GROUNDWATER SAMPLING REPORT
CHEMICAL LEAMAN TANK LINES, INC. SITE
NYSDEC SITE #915014
470 FILLMORE AVENUE, TONAWANDA, ERIE COUNTY, NEW YORK

PREPARED FOR:

QUALITY DISTRIBUTION, INC.
102 PICKERING WAY, SUITE 105
EXTON, PA 19341

PREPARED BY:
AECOM
257 WEST GENESEE STREET, SUITE 400
BUFFALO, NEW YORK 14202

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TABLE OF CONTENTS

1.0 INTRODUCTION

This report presents the results of groundwater sampling conducted by AECOM at the former Chemical Leaman Tank Lines (CLTL) site during July 2017.

In a letter dated February 10, 2017, the New York State Department of Environmental Conservation (NYSDEC) provided review comments for the Draft Site Management Plan prepared by AECOM in January 2016. In their letter, the NYSDEC requested that a groundwater monitoring program be developed to provide data on the effectiveness of in-situ chemical treatment and soil removal performed by AECOM in 2015. In subsequent communications with the NYSDEC, AECOM stated that the request for a groundwater monitoring program was contrary to our understanding NYSDEC had agreed that ongoing remediation performance monitoring would not be required for this site. However, in a telephone conversation on May 12, 2017, Glenn May of the NYSDEC suggested that a one-time focused sampling event be performed of the existing injection wells located in the former lagoons #1 and #2 so that results can be compared to pre-injection concentrations. The need for an ongoing site-wide monitoring program would be determined based on the results of this focused sampling.

The purpose of the sampling program is to provide post-remediation groundwater monitoring at the Site. This data will be used:

1. To evaluate the effectiveness of in-situ chemical treatment; and
2. To verify the effectiveness and progress of the natural attenuation process.

2.0 SITE BACKGROUND

2.1 Site Location and Description

The CLTL Site is located at 470 Fillmore Avenue, on the southwest corner of the intersection of Fillmore and Wales Avenues, in the City of Tonawanda, Erie County, New York (Figure 1). The Site, approximately 16 acres in size, is zoned light industrial/commercial. It is bordered by Fillmore Avenue to the north, Wales Avenue to the east, Ellicott Creek to the south, and an open field to the west, beyond which is located Route 425 (a large, divided highway.)

2.2 Site History

Prior to 1959, the Site was undeveloped. In 1959 CLTL purchased the property. By 1963 CLTL had constructed several buildings and made other improvements at the facility. CLTL's operations at the Site included tank truck dispatching, maintenance, and cleaning.

From 1963 to 1978 wastewater consisting of rinse water, dilute chemical residues, and expended steam condensate from the tank truck cleaning operations was discharged to three unlined surface settling lagoons in the central portion of the Site (Figure 2) for treatment (e.g., aeration and settling). The treated wastewater was discharged from the lagoons to the Tonawanda Wastewater Treatment Plant via the sanitary sewer system. In 1978, discharge to the three settling lagoons was limited to non-priority pollutant wastewaters, with wastewaters containing heavy metals and priority pollutants collected separately in two 1,000-gallon storage tanks. This practice continued until July 1987 when a new wastewater treatment facility was constructed at the Site.

The lagoons were closed during 1988 and 1989. As part of the closure, the lagoons were excavated as deep as possible below the water table, to a typical depth of about 14 to 16 feet below ground surface (bgs). Although post-excavation soil sampling showed some degree of residual contamination within the lagoons, further excavation was not possible due to the rapid infiltration of groundwater into the excavation and the possibility of sidewall collapse. The lagoon sludge and associated soils were disposed offsite. The lagoons themselves were backfilled to grade with clean soils, obtained from a former railroad embankment located on the Site.

QDI discontinued operations at the Site in 2001. The Site was subsequently leased to an independent third party and is currently used as a truck maintenance facility.

The Site was classified by the NYSDEC as a Class 2 inactive hazardous waste disposal site (Site Number 915014). Pursuant to an Order on Consent with the NYSDEC dated June 21, 1999, QDI conducted Remedial Investigations (RI) at the Site in four phases, from approximately August 2000 to July 2004, to investigate whether contamination remained onsite at actionable levels. The results of the RI are presented in the, "*Remedial Investigation Report – Chemical Leaman Tank Lines, Inc. Tonawanda, New York Facility*" prepared by URS, dated August 2002 (URS 2002), and in, "*Supplemental Remedial Investigation, Phase IV – Eastern Area*" prepared by URS, dated September 2004 (URS 2004). These reports are available for review at the NYSDEC office in Buffalo, New York.

The NYSDEC issued a Record of Decision (ROD) in March 2006 (URS 2006), which outlined the remedial actions to be undertaken by QDI at the Site.

The original Order on Consent expired, so QDI negotiated and signed a new Order on Consent with the NYSDEC, dated April 9, 2008. Pursuant to the new Order on Consent, QDI undertook the RD/RA to remediate the Site in accordance with the ROD. The RD/RA was implemented in two phases. Phase I, which was conducted in October 2009, consisted of supplemental site investigations designed to provide additional data such that the remedial actions identified in the ROD could be designed and implemented. Phase II consisted of design and implementation of the Remedial Action for the Site based on the findings of the Phase I supplemental investigations.

The Phase II RD/RA Work Plan (URS November 2011, appended December 2012) provided an analysis of the supplemental field investigation data, design rationale for the proposed remedial actions, and a description of the remedial action to be performed. The Phase II Remedial Action was conducted during the period of March 25 to July 17, 2015.

2.3 In-Situ Remediation

On March 25th 2015, Innovative Environmental Technologies, Inc. (IET) performed remediation injections within lagoon #1 and lagoon #2. The injection solution consisted of nutrients, sodium sulfite, calcium propionate, yeast and vitamins B-2 and B-12 to achieve the following:

- Supply nutrients to indigenous bacteria in the subsurface.
- Promote anaerobic conditions in groundwater, favorable to anaerobic bacteria that degrade chlorinated VOCs.
- Release hydrogen that is utilized by indigenous anaerobic bacteria to reduce residual concentrations of chlorinated VOCs.

After unsuccessful attempts to pump the solution into three of the six wells (B-L1-3, B-L2-1 and B-L2-2), it was concluded that the wells were fouled and/or the viscosity of the solution combined with the small slot size of the well screens and low permeability of the formation precluded injection using the existing wells. It subsequently was proposed and agreed between AECOM, QDI and the NYSDEC that a drill rig using direct push methodologies and an injection point with larger slots should be utilized. IET mobilized the drill rig and associated equipment to the site on March 26, 2015.

In Lagoon #1, direct push injection was successfully performed at wells B-L1–1 and B-L1-2, but not at B-L1-3. Consequently the third injection point (BL1-CTR) was installed at a location approximately centered between the three wells, and the nutrient solution was injected successfully. In Lagoon #2 the injections were successful adjacent to wells B-L2-2 and B-L2-3, but not in B-L2-1. Table 1 presents a summary of the proposed injection intervals and solution volumes as compared to the actual injection results. As indicated on Table 1, it was originally proposed that 300 gallons of solution be injected in each lagoon. A total of 250 gallons was injected into Lagoon #1 and 350 gallons in Lagoon #2. The injection locations are shown on Figure 3.

3.0 GROUNDWATER MONITORING ACTIVITIES

This section describes the groundwater monitoring activities performed during July 2017.

Monitoring activities consisted of the redevelopment and subsequent sampling of six onsite monitoring wells (B-L1-1, B-L1-2, B-L1-3, B-L2-1, B-L2-2, B-L2-3) (Figure 3). Although groundwater levels were measured in each well to calculate well volumes and to monitor drawdown during purging/sampling, groundwater potentiometric levels cannot be calculated because the well riser elevations were never surveyed. However, based on historical water levels measured in 2004, overall site groundwater flow is generally toward the south in the direction of Ellicott Creek.

3.1 Monitoring Well Redevelopment

Due to the inactivity of the wells which were installed in 2009, and difficulties encountered injecting solutions at some locations (B-L1-3, B-L2-1, and B-L2-2) in 2015, all wells were redeveloped prior to sampling. Redevelopment was completed on July 17, 2017, and consisted of surging and pumping with a submersible pump. An AECOM geologist monitored groundwater parameters of pH, conductivity, temperature, turbidity, dissolved oxygen (DO), and oxygen-reduction potential (ORP). Pumping continued until a minimum of four well casing volumes was removed and turbidity values decreased to less than 25 nephelometric turbidity units (NTU). All purge water was containerized in 55-gallon drums and staged onsite pending disposal. Well development logs are included in Appendix A.

3.2 Groundwater Sampling

Groundwater sampling was conducted on July 20-21, 2017. A peristaltic pump and dedicated-disposable tubing were used to complete the sampling using low-flow groundwater sampling techniques. During purging, an AECOM geologist monitored groundwater quality parameters of pH, conductivity, temperature, turbidity, DO, and ORP using a flow-through cell. Each well was purged until groundwater quality parameters stabilized. Groundwater samples were collected into laboratory-provided 40-milliliter sample vials pre-preserved with hydrochloric acid. The low flow purging/sampling logs are provided in Appendix C.

The groundwater sample containers were labeled and placed into an ice-filled cooler and delivered by AECOM staff under chain-of-custody (COC) protocol to the TestAmerica Laboratory located in Amherst, New York. All groundwater samples were analyzed for the Target Compound List (TCL) VOCs by United States Environmental Protection Agency (USEPA) Method 8260C.

3.3 Summary of Analytical Results

The pre and post injection data for wells B-L1-1, B-L1-2, B-L1-3, B-L2-1, B-L2-2, and B-L2-3 are presented in Tables 2-1 and 2-2. The data in both tables are compared to 6 NYCRR Part 703.5 Water Quality Standards as presented in the *Technical and Guidance Series (T.O.G.S. 1.1.1) Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations* (NYSDEC 1998; Revised April 2000 and June 2004). The laboratory reports and chain-of-custody records are provided in Appendix D.

In general, the total VOC concentrations present in the wells sampled have decreased significantly since injection. The injections seem to have been particularly effective on chlorinated VOC concentrations. Trichloroethene (TCE) and tetrachloroethene (PCE) were reduced to non-detect in Lagoon #1. Similarly TCE and PCE concentrations were reduced to concentrations below groundwater quality standards in Lagoon #2 with the exception of an increase in PCE at location B-L2-1.

It appears that the injections may have mobilized/moved around the contamination within the lagoons, particularly with dichlorobenzene and chlorobenzene compounds. However, overall the concentrations are much lower.

The groundwater quality parameters of DO and ORP are key indicators of whether or not conditions are favorable for continued anaerobic degradation. DO and ORP field readings for the six lagoon wells are summarized below:

Well	DO (mg/L)	ORP (mV)
B-L1-1	0.0	-160
B-L1-2	0.0	-127
B-L1-3	0.0	-142
B-L2-1	0.0	-116
B-L2-2	0.0	-107
B-L2-3	0.0	-120

Based on the DO and ORP values measured at the time of sampling, conditions appear favorable for continued degradation/natural attenuation of chlorinated solvents.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Based on results of recent groundwater sampling, the remedial injections have been successful at reducing the bulk of the VOC contamination within the Lagoons. Since the groundwater contamination at the site is known to be isolated to the Lagoons and offsite migration of groundwater contamination is not an issue, routine groundwater sampling does not appear to be warranted at this time. The in-situ chemical treatment has been effective at reducing the bulk of the VOC contamination within the Lagoons and conditions appear favorable for continued progress via natural attenuation.

FIGURES

Source: ESRI World Imagery

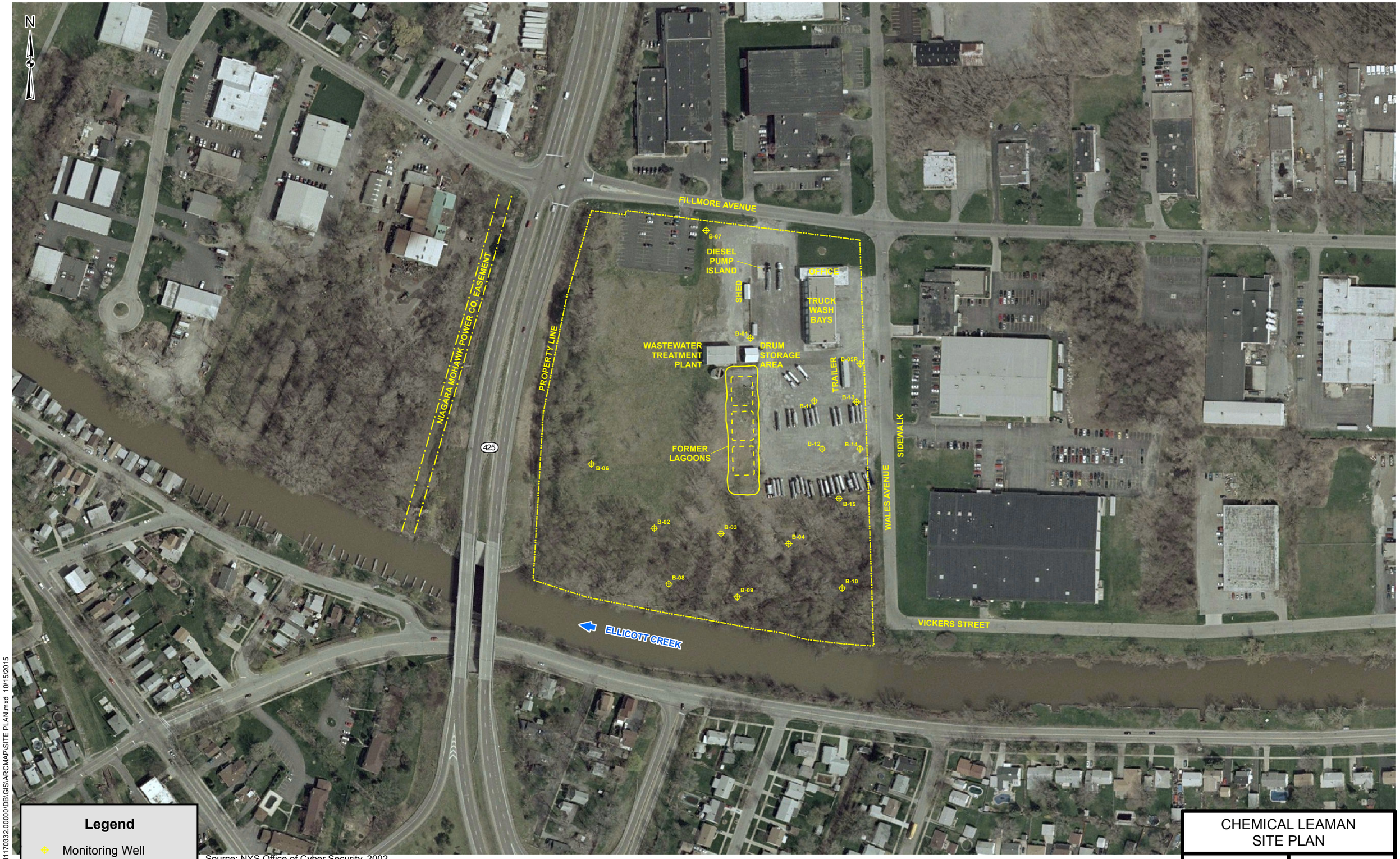
1,000 0 1,000 Feet

AECOM

CHEMICAL LEAMAN
SITE LOCATION

FIGURE 1

J:\Projects\11170332.00000\DB\GIS\ARCMAP\Site Location.mxd 10/15/2015



Legend

- Monitoring Well

Source: NYS Office of Cyber Security, 2002

200 0 200 Feet

CHEMICAL LEAMAN
SITE PLAN

AECOM | FIGURE 2

J:\Projects\11170332.00000\DB\GIS\ARCMAP\SITE PLAN.mxd 10/15/2015

J:\Projects\11170332.00000\DB\GIS\ARCMAP\OU 1 - INJECTION POINTS.mxd 10/26/2015

N

FORMER WASTEWATER TREATMENT PLANT

FORMER DRUM STORAGE AREA

B-L1-1

B-L1-2

BL-1-CTR

LAGOON #1

B-L1-3

B-L2-1

B-L2-2

B-L2-3

LAGOON #2

LAGOON #3

Legend

▲ OU1 Injection Point

Injection Well (2009)

20 0 20 Feet

AECOM

CHEMICAL LEAMAN
OPERABLE UNIT 1
INJECTION POINT LOCATIONS

FIGURE 3

TABLES

Table 1
Remedial Injection Summary
Chemical Leaman Tank Lines Site
March 2015

Injection Point Location	Proposed Injection Interval	Actual Injection Interval	Proposed Injection Volume (gallons)	Actual Injection Volume (gallons)
BL-1-1	15-22	16-20	100	100
BL-1-2	17-24	18-23	100	100
BL-1-3	15-22	19-21	100	0
BL-1-CTR*	NA	18-20	NA	50
Total Volume			300	250
BL-2-1	15-22	20-22	100	0
BL-2-2	15-22	17-21	100	200
BL-2-3	15-22	16-20	100	150
Total			300	350

Notes:

Injection wells did not accept any remediation solution. Therefore, injections were completed using Geoprobe injection points driven to the depth interval indicated. Injection points were located within 5 feet of the injection wells with the exception of one injection point (BL-1-CTR) located in the approximate center of wells BL-1-1, BL-1-2, and BL-1-3.

