



Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Drinking Water Program

UIC Class V Well Post-Closure Notification Form

Enter UIC Registration Number (required): MAS11A272200-5K
UIC Registration #

A. Facility Information

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



Lot O-32 Property
Facility/Residential Property Name
66 Leverett Road
Facility/Residential Property Street Address
Shutesbury MA 01072
City State Zip Code

B. Preparer and Contact Information

Matthew Kissane (Fuss & O'Neill) 1550 Main Street, Suite 400
Preparer Name Preparer Address
Springfield MA 01103
City/Town State Zip Code
mkissane@fando.com 413-333-5472
Preparer's Email Preparer's Telephone Number

Massachusetts Engineer License Number (if applicable) Licensed Site Professional (LSP)# (if applicable)
Rebecca Torres
Contact First Name Contact Last Name
townadmin@shutesbury.org 413-259-1214
Contact's email Contact's Phone number

C. Well Closure Information

Enter the date that all of the well closure activities were completed: 11/18/2022
Date of Well Closure(s)

Did the Closure include Floor Drain(s)? Yes No

If you answered "Yes" to this question you shall select one or more of the following four options and provide any additional information requested.

Option 1 – Sealing: Plug point of entry, if applicable (see 248 CMR 2.09).

Attach copy of **Form WS1: Notice of Plumbing Inspector Approval to Seal Floor Drain**

Plumbing Permit # (if assigned by inspector) Date of Plugging

Option 2 – Industrial Wastewater Holding Tank (314 CMR 18.00):

Connect discharge to a Certified holding tank meeting all appropriate MassDEP requirements. Attach floor plan with holding tank and floor drain location(s), and copy of Page 1 of Compliance Certification Form (DEP 01).

IWW Holding Tank Certification Transmittal # Date of Certification Application Submittal to MassDEP

Tank ID # Date of Connection



UIC Class V Well Post-Closure Notification Form

C. Well Closure Information (cont.)

- Option 3 – Sewer:** Connect discharge to municipal sanitary sewer system.

Attach copy of sewer discharge permit # or letter of approval from the issuing authority.

Date of Approval to Connect

Date of Connection

Name of POTW

Permit # (if issued by issuing authority)

- Option 4 - Other:** Certain other options are also acceptable (e.g. former discharge discontinued, closed loop recirculating system, closure and removal of entire operation, surface water discharge permit, and connection to municipal stormwater system (with approval from the issuing authority)). Specify and attach a sheet with additional information:

Closure and removal of entire floor drain with drainpipe abandoned in-place. See attached narrative for additional information.

D. Previously Submitted Information

Has any of the information that was submitted with the original UIC registration application and/or Pre-Closure Notification form (including any previously submitted UIC registration modification forms) changed or have any of the UIC well and discharge system conditions that MassDEP placed on the UIC registration/Pre-Closure approval not been met (excluding any post start-up sampling requirements)? This would include, but not be limited to, the following: well dimensions, well seal materials, piping/tubing materials, well(s) location(s), number of wells, number of entry points to the system, types of discharges, potential contaminants of concern, and any of the attachments previously submitted.

- Yes No

If you answered yes to this questions, you shall submit one or more of the following with this Post Closure Notification Form:

- A BRP WS06 Modification or Well Conversion form (if any of the information submitted on that form has changed) completing only the UIC Registration Number, facility name and address and those portions of the form that are changed, including data not supplied with the original application;
- Resubmitting only those attachments, that were modified; and/or,
- A narrative description of any UIC Registration/Pre-Closure approval conditions that were not met or any closure activities that were proposed that were either not completed or were modified.

E. Attachments

Check all of the following that are being attached to this submittal package:

- Copy of Form WS-1, Notice of Plumbing Inspector Approval to Seal Floor Drain:** Form WS-1 is required if you answered “Yes” to the first question in Section C regarding floor drains AND you selected “Option – Sealing”.



UIC Class V Well Post-Closure Notification Form

E. Attachments (cont.)

- All Screening and Analytical Results:** This information must be submitted in accordance with criteria specified in MassDEP Guidance Document Massachusetts Closure Requirements for Underground Injection Control (UICs) Wells (Guidance # BRP/DWM/DW/G04-3). Copies of all laboratory analytical reports shall be included along with a clear explanation (combination of narrative and figures) of where each of the field screening and laboratory analytical samples was collected and a description of all soil samples collected (i.e. texture, color, odor, whether it's sediment or sludge, etc.).
- Facilities Waste Management Report:** When required via the issuance of an enforcement order from the MassDEP's UIC program or other entity (EPA or MassDEP Program) or as a condition stated in your UIC Registration or Pre-Closure application approval, a waste management report specifying the methods that were used to properly collect, store, and dispose of all potentially hazardous wastes/material must be submitted including documentation regarding the quantities of potentially hazardous waste that were shipped off-site.
- Copy of discharge permit or letter of approval from the issuing authority for the floor drain connection to the municipal sewer system.**
- Copy of page 1 of Compliance Certification Form (DEP 01).**
- Revised Information:** Applicable BRP WS06 Registration form (including any revised plans or attachments)
- Other (specify):** _____

F. Certification

Operator

I certify under pains and penalties of law that I have personally examined and am familiar with the information submitted in this document and all attachments and based on my personal knowledge or inquiry of those agents immediately responsible for obtaining the information on my behalf, I believe the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including possible fines and imprisonment.

_____ Signature of Operator	12/9/22 Date
Rebecca Torres Printed Name of Operator	Town Administrator Position/Title

Owner (must be completed if owner has not signed above as operator)

I certify that I have personally examined and am familiar with the information submitted in this document.

_____ Signature of Owner	_____ Date
_____ Printed Name of Owner	_____ Position/Title

Submit a signed and complete application package to:

MassDEP
Bureau of Resource Protection
UIC Program
One Winter Street, 5th Floor
Boston, MA 02108

Send duplicate copies of this form to:

Local Board of Health
Local Plumbing Inspector (for any
applications involving the closure of floor
drains)

it's sediment or sludge, etc.).

- Facilities Waste Management Report:** When required via the issuance of an enforcement order from the MassDEP's UIC program or other entity (EPA or MassDEP Program) or as a condition stated in your UIC Registration or Pre-Closure application approval, a waste management report specifying the methods that were used to properly collect, store, and dispose of all potentially hazardous wastes/material must be submitted including documentation regarding the quantities of potentially hazardous waste that were shipped off-site.
- Copy of discharge permit or letter of approval from the issuing authority for the floor drain connection to the municipal sewer system.**
- Copy of page 1 of Compliance Certification Form (DEP 01).**
- Revised Information:** Applicable BRP WS06 Registration form (including any revised plans or attachments)
- Other** _____
(specify): _____

F. Certification

Operator

I certify under pains and penalties of law that I have personally examined and am familiar with the information submitted in this document and all attachments and based on my personal knowledge or inquiry of those agents immediately responsible for obtaining the information on my behalf, I believe the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including possible fines and imprisonment.

Rebecca Jones

Signature of Operator

12/9/22

Date

Rebecca Torres

Printed Name of Operator

Town Administrator

Position/Title

Owner (must be completed if owner has not signed above as operator)

I certify that I have personally examined and am familiar with the information submitted in this document.

Signature of Owner

Date

Printed Name of Owner

Position/Title

Submit a signed and complete application package to:

MassDEP
Bureau of Resource Protection
UIC Program
One Winter Street, 5th Floor
Boston, MA 02108

Send duplicate copies of this form to:

Local Board of Health
Local Plumbing Inspector (for any
applications involving the closure of floor
drains)



FUSS & O'NEILL

December 9, 2022

Mr. Joseph Cerutti
UIC Program Coordinator
MassDEP Drinking Water Program
1 Winter Street
Boston, MA 02108

Re: UIC Closure Report
UIC Registration ID# MAS11A272200-5K
66 Leverett Rd., Shutesbury, MA
Fuss & O'Neill Reference No. 20091032.A22

Dear Mr. Cerutti

On behalf of the Town of Shutesbury (the Town), Fuss & O'Neill has prepared this report in support of an Underground Injection Control (UIC) Class V Well Post-Closure Notification Form being submitted for a Class V Well located at 66 Leverett Road, Shutesbury, Massachusetts (the Site). The Site is identified by the Town Assessor's map as Lot O-32.

On October 26, 2022, the Town submitted a BRP WS 06 UIC Permit Application to the Massachusetts Department of Environmental Protection (MassDEP) Drinking Water Program (DWP) under eDEP Transaction #1440467. On November 7, 2022, a UIC Registration (ID# MAS11A272200-5K) was issued in accordance with the UIC program procedures and regulations, 310 CMR 27.00, which authorized closure of the UIC well in accordance with the description provided in the permit application and conditions stated in the authorization. This authorization e-mail is included as *Attachment A*.

On the accompanying Class V Well Post-Closure Notification Form, Section D, the Town has indicated that some information that was submitted with the original UIC registration application and Pre-Closure Notification form has changed since its submittal. The Town has answered in the affirmative for this question due to the in-field discovery of additional information related to the location of the historical floor drain since the submittal, which led to corresponding changes to the number of test pits and target locations, and sample methodology (i.e. grab samples in lieu of three-point composite samples).

The objective of the closure activities was to address the requirements under 310 CMR 27.10 and the *Massachusetts Closure Guidance for Underground Injection Control (UIC) Wells (including shallow injection wells)* (*Guidance #BRP/DWM/DW/G04-3*). Specifically, the closure activities were intended to evaluate whether the floor drain, and associated drainpipe, may have served as a preferential pathway for migration of oil and/or hazardous materials (OHM) to the environment. The following narrative describes the project background, previous environmental investigation related to the UIC well, and a summary of UIC closure activities completed.

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December 9, 2022
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1. Project Background

The UIC Class V well that is the subject of this UIC Closure Report is a floor drain that existed within the three-bay vehicle garage that was historically located at the Site. The three-bay garage was historically used for automotive repair purposes and then as a storage facility for the Town of Shutesbury Department of Public Works (DPW). It is unknown what year the garage and the floor drain were constructed; however the structure is not evident in aerial photography from 1962, but does appear on aerial photography from 1987. Therefore, it is inferred that the three-bay garage was built during that time. The floor drain and its drainpipe components were initially thought to have been removed from the Site during the demolition of the three-bay vehicle garage by the Town in August of 2021. However, as further discussed in *Section 3*, it has been determined that portions of the drainpipe remain.

2. Previous Environmental Investigations

The following is a brief summary of historical environmental investigations relevant to the location and condition of the UIC well that is the subject of this report.

