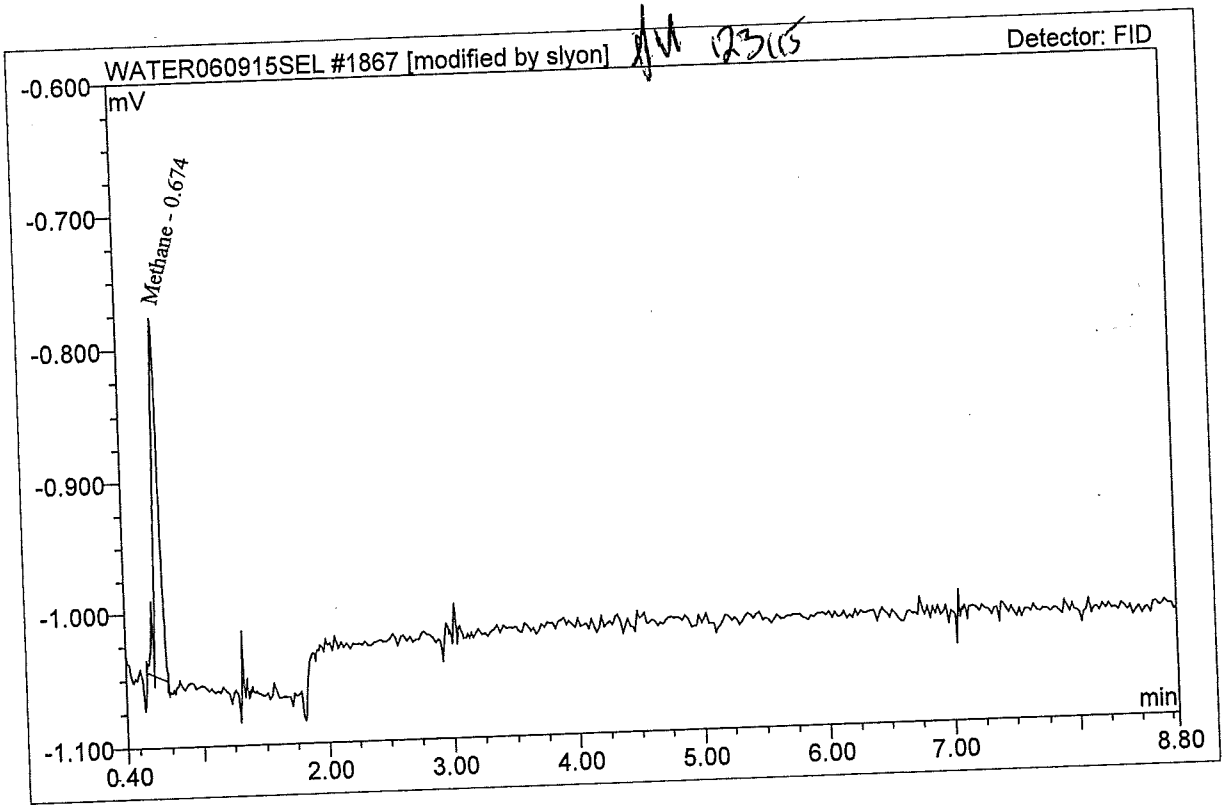


MICROSEEPS

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



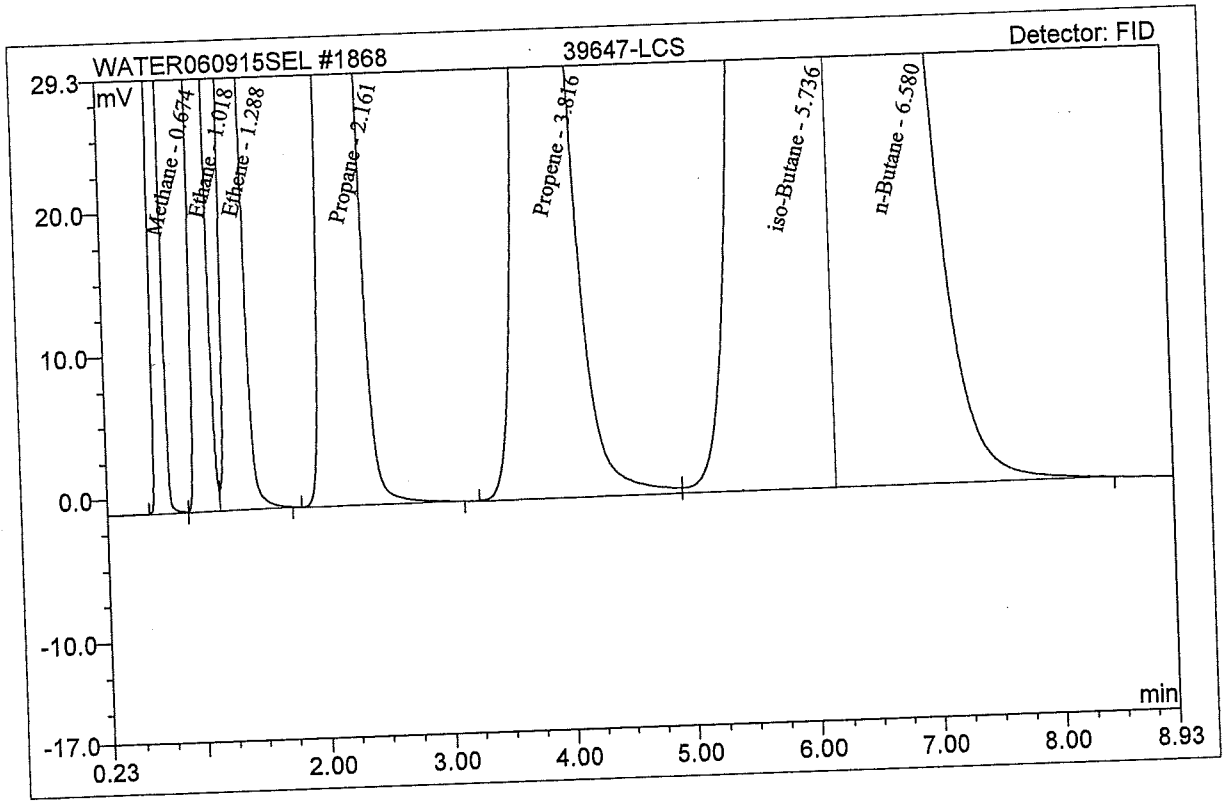
MICROSEEPS

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



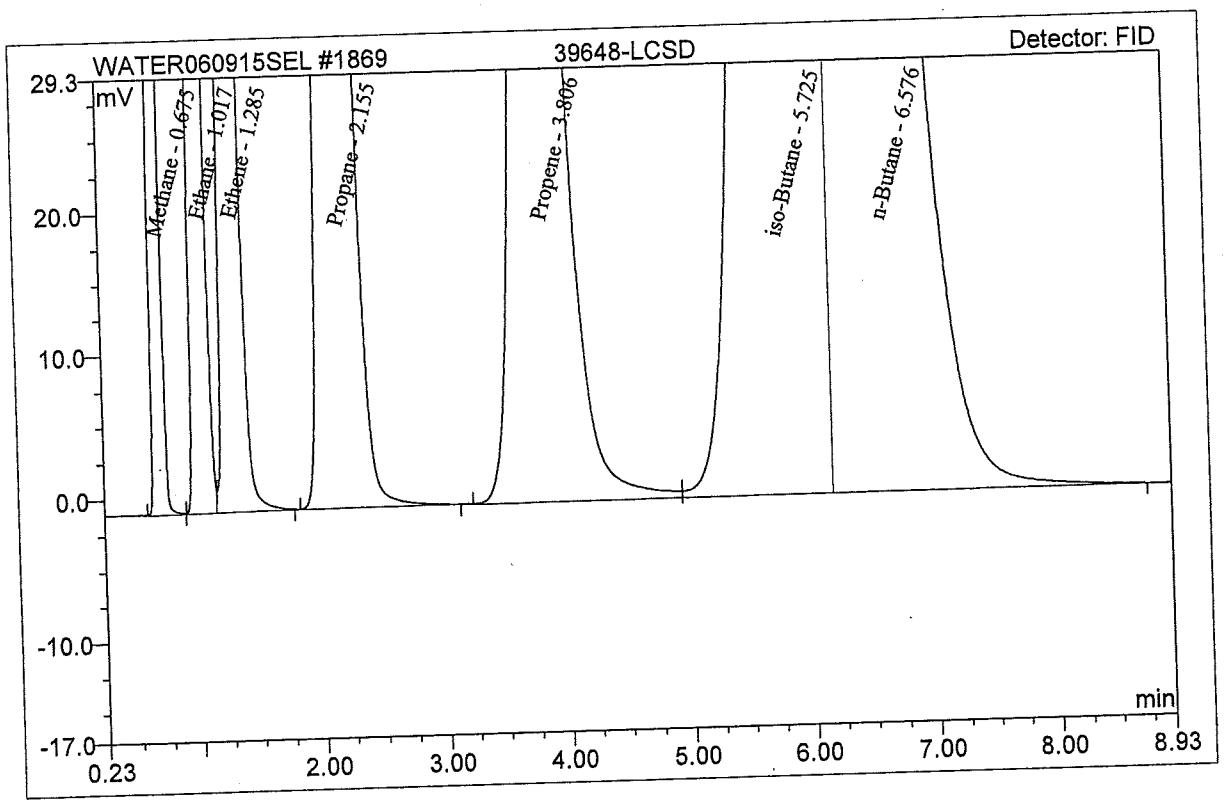
MICROSEEPS

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

TV
44.48

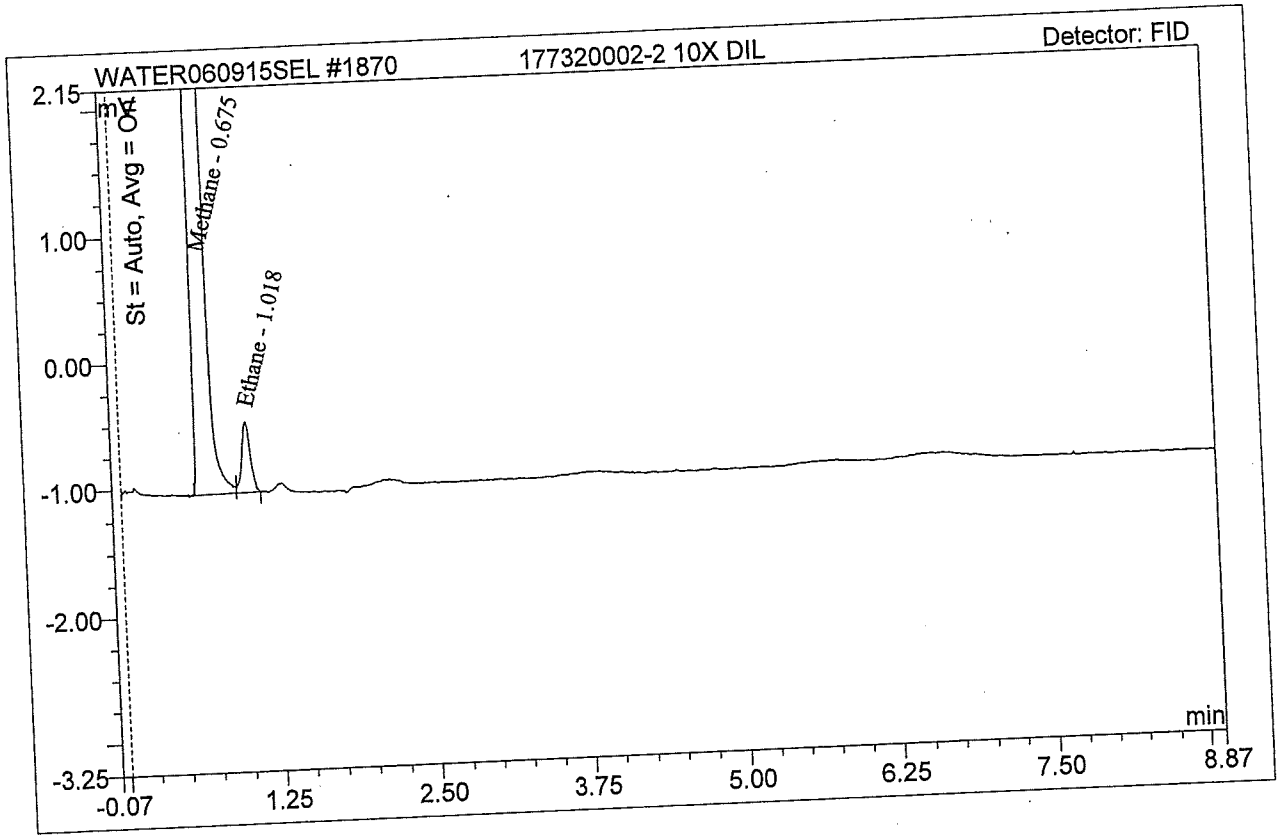


MICROSEEPS

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