Injection Points Shown on Figure 4-1

NA - Not applicable

Table 2
Lagoon #1 Groundwater Analytical Results
Chemical Leaman Tank Lines Site

Well Number			B-L-1-1		B-L-1-2		B-L-1-3	
Sample Number			B-L1-01		B-L1-02		B-L1-03	
Sample Date			10/26/09	07/21/17	10/26/09	07/21/17	10/26/09	07/20/17
Parameter	Units	6 NYCRR Part 703.5 Water Quality Standards						
Volatile Organic Compounds								
1,2,4-Trichlorobenzene	ug/L	5	**510 D**	U	**3,900 D**	U	**4,500 D**	U
1,1,2-Trichlorotrifluoroethane	ug/L	5	U	U	U	U	0.45 J	U
1,1,1-Trichloroethane	ug/L	5	0.59 J	U	U	U	U	U
1,1-Dichloroethane	ug/L	5	2.5	U	4.7	U	**8.4**	U
1,1-Dichloroethene	ug/L	5	U	U	2.2	U	**13**	U
1,2-Dichloroethene, Total	ug/L	5	**33**	U	**1,400 D**	U	**6,200 DJ**	U
1,2-Dichlorobenzene	ug/L	3	**29**	**260**	**80**	**290**	**2,400 D**	**88 JH**
1,3-Dichlorobenzene	ug/L	3	**3.2**	**180.0**	**170 D**	**190**	**660 D**	U
1,4-Dichlorobenzene	ug/L	3	**26**	**490**	**330 D**	**530**	**2,500 D**	**280 H**
1,2-Dichloropropane	ug/L	1	**2.1**	U	**82**	U	**120**	U
2-Hexanone	ug/L	NS	U	U	U	U	2.6 J	U
4-Methyl-2-pentanone	ug/L	NS	U	U	U	U	4.0 J	U
Acetone	ug/L	NS	2.0 J	U	17	U	19	U
Benzene	ug/L	1	**28**	**85**	**120D**	**92**	**1,000 D**	**410 H**
Carbon Disulfide	ug/L	60	U	U	0.58 J	U	11	U
Cyclohexane	ug/L	NS	U	U	0.67 J	U	1.2	U
Chlorobenzene	ug/L	5	**59**	**1,500**	**480 D**	**1,600**	**1,700 D**	**7800 H**
Chloroform	ug/L	7	0.47 J	U	6.4	U	32	U
Chlorodibromomethane	ug/L	NS	U	U	U	U	2.3 J	U
Ethylbenzene	ug/L	5	**9.9**	**200.0**	**64**	**220**	**200 JD**	**93 JH**
Isopropylbenzene	ug/L	5	U	U	1.4	U	**6.1**	U
cis-1,2-Dichloroethene	ug/L	5	**33**	**330**	**1,400 D**	**360**	**6,200 D**	U
Methylcyclohexane	ug/L	NS	U	U	0.64 J	U	1.3	U
Methylene Chloride	ug/L	5	U	U	0.47 J	U	3.9	U
Styrene	ug/L	5	1.0	U	**8.0**	U	**32**	U
Tetrachloroethene	ug/L	5	3.8	U	**29**	U	**180 JD**	U
trans-1,2-Dichloroethene	ug/L	5	U	U	**6.5**	U	**17**	U
Toluene	ug/L	5	**19**	**120**	**260 D**	**140**	**1,800 D**	**620 H**
Trichloroethene	ug/L	5	**69**	U	**370 D**	U	**17,000 D**	U
Vinyl Chloride	ug/L	2	**6.0**	**130.0**	**350 D**	**130**	**1,100 D**	U
Xylenes, Total	ug/L	5	**12**	**110**	**150**	**110**	**360 JD**	**94 JH**
Volatile Fatty Acids								
Lactic Acid	mg/L	NS	1.2		0.79		0.93	
Dissolved Gases								
Methane	ug/L	NS	720		870		740	
Metals								
Calcium	mg/L	NS	97.4		524		338	
Iron (Total)	mg/L	0.300	**7.37**		**25.8**		**46.4**	
Iron (Dissolved)	mg/L	0.300	**1.74**		U		0.200	
Manganese	mg/L	0.300	0.122		**3.26**		**2.2**	
Sodium	mg/L	20	**69.7 J**		**57.9 J**		**106 J**	
Miscellaneous								
Chloride	mg/L	250	41.3		79.4		74.9	
Nitrate-Nitrite	mg/L	10	U		0.048 J		0.032 J	
Bacteriological								
Dehalococcoides spp.	cells/mL	NS	552		2,170		696	
Field								
Oxygen Reduction Potential	millivolts	NS	-126		-110		-138	
Dissolved Oxygen	mg/L	NS	0.00		0.00		0.00	
pH		NS	7.23		8.61		8.33	

Only detected results are reported.

= Concentration above 6 NYCRR Part 703.5 Water Quality Standards.

Notes:

mg/L = milligrams per liter

ug/L = micrograms per liter

U = Not detected

J = Estimated value below the quantitation limit; or estimated due to quality control exceedance.

Table 3
Lagoon #2 Groundwater Analytical Results
Chemical Leaman Tank Lines Site

Well Number			B-L-2-1		B-L-2-2		B-L-2-3	
Sample Number			B-L2-01		B-L2-02		B-L2-03	
Sample Date			10/26/09	07/20/17	10/26/09	07/20/17	10/26/09	07/20/17
Parameter	Units	6 NYCRR Part 703.5 Water Quality Standards						
Volatile Organic Compounds								
1,2,4-Trichlorobenzene	ug/L	5	U	**12**	1.6	**17**	**840 D**	U
1,1,1-Trichloroethane	ug/L	5	U	U	U	U	**240 D**	U
1,1,2,2-Tetrachloroethane	ug/L	5	U	U	U	U	3.1	U
1,1,2-Trichloroethane	ug/L	1	U	U	U	U	**58**	U
1,1,2-Trichlorotrifluoroethane	ug/L	5	U	U	U	1.2 J	**1,500 D**	U
1,1-Dichloroethane	ug/L	5	0.92 J	2.1	0.95 J	U	3.0	2.9
1,1-Dichloroethene	ug/L	5	U	U	U	U	**66**	U
1,2-Dichloroethane	ug/L	0.6	U	0.29 J	U	U	**1.4**	U
1,2-Dichloroethene, Total	ug/L	5	U	U	2.6	U	**190**	U
1,2-Dichlorobenzene	ug/L	3	U	**5.2**	U	2.9	**50**	**4.3**
1,3-Dichlorobenzene	ug/L	3	U	**11**	U	**33**	**84**	**50**
1,4-Dichlorobenzene	ug/L	3	U	**13**	0.74 J	**50**	**170 D**	**23**
1,2-Dibromoethane (EDB)	ug/L	0.0006	U	U	U	U	**82**	U
2-Butanone (MEK)	ug/L	NS		4.3 J		U		U
Acetone	ug/L	NS	7.7	10	2.3	U	3.7 J	U
Benzene	ug/L	1	**23**	**19**	**52**	**1.8 J**	**430 D**	**7.7**
Bromodichloromethane	ug/L	5	U	U	U	U	0.52 J	U
Carbon Disulfide	ug/L	60	U	6.5	U	U	5.5	0.88 J
Carbon Tetrachloride	ug/L	5	U	U	U	U	**16**	U
Chlorobenzene	ug/L	5	U	**43**	3.5	**67**	**1,100 D**	**46**
Chloroform	ug/L	7	U	U	U	U	**200 D**	U
Chloroethane	ug/L	5	1.4	2.3	U	U	U	1.2
Ethylbenzene	ug/L	5	U	3.9	0.54 J	U	**43**	**5.1**
Isopropylbenzene	ug/L	5	1.7	1.8	U	U	1.5	U
cis-1,2-Dichloroethene	ug/L	5	U	2.4	2.6	U	**190 D**	0.97 J
Methylcyclohexane	ug/L	NS	U	U	U	U	0.74 J	0.16 J
Methylene Chloride	ug/L	5	U	U	U	U	3.6	U
Trichlorofluoromethane	ug/L	5	U	U	U	U	**82**	U
Tetrachloroethene	ug/L	5	0.54 J	**13**	**7.6**	U	**4,700 D**	0.37 J
trans-1,2-Dichloroethene	ug/L	5	U	U	U	U	**5.5**	U
Toluene	ug/L	5	U	2.8	0.97 J	1.2 J	**260 D**	3.4
Trichloroethene	ug/L	5	U	0.56 J	2.3	U	**3,200 D**	U
Vinyl Chloride	ug/L	2	U	**6.1**	0.86 J	U	**44**	1.8
Xylenes, Total	ug/L	5	U	**13**	1.3 J	U	**150**	**8.8**
Volatile Fatty Acids								
Lactic Acid	mg/L	NS	U		1.3		U	
Dissolved Gases								
Methane	ug/L	NS	1,400		1,200		690	
Metals								
Calcium	mg/L	NS	198		192		216	
Iron (Total)	mg/L	0.300	**33.3**		**35.7**		**59.2**	
Iron (Dissolved)	mg/L	0.300	**4.37**		**4.03**		**2.70**	
Manganese	mg/L	0.300	**0.533**		**0.533**		**1.23**	
Sodium	mg/L	20	**126 J**		**155 J**		**94.8 J**	
Miscellaneous								
Chloride	mg/L	250	197		**266**		96.2	
Sulfate	mg/L	250	164		181		175	
Bacteriological								
Dehalococcoides spp.	cells/mL	NS	59		586		12,400	
Field								
Oxygen Reduction Potential	millivolts	NS	-124		-118		-118	
Dissolved Oxygen	mg/L	NS	0.00		0.00		0.00	
pH		NS	7.02		7.02		7.01	

Only detected results are reported.

= Concentration above 6 NYCRR Part 703.5 Water Quality Standards.

Notes:

mg/L = milligrams per liter

ug/L = micrograms per liter

U = Not detected

J = Estimated value below the quantitation limit; or estimated due to quality control exceedance.

D = Concentration reported from secondary dilution.

NS = No Standard

APPENDIX A

WELL DEVELOPMENT LOGS

WELL DEVELOPMENT LOG

AECOM

PROJECT TITLE: Chemical Leamar WELL NO.: B-L1-1

PROJECT NO.:

STAFF: E. Thalhamer

DATE(S): 7/17/2017

			WELL ID.	. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	20.61	1"	0.04
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	6.27	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	14.34	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.17	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	2.44	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x 3)	=	7.31	6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	10	8"	2.60

OR

$V=0.0408 \times (\text{CASING DIAMETER})^2$

	ACCUMULATED VOLUME PURGED (GALLONS)										
PARAMETERS	INITIAL	2	4	6	8	10					INSTRUMENT
pH	7.39	7.37	7.36	7.31	7.28	7.24					
SPEC. COND. (umhos)	1.05	1.01	0.999	1.01	0.996	0.993					
TEMPERATURE (°C)	16.15	15.38	15.27	14.15	13.81	13.14					
TURBIDITY (NTU)	181	93.8	57.4	46.8	35.7	21.6					
DISSOLVED OXYGEN	1.53	1.21	0.96	0.35	0.41	0.27					
ORP (millivolts)	-146	-154	-155	-152	-158	-160					

COMMENTS:

WELL DEVELOPMENT LOG

AECOM

PROJECT TITLE: Chemical Leamar WELL NO.: B-L1-2

PROJECT NO.:

STAFF: E. Thalhamer

DATE(S): 7/17/2017

			WELL ID.	. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	23.41	1"	0.04
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	10.16	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	13.25	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.17	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	2.25	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x 3)	=	6.76	6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	10	8"	2.60

OR

$V=0.0408 \times (\text{CASING DIAMETER})^2$

	ACCUMULATED VOLUME PURGED (GALLONS)										
PARAMETERS	INITIAL	2	4	6	8	10					INSTRUMENT
pH	7.20	7.13	7.28	7.31	7.48	7.74					
SPEC. COND. (umhos)	0.815	0.81	0.805	0.794	0.728	0.735					
TEMPERATURE (°C)	15.13	15.54	15.46	15.75	15.81	16.12					
TURBIDITY (NTU)	max	325	113	64.8	31.7	24.9					
DISSOLVED OXYGEN	1.74	1.12	1.35	1.05	1.21	1.41					
ORP (millivolts)	-101	-111	-114	-117	-120	-124					

COMMENTS:

WELL DEVELOPMENT LOG

AECOM

PROJECT TITLE: Chemical Leamar WELL NO.: B-L1-3

PROJECT NO.:

STAFF: E. Thalhamer

DATE(S): 7/17/2017

			WELL ID.	. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	21.25	1"	0.04
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	11.46	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	9.79	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.17	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	1.66	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x 3)	=	4.99	6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	10	8"	2.60

OR

$V=0.0408 \times (\text{CASING DIAMETER})^2$

	ACCUMULATED VOLUME PURGED (GALLONS)										
PARAMETERS	INITIAL	2	4	6	8	10					INSTRUMENT
pH	7.21	7.26	7.28	7.35	7.41	7.51					
SPEC. COND. (umhos)	1.15	1.27	1.34	1.81	1.99	2.7					
TEMPERATURE (°C)	16.14	16.09	15.98	15.74	15.35	15.12					
TURBIDITY (NTU)	143	98.7	64.3	47.8	31.4	11.6					
DISSOLVED OXYGEN	1.12	1.04	0.93	0.71	0.21	0					
ORP (millivolts)	-127	-135	-138	-141	-146	-150					

COMMENTS:

WELL DEVELOPMENT LOG

AECOM

PROJECT TITLE: Chemical Leamar WELL NO.: B-L2-1

PROJECT NO.:

STAFF: E. Thalhamer

DATE(S): 7/17/2017

			WELL ID.	. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	24.18	1"	0.04
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	9.47	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	14.71	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.17	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	2.50	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x 3)	=	7.50	6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	10	8"	2.60

OR

$V=0.0408 \times (\text{CASING DIAMETER})^2$

	ACCUMULATED VOLUME PURGED (GALLONS)										
PARAMETERS	INITIAL	2	4	6	8	10					INSTRUMENT
pH	7.04	7.21	7.34	7.34	7.35	7.35					
SPEC. COND. (umhos)	1.12	1.68	1.81	1.97	2.03	2.08					
TEMPERATURE (°C)	17.14	16.98	16.81	16.8	16.47	16.31					
TURBIDITY (NTU)	824	476	228	91.2	47.8	21.4					
DISSOLVED OXYGEN	1.25	1.06	1.15	0.74	0.39	0.65					
ORP (millivolts)	-117	-110	-105	-99	-104	-109					

COMMENTS:

WELL DEVELOPMENT LOG

AECOM

PROJECT TITLE: Chemical Leamar WELL NO.: B-L2-2

PROJECT NO.:

STAFF: E. Thalhamer

DATE(S): 7/17/2017

			WELL ID.	. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	22.46	1"	0.04
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	9.51	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	12.95	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.17	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	2.20	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x 3)	=	6.60	6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	10	8"	2.60

OR

$V=0.0408 \times (\text{CASING DIAMETER})^2$

	ACCUMULATED VOLUME PURGED (GALLONS)										
PARAMETERS	INITIAL	2	4	6	8	10					INSTRUMENT
pH	7.81	7.61	7.47	7.46	7.41	7.34					
SPEC. COND. (umhos)	1.95	2.05	2.16	2.1	2.13	2.18					
TEMPERATURE (°C)	16.59	16.83	16.47	16.12	15.65	15.35					
TURBIDITY (NTU)	487	293	215	95.4	37.5	18.4					
DISSOLVED OXYGEN	0.17	1.04	0.78	0.61	0.35	0.24					
ORP (millivolts)	-110	-104	-103	-107	-105	-101					

COMMENTS:

WELL DEVELOPMENT LOG

AECOM

PROJECT TITLE: Chemical Leamar WELL NO.: B-L2-3

PROJECT NO.:

STAFF: E. Thalhamer

DATE(S): 7/17/2017

			WELL ID.	. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	22.08	1"	0.04
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	9.64	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	12.44	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.17	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	2.11	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x 3)	=	6.34	6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	12	8"	2.60

OR

$V=0.0408 \times (\text{CASING DIAMETER})^2$

	ACCUMULATED VOLUME PURGED (GALLONS)										
PARAMETERS	INITIAL	2	4	6	8	10					INSTRUMENT
pH	7.35	7.19	7.21	7.14	7.08	7.10	7.05				
SPEC. COND. (umhos)	1.7	1.76	1.77	1.74	1.69	1.67	1.67				
TEMPERATURE (°C)	15.85	15.91	15.63	15.21	15.09	14.93	14.81				
TURBIDITY (NTU)	max	847	468	226	87.5	21.3	8.4				
DISSOLVED OXYGEN	1.58	0.97	0.84	0.57	0.69	0.41	0.39				
ORP (millivolts)	-89	-97	-101	-100	-109	-104	-108				

COMMENTS:

APPENDIX B

GROUNDWATER LOW-FLOW PURGING/

SAMPLING LOGS

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

PAGE:

Project: Chemical Leaman Tank Lines, Inc. Site: Tonawanda, NY Well I.D.: B-L-1-1

Date: 7/21/2017 Sampling Personnel: Ernie Thalhamer Company: URS Corporation

Purging/ Sampling Device: Geopump Tubing Type: LDPE Tubing Inlet: Screen midpoint

Measuring Point: Below Top of Riser Initial Depth to Water: 6.19 Depth to Well Bottom: 20.61 Well Diameter: 2" Screen Length: 7

Casing Type: S.S. Volume in 1 Well Casing (liters): 8.89 Estimated Purge Volume (liters): 12.5

Sample ID: B-L1-1 Sample Time 1000 QA/QC: N/A

Sample Parameters:

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
9:10	7.24	21.94	0.818	1.14	425	-159	250	6.53
9:15	7.24	20.13	0.847	0.86	415	-159	250	6.75
9:20	7.24	19.79	0.871	0.47	407	-159	250	6.93
9:25	7.24	18.76	0.893	0.35	381	-159	250	7.18
9:30	7.24	17.31	0.931	0.14	265	-159	250	7.39
9:35	7.24	16.41	0.952	0.00	221	-159	250	7.45
9:40	7.24	15.07	0.966	0.00	146	-159	250	7.46
9:45	7.24	14.31	0.969	0.00	95	-160	250	7.46
9:50	7.23	13.48	0.970	0.00	15.5	-160	250	7.46
9:55	7.23	13.01	0.978	0.00	17.8	-160	250	7.46
10:00	7.23	12.89	0.986	0.00	11.6	-160	250	7.46
Tolerance:	**0.1**	**---**	**0.03**	**0.1**	**0.1**	**+ or - 10**	**---**	

Information:

Remarks:

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

PAGE:

Project: Chemical Leaman Tank Lines, Inc. Site: Tonawanda, NY Well I.D.: B-L-1-2

Date: 7/21/2017 Sampling Personnel: Ernie Thalhamer Company: URS Corporation

Purging/ Sampling Device: Geopump Tubing Type: LDPE Tubing Inlet: Screen midpoint

Measuring Point: Below Top of Riser Initial Depth to Water: 10.27 Depth to Well Bottom: 23.41 Well Diameter: 2" Screen Length: 7

Casing Type: S.S. Volume in 1 Well Casing (liters): 8.1 Estimated Purge Volume (liters): 10.1

Sample ID: B-L1-2 Sample Time 1110 QA/QC: N/A

Sample Parameters:

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
10:25	8.74	18.42	0.913	0.81	564	-83	225	10.27
10:30	8.35	17.31	0.864	0.61	419	-97	225	10.28
10:35	8.12	16.12	0.814	0.23	361	-106	225	10.28
10:40	8.08	15.37	0.799	0.0	273	-110	225	10.28
10:45	8.06	15.12	0.781	0.0	212	-112	225	10.28
10:50	8.01	14.81	0.743	0.0	146	-111	225	10.28
10:55	7.97	14.27	0.739	0.0	99.3	-121	225	10.28
11:00	7.92	14.21	0.726	0.0	47.2	-127	225	10.28
11:05	7.85	14.19	0.719	0.0	21.3	-126	225	10.28
11:10	7.83	14.13	0.714	0.0	11.7	-127	225	10.28
Tolerance:	**0.1**	**---**	**0.03**	**0.1**	**0.1**	**+ or - 10**	**---**	

Information:

Remarks:

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

PAGE:

Project: Chemical Leaman Tank Lines, Inc. Site: Tonawanda, NY Well I.D.: B-L-1-3

Date: 7/20/2017 Sampling Personnel: Ernie Thalhamer Company: URS Corporation

Purging/ Sampling Device: Geopump Tubing Type: LDPE Tubing Inlet: Screen midpoint

Measuring Point: Below Top of Riser Initial Depth to Water: 11.74 Depth to Well Bottom: 21.25 Well Diameter: 2" Screen Length: 7

Casing Type: S.S. Volume in 1 Well Casing (liters): 6.3 Estimated Purge Volume (liters): 12.5

Sample ID: B-L1-3 Sample Time 1015 QA/QC: N/A

Sample Parameters:

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
9:25	6.90	19.67	8.22	0.00	max	-199	250	11.74
9:30	7.01	16.35	6.12	0.00	max	-187	250	11.74
9:35	7.05	16.12	3.18	0.00	max	-181	250	11.74
9:40	7.14	15.81	2.99	0.00	625	-178	250	11.74
9:45	7.16	15.65	2.94	0.00	511	-175	250	11.74
9:50	7.28	14.95	2.91	0.00	312	-169	250	11.74
9:55	7.32	14.91	2.87	0.00	141	-156	250	11.74
10:00	7.39	14.75	2.84	0.00	78.3	-151	250	11.74
10:05	7.40	14.48	2.78	0.00	47.2	-145	250	11.74
10:10	7.41	14.41	2.76	0.00	31.3	-141	250	11.74
10:15	7.41	14.37	2.75	0.00	16.4	-142	250	11.74
Tolerance:	**0.1**	**---**	**0.03**	**0.1**	**0.1**	**+ or - 10**	**---**	

Information:

Remarks:

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

PAGE:

Project: Chemical Leaman Tank Lines, Inc. Site: Tonawanda, NY Well I.D.: B-L-2-1

Date: 7/20/2017 Sampling Personnel: Ernie Thalhamer Company: URS Corporation

Purging/ Sampling Device: Geopump Tubing Type: LDPE Tubing Inlet: Screen midpoint

Measuring Point: Below Top of Riser Initial Depth to Water: 9.13 Depth to Well Bottom: 24.18 Well Diameter: 2" Screen Length: 7

Casing Type: S.S. Volume in 1 Well Casing (liters): 9.2 Estimated Purge Volume (liters): 9

Sample ID: B-L2-1 Sample Time 1600 QA/QC: N/A

Sample Parameters:

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
15:15	7.53	18.12	2.46	1.83	max	-101	200	9.13
15:20	7.49	17.75	2.34	1.04	359	-102	200	9.13
15:25	7.46	17.35	2.25	0.61	127	-103	200	9.13
15:30	7.41	16.74	2.20	0.13	113	-105	200	9.13
15:35	7.39	16.52	2.14	0.00	97.4	-107	200	9.13
15:40	7.33	16.38	2.10	0.00	81.2	-109	200	9.13
15:45	7.28	16.27	2.07	0.00	61.3	-110	200	9.13
15:50	7.27	16.14	2.03	0.00	47.2	-111	200	9.13
15:55	7.24	15.83	1.99	0.00	38.6	-114	200	9.13
16:00	7.20	15.12	1.97	0.00	21.4	-116	200	9.13
Tolerance:	**0.1**	**---**	**0.03**	**0.1**	**0.1**	**+ or - 10**	**---**	

Information:

Remarks:

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

PAGE:

Project: Chemical Leaman Tank Lines, Inc. Site: Tonawanda, NY Well I.D.: B-L-2-2

Date: 7/20/2017 Sampling Personnel: Ernie Thalhamer Company: URS Corporation

Purging/ Sampling Device: Geopump Tubing Type: LDPE Tubing Inlet: Screen midpoint

Measuring Point: Below Top of Riser Initial Depth to Water: 9.04 Depth to Well Bottom: 22.46 Well Diameter: 2" Screen Length: 5

Casing Type: S.S. Volume in 1 Well Casing (liters): 8.2 Estimated Purge Volume (liters): 12.5

Sample ID: B-L2-2 Sample Time 1115 QA/QC: N/A

Sample Parameters:

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
10:25	8.05	17.31	2.20	1.93	max	-81	250	9.04
10:30	7.83	16.84	2.18	1.41	121	-83	250	9.05
10:35	7.80	16.27	2.17	1.03	84.3	-89	250	9.07
10:40	7.78	16.10	2.16	0.83	83.7	-91	250	9.07
10:45	7.70	15.81	2.14	0.21	81.1	-97	250	9.07
10:50	7.61	15.51	2.14	0.00	71.3	-101	250	9.07
10:55	7.47	15.21	2.14	0.00	57.2	-103	250	9.07
11:00	7.35	14.93	2.13	0.00	31.8	-105	250	9.07
11:05	7.23	14.31	2.13	0.00	27.4	-106	250	9.07
11:10	7.16	14.21	2.13	0.00	26.2	-106	250	9.07
11:15	7.14	14.13	2.13	0.00	21.4	-107	250	9.07
Tolerance:	**0.1**	**---**	**0.03**	**0.1**	**0.1**	**+ or - 10**	**---**	

Information:

Remarks:

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

PAGE:

Project: Chemical Leaman Tank Lines, Inc. Site: Tonawanda, NY Well I.D.: B-L-2-3

Date: 7/20/2017 Sampling Personnel: Ernie Thalhamer Company: URS Corporation

Purging/ Sampling Device: Geopump Tubing Type: LDPE Tubing Inlet: Screen midpoint

Measuring Point: Below Top of Riser Initial Depth to Water: 9.41 Depth to Well Bottom: 22.08 Well Diameter: 2" Screen Length: 7

Casing Type: S.S. Volume in 1 Well Casing (liters): 7.8 Estimated Purge Volume (liters): 11

Sample ID: B-L2-3 Sample Time 17:05 QA/QC: Dup-072017 @ 0800

Sample Parameters:

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
14:10	7.13	19.35	1.35	0.81	375	-87	200	9.41
14:15	7.10	17.51	1.42	0.37	204	-90	200	9.44
14:20	7.09	17.12	1.43	0.26	111	-93	200	9.47
14:25	7.05	16.52	1.45	0.14	87.4	-104	200	9.50
14:30	7.06	16.18	1.52	0.00	83.1	-115	200	9.51
14:35	7.05	15.42	1.54	0.00	71.2	-117	200	9.53
14:40	7.04	15.37	1.57	0.00	61.4	-118	200	9.54
14:45	7.05	15.17	1.63	0.00	41.3	-119	200	9.54
14:50	7.05	14.95	1.66	0.00	36.2	-119	200	9.54
14:55	7.05	14.83	1.69	0.00	28.4	-120	200	9.54
15:00	7.05	14.79	1.72	0.00	21.2	-120	200	9.54
15:05	7.05	14.74	1.74	0.00	14.3	-120	200	9.54
Tolerance:	**0.1**	**---**	**0.03**	**0.1**	**0.1**	**+ or - 10**	**---**	

Information:

Remarks:

APPENDIX C

LABORATORY REPORTS AND

CHAIN-OF-CUSTODY RECORD

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

TestAmerica Job ID: 480-121478-1
Client Project/Site: Chem Leeman Project

For:
AECOM, Inc.
257 West Genesee Street
Suite 400
Buffalo, New York 14202-2657

Attn: Ms. Ann Marie Kropovitch

Authorized for release by:
8/14/2017 1:24:45 PM
Rebecca Jones, Project Management Assistant I
rebecca.jones@testamericainc.com

Designee for

Melissa Deyo, Project Manager I
(716)504-9874
melissa.deyo@testamericainc.com

Table of Contents

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
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	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 480-121478-1

Laboratory: TestAmerica Buffalo

Narrative

Job Narrative
480-121478-1

Receipt
The samples were received on 7/21/2017 1:40 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.5º C.

GC/MS VOA
Method(s) 8260C: The following sample was diluted to bring the concentration of target analytes within the calibration range: B-L2-2 (480-121478-5). Elevated reporting limits (RLs) are provided.

Method(s) 8260C: The sample(s) was collected in properly preserved vials for analysis of volatile organic compounds (VOCs). However, when verified by the laboratory, the pH was greater than 2 and the following samples was analyzed after 7 days from sampling: B-L1-3 (480-121478-3) and B-L2-1 (480-121478-4).

Method(s) 8260C: The following volatiles samples were diluted due to foaming at the time of purging during the original sample analysis: B-L1-1 (480-121478-1) and B-L1-2 (480-121478-2). Elevated reporting limits (RLs) are provided.

Method(s) 8260C: The following volatile sample was analyzed with significant headspace in the sample Containers: B-L1-3 (480-121478-3). Significant headspace is defined as a bubble greater than 6 mm in diameter.

Method(s) 8260C: Reanalysis of the following samples was performed outside of the analytical holding time due to holding time limitations: B-L1-3 (480-121478-3). The original analysis was run within hold but was over-diluted.

Method(s) 8260C: The sample was collected in properly preserved vials for analysis of volatile organic compounds (VOCs). However, when verified by the laboratory, the pH was greater than 2 and the following sample was analyzed after 7 days from sampling: B-L1-3 (480-121478-3).

Method(s) 8260C: The following sample was diluted to bring the concentration of target analytes within the calibration range: B-L1-3 (480-121478-3). Elevated reporting limits (RLs) are provided.

Method(s) 8260C: The continuing calibration verification (CCV) associated with batch 480-371850 recovered outside acceptance criteria, low biased, for Vinyl Chloride and Chloromethane. A reporting limit (RL) standard was analyzed, and the target analytes were detected. Since the associated samples were non-detect for these analytes, the data have been reported. The following sample is impacted: B-L1-3 (480-121478-3).

Method(s) 8260C: The initial calibration curve associated with analytical batch 480-371850 was outside acceptance criteria for Bromoform. A CCV standard at or below the reporting limit (RL) was analyzed and found to be acceptable. The following samples were non detect for the affected analyte, therefore, the data have been reported. The following sample is impacted: B-L1-3 (480-121478-3).

Method(s) 8260C: The following sample was diluted based on screening information: B-L1-3 (480-121478-3). Elevated reporting limits (RLs) are provided. This sample was re-analyzed at a lesser dilution, however outside of the analytical holding time. Both sets of data have been reported. Sample non-homogeneity is suspected due to inconsistency between the original and re-analysis.