- *Subsurface Soil Boring/Well Installation and Sampling Letter* – CSEC, April 2012
 - **Soil:** As part of a larger environmental assessment, CSEC oversaw the collection of two (2) soil samples taken from test pit excavations along the length of the floor drain drainpipe and at the terminus of the floor drain drainpipe, at depths of 1 foot below ground surface (ft bgs) and 1.2 ft bgs respectively (CSEC sample numbers FD-S-1 and FD-S-2) and one (1) soil sample taken from a boring near the terminus of the floor drain drainpipe, at a depth interval of 4 to 8 ft bgs (CSEC sample number GP-3 4-8'). The samples were collected on December 15 and 16, 2011 and submitted for laboratory analysis for Volatile Organic Compounds (VOCs) by EPA Method 5035A and for Extractable Petroleum Hydrocarbons (EPH) and Target Polycyclic Aromatic Hydrocarbons (PAHs) by MassDEP Methodology. For both samples, no VOCs were detected at concentrations above laboratory reporting limits. For both samples, no EPH or target PAHs were detected at concentrations above laboratory reporting limits, with the exception of C19-C36 Aliphatics (19.1 milligrams/kilogram (mg/kg)) and C11-C22 Aromatics (33.5 mg/kg) in sample FD-S-1 and C11-C22 Aromatics (14.1 mg/kg) in sample GP-3 4-8'. These concentrations were well below their applicable RCS-1 Reportable Concentrations of 3,000 mg/kg for C19-C36 Aliphatics and 1,000 mg/kg for C11-C22 Aromatics.
 - **Groundwater:** CSEC also oversaw the installation of a groundwater monitoring well at soil boring location GP-3, and subsequently, the collection of two (2) groundwater samples from that groundwater monitoring well. The first sample was collected on December 22, 2011 and was submitted for laboratory analysis for VOCs by EPA Method 5030 and for EPH and Target PAHs by MassDEP Methodology. No VOCs, EPH, or target PAHs were detected above laboratory reporting limits. The second sample was collected on April 9, 2012 and was submitted for laboratory analysis for

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December 9, 2022
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Polychlorinated Biphenyls (PCBs) by EPA Method 3510C. No PCBs were detected above laboratory reporting limits, with the exception of Aroclor-1242 (0.425 micrograms/liter ($\mu\text{g}/\text{l}$)). This result was below the applicable RCGW-1 Reportable Concentration of 0.5 $\mu\text{g}/\text{l}$.

- *Limited Subsurface Assessment* – O'Reilly, Talbot & Okun Engineering Associates, October 2021
 - As part of a larger environmental assessment, O'Reilly, Talbot & Okun Engineering Associates (OTO) oversaw the installation of one soil boring, B-1, within the footprint of the historic three-bay garage and near the reported location of the historic floor drain. One soil sample was collected at an interval of 5 to 7 ft bgs and was analyzed for VOCs by EPA Method 8260, EPH with Target PAHs by MassDEP methods, and Polychlorinated Biphenyls by EPA Method 8082. No compounds were detected at concentrations above laboratory reporting limits.

3. November 2022 UIC Closure Activities

On November 18, 2022, following approval of the BRP WS06 permit application package for the closure of the UIC Class V well, Fuss & O'Neill performed the following UIC closure related activities:

- Excavation of three (3) test pits (designated as TP-1, TP-2, and TP-3) and the collection of soil samples by Fuss & O'Neill personnel.
- Laboratory analysis of two (2) soil samples.

Field Observations:

With Mr. Joseph Cerutti of MassDEP present, Fuss & O'Neill personnel oversaw the UIC closure-related activities. Test pits were excavated by DPW personnel with a backhoe, to depths of up to 24 inches below grade surface (in bgs). Test pit locations are depicted in *Figure 1*.

Fuss & O'Neill oversaw the excavation of one test pit to the east of the location of the former three-bay garage to investigate whether the drainpipe associated with the former floor drain was still in-place. The footprint of the historical three-bay garage was determined based on a combination of satellite imagery, historical photographs of the Site, and visual observations of changes in topography and/or vegetation indicative of the limits of a historical foundation. The inferred locations for the floor drain and associated drainpipe were derived from the *Subsurface Soil Boring/Well Installation and Sampling Letter* (CSEC 2012), firsthand testimonials, and photographs of the historical floor drain before removal in 2021.

The first test pit excavated (TP-3), was the initially inferred location of the terminus of the floor drain drainpipe. The drainpipe was discovered partially intact, approximately 16 in bgs within TP-3. This drainpipe was a 4-inch inner diameter perforated pipe, which resembled a bituminized fiber pipe (aka Orangeburg pipe). Perforations were located on only one side of the pipe, and those perforations alternated from one side of the pipe to another, along its length. The drainpipe was

Mr. Joseph Cerutti, MassDEP
December 9, 2022
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partially-to-fully collapsed in places and was visibly filled with soil in others. In an attempt to locate the beginning and terminus of the pipe, two additional test pits (TP-1 and TP-2) were excavated. TP-2 was excavated on the eastern-most portion of the work area along the border of a mapped wetland resource area. A section of the drainpipe was discovered approximately 12-inches below grade within TP-2. TP-1 was excavated within the footprint of the former garage within the observed alignment of the drainpipe. The beginning of the drainpipe at the inferred location of the historical floor drain, was discovered approximately 13 in bgs, approximately 58-inches from the eastern exterior of the former garage. The inferred location of the historical drainpipe was based off visual observation of subsurface lithology and the lack of any evidence of drainpipe or drainpipe bedding along the western end of TP-1. It was determined in the field based on the visual observation that there was no impermeable bottom beneath the inferred location of the historic floor drain, that the historical floor drain was not watertight in nature. A concrete slab and wood feature of unknown origin was also observed approximately 24 in bgs within TP-1, roughly 5-feet from- and parallel to- the eastern former garage wall.

A Fuss & O'Neill representative oversaw the excavation of the test pits and logged soil conditions and performed field screening of soils for total organic vapors (TOVs) using a photoionization detector (PID). No visual or olfactory evidence of contamination was observed in the test pits during the excavation. Groundwater infiltrated the test pits minutes after the excavation and remained at roughly 12 in bgs. Test Pit Logs are included as *Attachment C*.

The top 12 to 13-inches of soil was characterized as fill and contained mostly fine to coarse grained sand, with trace amounts of silt and sub-rounded gravel. Below this layer of soil was fine to medium grained sand, light brown in color. A photo log of representative photos from the November 18, 2022 closure activities is included as *Attachment B*.

Soil Sampling for Laboratory Analysis:

A total of two (2) soil sample locations were collected and submitted to New England Testing Laboratory in West Warwick, Rhode Island (NETLAB). The two (2) points were selected as the two most high probability locations where a potential release of OHM to the environment would have occurred based on the characteristics of the floor drain system (i.e. perforated pipe and a non-watertight floor drain). One (1) soil sample was sampled from the perforated side of the western end of the drainpipe (the inferred connection point to the historic floor drain) within TP-1, from 11 to 13 in bgs. Another sample was collected from the perforated side of the drainpipe at the wetland boundary within TP-2, from 10 to 12 in bgs. Both samples were collected with a dedicated nitrile glove.

Per *Massachusetts Closure Guidance for Underground Injection Control (UIC) Wells (including shallow injection wells)*, *Guidance #BRP/DWM/DW/G04-3*, the soil samples were submitted under chain of custody to NETLAB for the analysis of the following analytical parameters:

- Volatile organic compounds (VOCs) via EPA Method 8260C;

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 December 9, 2022
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- Extractable petroleum hydrocarbons (EPHs) with target polyaromatic hydrocarbons (PAHs) via the MassDEP Method;
- Volatile petroleum hydrocarbons (VPHs) Ranges via MassDEP Method;
- Select Metals (arsenic, barium, cadmium, chromium, lead, mercury nickel, selenium, and zinc) via EPA Methods 6010C/7471B; and
- Polychlorinated biphenyls (PCBs) via EPA Method 8082A.

A summary of the soil samples submitted for laboratory analysis is included in Table 1 below:

Table 1
Summary of Soil Sample Activities

Location ID	Location	Date	Sample Depth (ibg)	Sample ID	Analyses
TP-1	Historical Location of Floor Drain	11/18/2022	11 – 13	1708221118-01	VOCs, EPH w/ target PAHs, VPH, Select Metals, PCBs*
TP-2	Drainpipe at Wetlands Boundary		10 – 12	1708221118-04	

ibg: inches below grade

* two samples, one from the TP-1 sample location, and one from a dripline location of the former three-bay garage, and were submitted to Alpha Analytical Labs (Alpha) of Westborough, MA to be analyzed for per- and polyfluoroalkyl substances (PFAS). While PFAS was not a MassDEP requirement for the UIC closure process, these samples voluntarily collected and analyzed in response to concern regarding the possible presence of PFAS at the site. Results for this analysis were not available at the time of this closure report and will be provided to the MassDEP under separate cover.

4. Analytical Results

Soil Laboratory Results:

Test pit results were compared to the MassDEP RCS-1 Reportable Concentrations in Soil (310 CMR 40.0361) and the published background values for “natural” soil per the 2002 *MassDEP Technical Update for Background Levels of Polycyclic Aromatic Hydrocarbons and Metals in Soil*. The following describes the analytical results:

- One to two EPH Ranges (C19-C36 and C11-C22) were detected above laboratory reporting limits in the two soil samples collected from TP-1 and TP-2. The concentrations detected were below applicable MassDEP Reportable Concentrations in soil (RCS-1) in both samples.

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- Seven to eight Target PAH compounds were detected above laboratory reporting limits in the two samples collected from TP-1 and TP-2. The concentrations detected were below applicable RCS-1 criteria and consistent with “natural” background levels in both samples.
- A total of seven metals (arsenic, barium, cadmium, chromium, lead, nickel, selenium, zinc, and mercury) were detected above laboratory reporting limits in both samples collected from TP-1 and TP-2. The concentrations detected were below applicable RCS-1 criteria in both samples and consistent with “natural” soil background levels, except for zinc (108 mg/kg) which exceeded the published “natural” background level of 100 mg/kg.
- No PCBs, VOC, or VPH were detected in either sample at concentrations above laboratory reporting limits.

Refer to *Table 2* for a summary of soil analytical results compared to applicable MassDEP Reportable concentrations. The laboratory analytical report is included as *Attachment B*.

5. Conclusions

Based on results of the UIC Post-Closure Notification summarized herein, all concentrations of EPH and target PAHs, PCBs, select metals, VOCs, and VPHs detected were below applicable MassDEP Reportable Concentrations in soil and were generally consistent with MassDEP published “natural” soil background guidance values. Additionally, no visual or olfactory evidence of releases to the environment was observed in the field during this investigation. Based on the results of this and the previous investigations summarized herein, no evidence was observed to indicate that the floor drain and pipe constituting the UIC structure served as a migration pathway for releases to the environment. Therefore, no further response actions regarding the UIC structure are warranted.

If you have any questions, please feel free to contact the undersigned at 413-333-4572.