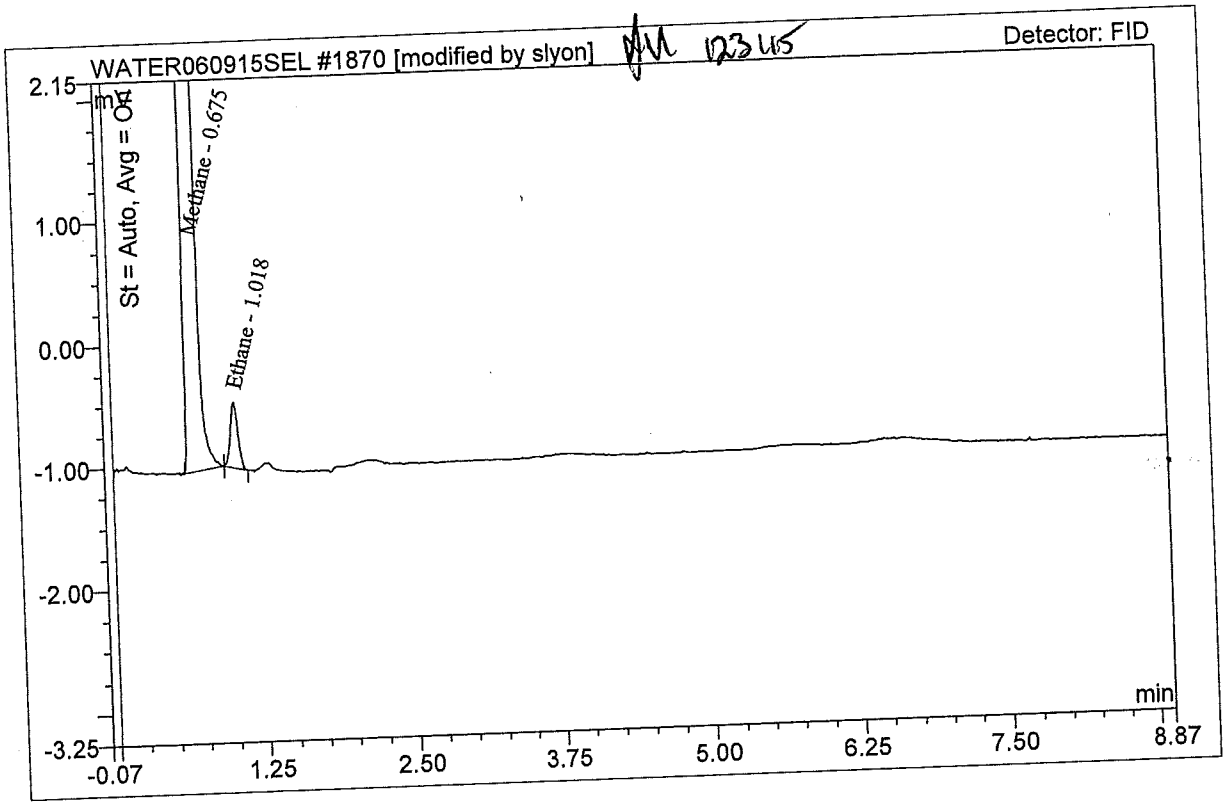
MICROSEEPS

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 10

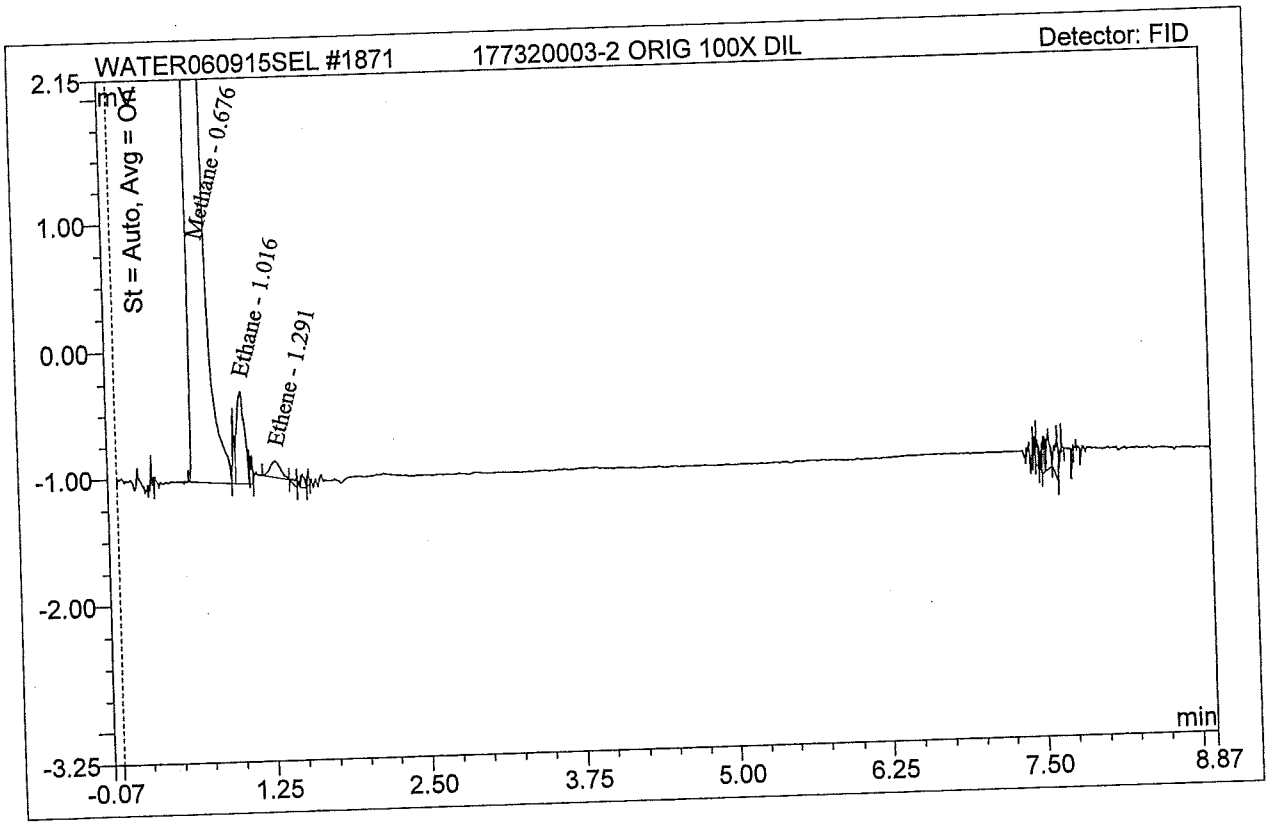


MICROSEEPS

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



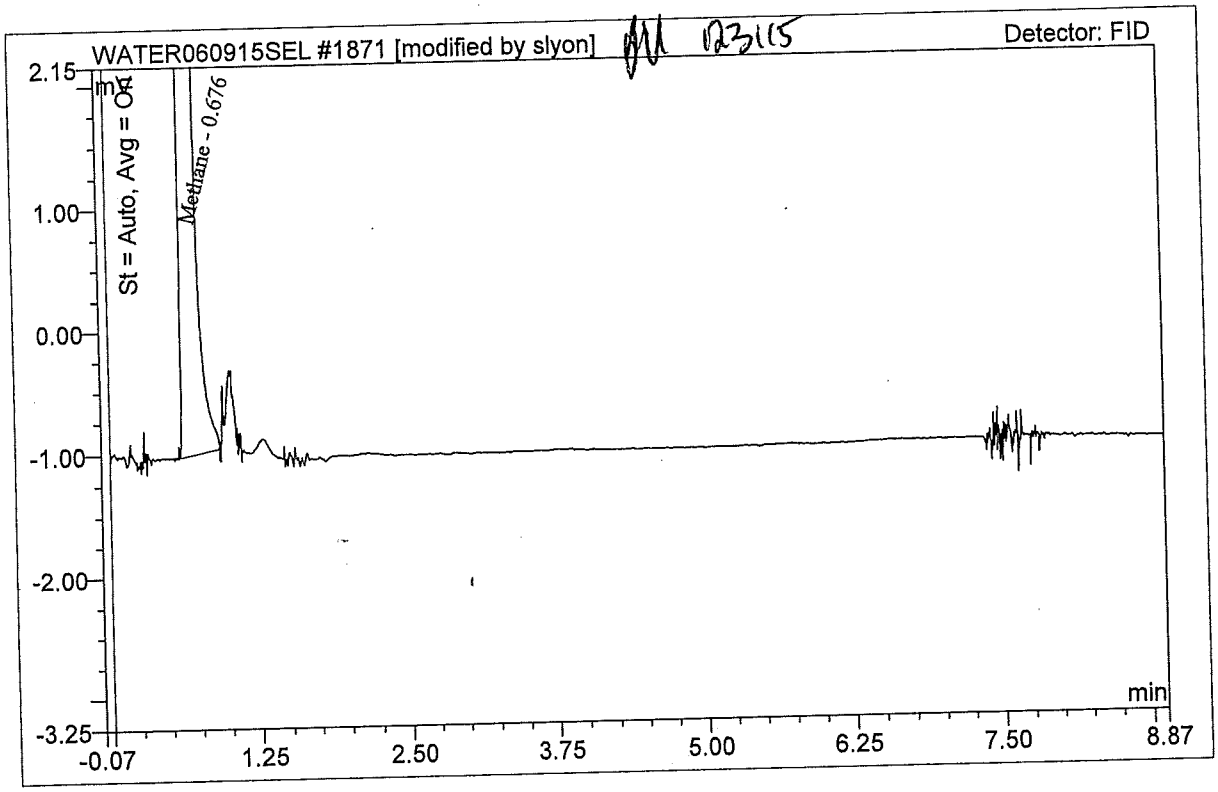
MICROSEEPS

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

x 100

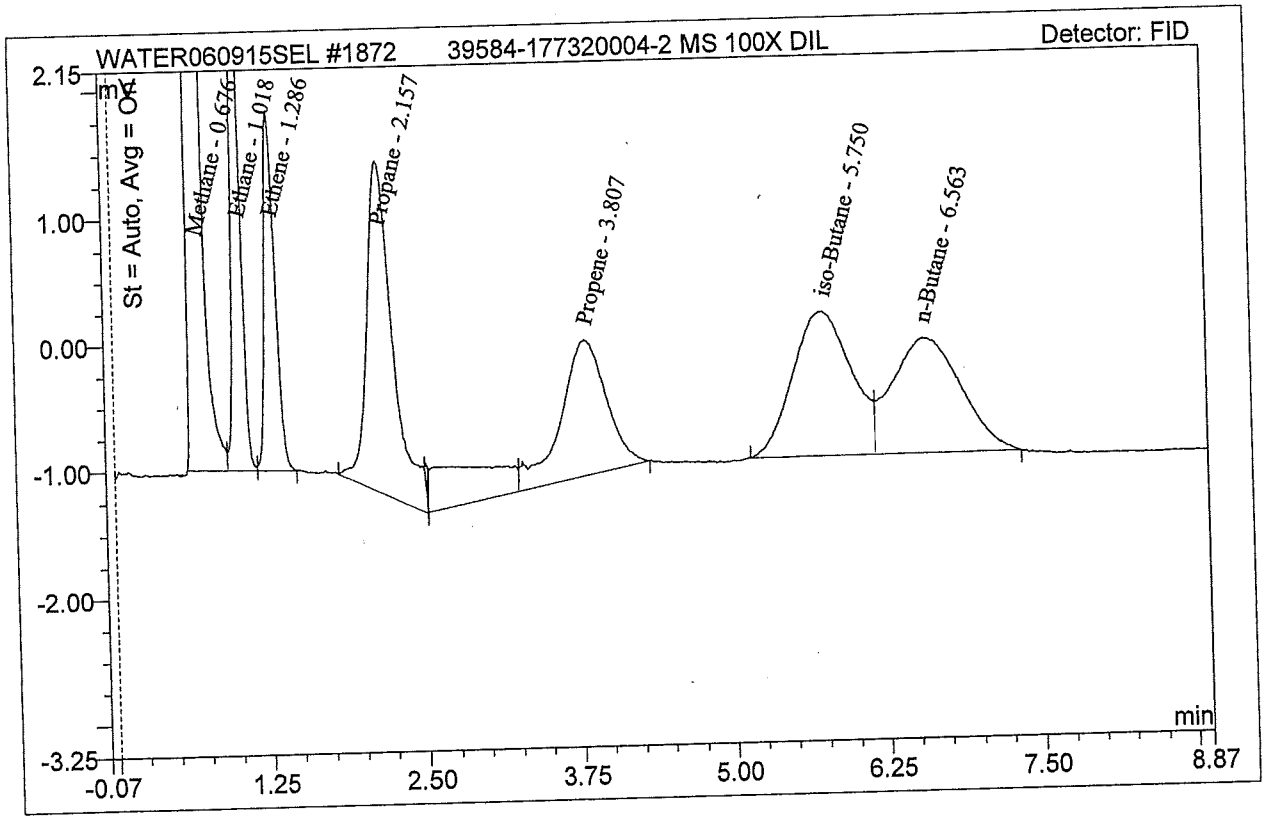


MICROSEEPS

Sample Analysis Report

Sample Name:	39584-177320004-2 MS 100X DIL	**uence 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