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

Detection Summary

Client: AECOM, Inc.
Project/Site: Chem Leeman Project

TestAmerica Job ID: 480-121478-1

Client Sample ID: B-L1-1 — Lab Sample ID: 480-121478-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2-Dichlorobenzene	260		20	16	ug/L	20		8260C	Total/NA
1,3-Dichlorobenzene	180		20	16	ug/L	20		8260C	Total/NA
1,4-Dichlorobenzene	490		20	17	ug/L	20		8260C	Total/NA
Benzene	85		20	8.2	ug/L	20		8260C	Total/NA
Chlorobenzene	1500		20	15	ug/L	20		8260C	Total/NA
cis-1,2-Dichloroethene	330		20	16	ug/L	20		8260C	Total/NA
Ethylbenzene	200		20	15	ug/L	20		8260C	Total/NA
Toluene	120		20	10	ug/L	20		8260C	Total/NA
Vinyl chloride	130		20	18	ug/L	20		8260C	Total/NA
Xylenes, Total	110		40	13	ug/L	20		8260C	Total/NA

Client Sample ID: B-L1-2 — Lab Sample ID: 480-121478-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2-Dichlorobenzene	290		20	16	ug/L	20		8260C	Total/NA
1,3-Dichlorobenzene	190		20	16	ug/L	20		8260C	Total/NA
1,4-Dichlorobenzene	530		20	17	ug/L	20		8260C	Total/NA
Benzene	92		20	8.2	ug/L	20		8260C	Total/NA
Chlorobenzene	1600		20	15	ug/L	20		8260C	Total/NA
cis-1,2-Dichloroethene	360		20	16	ug/L	20		8260C	Total/NA
Ethylbenzene	220		20	15	ug/L	20		8260C	Total/NA
Toluene	140		20	10	ug/L	20		8260C	Total/NA
Vinyl chloride	130		20	18	ug/L	20		8260C	Total/NA
Xylenes, Total	110		40	13	ug/L	20		8260C	Total/NA

Client Sample ID: B-L1-3 — Lab Sample ID: 480-121478-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	750		200	150	ug/L	200		8260C	Total/NA
1,2-Dichlorobenzene - RA	88	J H	100	79	ug/L	100		8260C	Total/NA
1,4-Dichlorobenzene - RA	280	H	100	84	ug/L	100		8260C	Total/NA
Benzene - RA	410	H	100	41	ug/L	100		8260C	Total/NA
Chlorobenzene - RA	7800	H	100	75	ug/L	100		8260C	Total/NA
Ethylbenzene - RA	93	J H	100	74	ug/L	100		8260C	Total/NA
Toluene - RA	620	H	100	51	ug/L	100		8260C	Total/NA
Xylenes, Total - RA	94	J H	200	66	ug/L	100		8260C	Total/NA

Client Sample ID: B-L2-1 — Lab Sample ID: 480-121478-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	2.1		1.0	0.38	ug/L	1		8260C	Total/NA
1,2,4-Trichlorobenzene	12		1.0	0.41	ug/L	1		8260C	Total/NA
1,2-Dichlorobenzene	5.2		1.0	0.79	ug/L	1		8260C	Total/NA
1,2-Dichloroethane	0.29	J	1.0	0.21	ug/L	1		8260C	Total/NA
1,3-Dichlorobenzene	11		1.0	0.78	ug/L	1		8260C	Total/NA
1,4-Dichlorobenzene	13		1.0	0.84	ug/L	1		8260C	Total/NA
2-Butanone (MEK)	4.3	J	10	1.3	ug/L	1		8260C	Total/NA
Acetone	10		10	3.0	ug/L	1		8260C	Total/NA
Benzene	19		1.0	0.41	ug/L	1		8260C	Total/NA
Carbon disulfide	6.5		1.0	0.19	ug/L	1		8260C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: B-L2-1 (Continued) — Lab Sample ID: 480-121478-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	43		1.0	0.75	ug/L	1		8260C	Total/NA
Chloroethane	2.3		1.0	0.32	ug/L	1		8260C	Total/NA
cis-1,2-Dichloroethene	2.4		1.0	0.81	ug/L	1		8260C	Total/NA
Ethylbenzene	3.9		1.0	0.74	ug/L	1		8260C	Total/NA
Isopropylbenzene	1.8		1.0	0.79	ug/L	1		8260C	Total/NA
Tetrachloroethene	13		1.0	0.36	ug/L	1		8260C	Total/NA
Toluene	2.8		1.0	0.51	ug/L	1		8260C	Total/NA
Trichloroethene	0.56	J	1.0	0.46	ug/L	1		8260C	Total/NA
Vinyl chloride	6.1		1.0	0.90	ug/L	1		8260C	Total/NA
Xylenes, Total	13		2.0	0.66	ug/L	1		8260C	Total/NA

Client Sample ID: B-L2-2 — Lab Sample ID: 480-121478-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,2-Trichloro-1,2,2-trifluoroethane	1.2	J	2.0	0.62	ug/L	2		8260C	Total/NA
1,2,4-Trichlorobenzene	17		2.0	0.82	ug/L	2		8260C	Total/NA
1,2-Dichlorobenzene	2.9		2.0	1.6	ug/L	2		8260C	Total/NA
1,3-Dichlorobenzene	33		2.0	1.6	ug/L	2		8260C	Total/NA
1,4-Dichlorobenzene	50		2.0	1.7	ug/L	2		8260C	Total/NA
Benzene	1.8	J	2.0	0.82	ug/L	2		8260C	Total/NA
Chlorobenzene	67		2.0	1.5	ug/L	2		8260C	Total/NA
Toluene	1.2	J	2.0	1.0	ug/L	2		8260C	Total/NA

Client Sample ID: B-L2-3 — Lab Sample ID: 480-121478-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	2.9		1.0	0.38	ug/L	1		8260C	Total/NA
1,2-Dichlorobenzene	4.3		1.0	0.79	ug/L	1		8260C	Total/NA
1,3-Dichlorobenzene	50		1.0	0.78	ug/L	1		8260C	Total/NA
1,4-Dichlorobenzene	23		1.0	0.84	ug/L	1		8260C	Total/NA
Benzene	7.7		1.0	0.41	ug/L	1		8260C	Total/NA
Carbon disulfide	0.88	J	1.0	0.19	ug/L	1		8260C	Total/NA
Chlorobenzene	46		1.0	0.75	ug/L	1		8260C	Total/NA
Chloroethane	1.2		1.0	0.32	ug/L	1		8260C	Total/NA
cis-1,2-Dichloroethene	0.97	J	1.0	0.81	ug/L	1		8260C	Total/NA
Ethylbenzene	5.1		1.0	0.74	ug/L	1		8260C	Total/NA
Methylcyclohexane	0.16	J	1.0	0.16	ug/L	1		8260C	Total/NA
Tetrachloroethene	0.37	J	1.0	0.36	ug/L	1		8260C	Total/NA
Toluene	3.4		1.0	0.51	ug/L	1		8260C	Total/NA
Vinyl chloride	1.8		1.0	0.90	ug/L	1		8260C	Total/NA
Xylenes, Total	8.8		2.0	0.66	ug/L	1		8260C	Total/NA

Client Sample ID: DUP-072017 — Lab Sample ID: 480-121478-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	2.9		1.0	0.38	ug/L	1		8260C	Total/NA
1,2-Dichlorobenzene	4.2		1.0	0.79	ug/L	1		8260C	Total/NA
1,3-Dichlorobenzene	51		1.0	0.78	ug/L	1		8260C	Total/NA
1,4-Dichlorobenzene	22		1.0	0.84	ug/L	1		8260C	Total/NA
Benzene	7.6		1.0	0.41	ug/L	1		8260C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: DUP-072017 (Continued)

Lab Sample ID: 480-121478-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Carbon disulfide	1.0		1.0	0.19	ug/L	1		8260C	Total/NA
Chlorobenzene	48		1.0	0.75	ug/L	1		8260C	Total/NA
Chloroethane	1.2		1.0	0.32	ug/L	1		8260C	Total/NA
cis-1,2-Dichloroethene	1.0		1.0	0.81	ug/L	1		8260C	Total/NA
Ethylbenzene	5.3		1.0	0.74	ug/L	1		8260C	Total/NA
Methylcyclohexane	0.18	J	1.0	0.16	ug/L	1		8260C	Total/NA
Tetrachloroethene	0.38	J	1.0	0.36	ug/L	1		8260C	Total/NA
Toluene	3.5		1.0	0.51	ug/L	1		8260C	Total/NA
Vinyl chloride	2.0		1.0	0.90	ug/L	1		8260C	Total/NA
Xylenes, Total	9.0		2.0	0.66	ug/L	1		8260C	Total/NA

Client Sample ID: TB-072017

Lab Sample ID: 480-121478-8

No Detections.

This Detection Summary does not include radiochemical test results.

Client: AECOM, Inc.
Project/Site: Chem Leeman Project

TestAmerica Job ID: 480-121478-1

Client Sample ID: B-L1-1
Date Collected: 07/21/17 10:00
Date Received: 07/21/17 13:40

Lab Sample ID: 480-121478-1
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		20	16	ug/L			08/04/17 00:51	20
1,1,2,2-Tetrachloroethane	ND		20	4.2	ug/L			08/04/17 00:51	20
1,1,2-Trichloroethane	ND		20	4.6	ug/L			08/04/17 00:51	20
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		20	6.2	ug/L			08/04/17 00:51	20
1,1-Dichloroethane	ND		20	7.6	ug/L			08/04/17 00:51	20
1,1-Dichloroethene	ND		20	5.8	ug/L			08/04/17 00:51	20
1,2,4-Trichlorobenzene	ND		20	8.2	ug/L			08/04/17 00:51	20
1,2-Dibromo-3-Chloropropane	ND		20	7.8	ug/L			08/04/17 00:51	20
1,2-Dichlorobenzene	**260**		20	16	ug/L			08/04/17 00:51	20
1,2-Dichloroethane	ND		20	4.2	ug/L			08/04/17 00:51	20
1,2-Dichloropropane	ND		20	14	ug/L			08/04/17 00:51	20
1,3-Dichlorobenzene	**180**		20	16	ug/L			08/04/17 00:51	20
1,4-Dichlorobenzene	**490**		20	17	ug/L			08/04/17 00:51	20
2-Butanone (MEK)	ND		200	26	ug/L			08/04/17 00:51	20
2-Hexanone	ND		100	25	ug/L			08/04/17 00:51	20
4-Methyl-2-pentanone (MIBK)	ND		100	42	ug/L			08/04/17 00:51	20
Acetone	ND		200	60	ug/L			08/04/17 00:51	20
Benzene	**85**		20	8.2	ug/L			08/04/17 00:51	20
Bromodichloromethane	ND		20	7.8	ug/L			08/04/17 00:51	20
Bromoform	ND		20	5.2	ug/L			08/04/17 00:51	20
Bromomethane	ND		20	14	ug/L			08/04/17 00:51	20
Carbon disulfide	ND		20	3.8	ug/L			08/04/17 00:51	20
Carbon tetrachloride	ND		20	5.4	ug/L			08/04/17 00:51	20
Chlorobenzene	**1500**		20	15	ug/L			08/04/17 00:51	20
Dibromochloromethane	ND		20	6.4	ug/L			08/04/17 00:51	20
Chloroethane	ND		20	6.4	ug/L			08/04/17 00:51	20
Chloroform	ND		20	6.8	ug/L			08/04/17 00:51	20
Chloromethane	ND		20	7.0	ug/L			08/04/17 00:51	20
cis-1,2-Dichloroethene	**330**		20	16	ug/L			08/04/17 00:51	20
cis-1,3-Dichloropropene	ND		20	7.2	ug/L			08/04/17 00:51	20
Cyclohexane	ND		20	3.6	ug/L			08/04/17 00:51	20
Dichlorodifluoromethane	ND		20	14	ug/L			08/04/17 00:51	20
Ethylbenzene	**200**		20	15	ug/L			08/04/17 00:51	20
1,2-Dibromoethane	ND		20	15	ug/L			08/04/17 00:51	20
Isopropylbenzene	ND		20	16	ug/L			08/04/17 00:51	20
Methyl acetate	ND		50	26	ug/L			08/04/17 00:51	20
Methyl tert-butyl ether	ND		20	3.2	ug/L			08/04/17 00:51	20
Methylcyclohexane	ND		20	3.2	ug/L			08/04/17 00:51	20
Methylene Chloride	ND		20	8.8	ug/L			08/04/17 00:51	20
Styrene	ND		20	15	ug/L			08/04/17 00:51	20
Tetrachloroethene	ND		20	7.2	ug/L			08/04/17 00:51	20
Toluene	**120**		20	10	ug/L			08/04/17 00:51	20
trans-1,2-Dichloroethene	ND		20	18	ug/L			08/04/17 00:51	20
trans-1,3-Dichloropropene	ND		20	7.4	ug/L			08/04/17 00:51	20
Trichloroethene	ND		20	9.2	ug/L			08/04/17 00:51	20
Trichlorofluoromethane	ND		20	18	ug/L			08/04/17 00:51	20
Vinyl chloride	**130**		20	18	ug/L			08/04/17 00:51	20
Xylenes, Total	**110**		40	13	ug/L			08/04/17 00:51	20

Client: AECOM, Inc.
Project/Site: Chem Leeman Project

TestAmerica Job ID: 480-121478-1

Client Sample ID: B-L1-1
Date Collected: 07/21/17 10:00
Date Received: 07/21/17 13:40

Lab Sample ID: 480-121478-1
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		80 - 120		08/04/17 00:51	20
1,2-Dichloroethane-d4 (Surr)	93		77 - 120		08/04/17 00:51	20
4-Bromofluorobenzene (Surr)	100		73 - 120		08/04/17 00:51	20
Dibromofluoromethane (Surr)	105		75 - 123		08/04/17 00:51	20

Client Sample ID: B-L1-2
Date Collected: 07/21/17 11:10
Date Received: 07/21/17 13:40

Lab Sample ID: 480-121478-2
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		20	16	ug/L			08/04/17 01:15	20
1,1,2,2-Tetrachloroethane	ND		20	4.2	ug/L			08/04/17 01:15	20
1,1,2-Trichloroethane	ND		20	4.6	ug/L			08/04/17 01:15	20
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		20	6.2	ug/L			08/04/17 01:15	20
1,1-Dichloroethane	ND		20	7.6	ug/L			08/04/17 01:15	20
1,1-Dichloroethene	ND		20	5.8	ug/L			08/04/17 01:15	20
1,2,4-Trichlorobenzene	ND		20	8.2	ug/L			08/04/17 01:15	20
1,2-Dibromo-3-Chloropropane	ND		20	7.8	ug/L			08/04/17 01:15	20
1,2-Dichlorobenzene	**290**		20	16	ug/L			08/04/17 01:15	20
1,2-Dichloroethane	ND		20	4.2	ug/L			08/04/17 01:15	20
1,2-Dichloropropane	ND		20	14	ug/L			08/04/17 01:15	20
1,3-Dichlorobenzene	**190**		20	16	ug/L			08/04/17 01:15	20
1,4-Dichlorobenzene	**530**		20	17	ug/L			08/04/17 01:15	20
2-Butanone (MEK)	ND		200	26	ug/L			08/04/17 01:15	20
2-Hexanone	ND		100	25	ug/L			08/04/17 01:15	20
4-Methyl-2-pentanone (MIBK)	ND		100	42	ug/L			08/04/17 01:15	20
Acetone	ND		200	60	ug/L			08/04/17 01:15	20
Benzene	**92**		20	8.2	ug/L			08/04/17 01:15	20
Bromodichloromethane	ND		20	7.8	ug/L			08/04/17 01:15	20
Bromoform	ND		20	5.2	ug/L			08/04/17 01:15	20
Bromomethane	ND		20	14	ug/L			08/04/17 01:15	20
Carbon disulfide	ND		20	3.8	ug/L			08/04/17 01:15	20
Carbon tetrachloride	ND		20	5.4	ug/L			08/04/17 01:15	20
Chlorobenzene	**1600**		20	15	ug/L			08/04/17 01:15	20
Dibromochloromethane	ND		20	6.4	ug/L			08/04/17 01:15	20
Chloroethane	ND		20	6.4	ug/L			08/04/17 01:15	20
Chloroform	ND		20	6.8	ug/L			08/04/17 01:15	20
Chloromethane	ND		20	7.0	ug/L			08/04/17 01:15	20
cis-1,2-Dichloroethene	**360**		20	16	ug/L			08/04/17 01:15	20
cis-1,3-Dichloropropene	ND		20	7.2	ug/L			08/04/17 01:15	20
Cyclohexane	ND		20	3.6	ug/L			08/04/17 01:15	20
Dichlorodifluoromethane	ND		20	14	ug/L			08/04/17 01:15	20
Ethylbenzene	**220**		20	15	ug/L			08/04/17 01:15	20
1,2-Dibromoethane	ND		20	15	ug/L			08/04/17 01:15	20
Isopropylbenzene	ND		20	16	ug/L			08/04/17 01:15	20
Methyl acetate	ND		50	26	ug/L			08/04/17 01:15	20
Methyl tert-butyl ether	ND		20	3.2	ug/L			08/04/17 01:15	20
Methylcyclohexane	ND		20	3.2	ug/L			08/04/17 01:15	20
Methylene Chloride	ND		20	8.8	ug/L			08/04/17 01:15	20
Styrene	ND		20	15	ug/L			08/04/17 01:15	20
Tetrachloroethene	ND		20	7.2	ug/L			08/04/17 01:15	20
Toluene	**140**		20	10	ug/L			08/04/17 01:15	20
trans-1,2-Dichloroethene	ND		20	18	ug/L			08/04/17 01:15	20
trans-1,3-Dichloropropene	ND		20	7.4	ug/L			08/04/17 01:15	20
Trichloroethene	ND		20	9.2	ug/L			08/04/17 01:15	20
Trichlorofluoromethane	ND		20	18	ug/L			08/04/17 01:15	20
Vinyl chloride	**130**		20	18	ug/L			08/04/17 01:15	20
Xylenes, Total	**110**		40	13	ug/L			08/04/17 01:15	20