Sincerely,



Matthew Kissane
Project Manager

Timothy Clinton, CPG, LSP
Department Manager

Attachments: Figure 1 – Site Plan
Table 2 – Summary of Test Pit Data and Objectives
Attachment A – UIC Registration and Pre-Closure Approval
Attachment B – Photo Log
Attachment C – Test Pit Logs
Attachment D – Laboratory Analytical Report



Mr. Joseph Cerutti, MassDEP
December 9, 2022
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cc: Mary Anne Antonellis, Director, M.N. Spear Memorial Library
Rebecca Torres, Town Administrator, Town of Shutesbury
Catherine Hilton, Chair, Shutesbury Board of Health

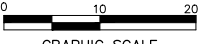
File: J:\DWG\IP2009\1\032\A22\Environmental\Plan\20091032A22_SAM02.dwg Layout: FIGURE 1 Plotted: 2022-12-09 12:06 PM Saved: 2022-12-09 12:06 PM User: Ekenewicz
 PC3: AUTOCAD PDF (GENERAL DOCUMENTATION) PC3 STB/CTB: FO HALF.STB
 LAYER STATE:



LEGEND

 TP-1
 TEST PIT LOCATION

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER

SCALE:
 HORZ.: 1"= 20'
 VERT.:
 DATUM:
 HORZ.:
 VERT.:

 GRAPHIC SCALE


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TOWN OF SHUTESBURY
 UNDERGROUND INJECTION CONTROL CLOSURE REPORT
 66 LEVERETT ROAD
 SHUTESBURY MASSACHUSETTS

PROJ. No.: 20091032.A22
 DATE: DECEMBER 2022
FIGURE 1

Table 2
Summary of Test Pit Analytical Data and Objectives
Underground Injection Control (UIC) Closure Report
 66 Leverett Road
 Shutesbury, Massachusetts

December 2022

	Location ID	TP-1	TP-2	MCP Reportable Concentrations		MassDEP Background Guidance ¹
	Matrix	Soil	Soil	RCS-1	RCS-2	
	Sample Interval (ftg)	11-13	10-12			
	TOV (ppmv)	0.0	0.0			
	Sampling Date	11/18/2022	11/18/2022			
Field Sample ID	1708221118-01	1708221118-04				
<i>Parameters</i>	<i>Units</i>					
EPH w/ Target PAH (MassDEP EPH Method)						
C9-C18 Aliphatic Hydrocarbons	mg/kg	ND < 16.8	ND < 15.9	1000	3000	NE
C19-C36 Aliphatic Hydrocarbons	mg/kg	165	ND < 15.9	3,000	5000	NE
C11-C22 Aromatic Hydrocarbons	mg/kg	62.1	22	1,000	3000	NE
Fluoranthene	mg/kg	0.98	0.87	1000	3000	4
Pyrene	mg/kg	0.89	0.78	1000	3000	4
Benzo(a)anthracene	mg/kg	0.67	0.6	7	40	2
Chrysene	mg/kg	0.78	0.67	70	400	2
Benzo(b)fluoranthene	mg/kg	0.66	0.5	7	40	2
Benzo(k)fluoranthene	mg/kg	0.6	0.53	70	400	1
Benzo(a)pyrene	mg/kg	0.61	0.54	2	7	2
Benzo(g,h,i)perylene	mg/kg	0.42	ND < 0.4	1,000	3000	1
PCBs (EPA Method 8082A)						
Various PCB Aroclors	ug/kg	ND < Varies	ND < Varies	Various	Various	NE
PCBs (Total)	ug/kg	ND < 83	ND < 78	1,000	4000	NE
Metals (EPA Method 6010C/7471B)						
Arsenic	mg/kg	1.62	1.65	20	20	20
Barium	mg/kg	44.8	19.4	1,000	3000	50
Cadmium	mg/kg	1.26	0.97	70	100	2
Chromium	mg/kg	10.4	7.87	100	200	30
Lead	mg/kg	38.2	36.9	200	600	100
Nickel	mg/kg	10.5	9.26	600	1000	20
Selenium	mg/kg	ND < 1.37	ND < 1.25	400	700	0.5
Zinc	mg/kg	108	50.5	1000	3000	100
Mercury	mg/kg	ND < 0.202	ND < 0.197	20	30	0.3
VOCs (EPA Method 8260C)						
Various VOCs	ug/kg	ND < Varies	ND < Varies	Various	Various	NE
VPH Ranges (MassDEP VPH Method)						
C5-C8 Aliphatic Hydrocarbons	mg/kg	ND < 7.7	ND < 7.1	100	500	NE
C9-C12 Aliphatic Hydrocarbons	mg/kg	ND < 7.7	ND < 7.1	1,000	3000	NE
C9-C10 Aromatic Hydrocarbons	mg/kg	ND < 7.7	ND < 7.1	100	500	NE

Prepared by: EK
 Checked by: MK

Notes:

¹2002 MassDEP Technical Update for Background Levels of Polycyclic Aromatic Hydrocarbons and Metals in "Natural" Soil
 Soil samples were analyzed by New England Testing Laboratory of West Warwick, Rhode Island.
 Generally, compounds having detections greater than their laboratory reporting limits are shown. Refer to the laboratory analytical reports for the complete analytical data.
 Shaded and bold value exceeds one or more criteria
 EPA: Environmental Protection Agency
 EPH: Extractable Petroleum Hydrocarbon
 VPH: Volatile Petroleum Hydrocarbon
 VOC: Volatile Organic Compounds
 MCP: Massachusetts Contingency Plan
 ND < X: Not Detected above the lab reporting limit
 PAH: Polycyclic Aromatic Hydrocarbons
 PCB: Polychlorinated Biphenyl
 RCS: Reportable Concentrations in Soil
 TP: Test Pit
 NE: No available MassDEP Background Guidance Value

Matthew Kissane

From: Cerutti, Joseph (DEP) <joseph.cerutti@state.ma.us>
Sent: Monday, November 7, 2022 11:22 AM
To: townadmin@shutesbury.org
Cc: Director-DWP, Program (DEP); Doherty, Deirdre (DEP); Motamedi, Saadi (DEP); Longridge, Kimberly (DEP); Grover, Mary (DEP); Matthew Kissane
Subject: UIC Registration and pre-closure approval_Shutesbury_66 Leverett Road_MAS11A272200-5K

Dear Rebecca Torres,

The Massachusetts Department of Environmental Protection (MassDEP), Drinking Water Program (DWP) received on October 26, 2022, the submittal of a **BRP WS 06** permit application, eDEP Transaction # 1440467 with supporting documentation in the form of one attached PDF document for the registration and closure of one Underground Injection Control (UIC) Class V well.

MassDEP/DWP has reviewed the above referenced permit application and is hereby issuing **UIC Registration ID# MAS11A272200-5K** in accordance with the UIC program procedures and regulations, 310 CMR 27.00; and is authorizing the closure of the UIC wells in accordance with the description provided in the permit application and the conditions stated in this email. In all future correspondence regarding this UIC registration please reference the UIC Registration ID Number.

UIC Class V Well Pre-Closure Application Information:

Facility Name: Lot 0-32 Property
Owner: Town of Shutesbury
Operator: same as owner
Owner's and Operator's legal contact: Rebecca Torres
Facility Address: 66 Leverett Road, Shutesbury, MA 01072
Applicant: Town of Shutesbury
Well category: Motor Vehicle
Well type: Motor Vehicle Waste Disposal
EPA Well Code: 5K

Number of wells proposed for complete closure: 2 (1 subsurface pipe outfall and 1 presumed leaching floor drain) [Note: the floor drain entry point to the former UIC well was also a UIC well if it was a leaching structure. Since the physical removal of that floor drain was not documented, MassDEP assumes that it was a leaching floor drain structure (i.e. any fluids entering the floor drain had the potential to infiltrate directly into the subsurface because it was not a water-tight structure)]

Number of Motor Vehicle Waste Disposal wells that will remain after proposed closure: 0

Number of entry points proposed for closure: 1 (1 floor drain that was previously removed).

Number of entry points that will remain after proposed closure: 0

Designer of UIC well closure activities: Matthew Kissane, Fuss & O'Neill

Installer of UIC well closure activities: Matthew Kissane, Fuss & O'Neill

Application prepared by: Matthew Kissane, Fuss & O'Neill

MassDEP concurs with the proposed UIC well closure activities as described in the Fuss & O'Neill letter dated October 25, 2022, that was included as a PDF attachment to the eDEP UIC registration application form.

This UIC well registration and pre-closure authorization is contingent upon satisfying the following requirements:

- You shall notify MassDEP's UIC Registration program of the date(s) selected to conduct the proposed UIC well closure activities at least two business days prior to that date to allow MassDEP to schedule staff to be present onsite to witness those activities. That notification may be sent via email or voice

message or text message to Joe Cerutti, MassDEP UIC program coordinator at 781-465-4123 (mobile) or by e-mail at joseph.cerutti@mass.gov The well closure activities shall not be scheduled for November 11, 16, or 17, as MassDEP UIC program staff are unavailable to witness on those days. All other business days are acceptable at this time.

- You are required to provide the UIC ID# issued in this email on all future correspondence with MassDEP/DWP related to these registered UIC wells.
- All correspondence related to the UIC program that is not submitted through MassDEP's eDEP electronic filing system shall be emailed to ask.UIC@mass.gov or joseph.cerutti@mass.gov
- Within seven (7) days following the completion of the closure of the UIC wells you are required to submit to the MassDEP/DWP documentation of the closure with a *UIC Class V Well Post-Closure Notification Form*. The completion of UIC well closure activities date is the date of your receipt of the required laboratory analytical report for the soil samples collected during the closure activities. Due to an error that occurred on MassDEP's end of the eDEP UIC registration application system, you will not be able to submit the post-closure form through your eDEP account. Instead, please download the form at the following MassDEP web page: <https://www.mass.gov/how-to/uic-class-v-well-post-closure-notification-form> That form may be submitted as an electronic attachment in an email to either ask.UIC@mass.gov or joseph.cerutti@mass.gov
- A narrative statement describing the well closure activities and information regarding sample collection locations shall be submitted electronically with the Post-Closure Notification Form.
- A copy of the complete laboratory analytical report(s) for all analytical results that are used to document the UIC well closure activities (may sent as a PDF document to to the above referenced email addresses).
- Since the building in which the floor drain was located has been demolished, MassDEP will **not** be requiring the submittal of a MassDEP *Form WS1, Notice of Plumbing Inspector Approval to Seal Floor Drain* for the sealing/removal of the floor drain.
- The applicant is required to maintain a copy of all documentation related to this permit application including but not limited to all the forms, correspondence and their respective noted attachments including site maps, and detail sheets for a period of three years following the submittal date of the UIC post closure notification form.

There may be other local permits, ordinances, or regulations that apply. The issuance of a UIC registration number by MassDEP does not supersede the requirements of any other state or local regulatory entity.

If you have questions, please contact me at 781-465-4123 or by e-mail at joseph.cerutti@mass.gov .

This email has been copied to the following:

Matthew Kissane, Fuss & O'Neill

Deirdre Cabral MassDEP/BWR/DWP Section Chief- Western Regional Office

Motamedi Saadi, MassDEP - Western Regional Office

Kim Longridge, MassDEP - Western Regional Office

Mary Grover, MassDEP - Western Regional Office

This message was copied to the Drinking Water Program Director's email account for archiving purposes – UIC registration and pre-closure approval

Joe Cerutti

MassDEP Drinking Water Program,

UIC program coordinator

mobile: 781-465-4123



Photo 1
Footprint of former garage within the work area.

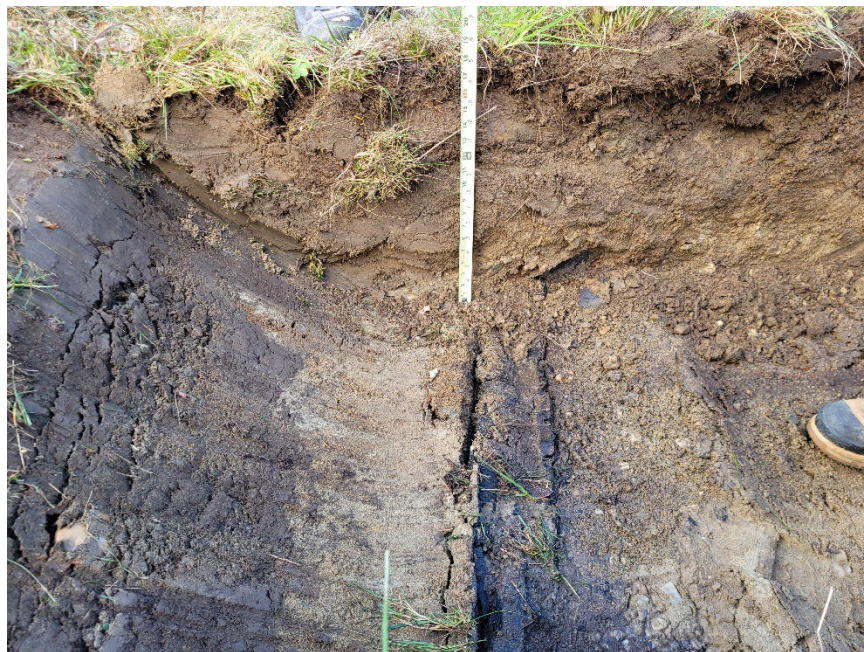


Photo 2
Drainpipe partially collapsed by backhoe.
Test pit 3.



