Pinnacle Engineering

Owning Challenges. Winning Trust.

October 21, 2016

Mr. Gilbert Gabanski
Hennepin County Public Works
Environment & Energy Department-Land & Water & Contaminated Lands Unit
701 Fourth Avenue South, Suite 700
Minneapolis, Minnesota 55415-1842

RE: Phase II Environmental Site Assessment
Vacant Lots -
3206 Penn Avenue North and 3201 Oliver Avenue North
Minneapolis, Minnesota
Pinnacle Project Number: R016526.000

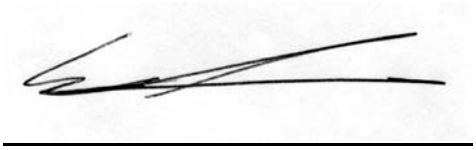
Dear Mr. Gabanski:

Pinnacle Engineering, Inc. (Pinnacle) is pleased to present the results of the Phase II Environmental Site Assessment on the vacant lots located at 3206 Penn Avenue North and 3201 Oliver Avenue North in Minneapolis, Minnesota. (Site). Based on the results of the Phase II, soil and soil vapor impacts exceeding regulatory criteria were identified, It is recommended that a Development Response Action Plan (DRAP) be prepared and approved by the Minnesota Pollution Control Agency (MPCA) prior to undertaking redevelopment of the property.

If you have any questions or wish to discuss any particular aspect of the project, please feel free to contact Eric Simonson at (763) 277-8415 or Matt Bartus at (763) 277-8419. We look forward to being of continued service to you.

Sincerely,

PINNACLE ENGINEERING, INC.



Eric Simonson
Senior Project Engineer

PHASE II
ENVIRONMENTAL SITE ASSESSMENT

FOR:

VACANT LOTS
3206 PENN AVENUE NORTH AND 3201 OLIVER AVENUE NORTH
MINNEAPOLIS, MINNESOTA

PREPARED FOR:

HENNEPIN COUNTY PUBLIC WORKS
ENVIRONMENT & ENERGY DEPARTMENT-
LAND & WATER & CONTAMINATED LANDS UNIT
701 FOURTH AVENUE SOUTH, SUITE 700
MINNEAPOLIS, MINNESOTA 55415-1842

AND

HENNEPIN COUNTY PUBLIC WORKS
COMMUNITY WORKS DEPARTMENT
701 FOURTH AVENUE SOUTH, SUITE 400
MINNEAPOLIS, MN 55415-1842

PREPARED BY:

PINNACLE ENGINEERING, INC.
11541 95th AVENUE NORTH
ST. PAUL, MN 55369
(763) 315-4501

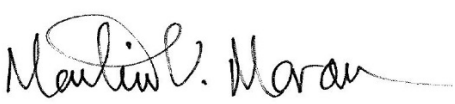
PINNACLE PROJECT NUMBER: R016526.000

October 21, 2016

Prepared By:

Eric Simonson
Senior Project Engineer

Reviewed By:



Marty Moran, MN PG 30042
Director Environmental Operations

TABLE OF CONTENTS

FIGURES

TABLES

APPENDICES

1.0 INTRODUCTION

Hennepin County retained Pinnacle Engineering, Inc. (Pinnacle) to conduct a Phase II Environmental Site Assessment (Phase II) at the surface parking Lot located at 270 7th Street West, St. Paul, Ramsey County, Minnesota (Site). This assessment was performed in accordance with Pinnacle's Proposal of Professional Services dated September 12, 2016, authorized by Hennepin County Purchase Order HNCTY-280224 dated October 4, 2016.

1.1 Site Location

For the purposes of this Phase II investigation, the Site consists of two vacant lots, located at 3206 Penn Avenue North and 3201 Oliver Avenue North in Minneapolis, Minnesota, as further described below:

3206 Penn Avenue North

- The property identification number is: 09-029-24-23-0224;
- The parcel is 0.24 acres in size;
- The property type is commercial preferred;
- The owner is County of Hennepin; and,
- The property description is: That Part of Lots 16, 17, And 18 Lying Easterly of the West 18.00 Feet Thereof, Except The South 24.00 Feet of Said Lot 16.

3201 Oliver Avenue North

- The property identification number is: 09-029-24-23-0016;
- The parcel is 0.10 acres in size;
- The property type is vacant land-residential;
- The owner is the County of Hennepin; and,
- The property description is: Lot 15 of the Calkins Addition to Minneapolis.

1.2 Background Information

Pinnacle conducted a Phase I environmental site assessment in August 2016 for the subject parcels, owned by Hennepin County, and several adjacent parcels to the north, owned by the City of Minneapolis, which identified the following recognized environmental condition in connection with the Site:

- A gasoline filling station historically operated on the Site, on the 3206 Penn Avenue North parcel, from approximately 1930-1977, and was identified as

closed LUST, RGA LUST, and U.S. BROWNFIELDS regulatory listings. Previous subsurface investigations conducted at the former filling station revealed soil contamination with a vertical extent ranging in depth from eight to 40 feet BGS. Soil vapor concentrations exceeding 10X and/or 100X the current Residential and/or Industrial ISVs have been detected in the southwestern portion of the Site. Groundwater was not encountered during the previous investigation despite one boring that was advanced to a depth of 65 feet BGS. Groundwater is reported to be situated approximately 110 feet BGS within the bedrock beneath the Site.

Based on the age of the data from the previous investigations, regulatory standards for vapor that have recently changed (most notably ethylbenzene), and the fact that vapor plumes can migrate and fluctuate annually and seasonally, Pinnacle recommended that additional assessment be conducted at the Site.

1.3 Phase II Scope

Pinnacle performed the following scope of work for the Phase II assessment:

- Cleared public utilities with the Gopher State One Call service and retained a private utility locator to mark private utilities;
- Advanced six soil borings (B-1 through B-6) to the depth of 20 feet.
- Collected soil samples from the borings continuously for headspace screening per Minnesota Pollution Control Agency (MPCA) poly bag screening procedure;
- Collected eight soil samples for laboratory analysis of diesel range organics (DRO), gasoline range organics (GRO), volatile organic compounds (VOCs), Resource Conservation and Recovery Act (RCRA) 8 Metals (arsenic, barium, cadmium, chromium, mercury, lead, selenium, and silver), and polynuclear aromatic hydrocarbons (PAHs);
- Collected six soil vapor samples (VP-1 through VP-6) from borings advanced to the depth of six feet. The soil vapor samples were submitted for analysis of VOCs using EPA method TO-15; and,
- Prepared this report presenting the data, results, conclusions, and recommendations regarding the assessment.

2.0 RESULTS

The field work was completed on October 4, 2016 under the direction of Eric Simonson of Pinnacle. The borings were completed by Midwestern Drilling, a direct-push probe drilling company that was subcontracted by Pinnacle. The boring logs are attached in Appendix A. The borings were advanced in the locations shown on Figure 2.

2.1 Soil Borings

The push probe borings were performed by Midwestern Drilling with a track-mounted direct push drill rig. The borings were advanced using a dual tube sampling system. Dual tube sampling uses two sets of probe rods to collect continuous soil cores. One set of rods is driven into the ground as an outer casing. These rods receive the driving force from the hammer and provide a sealed hole from which soil samples may be recovered without the threat of cross contamination. The second, smaller set of rods are placed inside the outer casing. The inner rods hold a sample liner in place as the outer casing is driven the five-foot sampling interval. The inner rods are then retracted to retrieve the filled liner. Following completion of the borings, the boreholes were sealed with bentonite chips.

Borings VP-1 through VP-6 were direct driven to the target depth of six feet, and withdrawn one foot, to collect soil vapor samples.

2.2 Stratigraphy

The borings encountered approximately ½ foot to three feet of topsoil/subsoil. The upper soils were generally underlain by fill, composed primarily of granular, mineral soil. In boring B-3, “urban fill”, which included slag and clinkers, was observed from the depth of 6-inches to one foot. Similar urban fill was not observed in the other borings.

Native soil consisted of glacial till, composed of sandy clay with a trace of gravel, and was present to the termination depth of each boring. Thin layers of sand or sand and gravel were observed in some borings, as shown on the boring logs in Appendix A.

Saturated or water-bearing soils indicative of a shallow water table or a perched water table were not encountered in the borings.

2.3 Field Screening

Soil samples were field screened for the presence of organic vapors using the Minnesota Pollution Control Agency (MPCA) headspace methodology with a Mini-Rae photoionization detector (PID) equipped with a 10.6 eV lamp. The PID indicates the relative concentration of ionizable vapors expressed in parts per million (ppm). The organic vapor concentrations are shown on the attached soil boring logs.

Petroleum odors and greenish-gray-stained soil were observed in boring B-2, 6-10 feet (organic vapor reading of 1330 ppm), and in B-2, 10-15 feet (organic vapor reading of 402 ppm). The sample collected from B-2, 15-20 feet had an organic vapor reading of

1.7 ppm, and did not exhibit odors or staining. Field screening did not detect organic vapors in excess of 2 ppm in the recovered soil samples from the other borings, with the exception of B-3, 10-15 feet (4.9 ppm), which exhibited a very faint petroleum odor.

2.4 Sample Collection

The samples for laboratory analysis were collected while wearing a pair of single-use nitrile gloves and placed in the appropriate, laboratory-supplied, sample containers. One soil sample from the fill in each boring was submitted for laboratory analysis of VOCs (Method 8260B), GRO and DRO (Wisconsin DNR Method), RCRA Metals (Methods 6010B/7471A), and PAHs (Method 8270C). In the shallow sample collected from boring B-3, 6 inch-1 foot, where "urban fill" was observed, there was only enough soil to collect samples for PAHs and RCRA metals analysis. The underlying sample, B-3, 1-5 feet, was analyzed for DRO, GRO, and VOCs.

The soil samples for VOC and GRO analysis were each collected by weighing 25-30 grams of soil into a tared, 60 milliliter (ml) jar and preserved with 25 ml of methanol. The soil samples for DRO analysis were collected like the VOC samples, but were not preserved. A 2-ounce sample jar for determination of moisture content was also collected. The soil samples for analysis of RCRA metals and PAHs were each collected in unpreserved 2-ounce or 4-ounce sample jars.

The soil vapor samples were collected from the push probes following the "post-run tubing" (PRT) method described by Geoprobe®. The PRT adaptor was connected to a length of dedicated sampling tubing which was inserted through the probe drive rod and screwed into the vapor sampling head. The sampling system was driven to the depth of six feet below the surface and retracted to five feet, and a dedicated sampling train was attached to the down-hole tubing. The sampling train consisted of a particulate filter to prevent particles and moisture from entering the evacuated canister, and a flow controller to limit the canister filling rate to a maximum flow rate of 200 milliliters per minute. The sampling train was purged of 60 ml of air using a syringe, and samples were collected using six-liter summa canisters equipped with a vacuum gauge and an in-line particulates filter. The time and vacuum pressure were documented at the start and end of sampling. The soil vapor sampling sheets are attached in Appendix C.

2.5 Laboratory Analytical Results

The soil samples were delivered to the laboratory on ice in a cooler, via overnight Federal Express, with chain-of-custody documentation. The summa canisters were shipped to the lab in a sealed box with chain-of-custody documentation. The laboratory analysis was performed by Environmental Science Corporation (ESC) of Mount Juliet,

Tennessee. Please refer to Appendix B for the complete laboratory reports. The laboratory results are summarized on Tables 1 and 2.

2.5.1 Soil Analytical Results

Eight soil samples were collected for laboratory analysis. One to two soil samples were collected from the borings. The soil samples were analyzed for VOCs, GRO, DRO, PAHs, and RCRA metals, as described above.

Applicable Minnesota regulatory standards for soil include Residential Soil Reference Values (RSRVs), Industrial Soil Reference Values (ISRVs), and Soil Leaching Values (SLVs). ISRVs are risk-based values established by the Minnesota Pollution Control Agency (MPCA). RSRV limits set acceptable soil concentrations in a Residential setting based on common exposure pathways, including ingestion, dermal contact and inhalation of vapors and particulates for residential exposure scenarios. ISRV limits set acceptable soil concentrations in a commercial/industrial setting based on common exposure pathways, including ingestion, dermal contact and inhalation of vapors and particulates for industrial exposure scenarios. SLV limits set acceptable soil concentrations for protection of groundwater. Refer to Table 1 for a summary of the soil analytical results compared with the MPCA RSRVs, ISRVs, and SLVs.

DRO consists of a range of petroleum compounds typical of diesel fuel, and GRO consists of a range of petroleum compounds typical of gasoline. There are no SRVs or SLVs for DRO/GRO; however, the MPCA considers soil with DRO/GRO concentrations exceeding 100 mg/kg to be unsuitable for off-Site reuse as unregulated fill. DRO was detected in sample B-2, 6-10 feet (91.9 mg/kg). GRO was also detected in sample B-2, 6-10 feet (2,280 mg/kg), and was detected at a concentration of 14.5 mg/kg in the underlying sample (B-2, 10-15 feet). DRO was not detected in sample B-2, 10-15 feet. DRO and GRO were not detected in the samples collected from borings B-1, B-3, B-4, B-5, or B-6.

As in the GRO and DRO analysis, VOCs were not detected in the analyzed soil samples collected from borings B-1, B-3, B-4, B-5, or B-6. Several petroleum VOCs were detected in the sample collected from B-2, 6-10 feet with 1,2,4-trimethylbenzene (80.8 mg/kg) and 1,3,5-trimethylbenzene (23.5 mg/kg) exceeding the ISRVs of 25 mg/kg and 10 mg/kg, respectively. Xylenes (88.8 mg/kg) exceeded the RSRV of 45 mg/kg. Concentrations of chlorobenzene (1.04 mg/kg), ethylbenzene (23.2 mg/kg), and naphthalene (7.4 mg/kg) exceeded the SLVs. Ethylbenzene was detected in sample B-2, 10-15 feet, at a concentration of 0.0524 mg/kg, which is lower than the regulatory criteria. No other VOCs were detected in sample B-2, 10-15 feet.

Various RCRA metals were detected in each of the soil samples. In sample B-2, 10-15 feet, arsenic (8.64 mg/kg) exceeded the SLV (5.82 mg/kg). In sample in B-3, 6 inch-1 foot, lead, detected at a concentration of 104 mg/kg, did not exceeded the regulatory criteria, but is elevated above typical background concentrations in Minnesota. The concentrations of the other metals appear generally consistent with concentrations typically found in urban soils in Minnesota.

PAHs generally occur in oil, coal, and tar, and may also be produced as byproducts of fuel burning. Various PAH compounds have been identified as carcinogenic. For PAHs, the cancer potencies of the various PAH compounds are compared with the cancer potency of benzo(a)pyrene (BaP), using established scaling factors of target PAH compounds. By this method, the evaluation of PAH mixtures can be expressed as BaP equivalents. The SLV, RSRV and ISRV for BaP equivalent are 1.41 mg/kg, 2.0 mg/kg, and 3.0 mg/kg, respectively. The detected BaP equivalent concentration in sample B-3, 6 inch - 1 foot (1.677 mg/kg) exceeded the SLV of 1.4 mg/kg. The naphthalene PAH concentration in sample B-2, 6-10 feet of 7.61 mg/kg exceeded the SLV.

2.5.2 Soil Vapor Analytical Results

Six soil vapor samples (VP-1 through VP-6) were collected from the Site, each from approximately five to six feet below the surface, in the locations shown on Figure 2.

The MPCA, in cooperation with the Minnesota Department of Health (MDH), have developed compound-specific inhalation risk screening values, known as Intrusion Screening Values (ISVs), for volatile compounds commonly evaluated during vapor investigations. The ISVs were developed to support the MPCA's Remediation Division risk-based guidance for evaluating the vapor intrusion pathway and are meant to be applied as screening values to evaluate potential risks utilizing the MPCA's Remediation Division program's guidance for this pathway. The values are designed to be used for screening for inhalation risks to indoor air. The concentration of soil gas that is considered to be a risk to building occupants in residential or industrial exposure scenarios are 10 times the Residential and Industrial ISVs. Refer to Table 2 for a summary of the soil vapor analytical results compared with the ISVs for Residential and Industrial properties. On May 25, 2016, the MPCA released "Interim ISVs" for several VOCs, which have been incorporated into Table 2. The laboratory report is included in Appendix B.

VOCs exceeding the Residential ISVs in one or more of the soil vapor samples included benzene, 1,3-butadiene, ethylbenzene, trichlorofluromethane, naphthalene, tetrachloroethylene (PCE), and 1,2,4-trimethylbenzene. The concentration of ethylbenzene in sample VP-4 (42.8 ug/m^3) exceeded 10 times the interim residential

ISV (4.1 ug/m^3). The concentration of PCE in sample VP-4 (64 ug/m^3) exceeded 10 times the interim residential ISV (3.3 ug/m^3). The concentration of 1,3-butadiene detected in VP-2 (6.2 ug/m^3), VP-4 (8.42 ug/m^3), and VP-5 (5.92 ug/m^3) exceeded 10X the interim residential ISV (0.3 ug/m^3). No VOCs exceeded 10X the Industrial ISV.

3.0 CONCLUSIONS

Soil impacts exceeding regulatory criteria were identified in samples B-2, 6-10 feet (petroleum VOCs, naphthalene (PAH), GRO, and DRO), B-2, 10-15 feet (arsenic), and B-3, 6 inch-1 foot (BaP equivalent/urban fill). Impacts were not identified in B-1, the deeper samples collected from B-3, or in the samples collected from borings B-4 through B-6. The petroleum impacts identified in B-2, 6-10 feet, are consistent with the closed LUST. Although an elevated organic vapor reading (402 ppm) and stained soil were noted in the field screening of the sample from B-2, 10-15 feet, petroleum compounds did not exceed regulatory criteria.

The BaP equivalent and somewhat elevated lead content in sample B-3, 6 inch-1 foot are consistent with the slag and clinkers observed in the sample. Similar urban fill was not observed in the other samples; however, is if the Site is redeveloped, additional areas of similar fill may be found.

The property is currently undeveloped and grass-covered, with at least six inches of topsoil over areas with identified impacts. Therefore, there is currently low risk of exposure risk from the impacted soils in the present property use/condition. The analytical results from boring B-2, as well as the petroleum impacts identified in the previous investigations, indicate that the soil in areas of the Site, primarily the south west section, would require appropriate management if disturbed during future Site development. As shown on Figure 4, this was the primary area where previous petroleum impacts were identified. The presence of debris (urban fill) and the elevated BaP equivalent in the area of B-3, 6 inch-1 foot indicate that the shallow soil in that area would also require management if disturbed.

Most of the detected soil vapors were consistent with the petroleum release on the Site. As shown on Figure 5, the soil vapor benzene concentrations are generally lower than the soil vapor benzene concentrations detected in the 2008 Peer LSI. However, one petroleum VOC, ethylbenzene, and two non-petroleum VOCs, 1,3 butadiene and PCE, were detected at concentrations exceeding 10X the Residential ISV in one or more of the soil vapor samples.

Relatively low concentrations of PCE in soil vapor were detected across the Site, but the only concentration that exceeded 10X the Residential ISV was in VP-4 (64 ug/m^3), in the central area of the Site. PCE is/was commonly used as a solvent, and could have

historically been used on the Site in parts cleaning for automobile maintenance. As shown on Figure 6, the PCE soil vapor concentrations detected in the 2008 LSI were significantly higher in the southwestern area of the Site than were detected in the current Phase II. PCE was not detected in the soil samples collected during the Phase II.

Vapor intrusion into a structure can be a concern because inhalation of the vapors can pose a risk to human health. Relatively low concentrations of some VOCs in indoor air may pose long term chronic health risks if sufficiently long exposures occur. High concentrations of some VOCs in indoor air have the potential to cause acute health risks. Currently, there are no occupied structures on the property. Therefore, the VOCs detected in the soil vapor samples do not currently represent an exposure risk to the Site. However, the detected VOCs in the soil vapors indicate a potential vapor intrusion risk to a future Site structure if the property is redeveloped, which may require a vapor mitigation system.

4.0 RECOMMENDATIONS

Based on the observations made during the soil borings and the laboratory results, much of the existing Site soil would meet the MPCA's criteria for off-Site reuse as unregulated fill if disturbed during future Site development. However, petroleum and non-petroleum impacts exceeding regulatory criteria were identified in samples B-2, 6-10 feet and B-3, 6 inch-1 foot. Soil from these areas, in the southwest section of the Site, would likely require additional characterization and proper management if disturbed during Site development.

The petroleum VOCs, GRO, and DRO detected in areas of the Site are consistent with the closed petroleum release, and, if left undisturbed, do not warrant any additional action. Based on the detected non-petroleum contaminants in soil that exceed regulatory criteria (arsenic, PAHs) and soil vapor (1,3 butadiene, PCE), Pinnacle recommends that the findings of this assessment be discussed with the Client's legal counsel to determine if any action, including reporting, is required. If reported, the MPCA may require additional investigation to determine the full extent of the impacts.

If the property is purchased and/or developed, Pinnacle recommends enrolling in the Minnesota Pollution Control Agency (MPCA) Voluntary Remediation Program (VRP) to request specific assurances. When a voluntary party performs actions at a site contaminated with a hazardous substance, pollutant or contaminant, the voluntary party could, under some circumstances, become a responsible party for the contamination under Minn. Stat. § 115B.03, subd. 3(4). The No Association Determination (NAD) applies to non-petroleum contaminants, and provides protection from this liability. The

NAD is a determination from the MPCA that the specific actions proposed by the voluntary party will not associate them with the identified contamination for the purpose of Minn. Stat. § 115B.03, subd. 3(4). Purchasers and/or Lenders can acquire property with known contamination and obtain protection from liability, provided that, among other things, reasonable efforts are taken to prevent future releases and to limit exposure to earlier hazardous material releases.

We would also recommend that future Site development be conducted under the oversight of the MPCA. The Site development should include a development Response Action Plan (RAP) to facilitate the identification and management of impacted soil, and would address the need for a soil vapor mitigation system, if applicable.

5.0 STANDARD OF CARE

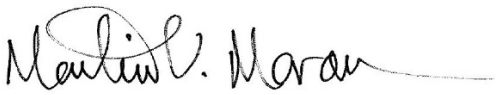
The conclusions contained in this report represent our professional opinions. These opinions were arrived at in accordance with the currently accepted hydrogeologic and engineering practices at this time and location. Other than this, no warranty is implied or intended. We reserve the right to redirect our recommendations in light of further information.

Eric Simonson, a Senior Project Engineer at Pinnacle prepared this report. He has a Bachelor of Science in Geological Engineering from the University of North Dakota, combined with over twenty-four years of professional experience. Marty Moran, PG, is the Director of Environmental Services at Pinnacle, has reviewed this report. Mr. Moran is registered as a Professional Geologist with the State of Minnesota and has over 29 years of professional experience.

Prepared By:

Eric Simonson
Sr. Scientist

Reviewed By:



Marty Moran, MN PG 30042
Director Environmental Services

FIGURES

Figure 1
Site Location

Figure 2
Phase II Boring Locations

Figure 3-Boring Locations
2016 (Pinnacle), 2008 (Peer) and 2006 (Barr)

Figure 4
Current and Historic GRO Soil Concentrations

Figure 5
Current and Historic Benzene Soil Vapor Concentrations

Figure 6
Current and Historic PCE Soil Vapor Concentrations

Base Map: Minneapolis North, MN 7.5' USGS Quadrangle Map

Pinnacle Engineering

11541 95th Ave. N., Maple Grove, MN 55369
Phone: 763-315-4501, Fax: 763-315-4507

Figure 1
Site Location
Vacant Parcels
3206 Penn Ave N & 3201 Oliver Ave N
Minneapolis, Minnesota 55412
Pinnacle Project Number: R016526.000

Legend

Soil Boring

Soil Vapor Boring

Base Map is from Hennepin County Property Information Search - Property Interactive Map

N

Scale

0′ 25′ 50′

Figure 2
Phase II Boring Locations
3206 Penn & 3201 Oliver Avenue N.
Minneapolis, Minnesota

Pinnacle Project No.: R016526.000
Date: 10/5/2016
Prepared By: ES
Reviewed By: MB

Pinnacle Engineering
11541 95th Ave N.
Maple Grove, MN 55369
(763) 315-4501
www.pineng.com

Legend

2016 Pinnacle Phase II

- Soil Boring
- Soil Vapor Boring

2008 Peer LSI

- Soil Boring
- Soil Vapor Boring

2006 Barr Phase II

- Soil Boring

N

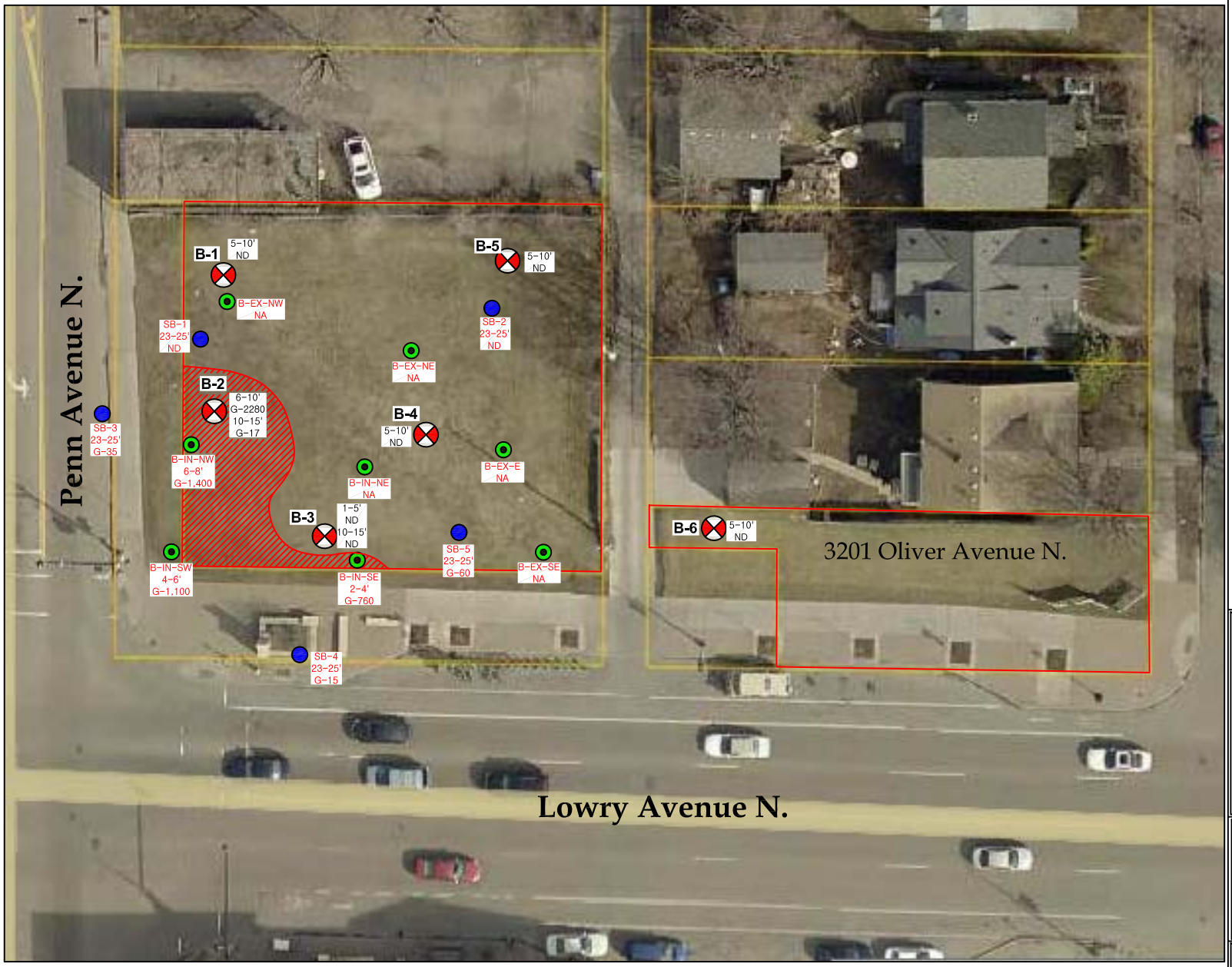
Scale

0′ 25′ 50′

Figure 3
Boring Locations
2016 (Pinnacle)
2008 (Peer), and 2006 (Barr)
3206 Penn & 3201 Oliver Avenue N.
Minneapolis, Minnesota

Pinnacle Project No.: R016526.000
Date: 10/5/2016
Prepared By: ES
Reviewed By: MB

Pinnacle Engineering
11541 95th Ave N.
Maple Grove, MN 55369
(763) 315-4501
www.pineng.com



Legend

2016 Pinnacle Phase II

Soil Boring

2008 Peer LSI

Soil Boring

2006 Barr Phase II

Soil Boring

SB-1 – Sample Location
23-25' – Sample Depth
G – GRO Concentration-soil, mg/kg
NA – Not Analyzed
ND – GRO Not Detected