Client: AECOM, Inc.
Project/Site: Chem Leeman Project

TestAmerica Job ID: 480-121478-1

Client Sample ID: B-L1-2
Date Collected: 07/21/17 11:10
Date Received: 07/21/17 13:40

Lab Sample ID: 480-121478-2
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		80 - 120		08/04/17 01:15	20
1,2-Dichloroethane-d4 (Surr)	103		77 - 120		08/04/17 01:15	20
4-Bromofluorobenzene (Surr)	99		73 - 120		08/04/17 01:15	20
Dibromofluoromethane (Surr)	105		75 - 123		08/04/17 01:15	20

Client Sample ID: B-L1-3
Date Collected: 07/20/17 10:15
Date Received: 07/21/17 13:40

Lab Sample ID: 480-121478-3
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		200	160	ug/L			08/03/17 19:22	200
1,1,2,2-Tetrachloroethane	ND		200	42	ug/L			08/03/17 19:22	200
1,1,2-Trichloroethane	ND		200	46	ug/L			08/03/17 19:22	200
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		200	62	ug/L			08/03/17 19:22	200
1,1-Dichloroethane	ND		200	76	ug/L			08/03/17 19:22	200
1,1-Dichloroethene	ND		200	58	ug/L			08/03/17 19:22	200
1,2,4-Trichlorobenzene	ND		200	82	ug/L			08/03/17 19:22	200
1,2-Dibromo-3-Chloropropane	ND		200	78	ug/L			08/03/17 19:22	200
1,2-Dichlorobenzene	ND		200	160	ug/L			08/03/17 19:22	200
1,2-Dichloroethane	ND		200	42	ug/L			08/03/17 19:22	200
1,2-Dichloropropane	ND		200	140	ug/L			08/03/17 19:22	200
1,3-Dichlorobenzene	ND		200	160	ug/L			08/03/17 19:22	200
1,4-Dichlorobenzene	ND		200	170	ug/L			08/03/17 19:22	200
2-Butanone (MEK)	ND		2000	260	ug/L			08/03/17 19:22	200
2-Hexanone	ND		1000	250	ug/L			08/03/17 19:22	200
4-Methyl-2-pentanone (MIBK)	ND		1000	420	ug/L			08/03/17 19:22	200
Acetone	ND		2000	600	ug/L			08/03/17 19:22	200
Benzene	ND		200	82	ug/L			08/03/17 19:22	200
Bromodichloromethane	ND		200	78	ug/L			08/03/17 19:22	200
Bromoform	ND		200	52	ug/L			08/03/17 19:22	200
Bromomethane	ND		200	140	ug/L			08/03/17 19:22	200
Carbon disulfide	ND		200	38	ug/L			08/03/17 19:22	200
Carbon tetrachloride	ND		200	54	ug/L			08/03/17 19:22	200
Chlorobenzene	**750**		200	150	ug/L			08/03/17 19:22	200
Dibromochloromethane	ND		200	64	ug/L			08/03/17 19:22	200
Chloroethane	ND		200	64	ug/L			08/03/17 19:22	200
Chloroform	ND		200	68	ug/L			08/03/17 19:22	200
Chloromethane	ND		200	70	ug/L			08/03/17 19:22	200
cis-1,2-Dichloroethene	ND		200	160	ug/L			08/03/17 19:22	200
cis-1,3-Dichloropropene	ND		200	72	ug/L			08/03/17 19:22	200
Cyclohexane	ND		200	36	ug/L			08/03/17 19:22	200
Dichlorodifluoromethane	ND		200	140	ug/L			08/03/17 19:22	200
Ethylbenzene	ND		200	150	ug/L			08/03/17 19:22	200
1,2-Dibromoethane	ND		200	150	ug/L			08/03/17 19:22	200
Isopropylbenzene	ND		200	160	ug/L			08/03/17 19:22	200
Methyl acetate	ND		500	260	ug/L			08/03/17 19:22	200
Methyl tert-butyl ether	ND		200	32	ug/L			08/03/17 19:22	200
Methylcyclohexane	ND		200	32	ug/L			08/03/17 19:22	200
Methylene Chloride	ND		200	88	ug/L			08/03/17 19:22	200
Styrene	ND		200	150	ug/L			08/03/17 19:22	200
Tetrachloroethene	ND		200	72	ug/L			08/03/17 19:22	200
Toluene	ND		200	100	ug/L			08/03/17 19:22	200
trans-1,2-Dichloroethene	ND		200	180	ug/L			08/03/17 19:22	200
trans-1,3-Dichloropropene	ND		200	74	ug/L			08/03/17 19:22	200
Trichloroethene	ND		200	92	ug/L			08/03/17 19:22	200
Trichlorofluoromethane	ND		200	180	ug/L			08/03/17 19:22	200
Vinyl chloride	ND		200	180	ug/L			08/03/17 19:22	200
Xylenes, Total	ND		400	130	ug/L			08/03/17 19:22	200

Client: AECOM, Inc.
Project/Site: Chem Leeman Project

TestAmerica Job ID: 480-121478-1

Client Sample ID: B-L1-3
Date Collected: 07/20/17 10:15
Date Received: 07/21/17 13:40

Lab Sample ID: 480-121478-3
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	*99*		*80 - 120*		*08/03/17 19:22*	*200*
1,2-Dichloroethane-d4 (Surr)	*99*		*77 - 120*		*08/03/17 19:22*	*200*
4-Bromofluorobenzene (Surr)	*97*		*73 - 120*		*08/03/17 19:22*	*200*
Dibromofluoromethane (Surr)	*97*		*75 - 123*		*08/03/17 19:22*	*200*

Method: 8260C - Volatile Organic Compounds by GC/MS - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	H	100	82	ug/L			08/12/17 00:28	100
1,1,2,2-Tetrachloroethane	ND	H	100	21	ug/L			08/12/17 00:28	100
1,1,2-Trichloroethane	ND	H	100	23	ug/L			08/12/17 00:28	100
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	H	100	31	ug/L			08/12/17 00:28	100
1,1-Dichloroethane	ND	H	100	38	ug/L			08/12/17 00:28	100
1,1-Dichloroethene	ND	H	100	29	ug/L			08/12/17 00:28	100
1,2,4-Trichlorobenzene	ND	H	100	41	ug/L			08/12/17 00:28	100
1,2-Dibromo-3-Chloropropane	ND	H	100	39	ug/L			08/12/17 00:28	100
1,2-Dichlorobenzene	**88**	**J H**	100	79	ug/L			08/12/17 00:28	100
1,2-Dichloroethane	ND	H	100	21	ug/L			08/12/17 00:28	100
1,2-Dichloropropane	ND	H	100	72	ug/L			08/12/17 00:28	100
1,3-Dichlorobenzene	ND	H	100	78	ug/L			08/12/17 00:28	100
1,4-Dichlorobenzene	**280**	**H**	100	84	ug/L			08/12/17 00:28	100
2-Butanone (MEK)	ND	H	1000	130	ug/L			08/12/17 00:28	100
2-Hexanone	ND	H	500	120	ug/L			08/12/17 00:28	100
4-Methyl-2-pentanone (MIBK)	ND	H	500	210	ug/L			08/12/17 00:28	100
Acetone	ND	H	1000	300	ug/L			08/12/17 00:28	100
Benzene	**410**	**H**	100	41	ug/L			08/12/17 00:28	100
Bromodichloromethane	ND	H	100	39	ug/L			08/12/17 00:28	100
Bromoform	ND	H	100	26	ug/L			08/12/17 00:28	100
Bromomethane	ND	H	100	69	ug/L			08/12/17 00:28	100
Carbon disulfide	ND	H	100	19	ug/L			08/12/17 00:28	100
Carbon tetrachloride	ND	H	100	27	ug/L			08/12/17 00:28	100
Chlorobenzene	**7800**	**H**	100	75	ug/L			08/12/17 00:28	100
Dibromochloromethane	ND	H	100	32	ug/L			08/12/17 00:28	100
Chloroethane	ND	H	100	32	ug/L			08/12/17 00:28	100
Chloroform	ND	H	100	34	ug/L			08/12/17 00:28	100
Chloromethane	ND	H	100	35	ug/L			08/12/17 00:28	100
cis-1,2-Dichloroethene	ND	H	100	81	ug/L			08/12/17 00:28	100
cis-1,3-Dichloropropene	ND	H	100	36	ug/L			08/12/17 00:28	100
Cyclohexane	ND	H	100	18	ug/L			08/12/17 00:28	100
Dichlorodifluoromethane	ND	H	100	68	ug/L			08/12/17 00:28	100
Ethylbenzene	**93**	**J H**	100	74	ug/L			08/12/17 00:28	100
1,2-Dibromoethane	ND	H	100	73	ug/L			08/12/17 00:28	100
Isopropylbenzene	ND	H	100	79	ug/L			08/12/17 00:28	100
Methyl acetate	ND	H	250	130	ug/L			08/12/17 00:28	100
Methyl tert-butyl ether	ND	H	100	16	ug/L			08/12/17 00:28	100
Methylcyclohexane	ND	H	100	16	ug/L			08/12/17 00:28	100
Methylene Chloride	ND	H	100	44	ug/L			08/12/17 00:28	100
Styrene	ND	H	100	73	ug/L			08/12/17 00:28	100
Tetrachloroethene	ND	H	100	36	ug/L			08/12/17 00:28	100
Toluene	**620**	**H**	100	51	ug/L			08/12/17 00:28	100
trans-1,2-Dichloroethene	ND	H	100	90	ug/L			08/12/17 00:28	100

Client: AECOM, Inc.
Project/Site: Chem Leeman Project

TestAmerica Job ID: 480-121478-1

Client Sample ID: B-L1-3
Date Collected: 07/20/17 10:15
Date Received: 07/21/17 13:40

Lab Sample ID: 480-121478-3
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS - RA (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,3-Dichloropropene	ND	H	100	37	ug/L			08/12/17 00:28	100
Trichloroethene	ND	H	100	46	ug/L			08/12/17 00:28	100
Trichlorofluoromethane	ND	H	100	88	ug/L			08/12/17 00:28	100
Vinyl chloride	ND	H	100	90	ug/L			08/12/17 00:28	100
Xylenes, Total	**94**	**J H**	200	66	ug/L			08/12/17 00:28	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*		*08/12/17 00:28*	*100*
1,2-Dichloroethane-d4 (Surr)	*100*		*77 - 120*		*08/12/17 00:28*	*100*
4-Bromofluorobenzene (Surr)	*97*		*73 - 120*		*08/12/17 00:28*	*100*
Dibromofluoromethane (Surr)	*100*		*75 - 123*		*08/12/17 00:28*	*100*

Client Sample ID: B-L2-1
Date Collected: 07/20/17 16:00
Date Received: 07/21/17 13:40

Lab Sample ID: 480-121478-4
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.82	ug/L			08/03/17 19:45	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			08/03/17 19:45	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			08/03/17 19:45	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			08/03/17 19:45	1
1,1-Dichloroethane	**2.1**		1.0	0.38	ug/L			08/03/17 19:45	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			08/03/17 19:45	1
1,2,4-Trichlorobenzene	**12**		1.0	0.41	ug/L			08/03/17 19:45	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			08/03/17 19:45	1
1,2-Dichlorobenzene	**5.2**		1.0	0.79	ug/L			08/03/17 19:45	1
1,2-Dichloroethane	**0.29**	**J**	1.0	0.21	ug/L			08/03/17 19:45	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			08/03/17 19:45	1
1,3-Dichlorobenzene	**11**		1.0	0.78	ug/L			08/03/17 19:45	1
1,4-Dichlorobenzene	**13**		1.0	0.84	ug/L			08/03/17 19:45	1
2-Butanone (MEK)	**4.3**	**J**	10	1.3	ug/L			08/03/17 19:45	1
2-Hexanone	ND		5.0	1.2	ug/L			08/03/17 19:45	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			08/03/17 19:45	1
Acetone	**10**		10	3.0	ug/L			08/03/17 19:45	1
Benzene	**19**		1.0	0.41	ug/L			08/03/17 19:45	1
Bromodichloromethane	ND		1.0	0.39	ug/L			08/03/17 19:45	1
Bromoform	ND		1.0	0.26	ug/L			08/03/17 19:45	1
Bromomethane	ND		1.0	0.69	ug/L			08/03/17 19:45	1
Carbon disulfide	**6.5**		1.0	0.19	ug/L			08/03/17 19:45	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			08/03/17 19:45	1
Chlorobenzene	**43**		1.0	0.75	ug/L			08/03/17 19:45	1
Dibromochloromethane	ND		1.0	0.32	ug/L			08/03/17 19:45	1
Chloroethane	**2.3**		1.0	0.32	ug/L			08/03/17 19:45	1
Chloroform	ND		1.0	0.34	ug/L			08/03/17 19:45	1
Chloromethane	ND		1.0	0.35	ug/L			08/03/17 19:45	1
cis-1,2-Dichloroethene	**2.4**		1.0	0.81	ug/L			08/03/17 19:45	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			08/03/17 19:45	1
Cyclohexane	ND		1.0	0.18	ug/L			08/03/17 19:45	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			08/03/17 19:45	1
Ethylbenzene	**3.9**		1.0	0.74	ug/L			08/03/17 19:45	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			08/03/17 19:45	1
Isopropylbenzene	**1.8**		1.0	0.79	ug/L			08/03/17 19:45	1
Methyl acetate	ND		2.5	1.3	ug/L			08/03/17 19:45	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			08/03/17 19:45	1
Methylcyclohexane	ND		1.0	0.16	ug/L			08/03/17 19:45	1
Methylene Chloride	ND		1.0	0.44	ug/L			08/03/17 19:45	1
Styrene	ND		1.0	0.73	ug/L			08/03/17 19:45	1
Tetrachloroethene	**13**		1.0	0.36	ug/L			08/03/17 19:45	1
Toluene	**2.8**		1.0	0.51	ug/L			08/03/17 19:45	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			08/03/17 19:45	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			08/03/17 19:45	1
Trichloroethene	**0.56**	**J**	1.0	0.46	ug/L			08/03/17 19:45	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			08/03/17 19:45	1
Vinyl chloride	**6.1**		1.0	0.90	ug/L			08/03/17 19:45	1
Xylenes, Total	**13**		2.0	0.66	ug/L			08/03/17 19:45	1