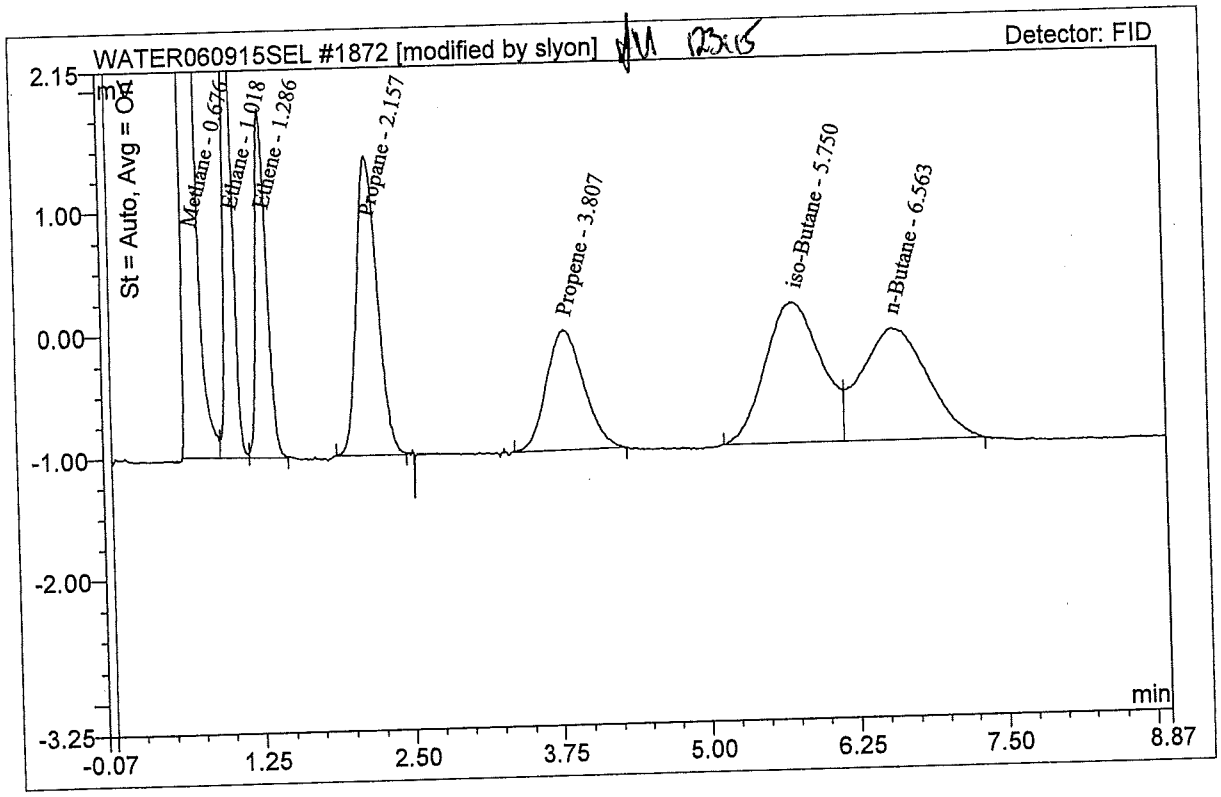


MICROSEEPS

Sample Analysis Report

Sample Name:	39584-177320004-2 MS 100X DIL	**uence 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 x 100
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



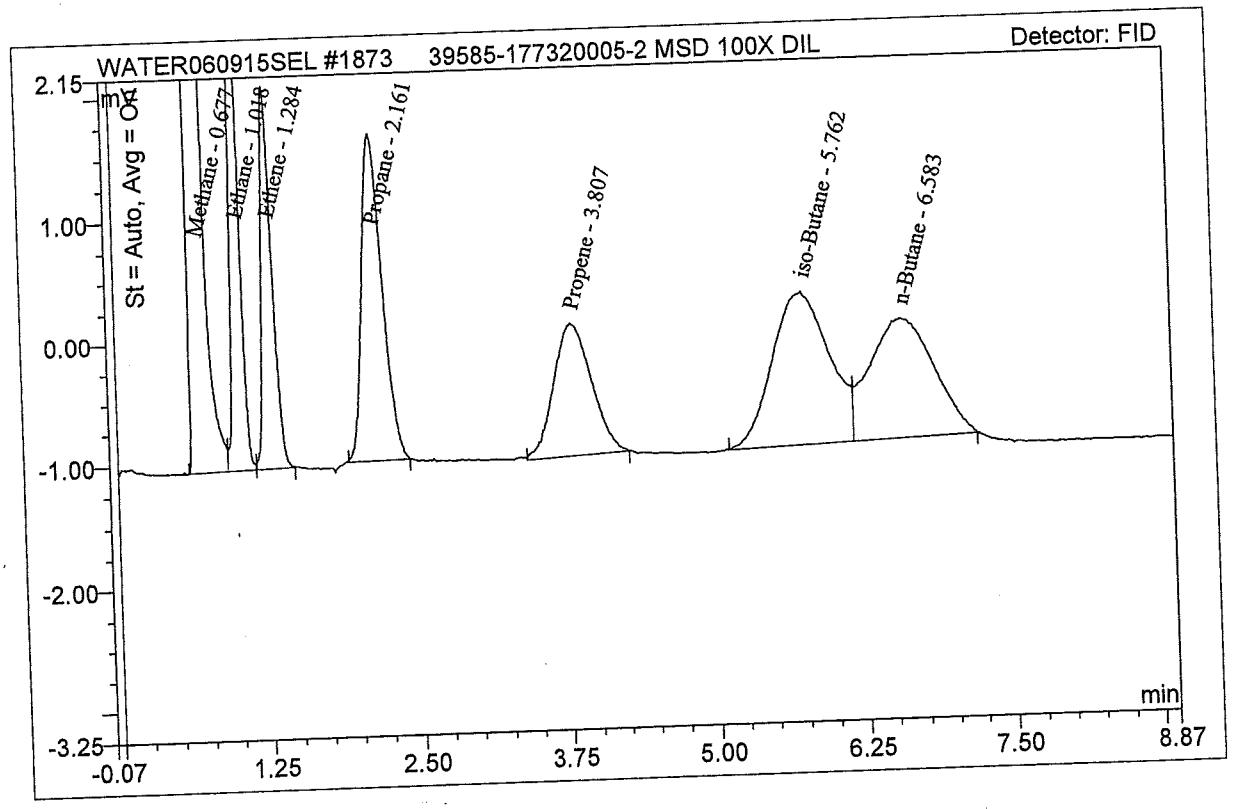
MICROSEEPS

Sample Analysis Report

Sample Name:	39585-177320005-2 MSD 100X DIL	**uence 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