Photo 3
Drainpipe and eastern boundary of work area.
Test pit 2.



Photo 4
Drainpipe and eastern boundary of work area. Terminus of drainpipe underneath shovel.
Test pit 2.



Photo 5
Beginning of drainpipe partially impacted by groundwater.
Test pit 1.



Photo 6
Drainpipe in center of photo. Beginning of drainpipe in right portion of photo.
Test pit 1.



*Photo 7
Sample location 1708221118-01.
Test pit 1.*



*Photo 8
Test pits covered with native material and straw/hay..*



FUSS & O'NEILL

TEST PIT LOG

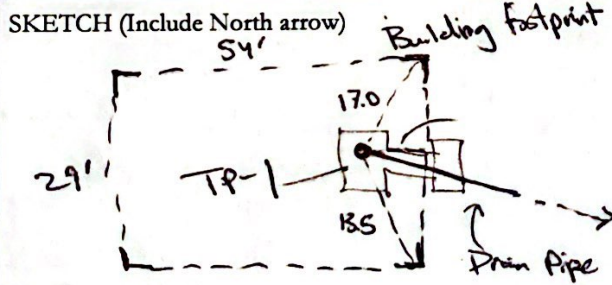
Location ID: TP-1
 Sheet: 1 of 1
 Project #: 20091032.A22
 Weather: 30s, clouds

Project Name: Shutesbury MIC
 Project Location: Shutesbury, MA

Contractor: Shutesbury Public Works
 Operator: _____
 F&O Representative: Erin & Matt
 Sampling Method: 3 Grab composite
 Sample # Prefix: 170822118-01103
 Photos Taken? YES NO
 Photo Numbers: _____

Test Pit Location Description: w/in building footprint
 Date Started: 11/18/22
 Date/Time Completed: 11/18/22
 Depth to Saturated Zone: 10.5"
 Water Observation: clear, no odor
 Weeping/Mottling/Standing _____

MATERIAL DESCRIPTION				ANALYTICAL SAMPLES		
DEPTH RANGE (FT)	DESCRIPTION	PID	LITHOLOGIC CODE	SAMPLE NO. & TIME	DEPTH INTERVAL (FT)	JARS & PRESERVATIVES
0-13"	SAND, f-c; trace gravel, subrounded; brown; no odor; wet @ 10.5	0.0	Sw	-01 @ 1115	11-13"	1 8oz jar 1 VOA-Meth 2 VOA-Sr
13-24"	SAND f-m; light brown; no odor; wet	0.0	Sp			Pres 1 8oz jar 1 4oz jar



- Groundwater & water from drain pipe has no odor, sheen, or evidence of contamination
 - Top of drain pipe @ 11", bottom @ 13".

Coordinates Obtained? Yes / No	North/Latitude _____	East/Longitude _____
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REMARKS
 Field Instrument ID = _____
 If refusal is encountered, describe all efforts used to confirm. 5
 Field Decon: Yes / No Dedicated Device

Pit Dimensions: 10 x 4 x 2

PROPORTIONS USED:
 Trace (tr) 0 to 10% Some (sm) 20 to 35%
 Little (lt) 10 to 20% And 35 to 50%


EXAMPLE DESCRIPTION:
 SAND, F-M; sm F angular gravel; lt silt; tr clay; (10R 5/4), wet at 7 ft.
 Loosc. No odor.

Reviewed by Staff: _____

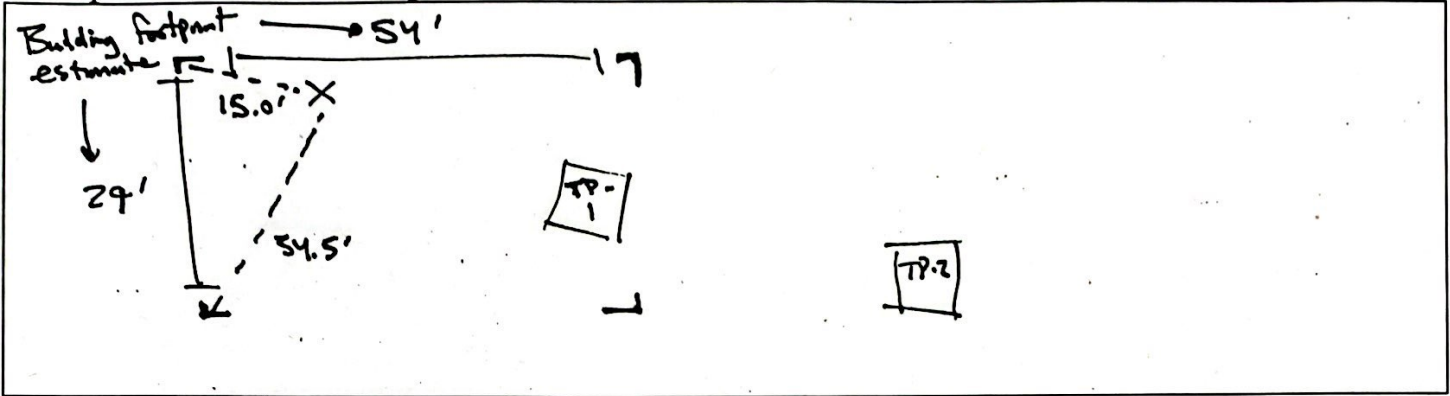
BACKFILL

Asphalt / Concrete	_____	To _____
Fill	_____	To _____
Cuttings/Native	<u>0</u>	To <u>bottom</u>
Other	_____	To _____

Soil Sampling Field Data

Client/Project Name: <u>Shutesbury VIC</u>		 FUSS & O'NEILL
Project Location: <u>Shutesbury, MA</u>	PROJECT #: <u>20091032.A22</u>	
Sample#: <u>1705221118-02</u>	Sample Location ID <u>Drip line</u>	

Sample Location Description



Sample Data

	Container	Quantity	Preservative
Date: <u>11/18/22</u> Time: <u>1155</u>	<u>2oz</u>	1	—
Sampler: <u>EPK</u> Weather: <u>30s, cloudy</u>	<u>4oz</u>	1	—
Sampling Device: Auger / Geoprobe / Shovel / Split Spoon / Trowel / <u>Other</u> <u>Wettable glove, native rock</u>			
Field decon: Yes / No / <u>Dedicated</u>			
Type of Sample: Grab / Composite / <u>Other</u> <u>3 pt. grab composite</u>			
Sample Depth: <u>4"-6"</u>			
PetroFLAG / OVM <u>0.0</u>			

Comments: Drip line location sampled for PFAS



FUSS & O'NEILL

TEST PIT LOG

Project Name: Shutebury VIC
Project Location: Shutebury, MA

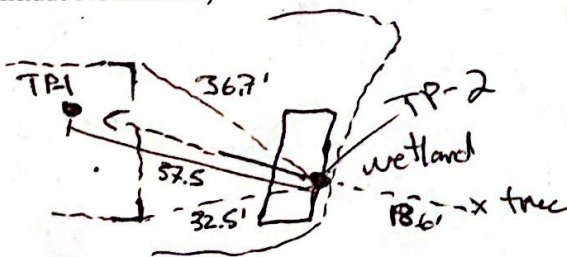
Location ID: TP-2
Sheet: 1 of 1
Project #: 20091032.A22
Weather: 30s, clouds

Contractor: Public Works
Operator:
F&O Representative: Matt & Evan
Sampling Method: 3 Grab Composite
Sample # Prefix: 17022118-04
Photos Taken? YES NO
Photo Numbers:

Test Pit Location Description: Corner, by wetland
Date Started: 11/18/22
Date/Time Completed: 11/18/22
Depth to Saturated Zone:
Water Observation: clear, no odor
Weeping/Mottling/Standing

MATERIAL DESCRIPTION				ANALYTICAL SAMPLES		
DEPTH RANGE (FT)	DESCRIPTION	PID	LITHOLOGIC CODE	SAMPLE NO. & TIME	DEPTH INTERVAL (FT)	JARS & PRESERVATIVES
0-12"	SAND f-c; trace silt; trace gravel, subrounded; brown; no odor; wet @ 10"	0.0	Sw	-04 @ 1225	10-12"	1 8oz jar 1 USA - Mechl 2 WA - stir bar
12-15"	SAND f-m; light brown; no odor; wet	0.0	Sp			

SKETCH (Include North arrow)



- Groundwater = water from drain pipe has no odor, sheen, or evidence of contamination
 - Top of drain pipe @ 10", bottom of drain pipe @ 12".

Coordinates Obtained? Yes / No	North/Latitude	East/Longitude	REMARKS Field Instrument ID = If refusal is encountered, describe all efforts used to confirm.
Pit Dimensions	9 x 3' x 15"		
PROPORTIONS USED: Trace (tr) 0 to 10% Some (sm) 20 to 35% Little (lt) 10 to 20% And 35 to 50%			BACKFILL Asphalt / Concrete _____ To _____ Fill _____ To _____ Cuttings/Native _____ To <u>bottom</u> Other _____ To _____
EXAMPLE DESCRIPTION: SAND, f-m; sm f angular gravel; lt silt; tr clay; (10R 5/4), wet at 7 ft. Loosc. No odor.			
Reviewed by Staff:			



New England Testing Laboratory, Inc.
(401) 353-3420

REPORT OF ANALYTICAL RESULTS

NETLAB Work Order Number: 2K21016
Client Project: 20091032.A22 - Shutesbury Library

Report Date: 02-December-2022

Prepared for:

Matt Kissane
Fuss & O'Neill
317 Iron Horse Way
Providence, RI 02908

Richard Warila, Laboratory Director
New England Testing Laboratory, Inc.
59 Greenhill Street
West Warwick, RI 02893
rich.warila@newenglandtesting.com

Samples Submitted :

The samples listed below were submitted to New England Testing Laboratory on 11/21/22. The group of samples appearing in this report was assigned an internal identification number (case number) for laboratory information management purposes. The client's designations for the individual samples, along with our case numbers, are used to identify the samples in this report. This report of analytical results pertains only to the sample(s) provided to us by the client which are indicated on the custody record. The case number for this sample submission is 2K21016. Custody records are included in this report.

Lab ID	Sample	Matrix	Date Sampled	Date Received
2K21016-01	1708221118-01	Soil	11/18/2022	11/21/2022
2K21016-02	1708221118-04	Soil	11/18/2022	11/21/2022
2K21016-03	1708221118-TB	Soil	11/18/2022	11/21/2022

Request for Analysis

At the client's request, the analyses presented in the following table were performed on the samples submitted.