Client: AECOM, Inc.
Project/Site: Chem Leeman Project

TestAmerica Job ID: 480-121478-1

Client Sample ID: B-L2-1
Date Collected: 07/20/17 16:00
Date Received: 07/21/17 13:40

Lab Sample ID: 480-121478-4
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 120		08/03/17 19:45	1
1,2-Dichloroethane-d4 (Surr)	100		77 - 120		08/03/17 19:45	1
4-Bromofluorobenzene (Surr)	98		73 - 120		08/03/17 19:45	1
Dibromofluoromethane (Surr)	105		75 - 123		08/03/17 19:45	1

Client: AECOM, Inc.
Project/Site: Chem Leeman Project

TestAmerica Job ID: 480-121478-1

Client Sample ID: B-L2-2
Date Collected: 07/20/17 11:15
Date Received: 07/21/17 13:40

Lab Sample ID: 480-121478-5
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		2.0	1.6	ug/L			08/03/17 20:08	2
1,1,2,2-Tetrachloroethane	ND		2.0	0.42	ug/L			08/03/17 20:08	2
1,1,2-Trichloroethane	ND		2.0	0.46	ug/L			08/03/17 20:08	2
1,1,2-Trichloro-1,2,2-trifluoroethane	**1.2**	**J**	2.0	0.62	ug/L			08/03/17 20:08	2
1,1-Dichloroethane	ND		2.0	0.76	ug/L			08/03/17 20:08	2
1,1-Dichloroethene	ND		2.0	0.58	ug/L			08/03/17 20:08	2
1,2,4-Trichlorobenzene	**17**		2.0	0.82	ug/L			08/03/17 20:08	2
1,2-Dibromo-3-Chloropropane	ND		2.0	0.78	ug/L			08/03/17 20:08	2
1,2-Dichlorobenzene	**2.9**		2.0	1.6	ug/L			08/03/17 20:08	2
1,2-Dichloroethane	ND		2.0	0.42	ug/L			08/03/17 20:08	2
1,2-Dichloropropane	ND		2.0	1.4	ug/L			08/03/17 20:08	2
1,3-Dichlorobenzene	**33**		2.0	1.6	ug/L			08/03/17 20:08	2
1,4-Dichlorobenzene	**50**		2.0	1.7	ug/L			08/03/17 20:08	2
2-Butanone (MEK)	ND		20	2.6	ug/L			08/03/17 20:08	2
2-Hexanone	ND		10	2.5	ug/L			08/03/17 20:08	2
4-Methyl-2-pentanone (MIBK)	ND		10	4.2	ug/L			08/03/17 20:08	2
Acetone	ND		20	6.0	ug/L			08/03/17 20:08	2
Benzene	**1.8**	**J**	2.0	0.82	ug/L			08/03/17 20:08	2
Bromodichloromethane	ND		2.0	0.78	ug/L			08/03/17 20:08	2
Bromoform	ND		2.0	0.52	ug/L			08/03/17 20:08	2
Bromomethane	ND		2.0	1.4	ug/L			08/03/17 20:08	2
Carbon disulfide	ND		2.0	0.38	ug/L			08/03/17 20:08	2
Carbon tetrachloride	ND		2.0	0.54	ug/L			08/03/17 20:08	2
Chlorobenzene	**67**		2.0	1.5	ug/L			08/03/17 20:08	2
Dibromochloromethane	ND		2.0	0.64	ug/L			08/03/17 20:08	2
Chloroethane	ND		2.0	0.64	ug/L			08/03/17 20:08	2
Chloroform	ND		2.0	0.68	ug/L			08/03/17 20:08	2
Chloromethane	ND		2.0	0.70	ug/L			08/03/17 20:08	2
cis-1,2-Dichloroethene	ND		2.0	1.6	ug/L			08/03/17 20:08	2
cis-1,3-Dichloropropene	ND		2.0	0.72	ug/L			08/03/17 20:08	2
Cyclohexane	ND		2.0	0.36	ug/L			08/03/17 20:08	2
Dichlorodifluoromethane	ND		2.0	1.4	ug/L			08/03/17 20:08	2
Ethylbenzene	ND		2.0	1.5	ug/L			08/03/17 20:08	2
1,2-Dibromoethane	ND		2.0	1.5	ug/L			08/03/17 20:08	2
Isopropylbenzene	ND		2.0	1.6	ug/L			08/03/17 20:08	2
Methyl acetate	ND		5.0	2.6	ug/L			08/03/17 20:08	2
Methyl tert-butyl ether	ND		2.0	0.32	ug/L			08/03/17 20:08	2
Methylcyclohexane	ND		2.0	0.32	ug/L			08/03/17 20:08	2
Methylene Chloride	ND		2.0	0.88	ug/L			08/03/17 20:08	2
Styrene	ND		2.0	1.5	ug/L			08/03/17 20:08	2
Tetrachloroethene	ND		2.0	0.72	ug/L			08/03/17 20:08	2
Toluene	**1.2**	**J**	2.0	1.0	ug/L			08/03/17 20:08	2
trans-1,2-Dichloroethene	ND		2.0	1.8	ug/L			08/03/17 20:08	2
trans-1,3-Dichloropropene	ND		2.0	0.74	ug/L			08/03/17 20:08	2
Trichloroethene	ND		2.0	0.92	ug/L			08/03/17 20:08	2
Trichlorofluoromethane	ND		2.0	1.8	ug/L			08/03/17 20:08	2
Vinyl chloride	ND		2.0	1.8	ug/L			08/03/17 20:08	2
Xylenes, Total	ND		4.0	1.3	ug/L			08/03/17 20:08	2

Client: AECOM, Inc.
Project/Site: Chem Leeman Project

TestAmerica Job ID: 480-121478-1

Client Sample ID: B-L2-2
Date Collected: 07/20/17 11:15
Date Received: 07/21/17 13:40

Lab Sample ID: 480-121478-5
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	95		80 - 120		08/03/17 20:08	2
1,2-Dichloroethane-d4 (Surr)	96		77 - 120		08/03/17 20:08	2
4-Bromofluorobenzene (Surr)	97		73 - 120		08/03/17 20:08	2
Dibromofluoromethane (Surr)	98		75 - 123		08/03/17 20:08	2

Client Sample ID: B-L2-3
Date Collected: 07/20/17 17:05
Date Received: 07/21/17 13:40

Lab Sample ID: 480-121478-6
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.82	ug/L			08/03/17 20:31	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			08/03/17 20:31	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			08/03/17 20:31	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			08/03/17 20:31	1
1,1-Dichloroethane	**2.9**		1.0	0.38	ug/L			08/03/17 20:31	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			08/03/17 20:31	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			08/03/17 20:31	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			08/03/17 20:31	1
1,2-Dichlorobenzene	**4.3**		1.0	0.79	ug/L			08/03/17 20:31	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			08/03/17 20:31	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			08/03/17 20:31	1
1,3-Dichlorobenzene	**50**		1.0	0.78	ug/L			08/03/17 20:31	1
1,4-Dichlorobenzene	**23**		1.0	0.84	ug/L			08/03/17 20:31	1
2-Butanone (MEK)	ND		10	1.3	ug/L			08/03/17 20:31	1
2-Hexanone	ND		5.0	1.2	ug/L			08/03/17 20:31	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			08/03/17 20:31	1
Acetone	ND		10	3.0	ug/L			08/03/17 20:31	1
Benzene	**7.7**		1.0	0.41	ug/L			08/03/17 20:31	1
Bromodichloromethane	ND		1.0	0.39	ug/L			08/03/17 20:31	1
Bromoform	ND		1.0	0.26	ug/L			08/03/17 20:31	1
Bromomethane	ND		1.0	0.69	ug/L			08/03/17 20:31	1
Carbon disulfide	**0.88**	**J**	1.0	0.19	ug/L			08/03/17 20:31	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			08/03/17 20:31	1
Chlorobenzene	**46**		1.0	0.75	ug/L			08/03/17 20:31	1
Dibromochloromethane	ND		1.0	0.32	ug/L			08/03/17 20:31	1
Chloroethane	**1.2**		1.0	0.32	ug/L			08/03/17 20:31	1
Chloroform	ND		1.0	0.34	ug/L			08/03/17 20:31	1
Chloromethane	ND		1.0	0.35	ug/L			08/03/17 20:31	1
cis-1,2-Dichloroethene	**0.97**	**J**	1.0	0.81	ug/L			08/03/17 20:31	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			08/03/17 20:31	1
Cyclohexane	ND		1.0	0.18	ug/L			08/03/17 20:31	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			08/03/17 20:31	1
Ethylbenzene	**5.1**		1.0	0.74	ug/L			08/03/17 20:31	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			08/03/17 20:31	1
Isopropylbenzene	ND		1.0	0.79	ug/L			08/03/17 20:31	1
Methyl acetate	ND		2.5	1.3	ug/L			08/03/17 20:31	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			08/03/17 20:31	1
Methylcyclohexane	**0.16**	**J**	1.0	0.16	ug/L			08/03/17 20:31	1
Methylene Chloride	ND		1.0	0.44	ug/L			08/03/17 20:31	1
Styrene	ND		1.0	0.73	ug/L			08/03/17 20:31	1
Tetrachloroethene	**0.37**	**J**	1.0	0.36	ug/L			08/03/17 20:31	1
Toluene	**3.4**		1.0	0.51	ug/L			08/03/17 20:31	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			08/03/17 20:31	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			08/03/17 20:31	1
Trichloroethene	ND		1.0	0.46	ug/L			08/03/17 20:31	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			08/03/17 20:31	1
Vinyl chloride	**1.8**		1.0	0.90	ug/L			08/03/17 20:31	1
Xylenes, Total	**8.8**		2.0	0.66	ug/L			08/03/17 20:31	1

Client: AECOM, Inc.
Project/Site: Chem Leeman Project

TestAmerica Job ID: 480-121478-1

Client Sample ID: B-L2-3
Date Collected: 07/20/17 17:05
Date Received: 07/21/17 13:40

Lab Sample ID: 480-121478-6
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	94		80 - 120		08/03/17 20:31	1
1,2-Dichloroethane-d4 (Surr)	95		77 - 120		08/03/17 20:31	1
4-Bromofluorobenzene (Surr)	94		73 - 120		08/03/17 20:31	1
Dibromofluoromethane (Surr)	102		75 - 123		08/03/17 20:31	1

Client Sample ID: DUP-072017
Date Collected: 07/20/17 08:00
Date Received: 07/21/17 13:40

Lab Sample ID: 480-121478-7
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.82	ug/L			08/03/17 20:54	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			08/03/17 20:54	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			08/03/17 20:54	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			08/03/17 20:54	1
1,1-Dichloroethane	**2.9**		1.0	0.38	ug/L			08/03/17 20:54	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			08/03/17 20:54	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			08/03/17 20:54	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			08/03/17 20:54	1
1,2-Dichlorobenzene	**4.2**		1.0	0.79	ug/L			08/03/17 20:54	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			08/03/17 20:54	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			08/03/17 20:54	1
1,3-Dichlorobenzene	**51**		1.0	0.78	ug/L			08/03/17 20:54	1
1,4-Dichlorobenzene	**22**		1.0	0.84	ug/L			08/03/17 20:54	1
2-Butanone (MEK)	ND		10	1.3	ug/L			08/03/17 20:54	1
2-Hexanone	ND		5.0	1.2	ug/L			08/03/17 20:54	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			08/03/17 20:54	1
Acetone	ND		10	3.0	ug/L			08/03/17 20:54	1
Benzene	**7.6**		1.0	0.41	ug/L			08/03/17 20:54	1
Bromodichloromethane	ND		1.0	0.39	ug/L			08/03/17 20:54	1
Bromoform	ND		1.0	0.26	ug/L			08/03/17 20:54	1
Bromomethane	ND		1.0	0.69	ug/L			08/03/17 20:54	1
Carbon disulfide	**1.0**		1.0	0.19	ug/L			08/03/17 20:54	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			08/03/17 20:54	1
Chlorobenzene	**48**		1.0	0.75	ug/L			08/03/17 20:54	1
Dibromochloromethane	ND		1.0	0.32	ug/L			08/03/17 20:54	1
Chloroethane	**1.2**		1.0	0.32	ug/L			08/03/17 20:54	1
Chloroform	ND		1.0	0.34	ug/L			08/03/17 20:54	1
Chloromethane	ND		1.0	0.35	ug/L			08/03/17 20:54	1
cis-1,2-Dichloroethene	**1.0**		1.0	0.81	ug/L			08/03/17 20:54	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			08/03/17 20:54	1
Cyclohexane	ND		1.0	0.18	ug/L			08/03/17 20:54	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			08/03/17 20:54	1
Ethylbenzene	**5.3**		1.0	0.74	ug/L			08/03/17 20:54	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			08/03/17 20:54	1
Isopropylbenzene	ND		1.0	0.79	ug/L			08/03/17 20:54	1
Methyl acetate	ND		2.5	1.3	ug/L			08/03/17 20:54	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			08/03/17 20:54	1
Methylcyclohexane	**0.18**	**J**	1.0	0.16	ug/L			08/03/17 20:54	1
Methylene Chloride	ND		1.0	0.44	ug/L			08/03/17 20:54	1
Styrene	ND		1.0	0.73	ug/L			08/03/17 20:54	1
Tetrachloroethene	**0.38**	**J**	1.0	0.36	ug/L			08/03/17 20:54	1
Toluene	**3.5**		1.0	0.51	ug/L			08/03/17 20:54	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			08/03/17 20:54	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			08/03/17 20:54	1
Trichloroethene	ND		1.0	0.46	ug/L			08/03/17 20:54	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			08/03/17 20:54	1
Vinyl chloride	**2.0**		1.0	0.90	ug/L			08/03/17 20:54	1
Xylenes, Total	**9.0**		2.0	0.66	ug/L			08/03/17 20:54	1

Client: AECOM, Inc.
Project/Site: Chem Leeman Project

TestAmerica Job ID: 480-121478-1

Client Sample ID: DUP-072017
Date Collected: 07/20/17 08:00
Date Received: 07/21/17 13:40

Lab Sample ID: 480-121478-7
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	95		80 - 120		08/03/17 20:54	1
1,2-Dichloroethane-d4 (Surr)	100		77 - 120		08/03/17 20:54	1
4-Bromofluorobenzene (Surr)	101		73 - 120		08/03/17 20:54	1
Dibromofluoromethane (Surr)	100		75 - 123		08/03/17 20:54	1

Client: AECOM, Inc.
Project/Site: Chem Leeman Project

TestAmerica Job ID: 480-121478-1

Client Sample ID: TB-072017
Date Collected: 07/20/17 00:00
Date Received: 07/21/17 13:40

Lab Sample ID: 480-121478-8
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.82	ug/L			08/03/17 23:59	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			08/03/17 23:59	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			08/03/17 23:59	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			08/03/17 23:59	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			08/03/17 23:59	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			08/03/17 23:59	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			08/03/17 23:59	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			08/03/17 23:59	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			08/03/17 23:59	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			08/03/17 23:59	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			08/03/17 23:59	1
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			08/03/17 23:59	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			08/03/17 23:59	1
2-Butanone (MEK)	ND		10	1.3	ug/L			08/03/17 23:59	1
2-Hexanone	ND		5.0	1.2	ug/L			08/03/17 23:59	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			08/03/17 23:59	1
Acetone	ND		10	3.0	ug/L			08/03/17 23:59	1
Benzene	ND		1.0	0.41	ug/L			08/03/17 23:59	1
Bromodichloromethane	ND		1.0	0.39	ug/L			08/03/17 23:59	1
Bromoform	ND		1.0	0.26	ug/L			08/03/17 23:59	1
Bromomethane	ND		1.0	0.69	ug/L			08/03/17 23:59	1
Carbon disulfide	ND		1.0	0.19	ug/L			08/03/17 23:59	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			08/03/17 23:59	1
Chlorobenzene	ND		1.0	0.75	ug/L			08/03/17 23:59	1
Dibromochloromethane	ND		1.0	0.32	ug/L			08/03/17 23:59	1
Chloroethane	ND		1.0	0.32	ug/L			08/03/17 23:59	1
Chloroform	ND		1.0	0.34	ug/L			08/03/17 23:59	1
Chloromethane	ND		1.0	0.35	ug/L			08/03/17 23:59	1
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			08/03/17 23:59	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			08/03/17 23:59	1
Cyclohexane	ND		1.0	0.18	ug/L			08/03/17 23:59	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			08/03/17 23:59	1
Ethylbenzene	ND		1.0	0.74	ug/L			08/03/17 23:59	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			08/03/17 23:59	1
Isopropylbenzene	ND		1.0	0.79	ug/L			08/03/17 23:59	1
Methyl acetate	ND		2.5	1.3	ug/L			08/03/17 23:59	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			08/03/17 23:59	1
Methylcyclohexane	ND		1.0	0.16	ug/L			08/03/17 23:59	1
Methylene Chloride	ND		1.0	0.44	ug/L			08/03/17 23:59	1
Styrene	ND		1.0	0.73	ug/L			08/03/17 23:59	1
Tetrachloroethene	ND		1.0	0.36	ug/L			08/03/17 23:59	1
Toluene	ND		1.0	0.51	ug/L			08/03/17 23:59	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			08/03/17 23:59	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			08/03/17 23:59	1
Trichloroethene	ND		1.0	0.46	ug/L			08/03/17 23:59	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			08/03/17 23:59	1
Vinyl chloride	ND		1.0	0.90	ug/L			08/03/17 23:59	1
Xylenes, Total	ND		2.0	0.66	ug/L			08/03/17 23:59	1