Estimated area of remaining soil impacts, less than 15' deep

N

Scale

0' 25' 50'

Figure 4
Current and Historic
GRO Soil Concentrations
3206 Penn & 3201 Oliver
Avenue N.
Minneapolis, Minnesota

Pinnacle Project No.: R016526.000
Date: 10/5/2016
Prepared By: ES
Reviewed By: MB

Pinnacle Engineering
11541 95th Ave N.
Maple Grove, MN 55369
(763) 315-4501
www.pineng.com

Legend

2016 Pinnacle Phase II

Soil Vapor Boring

VP-5 - Sample Location
6' – Sample Depth
B-4.23–Benzene Concentration, ug/m³

2008 Peer LSI

Soil Vapor Boring

VP-2 – Sample Location
10' – Sample Depth
B-12.2 – Benzene Concentration, ug/m³

N

Scale
0' 25' 50'

Figure 5
Current and Historic Benzene Soil Vapor Concentrations
3206 Penn & 3201 Oliver Avenue N.
Minneapolis, Minnesota

Pinnacle Project No.: R016526.000
Date: 10/5/2016
Prepared By: ES
Reviewed By: MB

Pinnacle Engineering
11541 95th Ave N.
Maple Grove, MN 55369
(763) 315-4501
www.pineng.com

Legend

2016 Pinnacle Phase II

Soil Vapor Boring

VP-5 - Sample Location
6' – Sample Depth
P–PCE Concentration, ug/m³

2008 Peer LSI

Soil Vapor Boring

VP-2 – Sample Location
10' – Sample Depth
P – PCE Concentration, ug/m³

N

Scale
0' 25' 50'

Figure 6
Current and Historic PCE Soil Vapor Concentrations
3206 Penn & 3201 Oliver Avenue N.
Minneapolis, Minnesota

Pinnacle Project No.: R016526.000
Date: 10/20/2016
Prepared By: ES
Reviewed By: MB

Pinnacle Engineering
11541 95th Ave N.
Maple Grove, MN 55369
(763) 315–4501
www.pineng.com

TABLES

Table 1
Analytical Results-Soil

Table 2
Analytical Results-Soil Vapor

Table 1
Analytical Results - Soil
Phase II Assessment - Vacant Lots
3206 Penn Avenue North and 3201 Oliver Avenue North, Minneapolis, MN
Pinnacle Project No.: R016526.000

Account: PINNENGMN SDG: L864389 Matrices:																									
Lab Sample ID			Residential SRV	Industrial SRV	SLV	L864389-01		L864389-02		L864389-03		L864389-04		L864389-05		L864389-06		L864389-07		L864389-08		L864389-09			
Client Sample ID						B-1 5-10 feet		B-2 6-10 feet		B-2 10-15 feet		B-3 6 inch-1 foot		B-3 1-5 feet		B-3 10-15 feet		B-4 5-10 feet		B-5 5-10 feet		B-6 5-10 feet			
Date Collected						10/04/2016		10/04/2016		10/04/2016		10/04/2016		10/04/2016		10/04/2016		10/04/2016		10/04/2016		10/04/2016			
Method	Analyte	Units				Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier		
2540 G-2011	TOTAL SOLIDS	%				85.7		84		85.4		92.1		87.4		85.1		87.1		86.5		86.4			
	Resource Conservation and Recovery Act (RCRA) Metals																								
6010B	ARSENIC	mg/kg	9	20	5.82	4.54		3.99		8.64		4.42		NA		4.66		3.63		4.29		4.75			
6010B	BARIUM	mg/kg	1100	18000	1680	67.8		77.3		57.5		84.5		NA		72		71.2		59.9		69.4			
6010B	CADMIUM	mg/kg	25	200	8.81	<0.5		<0.5		<0.5		0.769		NA		<0.5		<0.5		<0.5		<0.5			
6010B	CHROMIUM	mg/kg				17.1		11.9		10.4		15.4		NA		12.1		12.4		10.5		16.3			
6010B	LEAD	mg/kg	300	700	2700	3.09		6.9		3.91		104		NA		4.42		3.36		1.54		3.25			
6010B	SELENIUM	mg/kg	160	1300	2.64	<2		<2		<2		<2		NA		<2		<2		<2		<2			
6010B	SILVER	mg/kg	160	1300	7.86	<1		<1		<1		<1		NA		<1		<1		<1		<1			
7471A	MERCURY	mg/kg	0.5	1.5	3.29	0.02		<0.02		<0.02		0.0369		NA		<0.02		<0.02		<0.02		<0.02			
	Volatile Organic Compounds (VOCs)																								
8260B	ACETONE	mg/kg	340	1000	8.4	<2.5		<24.8		<2.45		NA		<2.5		<2.5		<2.45		<2.48		<2.48			
8260B	ACRYLONITRILE	mg/kg			0.00142	<0.5		<4.95		<0.49		NA		<0.5		<0.5		<0.49		<0.495		<0.495			
8260B	ALLYL CHLORIDE	mg/kg			0.154	<0.25		<2.48		<0.245		NA		<0.25		<0.25		<0.245		<0.248		<0.248			
8260B	BENZENE	mg/kg	6	10	0.0172	<0.05		<0.495		<0.049		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	BROMOBENZENE	mg/kg				<0.05		<0.495		<0.049		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	BROMODICHLOROMETHANE	mg/kg	10	17	0.0214	<0.05		<0.495		<0.049		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	BROMOFORM	mg/kg	370	650	0.134	<0.05		<0.495		<0.049		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	BROMOMETHANE	mg/kg	0.7	2	0.0357	<0.25		<2.48		<0.245		NA		<0.25		<0.25		<0.245		<0.248		<0.248			
8260B	N-BUTYLBENZENE	mg/kg	30	92		<0.05		5.82		<0.049		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	SEC-BUTYLBENZENE	mg/kg	25	70		<0.05		2.23		<0.049		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	TERT-BUTYLBENZENE	mg/kg	30	90		<0.05		<0.495		<0.049		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	CARBON TETRACHLORIDE	mg/kg	0.3	0.9	0.00767	<0.05		<0.495		<0.049		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	CHLOROBENZENE	mg/kg	11	32	1.18	<0.05		1.04		<0.049		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	CHLORODIBROMOMETHANE	mg/kg	12	20	0.0338	<0.05		<0.495		<0.049		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	CHLOROETHANE	mg/kg	1000	3000		<0.25		<2.48		<0.245		NA		<0.25		<0.25		<0.245		<0.248		<0.248			
8260B	2-CHLOROETHYL VINYL ETHER	mg/kg				<2.5		<24.8		<2.45		NA		<2.5		<2.5		<2.45		<2.48		<2.48			
8260B	CHLOROFORM	mg/kg	2.5	4	0.114	<0.25		<2.48		<0.245		NA		<0.25		<0.25		<0.245		<0.248		<0.248			
8260B	CHLOROMETHANE	mg/kg	8	23	0.113	<0.125		<1.24		<0.123		NA		<0.125		<0.125		<0.123		<0.124		<0.124			
8260B	2-CHLOROTOLUENE	mg/kg	436	436		<0.05		<0.495		<0.049		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	4-CHLOROTOLUENE	mg/kg				<0.05		<0.495		<0.049		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	1,2-DIBROMO-3-CHLOROPROPANE	mg/kg				<0.25		<2.48		<0.245		NA		<0.25		<0.25		<0.245		<0.248		<0.248			
8260B	1,2-DIBROMOETHANE	mg/kg	0.3	0.5	0.0000147	<0.05		<0.495		<0.049		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	DIBROMOMETHANE	mg/kg	260			<0.05		<0.495		<0.049		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	1,2-DICHLOROBENZENE	mg/kg	26	75	10.6	<0.05		<0.495		<0.049		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	1,3-DICHLOROBENZENE	mg/kg	26	200	10.4	<0.05		<0.495		<0.049		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	1,4-DICHLOROBENZENE	mg/kg	30	50	0.174	<0.05		<0.495		<0.049		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	DICHLORODIFLUOROMETHANE	mg/kg	16	50	36.7	<0.25		<2.48		<0.245		NA		<0.25		<0.25		<0.245		<0.248		<0.248			
8260B	1,1-DICHLOROETHANE	mg/kg	34	55	0.407	<0.05		<0.495		<0.049		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	1,2-DICHLOROETHANE	mg/kg	4	6	0.00375	<0.05		<0.495		<0.049		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	1,1-DICHLOROETHENE	mg/kg	20	60	1.39	<0.05		<0.495		<0.049		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	CIS-1,2-DICHLOROETHENE	mg/kg	8		0.208	<0.05		<0.495		<0.049		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	TRANS-1,2-DICHLOROETHENE	mg/kg	11	33	0.416	<0.05		<0.495		<0.049		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	1,2-DICHLOROPROPANE	mg/kg	4	6	0.0241	<0.05		<0.495		<0.049		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	1,1-DICHLOROPROPENE	mg/kg				<0.05		<0.495		<0.049		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	1,3-DICHLOROPROPANE	mg/kg				<0.05		<0.495		<0.049		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	CIS-1,3-DICHLOROPROPENE	mg/kg				<0.05		<0.495		<0.049		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	TRANS-1,3-DICHLOROPROPENE	mg/kg				<0.05		<0.495		<0.049		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	2,2-DICHLOROPROPANE	mg/kg				<0.05		<0.495		<0.049		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	DI-ISOPROPYL ETHER	mg/kg				<0.05		<0.495		<0.049		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	ETHYLBENZENE	mg/kg	200	200	1.05	<0.05		23.2		0.0524		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	ETHYL ETHER	mg/kg			0.512	<0.05		<0.495		<0.049		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	HEXACHLORO-1,3-BUTADIENE	mg/kg	6		0.0373	<0.05	J4	<0.495	J3 J4	<0.049	J3 J4	NA		<0.05	J3 J4	<0.05	J3 J4	<0.049	J3 J4	<0.0495	J3 J4	<0.0495	J3 J4		
8260B	2-HEXANONE	mg/kg				<0.5		<4.95		<0.49		NA		<0.5		<0.5		<0.49		<0.495		<0.495			
8260B	ISOPROPYLBENZENE	mg/kg	30	87	9.46	<0.05		3.53		<0.049		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	P-ISOPROPYLTOLUENE	mg/kg				<0.05		1.15		<0.049		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	2-BUTANONE (MEK)	mg/kg	5500	19000	8.75	<0.5		<4.95		<0.49		NA		<0.5		<0.5		<0.49		<0.495		<0.495			
8260B	METHYLENE CHLORIDE	mg/kg	97	158	0.0166	<0.25		<2.48		<0.245		NA		<0.25		<0.25		<0.245		<0.248		<0.248			
8260B	4-METHYL-2-PENTANONE (MIBK)	mg/kg	1700	9000	0.757	<0.5		<4.95		<0.49		NA		<0.5		<0.5		<0.49		<0.495		<0.495			
8260B	METHYL TERT-BUTYL ETHER	mg/kg				<0.05		<0.495		<0.049		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	NAPHTHALENE	mg/kg	10	28	4.47	<0.25		7.4		<0.245		NA		<0.25		<0.25		<0.245		<0.248		<0.248			
8260B	N-PROPYLBENZENE	mg/kg	30	93		<0.05		13.6		<0.049		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	STYRENE	mg/kg	210	600	2.02	<0.05		<0.495		<0.049		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	1,1,1,2-TETRACHLOROETHANE	mg/kg	31	51	0.406	<0.05		<0.495		<0.049		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	1,1,2,2-TETRACHLOROETHANE	mg/kg	3.5	6.5	0.0117	<0.05		<0.495		<0.049		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	1,1,2-TRICHLOROTRIFLUOROETHANE	mg/kg	3750	5430	16900	<0.05		<0.495		<0.049		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	TETRACHLOROETHENE	mg/kg	72	131	0.0415	<0.05		<0.495		<0.049		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	TETRAHYDROFURAN	mg/kg			0.244	<0.25		<2.48		<0.245		NA		<0.25		<0.25		<0.245		<0.248		<0.248			
8260B	TOLUENE	mg/kg	107	305	2.46	<0.25		<2.48		<0.245		NA		<0.25		<0.25		<0.245		<0.248		<0.248			
8260B	1,2,3-TRICHLOROBENZENE	mg/kg				<0.05		<0.495	J3	<0.049	J3	NA		<0.05	J3	<0.05	J3	<0.049	J3	<0.0495	J3	<0.0495	J3		
8260B	1,2,4-TRICHLOROBENZENE	mg/kg	200	985	0.226	<0.05		<0.495		<0.049		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	1,1,1-TRICHLOROETHANE	mg/kg	140	472	55.7	<0.05		<0.495		<0.049		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	1,1,2-TRICHLOROETHANE	mg/kg	9	14	0.0136	<0.05		<0.495		<0.049		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	TRICHLOROETHENE	mg/kg	29	46	0.0291	<0.05		<0.495		<0.049		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	TRICHLOROFLUOROMETHANE	mg/kg	67	195	35	<0.25		<2.48		<0.245		NA		<0.25		<0.25		<0.245		<0.248		<0.248			
8260B	1,2,3-TRICHLOROPROPANE	mg/kg			0.267	<0.125		<1.24		<0.123		NA		<0.125		<0.125		<0.123		<0.124		<0.124			
8260B	1,2,4-TRIMETHYLBENZENE	mg/kg	8	25	2.74	<0.05		80.8		<0.049		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	1,2,3-TRIMETHYLBENZENE	mg/kg				<0.05		15.9		<0.049		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	1,3,5-TRIMETHYLBENZENE	mg/kg	3	10	2.73	<0.05		23.5		<0.049		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	VINYL CHLORIDE	mg/kg	0.8	2.2	0.00136	<0.05		<0.495		<0.049		NA		<0.05		<0.05		<0.049		<0.0495		<0.0495			
8260B	XYLENES, TOTAL	mg/kg	45	130	5.42	<0.15		88.8		<0.147		NA		<0.15		<0.15		<0.147		<0.149		<0.149			
	Polynuclear Aromatic Hydrocarbons (PAHs)																								
8270C	ANTHRACENE	mg/kg	7880	45400	1300	<0.033		<0.033		<0.033		0.293		NA		<0.033		<0.033		<0.033		<0.033			
8270C	ACENAPHTHENE	mg/kg	1200	5260	81	<0.033		0.0399		<0.033		<0.165		NA		<0.033		<0.033		<0.033		<0.033			
8270C	ACENAPHTHYLENE	mg/kg				<0.033		<0.033		<0.033		<0.165		NA		<0.033		<0.033		<0.033		<0.033			
8270C	BENZO(A)ANTHRACENE	mg/kg				<0.033		<0.033		<0.033		1.09		NA		<0.033		<0.033		<0.033		<0.033			
8270C	BENZO(A)PYRENE	mg/kg	2	3	1.4	<0.033		<0.033		<0.033		1.1		NA		<0.033		<0.033		<0.033		<0.033			
8270C	BENZO(B)FLUORANTHENE	mg/kg				<0.033		<0.033		<0.033		1.43		NA		<0.033		<0.033		<0.033		<0.033			
8270C	BENZO(G,H,I)PERYLENE	mg/kg				<0.033		<0.033		<0.033		0.857		NA		<0.033		<0.033		<0.033		<0.033			
8270C	BENZO(K)FLUORANTHENE	mg/kg				<0.033		<0.033		<0.033		0.447		NA		<0.033		<0.033		<0.033		<0.033			
8270C	CHRYSENE	mg/kg				<0.033		<0.033		<0.033		1.16		NA		<0.033		<0.033		<0.033		<0.033			
8270C	DIBENZ(A,H)ANTHRACENE	mg/kg				<0.033		<0.033		<0.033		0.203		NA		<0.033		<0.033		<0.033		<0.033			
8270C	FLUORANTHENE	mg/kg	1080	6800	670	<0.033		<0.033		<0.033		2.74		NA		<0.033		<0.033		<0.033		<0.033			
8270C	FLUORENE	mg/kg	850	4120	110	<0.033		<0.033		<0.033		<0.165		NA		<0.033		<0.033		<0.033		<0.033			
8270C	INDENO(1,2,3-CD)PYRENE	mg/kg				<0.033		<0.033		<0.033		0.69		NA		<0.033		<0.033		<0.033		<0.033			
8270C	NAPHTHALENE	mg/kg	10	28	4.5	<0.033		7.61		0.0695		<0.165		NA		<0.033		<0.033		<0.033		<0.033			
8270C	PHENANTHRENE	mg/kg				<0.033		0.0372		<0.033		1.3		NA		<0.033		<0.033		<0.033		<0.033			
8270C	PYRENE	mg/kg	890	5800	440	<0.033		<0.033		<0.033		2.04		NA		<0.033		<0.033		<0.033		<0.033			
	BaP Equivalents	mg/kg	3	2	1.41	<0.033		<0.033		<0.033		1.677		NA		<0.033		<0.033		<0.033		<0.033			
	DRO & GRO																								
WI(95) DRO	TPH (GC/FID) HIGH FRACTION	mg/kg				<8		91.9		<8		NA		<40		<8		<8		<8		<8			
WI(95) GRO	TPH (GC/FID) LOW FRACTION	mg/kg				<5		2280		14.5		NA		<5		<5		<4.9		<4.95		<4.95			

Qualifiers:
J3 - The associated batch QC was outside the established quality control range for precision.
J4 - The associated batch QC was outside the established quality control range for accuracy
J7 - Surrogate recovery cannot be used for control limit evaluation due to dilution
NA - Not analyzed
Results above SLV
Results above Industrial SRV
Results above Residential SRV

Table 2
Analytical Results - Soil Vapors
Phase II Site Assessment - Vacant Lots
3206 Penn Avenue North and 3201 Oliver Avenue North, Minneapolis, MN
Pinnacle Project No.: R016526.000

Lab Sample ID					L864275-01		L864275-02		L864275-03		L864275-04		L864275-05		L864275-06	
Client Sample ID					VP-1		VP-2		VP-3		VP-4		VP-5		VP-6	
Date Collected					10/04/2016		10/04/2016		10/04/2016		10/04/2016		10/04/2016		10/04/2016	
Method	Analyte	Units	Residential ISV	Industrial ISV	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
TO-15	ACETONE	ug/m3	31000	87000	20.9		41		41.5		25.5		35.8		15	
TO-15	ALLYL CHLORIDE	ug/m3			<0.626		<0.626		<0.626		<0.626		<0.626		<0.626	
TO-15	BENZENE	ug/m3	4.6	45	4.26		4.51		9.34		4.29		4.23		2	
TO-15	BENZYL CHLORIDE	ug/m3	1	3	<1.04		<1.04		<1.04		<1.04		<1.04		<1.04	
TO-15	BROMODICHLOROMETHANE	ug/m3			<1.34		<1.34		<1.34		<1.34		<1.34		<1.34	
TO-15	BROMOFORM	ug/m3	9	30	<6.21		<6.21		<6.21		<6.21		<6.21		<6.21	
TO-15	BROMOMETHANE	ug/m3	5	10	<0.776		<0.776		<0.776		<0.776		<0.776		<0.776	
TO-15	1,3-BUTADIENE	ug/m3	0.3	2.7	<4.43		6.2		<4.43		8.42		5.92		<4.43	
TO-15	CARBON DISULFIDE	ug/m3	700	2000	0.749		10.9		2.81		1.83		2.6		<0.622	
TO-15	CARBON TETRACHLORIDE	ug/m3	1.7	16	<1.26		<1.26		<1.26		<1.26		<1.26		<1.26	
TO-15	CHLOROBENZENE	ug/m3	50	100	<0.924		<0.924		<0.924		<0.924		<0.924		<0.924	
TO-15	CHLOROETHANE	ug/m3	10000	30000	<0.528		<0.528		<0.528		<0.528		<0.528		<0.528	
TO-15	CHLOROFORM	ug/m3	100	300	<0.973		<0.973		<0.973		<0.973		<0.973		<0.973	
TO-15	CHLOROMETHANE	ug/m3	90	300	1.31		<0.413		1.64		<0.413		0.985		1.28	
TO-15	2-CHLOROTOLUENE	ug/m3			<1.03		<1.03		<1.03		<1.03		<1.03		<1.03	
TO-15	CYCLOHEXANE	ug/m3	6000	20000	1.21		1.39		2.39		1.37		1.53		0.818	
TO-15	CHLORODIBROMOMETHANE	ug/m3			<1.7		<1.7		<1.7		<1.7		<1.7		<1.7	
TO-15	1,2-DIBROMOETHANE	ug/m3	0.02	0.06	<1.54		<1.54		<1.54		<1.54		<1.54		<1.54	
TO-15	1,2-DICHLOROBENZENE	ug/m3	200	600	<1.2		<1.2		<1.2		<1.2		<1.2		<1.2	
TO-15	1,3-DICHLOROBENZENE	ug/m3			<1.2		<1.2		<1.2		2.54		1.37		<1.2	
TO-15	1,4-DICHLOROBENZENE	ug/m3	60	200	<1.2		<1.2		<1.2		<1.2		<1.2		<1.2	
TO-15	1,2-DICHLOROETHANE	ug/m3	0.4	1	<0.81		<0.81		<0.81		<0.81		<0.81		<0.81	
TO-15	1,1-DICHLOROETHANE	ug/m3	500	1000	<0.802		<0.802		<0.802		<0.802		<0.802		<0.802	
TO-15	1,1-DICHLOROETHENE	ug/m3	200	600	<0.793		<0.793		<0.793		<0.793		<0.793		<0.793	
TO-15	CIS-1,2-DICHLOROETHENE	ug/m3			<0.793		<0.793		<0.793		<0.793		<0.793		<0.793	
TO-15	TRANS-1,2-DICHLOROETHENE	ug/m3			<0.793		<0.793		<0.793		<0.793		<0.793		<0.793	
TO-15	1,2-DICHLOROPROPANE	ug/m3	4	10	<0.924		<0.924		<0.924		<0.924		<0.924		<0.924	
TO-15	CIS-1,3-DICHLOROPROPENE	ug/m3	20	60	<0.908		<0.908		<0.908		<0.908		<0.908		<0.908	
TO-15	TRANS-1,3-DICHLOROPROPENE	ug/m3	20	60	<0.908		<0.908		<0.908		<0.908		<0.908		<0.908	
TO-15	1,4-DIOXANE	ug/m3			<0.721		<0.721		5.89		<0.721		<0.721		<0.721	
TO-15	ETHANOL	ug/m3	15000	42000	49.9		21.5		52.9		19.3		18.2		26.4	
TO-15	ETHYLBENZENE	ug/m3	4.1	39	27.3		25.6		35.5		42.8		26.9		19.7	
TO-15	4-ETHYLTOLUENE	ug/m3			13		19.3		20		25.2		16.1		11.2	
TO-15	TRICHLOROFLUOROMETHANE	ug/m3	700	2000	3.35		2230		943		3000		8.55		1.45	
TO-15	DICHLORODIFLUOROMETHANE	ug/m3			9.66		5370		8560		9310		28.9		2.25	
TO-15	1,1,2-TRICHLOROTRIFLUOROETHANE	ug/m3	30000	80000	<1.53		<1.53		<1.53		<1.53		<1.53		<1.53	
TO-15	1,2-DICHLOROTETRAFLUOROETHANE	ug/m3			<1.4		<1.4		<1.4		<1.4		<1.4		<1.4	
TO-15	HEPTANE	ug/m3			3.6		7.27		9.06		7.5		9.82		6.66	
TO-15	HEXACHLORO-1,3-BUTADIENE	ug/m3	0.5		<6.73		<6.73		<6.73		<6.73		<6.73		<6.73	
TO-15	N-HEXANE	ug/m3	2000	6000	7.41		4.97		10.8		5.65		6.78		2.91	
TO-15	ISOPROPYLBENZENE	ug/m3			1.33		2.18		4.63		12.9		8.89		3.65	
TO-15	METHYLENE CHLORIDE	ug/m3	20	60	2.39	B	<0.694		1.99	B	<0.694		<0.694		1.9	B
TO-15	METHYL BUTYL KETONE	ug/m3			<5.11		<5.11		<5.11		<5.11		<5.11		<5.11	
TO-15	2-BUTANONE (MEK)	ug/m3	5000	10000	4.44		13		18.4		12.4		18.4		5.02	
TO-15	4-METHYL-2-PENTANONE (MIBK)	ug/m3	3000	8000	<5.12		10.1		8.75		7.43		6.93		<5.12	
TO-15	METHYL METHACRYLATE	ug/m3			<0.819		<0.819		<0.819		<0.819		<0.819		<0.819	
TO-15	METHYL TERT-BUTYL ETHER	ug/m3	3000	8000	<0.721		<0.721		<0.721		<0.721		<0.721		<0.721	
TO-15	NAPHTHALENE	ug/m3	9	30	16.9		10.6		7.8		14.9		5.91		6.9	
TO-15	2-PROPANOL	ug/m3	7000		7.31		<3.07		13.5		4.99		5.1		4.94	
TO-15	PROPENE	ug/m3	3000	8000	48		43.1		89		77.9		88.7		16.9	
TO-15	STYRENE	ug/m3	1000	3000	<0.851		<0.851		<0.851		<0.851		<0.851		<0.851	
TO-15	1,1,2,2-TETRACHLOROETHANE	ug/m3	0.2	1	<1.37		<1.37		<1.37		<1.37		<1.37		<1.37	
TO-15	TETRACHLOROETHENE	ug/m3	3.3	33	3.72		11.7		12.3		64		22.4		9.47	
TO-15	TETRAHYDROFURAN	ug/m3			<0.59		<0.59		<0.59		<0.59		<0.59		<0.59	
TO-15	TOLUENE	ug/m3	5000	10000	13.7		32.7		43.4		40.3		42.3		28.6	
TO-15	1,2,4-TRICHLOROBENZENE	ug/m3	4	10	<4.66		<4.66		<4.66		<4.66		<4.66		<4.66	
TO-15	1,1,1-TRICHLOROETHANE	ug/m3	5000	10000	<1.09		<1.09		<1.09		1.94		<1.09		<1.09	
TO-15	1,1,2-TRICHLOROETHANE	ug/m3	0.6	2	<1.09		<1.09		<1.09		<1.09		<1.09		<1.09	
TO-15	TRICHLOROETHENE	ug/m3	2.1	7	<1.07		<1.07		<1.07		<1.07		<1.07		<1.07	
TO-15	1,2,4-TRIMETHYLBENZENE	ug/m3	7	20	8.41		17.3		17.6		22.8		14.6		8.16	
TO-15	1,3,5-TRIMETHYLBENZENE	ug/m3	6	20	1.89		4.27		4.56		5.32		3.57		1.93	
TO-15	2,2,4-TRIMETHYLPENTANE	ug/m3			2.33	B	5.83		84.7		3.16	B	2.62	B	2.02	B
TO-15	VINYL CHLORIDE	ug/m3	3.2	22	<0.511		<0.511		<0.511		<0.511		<0.511		<0.511	
TO-15	VINYL BROMIDE	ug/m3			<0.875		<0.875		<0.875		<0.875		<0.875		<0.875	
TO-15	VINYL ACETATE	ug/m3	200	600	<0.704		<0.704		<0.704		<0.704		<0.704		<0.704	
TO-15	M&P-XYLENE	ug/m3	100	300	11.9		24		28.5		33.1		22.5		16.3	
TO-15	O-XYLENE	ug/m3	100	300	5.21		10.7		11.5		14.3		9.79		6.86	
TO-15	TPH (GC/MS) LOW FRACTION	ug/m3			456		1170		1880		2810		2640		1480	

Qualifiers: B: The same analyte is found in the associated blank.

APPENDIX A
SOIL BORING LOGS

Pinnacle Engineering

LOG OF TEST BORING

PROJECT:
3206 Penn Ave. N. and 3201 Oliver Ave. N.
Minneapolis, Minnesota
Pinnacle Project No.: R016526.000

BORING NAME/LOCATION:
B-1
See Figure 2

SCALE:
1 in. = 3 ft.

LOGGED BY: E. Simonson/Pinnacle
DRILLING METHOD: Push Probe
DRILLING DATE: 10/4/2016

RELATIVE ELEV: Existing Grade
DRILLING CONTRACTOR: Midwestern

Depth (ft.)	Depth	Sample Int. Rec. - (in.)	Log-Graphic	Description - ASTM D 2488	PID	Water Level	Comments
0				Topsoil/subsoil, mostly silty fine grained sand, dark brown, moist			
	2						
		28"		Fill - sand and gravel, brown, moist	0.4		
	3						
3				Possible fill - sandy clay, dark brown, moist			
	4.5						
				Sandy clay, trace gravel, light brown, moist, CL, glacial till			
6							
		30"			0.7		Lab sample collected, 5-10 feet
9							
12					0.3		
		46"					
15							
					0.2		
18							
	18.5						
				Sandy clay, trace gravel, dark gray, moist, CL, glacial till			
	20	54"					
21				The boring was terminated at 20 feet. Groundwater was not encountered.			