1708221118-01 (Lab Number: 2K21016-01)

Analysis

Arsenic
Barium
Cadmium
Chromium
Lead
MADEP EPH
MADEP VPH
Mercury
Nickel
PCBs
Selenium
Volatile Organic Compounds
Zinc

Method

EPA 6010C
EPA 6010C
EPA 6010C
EPA 6010C
EPA 6010C
MADEP EPH
MADEP VPH
EPA 7471B
EPA 6010C
EPA 8082A
EPA 6010C
EPA 8260C
EPA 6010C

1708221118-04 (Lab Number: 2K21016-02)

Analysis

Arsenic
Barium
Cadmium
Chromium
Lead
MADEP EPH
MADEP VPH
Mercury
Nickel
PCBs
Selenium
Volatile Organic Compounds
Zinc

Method

EPA 6010C
EPA 6010C
EPA 6010C
EPA 6010C
EPA 6010C
MADEP EPH
MADEP VPH
EPA 7471B
EPA 6010C
EPA 8082A
EPA 6010C
EPA 8260C
EPA 6010C

1708221118-TB (Lab Number: 2K21016-03)

Analysis

Volatile Organic Compounds

Method

EPA 8260C

Method References

Method for the Determination of Extractable Petroleum Hydrocarbons, Rev. 2.1, Massachusetts Department of Environmental Protection, 2004

Method for the Determination of Volatile Petroleum Hydrocarbons, Rev. 2.1, Massachusetts Department of Environmental Protection, 2018

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, USEPA

Case Narrative

Sample Receipt:

The samples associated with this work order were received in appropriately cooled and preserved containers. The chain of custody was adequately completed and corresponded to the samples submitted.

Exceptions: None

Analysis:

All samples were prepared and analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control requirements and allowances. Results for all soil samples, unless otherwise indicated, are reported on a dry weight basis.

Exceptions: None

Results: Total Metals**Sample: 1708221118-01****Lab Number: 2K21016-01 (Soil)**

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Arsenic	1.62		1.37	mg/kg	11/22/22	11/30/22
Barium	44.8		0.45	mg/kg	11/22/22	11/30/22
Cadmium	1.26		0.69	mg/kg	11/22/22	11/30/22
Chromium	10.4		0.69	mg/kg	11/22/22	11/30/22
Lead	38.2		0.69	mg/kg	11/22/22	11/30/22
Mercury	ND		0.202	mg/kg	11/30/22	11/30/22
Nickel	10.5		0.69	mg/kg	11/22/22	11/30/22
Selenium	ND		1.37	mg/kg	11/22/22	11/30/22
Zinc	108		2.7	mg/kg	11/22/22	11/30/22

Results: Total Metals**Sample: 1708221118-04****Lab Number: 2K21016-02 (Soil)**

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Arsenic	1.65		1.25	mg/kg	11/22/22	11/30/22
Barium	19.4		0.41	mg/kg	11/22/22	11/30/22
Cadmium	0.97		0.63	mg/kg	11/22/22	11/30/22
Chromium	7.87		0.63	mg/kg	11/22/22	11/30/22
Lead	36.9		0.63	mg/kg	11/22/22	11/30/22
Mercury	ND		0.197	mg/kg	11/30/22	11/30/22
Nickel	9.26		0.63	mg/kg	11/22/22	11/30/22
Selenium	ND		1.25	mg/kg	11/22/22	11/30/22
Zinc	50.5		2.5	mg/kg	11/22/22	11/30/22

Results: Volatile Organic Compounds

Sample: 1708221118-01

Lab Number: 2K21016-01 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Acetone	ND		8	ug/kg	12/01/22	12/01/22
Benzene	ND		8	ug/kg	12/01/22	12/01/22
Bromobenzene	ND		8	ug/kg	12/01/22	12/01/22
Bromochloromethane	ND		8	ug/kg	12/01/22	12/01/22
Bromodichloromethane	ND		8	ug/kg	12/01/22	12/01/22
Bromoform	ND		8	ug/kg	12/01/22	12/01/22
Bromomethane	ND		8	ug/kg	12/01/22	12/01/22
2-Butanone	ND		8	ug/kg	12/01/22	12/01/22
tert-Butyl alcohol	ND		8	ug/kg	12/01/22	12/01/22
sec-Butylbenzene	ND		8	ug/kg	12/01/22	12/01/22
n-Butylbenzene	ND		8	ug/kg	12/01/22	12/01/22
tert-Butylbenzene	ND		8	ug/kg	12/01/22	12/01/22
Methyl t-butyl ether (MTBE)	ND		8	ug/kg	12/01/22	12/01/22
Carbon Disulfide	ND		8	ug/kg	12/01/22	12/01/22
Carbon Tetrachloride	ND		8	ug/kg	12/01/22	12/01/22
Chlorobenzene	ND		8	ug/kg	12/01/22	12/01/22
Chloroethane	ND		8	ug/kg	12/01/22	12/01/22
Chloroform	ND		11	ug/kg	12/01/22	12/01/22
Chloromethane	ND		27	ug/kg	12/01/22	12/01/22
4-Chlorotoluene	ND		8	ug/kg	12/01/22	12/01/22
2-Chlorotoluene	ND		8	ug/kg	12/01/22	12/01/22
1,2-Dibromo-3-chloropropane (DBCP)	ND		8	ug/kg	12/01/22	12/01/22
Dibromochloromethane	ND		8	ug/kg	12/01/22	12/01/22
1,2-Dibromoethane (EDB)	ND		8	ug/kg	12/01/22	12/01/22
Dibromomethane	ND		8	ug/kg	12/01/22	12/01/22
1,2-Dichlorobenzene	ND		8	ug/kg	12/01/22	12/01/22
1,3-Dichlorobenzene	ND		8	ug/kg	12/01/22	12/01/22
1,4-Dichlorobenzene	ND		8	ug/kg	12/01/22	12/01/22
1,1-Dichloroethane	ND		8	ug/kg	12/01/22	12/01/22
1,2-Dichloroethane	ND		8	ug/kg	12/01/22	12/01/22
trans-1,2-Dichloroethene	ND		8	ug/kg	12/01/22	12/01/22
cis-1,2-Dichloroethene	ND		8	ug/kg	12/01/22	12/01/22
1,1-Dichloroethene	ND		8	ug/kg	12/01/22	12/01/22
1,2-Dichloropropane	ND		8	ug/kg	12/01/22	12/01/22
2,2-Dichloropropane	ND		8	ug/kg	12/01/22	12/01/22
cis-1,3-Dichloropropene	ND		8	ug/kg	12/01/22	12/01/22
trans-1,3-Dichloropropene	ND		8	ug/kg	12/01/22	12/01/22
1,1-Dichloropropene	ND		8	ug/kg	12/01/22	12/01/22
1,3-Dichloropropene (cis + trans)	ND		8	ug/kg	12/01/22	12/01/22
Diethyl ether	ND		13	ug/kg	12/01/22	12/01/22
1,4-Dioxane	ND		156	ug/kg	12/01/22	12/01/22
Ethylbenzene	ND		8	ug/kg	12/01/22	12/01/22
Hexachlorobutadiene	ND		8	ug/kg	12/01/22	12/01/22
2-Hexanone	ND		8	ug/kg	12/01/22	12/01/22
Isopropylbenzene	ND		8	ug/kg	12/01/22	12/01/22
p-Isopropyltoluene	ND		8	ug/kg	12/01/22	12/01/22
Methylene Chloride	ND		108	ug/kg	12/01/22	12/01/22
4-Methyl-2-pentanone	ND		8	ug/kg	12/01/22	12/01/22

Results: Volatile Organic Compounds (Continued)

Sample: 1708221118-01 (Continued)

Lab Number: 2K21016-01 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Naphthalene	ND		8	ug/kg	12/01/22	12/01/22
n-Propylbenzene	ND		8	ug/kg	12/01/22	12/01/22
Styrene	ND		8	ug/kg	12/01/22	12/01/22
1,1,1,2-Tetrachloroethane	ND		8	ug/kg	12/01/22	12/01/22
Tetrachloroethene	ND		8	ug/kg	12/01/22	12/01/22
Tetrahydrofuran	ND		8	ug/kg	12/01/22	12/01/22
Toluene	ND		8	ug/kg	12/01/22	12/01/22
1,2,4-Trichlorobenzene	ND		8	ug/kg	12/01/22	12/01/22
1,2,3-Trichlorobenzene	ND		8	ug/kg	12/01/22	12/01/22
1,1,2-Trichloroethane	ND		8	ug/kg	12/01/22	12/01/22
1,1,1-Trichloroethane	ND		8	ug/kg	12/01/22	12/01/22
Trichloroethene	ND		8	ug/kg	12/01/22	12/01/22
1,2,3-Trichloropropane	ND		8	ug/kg	12/01/22	12/01/22
1,3,5-Trimethylbenzene	ND		8	ug/kg	12/01/22	12/01/22
1,2,4-Trimethylbenzene	ND		8	ug/kg	12/01/22	12/01/22
Vinyl Chloride	ND		8	ug/kg	12/01/22	12/01/22
o-Xylene	ND		8	ug/kg	12/01/22	12/01/22
m&p-Xylene	ND		16	ug/kg	12/01/22	12/01/22
Total xylenes	ND		8	ug/kg	12/01/22	12/01/22
1,1,2,2-Tetrachloroethane	ND		8	ug/kg	12/01/22	12/01/22
tert-Amyl methyl ether	ND		8	ug/kg	12/01/22	12/01/22
1,3-Dichloropropane	ND		8	ug/kg	12/01/22	12/01/22
Ethyl tert-butyl ether	ND		8	ug/kg	12/01/22	12/01/22
Diisopropyl ether	ND		8	ug/kg	12/01/22	12/01/22
Trichlorofluoromethane	ND		8	ug/kg	12/01/22	12/01/22
Dichlorodifluoromethane	ND		8	ug/kg	12/01/22	12/01/22
Surrogate(s)	Recovery%		Limits			
<i>4-Bromofluorobenzene</i>	<i>98.4%</i>		<i>70-130</i>		<i>12/01/22</i>	<i>12/01/22</i>
<i>1,2-Dichloroethane-d4</i>	<i>98.8%</i>		<i>70-130</i>		<i>12/01/22</i>	<i>12/01/22</i>
<i>Toluene-d8</i>	<i>102%</i>		<i>70-130</i>		<i>12/01/22</i>	<i>12/01/22</i>