Client: AECOM, Inc.
Project/Site: Chem Leeman Project

TestAmerica Job ID: 480-121478-1

Client Sample ID: TB-072017
Date Collected: 07/20/17 00:00
Date Received: 07/21/17 13:40

Lab Sample ID: 480-121478-8
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		80 - 120		08/03/17 23:59	1
1,2-Dichloroethane-d4 (Surr)	94		77 - 120		08/03/17 23:59	1
4-Bromofluorobenzene (Surr)	100		73 - 120		08/03/17 23:59	1
Dibromofluoromethane (Surr)	98		75 - 123		08/03/17 23:59	1

Surrogate Summary

Client: AECOM, Inc.
Project/Site: Chem Leeman Project

TestAmerica Job ID: 480-121478-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		TOL	12DCE	BFB	DBFM
Lab Sample ID	Client Sample ID	(80-120)	(77-120)	(73-120)	(75-123)
480-121478-1	B-L1-1	101	93	100	105
480-121478-2	B-L1-2	102	103	99	105
480-121478-3	B-L1-3	99	99	97	97
480-121478-3 - RA	B-L1-3	99	100	97	100
480-121478-4	B-L2-1	99	100	98	105
480-121478-5	B-L2-2	95	96	97	98
480-121478-6	B-L2-3	94	95	94	102
480-121478-7	DUP-072017	95	100	101	100
480-121478-8	TB-072017	101	94	100	98
LCS 480-370253/5	Lab Control Sample	97	95	96	99
LCS 480-370428/3	Lab Control Sample	99	102	99	107
LCS 480-371850/9	Lab Control Sample	99	102	101	101
MB 480-370253/7	Method Blank	103	97	97	103
MB 480-370428/5	Method Blank	101	96	98	100
MB 480-371850/7	Method Blank	100	101	97	97

Surrogate Legend

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

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 480-370253/7
Matrix: Water
Analysis Batch: 370253

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	0.82	ug/L			08/03/17 11:59	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			08/03/17 11:59	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			08/03/17 11:59	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			08/03/17 11:59	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			08/03/17 11:59	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			08/03/17 11:59	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			08/03/17 11:59	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			08/03/17 11:59	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			08/03/17 11:59	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			08/03/17 11:59	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			08/03/17 11:59	1
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			08/03/17 11:59	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			08/03/17 11:59	1
2-Butanone (MEK)	ND		10	1.3	ug/L			08/03/17 11:59	1
2-Hexanone	ND		5.0	1.2	ug/L			08/03/17 11:59	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			08/03/17 11:59	1
Acetone	ND		10	3.0	ug/L			08/03/17 11:59	1
Benzene	ND		1.0	0.41	ug/L			08/03/17 11:59	1
Bromodichloromethane	ND		1.0	0.39	ug/L			08/03/17 11:59	1
Bromoform	ND		1.0	0.26	ug/L			08/03/17 11:59	1
Bromomethane	ND		1.0	0.69	ug/L			08/03/17 11:59	1
Carbon disulfide	ND		1.0	0.19	ug/L			08/03/17 11:59	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			08/03/17 11:59	1
Chlorobenzene	ND		1.0	0.75	ug/L			08/03/17 11:59	1
Dibromochloromethane	ND		1.0	0.32	ug/L			08/03/17 11:59	1
Chloroethane	ND		1.0	0.32	ug/L			08/03/17 11:59	1
Chloroform	ND		1.0	0.34	ug/L			08/03/17 11:59	1
Chloromethane	ND		1.0	0.35	ug/L			08/03/17 11:59	1
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			08/03/17 11:59	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			08/03/17 11:59	1
Cyclohexane	ND		1.0	0.18	ug/L			08/03/17 11:59	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			08/03/17 11:59	1
Ethylbenzene	ND		1.0	0.74	ug/L			08/03/17 11:59	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			08/03/17 11:59	1
Isopropylbenzene	ND		1.0	0.79	ug/L			08/03/17 11:59	1
Methyl acetate	ND		2.5	1.3	ug/L			08/03/17 11:59	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			08/03/17 11:59	1
Methylcyclohexane	ND		1.0	0.16	ug/L			08/03/17 11:59	1
Methylene Chloride	ND		1.0	0.44	ug/L			08/03/17 11:59	1
Styrene	ND		1.0	0.73	ug/L			08/03/17 11:59	1
Tetrachloroethene	ND		1.0	0.36	ug/L			08/03/17 11:59	1
Toluene	ND		1.0	0.51	ug/L			08/03/17 11:59	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			08/03/17 11:59	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			08/03/17 11:59	1
Trichloroethene	ND		1.0	0.46	ug/L			08/03/17 11:59	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			08/03/17 11:59	1
Vinyl chloride	ND		1.0	0.90	ug/L			08/03/17 11:59	1
Xylenes, Total	ND		2.0	0.66	ug/L			08/03/17 11:59	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	*103*		*80 - 120*		*08/03/17 11:59*	*1*
1,2-Dichloroethane-d4 (Surr)	*97*		*77 - 120*		*08/03/17 11:59*	*1*
4-Bromofluorobenzene (Surr)	*97*		*73 - 120*		*08/03/17 11:59*	*1*
Dibromofluoromethane (Surr)	*103*		*75 - 123*		*08/03/17 11:59*	*1*

Lab Sample ID: LCS 480-370253/5
Matrix: Water
Analysis Batch: 370253

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	25.0	24.6		ug/L		98	73 - 126
1,1,2,2-Tetrachloroethane	25.0	23.2		ug/L		93	76 - 120
1,1,2-Trichloroethane	25.0	23.5		ug/L		94	76 - 122
1,1,2-Trichloro-1,2,2-trifluoroethane	25.0	26.9		ug/L		107	61 - 148
1,1-Dichloroethane	25.0	24.2		ug/L		97	77 - 120
1,1-Dichloroethene	25.0	25.0		ug/L		100	66 - 127
1,2,4-Trichlorobenzene	25.0	23.7		ug/L		95	79 - 122
1,2-Dibromo-3-Chloropropane	25.0	20.8		ug/L		83	56 - 134
1,2-Dichlorobenzene	25.0	23.8		ug/L		95	80 - 124
1,2-Dichloroethane	25.0	22.9		ug/L		92	75 - 120
1,2-Dichloropropane	25.0	24.7		ug/L		99	76 - 120
1,3-Dichlorobenzene	25.0	23.9		ug/L		96	77 - 120
1,4-Dichlorobenzene	25.0	24.2		ug/L		97	80 - 120
2-Butanone (MEK)	125	109		ug/L		87	57 - 140
2-Hexanone	125	116		ug/L		93	65 - 127
4-Methyl-2-pentanone (MIBK)	125	110		ug/L		88	71 - 125
Acetone	125	105		ug/L		84	56 - 142
Benzene	25.0	26.1		ug/L		104	71 - 124
Bromodichloromethane	25.0	24.2		ug/L		97	80 - 122
Bromoform	25.0	23.5		ug/L		94	61 - 132
Bromomethane	25.0	20.9		ug/L		84	55 - 144
Carbon disulfide	25.0	24.1		ug/L		96	59 - 134
Carbon tetrachloride	25.0	25.8		ug/L		103	72 - 134
Chlorobenzene	25.0	24.6		ug/L		98	80 - 120
Dibromochloromethane	25.0	25.6		ug/L		102	75 - 125
Chloroethane	25.0	24.3		ug/L		97	69 - 136
Chloroform	25.0	24.6		ug/L		98	73 - 127
Chloromethane	25.0	21.8		ug/L		87	68 - 124
cis-1,2-Dichloroethene	25.0	25.7		ug/L		103	74 - 124
cis-1,3-Dichloropropene	25.0	25.2		ug/L		101	74 - 124
Cyclohexane	25.0	26.3		ug/L		105	59 - 135
Dichlorodifluoromethane	25.0	15.9		ug/L		63	59 - 135
Ethylbenzene	25.0	24.7		ug/L		99	77 - 123
1,2-Dibromoethane	25.0	24.2		ug/L		97	77 - 120
Isopropylbenzene	25.0	24.1		ug/L		96	77 - 122
Methyl acetate	125	112		ug/L		89	74 - 133
Methyl tert-butyl ether	25.0	23.1		ug/L		92	77 - 120
Methylcyclohexane	25.0	25.7		ug/L		103	68 - 134
Methylene Chloride	25.0	25.3		ug/L		101	75 - 124
Styrene	25.0	23.6		ug/L		94	80 - 120
Tetrachloroethene	25.0	24.1		ug/L		96	74 - 122
Toluene	25.0	24.4		ug/L		98	80 - 122
trans-1,2-Dichloroethene	25.0	25.7		ug/L		103	73 - 127

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

Lab Sample ID: LCS 480-370253/5
Matrix: Water
Analysis Batch: 370253

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
trans-1,3-Dichloropropene	25.0	25.4		ug/L		101	80 - 120
Trichloroethene	25.0	25.4		ug/L		102	74 - 123
Trichlorofluoromethane	25.0	25.1		ug/L		101	62 - 150
Vinyl chloride	25.0	22.9		ug/L		91	65 - 133

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*97*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*95*		*77 - 120*
4-Bromofluorobenzene (Surr)	*96*		*73 - 120*
Dibromofluoromethane (Surr)	*99*		*75 - 123*

Lab Sample ID: MB 480-370428/5
Matrix: Water
Analysis Batch: 370428

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	0.82	ug/L			08/03/17 23:13	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			08/03/17 23:13	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			08/03/17 23:13	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			08/03/17 23:13	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			08/03/17 23:13	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			08/03/17 23:13	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			08/03/17 23:13	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			08/03/17 23:13	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			08/03/17 23:13	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			08/03/17 23:13	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			08/03/17 23:13	1
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			08/03/17 23:13	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			08/03/17 23:13	1
2-Butanone (MEK)	ND		10	1.3	ug/L			08/03/17 23:13	1
2-Hexanone	ND		5.0	1.2	ug/L			08/03/17 23:13	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			08/03/17 23:13	1
Acetone	ND		10	3.0	ug/L			08/03/17 23:13	1
Benzene	ND		1.0	0.41	ug/L			08/03/17 23:13	1
Bromodichloromethane	ND		1.0	0.39	ug/L			08/03/17 23:13	1
Bromoform	ND		1.0	0.26	ug/L			08/03/17 23:13	1
Bromomethane	ND		1.0	0.69	ug/L			08/03/17 23:13	1
Carbon disulfide	ND		1.0	0.19	ug/L			08/03/17 23:13	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			08/03/17 23:13	1
Chlorobenzene	ND		1.0	0.75	ug/L			08/03/17 23:13	1
Dibromochloromethane	ND		1.0	0.32	ug/L			08/03/17 23:13	1
Chloroethane	ND		1.0	0.32	ug/L			08/03/17 23:13	1
Chloroform	ND		1.0	0.34	ug/L			08/03/17 23:13	1
Chloromethane	ND		1.0	0.35	ug/L			08/03/17 23:13	1
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			08/03/17 23:13	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			08/03/17 23:13	1
Cyclohexane	ND		1.0	0.18	ug/L			08/03/17 23:13	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			08/03/17 23:13	1

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

Lab Sample ID: MB 480-370428/5
Matrix: Water
Analysis Batch: 370428

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		1.0	0.74	ug/L			08/03/17 23:13	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			08/03/17 23:13	1
Isopropylbenzene	ND		1.0	0.79	ug/L			08/03/17 23:13	1
Methyl acetate	ND		2.5	1.3	ug/L			08/03/17 23:13	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			08/03/17 23:13	1
Methylcyclohexane	ND		1.0	0.16	ug/L			08/03/17 23:13	1
Methylene Chloride	ND		1.0	0.44	ug/L			08/03/17 23:13	1
Styrene	ND		1.0	0.73	ug/L			08/03/17 23:13	1
Tetrachloroethene	ND		1.0	0.36	ug/L			08/03/17 23:13	1
Toluene	ND		1.0	0.51	ug/L			08/03/17 23:13	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			08/03/17 23:13	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			08/03/17 23:13	1
Trichloroethene	ND		1.0	0.46	ug/L			08/03/17 23:13	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			08/03/17 23:13	1
Vinyl chloride	ND		1.0	0.90	ug/L			08/03/17 23:13	1
Xylenes, Total	ND		2.0	0.66	ug/L			08/03/17 23:13	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*101*		*80 - 120*		*08/03/17 23:13*	*1*
1,2-Dichloroethane-d4 (Surr)	*96*		*77 - 120*		*08/03/17 23:13*	*1*
4-Bromofluorobenzene (Surr)	*98*		*73 - 120*		*08/03/17 23:13*	*1*
Dibromofluoromethane (Surr)	*100*		*75 - 123*		*08/03/17 23:13*	*1*

Lab Sample ID: LCS 480-370428/3
Matrix: Water
Analysis Batch: 370428

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	25.0	24.4		ug/L		98	73 - 126
1,1,2,2-Tetrachloroethane	25.0	23.5		ug/L		94	76 - 120
1,1,2-Trichloroethane	25.0	25.4		ug/L		102	76 - 122
1,1,2-Trichloro-1,2,2-trifluoroetha ne	25.0	27.2		ug/L		109	61 - 148
1,1-Dichloroethane	25.0	25.1		ug/L		101	77 - 120
1,1-Dichloroethene	25.0	25.0		ug/L		100	66 - 127
1,2,4-Trichlorobenzene	25.0	23.3		ug/L		93	79 - 122
1,2-Dibromo-3-Chloropropane	25.0	20.6		ug/L		82	56 - 134
1,2-Dichlorobenzene	25.0	23.9		ug/L		96	80 - 124
1,2-Dichloroethane	25.0	23.5		ug/L		94	75 - 120
1,2-Dichloropropane	25.0	25.9		ug/L		104	76 - 120
1,3-Dichlorobenzene	25.0	23.8		ug/L		95	77 - 120
1,4-Dichlorobenzene	25.0	24.0		ug/L		96	80 - 120
2-Butanone (MEK)	125	126		ug/L		101	57 - 140
2-Hexanone	125	121		ug/L		97	65 - 127
4-Methyl-2-pentanone (MIBK)	125	120		ug/L		96	71 - 125
Acetone	125	122		ug/L		97	56 - 142
Benzene	25.0	26.0		ug/L		104	71 - 124
Bromodichloromethane	25.0	25.0		ug/L		100	80 - 122