x 100

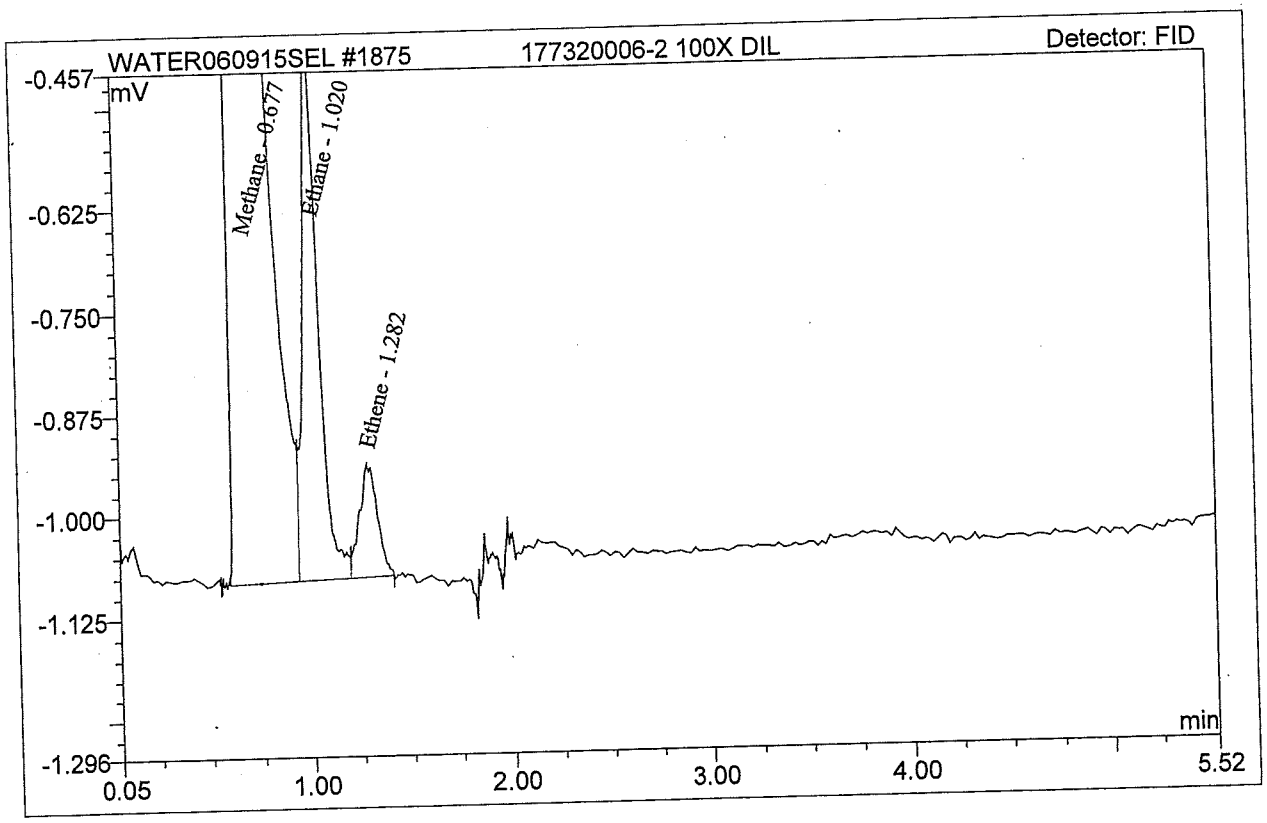


MICROSEEPS

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



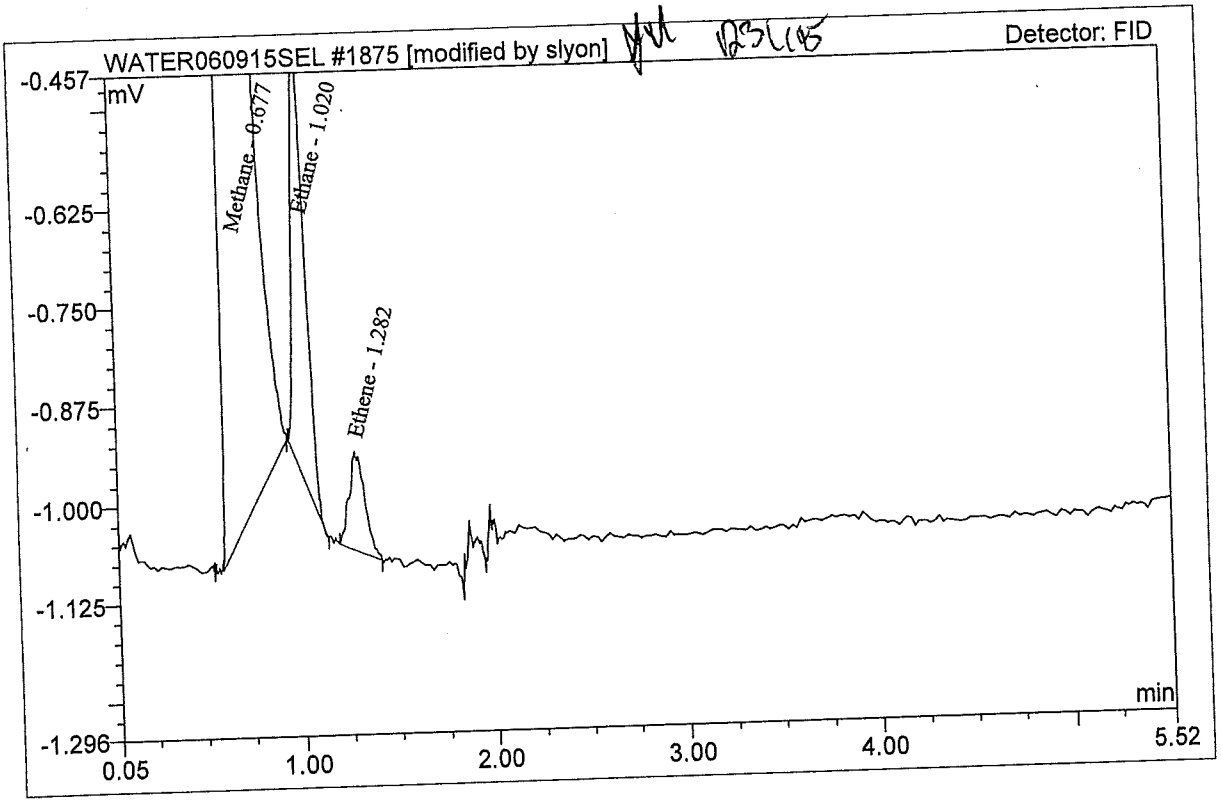
MICROSEEPS

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

x100

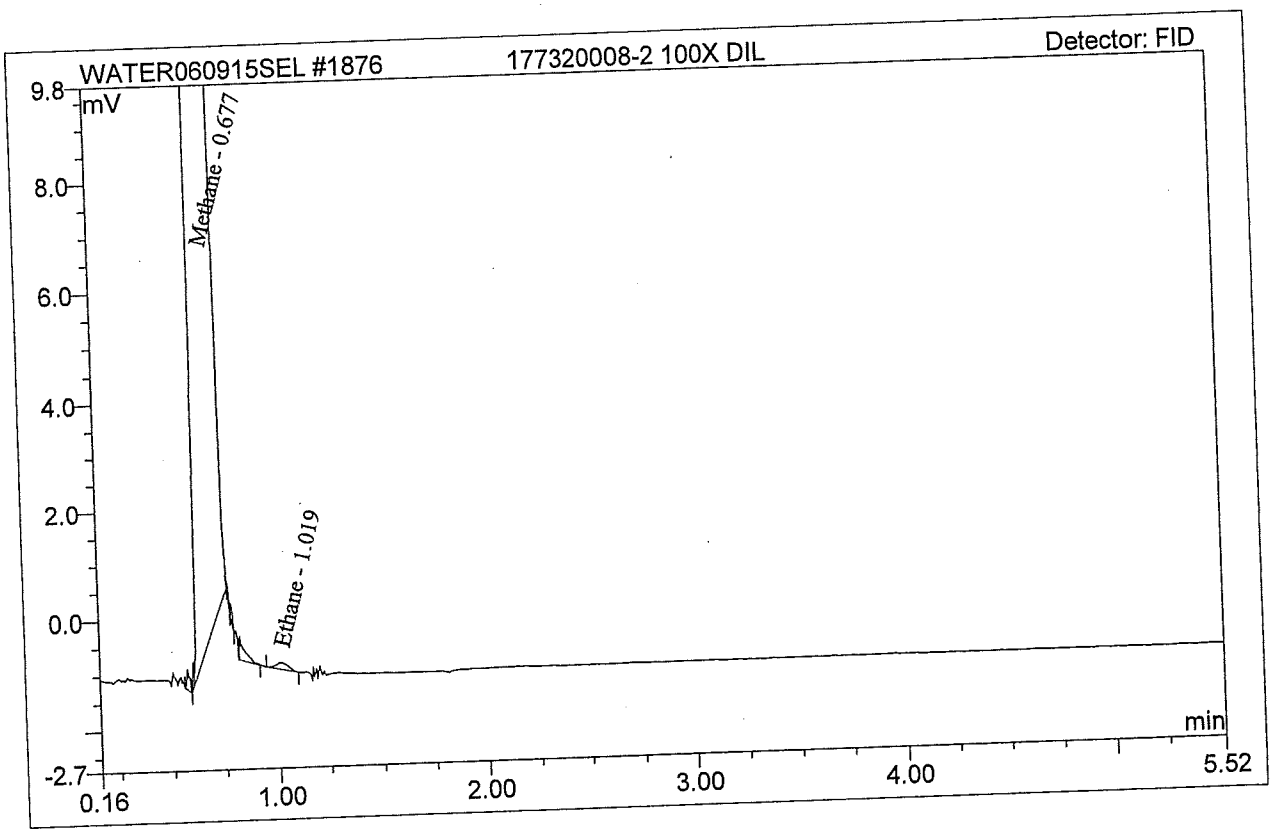


MICROSEEPS

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

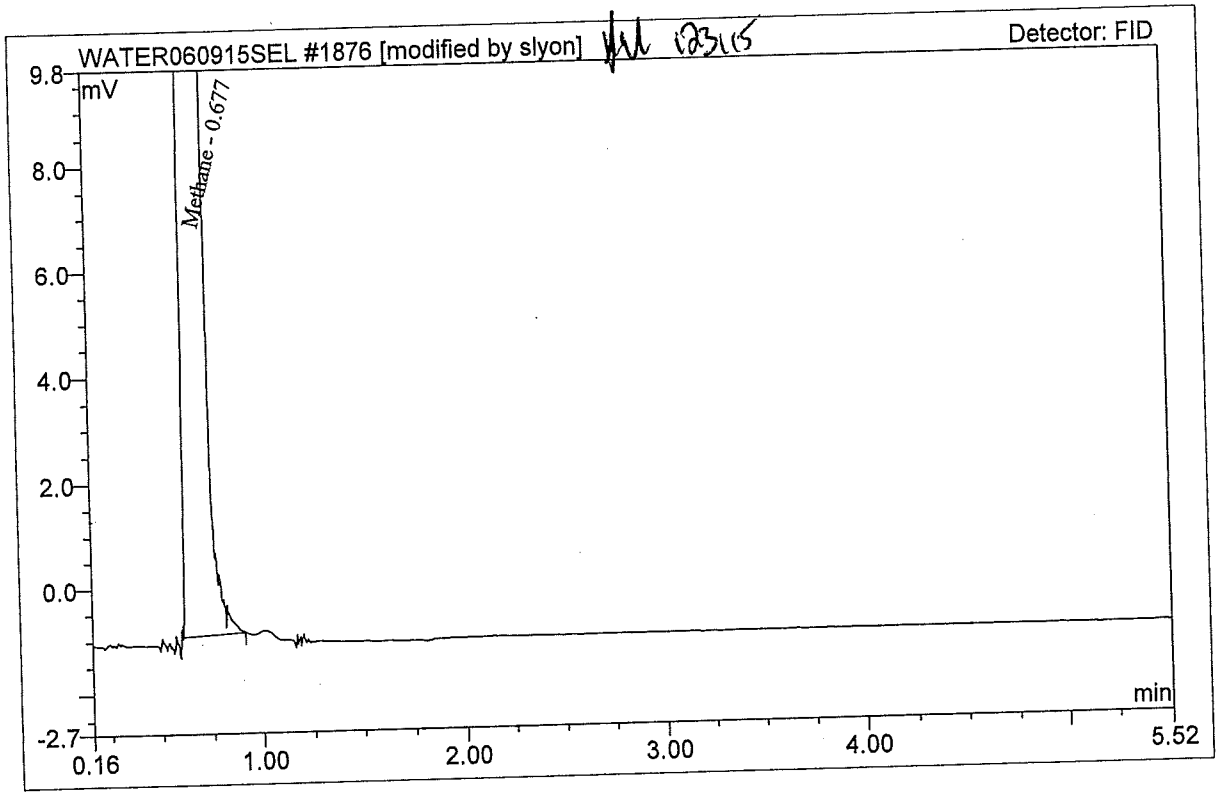


MICROSEEPS