Results: Volatile Organic Compounds

Sample: 1708221118-04

Lab Number: 2K21016-02 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Acetone	ND		7	ug/kg	12/01/22	12/01/22
Benzene	ND		7	ug/kg	12/01/22	12/01/22
Bromobenzene	ND		7	ug/kg	12/01/22	12/01/22
Bromochloromethane	ND		7	ug/kg	12/01/22	12/01/22
Bromodichloromethane	ND		7	ug/kg	12/01/22	12/01/22
Bromoform	ND		7	ug/kg	12/01/22	12/01/22
Bromomethane	ND		7	ug/kg	12/01/22	12/01/22
2-Butanone	ND		7	ug/kg	12/01/22	12/01/22
tert-Butyl alcohol	ND		7	ug/kg	12/01/22	12/01/22
sec-Butylbenzene	ND		7	ug/kg	12/01/22	12/01/22
n-Butylbenzene	ND		7	ug/kg	12/01/22	12/01/22
tert-Butylbenzene	ND		7	ug/kg	12/01/22	12/01/22
Methyl t-butyl ether (MTBE)	ND		7	ug/kg	12/01/22	12/01/22
Carbon Disulfide	ND		7	ug/kg	12/01/22	12/01/22
Carbon Tetrachloride	ND		7	ug/kg	12/01/22	12/01/22
Chlorobenzene	ND		7	ug/kg	12/01/22	12/01/22
Chloroethane	ND		7	ug/kg	12/01/22	12/01/22
Chloroform	ND		9	ug/kg	12/01/22	12/01/22
Chloromethane	ND		23	ug/kg	12/01/22	12/01/22
4-Chlorotoluene	ND		7	ug/kg	12/01/22	12/01/22
2-Chlorotoluene	ND		7	ug/kg	12/01/22	12/01/22
1,2-Dibromo-3-chloropropane (DBCP)	ND		7	ug/kg	12/01/22	12/01/22
Dibromochloromethane	ND		7	ug/kg	12/01/22	12/01/22
1,2-Dibromoethane (EDB)	ND		7	ug/kg	12/01/22	12/01/22
Dibromomethane	ND		7	ug/kg	12/01/22	12/01/22
1,2-Dichlorobenzene	ND		7	ug/kg	12/01/22	12/01/22
1,3-Dichlorobenzene	ND		7	ug/kg	12/01/22	12/01/22
1,4-Dichlorobenzene	ND		7	ug/kg	12/01/22	12/01/22
1,1-Dichloroethane	ND		7	ug/kg	12/01/22	12/01/22
1,2-Dichloroethane	ND		7	ug/kg	12/01/22	12/01/22
trans-1,2-Dichloroethene	ND		7	ug/kg	12/01/22	12/01/22
cis-1,2-Dichloroethene	ND		7	ug/kg	12/01/22	12/01/22
1,1-Dichloroethene	ND		7	ug/kg	12/01/22	12/01/22
1,2-Dichloropropane	ND		7	ug/kg	12/01/22	12/01/22
2,2-Dichloropropane	ND		7	ug/kg	12/01/22	12/01/22
cis-1,3-Dichloropropene	ND		7	ug/kg	12/01/22	12/01/22
trans-1,3-Dichloropropene	ND		7	ug/kg	12/01/22	12/01/22
1,1-Dichloropropene	ND		7	ug/kg	12/01/22	12/01/22
1,3-Dichloropropene (cis + trans)	ND		7	ug/kg	12/01/22	12/01/22
Diethyl ether	ND		11	ug/kg	12/01/22	12/01/22
1,4-Dioxane	ND		134	ug/kg	12/01/22	12/01/22
Ethylbenzene	ND		7	ug/kg	12/01/22	12/01/22
Hexachlorobutadiene	ND		7	ug/kg	12/01/22	12/01/22
2-Hexanone	ND		7	ug/kg	12/01/22	12/01/22
Isopropylbenzene	ND		7	ug/kg	12/01/22	12/01/22
p-Isopropyltoluene	ND		7	ug/kg	12/01/22	12/01/22
Methylene Chloride	ND		93	ug/kg	12/01/22	12/01/22
4-Methyl-2-pentanone	ND		7	ug/kg	12/01/22	12/01/22

Results: Volatile Organic Compounds (Continued)

Sample: 1708221118-04 (Continued)

Lab Number: 2K21016-02 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Naphthalene	ND		7	ug/kg	12/01/22	12/01/22
n-Propylbenzene	ND		7	ug/kg	12/01/22	12/01/22
Styrene	ND		7	ug/kg	12/01/22	12/01/22
1,1,1,2-Tetrachloroethane	ND		7	ug/kg	12/01/22	12/01/22
Tetrachloroethene	ND		7	ug/kg	12/01/22	12/01/22
Tetrahydrofuran	ND		7	ug/kg	12/01/22	12/01/22
Toluene	ND		7	ug/kg	12/01/22	12/01/22
1,2,4-Trichlorobenzene	ND		7	ug/kg	12/01/22	12/01/22
1,2,3-Trichlorobenzene	ND		7	ug/kg	12/01/22	12/01/22
1,1,2-Trichloroethane	ND		7	ug/kg	12/01/22	12/01/22
1,1,1-Trichloroethane	ND		7	ug/kg	12/01/22	12/01/22
Trichloroethene	ND		7	ug/kg	12/01/22	12/01/22
1,2,3-Trichloropropane	ND		7	ug/kg	12/01/22	12/01/22
1,3,5-Trimethylbenzene	ND		7	ug/kg	12/01/22	12/01/22
1,2,4-Trimethylbenzene	ND		7	ug/kg	12/01/22	12/01/22
Vinyl Chloride	ND		7	ug/kg	12/01/22	12/01/22
o-Xylene	ND		7	ug/kg	12/01/22	12/01/22
m&p-Xylene	ND		13	ug/kg	12/01/22	12/01/22
Total xylenes	ND		7	ug/kg	12/01/22	12/01/22
1,1,2,2-Tetrachloroethane	ND		7	ug/kg	12/01/22	12/01/22
tert-Amyl methyl ether	ND		7	ug/kg	12/01/22	12/01/22
1,3-Dichloropropane	ND		7	ug/kg	12/01/22	12/01/22
Ethyl tert-butyl ether	ND		7	ug/kg	12/01/22	12/01/22
Diisopropyl ether	ND		7	ug/kg	12/01/22	12/01/22
Trichlorofluoromethane	ND		7	ug/kg	12/01/22	12/01/22
Dichlorodifluoromethane	ND		7	ug/kg	12/01/22	12/01/22
Surrogate(s)	Recovery%		Limits			
<i>4-Bromofluorobenzene</i>	<i>98.5%</i>		<i>70-130</i>		<i>12/01/22</i>	<i>12/01/22</i>
<i>1,2-Dichloroethane-d4</i>	<i>98.4%</i>		<i>70-130</i>		<i>12/01/22</i>	<i>12/01/22</i>
<i>Toluene-d8</i>	<i>103%</i>		<i>70-130</i>		<i>12/01/22</i>	<i>12/01/22</i>

Results: Volatile Organic Compounds

Sample: 1708221118-TB

Lab Number: 2K21016-03 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Acetone	ND		1000	ug/kg	11/30/22	12/01/22
Benzene	ND		50	ug/kg	11/30/22	12/01/22
Bromobenzene	ND		50	ug/kg	11/30/22	12/01/22
Bromochloromethane	ND		50	ug/kg	11/30/22	12/01/22
Bromodichloromethane	ND		50	ug/kg	11/30/22	12/01/22
Bromoform	ND		50	ug/kg	11/30/22	12/01/22
Bromomethane	ND		50	ug/kg	11/30/22	12/01/22
2-Butanone	ND		250	ug/kg	11/30/22	12/01/22
tert-Butyl alcohol	ND		250	ug/kg	11/30/22	12/01/22
sec-Butylbenzene	ND		50	ug/kg	11/30/22	12/01/22
n-Butylbenzene	ND		50	ug/kg	11/30/22	12/01/22
tert-Butylbenzene	ND		50	ug/kg	11/30/22	12/01/22
Methyl t-butyl ether (MTBE)	ND		50	ug/kg	11/30/22	12/01/22
Carbon Disulfide	ND		50	ug/kg	11/30/22	12/01/22
Carbon Tetrachloride	ND		50	ug/kg	11/30/22	12/01/22
Chlorobenzene	ND		50	ug/kg	11/30/22	12/01/22
Chloroethane	ND		50	ug/kg	11/30/22	12/01/22
Chloroform	ND		50	ug/kg	11/30/22	12/01/22
Chloromethane	ND		50	ug/kg	11/30/22	12/01/22
4-Chlorotoluene	ND		50	ug/kg	11/30/22	12/01/22
2-Chlorotoluene	ND		50	ug/kg	11/30/22	12/01/22
1,2-Dibromo-3-chloropropane (DBCP)	ND		50	ug/kg	11/30/22	12/01/22
Dibromochloromethane	ND		50	ug/kg	11/30/22	12/01/22
1,2-Dibromoethane (EDB)	ND		50	ug/kg	11/30/22	12/01/22
Dibromomethane	ND		50	ug/kg	11/30/22	12/01/22
1,2-Dichlorobenzene	ND		50	ug/kg	11/30/22	12/01/22
1,3-Dichlorobenzene	ND		50	ug/kg	11/30/22	12/01/22
1,4-Dichlorobenzene	ND		50	ug/kg	11/30/22	12/01/22
1,1-Dichloroethane	ND		50	ug/kg	11/30/22	12/01/22
1,2-Dichloroethane	ND		50	ug/kg	11/30/22	12/01/22
trans-1,2-Dichloroethene	ND		50	ug/kg	11/30/22	12/01/22
cis-1,2-Dichloroethene	ND		50	ug/kg	11/30/22	12/01/22
1,1-Dichloroethene	ND		50	ug/kg	11/30/22	12/01/22
1,2-Dichloropropane	ND		50	ug/kg	11/30/22	12/01/22
2,2-Dichloropropane	ND		50	ug/kg	11/30/22	12/01/22
cis-1,3-Dichloropropene	ND		50	ug/kg	11/30/22	12/01/22
trans-1,3-Dichloropropene	ND		50	ug/kg	11/30/22	12/01/22
1,1-Dichloropropene	ND		50	ug/kg	11/30/22	12/01/22
1,3-Dichloropropene (cis + trans)	ND		100	ug/kg	11/30/22	12/01/22
Diethyl ether	ND		250	ug/kg	11/30/22	12/01/22
1,4-Dioxane	ND		5000	ug/kg	11/30/22	12/01/22
Ethylbenzene	ND		50	ug/kg	11/30/22	12/01/22
Hexachlorobutadiene	ND		50	ug/kg	11/30/22	12/01/22
2-Hexanone	ND		250	ug/kg	11/30/22	12/01/22
Isopropylbenzene	ND		50	ug/kg	11/30/22	12/01/22
p-Isopropyltoluene	ND		50	ug/kg	11/30/22	12/01/22
Methylene Chloride	ND		100	ug/kg	11/30/22	12/01/22
4-Methyl-2-pentanone	ND		250	ug/kg	11/30/22	12/01/22

Results: Volatile Organic Compounds (Continued)

Sample: 1708221118-TB (Continued)

Lab Number: 2K21016-03 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Naphthalene	ND		50	ug/kg	11/30/22	12/01/22
n-Propylbenzene	ND		50	ug/kg	11/30/22	12/01/22
Styrene	ND		50	ug/kg	11/30/22	12/01/22
1,1,1,2-Tetrachloroethane	ND		50	ug/kg	11/30/22	12/01/22
Tetrachloroethene	ND		50	ug/kg	11/30/22	12/01/22
Tetrahydrofuran	ND		250	ug/kg	11/30/22	12/01/22
Toluene	ND		50	ug/kg	11/30/22	12/01/22
1,2,4-Trichlorobenzene	ND		50	ug/kg	11/30/22	12/01/22
1,2,3-Trichlorobenzene	ND		50	ug/kg	11/30/22	12/01/22
1,1,2-Trichloroethane	ND		50	ug/kg	11/30/22	12/01/22
1,1,1-Trichloroethane	ND		50	ug/kg	11/30/22	12/01/22
Trichloroethene	ND		50	ug/kg	11/30/22	12/01/22
1,2,3-Trichloropropane	ND		50	ug/kg	11/30/22	12/01/22
1,3,5-Trimethylbenzene	ND		50	ug/kg	11/30/22	12/01/22
1,2,4-Trimethylbenzene	ND		50	ug/kg	11/30/22	12/01/22
Vinyl Chloride	ND		50	ug/kg	11/30/22	12/01/22
o-Xylene	ND		50	ug/kg	11/30/22	12/01/22
m&p-Xylene	ND		100	ug/kg	11/30/22	12/01/22
Total xylenes	ND		50	ug/kg	11/30/22	12/01/22
1,1,1,2-Tetrachloroethane	ND		50	ug/kg	11/30/22	12/01/22
tert-Amyl methyl ether	ND		50	ug/kg	11/30/22	12/01/22
1,3-Dichloropropane	ND		50	ug/kg	11/30/22	12/01/22
Ethyl tert-butyl ether	ND		50	ug/kg	11/30/22	12/01/22
Diisopropyl ether	ND		50	ug/kg	11/30/22	12/01/22
Trichlorofluoromethane	ND		50	ug/kg	11/30/22	12/01/22
Dichlorodifluoromethane	ND		50	ug/kg	11/30/22	12/01/22
Surrogate(s)	Recovery%		Limits			
<i>4-Bromofluorobenzene</i>	<i>100%</i>		<i>70-130</i>		11/30/22	12/01/22
<i>1,2-Dichloroethane-d4</i>	<i>95.0%</i>		<i>70-130</i>		11/30/22	12/01/22
<i>Toluene-d8</i>	<i>97.7%</i>		<i>70-130</i>		11/30/22	12/01/22