Pinnacle Engineering

LOG OF TEST BORING

PROJECT:
3206 Penn Ave. N. and 3201 Oliver Ave. N.
Minneapolis, Minnesota
Pinnacle Project No.: R016526.000

BORING NAME/LOCATION:
B-2
See Figure 2

SCALE:
1 in. = 3 ft.

LOGGED BY: E. Simonson/Pinnacle
RELATIVE ELEV: Existing Grade
DRILLING METHOD: Push Probe
DRILLING CONTRACTOR: Midwestern
DRILLING DATE: 10/4/2016
PAGE 1 OF 1

Depth (ft.)	Depth	Sample Int. Rec.- (in.)	Log-Graphic	Description - ASTM D 2488	PID	Water Level	Comments
0				Topsoil/subsoil, mostly silty fine grained sand, dark brown, moist			
	2						
				Possible fill - silty clay, dark brown, moist	0.2		
	3						
3		38"		Fill - sand, trace gravel, brown, moist			
	6						
6				Sandy clay, trace gravel, greenish gray, petroleum odor, moist, CL, glacial till	1,320		Lab sample collected, 6- 10 feet
		40"					
9							
12					402		Lab sample collected, 10-15 feet
	14.5						
15				Sandy clay, trace gravel, light brown, moist, CL, glacial till			
					1.7		
18		45"					
	19.5						
	20			Sandy clay, trace gravel, dark gray, moist, CL, glacial till			
21				The boring was terminated at 20 feet. Groundwater was not encountered.			

Pinnacle Engineering

LOG OF TEST BORING

PROJECT:
3206 Penn Ave. N. and 3201 Oliver Ave. N.
Minneapolis, Minnesota
Pinnacle Project No.: R016526.000

BORING NAME/LOCATION:
B-3
See Figure 2

SCALE:
1 in. = 3 ft.

LOGGED BY: E. Simonson/Pinnacle
RELATIVE ELEV: Existing Grade
DRILLING METHOD: Push Probe
DRILLING CONTRACTOR: Midwestern
DRILLING DATE: 10/4/2016
PAGE 1 OF 1

Depth (ft.)	Depth	Sample Int. Rec. - (in.)	Log-Graphic	Description - ASTM D 2488	PID	Water Level	Comments
0	.5			Topsoil/subsoil, mostly silty fine grained sand, dark brown, moist	0.2		Lab sample collected, PAHs and Metals, 6"-1'
	1			Fill - silty sand with slag and clinkers, dark brown, moist			
3		36"		Possible fill - sandy clay, trace gravel, dark brown to brown, moist	0.1		Lab sample collected, VOCs, GRO, DRO 1-5 feet
	5.5						
6		24"		Possible fill, fine- to medium grained sand, brown, moist	0.2		
	8.5						
9				Clayey sand, brown, moist, SC, glacial till			
	10						
12		48"		Sandy clay, trace gravel, light brown to gray/brown mottled , moist, CL, glacial till	4.9		Lab sample collected, 10- 15 feet
15							
18		50"			1.9		
	20						
21				The boring was terminated at 20 feet. Groundwater was not encountered.			

Pinnacle Engineering

LOG OF TEST BORING

PROJECT:
3206 Penn Ave. N. and 3201 Oliver Ave. N.
Minneapolis, Minnesota
Pinnacle Project No.: R016526.000

BORING NAME/LOCATION:
B-4
See Figure 2

SCALE:
1 in. = 3 ft.

LOGGED BY: E. Simonson/Pinnacle
DRILLING METHOD: Push Probe
DRILLING DATE: 10/4/2016

RELATIVE ELEV: Existing Grade
DRILLING CONTRACTOR: Midwestern

Depth (ft.)	Depth	Sample Int. Rec. - (in.)	Log-Graphic	Description - ASTM D 2488	PID	Water Level	Comments
0				Topsoil/subsoil, mostly silty fine grained sand, dark brown, moist			
	2						
				Fill - sand, a little gravel, brown, moist	0.1		
	3						
3		36"		Silty clay, a little sand, light brown, moist, CL, glacial till			
6							
	6.5						
	7			Sand and gravel, brown, wet, SP-GP, glacial outwash			
				Sandy clay, trace gravel, light brown, moist, CL, glacial till	0.3		Lab sample collected, 5-10 feet
9							
12					0.1		
15							
18					0.3		
	20						
		60"		The boring was terminated at 20 feet. Groundwater was not encountered.			
21							

Pinnacle Engineering

LOG OF TEST BORING

PROJECT:
3206 Penn Ave. N. and 3201 Oliver Ave. N.
Minneapolis, Minnesota
Pinnacle Project No.: R016526.000

BORING NAME/LOCATION:
B-5
See Figure 2

SCALE:
1 in. = 3 ft.

LOGGED BY: E. Simonson/Pinnacle
DRILLING METHOD: Push Probe
DRILLING DATE: 10/4/2016

RELATIVE ELEV: Existing Grade
DRILLING CONTRACTOR: Midwestern

Depth (ft.)	Depth	Sample Int. Rec.- (in.)	Log-Graphic	Description - ASTM D 2488	PID	Water Level	Comments
0							
	1			Topsoil/subsoil, mostly silty fine grained sand, dark brown, moist			
		50"		Sandy clay, trace gravel, brown, moist, CL, glacial till	0		
3							
	6						
6	6.25			Sand and gravel, brown, wet, SP-GP, glacial outwash			
				Sandy clay, trace gravel, light brown, moist, CL, glacial till	0.1		Lab sample collected, 5-10 feet
		50"					
9							
12					0.1		
15							
					0.1		
18	18.5						
	18.75			Fine-grained sand, brown, wet, SP, glacial outwash			
	20	60"					
				The boring was terminated at 20 feet. Groundwater was not encountered.			
21							

Pinnacle Engineering

LOG OF TEST BORING

PROJECT:
3206 Penn Ave. N. and 3201 Oliver Ave. N.
Minneapolis, Minnesota
Pinnacle Project No.: R016526.000

BORING NAME/LOCATION:
B-6
See Figure 2

SCALE:
1 in. = 3 ft.

LOGGED BY: E. Simonson/Pinnacle
RELATIVE ELEV: Existing Grade
DRILLING METHOD: Push Probe
DRILLING CONTRACTOR: Midwestern
DRILLING DATE: 10/4/2016
PAGE 1 OF 1

Depth (ft.)	Depth	Sample Int. Rec.- (in.)	Log-Graphic	Description - ASTM D 2488	PID	Water Level	Comments
0				Topsoil/subsoil, mostly silty fine grained sand, dark brown, moist			
	1			Sandy clay, trace gravel, brown, moist, CL, glacial till			
		50"			0		
3							
6							
	7.5						
	7.6			Sand, brown, wet, SP, glacial outwash	0		Lab sample collected, 5-10 feet
				Sandy clay, trace gravel, light brown, moist, CL, glacial till			
9							
12					0.1		
15							
	18				0		
18				Clayey sand, trace gravel, reddish brown, moist, SC, glacial till			
	20	60"					
				The boring was terminated at 20 feet. Groundwater was not encountered.			
21							

APPENDIX B
LABORATORY ANALYTICAL REPORTS

ANALYTICAL REPORT

October 13, 2016

Pinnacle Engineering - Maple G. MN.

Sample Delivery Group:	L864275
Samples Received:	10/06/2016
Project Number:	R016526.000
Description:	Penn Avenue North Phase II
Site:	MINNEAPOLIS, MN
Report To:	Matt Bartus 11541 95th Ave. N Minneapolis, MN 55369

Entire Report Reviewed By:

John Hawkins
Technical Service Representative

TABLE OF CONTENTS

VP-1 L864275-01 Air

Collected by: Eric Simonson
Collected date/time: 10/04/16 11:00
Received date/time: 10/06/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG915703	1	10/10/16 21:22	10/10/16 21:22	MBF

VP-2 L864275-02 Air

Collected by: Eric Simonson
Collected date/time: 10/04/16 11:30
Received date/time: 10/06/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG915703	1	10/10/16 22:06	10/10/16 22:06	MBF
Volatile Organic Compounds (MS) by Method TO-15	WG916000	25	10/11/16 11:39	10/11/16 11:39	MBF

VP-3 L864275-03 Air

Collected by: Eric Simonson
Collected date/time: 10/04/16 12:10
Received date/time: 10/06/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG915703	1	10/10/16 22:49	10/10/16 22:49	MBF
Volatile Organic Compounds (MS) by Method TO-15	WG916000	25	10/11/16 12:25	10/11/16 12:25	MBF
Volatile Organic Compounds (MS) by Method TO-15	WG916348	200	10/12/16 10:26	10/12/16 10:26	MBF

VP-4 L864275-04 Air

Collected by: Eric Simonson
Collected date/time: 10/04/16 13:00
Received date/time: 10/06/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG915703	1	10/10/16 23:35	10/10/16 23:35	MBF
Volatile Organic Compounds (MS) by Method TO-15	WG916000	25	10/11/16 13:09	10/11/16 13:09	MBF
Volatile Organic Compounds (MS) by Method TO-15	WG916348	200	10/12/16 11:08	10/12/16 11:08	MBF

VP-5 L864275-05 Air

Collected by: Eric Simonson
Collected date/time: 10/04/16 13:30
Received date/time: 10/06/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG915703	1	10/11/16 00:18	10/11/16 00:18	MBF
Volatile Organic Compounds (MS) by Method TO-15	WG916000	10	10/11/16 13:52	10/11/16 13:52	MBF

VP-6 L864275-06 Air

Collected by: Eric Simonson
Collected date/time: 10/04/16 14:40
Received date/time: 10/06/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG915703	1	10/11/16 01:01	10/11/16 01:01	MBF

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Technical Service Representative

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	8.81	20.9		1	WG915703
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG915703
Benzene	71-43-2	78.10	0.200	0.639	1.34	4.26		1	WG915703
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG915703
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG915703
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG915703
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG915703
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG915703
Carbon disulfide	75-15-0	76.10	0.200	0.622	0.241	0.749		1	WG915703
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG915703
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG915703
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG915703
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG915703
Chloromethane	74-87-3	50.50	0.200	0.413	0.637	1.31		1	WG915703
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG915703
Cyclohexane	110-82-7	84.20	0.200	0.689	0.352	1.21		1	WG915703
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG915703
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG915703
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG915703
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG915703
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG915703
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG915703
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG915703
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG915703
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG915703
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG915703
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG915703
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG915703
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG915703
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG915703
Ethanol	64-17-5	46.10	0.630	1.19	26.5	49.9		1	WG915703
Ethylbenzene	100-41-4	106	0.200	0.867	6.29	27.3		1	WG915703
4-Ethyltoluene	622-96-8	120	0.200	0.982	2.65	13.0		1	WG915703
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.595	3.35		1	WG915703
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	1.95	9.66		1	WG915703
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG915703
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG915703
Heptane	142-82-5	100	0.200	0.818	0.880	3.60		1	WG915703
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG915703
n-Hexane	110-54-3	86.20	0.200	0.705	2.10	7.41		1	WG915703
Isopropylbenzene	98-82-8	120.20	0.200	0.983	0.270	1.33		1	WG915703
Methylene Chloride	75-09-2	84.90	0.200	0.694	0.689	2.39	B	1	WG915703
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG915703
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	1.50	4.44		1	WG915703
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG915703
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG915703
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG915703
Naphthalene	91-20-3	128	0.630	3.30	3.23	16.9		1	WG915703
2-Propanol	67-63-0	60.10	1.25	3.07	2.98	7.31		1	WG915703
Propene	115-07-1	42.10	0.400	0.689	27.9	48.0		1	WG915703
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG915703
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG915703
Tetrachloroethylene	127-18-4	166	0.200	1.36	0.548	3.72		1	WG915703
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG915703
Toluene	108-88-3	92.10	0.200	0.753	3.63	13.7		1	WG915703
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG915703

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG915703
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG915703
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG915703
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	1.71	8.41		1	WG915703
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	0.385	1.89		1	WG915703
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	0.498	2.33	B	1	WG915703
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG915703
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG915703
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG915703
m&p-Xylene	1330-20-7	106	0.400	1.73	2.74	11.9		1	WG915703
o-Xylene	95-47-6	106	0.200	0.867	1.20	5.21		1	WG915703
TPH (GC/MS) Low Fraction	8006-61-9	101	50.0	207	110	456		1	WG915703
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*98.3*				WG915703

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	17.3	41.0		1	WG915703
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG915703
Benzene	71-43-2	78.10	0.200	0.639	1.41	4.51		1	WG915703
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG915703
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG915703
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG915703
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG915703
1,3-Butadiene	106-99-0	54.10	2.00	4.43	2.80	6.20		1	WG915703
Carbon disulfide	75-15-0	76.10	0.200	0.622	3.51	10.9		1	WG915703
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG915703
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG915703
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG915703
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG915703
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG915703
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG915703
Cyclohexane	110-82-7	84.20	0.200	0.689	0.403	1.39		1	WG915703
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG915703
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG915703
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG915703
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG915703
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG915703
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG915703
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG915703
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG915703
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG915703
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG915703
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG915703
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG915703
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG915703
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG915703
Ethanol	64-17-5	46.10	0.630	1.19	11.4	21.5		1	WG915703
Ethylbenzene	100-41-4	106	0.200	0.867	5.91	25.6		1	WG915703
4-Ethyltoluene	622-96-8	120	0.200	0.982	3.93	19.3		1	WG915703
Trichlorofluoromethane	75-69-4	137.40	5.00	28.1	397	2230		25	WG916000
Dichlorodifluoromethane	75-71-8	120.92	5.00	24.7	1090	5370		25	WG916000
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG915703
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG915703
Heptane	142-82-5	100	0.200	0.818	1.78	7.27		1	WG915703
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG915703
n-Hexane	110-54-3	86.20	0.200	0.705	1.41	4.97		1	WG915703
Isopropylbenzene	98-82-8	120.20	0.200	0.983	0.444	2.18		1	WG915703
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG915703
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG915703
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	4.41	13.0		1	WG915703
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	2.46	10.1		1	WG915703
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG915703
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG915703
Naphthalene	91-20-3	128	0.630	3.30	2.03	10.6		1	WG915703
2-Propanol	67-63-0	60.10	1.25	3.07	ND	ND		1	WG915703
Propene	115-07-1	42.10	0.400	0.689	25.1	43.1		1	WG915703
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG915703
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG915703
Tetrachloroethylene	127-18-4	166	0.200	1.36	1.72	11.7		1	WG915703
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG915703
Toluene	108-88-3	92.10	0.200	0.753	8.69	32.7		1	WG915703
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG915703

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG915703
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG915703
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG915703
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	3.52	17.3		1	WG915703
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	0.870	4.27		1	WG915703
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	1.25	5.83		1	WG915703
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG915703
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG915703
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG915703
m&p-Xylene	1330-20-7	106	0.400	1.73	5.53	24.0		1	WG915703
o-Xylene	95-47-6	106	0.200	0.867	2.47	10.7		1	WG915703
TPH (GC/MS) Low Fraction	8006-61-9	101	50.0	207	283	1170		1	WG915703
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*90.4*				WG916000
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*102*				WG915703

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	17.4	41.5		1	WG915703
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG915703
Benzene	71-43-2	78.10	0.200	0.639	2.93	9.34		1	WG915703
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG915703
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG915703
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG915703
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG915703
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG915703
Carbon disulfide	75-15-0	76.10	0.200	0.622	0.902	2.81		1	WG915703
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG915703
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG915703
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG915703
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG915703
Chloromethane	74-87-3	50.50	0.200	0.413	0.792	1.64		1	WG915703
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG915703
Cyclohexane	110-82-7	84.20	0.200	0.689	0.695	2.39		1	WG915703
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG915703
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG915703
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG915703
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG915703
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG915703
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG915703
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG915703
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG915703
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG915703
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG915703
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG915703
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG915703
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG915703
1,4-Dioxane	123-91-1	88.10	0.200	0.721	1.63	5.89		1	WG915703
Ethanol	64-17-5	46.10	0.630	1.19	28.0	52.9		1	WG915703
Ethylbenzene	100-41-4	106	0.200	0.867	8.19	35.5		1	WG915703
4-Ethyltoluene	622-96-8	120	0.200	0.982	4.08	20.0		1	WG915703
Trichlorofluoromethane	75-69-4	137.40	5.00	28.1	168	943		25	WG916000
Dichlorodifluoromethane	75-71-8	120.92	40.0	198	1730	8560		200	WG916348
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG915703
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG915703
Heptane	142-82-5	100	0.200	0.818	2.22	9.06		1	WG915703
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG915703
n-Hexane	110-54-3	86.20	0.200	0.705	3.06	10.8		1	WG915703
Isopropylbenzene	98-82-8	120.20	0.200	0.983	0.942	4.63		1	WG915703
Methylene Chloride	75-09-2	84.90	0.200	0.694	0.574	1.99	B	1	WG915703
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG915703
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	6.24	18.4		1	WG915703
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	2.14	8.75		1	WG915703
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG915703
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG915703
Naphthalene	91-20-3	128	0.630	3.30	1.49	7.80		1	WG915703
2-Propanol	67-63-0	60.10	1.25	3.07	5.49	13.5		1	WG915703
Propene	115-07-1	42.10	10.0	17.2	51.7	89.0		25	WG916000
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG915703
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG915703
Tetrachloroethylene	127-18-4	166	0.200	1.36	1.81	12.3		1	WG915703
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG915703
Toluene	108-88-3	92.10	0.200	0.753	11.5	43.4		1	WG915703
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG915703

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG915703
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG915703
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG915703
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	3.58	17.6		1	WG915703
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	0.929	4.56		1	WG915703
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	18.1	84.7		1	WG915703
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG915703
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG915703
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG915703
m&p-Xylene	1330-20-7	106	0.400	1.73	6.57	28.5		1	WG915703
o-Xylene	95-47-6	106	0.200	0.867	2.64	11.5		1	WG915703
TPH (GC/MS) Low Fraction	8006-61-9	101	50.0	207	456	1880		1	WG915703
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*81.5*				WG916000
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*100*				WG916348
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*108*				WG915703

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	10.7	25.5		1	WG915703
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG915703
Benzene	71-43-2	78.10	0.200	0.639	1.34	4.29		1	WG915703
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG915703
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG915703
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG915703
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG915703
1,3-Butadiene	106-99-0	54.10	2.00	4.43	3.81	8.42		1	WG915703
Carbon disulfide	75-15-0	76.10	0.200	0.622	0.588	1.83		1	WG915703
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG915703
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG915703
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG915703
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG915703
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG915703
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG915703
Cyclohexane	110-82-7	84.20	0.200	0.689	0.397	1.37		1	WG915703
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG915703
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG915703
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG915703
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	0.423	2.54		1	WG915703
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG915703
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG915703
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG915703
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG915703
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG915703
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG915703
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG915703
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG915703
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG915703
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG915703
Ethanol	64-17-5	46.10	0.630	1.19	10.2	19.3		1	WG915703
Ethylbenzene	100-41-4	106	0.200	0.867	9.87	42.8		1	WG915703
4-Ethyltoluene	622-96-8	120	0.200	0.982	5.13	25.2		1	WG915703
Trichlorofluoromethane	75-69-4	137.40	5.00	28.1	534	3000		25	WG916000
Dichlorodifluoromethane	75-71-8	120.92	40.0	198	1880	9310		200	WG916348
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG915703
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG915703
Heptane	142-82-5	100	0.200	0.818	1.83	7.50		1	WG915703
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG915703
n-Hexane	110-54-3	86.20	0.200	0.705	1.60	5.65		1	WG915703
Isopropylbenzene	98-82-8	120.20	0.200	0.983	2.63	12.9		1	WG915703
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG915703
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG915703
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	4.21	12.4		1	WG915703
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	1.82	7.43		1	WG915703
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG915703
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG915703
Naphthalene	91-20-3	128	0.630	3.30	2.85	14.9		1	WG915703
2-Propanol	67-63-0	60.10	1.25	3.07	2.03	4.99		1	WG915703
Propene	115-07-1	42.10	10.0	17.2	45.2	77.9		25	WG916000
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG915703
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG915703
Tetrachloroethylene	127-18-4	166	0.200	1.36	9.42	64.0		1	WG915703
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG915703
Toluene	108-88-3	92.10	0.200	0.753	10.7	40.3		1	WG915703
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG915703

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	0.357	1.94		1	WG915703
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG915703
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG915703
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	4.65	22.8		1	WG915703
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	1.08	5.32		1	WG915703
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	0.676	3.16	B	1	WG915703
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG915703
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG915703
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG915703
m&p-Xylene	1330-20-7	106	0.400	1.73	7.63	33.1		1	WG915703
o-Xylene	95-47-6	106	0.200	0.867	3.31	14.3		1	WG915703
TPH (GC/MS) Low Fraction	8006-61-9	101	50.0	207	680	2810		1	WG915703
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*101*				WG915703
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*92.6*				WG916000
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*102*				WG916348

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	15.1	35.8		1	WG915703
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG915703
Benzene	71-43-2	78.10	0.200	0.639	1.32	4.23		1	WG915703
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG915703
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG915703
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG915703
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG915703
1,3-Butadiene	106-99-0	54.10	2.00	4.43	2.67	5.92		1	WG915703
Carbon disulfide	75-15-0	76.10	0.200	0.622	0.836	2.60		1	WG915703
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG915703
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG915703
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG915703
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG915703
Chloromethane	74-87-3	50.50	0.200	0.413	0.477	0.985		1	WG915703
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG915703
Cyclohexane	110-82-7	84.20	0.200	0.689	0.444	1.53		1	WG915703
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG915703
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG915703
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG915703
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	0.227	1.37		1	WG915703
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG915703
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG915703
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG915703
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG915703
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG915703
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG915703
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG915703
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG915703
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG915703
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG915703
Ethanol	64-17-5	46.10	0.630	1.19	9.63	18.2		1	WG915703
Ethylbenzene	100-41-4	106	0.200	0.867	6.20	26.9		1	WG915703
4-Ethyltoluene	622-96-8	120	0.200	0.982	3.28	16.1		1	WG915703
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	1.52	8.55		1	WG915703
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	5.83	28.9		1	WG915703
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG915703
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG915703
Heptane	142-82-5	100	0.200	0.818	2.40	9.82		1	WG915703
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG915703
n-Hexane	110-54-3	86.20	0.200	0.705	1.92	6.78		1	WG915703
Isopropylbenzene	98-82-8	120.20	0.200	0.983	1.81	8.89		1	WG915703
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG915703
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG915703
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	6.24	18.4		1	WG915703
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	1.69	6.93		1	WG915703
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG915703
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG915703
Naphthalene	91-20-3	128	0.630	3.30	1.13	5.91		1	WG915703
2-Propanol	67-63-0	60.10	1.25	3.07	2.07	5.10		1	WG915703
Propene	115-07-1	42.10	4.00	6.89	51.5	88.7		10	WG916000
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG915703
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG915703
Tetrachloroethylene	127-18-4	166	0.200	1.36	3.29	22.4		1	WG915703
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG915703
Toluene	108-88-3	92.10	0.200	0.753	11.2	42.3		1	WG915703
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG915703

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG915703
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG915703
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG915703
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	2.98	14.6		1	WG915703
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	0.728	3.57		1	WG915703
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	0.561	2.62	B	1	WG915703
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG915703
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG915703
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG915703
m&p-Xylene	1330-20-7	106	0.400	1.73	5.19	22.5		1	WG915703
o-Xylene	95-47-6	106	0.200	0.867	2.26	9.79		1	WG915703
TPH (GC/MS) Low Fraction	8006-61-9	101	50.0	207	640	2640		1	WG915703
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*96.4*				WG915703
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*95.1*				WG916000

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	6.30	15.0		1	WG915703
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG915703
Benzene	71-43-2	78.10	0.200	0.639	0.626	2.00		1	WG915703
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG915703
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG915703
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG915703
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG915703
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG915703
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG915703
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG915703
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG915703
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG915703
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG915703
Chloromethane	74-87-3	50.50	0.200	0.413	0.622	1.28		1	WG915703
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG915703
Cyclohexane	110-82-7	84.20	0.200	0.689	0.237	0.818		1	WG915703
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG915703
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG915703
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG915703
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG915703
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG915703
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG915703
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG915703
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG915703
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG915703
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG915703
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG915703
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG915703
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG915703
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG915703
Ethanol	64-17-5	46.10	0.630	1.19	14.0	26.4		1	WG915703
Ethylbenzene	100-41-4	106	0.200	0.867	4.56	19.7		1	WG915703
4-Ethyltoluene	622-96-8	120	0.200	0.982	2.27	11.2		1	WG915703
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.258	1.45		1	WG915703
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.455	2.25		1	WG915703
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG915703
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG915703
Heptane	142-82-5	100	0.200	0.818	1.63	6.66		1	WG915703
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG915703
n-Hexane	110-54-3	86.20	0.200	0.705	0.826	2.91		1	WG915703
Isopropylbenzene	98-82-8	120.20	0.200	0.983	0.742	3.65		1	WG915703
Methylene Chloride	75-09-2	84.90	0.200	0.694	0.547	1.90	B	1	WG915703
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG915703
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	1.70	5.02		1	WG915703
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG915703
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG915703
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG915703
Naphthalene	91-20-3	128	0.630	3.30	1.32	6.90		1	WG915703
2-Propanol	67-63-0	60.10	1.25	3.07	2.01	4.94		1	WG915703
Propene	115-07-1	42.10	0.400	0.689	9.79	16.9		1	WG915703
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG915703
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG915703
Tetrachloroethylene	127-18-4	166	0.200	1.36	1.39	9.47		1	WG915703
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG915703
Toluene	108-88-3	92.10	0.200	0.753	7.59	28.6		1	WG915703
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG915703

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG915703
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG915703
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG915703
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	1.66	8.16		1	WG915703
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	0.393	1.93		1	WG915703
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	0.432	2.02	B	1	WG915703
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG915703
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG915703
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG915703
m&p-Xylene	1330-20-7	106	0.400	1.73	3.75	16.3		1	WG915703
o-Xylene	95-47-6	106	0.200	0.867	1.58	6.86		1	WG915703
TPH (GC/MS) Low Fraction	8006-61-9	101	50.0	207	358	1480		1	WG915703
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*101*				WG915703

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Method Blank (MB)

(MB) R3169590-3 10/10/16 10:40

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Acetone	U		0.0569	1.25
Allyl Chloride	U		0.0546	0.200
Benzene	U		0.0460	0.200
Benzyl Chloride	U		0.0598	0.200
Bromodichloromethane	U		0.0436	0.200
Bromoform	U		0.0786	0.600
Bromomethane	U		0.0609	0.200
1,3-Butadiene	U		0.0563	2.00
Carbon disulfide	U		0.0544	0.200
Carbon tetrachloride	U		0.0585	0.200
Chlorobenzene	U		0.0601	0.200
Chloroethane	U		0.0489	0.200
Chloroform	U		0.0574	0.200
Chloromethane	U		0.0544	0.200
2-Chlorotoluene	U		0.0605	0.200
Cyclohexane	U		0.0534	0.200
Dibromochloromethane	U		0.0494	0.200
1,2-Dibromoethane	U		0.0185	0.200
1,2-Dichlorobenzene	U		0.0603	0.200
1,3-Dichlorobenzene	U		0.0597	0.200
1,4-Dichlorobenzene	U		0.0557	0.200
1,2-Dichloroethane	U		0.0616	0.200
1,1-Dichloroethane	U		0.0514	0.200
1,1-Dichloroethene	U		0.0490	0.200
cis-1,2-Dichloroethene	U		0.0389	0.200
trans-1,2-Dichloroethene	U		0.0464	0.200
1,2-Dichloropropane	U		0.0599	0.200
cis-1,3-Dichloropropene	U		0.0588	0.200
trans-1,3-Dichloropropene	U		0.0435	0.200
1,4-Dioxane	U		0.0554	0.200
Ethylbenzene	U		0.0506	0.200
4-Ethyltoluene	U		0.0666	0.200
Trichlorofluoromethane	U		0.0673	0.200
Dichlorodifluoromethane	U		0.0601	0.200
1,1,2-Trichlorotrifluoroethane	U		0.0687	0.200
1,2-Dichlorotetrafluoroethane	U		0.0458	0.200
Heptane	U		0.0626	0.200
Hexachloro-1,3-butadiene	U		0.0656	0.630
n-Hexane	U		0.0457	0.200
Isopropylbenzene	U		0.0563	0.200

Method Blank (MB)