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 X100

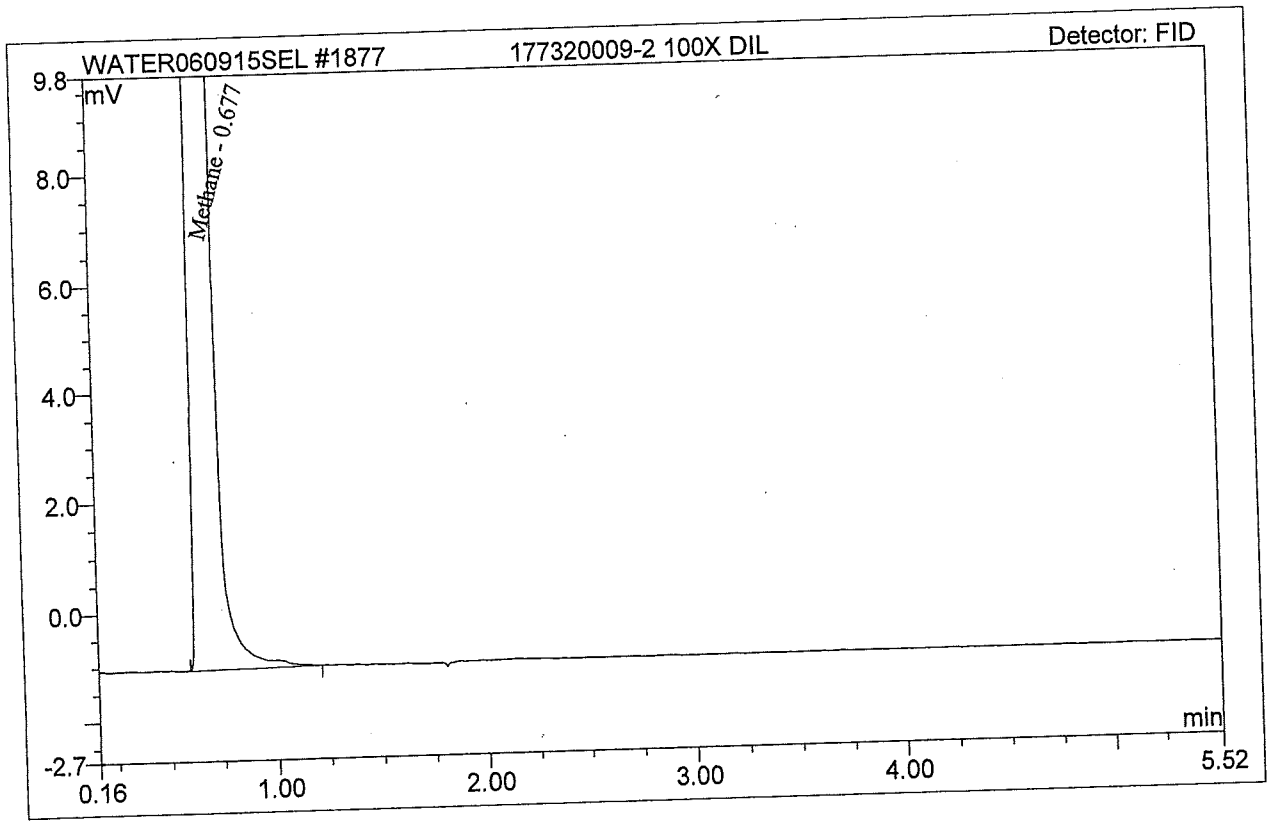


MICROSEEPS

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

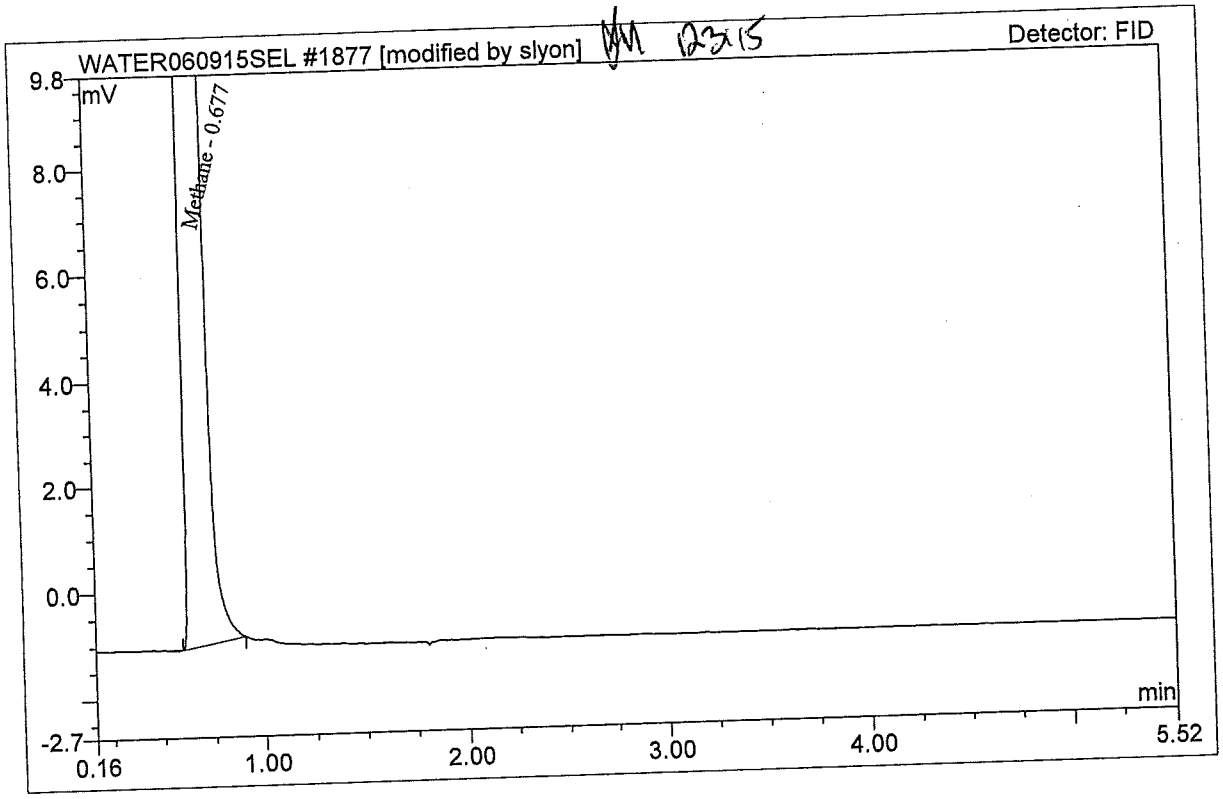


MICROSEEPS

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

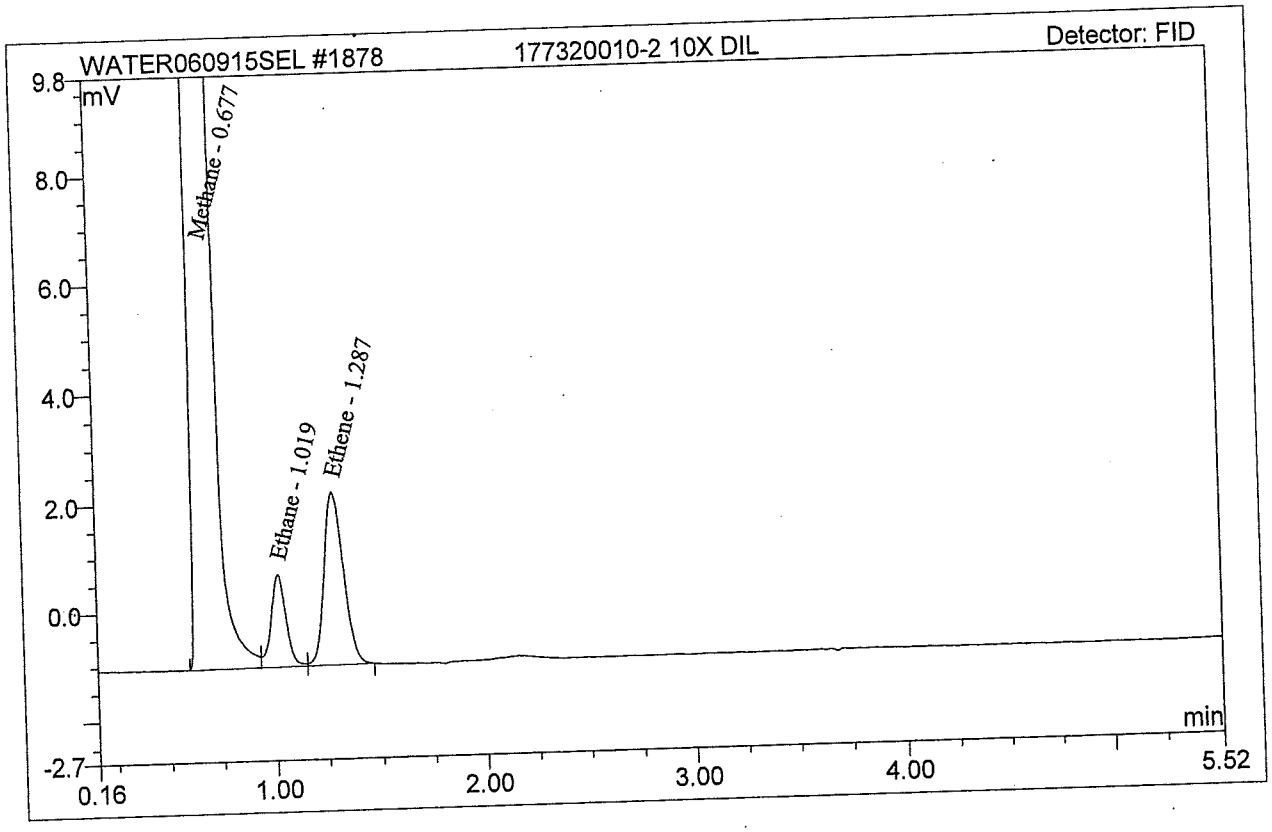


MICROSEEPS

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