Volatile Petroleum Hydrocarbons
Sample: 1708221118-01 (2K21016-01)

SAMPLE INFORMATION

Matrix	Soil		
Containers	Satisfactory		
Sample Preservation	Aqueous	NA	
	Soil or Sediment	Preserved with methanol and/or in an air-tight container	
		Methanol preserved (covering sample)	
		Received in air-tight container	
Temperature	Received on Ice Received at: 4+/-2 C°		
		ml methanol per gram soil: 1:1 +/- 25%	

VPH ANALYTICAL RESULTS

Method for Ranges: MADEP VPH-18-2.1	Client ID			1708221118-01		
Method for Target Analytes: EPA Method 8260C	Lab ID			2K21016-01		
VPH Surrogate Standards: PID: 2,5-Dibromotoluene FID: 2,5-Dibromotoluene	Date Collected			11/18/22		
	Date Received			11/21/22		
	% Moisture			21.50		
RANGE/TARGET ANALYTE	Elution Range	Dilution	RL	Units	Result	Analyzed
Unadjusted C5-C8 Aliphatic Hydrocarbons [1]	NA	50X	7.7	mg/kg	<7.7	11/29/22 16:47
Unadjusted C9-C12 Aliphatic Hydrocarbons [1]	NA	50X	7.7	mg/kg	<7.7	11/29/22 16:47
C5-C8 Aliphatic Hydrocarbons [1,2]	NA	50X	7.7	mg/kg	<7.7	11/29/22 16:47
C9-C12 Aliphatic Hydrocarbons [1,3]	NA	50X	7.7	mg/kg	<7.7	11/29/22 16:47
C9-C10 Aromatic Hydrocarbons [1]	NA	50X	7.7	mg/kg	<7.7	11/29/22 16:47
2,5-Dibromotoluene-PID				%	77.0	11/29/22 16:47
2,5-Dibromotoluene-FID				%	77.9	11/29/22 16:47
Surrogate Acceptance Range				%	70-130	

[1] Hydrocarbon Range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range

[2] C5-C8 Aliphatic Hydrocarbons exclude the concentration of Target Analytes eluting in that range

[3] C9-C12 Aliphatic Hydrocarbons exclude conc of Target Analytes eluting in that range AND concentration of C9-C10 Aromatic Hydrocarbons

Volatile Petroleum Hydrocarbons
Sample: 1708221118-04 (2K21016-02)

SAMPLE INFORMATION

Matrix	Soil		
Containers	Satisfactory		
Sample Preservation	Aqueous	NA	
	Soil or Sediment	Preserved with methanol and/or in an air-tight container	
		Methanol preserved (covering sample)	
		Received in air-tight container	
Temperature	Received on Ice Received at: 4+/-2 C°		
		ml methanol per gram soil: 1:1 +/- 25%	

VPH ANALYTICAL RESULTS

Method for Ranges: MADEP VPH-18-2.1	Client ID			1708221118-04		
Method for Target Analytes: EPA Method 8260C	Lab ID			2K21016-02		
VPH Surrogate Standards: PID: 2,5-Dibromotoluene FID: 2,5-Dibromotoluene	Date Collected			11/18/22		
	Date Received			11/21/22		
	% Moisture			17.20		
RANGE/TARGET ANALYTE	Elution Range	Dilution	RL	Units	Result	Analyzed
Unadjusted C5-C8 Aliphatic Hydrocarbons [1]	NA	50X	7.1	mg/kg	<7.1	11/29/22 17:19
Unadjusted C9-C12 Aliphatic Hydrocarbons [1]	NA	50X	7.1	mg/kg	<7.1	11/29/22 17:19
C5-C8 Aliphatic Hydrocarbons [1,2]	NA	50X	7.1	mg/kg	<7.1	11/29/22 17:19
C9-C12 Aliphatic Hydrocarbons [1,3]	NA	50X	7.1	mg/kg	<7.1	11/29/22 17:19
C9-C10 Aromatic Hydrocarbons [1]	NA	50X	7.1	mg/kg	<7.1	11/29/22 17:19
2,5-Dibromotoluene-PID				%	77.5	11/29/22 17:19
2,5-Dibromotoluene-FID				%	76.9	11/29/22 17:19
Surrogate Acceptance Range				%	70-130	

[1] Hydrocarbon Range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range

[2] C5-C8 Aliphatic Hydrocarbons exclude the concentration of Target Analytes eluting in that range

[3] C9-C12 Aliphatic Hydrocarbons exclude conc of Target Analytes eluting in that range AND concentration of C9-C10 Aromatic Hydrocarbons

Results: Polychlorinated Biphenyls (PCBs)

Sample: 1708221118-01

Lab Number: 2K21016-01 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Aroclor-1016	ND		83	ug/kg	11/21/22	11/30/22
Aroclor-1221	ND		83	ug/kg	11/21/22	11/30/22
Aroclor-1232	ND		83	ug/kg	11/21/22	11/30/22
Aroclor-1242	ND		83	ug/kg	11/21/22	11/30/22
Aroclor-1248	ND		83	ug/kg	11/21/22	11/30/22
Aroclor-1254	ND		83	ug/kg	11/21/22	11/30/22
Aroclor-1260	ND		83	ug/kg	11/21/22	11/30/22
Aroclor-1262	ND		83	ug/kg	11/21/22	11/30/22
Aroclor-1268	ND		83	ug/kg	11/21/22	11/30/22
PCBs (Total)	ND		83	ug/kg	11/21/22	11/30/22
Surrogate(s)	Recovery%		Limits			
<i>2,4,5,6-Tetrachloro-m-xylene (TCMX)</i>	70.9%		36.2-130		11/21/22	11/30/22
<i>Decachlorobiphenyl (DCBP)</i>	63.0%		43.3-130		11/21/22	11/30/22

Results: Polychlorinated Biphenyls (PCBs)

Sample: 1708221118-04

Lab Number: 2K21016-02 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Aroclor-1016	ND		78	ug/kg	11/21/22	11/30/22
Aroclor-1221	ND		78	ug/kg	11/21/22	11/30/22
Aroclor-1232	ND		78	ug/kg	11/21/22	11/30/22
Aroclor-1242	ND		78	ug/kg	11/21/22	11/30/22
Aroclor-1248	ND		78	ug/kg	11/21/22	11/30/22
Aroclor-1254	ND		78	ug/kg	11/21/22	11/30/22
Aroclor-1260	ND		78	ug/kg	11/21/22	11/30/22
Aroclor-1262	ND		78	ug/kg	11/21/22	11/30/22
Aroclor-1268	ND		78	ug/kg	11/21/22	11/30/22
PCBs (Total)	ND		78	ug/kg	11/21/22	11/30/22
Surrogate(s)	Recovery%		Limits			
<i>2,4,5,6-Tetrachloro-m-xylene (TCMX)</i>	59.0%		36.2-130		11/21/22	11/30/22
<i>Decachlorobiphenyl (DCBP)</i>	66.4%		43.3-130		11/21/22	11/30/22

**Extractable Petroleum Hydrocarbons
Sample: 1708221118-01 (2K21016-01)**

SAMPLE INFORMATION

Matrix	Soil
Containers	Satisfactory
Aqueous Preservatives	NA
Temperature	Received on Ice Received at: 4+/-2 C°
Extraction Method	EPA Method 3546

EPH ANALYTICAL RESULTS

Method for Ranges: MADEP EPH 4-1.1	Client ID	1708221118-01				
Method for Target Analytes: MADEP EPH 4-1.1	Lab ID	2K21016-01				
EPH Surrogate Standards: Aliphatic: Chlorooctadecane Aromatic: o-Terphenyl	Date Collected	11/18/22				
	Date Received	11/21/22				
	Date Thawed	NA				
	Date Extracted	11/27/22				
EPH Fractionation Surrogates: (1) 2-Fluorobiphenyl (2) 2-Bromonaphthalene	Percent Moisture	21.50				
RANGE/TARGET ANALYTE	Dilution	RL	Units	Result	Analyzed	
Unadjusted C11-C22 Aromatic Hydrocarbons [1]	1X	8.44	mg/kg	67.7	12/02/22 02:17	
Diesel PAH Analytes	Naphthalene	1X	0.42	mg/kg	<0.42	12/02/22 02:17
	2-Methylnaphthalene	1X	0.42	mg/kg	<0.42	12/02/22 02:17
	Phenanthrene	1X	0.42	mg/kg	<0.42	12/02/22 02:17
	Acenaphthene	1X	0.42	mg/kg	<0.42	12/02/22 02:17
Other Target PAH Analytes	Acenaphthylene	1X	0.42	mg/kg	<0.42	12/02/22 02:17
	Fluorene	1X	0.42	mg/kg	<0.42	12/02/22 02:17
	Anthracene	1X	0.42	mg/kg	<0.42	12/02/22 02:17
	Fluoranthene	1X	0.42	mg/kg	0.98	12/02/22 02:17
	Pyrene	1X	0.42	mg/kg	0.89	12/02/22 02:17
	Benzo(a)anthracene	1X	0.42	mg/kg	0.67	12/02/22 02:17
	Chrysene	1X	0.42	mg/kg	0.78	12/02/22 02:17
	Benzo(b)fluoranthene	1X	0.42	mg/kg	0.66	12/02/22 02:17
	Benzo(k)fluoranthene	1X	0.42	mg/kg	0.59	12/02/22 02:17
	Benzo(a)pyrene	1X	0.42	mg/kg	0.61	12/02/22 02:17
	Indeno(1,2,3-cd)pyrene	1X	0.42	mg/kg	<0.42	12/02/22 02:17
	Dibenz(a,h)anthracene	1X	0.42	mg/kg	<0.42	12/02/22 02:17
Benzo(g,h,i)perylene	1X	0.42	mg/kg	0.42	12/02/22 02:17	
C9-C18 Aliphatic Hydrocarbons [1]	1X	16.8	mg/kg	<16.8	12/01/22 14:20	
C19-C36 Aliphatic Hydrocarbons [1]	1X	16.8	mg/kg	165	12/01/22 14:20	
C11-C22 Aromatic Hydrocarbons [1,2]	1X	8.44	mg/kg	62.1	12/02/22 02:17	
Chlorooctadecane (Sample Surrogate)			%	64.4	12/01/22 14:20	
o-Terphenyl (Sample Surrogate)			%	65.1	12/02/22 02:17	
2-Fluorobiphenyl (Fractionation Surrogate)			%	78.3	12/02/22 02:17	
2-Bromonaphthalene (Fractionation Surrogate)			%	76.7	12/02/22 02:17	
Surrogate Acceptance Range [3]			%	40 - 140		

[1] Hydrocarbon range data excludes area counts of any surrogate(s) and/or internal standards eluting in that range.

[2] C11-C22 Aromatic Hydrocarbons excludes the concentration of Target PAH Analytes.

[3] See the case narrative in cases where a dash (-) is entered in the surrogate recovery block.