(MB) R3169590-3 10/10/16 10:40

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Methylene Chloride	0.0837	J	0.0465	0.200
Methyl Butyl Ketone	U		0.0682	1.25
2-Butanone (MEK)	U		0.0493	1.25
4-Methyl-2-pentanone (MIBK)	U		0.0650	1.25
Methyl Methacrylate	U		0.0773	0.200
MTBE	U		0.0505	0.200
Naphthalene	U		0.154	0.630
2-Propanol	U		0.0882	1.25
Propene	U		0.0932	0.400
Styrene	U		0.0465	0.200
1,1,2,2-Tetrachloroethane	U		0.0576	0.200
Tetrachloroethylene	U		0.0497	0.200
Tetrahydrofuran	U		0.0508	0.200
Toluene	U		0.0499	0.200
1,2,4-Trichlorobenzene	U		0.148	0.630
1,1,1-Trichloroethane	U		0.0665	0.200
1,1,2-Trichloroethane	U		0.0287	0.200
Trichloroethylene	U		0.0545	0.200
1,2,4-Trimethylbenzene	U		0.0483	0.200
1,3,5-Trimethylbenzene	U		0.0631	0.200
2,2,4-Trimethylpentane	0.0704	J	0.0456	0.200
Vinyl chloride	U		0.0457	0.200
Vinyl Bromide	U		0.0727	0.200
Vinyl acetate	U		0.0639	0.200
m&p-Xylene	U		0.0946	0.400
o-Xylene	U		0.0633	0.200
Ethanol	U		0.0832	0.630
TPH (GC/MS) Low Fraction	U		6.91	50.0
(S) 1,4-Bromofluorobenzene	*98.3*			*60.0-140*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3169590-1 10/10/16 09:15 • (LCSD) R3169590-2 10/10/16 09:57

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethanol	3.75	4.08	4.18	109	111	34.3-167			2.48	25
Propene	3.75	3.87	3.81	103	102	53.9-143			1.42	25
Dichlorodifluoromethane	3.75	4.07	4.21	109	112	56.7-140			3.34	25
1,2-Dichlorotetrafluoroethane	3.75	4.07	4.09	109	109	70.0-130			0.320	25

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3169590-1 10/10/16 09:15 • (LCSD) R3169590-2 10/10/16 09:57

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Chloromethane	3.75	4.00	4.12	107	110	70.0-130			2.97	25
Vinyl chloride	3.75	4.10	3.94	109	105	70.0-130			3.99	25
1,3-Butadiene	3.75	3.96	3.85	106	103	70.0-130			2.72	25
Bromomethane	3.75	3.94	3.80	105	101	70.0-130			3.64	25
Chloroethane	3.75	3.93	3.84	105	102	70.0-130			2.22	25
Trichlorofluoromethane	3.75	3.89	3.87	104	103	70.0-130			0.480	25
1,1,2-Trichlorotrifluoroethane	3.75	4.02	4.04	107	108	70.0-130			0.340	25
1,1-Dichloroethene	3.75	3.97	3.96	106	106	70.0-130			0.110	25
1,1-Dichloroethane	3.75	3.92	3.98	105	106	70.0-130			1.34	25
Acetone	3.75	4.40	4.43	117	118	70.0-130			0.680	25
2-Propanol	3.75	4.10	4.10	109	109	50.4-152			0.130	25
Carbon disulfide	3.75	3.94	3.99	105	106	70.0-130			1.26	25
Methylene Chloride	3.75	3.56	3.60	95.0	96.1	70.0-130			1.09	25
MTBE	3.75	3.97	3.99	106	106	70.0-130			0.320	25
trans-1,2-Dichloroethene	3.75	3.97	3.93	106	105	70.0-130			0.890	25
n-Hexane	3.75	3.89	3.99	104	106	70.0-130			2.68	25
Vinyl acetate	3.75	4.09	4.07	109	108	70.0-130			0.550	25
Methyl Ethyl Ketone	3.75	4.03	4.08	108	109	70.0-130			1.17	25
cis-1,2-Dichloroethene	3.75	3.93	3.96	105	106	70.0-130			0.690	25
Chloroform	3.75	3.87	3.92	103	105	70.0-130			1.41	25
Cyclohexane	3.75	3.89	3.95	104	105	70.0-130			1.56	25
1,1,1-Trichloroethane	3.75	3.90	3.97	104	106	70.0-130			1.65	25
Carbon tetrachloride	3.75	4.02	3.99	107	106	70.0-130			0.800	25
Benzene	3.75	3.85	3.88	103	104	70.0-130			0.980	25
1,2-Dichloroethane	3.75	3.83	3.79	102	101	70.0-130			0.980	25
Heptane	3.75	3.88	3.85	103	103	70.0-130			0.690	25
Trichloroethylene	3.75	3.85	3.86	103	103	70.0-130			0.240	25
1,2-Dichloropropane	3.75	3.83	3.90	102	104	70.0-130			1.94	25
1,4-Dioxane	3.75	4.04	3.99	108	106	48.0-156			1.21	25
Bromodichloromethane	3.75	3.89	3.92	104	104	70.0-130			0.610	25
cis-1,3-Dichloropropene	3.75	3.97	3.96	106	105	70.0-130			0.270	25
4-Methyl-2-pentanone (MIBK)	3.75	4.02	3.94	107	105	55.3-154			2.05	25
Toluene	3.75	3.90	3.84	104	103	70.0-130			1.53	25
trans-1,3-Dichloropropene	3.75	3.95	3.89	105	104	70.0-130			1.61	25
1,1,2-Trichloroethane	3.75	3.95	3.95	105	105	70.0-130			0.0100	25
Tetrachloroethylene	3.75	3.92	3.88	105	104	70.0-130			1.03	25
Methyl Butyl Ketone	3.75	3.52	3.53	93.8	94.1	47.9-165			0.290	25
Dibromochloromethane	3.75	3.97	3.94	106	105	70.0-130			0.720	25
1,2-Dibromoethane	3.75	3.90	3.93	104	105	70.0-130			0.870	25
Chlorobenzene	3.75	3.96	3.95	106	105	70.0-130			0.280	25

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3169590-1 10/10/16 09:15 • (LCSD) R3169590-2 10/10/16 09:57

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethylbenzene	3.75	4.00	3.97	107	106	70.0-130			0.760	25
m&p-Xylene	7.50	8.25	8.22	110	110	70.0-130			0.420	25
o-Xylene	3.75	3.89	3.86	104	103	70.0-130			0.690	25
Styrene	3.75	4.25	4.25	113	113	70.0-130			0.110	25
Bromoform	3.75	4.35	4.26	116	114	70.0-130			2.14	25
1,1,2,2-Tetrachloroethane	3.75	3.89	3.90	104	104	70.0-130			0.280	25
4-Ethyltoluene	3.75	4.14	4.15	110	111	70.0-130			0.260	25
1,3,5-Trimethylbenzene	3.75	4.10	4.05	109	108	70.0-130			1.14	25
1,2,4-Trimethylbenzene	3.75	4.16	4.13	111	110	70.0-130			0.800	25
1,3-Dichlorobenzene	3.75	3.84	3.83	103	102	70.0-130			0.440	25
1,4-Dichlorobenzene	3.75	4.10	4.09	109	109	70.0-130			0.110	25
Benzyl Chloride	3.75	4.33	4.19	115	112	55.6-160			3.29	25
1,2-Dichlorobenzene	3.75	3.89	3.86	104	103	70.0-130			0.780	25
1,2,4-Trichlorobenzene	3.75	3.61	3.55	96.1	94.6	53.6-154			1.57	25
Hexachloro-1,3-butadiene	3.75	3.50	3.50	93.4	93.4	62.1-143			0.0100	25
Naphthalene	3.75	3.92	3.88	104	104	52.0-158			0.800	25
TPH (GC/MS) Low Fraction	176	173	171	98.0	97.2	70.0-130			0.770	25
Allyl Chloride	3.75	4.00	3.94	107	105	70.0-130			1.67	25
2-Chlorotoluene	3.75	3.76	3.80	100	101	70.0-130			0.900	25
Methyl Methacrylate	3.75	3.88	3.83	104	102	70.0-130			1.47	25
Tetrahydrofuran	3.75	3.82	3.89	102	104	65.0-140			1.89	25
2,2,4-Trimethylpentane	3.75	3.99	4.05	106	108	70.0-130			1.56	25
Vinyl Bromide	3.75	3.92	3.86	105	103	70.0-130			1.73	25
Isopropylbenzene	3.75	4.00	3.99	107	106	70.0-130			0.180	25
(S) 1,4-Bromofluorobenzene				*99.5*	*98.6*	*60.0-140*				

Method Blank (MB)

(MB) R3169881-3 10/11/16 10:21

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Trichlorofluoromethane	U		0.0673	0.200
Dichlorodifluoromethane	U		0.0601	0.200
Propene	U		0.0932	0.400
(S) 1,4-Bromofluorobenzene	*93.6*			*60.0-140*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3169881-1 10/11/16 08:48 • (LCSD) R3169881-2 10/11/16 09:34

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Propene	3.75	3.69	3.75	98.5	99.9	53.9-143			1.44	25
Dichlorodifluoromethane	3.75	3.94	3.62	105	96.4	56.7-140			8.58	25
Trichlorofluoromethane	3.75	3.67	3.77	97.9	100	70.0-130			2.59	25
(S) 1,4-Bromofluorobenzene				*104*	*103*	*60.0-140*				

Method Blank (MB)

(MB) R3170214-3 10/12/16 09:43

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Dichlorodifluoromethane	U		0.0601	0.200
(S) 1,4-Bromofluorobenzene	*101*			*60.0-140*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3170214-1 10/12/16 08:12 • (LCSD) R3170214-2 10/12/16 08:57

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Dichlorodifluoromethane	3.75	3.43	3.62	91.4	96.6	56.7-140			5.59	25
(S) 1,4-Bromofluorobenzene				*104*	*103*	*60.0-140*				

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE.**
***** Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Conneticut	PH-0197	North Carolina [1]	DW21704
Florida	E87487	North Carolina [2]	41
Georgia	NELAP	North Dakota	R-140
Georgia [1]	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky [1]	90010	South Dakota	n/a
Kentucky [2]	16	Tennessee [1 4]	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

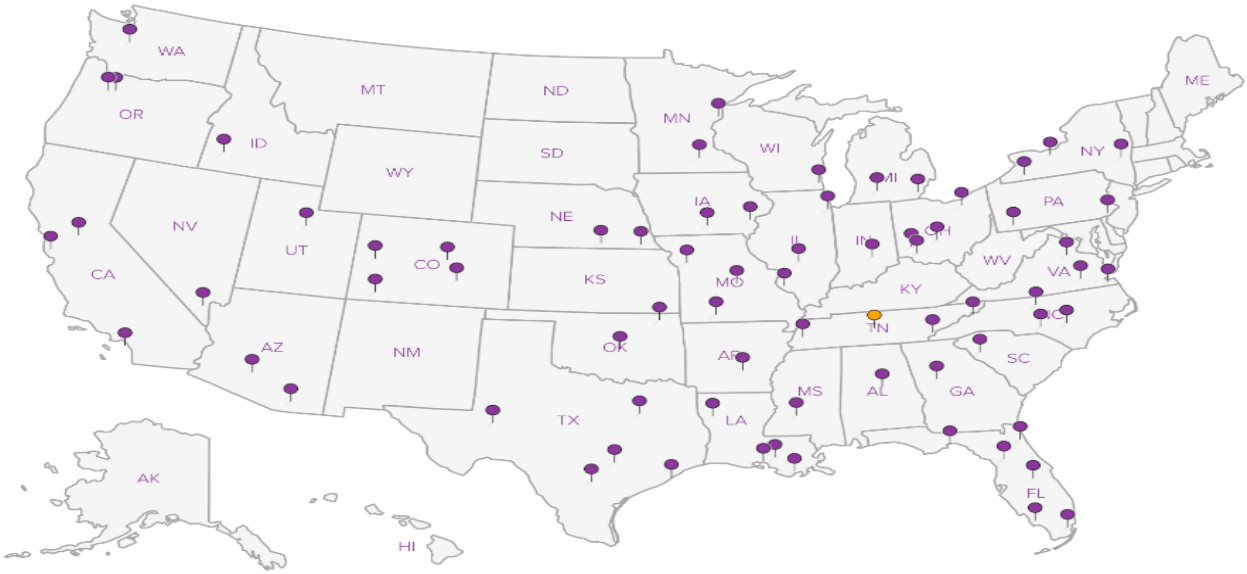
Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [n/a] Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



Pinnacle Engineering - Maple G. MN.

11541 95th Ave. N
Minneapolis, MN 55369

Billing Information:
Accounts Payable
11541 95th Ave. N
Maple Grove, MN 55369

Report to: **Matt Bartus**

Email To: **mbartus@pineng.com**

Project Description: **Penn Avenue North Phase II**

City/State Collected: Minneapolis, MN

Phone: **763-315-4501**
Fax: **763-315-4507**

Client Project # R016526.000

Lab Project # **PINNENGMN-PENN AVE N**

Collected by (print): Eric Simonson

Site/Facility ID # **MINNEAPOLIS, MN**

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y ___

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed

Email? ___No X__Yes
FAX? ___No ___Yes

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	TO-15TIC Summa	Rem./Contaminant	Sample # (lab only)
VP-1	G	Air	5'	10-4-16	1100	1	X		01
VP-2 *		Air	5'		1130	1	X	* High Concentrations Likely	02
VP-3		Air	5'		1210	1	X		03
VP-4		Air	5'		1300	1	X		04
VP-5		Air	5'		1330	1	X		05
VP-6		Air	5'		1440	1	X		06
		~~Air~~	unused			~~1~~	~~X~~		

* Matrix: **SS** - Soil **GW** - Groundwater **WW** - WasteWater **DW** - Drinking Water **OT** - Other_____

Remarks: * High concentrations likely in VP-2

pH _____ Temp _____

Flow _____ Other _____

Chain of Custody Page ___ of ___

ESC LAB SCIENCES
YOUR LAB OF CHOICE
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L # 86275
L163

Acctnum: **PINNENGMN**
Template: **T116423**
Prelogin: **P570392**
TSR: **341 - John Hawkins**
PB: BA 9-29-16
Shipped Via: **FedEX Ground**

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	10-5-16	1:15	FED-EX
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Samples returned via: ☐ UPS ☒ FedEx ☐ Courier ☐ _____

Temp: 3.2 °C Amb Bottles Received: 6

Date: 10-6-16 Time: 900

Hold #

Condition: (lab use only) FCX7 + 1 empty

COC Seal Intact: ___ Y ___ N ___ NA

pH Checked: NCF:

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

Cooler Receipt Form

Client: PINNENGMN	SDG#	364275
Cooler Received/Opened On: 10/ 6 /16	Temperature Upon Receipt:	AMB °c
Received By: **Michael Lowe**		
Signature: MDowe		

Receipt Check List	Yes	No	N/A
Were custody seals on outside of cooler and intact?			✓
Were custody papers properly filled out?	✓		
Did all bottles arrive in good condition?	✓		
Were correct bottles used for the analyses requested?	✓		
Was sufficient amount of sample sent in each bottle?	✓		
Were all applicable sample containers correctly preserved and checked for preservation? (Any not in accepted range noted on COC)			✓
If applicable, was an observable VOA headspace present?			✓
Non Conformance Generated. (If yes see attached NCF)			

ANALYTICAL REPORT

October 20, 2016

Pinnacle Engineering - Maple G. MN.

Sample Delivery Group:	L864389
Samples Received:	10/06/2016
Project Number:	R016526.000
Description:	Penn Avenue North Phase II
Site:	MINNEAPOLIS, MN
Report To:	Matt Bartus 11541 95th Ave. N Minneapolis, MN 55369

Entire Report Reviewed By:

Jason Romer
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

B-1 5-10 L864389-01 Solid

Collected by: Eric Simonson
Collected date/time: 10/04/16 11:40
Received date/time: 10/06/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7471A	WG914857	1	10/06/16 18:55	10/08/16 07:02	TRB
Metals (ICP) by Method 6010B	WG915161	1	10/10/16 19:07	10/11/16 11:54	JDG
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG916057	1	10/11/16 07:26	10/13/16 17:35	KMP
Semi-Volatile Organic Compounds (GC) by Method WI(95) DRO	WG915843	1	10/11/16 23:31	10/12/16 10:49	DMG
Total Solids by Method 2540 G-2011	WG915264	1	10/08/16 07:46	10/08/16 07:53	KDW
Volatile Organic Compounds (GC) by Method WI(95) GRO	WG916197	50	10/04/16 11:40	10/17/16 02:01	HJF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG916702	50	10/15/16 07:30	10/15/16 12:53	JHH

B-2 6-10 L864389-02 Solid

Collected by: Eric Simonson
Collected date/time: 10/04/16 11:10
Received date/time: 10/06/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7471A	WG914857	1	10/06/16 18:55	10/08/16 07:04	TRB
Metals (ICP) by Method 6010B	WG915161	1	10/10/16 19:07	10/11/16 12:08	JDG
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG916057	1	10/11/16 07:26	10/13/16 17:56	ADF
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG916057	20	10/11/16 07:26	10/14/16 16:16	KMP
Semi-Volatile Organic Compounds (GC) by Method WI(95) DRO	WG915843	1	10/11/16 23:31	10/12/16 11:01	DMG
Total Solids by Method 2540 G-2011	WG915264	1	10/08/16 07:46	10/08/16 07:53	KDW
Volatile Organic Compounds (GC) by Method WI(95) GRO	WG916197	1980	10/04/16 11:10	10/19/16 13:53	JAH
Volatile Organic Compounds (GC/MS) by Method 8260B	WG916702	495	10/15/16 07:30	10/15/16 13:11	JHH

B-2 10-15 L864389-03 Solid

Collected by: Eric Simonson
Collected date/time: 10/04/16 11:20
Received date/time: 10/06/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7471A	WG914857	1	10/06/16 18:55	10/08/16 07:07	TRB
Metals (ICP) by Method 6010B	WG915161	1	10/10/16 19:07	10/11/16 12:11	JDG
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG916057	1	10/11/16 07:26	10/13/16 18:18	KMP
Semi-Volatile Organic Compounds (GC) by Method WI(95) DRO	WG915843	1	10/11/16 23:31	10/12/16 11:13	DMG
Total Solids by Method 2540 G-2011	WG915264	1	10/08/16 07:46	10/08/16 07:53	KDW
Volatile Organic Compounds (GC) by Method WI(95) GRO	WG916197	49	10/04/16 11:20	10/17/16 02:46	HJF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG916702	49	10/15/16 07:30	10/15/16 13:28	JHH

B-3 6-1 L864389-04 Solid

Collected by: Eric Simonson
Collected date/time: 10/04/16 12:55
Received date/time: 10/06/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7471A	WG914857	1	10/06/16 18:55	10/08/16 07:10	TRB
Metals (ICP) by Method 6010B	WG915161	1	10/10/16 19:07	10/11/16 12:19	JDG
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG916057	5	10/11/16 07:26	10/14/16 15:32	KMP
Total Solids by Method 2540 G-2011	WG915264	1	10/08/16 07:46	10/08/16 07:53	KDW

B-3 1-5 L864389-05 Solid

Collected by: Eric Simonson
Collected date/time: 10/04/16 13:00
Received date/time: 10/06/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Semi-Volatile Organic Compounds (GC) by Method WI(95) DRO	WG915843	5	10/11/16 23:31	10/12/16 13:46	DMG
Total Solids by Method 2540 G-2011	WG915264	1	10/08/16 07:46	10/08/16 07:53	KDW
Volatile Organic Compounds (GC) by Method WI(95) GRO	WG916197	50	10/04/16 13:00	10/17/16 03:08	HJF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG916702	50	10/15/16 07:30	10/15/16 13:46	JHH

B-3 10-15 L864389-06 Solid

Collected by: Eric Simonson
Collected date/time: 10/04/16 13:15
Received date/time: 10/06/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7471A	WG914857	1	10/06/16 18:55	10/08/16 07:13	TRB
Metals (ICP) by Method 6010B	WG915161	1	10/10/16 19:07	10/11/16 12:22	JDG
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG916057	1	10/11/16 07:26	10/13/16 18:40	KMP
Semi-Volatile Organic Compounds (GC) by Method WI(95) DRO	WG915843	1	10/11/16 23:31	10/12/16 11:24	DMG
Total Solids by Method 2540 G-2011	WG915264	1	10/08/16 07:46	10/08/16 07:53	KDW
Volatile Organic Compounds (GC) by Method WI(95) GRO	WG916197	50	10/04/16 13:15	10/17/16 03:30	HJF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG916702	50	10/15/16 07:30	10/15/16 14:03	JHH

B-4 5-10 L864389-07 Solid

Collected by: Eric Simonson
Collected date/time: 10/04/16 12:25
Received date/time: 10/06/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7471A	WG914857	1	10/06/16 18:55	10/08/16 07:16	TRB
Metals (ICP) by Method 6010B	WG915161	1	10/10/16 19:07	10/11/16 12:25	JDG
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG916057	1	10/11/16 07:26	10/13/16 19:02	KMP
Semi-Volatile Organic Compounds (GC) by Method WI(95) DRO	WG915843	1	10/11/16 23:31	10/12/16 11:36	DMG
Total Solids by Method 2540 G-2011	WG915264	1	10/08/16 07:46	10/08/16 07:53	KDW
Volatile Organic Compounds (GC) by Method WI(95) GRO	WG916197	49	10/04/16 12:25	10/17/16 03:52	HJF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG916702	49	10/15/16 07:30	10/15/16 14:20	JHH

B-5 5-10 L864389-08 Solid

Collected by: Eric Simonson
Collected date/time: 10/04/16 14:10
Received date/time: 10/06/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7471A	WG914857	1	10/06/16 18:55	10/08/16 07:19	TRB
Metals (ICP) by Method 6010B	WG915161	1	10/10/16 19:07	10/11/16 12:28	JDG
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG916057	1	10/11/16 07:26	10/13/16 19:23	KMP
Semi-Volatile Organic Compounds (GC) by Method WI(95) DRO	WG915843	1	10/11/16 23:31	10/12/16 12:12	DMG
Total Solids by Method 2540 G-2011	WG915264	1	10/08/16 07:46	10/08/16 07:53	KDW
Volatile Organic Compounds (GC) by Method WI(95) GRO	WG916197	49.5	10/04/16 14:10	10/17/16 04:14	HJF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG916702	49.5	10/15/16 07:30	10/15/16 14:38	JHH

B-6 5-10 L864389-09 Solid

Collected by: Eric Simonson
Collected date/time: 10/04/16 15:30
Received date/time: 10/06/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7471A	WG914857	1	10/06/16 18:55	10/08/16 07:22	TRB
Metals (ICP) by Method 6010B	WG915161	1	10/10/16 19:07	10/11/16 12:31	JDG
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG916057	1	10/11/16 07:26	10/13/16 19:45	KMP
Semi-Volatile Organic Compounds (GC) by Method WI(95) DRO	WG915843	1	10/11/16 23:31	10/12/16 12:24	DMG
Total Solids by Method 2540 G-2011	WG915264	1	10/08/16 07:46	10/08/16 07:53	KDW
Volatile Organic Compounds (GC) by Method WI(95) GRO	WG916197	49.5	10/04/16 15:30	10/17/16 04:36	HJF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG916702	49.5	10/15/16 07:30	10/15/16 14:55	JHH

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jason Romer
Technical Service Representative

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	85.7		1	10/08/2016 07:53	WG915264

Mercury by Method 7471A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Mercury	0.0200		0.0200	1	10/08/2016 07:02	WG914857

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Arsenic	4.54		2.00	1	10/11/2016 11:54	WG915161
Barium	67.8		0.500	1	10/11/2016 11:54	WG915161
Cadmium	ND		0.500	1	10/11/2016 11:54	WG915161
Chromium	17.1		1.00	1	10/11/2016 11:54	WG915161
Lead	3.09		0.500	1	10/11/2016 11:54	WG915161
Selenium	ND		2.00	1	10/11/2016 11:54	WG915161
Silver	ND		1.00	1	10/11/2016 11:54	WG915161

Volatile Organic Compounds (GC) by Method WI(95) GRO

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
TPH (GC/FID) Low Fraction	ND		5.00	50	10/17/2016 02:01	WG916197
(S) a,a,a-Trifluorotoluene(PID)	*94.8*		*80.0-200*		*10/17/2016 02:01*	WG916197

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Acetone	ND		2.50	50	10/15/2016 12:53	WG916702
Acrylonitrile	ND		0.500	50	10/15/2016 12:53	WG916702
Allyl chloride	ND		0.250	50	10/15/2016 12:53	WG916702
Benzene	ND		0.0500	50	10/15/2016 12:53	WG916702
Bromobenzene	ND		0.0500	50	10/15/2016 12:53	WG916702
Bromodichloromethane	ND		0.0500	50	10/15/2016 12:53	WG916702
Bromoform	ND		0.0500	50	10/15/2016 12:53	WG916702
Bromomethane	ND		0.250	50	10/15/2016 12:53	WG916702
n-Butylbenzene	ND		0.0500	50	10/15/2016 12:53	WG916702
sec-Butylbenzene	ND		0.0500	50	10/15/2016 12:53	WG916702
tert-Butylbenzene	ND		0.0500	50	10/15/2016 12:53	WG916702
Carbon tetrachloride	ND		0.0500	50	10/15/2016 12:53	WG916702
Chlorobenzene	ND		0.0500	50	10/15/2016 12:53	WG916702
Chlorodibromomethane	ND		0.0500	50	10/15/2016 12:53	WG916702
Chloroethane	ND		0.250	50	10/15/2016 12:53	WG916702
2-Chloroethyl vinyl ether	ND		2.50	50	10/15/2016 12:53	WG916702
Chloroform	ND		0.250	50	10/15/2016 12:53	WG916702
Chloromethane	ND		0.125	50	10/15/2016 12:53	WG916702
2-Chlorotoluene	ND		0.0500	50	10/15/2016 12:53	WG916702
4-Chlorotoluene	ND		0.0500	50	10/15/2016 12:53	WG916702
1,2-Dibromo-3-Chloropropane	ND		0.250	50	10/15/2016 12:53	WG916702
1,2-Dibromoethane	ND		0.0500	50	10/15/2016 12:53	WG916702
Dibromomethane	ND		0.0500	50	10/15/2016 12:53	WG916702
1,2-Dichlorobenzene	ND		0.0500	50	10/15/2016 12:53	WG916702
1,3-Dichlorobenzene	ND		0.0500	50	10/15/2016 12:53	WG916702
1,4-Dichlorobenzene	ND		0.0500	50	10/15/2016 12:53	WG916702
Dichlorodifluoromethane	ND		0.250	50	10/15/2016 12:53	WG916702

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
1,1-Dichloroethane	ND		0.0500	50	10/15/2016 12:53	WG916702
1,2-Dichloroethane	ND		0.0500	50	10/15/2016 12:53	WG916702
1,1-Dichloroethene	ND		0.0500	50	10/15/2016 12:53	WG916702
cis-1,2-Dichloroethene	ND		0.0500	50	10/15/2016 12:53	WG916702
trans-1,2-Dichloroethene	ND		0.0500	50	10/15/2016 12:53	WG916702
1,2-Dichloropropane	ND		0.0500	50	10/15/2016 12:53	WG916702
1,1-Dichloropropene	ND		0.0500	50	10/15/2016 12:53	WG916702
1,3-Dichloropropane	ND		0.0500	50	10/15/2016 12:53	WG916702
cis-1,3-Dichloropropene	ND		0.0500	50	10/15/2016 12:53	WG916702
trans-1,3-Dichloropropene	ND		0.0500	50	10/15/2016 12:53	WG916702
2,2-Dichloropropane	ND		0.0500	50	10/15/2016 12:53	WG916702
Di-isopropyl ether	ND		0.0500	50	10/15/2016 12:53	WG916702
Ethylbenzene	ND		0.0500	50	10/15/2016 12:53	WG916702
Ethyl ether	ND		0.0500	50	10/15/2016 12:53	WG916702
Hexachloro-1,3-butadiene	ND	J4	0.0500	50	10/15/2016 12:53	WG916702
2-Hexanone	ND		0.500	50	10/15/2016 12:53	WG916702
Isopropylbenzene	ND		0.0500	50	10/15/2016 12:53	WG916702
p-Isopropyltoluene	ND		0.0500	50	10/15/2016 12:53	WG916702
2-Butanone (MEK)	ND		0.500	50	10/15/2016 12:53	WG916702
Methylene Chloride	ND		0.250	50	10/15/2016 12:53	WG916702
4-Methyl-2-pentanone (MIBK)	ND		0.500	50	10/15/2016 12:53	WG916702
Methyl tert-butyl ether	ND		0.0500	50	10/15/2016 12:53	WG916702
Naphthalene	ND		0.250	50	10/15/2016 12:53	WG916702
n-Propylbenzene	ND		0.0500	50	10/15/2016 12:53	WG916702
Styrene	ND		0.0500	50	10/15/2016 12:53	WG916702
1,1,1,2-Tetrachloroethane	ND		0.0500	50	10/15/2016 12:53	WG916702
1,1,2,2-Tetrachloroethane	ND		0.0500	50	10/15/2016 12:53	WG916702
1,1,2-Trichlorotrifluoroethane	ND		0.0500	50	10/15/2016 12:53	WG916702
Tetrachloroethene	ND		0.0500	50	10/15/2016 12:53	WG916702
Tetrahydrofuran	ND		0.250	50	10/15/2016 12:53	WG916702
Toluene	ND		0.250	50	10/15/2016 12:53	WG916702
1,2,3-Trichlorobenzene	ND		0.0500	50	10/15/2016 12:53	WG916702
1,2,4-Trichlorobenzene	ND		0.0500	50	10/15/2016 12:53	WG916702
1,1,1-Trichloroethane	ND		0.0500	50	10/15/2016 12:53	WG916702
1,1,2-Trichloroethane	ND		0.0500	50	10/15/2016 12:53	WG916702
Trichloroethene	ND		0.0500	50	10/15/2016 12:53	WG916702
Trichlorofluoromethane	ND		0.250	50	10/15/2016 12:53	WG916702
1,2,3-Trichloropropane	ND		0.125	50	10/15/2016 12:53	WG916702
1,2,4-Trimethylbenzene	ND		0.0500	50	10/15/2016 12:53	WG916702
1,2,3-Trimethylbenzene	ND		0.0500	50	10/15/2016 12:53	WG916702
1,3,5-Trimethylbenzene	ND		0.0500	50	10/15/2016 12:53	WG916702
Vinyl chloride	ND		0.0500	50	10/15/2016 12:53	WG916702
Xylenes, Total	ND		0.150	50	10/15/2016 12:53	WG916702
(S) Toluene-d8	*103*		*88.7-115*		*10/15/2016 12:53*	WG916702
(S) Dibromofluoromethane	*98.4*		*76.3-123*		*10/15/2016 12:53*	WG916702
(S) 4-Bromofluorobenzene	*113*		*69.7-129*		*10/15/2016 12:53*	WG916702