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

Lab Sample ID: LCS 480-370428/3
Matrix: Water
Analysis Batch: 370428

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromoform	25.0	23.6		ug/L		94	61 - 132
Bromomethane	25.0	23.1		ug/L		92	55 - 144
Carbon disulfide	25.0	24.5		ug/L		98	59 - 134
Carbon tetrachloride	25.0	24.5		ug/L		98	72 - 134
Chlorobenzene	25.0	24.4		ug/L		98	80 - 120
Dibromochloromethane	25.0	24.7		ug/L		99	75 - 125
Chloroethane	25.0	25.5		ug/L		102	69 - 136
Chloroform	25.0	25.3		ug/L		101	73 - 127
Chloromethane	25.0	24.5		ug/L		98	68 - 124
cis-1,2-Dichloroethene	25.0	27.0		ug/L		108	74 - 124
cis-1,3-Dichloropropene	25.0	25.9		ug/L		103	74 - 124
Cyclohexane	25.0	24.6		ug/L		98	59 - 135
Dichlorodifluoromethane	25.0	20.4		ug/L		82	59 - 135
Ethylbenzene	25.0	23.8		ug/L		95	77 - 123
1,2-Dibromoethane	25.0	24.5		ug/L		98	77 - 120
Isopropylbenzene	25.0	23.0		ug/L		92	77 - 122
Methyl acetate	125	121		ug/L		97	74 - 133
Methyl tert-butyl ether	25.0	24.6		ug/L		99	77 - 120
Methylcyclohexane	25.0	25.6		ug/L		103	68 - 134
Methylene Chloride	25.0	26.3		ug/L		105	75 - 124
Styrene	25.0	23.6		ug/L		94	80 - 120
Tetrachloroethene	25.0	23.4		ug/L		94	74 - 122
Toluene	25.0	23.8		ug/L		95	80 - 122
trans-1,2-Dichloroethene	25.0	26.2		ug/L		105	73 - 127
trans-1,3-Dichloropropene	25.0	25.0		ug/L		100	80 - 120
Trichloroethene	25.0	26.0		ug/L		104	74 - 123
Trichlorofluoromethane	25.0	26.3		ug/L		105	62 - 150
Vinyl chloride	25.0	25.3		ug/L		101	65 - 133

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*99*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*102*		*77 - 120*
4-Bromofluorobenzene (Surr)	*99*		*73 - 120*
Dibromofluoromethane (Surr)	*107*		*75 - 123*

Lab Sample ID: MB 480-371850/7
Matrix: Water
Analysis Batch: 371850

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	0.82	ug/L			08/11/17 23:01	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			08/11/17 23:01	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			08/11/17 23:01	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			08/11/17 23:01	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			08/11/17 23:01	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			08/11/17 23:01	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			08/11/17 23:01	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			08/11/17 23:01	1

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

Lab Sample ID: MB 480-371850/7
Matrix: Water
Analysis Batch: 371850

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			08/11/17 23:01	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			08/11/17 23:01	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			08/11/17 23:01	1
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			08/11/17 23:01	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			08/11/17 23:01	1
2-Butanone (MEK)	ND		10	1.3	ug/L			08/11/17 23:01	1
2-Hexanone	ND		5.0	1.2	ug/L			08/11/17 23:01	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			08/11/17 23:01	1
Acetone	ND		10	3.0	ug/L			08/11/17 23:01	1
Benzene	ND		1.0	0.41	ug/L			08/11/17 23:01	1
Bromodichloromethane	ND		1.0	0.39	ug/L			08/11/17 23:01	1
Bromoform	ND		1.0	0.26	ug/L			08/11/17 23:01	1
Bromomethane	ND		1.0	0.69	ug/L			08/11/17 23:01	1
Carbon disulfide	ND		1.0	0.19	ug/L			08/11/17 23:01	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			08/11/17 23:01	1
Chlorobenzene	ND		1.0	0.75	ug/L			08/11/17 23:01	1
Dibromochloromethane	ND		1.0	0.32	ug/L			08/11/17 23:01	1
Chloroethane	ND		1.0	0.32	ug/L			08/11/17 23:01	1
Chloroform	ND		1.0	0.34	ug/L			08/11/17 23:01	1
Chloromethane	ND		1.0	0.35	ug/L			08/11/17 23:01	1
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			08/11/17 23:01	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			08/11/17 23:01	1
Cyclohexane	ND		1.0	0.18	ug/L			08/11/17 23:01	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			08/11/17 23:01	1
Ethylbenzene	ND		1.0	0.74	ug/L			08/11/17 23:01	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			08/11/17 23:01	1
Isopropylbenzene	ND		1.0	0.79	ug/L			08/11/17 23:01	1
Methyl acetate	ND		2.5	1.3	ug/L			08/11/17 23:01	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			08/11/17 23:01	1
Methylcyclohexane	ND		1.0	0.16	ug/L			08/11/17 23:01	1
Methylene Chloride	ND		1.0	0.44	ug/L			08/11/17 23:01	1
Styrene	ND		1.0	0.73	ug/L			08/11/17 23:01	1
Tetrachloroethene	ND		1.0	0.36	ug/L			08/11/17 23:01	1
Toluene	ND		1.0	0.51	ug/L			08/11/17 23:01	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			08/11/17 23:01	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			08/11/17 23:01	1
Trichloroethene	ND		1.0	0.46	ug/L			08/11/17 23:01	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			08/11/17 23:01	1
Vinyl chloride	ND		1.0	0.90	ug/L			08/11/17 23:01	1
Xylenes, Total	ND		2.0	0.66	ug/L			08/11/17 23:01	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*100*		*80 - 120*		*08/11/17 23:01*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*77 - 120*		*08/11/17 23:01*	*1*
4-Bromofluorobenzene (Surr)	*97*		*73 - 120*		*08/11/17 23:01*	*1*
Dibromofluoromethane (Surr)	*97*		*75 - 123*		*08/11/17 23:01*	*1*

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

Lab Sample ID: LCS 480-371850/9
Matrix: Water
Analysis Batch: 371850

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	25.0	24.6		ug/L		98	73 - 126
1,1,2,2-Tetrachloroethane	25.0	23.7		ug/L		95	76 - 120
1,1,2-Trichloroethane	25.0	23.5		ug/L		94	76 - 122
1,1,2-Trichloro-1,2,2-trifluoroethane	25.0	24.4		ug/L		98	61 - 148
1,1-Dichloroethane	25.0	23.7		ug/L		95	77 - 120
1,1-Dichloroethene	25.0	23.9		ug/L		96	66 - 127
1,2,4-Trichlorobenzene	25.0	24.3		ug/L		97	79 - 122
1,2-Dibromo-3-Chloropropane	25.0	20.2		ug/L		81	56 - 134
1,2-Dichlorobenzene	25.0	24.5		ug/L		98	80 - 124
1,2-Dichloroethane	25.0	23.5		ug/L		94	75 - 120
1,2-Dichloropropane	25.0	24.1		ug/L		96	76 - 120
1,3-Dichlorobenzene	25.0	24.1		ug/L		97	77 - 120
1,4-Dichlorobenzene	25.0	24.5		ug/L		98	80 - 120
2-Butanone (MEK)	125	110		ug/L		88	57 - 140
2-Hexanone	125	113		ug/L		91	65 - 127
4-Methyl-2-pentanone (MIBK)	125	111		ug/L		88	71 - 125
Acetone	125	110		ug/L		88	56 - 142
Benzene	25.0	23.4		ug/L		94	71 - 124
Bromodichloromethane	25.0	25.1		ug/L		100	80 - 122
Bromoform	25.0	24.2		ug/L		97	61 - 132
Bromomethane	25.0	25.2		ug/L		101	55 - 144
Carbon disulfide	25.0	22.9		ug/L		92	59 - 134
Carbon tetrachloride	25.0	26.0		ug/L		104	72 - 134
Chlorobenzene	25.0	23.4		ug/L		94	80 - 120
Dibromochloromethane	25.0	24.6		ug/L		98	75 - 125
Chloroethane	25.0	28.4		ug/L		114	69 - 136
Chloroform	25.0	23.9		ug/L		96	73 - 127
Chloromethane	25.0	23.9		ug/L		96	68 - 124
cis-1,2-Dichloroethene	25.0	24.2		ug/L		97	74 - 124
cis-1,3-Dichloropropene	25.0	25.8		ug/L		103	74 - 124
Cyclohexane	25.0	23.5		ug/L		94	59 - 135
Dichlorodifluoromethane	25.0	24.7		ug/L		99	59 - 135
Ethylbenzene	25.0	23.0		ug/L		92	77 - 123
1,2-Dibromoethane	25.0	23.7		ug/L		95	77 - 120
Isopropylbenzene	25.0	24.9		ug/L		100	77 - 122
Methyl acetate	125	106		ug/L		85	74 - 133
Methyl tert-butyl ether	25.0	25.1		ug/L		100	77 - 120
Methylcyclohexane	25.0	24.9		ug/L		99	68 - 134
Methylene Chloride	25.0	23.7		ug/L		95	75 - 124
Styrene	25.0	25.1		ug/L		100	80 - 120
Tetrachloroethene	25.0	23.6		ug/L		94	74 - 122
Toluene	25.0	23.0		ug/L		92	80 - 122
trans-1,2-Dichloroethene	25.0	23.6		ug/L		94	73 - 127
trans-1,3-Dichloropropene	25.0	25.7		ug/L		103	80 - 120
Trichloroethene	25.0	24.1		ug/L		96	74 - 123
Trichlorofluoromethane	25.0	25.5		ug/L		102	62 - 150
Vinyl chloride	25.0	24.4		ug/L		98	65 - 133

Client: AECOM, Inc.
Project/Site: Chem Leeman Project

TestAmerica Job ID: 480-121478-1

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

Lab Sample ID: LCS 480-371850/9
Matrix: Water
Analysis Batch: 371850

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

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	99		80 - 120
1,2-Dichloroethane-d4 (Surr)	102		77 - 120
4-Bromofluorobenzene (Surr)	101		73 - 120
Dibromofluoromethane (Surr)	101		75 - 123

QC Association Summary

Client: AECOM, Inc.
Project/Site: Chem Leeman Project

TestAmerica Job ID: 480-121478-1

GC/MS VOA

Analysis Batch: 370253

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-121478-3	B-L1-3	Total/NA	Water	8260C	
480-121478-4	B-L2-1	Total/NA	Water	8260C	
480-121478-5	B-L2-2	Total/NA	Water	8260C	
480-121478-6	B-L2-3	Total/NA	Water	8260C	
480-121478-7	DUP-072017	Total/NA	Water	8260C	
MB 480-370253/7	Method Blank	Total/NA	Water	8260C	
LCS 480-370253/5	Lab Control Sample	Total/NA	Water	8260C	

Analysis Batch: 370428

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-121478-1	B-L1-1	Total/NA	Water	8260C	
480-121478-2	B-L1-2	Total/NA	Water	8260C	
480-121478-8	TB-072017	Total/NA	Water	8260C	
MB 480-370428/5	Method Blank	Total/NA	Water	8260C	
LCS 480-370428/3	Lab Control Sample	Total/NA	Water	8260C	

Analysis Batch: 371850

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-121478-3 - RA	B-L1-3	Total/NA	Water	8260C	
MB 480-371850/7	Method Blank	Total/NA	Water	8260C	
LCS 480-371850/9	Lab Control Sample	Total/NA	Water	8260C	

Lab Chronicle

Client: AECOM, Inc.
Project/Site: Chem Leeman Project

TestAmerica Job ID: 480-121478-1

Client Sample ID: B-L1-1
Date Collected: 07/21/17 10:00
Date Received: 07/21/17 13:40

Lab Sample ID: 480-121478-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		20	370428	08/04/17 00:51	KMN	TAL BUF

Client Sample ID: B-L1-2
Date Collected: 07/21/17 11:10
Date Received: 07/21/17 13:40

Lab Sample ID: 480-121478-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		20	370428	08/04/17 01:15	KMN	TAL BUF

Client Sample ID: B-L1-3
Date Collected: 07/20/17 10:15
Date Received: 07/21/17 13:40

Lab Sample ID: 480-121478-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C	RA	100	371850	08/12/17 00:28	RRS	TAL BUF
Total/NA	Analysis	8260C		200	370253	08/03/17 19:22	ARS	TAL BUF

Client Sample ID: B-L2-1
Date Collected: 07/20/17 16:00
Date Received: 07/21/17 13:40

Lab Sample ID: 480-121478-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	370253	08/03/17 19:45	ARS	TAL BUF

Client Sample ID: B-L2-2
Date Collected: 07/20/17 11:15
Date Received: 07/21/17 13:40

Lab Sample ID: 480-121478-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		2	370253	08/03/17 20:08	ARS	TAL BUF

Client Sample ID: B-L2-3
Date Collected: 07/20/17 17:05
Date Received: 07/21/17 13:40

Lab Sample ID: 480-121478-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	370253	08/03/17 20:31	ARS	TAL BUF

Lab Chronicle

Client: AECOM, Inc.
Project/Site: Chem Leeman Project

TestAmerica Job ID: 480-121478-1

Client Sample ID: DUP-072017

Lab Sample ID: 480-121478-7

Date Collected: 07/20/17 08:00

Matrix: Water

Date Received: 07/21/17 13:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	370253	08/03/17 20:54	ARS	TAL BUF

Client Sample ID: TB-072017

Lab Sample ID: 480-121478-8

Date Collected: 07/20/17 00:00

Matrix: Water

Date Received: 07/21/17 13:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	370428	08/03/17 23:59	KMN	TAL BUF

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Accreditation/Certification Summary

Client: AECOM, Inc.
Project/Site: Chem Leeman Project

TestAmerica Job ID: 480-121478-1

Laboratory: TestAmerica Buffalo

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

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	10026	03-31-18

Method Summary

Client: AECOM, Inc.
Project/Site: Chem Leeman Project

TestAmerica Job ID: 480-121478-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL BUF

Protocol References:

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

Sample Summary

Client: AECOM, Inc.
Project/Site: Chem Leeman Project

TestAmerica Job ID: 480-121478-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-121478-1	B-L1-1	Water	07/21/17 10:00	07/21/17 13:40
480-121478-2	B-L1-2	Water	07/21/17 11:10	07/21/17 13:40
480-121478-3	B-L1-3	Water	07/20/17 10:15	07/21/17 13:40
480-121478-4	B-L2-1	Water	07/20/17 16:00	07/21/17 13:40
480-121478-5	B-L2-2	Water	07/20/17 11:15	07/21/17 13:40
480-121478-6	B-L2-3	Water	07/20/17 17:05	07/21/17 13:40
480-121478-7	DUP-072017	Water	07/20/17 08:00	07/21/17 13:40
480-121478-8	TB-072017	Water	07/20/17 00:00	07/21/17 13:40

TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone (716) 691-2600 Fax (716) 691-7991

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler:	Lab PM: Deyo, Melissa L	Carrier Tracking No(s):	COC No: 480-99934-23793.1
Client Contact: Ms. Ann Marie Kropovitch	Phone:	E-Mail: melissa.deyo@testamericainc.com		Page: Page 1 of 1
Company: AECOM, Inc.		Analysis Requested		Job #:

Address: 257 West Genesee Street Suite 400	Due Date Requested:
City: Buffalo	TAT Requested (days):
State, Zip: NY, 14202-2657	
Phone: 716-923-1137(Tel)	PO #: Purchase Order Requested
Email: ann.marie.kropovitch@aecom.com	WO #:
Project Name: Chem Leeman Project	Project #: 48016395
Site:	SSOW#:

Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
Other:

480-121478 COC

Sample Identification	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)	8260C - TCL list OLM04.2	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A		
B-L1-1	7-21-17	1000	G	Water			3		
B-L1-2	7-21-17	1110	G	Water			3		
B-L1-3	7-20-17	1015	G	Water			3		
B-L2-1	7-20-17	1600	G	Water			3		
B-L2-2	7-20-17	1115	G	Water			3		
B-L2-3	7-20-17	1705	G	Water			3		
Dup-072017	7-20-17	0800	G	Water			3		
TB-072017	7-20-17	—	TB	Water			1		Trip Blank
				Water					

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

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: 7/21-17 13:40	Company AECOM	Received by:	Date/Time: 7/21/17 1340	Company TA Buf.
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: 3.5 #1

8/14/2017

Login Sample Receipt Checklist

Client: AECOM, Inc.

Job Number: 480-121478-1

Login Number: 121478

List Source: TestAmerica Buffalo

List Number: 1

Creator: Janish, Carl M

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	
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 (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
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	AECOM
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	