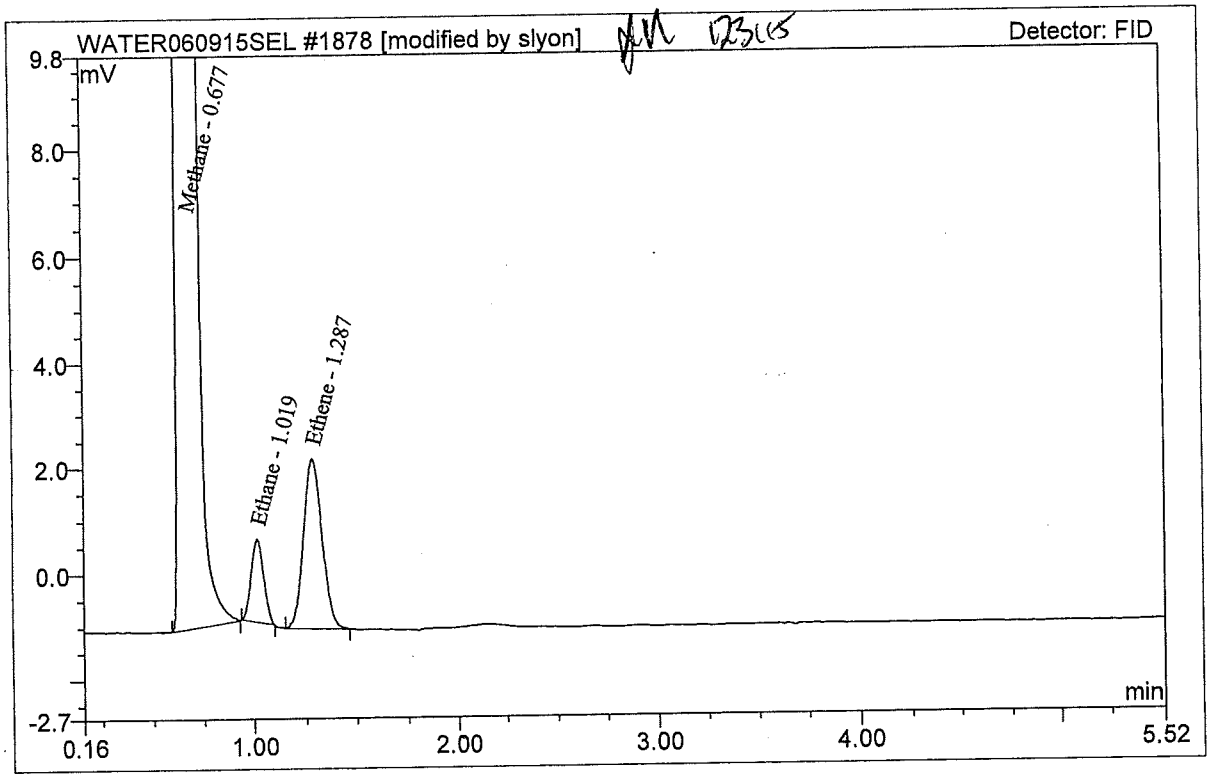
MICROSEEPS

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

X 10

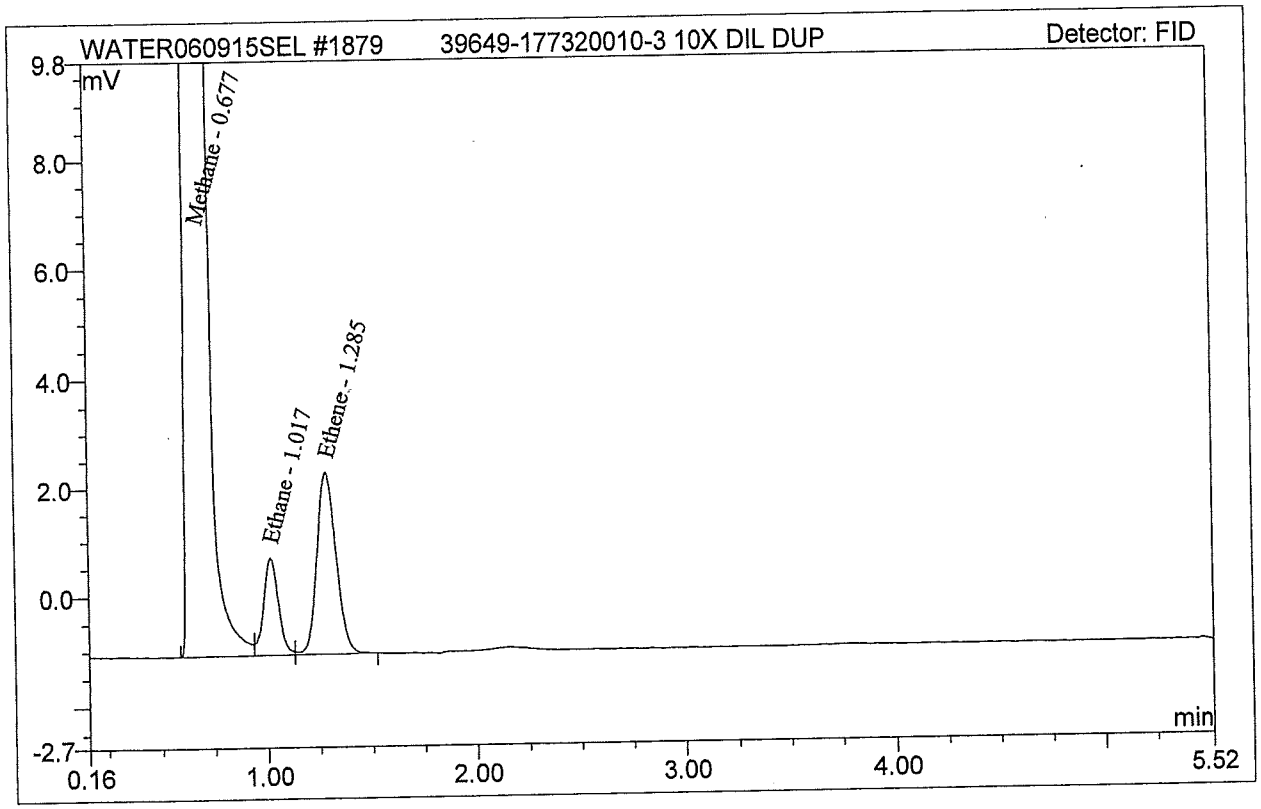


MICROSEEPS

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

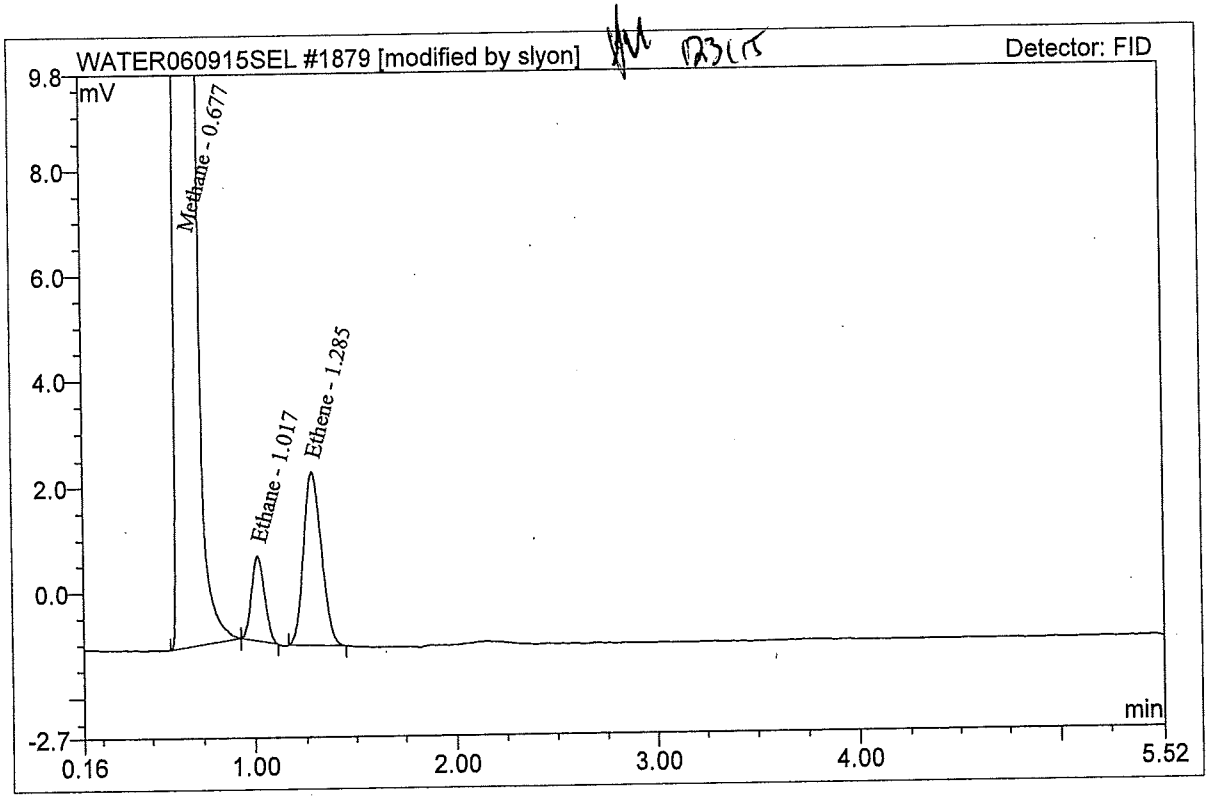


MICROSEEPS

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 X 10
2	Ethane	1.017	0.118	1.618	bMB*	0.2998
3	Ethene	1.285	0.338	3.295	BMB*	0.9506