Semi-Volatile Organic Compounds (GC) by Method WI(95) DRO

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	ND		8.00	1	10/12/2016 10:49	WG915843
(S) Triacontane	*92.5*		*40.0-136*		*10/12/2016 10:49*	WG915843

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.0330	1	10/13/2016 17:35	WG916057
Acenaphthene	ND		0.0330	1	10/13/2016 17:35	WG916057
Acenaphthylene	ND		0.0330	1	10/13/2016 17:35	WG916057
Benzo(a)anthracene	ND		0.0330	1	10/13/2016 17:35	WG916057
Benzo(a)pyrene	ND		0.0330	1	10/13/2016 17:35	WG916057
Benzo(b)fluoranthene	ND		0.0330	1	10/13/2016 17:35	WG916057
Benzo(g,h,i)perylene	ND		0.0330	1	10/13/2016 17:35	WG916057
Benzo(k)fluoranthene	ND		0.0330	1	10/13/2016 17:35	WG916057
Chrysene	ND		0.0330	1	10/13/2016 17:35	WG916057
Dibenz(a,h)anthracene	ND		0.0330	1	10/13/2016 17:35	WG916057
Fluoranthene	ND		0.0330	1	10/13/2016 17:35	WG916057
Fluorene	ND		0.0330	1	10/13/2016 17:35	WG916057
Indeno(1,2,3-cd)pyrene	ND		0.0330	1	10/13/2016 17:35	WG916057
Naphthalene	ND		0.0330	1	10/13/2016 17:35	WG916057
Phenanthrene	ND		0.0330	1	10/13/2016 17:35	WG916057
Pyrene	ND		0.0330	1	10/13/2016 17:35	WG916057
(S) Nitrobenzene-d5	*87.0*		*28.3-148*		*10/13/2016 17:35*	WG916057
(S) 2-Fluorobiphenyl	*75.3*		*41.4-134*		*10/13/2016 17:35*	WG916057
(S) p-Terphenyl-d14	*68.4*		*35.8-140*		*10/13/2016 17:35*	WG916057

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	84.0		1	10/08/2016 07:53	WG915264

Mercury by Method 7471A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Mercury	ND		0.0200	1	10/08/2016 07:04	WG914857

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Arsenic	3.99		2.00	1	10/11/2016 12:08	WG915161
Barium	77.3		0.500	1	10/11/2016 12:08	WG915161
Cadmium	ND		0.500	1	10/11/2016 12:08	WG915161
Chromium	11.9		1.00	1	10/11/2016 12:08	WG915161
Lead	6.90		0.500	1	10/11/2016 12:08	WG915161
Selenium	ND		2.00	1	10/11/2016 12:08	WG915161
Silver	ND		1.00	1	10/11/2016 12:08	WG915161

Volatile Organic Compounds (GC) by Method WI(95) GRO

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
TPH (GC/FID) Low Fraction	2280		198	1980	10/19/2016 13:53	WG916197
(S) a,a,a-Trifluorotoluene(PID)	*138*		*80.0-200*		*10/19/2016 13:53*	WG916197

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Acetone	ND		24.8	495	10/15/2016 13:11	WG916702
Acrylonitrile	ND		4.95	495	10/15/2016 13:11	WG916702
Allyl chloride	ND		2.48	495	10/15/2016 13:11	WG916702
Benzene	ND		0.495	495	10/15/2016 13:11	WG916702
Bromobenzene	ND		0.495	495	10/15/2016 13:11	WG916702
Bromodichloromethane	ND		0.495	495	10/15/2016 13:11	WG916702
Bromoform	ND		0.495	495	10/15/2016 13:11	WG916702
Bromomethane	ND		2.48	495	10/15/2016 13:11	WG916702
n-Butylbenzene	5.82		0.495	495	10/15/2016 13:11	WG916702
sec-Butylbenzene	2.23		0.495	495	10/15/2016 13:11	WG916702
tert-Butylbenzene	ND		0.495	495	10/15/2016 13:11	WG916702
Carbon tetrachloride	ND		0.495	495	10/15/2016 13:11	WG916702
Chlorobenzene	1.04		0.495	495	10/15/2016 13:11	WG916702
Chlorodibromomethane	ND		0.495	495	10/15/2016 13:11	WG916702
Chloroethane	ND		2.48	495	10/15/2016 13:11	WG916702
2-Chloroethyl vinyl ether	ND		24.8	495	10/15/2016 13:11	WG916702
Chloroform	ND		2.48	495	10/15/2016 13:11	WG916702
Chloromethane	ND		1.24	495	10/15/2016 13:11	WG916702
2-Chlorotoluene	ND		0.495	495	10/15/2016 13:11	WG916702
4-Chlorotoluene	ND		0.495	495	10/15/2016 13:11	WG916702
1,2-Dibromo-3-Chloropropane	ND		2.48	495	10/15/2016 13:11	WG916702
1,2-Dibromoethane	ND		0.495	495	10/15/2016 13:11	WG916702
Dibromomethane	ND		0.495	495	10/15/2016 13:11	WG916702
1,2-Dichlorobenzene	ND		0.495	495	10/15/2016 13:11	WG916702
1,3-Dichlorobenzene	ND		0.495	495	10/15/2016 13:11	WG916702
1,4-Dichlorobenzene	ND		0.495	495	10/15/2016 13:11	WG916702
Dichlorodifluoromethane	ND		2.48	495	10/15/2016 13:11	WG916702

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
1,1-Dichloroethane	ND		0.495	495	10/15/2016 13:11	WG916702
1,2-Dichloroethane	ND		0.495	495	10/15/2016 13:11	WG916702
1,1-Dichloroethene	ND		0.495	495	10/15/2016 13:11	WG916702
cis-1,2-Dichloroethene	ND		0.495	495	10/15/2016 13:11	WG916702
trans-1,2-Dichloroethene	ND		0.495	495	10/15/2016 13:11	WG916702
1,2-Dichloropropane	ND		0.495	495	10/15/2016 13:11	WG916702
1,1-Dichloropropene	ND		0.495	495	10/15/2016 13:11	WG916702
1,3-Dichloropropane	ND		0.495	495	10/15/2016 13:11	WG916702
cis-1,3-Dichloropropene	ND		0.495	495	10/15/2016 13:11	WG916702
trans-1,3-Dichloropropene	ND		0.495	495	10/15/2016 13:11	WG916702
2,2-Dichloropropane	ND		0.495	495	10/15/2016 13:11	WG916702
Di-isopropyl ether	ND		0.495	495	10/15/2016 13:11	WG916702
Ethylbenzene	23.2		0.495	495	10/15/2016 13:11	WG916702
Ethyl ether	ND		0.495	495	10/15/2016 13:11	WG916702
Hexachloro-1,3-butadiene	ND	J3 J4	0.495	495	10/15/2016 13:11	WG916702
2-Hexanone	ND		4.95	495	10/15/2016 13:11	WG916702
Isopropylbenzene	3.53		0.495	495	10/15/2016 13:11	WG916702
p-Isopropyltoluene	1.15		0.495	495	10/15/2016 13:11	WG916702
2-Butanone (MEK)	ND		4.95	495	10/15/2016 13:11	WG916702
Methylene Chloride	ND		2.48	495	10/15/2016 13:11	WG916702
4-Methyl-2-pentanone (MIBK)	ND		4.95	495	10/15/2016 13:11	WG916702
Methyl tert-butyl ether	ND		0.495	495	10/15/2016 13:11	WG916702
Naphthalene	7.40		2.48	495	10/15/2016 13:11	WG916702
n-Propylbenzene	13.6		0.495	495	10/15/2016 13:11	WG916702
Styrene	ND		0.495	495	10/15/2016 13:11	WG916702
1,1,1,2-Tetrachloroethane	ND		0.495	495	10/15/2016 13:11	WG916702
1,1,2,2-Tetrachloroethane	ND		0.495	495	10/15/2016 13:11	WG916702
1,1,2-Trichlorotrifluoroethane	ND		0.495	495	10/15/2016 13:11	WG916702
Tetrachloroethene	ND		0.495	495	10/15/2016 13:11	WG916702
Tetrahydrofuran	ND		2.48	495	10/15/2016 13:11	WG916702
Toluene	ND		2.48	495	10/15/2016 13:11	WG916702
1,2,3-Trichlorobenzene	ND	J3	0.495	495	10/15/2016 13:11	WG916702
1,2,4-Trichlorobenzene	ND		0.495	495	10/15/2016 13:11	WG916702
1,1,1-Trichloroethane	ND		0.495	495	10/15/2016 13:11	WG916702
1,1,2-Trichloroethane	ND		0.495	495	10/15/2016 13:11	WG916702
Trichloroethene	ND		0.495	495	10/15/2016 13:11	WG916702
Trichlorofluoromethane	ND		2.48	495	10/15/2016 13:11	WG916702
1,2,3-Trichloropropane	ND		1.24	495	10/15/2016 13:11	WG916702
1,2,4-Trimethylbenzene	80.8		0.495	495	10/15/2016 13:11	WG916702
1,2,3-Trimethylbenzene	15.9		0.495	495	10/15/2016 13:11	WG916702
1,3,5-Trimethylbenzene	23.5		0.495	495	10/15/2016 13:11	WG916702
Vinyl chloride	ND		0.495	495	10/15/2016 13:11	WG916702
Xylenes, Total	88.8		1.49	495	10/15/2016 13:11	WG916702
(S) Toluene-d8	*103*		*88.7-115*		*10/15/2016 13:11*	WG916702
(S) Dibromofluoromethane	*103*		*76.3-123*		*10/15/2016 13:11*	WG916702
(S) 4-Bromofluorobenzene	*102*		*69.7-129*		*10/15/2016 13:11*	WG916702

Semi-Volatile Organic Compounds (GC) by Method WI(95) DRO

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	91.9		8.00	1	10/12/2016 11:01	WG915843
(S) Triacontane	*78.2*		*40.0-136*		*10/12/2016 11:01*	WG915843

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.0330	1	10/13/2016 17:56	WG916057
Acenaphthene	0.0399		0.0330	1	10/13/2016 17:56	WG916057
Acenaphthylene	ND		0.0330	1	10/13/2016 17:56	WG916057
Benzo(a)anthracene	ND		0.0330	1	10/13/2016 17:56	WG916057
Benzo(a)pyrene	ND		0.0330	1	10/13/2016 17:56	WG916057
Benzo(b)fluoranthene	ND		0.0330	1	10/13/2016 17:56	WG916057
Benzo(g,h,i)perylene	ND		0.0330	1	10/13/2016 17:56	WG916057
Benzo(k)fluoranthene	ND		0.0330	1	10/13/2016 17:56	WG916057
Chrysene	ND		0.0330	1	10/13/2016 17:56	WG916057
Dibenz(a,h)anthracene	ND		0.0330	1	10/13/2016 17:56	WG916057
Fluoranthene	ND		0.0330	1	10/13/2016 17:56	WG916057
Fluorene	ND		0.0330	1	10/13/2016 17:56	WG916057
Indeno(1,2,3-cd)pyrene	ND		0.0330	1	10/13/2016 17:56	WG916057
Naphthalene	7.61		0.660	20	10/14/2016 16:16	WG916057
Phenanthrene	0.0372		0.0330	1	10/13/2016 17:56	WG916057
Pyrene	ND		0.0330	1	10/13/2016 17:56	WG916057
(S) Nitrobenzene-d5	*102*		*28.3-148*		*10/13/2016 17:56*	WG916057
(S) Nitrobenzene-d5	*108*	J7	*28.3-148*		*10/14/2016 16:16*	WG916057
(S) 2-Fluorobiphenyl	*92.3*	J7	*41.4-134*		*10/14/2016 16:16*	WG916057
(S) 2-Fluorobiphenyl	*85.6*		*41.4-134*		*10/13/2016 17:56*	WG916057
(S) p-Terphenyl-d14	*92.8*		*35.8-140*		*10/13/2016 17:56*	WG916057
(S) p-Terphenyl-d14	*82.8*	J7	*35.8-140*		*10/14/2016 16:16*	WG916057

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
	%				
Total Solids	85.4		1	10/08/2016 07:53	WG915264

Mercury by Method 7471A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Mercury	ND		0.0200	1	10/08/2016 07:07	WG914857

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Arsenic	8.64		2.00	1	10/11/2016 12:11	WG915161
Barium	57.5		0.500	1	10/11/2016 12:11	WG915161
Cadmium	ND		0.500	1	10/11/2016 12:11	WG915161
Chromium	10.4		1.00	1	10/11/2016 12:11	WG915161
Lead	3.91		0.500	1	10/11/2016 12:11	WG915161
Selenium	ND		2.00	1	10/11/2016 12:11	WG915161
Silver	ND		1.00	1	10/11/2016 12:11	WG915161

Volatile Organic Compounds (GC) by Method WI(95) GRO

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
TPH (GC/FID) Low Fraction	14.5		4.90	49	10/17/2016 02:46	WG916197
(S) a,a,a-Trifluorotoluene(PID)	*101*		*80.0-200*		*10/17/2016 02:46*	WG916197

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Acetone	ND		2.45	49	10/15/2016 13:28	WG916702
Acrylonitrile	ND		0.490	49	10/15/2016 13:28	WG916702
Allyl chloride	ND		0.245	49	10/15/2016 13:28	WG916702
Benzene	ND		0.0490	49	10/15/2016 13:28	WG916702
Bromobenzene	ND		0.0490	49	10/15/2016 13:28	WG916702
Bromodichloromethane	ND		0.0490	49	10/15/2016 13:28	WG916702
Bromoform	ND		0.0490	49	10/15/2016 13:28	WG916702
Bromomethane	ND		0.245	49	10/15/2016 13:28	WG916702
n-Butylbenzene	ND		0.0490	49	10/15/2016 13:28	WG916702
sec-Butylbenzene	ND		0.0490	49	10/15/2016 13:28	WG916702
tert-Butylbenzene	ND		0.0490	49	10/15/2016 13:28	WG916702
Carbon tetrachloride	ND		0.0490	49	10/15/2016 13:28	WG916702
Chlorobenzene	ND		0.0490	49	10/15/2016 13:28	WG916702
Chlorodibromomethane	ND		0.0490	49	10/15/2016 13:28	WG916702
Chloroethane	ND		0.245	49	10/15/2016 13:28	WG916702
2-Chloroethyl vinyl ether	ND		2.45	49	10/15/2016 13:28	WG916702
Chloroform	ND		0.245	49	10/15/2016 13:28	WG916702
Chloromethane	ND		0.123	49	10/15/2016 13:28	WG916702
2-Chlorotoluene	ND		0.0490	49	10/15/2016 13:28	WG916702
4-Chlorotoluene	ND		0.0490	49	10/15/2016 13:28	WG916702
1,2-Dibromo-3-Chloropropane	ND		0.245	49	10/15/2016 13:28	WG916702
1,2-Dibromoethane	ND		0.0490	49	10/15/2016 13:28	WG916702
Dibromomethane	ND		0.0490	49	10/15/2016 13:28	WG916702
1,2-Dichlorobenzene	ND		0.0490	49	10/15/2016 13:28	WG916702
1,3-Dichlorobenzene	ND		0.0490	49	10/15/2016 13:28	WG916702
1,4-Dichlorobenzene	ND		0.0490	49	10/15/2016 13:28	WG916702
Dichlorodifluoromethane	ND		0.245	49	10/15/2016 13:28	WG916702

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
1,1-Dichloroethane	ND		0.0490	49	10/15/2016 13:28	WG916702
1,2-Dichloroethane	ND		0.0490	49	10/15/2016 13:28	WG916702
1,1-Dichloroethene	ND		0.0490	49	10/15/2016 13:28	WG916702
cis-1,2-Dichloroethene	ND		0.0490	49	10/15/2016 13:28	WG916702
trans-1,2-Dichloroethene	ND		0.0490	49	10/15/2016 13:28	WG916702
1,2-Dichloropropane	ND		0.0490	49	10/15/2016 13:28	WG916702
1,1-Dichloropropene	ND		0.0490	49	10/15/2016 13:28	WG916702
1,3-Dichloropropane	ND		0.0490	49	10/15/2016 13:28	WG916702
cis-1,3-Dichloropropene	ND		0.0490	49	10/15/2016 13:28	WG916702
trans-1,3-Dichloropropene	ND		0.0490	49	10/15/2016 13:28	WG916702
2,2-Dichloropropane	ND		0.0490	49	10/15/2016 13:28	WG916702
Di-isopropyl ether	ND		0.0490	49	10/15/2016 13:28	WG916702
Ethylbenzene	0.0524		0.0490	49	10/15/2016 13:28	WG916702
Ethyl ether	ND		0.0490	49	10/15/2016 13:28	WG916702
Hexachloro-1,3-butadiene	ND	J3 J4	0.0490	49	10/15/2016 13:28	WG916702
2-Hexanone	ND		0.490	49	10/15/2016 13:28	WG916702
Isopropylbenzene	ND		0.0490	49	10/15/2016 13:28	WG916702
p-Isopropyltoluene	ND		0.0490	49	10/15/2016 13:28	WG916702
2-Butanone (MEK)	ND		0.490	49	10/15/2016 13:28	WG916702
Methylene Chloride	ND		0.245	49	10/15/2016 13:28	WG916702
4-Methyl-2-pentanone (MIBK)	ND		0.490	49	10/15/2016 13:28	WG916702
Methyl tert-butyl ether	ND		0.0490	49	10/15/2016 13:28	WG916702
Naphthalene	ND		0.245	49	10/15/2016 13:28	WG916702
n-Propylbenzene	ND		0.0490	49	10/15/2016 13:28	WG916702
Styrene	ND		0.0490	49	10/15/2016 13:28	WG916702
1,1,1,2-Tetrachloroethane	ND		0.0490	49	10/15/2016 13:28	WG916702
1,1,2,2-Tetrachloroethane	ND		0.0490	49	10/15/2016 13:28	WG916702
1,1,2-Trichlorotrifluoroethane	ND		0.0490	49	10/15/2016 13:28	WG916702
Tetrachloroethene	ND		0.0490	49	10/15/2016 13:28	WG916702
Tetrahydrofuran	ND		0.245	49	10/15/2016 13:28	WG916702
Toluene	ND		0.245	49	10/15/2016 13:28	WG916702
1,2,3-Trichlorobenzene	ND	J3	0.0490	49	10/15/2016 13:28	WG916702
1,2,4-Trichlorobenzene	ND		0.0490	49	10/15/2016 13:28	WG916702
1,1,1-Trichloroethane	ND		0.0490	49	10/15/2016 13:28	WG916702
1,1,2-Trichloroethane	ND		0.0490	49	10/15/2016 13:28	WG916702
Trichloroethene	ND		0.0490	49	10/15/2016 13:28	WG916702
Trichlorofluoromethane	ND		0.245	49	10/15/2016 13:28	WG916702
1,2,3-Trichloropropane	ND		0.123	49	10/15/2016 13:28	WG916702
1,2,4-Trimethylbenzene	ND		0.0490	49	10/15/2016 13:28	WG916702
1,2,3-Trimethylbenzene	ND		0.0490	49	10/15/2016 13:28	WG916702
1,3,5-Trimethylbenzene	ND		0.0490	49	10/15/2016 13:28	WG916702
Vinyl chloride	ND		0.0490	49	10/15/2016 13:28	WG916702
Xylenes, Total	ND		0.147	49	10/15/2016 13:28	WG916702
(S) Toluene-d8	*103*		*88.7-115*		*10/15/2016 13:28*	WG916702
(S) Dibromofluoromethane	*98.7*		*76.3-123*		*10/15/2016 13:28*	WG916702
(S) 4-Bromofluorobenzene	*106*		*69.7-129*		*10/15/2016 13:28*	WG916702

Semi-Volatile Organic Compounds (GC) by Method WI(95) DRO

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	ND		8.00	1	10/12/2016 11:13	WG915843
(S) Triacontane	*78.4*		*40.0-136*		*10/12/2016 11:13*	WG915843

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.0330	1	10/13/2016 18:18	WG916057
Acenaphthene	ND		0.0330	1	10/13/2016 18:18	WG916057
Acenaphthylene	ND		0.0330	1	10/13/2016 18:18	WG916057
Benzo(a)anthracene	ND		0.0330	1	10/13/2016 18:18	WG916057
Benzo(a)pyrene	ND		0.0330	1	10/13/2016 18:18	WG916057
Benzo(b)fluoranthene	ND		0.0330	1	10/13/2016 18:18	WG916057
Benzo(g,h,i)perylene	ND		0.0330	1	10/13/2016 18:18	WG916057
Benzo(k)fluoranthene	ND		0.0330	1	10/13/2016 18:18	WG916057
Chrysene	ND		0.0330	1	10/13/2016 18:18	WG916057
Dibenz(a,h)anthracene	ND		0.0330	1	10/13/2016 18:18	WG916057
Fluoranthene	ND		0.0330	1	10/13/2016 18:18	WG916057
Fluorene	ND		0.0330	1	10/13/2016 18:18	WG916057
Indeno(1,2,3-cd)pyrene	ND		0.0330	1	10/13/2016 18:18	WG916057
Naphthalene	0.0695		0.0330	1	10/13/2016 18:18	WG916057
Phenanthrene	ND		0.0330	1	10/13/2016 18:18	WG916057
Pyrene	ND		0.0330	1	10/13/2016 18:18	WG916057
(S) Nitrobenzene-d5	*89.7*		*28.3-148*		*10/13/2016 18:18*	WG916057
(S) 2-Fluorobiphenyl	*69.1*		*41.4-134*		*10/13/2016 18:18*	WG916057
(S) p-Terphenyl-d14	*76.0*		*35.8-140*		*10/13/2016 18:18*	WG916057

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	92.1		1	10/08/2016 07:53	WG915264

Mercury by Method 7471A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Mercury	0.0369		0.0200	1	10/08/2016 07:10	WG914857

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Arsenic	4.42		2.00	1	10/11/2016 12:19	WG915161
Barium	84.5		0.500	1	10/11/2016 12:19	WG915161
Cadmium	0.769		0.500	1	10/11/2016 12:19	WG915161
Chromium	15.4		1.00	1	10/11/2016 12:19	WG915161
Lead	104		0.500	1	10/11/2016 12:19	WG915161
Selenium	ND		2.00	1	10/11/2016 12:19	WG915161
Silver	ND		1.00	1	10/11/2016 12:19	WG915161

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Anthracene	0.293		0.165	5	10/14/2016 15:32	WG916057
Acenaphthene	ND		0.165	5	10/14/2016 15:32	WG916057
Acenaphthylene	ND		0.165	5	10/14/2016 15:32	WG916057
Benzo(a)anthracene	1.09		0.165	5	10/14/2016 15:32	WG916057
Benzo(a)pyrene	1.10		0.165	5	10/14/2016 15:32	WG916057
Benzo(b)fluoranthene	1.43		0.165	5	10/14/2016 15:32	WG916057
Benzo(g,h,i)perylene	0.857		0.165	5	10/14/2016 15:32	WG916057
Benzo(k)fluoranthene	0.447		0.165	5	10/14/2016 15:32	WG916057
Chrysene	1.16		0.165	5	10/14/2016 15:32	WG916057
Dibenz(a,h)anthracene	0.203		0.165	5	10/14/2016 15:32	WG916057
Fluoranthene	2.74		0.165	5	10/14/2016 15:32	WG916057
Fluorene	ND		0.165	5	10/14/2016 15:32	WG916057
Indeno(1,2,3-cd)pyrene	0.690		0.165	5	10/14/2016 15:32	WG916057
Naphthalene	ND		0.165	5	10/14/2016 15:32	WG916057
Phenanthrene	1.30		0.165	5	10/14/2016 15:32	WG916057
Pyrene	2.04		0.165	5	10/14/2016 15:32	WG916057
(S) Nitrobenzene-d5	*128*		*28.3-148*		*10/14/2016 15:32*	WG916057
(S) 2-Fluorobiphenyl	*81.7*		*41.4-134*		*10/14/2016 15:32*	WG916057
(S) p-Terphenyl-d14	*64.9*		*35.8-140*		*10/14/2016 15:32*	WG916057

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
	%				
Total Solids	87.4		1	10/08/2016 07:53	WG915264

Volatile Organic Compounds (GC) by Method WI(95) GRO

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
TPH (GC/FID) Low Fraction	ND		5.00	50	10/17/2016 03:08	WG916197
(S) a,a,a-Trifluorotoluene(PID)	*94.9*		*80.0-200*		*10/17/2016 03:08*	WG916197

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Acetone	ND		2.50	50	10/15/2016 13:46	WG916702
Acrylonitrile	ND		0.500	50	10/15/2016 13:46	WG916702
Allyl chloride	ND		0.250	50	10/15/2016 13:46	WG916702
Benzene	ND		0.0500	50	10/15/2016 13:46	WG916702
Bromobenzene	ND		0.0500	50	10/15/2016 13:46	WG916702
Bromodichloromethane	ND		0.0500	50	10/15/2016 13:46	WG916702
Bromoform	ND		0.0500	50	10/15/2016 13:46	WG916702
Bromomethane	ND		0.250	50	10/15/2016 13:46	WG916702
n-Butylbenzene	ND		0.0500	50	10/15/2016 13:46	WG916702
sec-Butylbenzene	ND		0.0500	50	10/15/2016 13:46	WG916702
tert-Butylbenzene	ND		0.0500	50	10/15/2016 13:46	WG916702
Carbon tetrachloride	ND		0.0500	50	10/15/2016 13:46	WG916702
Chlorobenzene	ND		0.0500	50	10/15/2016 13:46	WG916702
Chlorodibromomethane	ND		0.0500	50	10/15/2016 13:46	WG916702
Chloroethane	ND		0.250	50	10/15/2016 13:46	WG916702
2-Chloroethyl vinyl ether	ND		2.50	50	10/15/2016 13:46	WG916702
Chloroform	ND		0.250	50	10/15/2016 13:46	WG916702
Chloromethane	ND		0.125	50	10/15/2016 13:46	WG916702
2-Chlorotoluene	ND		0.0500	50	10/15/2016 13:46	WG916702
4-Chlorotoluene	ND		0.0500	50	10/15/2016 13:46	WG916702
1,2-Dibromo-3-Chloropropane	ND		0.250	50	10/15/2016 13:46	WG916702
1,2-Dibromoethane	ND		0.0500	50	10/15/2016 13:46	WG916702
Dibromomethane	ND		0.0500	50	10/15/2016 13:46	WG916702
1,2-Dichlorobenzene	ND		0.0500	50	10/15/2016 13:46	WG916702
1,3-Dichlorobenzene	ND		0.0500	50	10/15/2016 13:46	WG916702
1,4-Dichlorobenzene	ND		0.0500	50	10/15/2016 13:46	WG916702
Dichlorodifluoromethane	ND		0.250	50	10/15/2016 13:46	WG916702
1,1-Dichloroethane	ND		0.0500	50	10/15/2016 13:46	WG916702
1,2-Dichloroethane	ND		0.0500	50	10/15/2016 13:46	WG916702
1,1-Dichloroethene	ND		0.0500	50	10/15/2016 13:46	WG916702
cis-1,2-Dichloroethene	ND		0.0500	50	10/15/2016 13:46	WG916702
trans-1,2-Dichloroethene	ND		0.0500	50	10/15/2016 13:46	WG916702
1,2-Dichloropropane	ND		0.0500	50	10/15/2016 13:46	WG916702
1,1-Dichloropropene	ND		0.0500	50	10/15/2016 13:46	WG916702
1,3-Dichloropropane	ND		0.0500	50	10/15/2016 13:46	WG916702
cis-1,3-Dichloropropene	ND		0.0500	50	10/15/2016 13:46	WG916702
trans-1,3-Dichloropropene	ND		0.0500	50	10/15/2016 13:46	WG916702
2,2-Dichloropropane	ND		0.0500	50	10/15/2016 13:46	WG916702
Di-isopropyl ether	ND		0.0500	50	10/15/2016 13:46	WG916702
Ethylbenzene	ND		0.0500	50	10/15/2016 13:46	WG916702
Ethyl ether	ND		0.0500	50	10/15/2016 13:46	WG916702
Hexachloro-1,3-butadiene	ND	J3 J4	0.0500	50	10/15/2016 13:46	WG916702
2-Hexanone	ND		0.500	50	10/15/2016 13:46	WG916702
Isopropylbenzene	ND		0.0500	50	10/15/2016 13:46	WG916702