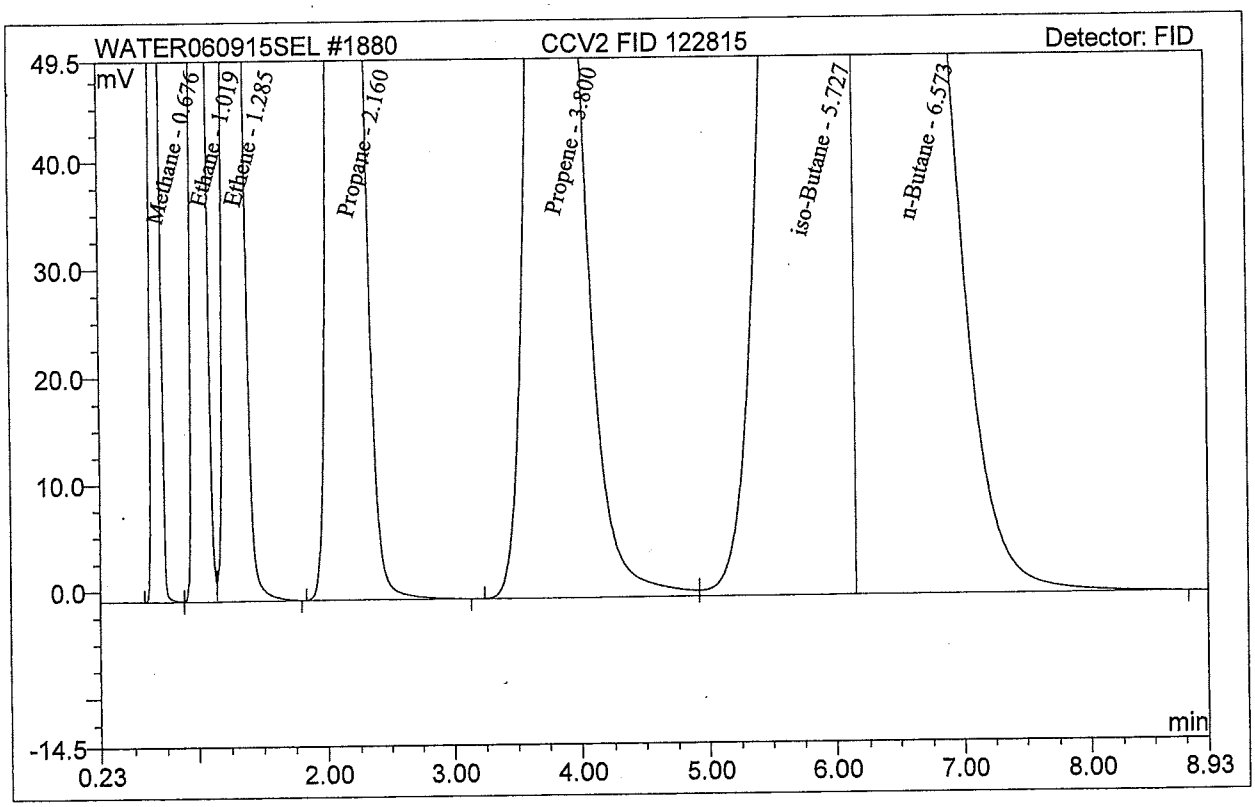
MICROSEEPS

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
45.6

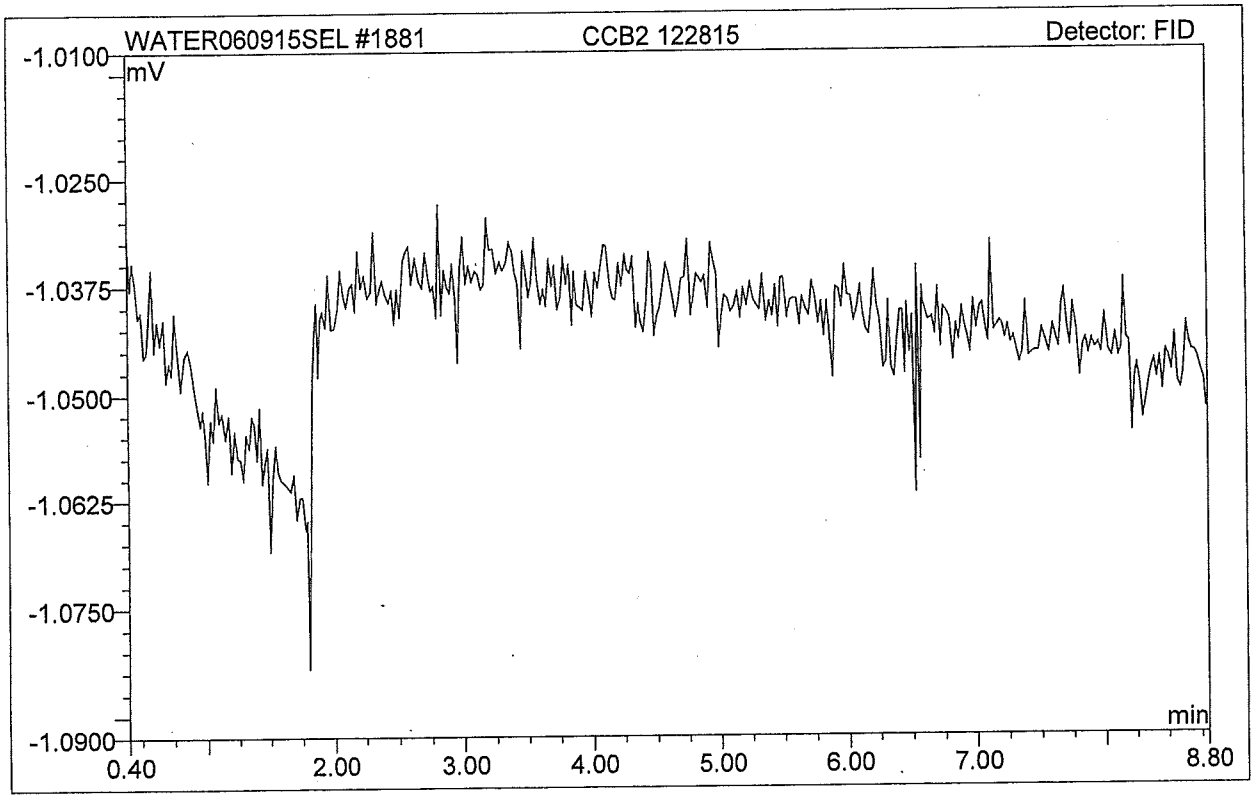


MICROSEEPS

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



APPENDIX E

DATA VALIDATION SHEETS

PROJECT NAME/NO. USACE - Seneca Army Depot Ash Landfill LTM Round 21
LAB: TestAmerica (TA)
SDG: 680-126520-1
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 < 10º. Samples holding time requirement < 14 days. Solids percentage >50%.	Cooler was received at 0.9-3.1°C on 6/16/16 and 6/18/16 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 ALBW20370 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 high LCS/LCSD recovery for chloromethane (135%R/133%R; QC limit 63-126%R) associated with sample ALBW20369; and the high LCSD recovery for chloromethane (129%R; QC limit 63-126%R) associated with samples ALBW20367 and ALBW00048. 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 ALBW00047 and ALBW00048 No TCL VOCs were detected in the rinse blank ALBW00125.	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 21
LAB: TestAmerica (TA)
SDG: 680-126520-1
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 ± 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≥10% present in sample MS. TIC and "best match" standard relative ion intensities agree within ± 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 ≤ 20%. Average RRFs > 0.050.	All initial calibration criteria were met.	No

PROJECT NAME/NO. USACE - Seneca Army Depot Ash Landfill LTM Round 21
LAB: TestAmerica (TA)
SDG: 680-126520-1
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 (6/26/16 07:54) associated with samples ALBW20359, 62, 63, 69, 73, ALBW00125, and ALBW00047 had %D outliers for bromoform (-21.4%D) and 1,2,4-trichlorobenzene (-24.6%D); the continuing calibration (6/27/16 18:30) associated with samples ALBW20360, 61, 64, 65, and 66 had %D outlier for bromoform (-23.9%D); the continuing calibration (6/28/16 16:09) associated with samples ALBW20367 and ALBW00048; and the continuing calibration (6/27/16 07:42) associated with sample ALBW20368 had %D outliers for tetrachlorethene (-23%D) and bromoform (-30.3%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 ALBW20370 and its duplicate ALBW20371. %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 21
SDG: 680-126520-1
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 0.9-3.1°C on 6/16/16 and 6/18/16 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 (ALBW00125) 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 (ALBW20370 and ALBW20371) 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 ALBW20370 for sulfate and the %Rs were within the project limits (75-125%).	NO

PROJECT NAME/NO. USACE - Seneca Army Depot Ash Landfill LTM Round 21
SDG: 680-126520-1
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 0.9-3.1°C on 6/16/16 and 6/18/16. 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 blanks did not contain TOC. The rinse blank (ALBW00125) contained TOC at a concentration of 0.75 J mg/L. Validation qualification was not required.	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 ALBW20370. Recoveries were with the laboratory limits and the project limit of 90%-110%.	No
Duplicates	Yes		A field duplicate pair (ALBW20370 and ALBW20371) 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 21
LABORATORY: Microseeps/Pace Laboratory
SDG: 19379
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 2ºC~6ºC? Record sample preservation and problems noted for sample conditions (e.g., bubbles?)	**No**	All samples received within one to two days of sample collection at 1.4ºC. pH=8 for samples ALBW20369, 70, 71, 72, 73 and ALBW00125. No action taken.	**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**	ALBW20370 was designated for MS/MSD analyses. MS/MSD accuracy outliers for methane (2500%R/871%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**	The laboratory method blank associated with project samples contained methane at a concentration of 0.024 J ug/L. Associated methane result for sample ALBW00125 qualified "U". Sample ALBW00125 is the rinse blank which contained methane at a concentration of 0.09 J ug/L. Validation qualification of the project samples was not required.	**Yes**	Methane result for sample ALBW00125 qualified "U".

PROJECT NAME/NO. USACE - Seneca Army Depot Ash Landfill Round 21
LABORATORY: Microseeps/Pace Laboratory
SDG: 19379
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. 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?	**Yes**	Sample ALBW20371 was collected as the field duplicate of ALBW20370. 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.