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
p-Isopropyltoluene	ND		0.0500	50	10/15/2016 13:46	WG916702
2-Butanone (MEK)	ND		0.500	50	10/15/2016 13:46	WG916702
Methylene Chloride	ND		0.250	50	10/15/2016 13:46	WG916702
4-Methyl-2-pentanone (MIBK)	ND		0.500	50	10/15/2016 13:46	WG916702
Methyl tert-butyl ether	ND		0.0500	50	10/15/2016 13:46	WG916702
Naphthalene	ND		0.250	50	10/15/2016 13:46	WG916702
n-Propylbenzene	ND		0.0500	50	10/15/2016 13:46	WG916702
Styrene	ND		0.0500	50	10/15/2016 13:46	WG916702
1,1,1,2-Tetrachloroethane	ND		0.0500	50	10/15/2016 13:46	WG916702
1,1,2,2-Tetrachloroethane	ND		0.0500	50	10/15/2016 13:46	WG916702
1,1,2-Trichlorotrifluoroethane	ND		0.0500	50	10/15/2016 13:46	WG916702
Tetrachloroethene	ND		0.0500	50	10/15/2016 13:46	WG916702
Tetrahydrofuran	ND		0.250	50	10/15/2016 13:46	WG916702
Toluene	ND		0.250	50	10/15/2016 13:46	WG916702
1,2,3-Trichlorobenzene	ND	J3	0.0500	50	10/15/2016 13:46	WG916702
1,2,4-Trichlorobenzene	ND		0.0500	50	10/15/2016 13:46	WG916702
1,1,1-Trichloroethane	ND		0.0500	50	10/15/2016 13:46	WG916702
1,1,2-Trichloroethane	ND		0.0500	50	10/15/2016 13:46	WG916702
Trichloroethene	ND		0.0500	50	10/15/2016 13:46	WG916702
Trichlorofluoromethane	ND		0.250	50	10/15/2016 13:46	WG916702
1,2,3-Trichloropropane	ND		0.125	50	10/15/2016 13:46	WG916702
1,2,4-Trimethylbenzene	ND		0.0500	50	10/15/2016 13:46	WG916702
1,2,3-Trimethylbenzene	ND		0.0500	50	10/15/2016 13:46	WG916702
1,3,5-Trimethylbenzene	ND		0.0500	50	10/15/2016 13:46	WG916702
Vinyl chloride	ND		0.0500	50	10/15/2016 13:46	WG916702
Xylenes, Total	ND		0.150	50	10/15/2016 13:46	WG916702
(S) Toluene-d8	*103*		*88.7-115*		*10/15/2016 13:46*	WG916702
(S) Dibromofluoromethane	*97.0*		*76.3-123*		*10/15/2016 13:46*	WG916702
(S) 4-Bromofluorobenzene	*89.9*		*69.7-129*		*10/15/2016 13:46*	WG916702

Semi-Volatile Organic Compounds (GC) by Method WI(95) DRO

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	ND		40.0	5	10/12/2016 13:46	WG915843
(S) Triacontane	*92.0*		*40.0-136*		*10/12/2016 13:46*	WG915843

Sample Narrative:

WI(95) DRO L864389-05 WG915843: Cannot run at lower dilution due to viscosity of extract

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	85.1		1	10/08/2016 07:53	WG915264

Mercury by Method 7471A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Mercury	ND		0.0200	1	10/08/2016 07:13	WG914857

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Arsenic	4.66		2.00	1	10/11/2016 12:22	WG915161
Barium	72.0		0.500	1	10/11/2016 12:22	WG915161
Cadmium	ND		0.500	1	10/11/2016 12:22	WG915161
Chromium	12.1		1.00	1	10/11/2016 12:22	WG915161
Lead	4.42		0.500	1	10/11/2016 12:22	WG915161
Selenium	ND		2.00	1	10/11/2016 12:22	WG915161
Silver	ND		1.00	1	10/11/2016 12:22	WG915161

Volatile Organic Compounds (GC) by Method WI(95) GRO

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
TPH (GC/FID) Low Fraction	ND		5.00	50	10/17/2016 03:30	WG916197
(S) a,a,a-Trifluorotoluene(PID)	*97.4*		*80.0-200*		*10/17/2016 03:30*	WG916197

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Acetone	ND		2.50	50	10/15/2016 14:03	WG916702
Acrylonitrile	ND		0.500	50	10/15/2016 14:03	WG916702
Allyl chloride	ND		0.250	50	10/15/2016 14:03	WG916702
Benzene	ND		0.0500	50	10/15/2016 14:03	WG916702
Bromobenzene	ND		0.0500	50	10/15/2016 14:03	WG916702
Bromodichloromethane	ND		0.0500	50	10/15/2016 14:03	WG916702
Bromoform	ND		0.0500	50	10/15/2016 14:03	WG916702
Bromomethane	ND		0.250	50	10/15/2016 14:03	WG916702
n-Butylbenzene	ND		0.0500	50	10/15/2016 14:03	WG916702
sec-Butylbenzene	ND		0.0500	50	10/15/2016 14:03	WG916702
tert-Butylbenzene	ND		0.0500	50	10/15/2016 14:03	WG916702
Carbon tetrachloride	ND		0.0500	50	10/15/2016 14:03	WG916702
Chlorobenzene	ND		0.0500	50	10/15/2016 14:03	WG916702
Chlorodibromomethane	ND		0.0500	50	10/15/2016 14:03	WG916702
Chloroethane	ND		0.250	50	10/15/2016 14:03	WG916702
2-Chloroethyl vinyl ether	ND		2.50	50	10/15/2016 14:03	WG916702
Chloroform	ND		0.250	50	10/15/2016 14:03	WG916702
Chloromethane	ND		0.125	50	10/15/2016 14:03	WG916702
2-Chlorotoluene	ND		0.0500	50	10/15/2016 14:03	WG916702
4-Chlorotoluene	ND		0.0500	50	10/15/2016 14:03	WG916702
1,2-Dibromo-3-Chloropropane	ND		0.250	50	10/15/2016 14:03	WG916702
1,2-Dibromoethane	ND		0.0500	50	10/15/2016 14:03	WG916702
Dibromomethane	ND		0.0500	50	10/15/2016 14:03	WG916702
1,2-Dichlorobenzene	ND		0.0500	50	10/15/2016 14:03	WG916702
1,3-Dichlorobenzene	ND		0.0500	50	10/15/2016 14:03	WG916702
1,4-Dichlorobenzene	ND		0.0500	50	10/15/2016 14:03	WG916702
Dichlorodifluoromethane	ND		0.250	50	10/15/2016 14:03	WG916702

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
1,1-Dichloroethane	ND		0.0500	50	10/15/2016 14:03	WG916702
1,2-Dichloroethane	ND		0.0500	50	10/15/2016 14:03	WG916702
1,1-Dichloroethene	ND		0.0500	50	10/15/2016 14:03	WG916702
cis-1,2-Dichloroethene	ND		0.0500	50	10/15/2016 14:03	WG916702
trans-1,2-Dichloroethene	ND		0.0500	50	10/15/2016 14:03	WG916702
1,2-Dichloropropane	ND		0.0500	50	10/15/2016 14:03	WG916702
1,1-Dichloropropene	ND		0.0500	50	10/15/2016 14:03	WG916702
1,3-Dichloropropane	ND		0.0500	50	10/15/2016 14:03	WG916702
cis-1,3-Dichloropropene	ND		0.0500	50	10/15/2016 14:03	WG916702
trans-1,3-Dichloropropene	ND		0.0500	50	10/15/2016 14:03	WG916702
2,2-Dichloropropane	ND		0.0500	50	10/15/2016 14:03	WG916702
Di-isopropyl ether	ND		0.0500	50	10/15/2016 14:03	WG916702
Ethylbenzene	ND		0.0500	50	10/15/2016 14:03	WG916702
Ethyl ether	ND		0.0500	50	10/15/2016 14:03	WG916702
Hexachloro-1,3-butadiene	ND	J3 J4	0.0500	50	10/15/2016 14:03	WG916702
2-Hexanone	ND		0.500	50	10/15/2016 14:03	WG916702
Isopropylbenzene	ND		0.0500	50	10/15/2016 14:03	WG916702
p-Isopropyltoluene	ND		0.0500	50	10/15/2016 14:03	WG916702
2-Butanone (MEK)	ND		0.500	50	10/15/2016 14:03	WG916702
Methylene Chloride	ND		0.250	50	10/15/2016 14:03	WG916702
4-Methyl-2-pentanone (MIBK)	ND		0.500	50	10/15/2016 14:03	WG916702
Methyl tert-butyl ether	ND		0.0500	50	10/15/2016 14:03	WG916702
Naphthalene	ND		0.250	50	10/15/2016 14:03	WG916702
n-Propylbenzene	ND		0.0500	50	10/15/2016 14:03	WG916702
Styrene	ND		0.0500	50	10/15/2016 14:03	WG916702
1,1,1,2-Tetrachloroethane	ND		0.0500	50	10/15/2016 14:03	WG916702
1,1,2,2-Tetrachloroethane	ND		0.0500	50	10/15/2016 14:03	WG916702
1,1,2-Trichlorotrifluoroethane	ND		0.0500	50	10/15/2016 14:03	WG916702
Tetrachloroethene	ND		0.0500	50	10/15/2016 14:03	WG916702
Tetrahydrofuran	ND		0.250	50	10/15/2016 14:03	WG916702
Toluene	ND		0.250	50	10/15/2016 14:03	WG916702
1,2,3-Trichlorobenzene	ND	J3	0.0500	50	10/15/2016 14:03	WG916702
1,2,4-Trichlorobenzene	ND		0.0500	50	10/15/2016 14:03	WG916702
1,1,1-Trichloroethane	ND		0.0500	50	10/15/2016 14:03	WG916702
1,1,2-Trichloroethane	ND		0.0500	50	10/15/2016 14:03	WG916702
Trichloroethene	ND		0.0500	50	10/15/2016 14:03	WG916702
Trichlorofluoromethane	ND		0.250	50	10/15/2016 14:03	WG916702
1,2,3-Trichloropropane	ND		0.125	50	10/15/2016 14:03	WG916702
1,2,4-Trimethylbenzene	ND		0.0500	50	10/15/2016 14:03	WG916702
1,2,3-Trimethylbenzene	ND		0.0500	50	10/15/2016 14:03	WG916702
1,3,5-Trimethylbenzene	ND		0.0500	50	10/15/2016 14:03	WG916702
Vinyl chloride	ND		0.0500	50	10/15/2016 14:03	WG916702
Xylenes, Total	ND		0.150	50	10/15/2016 14:03	WG916702
(S) Toluene-d8	*104*		*88.7-115*		*10/15/2016 14:03*	WG916702
(S) Dibromofluoromethane	*99.3*		*76.3-123*		*10/15/2016 14:03*	WG916702
(S) 4-Bromofluorobenzene	*113*		*69.7-129*		*10/15/2016 14:03*	WG916702

Semi-Volatile Organic Compounds (GC) by Method WI(95) DRO

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	ND		8.00	1	10/12/2016 11:24	WG915843
(S) Triacontane	*82.4*		*40.0-136*		*10/12/2016 11:24*	WG915843

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.0330	1	10/13/2016 18:40	WG916057
Acenaphthene	ND		0.0330	1	10/13/2016 18:40	WG916057
Acenaphthylene	ND		0.0330	1	10/13/2016 18:40	WG916057
Benzo(a)anthracene	ND		0.0330	1	10/13/2016 18:40	WG916057
Benzo(a)pyrene	ND		0.0330	1	10/13/2016 18:40	WG916057
Benzo(b)fluoranthene	ND		0.0330	1	10/13/2016 18:40	WG916057
Benzo(g,h,i)perylene	ND		0.0330	1	10/13/2016 18:40	WG916057
Benzo(k)fluoranthene	ND		0.0330	1	10/13/2016 18:40	WG916057
Chrysene	ND		0.0330	1	10/13/2016 18:40	WG916057
Dibenz(a,h)anthracene	ND		0.0330	1	10/13/2016 18:40	WG916057
Fluoranthene	ND		0.0330	1	10/13/2016 18:40	WG916057
Fluorene	ND		0.0330	1	10/13/2016 18:40	WG916057
Indeno(1,2,3-cd)pyrene	ND		0.0330	1	10/13/2016 18:40	WG916057
Naphthalene	ND		0.0330	1	10/13/2016 18:40	WG916057
Phenanthrene	ND		0.0330	1	10/13/2016 18:40	WG916057
Pyrene	ND		0.0330	1	10/13/2016 18:40	WG916057
(S) Nitrobenzene-d5	*91.3*		*28.3-148*		*10/13/2016 18:40*	WG916057
(S) 2-Fluorobiphenyl	*77.5*		*41.4-134*		*10/13/2016 18:40*	WG916057
(S) p-Terphenyl-d14	*72.3*		*35.8-140*		*10/13/2016 18:40*	WG916057

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	87.1		1	10/08/2016 07:53	WG915264

Mercury by Method 7471A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Mercury	ND		0.0200	1	10/08/2016 07:16	WG914857

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Arsenic	3.63		2.00	1	10/11/2016 12:25	WG915161
Barium	71.2		0.500	1	10/11/2016 12:25	WG915161
Cadmium	ND		0.500	1	10/11/2016 12:25	WG915161
Chromium	12.4		1.00	1	10/11/2016 12:25	WG915161
Lead	3.36		0.500	1	10/11/2016 12:25	WG915161
Selenium	ND		2.00	1	10/11/2016 12:25	WG915161
Silver	ND		1.00	1	10/11/2016 12:25	WG915161

Volatile Organic Compounds (GC) by Method WI(95) GRO

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
TPH (GC/FID) Low Fraction	ND		4.90	49	10/17/2016 03:52	WG916197
(S) a,a,a-Trifluorotoluene(PID)	*94.9*		*80.0-200*		*10/17/2016 03:52*	WG916197

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Acetone	ND		2.45	49	10/15/2016 14:20	WG916702
Acrylonitrile	ND		0.490	49	10/15/2016 14:20	WG916702
Allyl chloride	ND		0.245	49	10/15/2016 14:20	WG916702
Benzene	ND		0.0490	49	10/15/2016 14:20	WG916702
Bromobenzene	ND		0.0490	49	10/15/2016 14:20	WG916702
Bromodichloromethane	ND		0.0490	49	10/15/2016 14:20	WG916702
Bromoform	ND		0.0490	49	10/15/2016 14:20	WG916702
Bromomethane	ND		0.245	49	10/15/2016 14:20	WG916702
n-Butylbenzene	ND		0.0490	49	10/15/2016 14:20	WG916702
sec-Butylbenzene	ND		0.0490	49	10/15/2016 14:20	WG916702
tert-Butylbenzene	ND		0.0490	49	10/15/2016 14:20	WG916702
Carbon tetrachloride	ND		0.0490	49	10/15/2016 14:20	WG916702
Chlorobenzene	ND		0.0490	49	10/15/2016 14:20	WG916702
Chlorodibromomethane	ND		0.0490	49	10/15/2016 14:20	WG916702
Chloroethane	ND		0.245	49	10/15/2016 14:20	WG916702
2-Chloroethyl vinyl ether	ND		2.45	49	10/15/2016 14:20	WG916702
Chloroform	ND		0.245	49	10/15/2016 14:20	WG916702
Chloromethane	ND		0.123	49	10/15/2016 14:20	WG916702
2-Chlorotoluene	ND		0.0490	49	10/15/2016 14:20	WG916702
4-Chlorotoluene	ND		0.0490	49	10/15/2016 14:20	WG916702
1,2-Dibromo-3-Chloropropane	ND		0.245	49	10/15/2016 14:20	WG916702
1,2-Dibromoethane	ND		0.0490	49	10/15/2016 14:20	WG916702
Dibromomethane	ND		0.0490	49	10/15/2016 14:20	WG916702
1,2-Dichlorobenzene	ND		0.0490	49	10/15/2016 14:20	WG916702
1,3-Dichlorobenzene	ND		0.0490	49	10/15/2016 14:20	WG916702
1,4-Dichlorobenzene	ND		0.0490	49	10/15/2016 14:20	WG916702
Dichlorodifluoromethane	ND		0.245	49	10/15/2016 14:20	WG916702

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
1,1-Dichloroethane	ND		0.0490	49	10/15/2016 14:20	WG916702
1,2-Dichloroethane	ND		0.0490	49	10/15/2016 14:20	WG916702
1,1-Dichloroethene	ND		0.0490	49	10/15/2016 14:20	WG916702
cis-1,2-Dichloroethene	ND		0.0490	49	10/15/2016 14:20	WG916702
trans-1,2-Dichloroethene	ND		0.0490	49	10/15/2016 14:20	WG916702
1,2-Dichloropropane	ND		0.0490	49	10/15/2016 14:20	WG916702
1,1-Dichloropropene	ND		0.0490	49	10/15/2016 14:20	WG916702
1,3-Dichloropropane	ND		0.0490	49	10/15/2016 14:20	WG916702
cis-1,3-Dichloropropene	ND		0.0490	49	10/15/2016 14:20	WG916702
trans-1,3-Dichloropropene	ND		0.0490	49	10/15/2016 14:20	WG916702
2,2-Dichloropropane	ND		0.0490	49	10/15/2016 14:20	WG916702
Di-isopropyl ether	ND		0.0490	49	10/15/2016 14:20	WG916702
Ethylbenzene	ND		0.0490	49	10/15/2016 14:20	WG916702
Ethyl ether	ND		0.0490	49	10/15/2016 14:20	WG916702
Hexachloro-1,3-butadiene	ND	J3 J4	0.0490	49	10/15/2016 14:20	WG916702
2-Hexanone	ND		0.490	49	10/15/2016 14:20	WG916702
Isopropylbenzene	ND		0.0490	49	10/15/2016 14:20	WG916702
p-Isopropyltoluene	ND		0.0490	49	10/15/2016 14:20	WG916702
2-Butanone (MEK)	ND		0.490	49	10/15/2016 14:20	WG916702
Methylene Chloride	ND		0.245	49	10/15/2016 14:20	WG916702
4-Methyl-2-pentanone (MIBK)	ND		0.490	49	10/15/2016 14:20	WG916702
Methyl tert-butyl ether	ND		0.0490	49	10/15/2016 14:20	WG916702
Naphthalene	ND		0.245	49	10/15/2016 14:20	WG916702
n-Propylbenzene	ND		0.0490	49	10/15/2016 14:20	WG916702
Styrene	ND		0.0490	49	10/15/2016 14:20	WG916702
1,1,1,2-Tetrachloroethane	ND		0.0490	49	10/15/2016 14:20	WG916702
1,1,2,2-Tetrachloroethane	ND		0.0490	49	10/15/2016 14:20	WG916702
1,1,2-Trichlorotrifluoroethane	ND		0.0490	49	10/15/2016 14:20	WG916702
Tetrachloroethene	ND		0.0490	49	10/15/2016 14:20	WG916702
Tetrahydrofuran	ND		0.245	49	10/15/2016 14:20	WG916702
Toluene	ND		0.245	49	10/15/2016 14:20	WG916702
1,2,3-Trichlorobenzene	ND	J3	0.0490	49	10/15/2016 14:20	WG916702
1,2,4-Trichlorobenzene	ND		0.0490	49	10/15/2016 14:20	WG916702
1,1,1-Trichloroethane	ND		0.0490	49	10/15/2016 14:20	WG916702
1,1,2-Trichloroethane	ND		0.0490	49	10/15/2016 14:20	WG916702
Trichloroethene	ND		0.0490	49	10/15/2016 14:20	WG916702
Trichlorofluoromethane	ND		0.245	49	10/15/2016 14:20	WG916702
1,2,3-Trichloropropane	ND		0.123	49	10/15/2016 14:20	WG916702
1,2,4-Trimethylbenzene	ND		0.0490	49	10/15/2016 14:20	WG916702
1,2,3-Trimethylbenzene	ND		0.0490	49	10/15/2016 14:20	WG916702
1,3,5-Trimethylbenzene	ND		0.0490	49	10/15/2016 14:20	WG916702
Vinyl chloride	ND		0.0490	49	10/15/2016 14:20	WG916702
Xylenes, Total	ND		0.147	49	10/15/2016 14:20	WG916702
(S) Toluene-d8	*105*		*88.7-115*		*10/15/2016 14:20*	WG916702
(S) Dibromofluoromethane	*96.8*		*76.3-123*		*10/15/2016 14:20*	WG916702
(S) 4-Bromofluorobenzene	*110*		*69.7-129*		*10/15/2016 14:20*	WG916702

Semi-Volatile Organic Compounds (GC) by Method WI(95) DRO

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	ND		8.00	1	10/12/2016 11:36	WG915843
(S) Triacontane	*79.4*		*40.0-136*		*10/12/2016 11:36*	WG915843

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.0330	1	10/13/2016 19:02	WG916057
Acenaphthene	ND		0.0330	1	10/13/2016 19:02	WG916057
Acenaphthylene	ND		0.0330	1	10/13/2016 19:02	WG916057
Benzo(a)anthracene	ND		0.0330	1	10/13/2016 19:02	WG916057
Benzo(a)pyrene	ND		0.0330	1	10/13/2016 19:02	WG916057
Benzo(b)fluoranthene	ND		0.0330	1	10/13/2016 19:02	WG916057
Benzo(g,h,i)perylene	ND		0.0330	1	10/13/2016 19:02	WG916057
Benzo(k)fluoranthene	ND		0.0330	1	10/13/2016 19:02	WG916057
Chrysene	ND		0.0330	1	10/13/2016 19:02	WG916057
Dibenz(a,h)anthracene	ND		0.0330	1	10/13/2016 19:02	WG916057
Fluoranthene	ND		0.0330	1	10/13/2016 19:02	WG916057
Fluorene	ND		0.0330	1	10/13/2016 19:02	WG916057
Indeno(1,2,3-cd)pyrene	ND		0.0330	1	10/13/2016 19:02	WG916057
Naphthalene	ND		0.0330	1	10/13/2016 19:02	WG916057
Phenanthrene	ND		0.0330	1	10/13/2016 19:02	WG916057
Pyrene	ND		0.0330	1	10/13/2016 19:02	WG916057
(S) Nitrobenzene-d5	*84.9*		*28.3-148*		*10/13/2016 19:02*	WG916057
(S) 2-Fluorobiphenyl	*76.6*		*41.4-134*		*10/13/2016 19:02*	WG916057
(S) p-Terphenyl-d14	*66.8*		*35.8-140*		*10/13/2016 19:02*	WG916057

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	86.5		1	10/08/2016 07:53	WG915264

Mercury by Method 7471A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Mercury	ND		0.0200	1	10/08/2016 07:19	WG914857

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Arsenic	4.29		2.00	1	10/11/2016 12:28	WG915161
Barium	59.9		0.500	1	10/11/2016 12:28	WG915161
Cadmium	ND		0.500	1	10/11/2016 12:28	WG915161
Chromium	10.5		1.00	1	10/11/2016 12:28	WG915161
Lead	1.54		0.500	1	10/11/2016 12:28	WG915161
Selenium	ND		2.00	1	10/11/2016 12:28	WG915161
Silver	ND		1.00	1	10/11/2016 12:28	WG915161

Volatile Organic Compounds (GC) by Method WI(95) GRO

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
TPH (GC/FID) Low Fraction	ND		4.95	49.5	10/17/2016 04:14	WG916197
(S) a,a,a-Trifluorotoluene(PID)	*95.3*		*80.0-200*		*10/17/2016 04:14*	WG916197

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Acetone	ND		2.48	49.5	10/15/2016 14:38	WG916702
Acrylonitrile	ND		0.495	49.5	10/15/2016 14:38	WG916702
Allyl chloride	ND		0.248	49.5	10/15/2016 14:38	WG916702
Benzene	ND		0.0495	49.5	10/15/2016 14:38	WG916702
Bromobenzene	ND		0.0495	49.5	10/15/2016 14:38	WG916702
Bromodichloromethane	ND		0.0495	49.5	10/15/2016 14:38	WG916702
Bromoform	ND		0.0495	49.5	10/15/2016 14:38	WG916702
Bromomethane	ND		0.248	49.5	10/15/2016 14:38	WG916702
n-Butylbenzene	ND		0.0495	49.5	10/15/2016 14:38	WG916702
sec-Butylbenzene	ND		0.0495	49.5	10/15/2016 14:38	WG916702
tert-Butylbenzene	ND		0.0495	49.5	10/15/2016 14:38	WG916702
Carbon tetrachloride	ND		0.0495	49.5	10/15/2016 14:38	WG916702
Chlorobenzene	ND		0.0495	49.5	10/15/2016 14:38	WG916702
Chlorodibromomethane	ND		0.0495	49.5	10/15/2016 14:38	WG916702
Chloroethane	ND		0.248	49.5	10/15/2016 14:38	WG916702
2-Chloroethyl vinyl ether	ND		2.48	49.5	10/15/2016 14:38	WG916702
Chloroform	ND		0.248	49.5	10/15/2016 14:38	WG916702
Chloromethane	ND		0.124	49.5	10/15/2016 14:38	WG916702
2-Chlorotoluene	ND		0.0495	49.5	10/15/2016 14:38	WG916702
4-Chlorotoluene	ND		0.0495	49.5	10/15/2016 14:38	WG916702
1,2-Dibromo-3-Chloropropane	ND		0.248	49.5	10/15/2016 14:38	WG916702
1,2-Dibromoethane	ND		0.0495	49.5	10/15/2016 14:38	WG916702
Dibromomethane	ND		0.0495	49.5	10/15/2016 14:38	WG916702
1,2-Dichlorobenzene	ND		0.0495	49.5	10/15/2016 14:38	WG916702
1,3-Dichlorobenzene	ND		0.0495	49.5	10/15/2016 14:38	WG916702
1,4-Dichlorobenzene	ND		0.0495	49.5	10/15/2016 14:38	WG916702
Dichlorodifluoromethane	ND		0.248	49.5	10/15/2016 14:38	WG916702

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
1,1-Dichloroethane	ND		0.0495	49.5	10/15/2016 14:38	WG916702
1,2-Dichloroethane	ND		0.0495	49.5	10/15/2016 14:38	WG916702
1,1-Dichloroethene	ND		0.0495	49.5	10/15/2016 14:38	WG916702
cis-1,2-Dichloroethene	ND		0.0495	49.5	10/15/2016 14:38	WG916702
trans-1,2-Dichloroethene	ND		0.0495	49.5	10/15/2016 14:38	WG916702
1,2-Dichloropropane	ND		0.0495	49.5	10/15/2016 14:38	WG916702
1,1-Dichloropropene	ND		0.0495	49.5	10/15/2016 14:38	WG916702
1,3-Dichloropropane	ND		0.0495	49.5	10/15/2016 14:38	WG916702
cis-1,3-Dichloropropene	ND		0.0495	49.5	10/15/2016 14:38	WG916702
trans-1,3-Dichloropropene	ND		0.0495	49.5	10/15/2016 14:38	WG916702
2,2-Dichloropropane	ND		0.0495	49.5	10/15/2016 14:38	WG916702
Di-isopropyl ether	ND		0.0495	49.5	10/15/2016 14:38	WG916702
Ethylbenzene	ND		0.0495	49.5	10/15/2016 14:38	WG916702
Ethyl ether	ND		0.0495	49.5	10/15/2016 14:38	WG916702
Hexachloro-1,3-butadiene	ND	J3 J4	0.0495	49.5	10/15/2016 14:38	WG916702
2-Hexanone	ND		0.495	49.5	10/15/2016 14:38	WG916702
Isopropylbenzene	ND		0.0495	49.5	10/15/2016 14:38	WG916702
p-Isopropyltoluene	ND		0.0495	49.5	10/15/2016 14:38	WG916702
2-Butanone (MEK)	ND		0.495	49.5	10/15/2016 14:38	WG916702
Methylene Chloride	ND		0.248	49.5	10/15/2016 14:38	WG916702
4-Methyl-2-pentanone (MIBK)	ND		0.495	49.5	10/15/2016 14:38	WG916702
Methyl tert-butyl ether	ND		0.0495	49.5	10/15/2016 14:38	WG916702
Naphthalene	ND		0.248	49.5	10/15/2016 14:38	WG916702
n-Propylbenzene	ND		0.0495	49.5	10/15/2016 14:38	WG916702
Styrene	ND		0.0495	49.5	10/15/2016 14:38	WG916702
1,1,1,2-Tetrachloroethane	ND		0.0495	49.5	10/15/2016 14:38	WG916702
1,1,2,2-Tetrachloroethane	ND		0.0495	49.5	10/15/2016 14:38	WG916702
1,1,2-Trichlorotrifluoroethane	ND		0.0495	49.5	10/15/2016 14:38	WG916702
Tetrachloroethene	ND		0.0495	49.5	10/15/2016 14:38	WG916702
Tetrahydrofuran	ND		0.248	49.5	10/15/2016 14:38	WG916702
Toluene	ND		0.248	49.5	10/15/2016 14:38	WG916702
1,2,3-Trichlorobenzene	ND	J3	0.0495	49.5	10/15/2016 14:38	WG916702
1,2,4-Trichlorobenzene	ND		0.0495	49.5	10/15/2016 14:38	WG916702
1,1,1-Trichloroethane	ND		0.0495	49.5	10/15/2016 14:38	WG916702
1,1,2-Trichloroethane	ND		0.0495	49.5	10/15/2016 14:38	WG916702
Trichloroethene	ND		0.0495	49.5	10/15/2016 14:38	WG916702
Trichlorofluoromethane	ND		0.248	49.5	10/15/2016 14:38	WG916702
1,2,3-Trichloropropane	ND		0.124	49.5	10/15/2016 14:38	WG916702
1,2,4-Trimethylbenzene	ND		0.0495	49.5	10/15/2016 14:38	WG916702
1,2,3-Trimethylbenzene	ND		0.0495	49.5	10/15/2016 14:38	WG916702
1,3,5-Trimethylbenzene	ND		0.0495	49.5	10/15/2016 14:38	WG916702
Vinyl chloride	ND		0.0495	49.5	10/15/2016 14:38	WG916702
Xylenes, Total	ND		0.149	49.5	10/15/2016 14:38	WG916702
(S) Toluene-d8	*103*		*88.7-115*		*10/15/2016 14:38*	WG916702
(S) Dibromofluoromethane	*98.3*		*76.3-123*		*10/15/2016 14:38*	WG916702
(S) 4-Bromofluorobenzene	*111*		*69.7-129*		*10/15/2016 14:38*	WG916702

Semi-Volatile Organic Compounds (GC) by Method WI(95) DRO

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	ND		8.00	1	10/12/2016 12:12	WG915843
(S) Triacontane	*86.5*		*40.0-136*		*10/12/2016 12:12*	WG915843

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.0330	1	10/13/2016 19:23	WG916057
Acenaphthene	ND		0.0330	1	10/13/2016 19:23	WG916057
Acenaphthylene	ND		0.0330	1	10/13/2016 19:23	WG916057
Benzo(a)anthracene	ND		0.0330	1	10/13/2016 19:23	WG916057
Benzo(a)pyrene	ND		0.0330	1	10/13/2016 19:23	WG916057
Benzo(b)fluoranthene	ND		0.0330	1	10/13/2016 19:23	WG916057
Benzo(g,h,i)perylene	ND		0.0330	1	10/13/2016 19:23	WG916057
Benzo(k)fluoranthene	ND		0.0330	1	10/13/2016 19:23	WG916057
Chrysene	ND		0.0330	1	10/13/2016 19:23	WG916057
Dibenz(a,h)anthracene	ND		0.0330	1	10/13/2016 19:23	WG916057
Fluoranthene	ND		0.0330	1	10/13/2016 19:23	WG916057
Fluorene	ND		0.0330	1	10/13/2016 19:23	WG916057
Indeno(1,2,3-cd)pyrene	ND		0.0330	1	10/13/2016 19:23	WG916057
Naphthalene	ND		0.0330	1	10/13/2016 19:23	WG916057
Phenanthrene	ND		0.0330	1	10/13/2016 19:23	WG916057
Pyrene	ND		0.0330	1	10/13/2016 19:23	WG916057
(S) Nitrobenzene-d5	*85.8*		*28.3-148*		*10/13/2016 19:23*	WG916057
(S) 2-Fluorobiphenyl	*74.4*		*41.4-134*		*10/13/2016 19:23*	WG916057
(S) p-Terphenyl-d14	*66.7*		*35.8-140*		*10/13/2016 19:23*	WG916057

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	86.4		1	10/08/2016 07:53	WG915264

Mercury by Method 7471A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Mercury	ND		0.0200	1	10/08/2016 07:22	WG914857

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Arsenic	4.75		2.00	1	10/11/2016 12:31	WG915161
Barium	69.4		0.500	1	10/11/2016 12:31	WG915161
Cadmium	ND		0.500	1	10/11/2016 12:31	WG915161
Chromium	16.3		1.00	1	10/11/2016 12:31	WG915161
Lead	3.25		0.500	1	10/11/2016 12:31	WG915161
Selenium	ND		2.00	1	10/11/2016 12:31	WG915161
Silver	ND		1.00	1	10/11/2016 12:31	WG915161

Volatile Organic Compounds (GC) by Method WI(95) GRO

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
TPH (GC/FID) Low Fraction	ND		4.95	49.5	10/17/2016 04:36	WG916197
(S) a,a,a-Trifluorotoluene(PID)	*95.1*		*80.0-200*		*10/17/2016 04:36*	WG916197

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Acetone	ND		2.48	49.5	10/15/2016 14:55	WG916702
Acrylonitrile	ND		0.495	49.5	10/15/2016 14:55	WG916702
Allyl chloride	ND		0.248	49.5	10/15/2016 14:55	WG916702
Benzene	ND		0.0495	49.5	10/15/2016 14:55	WG916702
Bromobenzene	ND		0.0495	49.5	10/15/2016 14:55	WG916702
Bromodichloromethane	ND		0.0495	49.5	10/15/2016 14:55	WG916702
Bromoform	ND		0.0495	49.5	10/15/2016 14:55	WG916702
Bromomethane	ND		0.248	49.5	10/15/2016 14:55	WG916702
n-Butylbenzene	ND		0.0495	49.5	10/15/2016 14:55	WG916702
sec-Butylbenzene	ND		0.0495	49.5	10/15/2016 14:55	WG916702
tert-Butylbenzene	ND		0.0495	49.5	10/15/2016 14:55	WG916702
Carbon tetrachloride	ND		0.0495	49.5	10/15/2016 14:55	WG916702
Chlorobenzene	ND		0.0495	49.5	10/15/2016 14:55	WG916702
Chlorodibromomethane	ND		0.0495	49.5	10/15/2016 14:55	WG916702
Chloroethane	ND		0.248	49.5	10/15/2016 14:55	WG916702
2-Chloroethyl vinyl ether	ND		2.48	49.5	10/15/2016 14:55	WG916702
Chloroform	ND		0.248	49.5	10/15/2016 14:55	WG916702
Chloromethane	ND		0.124	49.5	10/15/2016 14:55	WG916702
2-Chlorotoluene	ND		0.0495	49.5	10/15/2016 14:55	WG916702
4-Chlorotoluene	ND		0.0495	49.5	10/15/2016 14:55	WG916702
1,2-Dibromo-3-Chloropropane	ND		0.248	49.5	10/15/2016 14:55	WG916702
1,2-Dibromoethane	ND		0.0495	49.5	10/15/2016 14:55	WG916702
Dibromomethane	ND		0.0495	49.5	10/15/2016 14:55	WG916702
1,2-Dichlorobenzene	ND		0.0495	49.5	10/15/2016 14:55	WG916702
1,3-Dichlorobenzene	ND		0.0495	49.5	10/15/2016 14:55	WG916702
1,4-Dichlorobenzene	ND		0.0495	49.5	10/15/2016 14:55	WG916702
Dichlorodifluoromethane	ND		0.248	49.5	10/15/2016 14:55	WG916702

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
1,1-Dichloroethane	ND		0.0495	49.5	10/15/2016 14:55	WG916702
1,2-Dichloroethane	ND		0.0495	49.5	10/15/2016 14:55	WG916702
1,1-Dichloroethene	ND		0.0495	49.5	10/15/2016 14:55	WG916702
cis-1,2-Dichloroethene	ND		0.0495	49.5	10/15/2016 14:55	WG916702
trans-1,2-Dichloroethene	ND		0.0495	49.5	10/15/2016 14:55	WG916702
1,2-Dichloropropane	ND		0.0495	49.5	10/15/2016 14:55	WG916702
1,1-Dichloropropene	ND		0.0495	49.5	10/15/2016 14:55	WG916702
1,3-Dichloropropane	ND		0.0495	49.5	10/15/2016 14:55	WG916702
cis-1,3-Dichloropropene	ND		0.0495	49.5	10/15/2016 14:55	WG916702
trans-1,3-Dichloropropene	ND		0.0495	49.5	10/15/2016 14:55	WG916702
2,2-Dichloropropane	ND		0.0495	49.5	10/15/2016 14:55	WG916702
Di-isopropyl ether	ND		0.0495	49.5	10/15/2016 14:55	WG916702
Ethylbenzene	ND		0.0495	49.5	10/15/2016 14:55	WG916702
Ethyl ether	ND		0.0495	49.5	10/15/2016 14:55	WG916702
Hexachloro-1,3-butadiene	ND	J3 J4	0.0495	49.5	10/15/2016 14:55	WG916702
2-Hexanone	ND		0.495	49.5	10/15/2016 14:55	WG916702
Isopropylbenzene	ND		0.0495	49.5	10/15/2016 14:55	WG916702
p-Isopropyltoluene	ND		0.0495	49.5	10/15/2016 14:55	WG916702
2-Butanone (MEK)	ND		0.495	49.5	10/15/2016 14:55	WG916702
Methylene Chloride	ND		0.248	49.5	10/15/2016 14:55	WG916702
4-Methyl-2-pentanone (MIBK)	ND		0.495	49.5	10/15/2016 14:55	WG916702
Methyl tert-butyl ether	ND		0.0495	49.5	10/15/2016 14:55	WG916702
Naphthalene	ND		0.248	49.5	10/15/2016 14:55	WG916702
n-Propylbenzene	ND		0.0495	49.5	10/15/2016 14:55	WG916702
Styrene	ND		0.0495	49.5	10/15/2016 14:55	WG916702
1,1,1,2-Tetrachloroethane	ND		0.0495	49.5	10/15/2016 14:55	WG916702
1,1,2,2-Tetrachloroethane	ND		0.0495	49.5	10/15/2016 14:55	WG916702
1,1,2-Trichlorotrifluoroethane	ND		0.0495	49.5	10/15/2016 14:55	WG916702
Tetrachloroethene	ND		0.0495	49.5	10/15/2016 14:55	WG916702
Tetrahydrofuran	ND		0.248	49.5	10/15/2016 14:55	WG916702
Toluene	ND		0.248	49.5	10/15/2016 14:55	WG916702
1,2,3-Trichlorobenzene	ND	J3	0.0495	49.5	10/15/2016 14:55	WG916702
1,2,4-Trichlorobenzene	ND		0.0495	49.5	10/15/2016 14:55	WG916702
1,1,1-Trichloroethane	ND		0.0495	49.5	10/15/2016 14:55	WG916702
1,1,2-Trichloroethane	ND		0.0495	49.5	10/15/2016 14:55	WG916702
Trichloroethene	ND		0.0495	49.5	10/15/2016 14:55	WG916702
Trichlorofluoromethane	ND		0.248	49.5	10/15/2016 14:55	WG916702
1,2,3-Trichloropropane	ND		0.124	49.5	10/15/2016 14:55	WG916702
1,2,4-Trimethylbenzene	ND		0.0495	49.5	10/15/2016 14:55	WG916702
1,2,3-Trimethylbenzene	ND		0.0495	49.5	10/15/2016 14:55	WG916702
1,3,5-Trimethylbenzene	ND		0.0495	49.5	10/15/2016 14:55	WG916702
Vinyl chloride	ND		0.0495	49.5	10/15/2016 14:55	WG916702
Xylenes, Total	ND		0.149	49.5	10/15/2016 14:55	WG916702
(S) Toluene-d8	*102*		*88.7-115*		*10/15/2016 14:55*	WG916702
(S) Dibromofluoromethane	*101*		*76.3-123*		*10/15/2016 14:55*	WG916702
(S) 4-Bromofluorobenzene	*112*		*69.7-129*		*10/15/2016 14:55*	WG916702

Semi-Volatile Organic Compounds (GC) by Method WI(95) DRO

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	ND		8.00	1	10/12/2016 12:24	WG915843
(S) Triacontane	*79.4*		*40.0-136*		*10/12/2016 12:24*	WG915843

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.0330	1	10/13/2016 19:45	WG916057
Acenaphthene	ND		0.0330	1	10/13/2016 19:45	WG916057
Acenaphthylene	ND		0.0330	1	10/13/2016 19:45	WG916057
Benzo(a)anthracene	ND		0.0330	1	10/13/2016 19:45	WG916057
Benzo(a)pyrene	ND		0.0330	1	10/13/2016 19:45	WG916057
Benzo(b)fluoranthene	ND		0.0330	1	10/13/2016 19:45	WG916057
Benzo(g,h,i)perylene	ND		0.0330	1	10/13/2016 19:45	WG916057
Benzo(k)fluoranthene	ND		0.0330	1	10/13/2016 19:45	WG916057
Chrysene	ND		0.0330	1	10/13/2016 19:45	WG916057
Dibenz(a,h)anthracene	ND		0.0330	1	10/13/2016 19:45	WG916057
Fluoranthene	ND		0.0330	1	10/13/2016 19:45	WG916057
Fluorene	ND		0.0330	1	10/13/2016 19:45	WG916057
Indeno(1,2,3-cd)pyrene	ND		0.0330	1	10/13/2016 19:45	WG916057
Naphthalene	ND		0.0330	1	10/13/2016 19:45	WG916057
Phenanthrene	ND		0.0330	1	10/13/2016 19:45	WG916057
Pyrene	ND		0.0330	1	10/13/2016 19:45	WG916057
(S) Nitrobenzene-d5	*92.9*		*28.3-148*		*10/13/2016 19:45*	WG916057
(S) 2-Fluorobiphenyl	*75.8*		*41.4-134*		*10/13/2016 19:45*	WG916057
(S) p-Terphenyl-d14	*71.9*		*35.8-140*		*10/13/2016 19:45*	WG916057

Method Blank (MB)

(MB) R3169282-1 10/08/16 07:53

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.000600			

L864389-01 Original Sample (OS) • Duplicate (DUP)

(OS) L864389-01 10/08/16 07:53 • (DUP) R3169282-3 10/08/16 07:53

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	85.7	85.5	1	0.204		5

Laboratory Control Sample (LCS)

(LCS) R3169282-2 10/08/16 07:53

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.0	99.9	85.0-115	

Method Blank (MB)

(MB) R3169096-1 10/08/16 06:03

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Mercury	U		0.0028	0.0200

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3169096-2 10/08/16 06:05 • (LCSD) R3169096-3 10/08/16 06:08

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Mercury	0.300	0.274	0.278	91	93	80-120			1	20

L864354-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L864354-04 10/08/16 06:11 • (MS) R3169096-4 10/08/16 06:14 • (MSD) R3169096-5 10/08/16 06:23

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury	0.347	U	0.307	0.317	89	91	1	75-125			3	20

Method Blank (MB)

(MB) R3169682-1 10/11/16 11:47

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.65	2.00
Barium	0.173	J	0.17	0.500
Cadmium	U		0.07	0.500
Chromium	U		0.14	1.00
Lead	U		0.19	0.500
Selenium	U		0.74	2.00
Silver	U		0.28	1.00

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3169682-2 10/11/16 11:49 • (LCSD) R3169682-3 10/11/16 11:52

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Arsenic	100	99.1	103	99	103	80-120			4	20
Barium	100	102	106	102	106	80-120			4	20
Cadmium	100	98.3	102	98	102	80-120			4	20
Chromium	100	98.3	103	98	103	80-120			4	20
Lead	100	99.0	103	99	103	80-120			4	20
Selenium	100	100	104	100	104	80-120			3	20
Silver	100	95.9	100	96	100	80-120			4	20

L864389-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L864389-01 10/11/16 11:54 • (MS) R3169682-6 10/11/16 12:02 • (MSD) R3169682-7 10/11/16 12:05

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	4.54	101	103	97	98	1	75-125			1	20
Barium	100	67.8	163	201	95	133	1	75-125		J3 J5	21	20
Cadmium	100	ND	96.7	95.6	96	95	1	75-125			1	20
Chromium	100	17.1	113	112	96	94	1	75-125			1	20
Lead	100	3.09	105	108	102	105	1	75-125			2	20
Selenium	100	ND	97.9	96.8	98	97	1	75-125			1	20
Silver	100	ND	96.2	94.8	96	95	1	75-125			2	20

Method Blank (MB)

(MB) R3171415-1 10/16/16 20:43

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	0.0120	J	0.0110	0.100
(S) a,a,a-Trifluorotoluene(PID)	*93.9*			*80.0-200*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3171415-3 10/16/16 21:14 • (LCSD) R3171415-9 10/17/16 06:04

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	0.500	0.465	0.510	92.9	102	80.0-120			9.35	20
(S) a,a,a-Trifluorotoluene(PID)				*90.7*	*90.6*	*80.0-200*				

L864328-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L864328-01 10/16/16 22:43 • (MS) R3171415-5 10/17/16 05:20 • (MSD) R3171415-7 10/17/16 05:42

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	0.522	ND	50.1	34.3	154	104	60.5	80.0-120	J5	J3	37.4	20
(S) a,a,a-Trifluorotoluene(PID)					*96.1*	*91.8*		*80.0-200*				

Method Blank (MB)

(MB) R3171384-3 10/15/16 08:50

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acetone	U		0.0100	0.0500
Acrylonitrile	U		0.00179	0.0100
Benzene	U		0.000270	0.00100
Bromobenzene	U		0.000284	0.00100
Bromodichloromethane	U		0.000254	0.00100
Bromoform	U		0.000424	0.00100
Bromomethane	U		0.00134	0.00500
n-Butylbenzene	U		0.000258	0.00100
sec-Butylbenzene	U		0.000201	0.00100
tert-Butylbenzene	U		0.000206	0.00100
Carbon tetrachloride	U		0.000328	0.00100
Chlorobenzene	U		0.000212	0.00100
Chlorodibromomethane	U		0.000373	0.00100
Chloroethane	U		0.000946	0.00500
2-Chloroethyl vinyl ether	U		0.00234	0.0500
Chloroform	U		0.000229	0.00500
Chloromethane	U		0.000375	0.00250
2-Chlorotoluene	U		0.000301	0.00100
4-Chlorotoluene	U		0.000240	0.00100
1,2-Dibromo-3-Chloropropane	U		0.00105	0.00500
1,2-Dibromoethane	U		0.000343	0.00100
Dibromomethane	U		0.000382	0.00100
1,2-Dichlorobenzene	U		0.000305	0.00100
1,3-Dichlorobenzene	U		0.000239	0.00100
1,4-Dichlorobenzene	U		0.000226	0.00100
Dichlorodifluoromethane	U		0.000713	0.00500
1,1-Dichloroethane	U		0.000199	0.00100
1,2-Dichloroethane	U		0.000265	0.00100
1,1-Dichloroethene	U		0.000303	0.00100
cis-1,2-Dichloroethene	U		0.000235	0.00100
trans-1,2-Dichloroethene	U		0.000264	0.00100
1,2-Dichloropropane	U		0.000358	0.00100
1,1-Dichloropropene	U		0.000317	0.00100
1,3-Dichloropropane	U		0.000207	0.00100
cis-1,3-Dichloropropene	U		0.000262	0.00100
trans-1,3-Dichloropropene	U		0.000267	0.00100
2,2-Dichloropropane	U		0.000279	0.00100
Di-isopropyl ether	U		0.000248	0.00100
Ethylbenzene	U		0.000297	0.00100
Ethyl ether	U		0.000389	0.00100

Method Blank (MB)

(MB) R3171384-3 10/15/16 08:50

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Hexachloro-1,3-butadiene	U		0.000342	0.00100
2-Hexanone	U		0.00137	0.0100
Isopropylbenzene	U		0.000243	0.00100
p-Isopropyltoluene	U		0.000204	0.00100
2-Butanone (MEK)	U		0.00468	0.0100
Methylene Chloride	U		0.00100	0.00500
4-Methyl-2-pentanone (MIBK)	U		0.00188	0.0100
Methyl tert-butyl ether	U		0.000212	0.00100
Naphthalene	U		0.00100	0.00500
n-Propylbenzene	U		0.000206	0.00100
Styrene	U		0.000234	0.00100
1,1,1,2-Tetrachloroethane	U		0.000264	0.00100
1,1,2,2-Tetrachloroethane	U		0.000365	0.00100
Tetrachloroethene	U		0.000276	0.00100
Tetrahydrofuran	U		0.00113	0.00500
Toluene	U		0.000434	0.00500
1,1,2-Trichlorotrifluoroethane	U		0.000365	0.00100
1,2,3-Trichlorobenzene	U		0.000306	0.00100
1,2,4-Trichlorobenzene	U		0.000388	0.00100
1,1,1-Trichloroethane	U		0.000286	0.00100
1,1,2-Trichloroethane	U		0.000277	0.00100
Trichloroethene	U		0.000279	0.00100
Trichlorofluoromethane	U		0.000382	0.00500
1,2,3-Trichloropropane	U		0.000741	0.00250
1,2,3-Trimethylbenzene	U		0.000287	0.00100
1,2,4-Trimethylbenzene	U		0.000211	0.00100
1,3,5-Trimethylbenzene	U		0.000266	0.00100
Vinyl chloride	U		0.000291	0.00100
Xylenes, Total	U		0.000698	0.00300
Allyl Chloride	U		0.00150	0.00500
(S) Toluene-d8	*105*			*88.7-115*
(S) Dibromofluoromethane	*108*			*76.3-123*
(S) 4-Bromofluorobenzene	*112*			*69.7-129*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3171384-1 10/15/16 07:58 • (LCSD) R3171384-2 10/15/16 08:15

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	0.125	0.106	0.0964	84.7	77.1	25.3-178			9.30	22.9
Acrylonitrile	0.125	0.120	0.110	95.8	87.7	57.8-143			8.75	20
Benzene	0.0250	0.0223	0.0208	89.1	83.0	72.6-120			7.13	20
Bromobenzene	0.0250	0.0240	0.0220	95.8	88.2	80.3-115			8.34	20
Bromodichloromethane	0.0250	0.0226	0.0205	90.4	81.9	75.3-119			9.87	20
Bromoform	0.0250	0.0242	0.0222	96.7	88.9	69.1-135			8.36	20
Bromomethane	0.0250	0.0222	0.0197	88.7	78.7	23.0-191			11.9	20
n-Butylbenzene	0.0250	0.0204	0.0198	81.6	79.3	74.2-134			2.89	20
sec-Butylbenzene	0.0250	0.0229	0.0219	91.8	87.5	77.8-129			4.75	20
tert-Butylbenzene	0.0250	0.0238	0.0225	95.1	89.9	77.2-129			5.61	20
Carbon tetrachloride	0.0250	0.0210	0.0196	84.1	78.5	69.4-129			6.98	20
Chlorobenzene	0.0250	0.0246	0.0226	98.4	90.3	78.9-122			8.55	20
Chlorodibromomethane	0.0250	0.0257	0.0230	103	91.9	76.4-126			11.0	20
Chloroethane	0.0250	0.0186	0.0167	74.5	66.9	47.2-147			10.7	20
2-Chloroethyl vinyl ether	0.125	0.110	0.102	87.9	81.8	16.7-162			7.18	23.7
Chloroform	0.0250	0.0236	0.0214	94.5	85.6	73.3-122			9.95	20
Chloromethane	0.0250	0.0195	0.0175	78.0	69.9	53.1-135			10.9	20
2-Chlorotoluene	0.0250	0.0247	0.0226	98.9	90.4	74.6-127			9.03	20
4-Chlorotoluene	0.0250	0.0240	0.0222	96.0	89.0	79.5-123			7.59	20
1,2-Dibromo-3-Chloropropane	0.0250	0.0224	0.0210	89.7	84.0	64.9-131			6.49	20
1,2-Dibromoethane	0.0250	0.0252	0.0231	101	92.3	78.7-123			8.87	20
Dibromomethane	0.0250	0.0239	0.0219	95.7	87.4	78.5-117			9.07	20
1,2-Dichlorobenzene	0.0250	0.0248	0.0223	99.1	89.2	83.6-119			10.4	20
1,3-Dichlorobenzene	0.0250	0.0252	0.0232	101	92.7	75.9-129			8.33	20
1,4-Dichlorobenzene	0.0250	0.0234	0.0214	93.7	85.6	81.0-115			9.04	20
Dichlorodifluoromethane	0.0250	0.0219	0.0207	87.6	82.7	50.9-139			5.76	20
1,1-Dichloroethane	0.0250	0.0224	0.0208	89.8	83.3	71.7-125			7.46	20
1,2-Dichloroethane	0.0250	0.0253	0.0236	101	94.4	67.2-121			6.80	20
1,1-Dichloroethene	0.0250	0.0192	0.0182	76.7	72.9	60.6-133			5.13	20
cis-1,2-Dichloroethene	0.0250	0.0234	0.0215	93.8	86.1	76.1-121			8.54	20
trans-1,2-Dichloroethene	0.0250	0.0234	0.0219	93.8	87.7	70.7-124			6.64	20
1,2-Dichloropropane	0.0250	0.0222	0.0200	88.8	79.8	76.9-123			10.7	20
1,1-Dichloropropene	0.0250	0.0225	0.0208	89.9	83.0	71.2-126			7.92	20
1,3-Dichloropropane	0.0250	0.0242	0.0224	96.6	89.8	80.3-114			7.35	20
cis-1,3-Dichloropropene	0.0250	0.0226	0.0210	90.4	84.2	77.3-123			7.08	20
trans-1,3-Dichloropropene	0.0250	0.0218	0.0208	87.2	83.2	73.0-127			4.63	20
2,2-Dichloropropane	0.0250	0.0230	0.0215	91.9	85.9	61.9-132			6.71	20
Di-isopropyl ether	0.0250	0.0194	0.0178	77.7	71.4	67.2-131			8.47	20
Ethylbenzene	0.0250	0.0240	0.0222	95.8	88.7	78.6-124			7.76	20
Ethyl ether	0.0250	0.0181	0.0164	72.4	65.5	57.5-136			10.0	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3171384-1 10/15/16 07:58 • (LCSD) R3171384-2 10/15/16 08:15