PROJECT NAME/NO. USACE - Seneca Army Depot Ash Landfill LTM Round 22
LAB: TestAmerica (TA)
SDG: 680-133072-1
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 < 10º. Samples holding time requirement < 14 days. Solids percentage >50%.	Cooler was received at 0.7-2.2°C on 12/9/16 and 12/13/16 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 ALBW20386 was used for the MS/MSD for this SDG. All MS/MSD recoveries were within laboratory limits with the exception of the low MS accuracy result for 1,2,4-trichlorobenzene (63%R; QC limit 71-126%R). Validation qualification was not required. LCS/LCSD recoveries were within laboratory limits and the project limits (70-130%) except for the high LCSD recovery for dichlorodifluoromethane (140%R; QC limit 70-137%R) associated with samples ALBW20376, 77, 78, 80, 81, 82, 83, and ALBW00050. Validation qualification of these samples was not required.	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 TCL VOCs were detected in the trip blanks ALBW00049 and ALBW00050 The rinse blank ALBW00126 contained acetone at a concentration of 7.3 J ug/L associated with the project samples. Therefore, associated acetone results less than the validation action concentration were 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 22
LAB:	TestAmerica (TA)
SDG:	680-133072-1
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 ± 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≥10% present in sample MS. TIC and "best match" standard relative ion intensities agree within ± 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 ≤ 20%. Average RRFs > 0.050.	All initial calibration criteria were met.	No

PROJECT NAME/NO. USACE - Seneca Army Depot Ash Landfill LTM Round 22
LAB: TestAmerica (TA)
SDG: 680-133072-1
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 calibrations (12/18/16 11:25 and 12/21/16 17:58) associated with samples ALBW20376, 77, 78, 80, 81, 82, 83, 86, and ALBW00050 had %D outliers for 1,2,4-trichlorobenzene (-36%D, -33%D). Results for this compound which were nondetects in the associated samples were considered estimated and qualified "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 ALBW20386 and its duplicate ALBW20387. %RPDs 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 22
SDG: 680-133072-1
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 0.7-2.2°C on 12/9/16 and 12/13/16 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 (ALBW00126) did not contain sulfate.	NO
Laboratory Control Sample	NO	ALBW20379, 84, 86, 87, 88, and ALBW00126	High LCSD recovery for sulfate (114%R; QC limit 90-110%R) associated with sample ALBW20379, 84, 86, 87, 88, and ALBW00126. Therefore, positive sulfate results for these samples were considered estimated, possibly biased high, and qualified "J+" for the affected samples.	YES
Duplicates	YES		A field duplicate pair (ALBW20386 and ALBW20387) 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 ALBW20384 and 86 for sulfate and the %Rs were within the project limits (75-125%).	NO

PROJECT NAME/NO. USACE - Seneca Army Depot Ash Landfill LTM Round 22
SDG: 680-133072-1
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 0.7-2.2°C on 12/9/16 and 12/13/16. 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	Yes		The laboratory blanks did not contain TOC. The rinse blank (ALBW00126) 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 ALBW20386. Recoveries were with the laboratory limits and the project limit of 90%-110%.	No
Duplicates	Yes		A field duplicate pair (ALBW20386 and ALBW20387) 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 21
LABORATORY: Microseeps/Pace Laboratory
SDG: 21226
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 2ºC~6ºC? Record sample preservation and problems noted for sample conditions (e.g., bubbles?)	**No**	All samples received within one to two days of sample collection at 4ºC. pH<10 for samples ALBW20386, 87, and 88. No action taken.	**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**	ALBW20386 was designated for MS/MSD analyses. MS/MSD accuracy outliers for methane. 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**	The laboratory method blank associated with project samples contained methane at a concentration of 0.022 J ug/L. Sample ALBW00126 is the rinse blank which contained methane at a concentration of 0.27 J ug/L. Validation qualification of the project samples was not required.	**No**	

PROJECT NAME/NO. USACE - Seneca Army Depot Ash Landfill Round 21
LABORATORY: Microseeps/Pace Laboratory
SDG: 21226
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. 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?	**Yes**	Sample ALBW20387 was collected as the field duplicate of ALBW20386. 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 10 REVIEW FOR THE ASH LANDFILL OPERABLE UNIT AT SENECA ARMY DEPOT ACTIVITY (YEAR 10 ANNUAL REPORT)

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

Comments Dated: 29 November 2017

Date of Comment Response: 22 January 2018

Response to Comments

GENERAL COMMENTS

Comment 1: The Year 10 Annual Report does not clearly discuss if the third performance monitoring objective, "Confirm that groundwater concentrations throughout the plume are decreasing to eventually meet GA standards," is met by the monitoring results to date. Currently, several downgradient monitoring wells do not show decreasing trends in contaminant concentrations (e.g., trichloroethene [TCE] in PT-22 is increasing as shown in Figure 10G [Concentrations of Chlorinated Organics Over Time at PT-22] and Appendix C, Figure C-7 [Regression Plot of Well Concentrations At PT-22]). In addition, Section 3.3.3, Achievement of Third Performance Monitoring Objective, states that PT-22, MWT-22, PT-17, and MWT-7 will require further monitoring to establish the contaminant of concern (COC) trends, but does not discuss the current observed trends as shown in Appendix C (e.g., the increasing concentration of cis-1,2-dichoroethene [cis-DCE] in MWT-7; Figure C-13). Since it appears that the concentrations of COCs are increasing at several locations, revise the Year 10 Annual Report to indicate that the third performance monitoring objective is not being met as demonstrated by the current monitoring data and to note the locations and COCs that show increasing trends. Also, revise the Year 10 Annual Report to describe existing mechanisms, if available, that will reduce the concentrations of these COCs to levels below Class GA groundwater standards to ensure the third performance monitoring objective can be met.

Response 1: Section 3.3.3 – Achievement of Third Performance Monitoring Objective was revised to indicate that the third objective has not yet been met. Wells with increasing COC trends were noted in the text. COC concentrations in the plume performance monitoring wells are expected to decrease after the summer 2017 refresh of the biowalls and an evaluation will be done at that time.

Comment 2: The Year 10 Annual Report indicates that a recharge event is planned for the summer of 2017 (e.g., Chapter 4, Conclusions and Recommendations); however, information associated with the recharge event is not provided in the Year 10 Annual Report that is dated September 2017. It is unclear if this recharge event has taken place. Revise the Year 10 Annual Report to state whether the recharge event planned for the summer of 2017 took place or specify when it will be performed. If the recharge event will be described in a subsequent document, revise the Year 10 Annual Report to indicate in what document and at what time the recharge event information will be presented for review.

Response 2: The Year 10 Annual Report was initially drafted prior to the recharge event. A Final work plan was submitted to you in June 2017. The recharge event was completed between August and October 2017. Section 3.4.2 of the Annual Report was updated to include the following text:

> …a biowall recharge event was conducted between August and October 2017. Approximately, 68 four-inch wells were installed into the A1/A2, B1/B2, pilot and C1/C2 biowalls. Groundwater was extracted, mixed with an emulsified vegetable oil product and pH buffer solution and reinjected into the walls to increase the overall carbon content of the biowall mulch.

Comment 3: Along the western edge of the plume near the SEDA property boundary (e.g., wells PT-17 and MWT-7), it appears as if the reductive dechlorination of cis-DCE and vinyl chloride (VC) 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-DCE and VC concentrations, would aid in clarifying dehalogenation potential in this downgradient portion of the plume. Revise the Year 10 Annual Report to evaluate if sampling for Dehalococcoides populations or other parameters would aid in confirming that dehalogenation is occurring or will occur in this portion of the plume.

Response 3: A decline in dechlorination rates was one of the triggers for biowall refresh. The biowalls were refreshed with organic substrate between August and October 2017. A completion report detailing the biowall refresh is being prepared and will be issued for review. Dechlorination of TCE/cisDCE at the referenced wells is expected to improve and groundwater conditions will continue to be monitored semi-annually to determine the efficacy of the refresh. If the COC concentrations do not show evidence of improvement in upcoming sampling rounds, *Dehalococcoides* sampling will be considered.

Comment 4: It is not clear whether data verification/validation was performed on the analytical results generated by the subcontracted laboratories. Revise Chapter 3, Long-Term Monitoring, 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 4: 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 21 and 22 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.

SPECIFIC COMMENTS

Comment 1: Section 3.1.3.1, Dissolved Oxygen, Page 11:
The text states that the elevated dissolved oxygen (DO) concentration of 2.86 mg/L observed in MWT-28 is not likely representative of the current conditions of the well and that snow melt likely impacted the measured concentration. However, DO was not elevated in MWT-27 (DO = 0.14 mg/L), located less than 50 feet upgradient, and MWT-29 (DO = 0.88 mg/L), located 50 feet downgradient of MWT-28. The text does not discuss how snow melt impacted the localized area of MWT-28 and why nearby wells were not impacted. Revise the text to clarify how snow melt impacted the DO concentration in MWT-28.

Response 1: The text was revised in Section 3.1.3.1. "*Due to the permeability of the mulch substrate, it is possible that snow melt may have more quickly infiltrated into the biowall and not the surrounding native soils. This is one possibility for the increase in DO concentration in well MWT-28; however, the reading may just be anomalous.*"

Comment 2: Section 3.1.3.5, Total Organic Carbon [TOC], Page 13:
The last paragraph in this section states, "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…." However, it is unclear where this is discussed "below," and the recharge discussion in Section 3.4.2, Recharge Evaluation for Year 10, uses the decreases in TOC concentration with the deviation of other parameters from ideal benchmarks as lines of evidence to support the need for the recharge of the biowalls. Revise the text to clarify or remove this statement.

Response 2: The referenced sentence was removed and the text revised as follows: "*TOC concentrations on-site have remained sufficiently high historically to serve as an energy source for anaerobic bacteria in the biowalls; however, the TOC concentrations are decreasing below suggested benchmark values.*"

Comment 3: Section 3.3.2, Achievement of Second Performance Monitoring Objective, Page 15:
The first paragraph on this page states that low levels of VC detected in the biowall wells indicate the biowall systems performance can be enhanced, but the second paragraph states that, based upon TCE and cis-DCE concentrations, complete mineralization is occurring and the biowalls are operating with no loss of performance. These statements are contradictory, and as shown in Figure 5, Reductive Dechlorination of Chlorinated Ethenes, it is unclear how reductions in TCE and cis-DCE concentrations are directly indicative of complete mineralization, especially given the detections of VC (a precursor to complete mineralization). Revise these paragraphs to resolve the discrepancy in the discussion of the biowall system performance and clarify the extent to which complete mineralization is occurring.

Response 3: The referenced paragraphs were revised for clarity:

> 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.

Comment 4: Section 3.3.3, Achievement of Third Performance Monitoring Objective, Page 16:
The first paragraph in this section states that there is an overall decreasing trend in the VC concentration at MWT-22 compared to previous years, but an overall increasing trend in the VC concentration since Round 8 is apparent in Figure 10F, Concentrations of Chlorinated Organics Over Time at MWT-22, and Appendix C, Regression Plots, indicates the VC concentrations are increasing in this well (see Figure C-6, Regression Plot of Well Concentrations At MWT-22). Revise the paragraph to clarify that the VC concentrations at MWT-22 are not decreasing, and appear to be increasing as shown in the referenced figures.

Response 4: Section 3.3.3 was revised based on RTC General Comment #1 and the above comment. It was noted that concentrations of some COCs are increasing.

Comment 5: Section 3.3.3, Achievement of Third Performance Monitoring Objective, Page 17:
The discussion of the predicted timeframes for meeting the Class GA standards indicates that wells that will not meet compliance in the near future (e.g., estimated compliance dates of 2043 and 2068) have a poor correlation (R^2<0.1). While correlation values are low, the correlation coefficients for the referenced chemical trends are slightly greater than 0.1 (e.g., R^2=0.1832 for cis-DCE in MWT-22 with an estimated compliance date of 2043). Revise the text to resolve this discrepancy.

Response 5: The R^2 value representing poor correlation was revised to 0.2. In Table 5, MWT-22 still has an estimated compliance date of 2043, but no upper correlation limit is reported. Although their R^2 values are low (0.22 and 0.27) and suggest poor fits, upper correlation limits of 2203 and 2098 were added to Table 5 for MWT-29 (VC) and MWT-24 (cisDCE), respectively.