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Hexachloro-1,3-butadiene	0.0250	0.0170	0.0214	68.1	85.4	69.2-136	J4	J3	22.5	20
2-Hexanone	0.125	0.0992	0.0958	79.3	76.6	62.7-150			3.44	20
Isopropylbenzene	0.0250	0.0219	0.0204	87.8	81.5	79.4-126			7.46	20
p-Isopropyltoluene	0.0250	0.0235	0.0227	94.1	90.9	75.4-132			3.48	20
2-Butanone (MEK)	0.125	0.0866	0.0801	69.3	64.1	44.5-154			7.72	21.3
Methylene Chloride	0.0250	0.0235	0.0218	94.0	87.3	68.2-119			7.44	20
4-Methyl-2-pentanone (MIBK)	0.125	0.102	0.0924	81.4	73.9	61.1-138			9.65	20
Methyl tert-butyl ether	0.0250	0.0230	0.0211	91.9	84.5	70.2-122			8.46	20
Naphthalene	0.0250	0.0196	0.0218	78.4	87.2	69.9-132			10.7	20
n-Propylbenzene	0.0250	0.0229	0.0216	91.5	86.5	80.2-124			5.61	20
Styrene	0.0250	0.0251	0.0232	100	92.9	79.4-124			7.72	20
1,1,1,2-Tetrachloroethane	0.0250	0.0240	0.0216	96.1	86.5	76.7-127			10.4	20
1,1,2,2-Tetrachloroethane	0.0250	0.0239	0.0221	95.5	88.5	78.8-124			7.54	20
Tetrachloroethene	0.0250	0.0244	0.0230	97.5	92.1	71.1-133			5.70	20
Tetrahydrofuran	0.0250	0.0222	0.0204	88.8	81.6	63.4-122			8.46	20
Toluene	0.0250	0.0215	0.0198	85.8	79.3	76.7-116			7.89	20
1,1,2-Trichlorotrifluoroethane	0.0250	0.0197	0.0178	78.9	71.2	62.6-138			10.3	20
1,2,3-Trichlorobenzene	0.0250	0.0183	0.0228	73.4	91.2	72.5-137		J3	21.7	20
1,2,4-Trichlorobenzene	0.0250	0.0193	0.0226	77.1	90.5	74.0-137			15.9	20
1,1,1-Trichloroethane	0.0250	0.0229	0.0210	91.8	84.1	69.9-127			8.74	20
1,1,2-Trichloroethane	0.0250	0.0246	0.0225	98.4	90.0	81.9-119			8.94	20
Trichloroethene	0.0250	0.0243	0.0228	97.3	91.3	77.2-122			6.38	20
Trichlorofluoromethane	0.0250	0.0221	0.0207	88.4	82.8	51.5-151			6.53	20
1,2,3-Trichloropropane	0.0250	0.0246	0.0224	98.3	89.8	74.0-124			9.01	20
1,2,3-Trimethylbenzene	0.0250	0.0225	0.0205	89.9	82.1	79.4-118			9.16	20
1,2,4-Trimethylbenzene	0.0250	0.0239	0.0221	95.7	88.5	77.1-124			7.75	20
1,3,5-Trimethylbenzene	0.0250	0.0242	0.0227	96.8	90.9	79.0-125			6.27	20
Vinyl chloride	0.0250	0.0196	0.0177	78.3	70.9	58.4-134			9.86	20
Xylenes, Total	0.0750	0.0711	0.0668	94.8	89.0	78.1-123			6.31	20
(S) Toluene-d8				*107*	*106*	*88.7-115*				
(S) Dibromofluoromethane				*108*	*108*	*76.3-123*				
(S) 4-Bromofluorobenzene				*106*	*108*	*69.7-129*				

L864389-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L864389-01 10/15/16 12:53 • (MS) R3171384-4 10/15/16 12:01 • (MSD) R3171384-5 10/15/16 12:19

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acetone	0.125	ND	4.33	3.91	69.3	62.5	50	10.0-130			10.2	31.5
Acrylonitrile	0.125	ND	4.71	4.75	75.3	76.0	50	39.3-152			0.920	27.2
Benzene	0.0250	ND	0.944	0.940	75.5	75.2	50	47.8-131			0.440	22.8
Bromobenzene	0.0250	ND	1.07	1.04	85.6	82.8	50	40.0-130			3.34	27.4
Bromodichloromethane	0.0250	ND	0.912	0.891	73.0	71.3	50	50.6-128			2.30	22.8
Bromoform	0.0250	ND	0.935	0.899	74.8	71.9	50	43.3-139			3.95	25.9
Bromomethane	0.0250	ND	0.566	0.601	45.3	48.1	50	5.00-189			5.90	26.7
n-Butylbenzene	0.0250	ND	1.02	0.909	81.5	72.7	50	23.6-146			11.4	39.2
sec-Butylbenzene	0.0250	ND	1.06	0.999	84.4	79.9	50	31.0-142			5.54	34.7
tert-Butylbenzene	0.0250	ND	1.08	1.03	86.5	82.7	50	36.9-142			4.44	31.7
Carbon tetrachloride	0.0250	ND	0.834	0.847	66.7	67.8	50	46.0-140			1.57	27.2
Chlorobenzene	0.0250	ND	1.13	1.12	90.1	89.6	50	44.1-134			0.610	25.7
Chlorodibromomethane	0.0250	ND	1.04	1.01	83.2	80.5	50	49.7-134			3.23	24
Chloroethane	0.0250	ND	0.445	0.471	35.6	37.7	50	5.00-164			5.65	28.4
2-Chloroethyl vinyl ether	0.125	ND	4.89	4.77	78.2	76.3	50	5.00-159			2.50	40
Chloroform	0.0250	ND	0.971	0.963	77.7	77.0	50	51.2-133			0.820	22.8
Chloromethane	0.0250	ND	0.785	0.764	62.8	61.1	50	31.4-141			2.79	24.6
2-Chlorotoluene	0.0250	ND	1.10	1.08	88.3	86.5	50	36.1-137			2.05	28.9
4-Chlorotoluene	0.0250	ND	1.14	1.09	90.9	87.4	50	35.4-137			3.94	29.8
1,2-Dibromo-3-Chloropropane	0.0250	ND	0.840	0.852	67.2	68.2	50	40.4-138			1.41	30.8
1,2-Dibromoethane	0.0250	ND	1.09	1.06	87.3	84.9	50	50.2-133			2.70	23.6
Dibromomethane	0.0250	ND	0.969	0.950	77.5	76.0	50	52.4-128			1.97	23
1,2-Dichlorobenzene	0.0250	ND	1.09	1.05	87.3	84.2	50	34.6-139			3.70	29.9
1,3-Dichlorobenzene	0.0250	ND	1.13	1.12	90.4	89.5	50	28.4-142			1.07	31.2
1,4-Dichlorobenzene	0.0250	ND	1.09	1.04	87.1	82.8	50	35.0-133			5.08	31.1
Dichlorodifluoromethane	0.0250	ND	0.920	0.927	73.6	74.2	50	31.2-144			0.720	30.2
1,1-Dichloroethane	0.0250	ND	0.935	0.921	74.8	73.6	50	49.1-136			1.59	22.9
1,2-Dichloroethane	0.0250	ND	1.08	1.07	86.2	85.8	50	47.1-129			0.500	22.7
1,1-Dichloroethene	0.0250	ND	0.684	0.658	54.7	52.6	50	36.1-142			3.86	25.6
cis-1,2-Dichloroethene	0.0250	ND	0.962	0.984	76.9	78.7	50	50.6-133			2.25	23
trans-1,2-Dichloroethene	0.0250	ND	0.961	0.948	76.9	75.8	50	43.8-135			1.32	24.8
1,2-Dichloropropane	0.0250	ND	0.951	0.935	76.1	74.8	50	50.3-134			1.72	22.7
1,1-Dichloropropene	0.0250	ND	0.969	0.957	77.5	76.6	50	43.0-137			1.27	26.4
1,3-Dichloropropane	0.0250	ND	1.12	1.07	89.7	85.2	50	51.4-127			5.12	23.1
cis-1,3-Dichloropropene	0.0250	ND	0.982	0.967	78.6	77.4	50	48.4-134			1.56	23.6
trans-1,3-Dichloropropene	0.0250	ND	0.944	0.943	75.6	75.5	50	46.6-135			0.100	25.3
2,2-Dichloropropane	0.0250	ND	0.874	0.909	69.9	72.7	50	45.2-141			3.90	26.6
Di-isopropyl ether	0.0250	ND	0.819	0.805	65.5	64.4	50	46.7-140			1.74	23.5
Ethylbenzene	0.0250	ND	1.08	1.07	86.2	85.9	50	44.8-135			0.360	26.9
Ethyl ether	0.0250	ND	0.605	0.588	48.4	47.1	50	34.7-135			2.82	26.5

L864389-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L864389-01 10/15/16 12:53 • (MS) R3171384-4 10/15/16 12:01 • (MSD) R3171384-5 10/15/16 12:19

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Hexachloro-1,3-butadiene	0.0250	ND	0.852	0.706	68.2	56.5	50	10.0-149			18.8	40
2-Hexanone	0.125	ND	5.03	4.98	80.4	79.7	50	44.3-157			0.970	23.7
Isopropylbenzene	0.0250	ND	1.01	0.985	81.1	78.8	50	41.9-139			2.84	29.3
p-Isopropyltoluene	0.0250	ND	1.09	1.02	87.2	81.4	50	27.3-146			6.87	35.1
2-Butanone (MEK)	0.125	ND	4.65	4.62	74.4	73.9	50	23.9-170			0.710	28.3
Methylene Chloride	0.0250	ND	0.928	0.932	74.3	74.6	50	46.7-125			0.430	22.2
4-Methyl-2-pentanone (MIBK)	0.125	ND	4.16	4.27	66.5	68.3	50	42.4-146			2.54	26.7
Methyl tert-butyl ether	0.0250	ND	0.917	0.923	73.4	73.8	50	50.4-131			0.620	24.8
Naphthalene	0.0250	ND	0.823	0.846	65.8	67.7	50	18.4-145			2.78	34
n-Propylbenzene	0.0250	ND	1.07	1.06	85.5	84.5	50	35.2-139			1.17	31.9
Styrene	0.0250	ND	1.15	1.12	92.3	89.3	50	39.7-137			3.30	28.2
1,1,1,2-Tetrachloroethane	0.0250	ND	1.04	1.01	83.1	80.6	50	48.8-136			3.13	25.5
1,1,2,2-Tetrachloroethane	0.0250	ND	1.02	1.00	81.9	80.0	50	45.7-140			2.28	26.4
Tetrachloroethene	0.0250	ND	1.16	1.11	93.2	88.8	50	37.7-140			4.78	29.2
Tetrahydrofuran	0.0250	ND	0.937	0.912	75.0	72.9	50	61.1-121			2.77	20.2
Toluene	0.0250	ND	0.947	0.937	75.8	74.9	50	47.8-127			1.09	24.3
1,1,2-Trichlorotrifluoroethane	0.0250	ND	0.779	0.690	62.3	55.2	50	35.7-146			12.1	28.8
1,2,3-Trichlorobenzene	0.0250	ND	0.869	0.814	69.6	65.1	50	10.0-150			6.62	38.5
1,2,4-Trichlorobenzene	0.0250	ND	0.934	0.841	74.7	67.2	50	10.0-153			10.6	39.3
1,1,1-Trichloroethane	0.0250	ND	0.945	0.957	75.6	76.6	50	49.0-138			1.24	25.3
1,1,2-Trichloroethane	0.0250	ND	1.15	1.05	91.6	83.8	50	52.3-132			8.96	23.4
Trichloroethene	0.0250	ND	1.08	1.04	86.2	83.3	50	48.0-132			3.46	24.8
Trichlorofluoromethane	0.0250	ND	0.718	0.756	57.5	60.5	50	12.8-169			5.05	29.7
1,2,3-Trichloropropane	0.0250	ND	1.07	1.04	85.4	83.4	50	44.4-138			2.29	26.3
1,2,3-Trimethylbenzene	0.0250	ND	0.993	0.937	79.4	74.9	50	41.0-133			5.84	27.6
1,2,4-Trimethylbenzene	0.0250	ND	1.06	1.03	85.1	82.1	50	32.9-139			3.67	30.6
1,3,5-Trimethylbenzene	0.0250	ND	1.11	1.06	88.5	84.7	50	37.1-138			4.37	30.6
Vinyl chloride	0.0250	ND	0.786	0.770	62.9	61.6	50	32.0-146			2.10	26.3
Xylenes, Total	0.0750	ND	3.33	3.23	88.9	86.1	50	42.7-135			3.15	26.6
(S) Toluene-d8					*105*	*106*		*88.7-115*				
(S) Dibromofluoromethane					*101*	*103*		*76.3-123*				
(S) 4-Bromofluorobenzene					*108*	*108*		*69.7-129*				

Method Blank (MB)

(MB) R3170066-1 10/12/16 09:28

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) High Fraction	U		1.58	8.00
(S) Triacontane	*86.7*			*40.0-136*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3170066-2 10/12/16 09:39 • (LCSD) R3170066-3 10/12/16 14:09

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) High Fraction	40.0	37.0	33.8	92.6	84.4	70.0-120			9.22	20
(S) Triacontane				*91.8*	*86.0*	*40.0-136*				

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Method Blank (MB)

(MB) R3170603-3 10/13/16 17:13

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Anthracene	U		0.00728	0.0330
Acenaphthene	U		0.00737	0.0330
Acenaphthylene	U		0.00751	0.0330
Benzo(a)anthracene	U		0.00428	0.0330
Benzo(a)pyrene	U		0.00502	0.0330
Benzo(b)fluoranthene	U		0.00695	0.0330
Benzo(g,h,i)perylene	U		0.00721	0.0330
Benzo(k)fluoranthene	U		0.00506	0.0330
Chrysene	U		0.00785	0.0330
Dibenz(a,h)anthracene	U		0.00591	0.0330
Fluoranthene	U		0.00708	0.0330
Fluorene	U		0.00719	0.0330
Indeno(1,2,3-cd)pyrene	U		0.00561	0.0330
Naphthalene	U		0.00513	0.0330
Phenanthrene	U		0.00710	0.0330
Pyrene	U		0.00776	0.0330
(S) Nitrobenzene-d5	*89.4*			*28.3-148*
(S) 2-Fluorobiphenyl	*88.6*			*41.4-134*
(S) p-Terphenyl-d14	*96.5*			*35.8-140*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3170603-1 10/13/16 16:30 • (LCSD) R3170603-2 10/13/16 16:51

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acenaphthene	0.400	0.347	0.355	86.7	88.9	50.7-125			2.49	20
Acenaphthylene	0.400	0.366	0.367	91.4	91.8	51.3-126			0.400	20
Anthracene	0.400	0.351	0.351	87.7	87.8	50.5-130			0.0800	20
Benzo(a)anthracene	0.400	0.405	0.399	101	99.6	54.1-127			1.56	20
Benzo(b)fluoranthene	0.400	0.401	0.383	100	95.8	56.1-125			4.55	20
Benzo(k)fluoranthene	0.400	0.376	0.402	94.0	100	50.9-129			6.63	20
Benzo(g,h,i)perylene	0.400	0.402	0.394	101	98.4	53.3-132			2.14	20
Benzo(a)pyrene	0.400	0.411	0.409	103	102	54.8-127			0.510	20
Chrysene	0.400	0.403	0.401	101	100	55.3-126			0.370	20
Dibenz(a,h)anthracene	0.400	0.394	0.392	98.5	97.9	52.3-133			0.620	20
Fluoranthene	0.400	0.392	0.395	97.9	98.7	50.1-135			0.780	20
Fluorene	0.400	0.342	0.351	85.5	87.7	52.3-125			2.49	20
Naphthalene	0.400	0.358	0.362	89.6	90.5	47.8-121			0.980	20
Phenanthrene	0.400	0.359	0.355	89.6	88.8	56.0-122			0.960	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3170603-1 10/13/16 16:30 • (LCSD) R3170603-2 10/13/16 16:51

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Pyrene	0.400	0.449	0.443	112	111	55.6-129			1.49	20
Indeno(1,2,3-cd)pyrene	0.400	0.401	0.399	100	99.6	50.1-135			0.570	20
(S) Nitrobenzene-d5				*90.0*	*90.7*	*28.3-148*				
(S) 2-Fluorobiphenyl				*87.0*	*88.5*	*41.4-134*				
(S) p-Terphenyl-d14				*95.2*	*93.0*	*35.8-140*				

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE.**
***** Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Conneticut	PH-0197	North Carolina [1]	DW21704
Florida	E87487	North Carolina [2]	41
Georgia	NELAP	North Dakota	R-140
Georgia [1]	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky [1]	90010	South Dakota	n/a
Kentucky [2]	16	Tennessee [1 4]	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

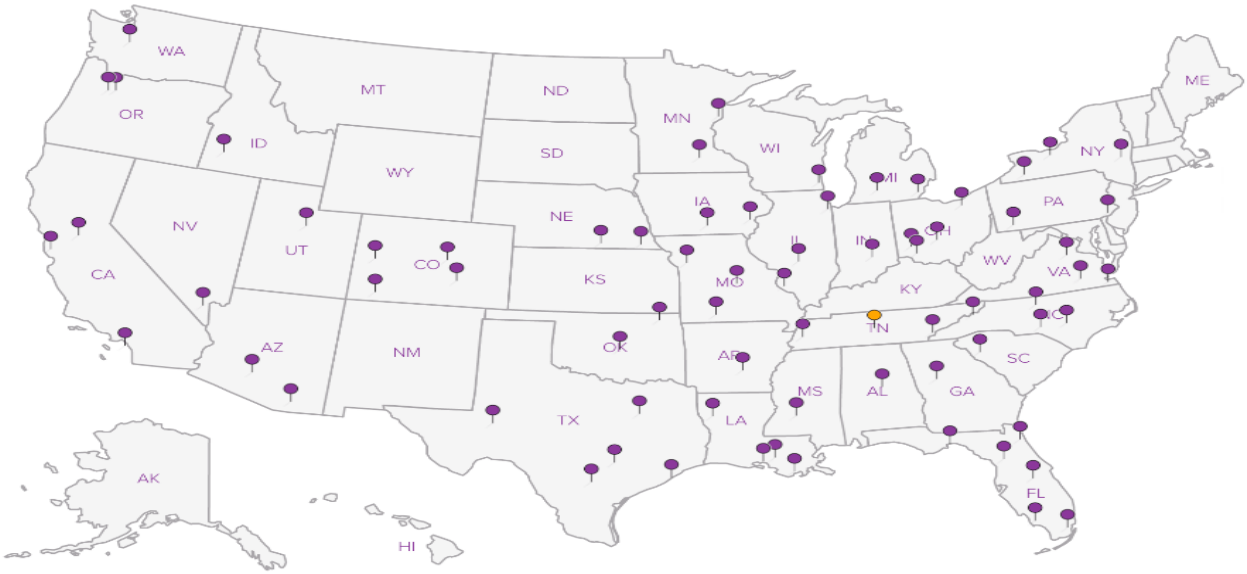
Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

[1.] Drinking Water [2.] Underground Storage Tanks [3.] Aquatic Toxicity [4.] Chemical/Microbiological [5.] Mold [n/a] Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



Pinnacle Engineering - Maple G. MN.

11541 95th Ave. N
Minneapolis, MN 55369

Billing Information:
Accounts Payable
11541 95th Ave. N
Maple Grove, MN 55369

Report to: **Matt Bartus**

Email To: **mbartus@pineng.com**

Project Description: **Penn Avenue North Phase II**

City/State Collected:

Phone: **763-315-4501**
Fax: **763-315-4507**

Client Project # R0165-26.000

Lab Project # **PINNENGMN-PENN AVE N**

Collected by (print): Erica Simonson

Site/Facility ID # **MINNEAPOLIS, MN**

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ (Y)

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed

Email? ___No X__Yes
FAX? ___No ___Yes

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

ESC LABORATORY SCIENCES
YOUR LAB OF CHOICE
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# L844389

A125

Acctnum: **PINNENGMN**
Template: **T116425**
Prelogin: **P570394**
TSR: **341 - John Hawkins**
PB: 9-29-16 MB
Shipped Via: **FedEX Ground**

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	DROWM 60mlAmb/MeCl/Syr	GROWM and VOC 60mlAmb/MeOH/Syr	RCRA8 Metals 2ozClr-NoPres	SV8270PAH 4ozClr-NoPres	TS 2ozClr-NoPres	Volatile Screen 2ozClr-NoPres				Rem./Contaminant	Sample # (lab only)
B-1 5-10'	G	SS	5-10	10-4-16	1140	6	X	X	X	X	X	X					-01
B-2 6-10' *		SS	6-10		1110	6	X	X	X	X	X	X				* PID=133.0	-02
B-2 10-15' *		SS	10-15		1120	6	X	X	X	X	X	X				* PID=402	-03
B-3 6"-1'		SS	6"-1'		1255	3	X	X	X	X	X	X					-04
B-3 1'-5'		SS	1'-5'		1300	4	X	X	X	X	X	X					-05
B-3 10-15'		SS	10-15'		1315	6	X	X	X	X	X	X					-06
B-4 5-10'		SS	5-10		1225	6	X	X	X	X	X	X					-07
B-5 5-10'		SS	5-10		1410	6	X	X	X	X	X	X					-08
B-6 5-10'		SS	5-10		1530	6	X	X	X	X	X	X					-09
		SS				6	X	X	X	X	X	X					

* Matrix: **SS** - Soil **GW** - Groundwater **WW** - WasteWater **DW** - Drinking Water **OT** - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

690347584567

Hold #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	10-5-16	0917	Fed-Ex
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Samples returned via: ☐ UPS ☑ FedEx ☐ Courier ☐ _____

Temp: 3.2 °C Bottles Received: 48

Date: 10/6/16 Time: 900

Condition: (lab use only) ok Gel

COC Seal Intact: ___Y ___N ___NA

pH Checked: NCF:

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

Cooler Receipt Form

Client: PINNENGMN		SDG#	L864389
Cooler Received/Opened On: 10/06/16		Temperature Upon Receipt:	3.2 °c
Received By: Alex Schulert			
Signature:			

Receipt Check List	Yes	No	N/A
Were custody seals on outside of cooler and intact?			
Were custody papers properly filled out?			
Did all bottles arrive in good condition?			
Were correct bottles used for the analyses requested?			
Was sufficient amount of sample sent in each bottle?			
Were all applicable sample containers correctly preserved and checked for preservation? (Any not in accepted range noted on COC)			
If applicable, was an observable VOA headspace present?			
Non Conformance Generated. (If yes see attached NCF)			

APPENDIX C
SOIL VAPOR SAMPLING SHEETS

Pinnacle Engineering

Vapor Sampling Form
Lab Sample

Project Name: 3206 Penn and 3201 Oliver | Client Name: Hennepin County

Pinnacle Project No.: R016526.000 | Vapor Point Material: PVC | Steel X | Other

Location: 206 Penn and 3201 Oliver Ave. N., Mpls, MN | Vapor Point #: VP-1 PKJ

Date: 10/4/16 | Conditions: windy, 60°

Time: 1100 | Page: 1 of 1

Sample Container #: 826 | 6 L summa X | 1 L summa _____ | Tedlar Bag _____

Flow Controller: 1433 | Set Time (Hr/min): 30 min | Controller #: _____

Purge Method/Volume Purged: syringe - 60 cc

SAMPLE DATA

Screen Depth	Start Time	Start Pressure (PSI)	End Time	End Pressure (PSI)	Screen Length	Comments:
5-6'	1042	-28	1054	-12	PRT	PRT

NOTES: (decon. procedures, equipment status, etc.)

Vapor Point

SAMPLE ID	DEPTH	TIME
VP-1	5'	1100

Collected by (Print/Signature): _____

Field QC: _____

Office QC: _____

Other: _____

Filename: VaporSamplingForm-LabSample_Rev20160524.xls

Date Printed: 10/3/2016

Pinnacle Engineering

Vapor Sampling Form
Lab Sample

Project Name: 3206 Penn and 3201 Oliver | Client Name: Hennepin County

Pinnacle Project No.: R016526.000 | Vapor Point Material: PVC Steel X Other

Location: 206 Penn and 3201 Oliver Ave. N., Mpls, MN | Vapor Point #: VP-2

Date: 10/4/16 | Conditions: ptcldy, mid-50's, 60s

Time: 1130 | Page: 1 of 1

Sample Container #: 893 | 6 L summa X | 1 L summa _____ | Tedlar Bag _____

Flow Controller: 1423 | Set Time (Hr/min): 30 min | Controller #: _____

Purge Method/Volume Purged: syringe - 60 cc

SAMPLE DATA

Screen Depth	Start Time	Start Pressure (PSI)	End Time	End Pressure (PSI)	Screen Length	Comments:
5-6'	1113	-29	~~0~~ 1139	-4		PRT

NOTES: (decon. procedures, equipment status, etc.)

Vapor Point

SAMPLE ID	DEPTH	TIME
VP-2	5-6	1130

Collected by (Print/Signature): _____

Field QC: _____

Office QC: _____

Other: _____

Filename: VaporSamplingForm-LabSample_Rev20160524.xls

Date Printed: 10/3/2016

Pinnacle Engineering

Vapor Sampling Form
Lab Sample

Project Name: 3206 Penn and 3201 Oliver | Client Name: Hennepin County

Pinnacle Project No.: R016526.000 | Vapor Point Material: PVC | Steel X | Other

Location: 206 Penn and 3201 Oliver Ave. N., Mpls, MN | Vapor Point #: VP-3

Date: 10/4/16 | Conditions: Sunny, windy, 70°

Time: 1210 | Page: 1 of 1

Sample Container #: 211 | 6 L summa X | 1 L summa _____ | Tedlar Bag _____

Flow Controller: 1329 | Set Time (Hr/min): 30 min | Controller #: _____

Purge Method/Volume Purged: syringe - 60 cc

SAMPLE DATA

Screen Depth	Start Time	Start Pressure (PSI)	End Time	End Pressure (PSI)	Screen Length	Comments:
5-6'	1152	-26½	1220	-3		PRT

NOTES: (decon. procedures, equipment status, etc.)

Vapor Point

SAMPLE ID	DEPTH	TIME
VP-3	5'	1210

Collected by (Print/Signature): _____

Field QC: _____

Office QC: _____

Other: _____

Filename: VaporSamplingForm-LabSample_Rev20160524.xls

Date Printed: 10/3/2016

Pinnacle Engineering

Vapor Sampling Form
Lab Sample

Project Name: 3206 Penn and 3201 Oliver | Client Name: Hennepin County

Pinnacle Project No.: R016526.000 | Vapor Point Material: PVC Steel X Other

Location: 206 Penn and 3201 Oliver Ave. N., Mpls, MN | Vapor Point #: VP-4

Date: 10/4/16 | Conditions: Cloudy, windy, 65°

Time: ~~1240~~ 1300 | Page: 1 of 1

Sample Container #: 1637 | 6 L summa X | 1 L summa _____ | Tedlar Bag _____

Flow Controller: 1347 | Set Time (Hr/min): 30 min | Controller #: _____

Purge Method/Volume Purged: syringe - 60 cc

SAMPLE DATA

Screen Depth	Start Time	Start Pressure (PSI)	End Time	End Pressure (PSI)	Screen Length	Comments:
5-6'	1240	-28	~~1245~~ 1333	-5		PRT

NOTES: (decon. procedures, equipment status, etc.)

Vapor Point

SAMPLE ID	DEPTH	TIME
VP-4	5'	1300

Collected by (Print/Signature): _____

Field QC: _____

Office QC: _____

Other: _____

Filename: VaporSamplingForm-LabSample_Rev20160524.xls

Date Printed: 10/3/2016

Pinnacle Engineering

Vapor Sampling Form
Lab Sample

Project Name: 3206 Penn and 3201 Oliver | Client Name: Hennepin County

Pinnacle Project No.: R016526.000 | Vapor Point Material: PVC Steel X Other

Location: 206 Penn and 3201 Oliver Ave. N., Mpls, MN | Vapor Point #: 5

Date: 10/4/16 | Conditions: windy, 70

Time: 1330 | Page: 1 of 1

Sample Container #: 1152 | 6 L summa X | 1 L summa _____ | Tedlar Bag _____

Flow Controller: 1338 | Set Time (Hr/min): 30 min | Controller #: _____

Purge Method/Volume Purged: syringe - 60 cc

SAMPLE DATA

Screen Depth	Start Time	Start Pressure (PSI)	End Time	End Pressure (PSI)	Screen Length	Comments:
5-6'	1326	-28	-3	1357		PRT

NOTES: (decon. procedures, equipment status, etc.)

Vapor Point

SAMPLE ID	DEPTH	TIME
VP-5	5'	1330

Collected by (Print/Signature): _____

Field QC: _____

Office QC: _____

Other: _____

Filename: VaporSamplingForm-LabSample_Rev20160524.xls

Date Printed: 10/3/2016

Pinnacle Engineering

Vapor Sampling Form
Lab Sample

Project Name: 3206 Penn and 3201 Oliver | Client Name: Hennepin County

Pinnacle Project No.: R016526.000 | Vapor Point Material: PVC | Steel X | Other

Location: 206 Penn and 3201 Oliver Ave. N., Mpls, MN | Vapor Point #: VP-6

Date: 10/4/16 | Conditions: Sunny, windy, 25°

Time: 1440 | Page: 1 of 1

Sample Container #: 2216 | 6 L summa X | 1 L summa _____ | Tedlar Bag _____

Flow Controller: 1459 | Set Time (Hr/min): 30 min | Controller #: _____

Purge Method/Volume Purged: syringe - 60 cc

SAMPLE DATA

Screen Depth	Start Time	Start Pressure (PSI)	End Time	End Pressure (PSI)	Screen Length	Comments:
5-6'	1421	~~-30~~ -29	1430	-4		PRT

NOTES: (decon. procedures, equipment status, etc.)

Vapor Point

SAMPLE ID	DEPTH	TIME
VP-6	5'	1440

Collected by (Print/Signature): _____

Field QC: _____

Office QC: _____

Other: _____

Filename: VaporSamplingForm-LabSample_Rev20160524.xls

Date Printed: 10/3/2016