**Extractable Petroleum Hydrocarbons
Sample: 1708221118-04 (2K21016-02)**

SAMPLE INFORMATION

Matrix	Soil
Containers	Satisfactory
Aqueous Preservatives	NA
Temperature	Received on Ice Received at: 4+/-2 C°
Extraction Method	EPA Method 3546

EPH ANALYTICAL RESULTS

Method for Ranges: MADEP EPH 4-1.1		Client ID		1708221118-04		
Method for Target Analytes: MADEP EPH 4-1.1		Lab ID		2K21016-02		
EPH Surrogate Standards: Aliphatic: Chlorooctadecane Aromatic: o-Terphenyl		Date Collected		11/18/22		
		Date Received		11/21/22		
		Date Thawed		NA		
		Date Extracted		11/27/22		
EPH Fractionation Surrogates: (1) 2-Fluorobiphenyl (2) 2-Bromonaphthalene		Percent Moisture		17.20		
RANGE/TARGET ANALYTE	Dilution	RL	Units	Result	Analyzed	
Unadjusted C11-C22 Aromatic Hydrocarbons [1]	1X	8.00	mg/kg	26.5	12/02/22 01:32	
Diesel PAH Analytes	Naphthalene	1X	0.40	mg/kg	<0.40	12/02/22 01:32
	2-Methylnaphthalene	1X	0.40	mg/kg	<0.40	12/02/22 01:32
	Phenanthrene	1X	0.40	mg/kg	<0.40	12/02/22 01:32
	Acenaphthene	1X	0.40	mg/kg	<0.40	12/02/22 01:32
Other Target PAH Analytes	Acenaphthylene	1X	0.40	mg/kg	<0.40	12/02/22 01:32
	Fluorene	1X	0.40	mg/kg	<0.40	12/02/22 01:32
	Anthracene	1X	0.40	mg/kg	<0.40	12/02/22 01:32
	Fluoranthene	1X	0.40	mg/kg	0.87	12/02/22 01:32
	Pyrene	1X	0.40	mg/kg	0.78	12/02/22 01:32
	Benzo(a)anthracene	1X	0.40	mg/kg	0.60	12/02/22 01:32
	Chrysene	1X	0.40	mg/kg	0.67	12/02/22 01:32
	Benzo(b)fluoranthene	1X	0.40	mg/kg	0.49	12/02/22 01:32
	Benzo(k)fluoranthene	1X	0.40	mg/kg	0.53	12/02/22 01:32
	Benzo(a)pyrene	1X	0.40	mg/kg	0.54	12/02/22 01:32
	Indeno(1,2,3-cd)pyrene	1X	0.40	mg/kg	<0.40	12/02/22 01:32
	Dibenz(a,h)anthracene	1X	0.40	mg/kg	<0.40	12/02/22 01:32
Benzo(g,h,i)perylene	1X	0.40	mg/kg	<0.40	12/02/22 01:32	
C9-C18 Aliphatic Hydrocarbons [1]	1X	15.9	mg/kg	<15.9	12/01/22 14:44	
C19-C36 Aliphatic Hydrocarbons [1]	1X	15.9	mg/kg	<15.9	12/01/22 14:44	
C11-C22 Aromatic Hydrocarbons [1,2]	1X	8.00	mg/kg	22.0	12/02/22 01:32	
Chlorooctadecane (Sample Surrogate)			%	46.5	12/01/22 14:44	
o-Terphenyl (Sample Surrogate)			%	41.5	12/02/22 01:32	
2-Fluorobiphenyl (Fractionation Surrogate)			%	62.2	12/02/22 01:32	
2-Bromonaphthalene (Fractionation Surrogate)			%	58.2	12/02/22 01:32	
Surrogate Acceptance Range [3]			%	40 - 140		

[1] Hydrocarbon range data excludes area counts of any surrogate(s) and/or internal standards eluting in that range.

[2] C11-C22 Aromatic Hydrocarbons excludes the concentration of Target PAH Analytes.

[3] See the case narrative in cases where a dash (-) is entered in the surrogate recovery block.

Quality Control

Total Metals

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B2K1209 - Metals Digestion Soils										
Blank (B2K1209-BLK1)				Prepared: 11/22/22 Analyzed: 11/29/22						
Selenium	ND		1.00	mg/kg						
Arsenic	ND		1.00	mg/kg						
Barium	ND		0.33	mg/kg						
Zinc	ND		2.0	mg/kg						
Cadmium	ND		0.50	mg/kg						
Chromium	ND		0.50	mg/kg						
Lead	ND		0.50	mg/kg						
Nickel	ND		0.50	mg/kg						
LCS (B2K1209-BS1)				Prepared: 11/22/22 Analyzed: 11/29/22						
Zinc	91.0		2.0	mg/kg	100		91.0	85-115		
Lead	85.1		0.50	mg/kg	100		85.1	85-115		
Chromium	89.0		0.50	mg/kg	100		89.0	85-115		
Cadmium	88.0		0.50	mg/kg	100		88.0	85-115		
Barium	86.0		0.33	mg/kg	100		86.0	85-115		
Arsenic	17.6		1.00	mg/kg	20.0		88.2	85-115		
Nickel	87.0		0.50	mg/kg	100		87.0	85-112		
Selenium	17.4		1.00	mg/kg	20.0		87.1	85-115		
Batch: B2K1473 - Metals Cold-Vapor Mercury										
Blank (B2K1473-BLK1)				Prepared & Analyzed: 11/30/22						
Mercury	ND		0.140	mg/kg						
LCS (B2K1473-BS1)				Prepared & Analyzed: 11/30/22						
Mercury	0.510		0.140	mg/kg	0.500		102	93-114		

Quality Control
(Continued)

Volatile Organic Compounds

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B2L0087 - EPA 5035										
Blank (B2L0087-BLK1)										
					Prepared: 12/01/22 Analyzed: 12/02/22					
Acetone	ND		5	ug/kg						
Benzene	ND		5	ug/kg						
Bromobenzene	ND		5	ug/kg						
Bromochloromethane	ND		5	ug/kg						
Bromodichloromethane	ND		5	ug/kg						
Bromoform	ND		5	ug/kg						
Bromomethane	ND		5	ug/kg						
2-Butanone	ND		5	ug/kg						
tert-Butyl alcohol	ND		5	ug/kg						
sec-Butylbenzene	ND		5	ug/kg						
n-Butylbenzene	ND		5	ug/kg						
tert-Butylbenzene	ND		5	ug/kg						
Methyl t-butyl ether (MTBE)	ND		5	ug/kg						
Carbon Disulfide	ND		5	ug/kg						
Carbon Tetrachloride	ND		5	ug/kg						
Chlorobenzene	ND		5	ug/kg						
Chloroethane	ND		5	ug/kg						
Chloroform	ND		5	ug/kg						
Chloromethane	ND		17	ug/kg						
4-Chlorotoluene	ND		5	ug/kg						
2-Chlorotoluene	ND		5	ug/kg						
1,2-Dibromo-3-chloropropane (DBCP)	ND		5	ug/kg						
Dibromochloromethane	ND		5	ug/kg						
1,2-Dibromoethane (EDB)	ND		5	ug/kg						
Dibromomethane	ND		5	ug/kg						
1,2-Dichlorobenzene	ND		5	ug/kg						
1,3-Dichlorobenzene	ND		5	ug/kg						
1,4-Dichlorobenzene	ND		5	ug/kg						
1,1-Dichloroethane	ND		5	ug/kg						
1,2-Dichloroethane	ND		5	ug/kg						
trans-1,2-Dichloroethene	ND		5	ug/kg						
cis-1,2-Dichloroethene	ND		5	ug/kg						
1,1-Dichloroethene	ND		5	ug/kg						
1,2-Dichloropropane	ND		5	ug/kg						
2,2-Dichloropropane	ND		5	ug/kg						
cis-1,3-Dichloropropene	ND		5	ug/kg						
trans-1,3-Dichloropropene	ND		5	ug/kg						
1,1-Dichloropropene	ND		5	ug/kg						
1,3-Dichloropropene (cis + trans)	ND		5	ug/kg						
Diethyl ether	ND		8	ug/kg						
1,4-Dioxane	ND		100	ug/kg						
Ethylbenzene	ND		5	ug/kg						
Hexachlorobutadiene	ND		5	ug/kg						
2-Hexanone	ND		5	ug/kg						
Isopropylbenzene	ND		5	ug/kg						
p-Isopropyltoluene	ND		5	ug/kg						
Methylene Chloride	ND		69	ug/kg						
4-Methyl-2-pentanone	ND		5	ug/kg						
Naphthalene	ND		5	ug/kg						
n-Propylbenzene	ND		5	ug/kg						
Styrene	ND		5	ug/kg						
1,1,1,2-Tetrachloroethane	ND		5	ug/kg						
Tetrachloroethene	ND		5	ug/kg						
Tetrahydrofuran	ND		5	ug/kg						
Toluene	ND		5	ug/kg						
1,2,4-Trichlorobenzene	ND		5	ug/kg						
1,2,3-Trichlorobenzene	ND		5	ug/kg						

Quality Control
(Continued)

Volatile Organic Compounds (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B2L0087 - EPA 5035 (Continued)										
Blank (B2L0087-BLK1)										
					Prepared: 12/01/22 Analyzed: 12/02/22					
1,1,2-Trichloroethane	ND		5	ug/kg						
1,1,1-Trichloroethane	ND		5	ug/kg						
Trichloroethene	ND		5	ug/kg						
1,2,3-Trichloropropane	ND		5	ug/kg						
1,3,5-Trimethylbenzene	ND		5	ug/kg						
1,2,4-Trimethylbenzene	ND		5	ug/kg						
Vinyl Chloride	ND		5	ug/kg						
o-Xylene	ND		5	ug/kg						
m&p-Xylene	ND		10	ug/kg						
Total xylenes	ND		5	ug/kg						
1,1,2,2-Tetrachloroethane	ND		5	ug/kg						
tert-Amyl methyl ether	ND		5	ug/kg						
1,3-Dichloropropane	ND		5	ug/kg						
Ethyl tert-butyl ether	ND		5	ug/kg						
Diisopropyl ether	ND		5	ug/kg						
Trichlorofluoromethane	ND		5	ug/kg						
Dichlorodifluoromethane	ND		5	ug/kg						
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<i>Surrogate: 4-Bromofluorobenzene</i>			<i>51.0</i>	ug/kg	<i>50.0</i>		<i>102</i>	<i>70-130</i>		
<i>Surrogate: 1,2-Dichloroethane-d4</i>			<i>49.4</i>	ug/kg	<i>50.0</i>		<i>98.8</i>	<i>70-130</i>		
<i>Surrogate: Toluene-d8</i>			<i>52.3</i>	ug/kg	<i>50.0</i>		<i>105</i>	<i>70-130</i>		
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LCS (B2L0087-BS1)										
					Prepared & Analyzed: 12/01/22					
Acetone	65			ug/kg	50.0		129	60-140		
Benzene	42			ug/kg	50.0		83.7	70-130		
Bromobenzene	44			ug/kg	50.0		89.0	70-130		
Bromochloromethane	40			ug/kg	50.0		79.3	70-130		
Bromodichloromethane	53			ug/kg	50.0		105	70-130		
Bromoform	50			ug/kg	50.0		101	70-130		
Bromomethane	11			ug/kg	50.0		21.9	60-140		
2-Butanone	56			ug/kg	50.0		112	60-140		
tert-Butyl alcohol	38			ug/kg	50.0		75.3	70-130		
sec-Butylbenzene	42			ug/kg	50.0		84.9	70-130		
n-Butylbenzene	40			ug/kg	50.0		80.0	70-130		
tert-Butylbenzene	43			ug/kg	50.0		86.0	70-130		
Methyl t-butyl ether (MTBE)	59			ug/kg	50.0		119	70-130		
Carbon Disulfide	48			ug/kg	50.0		95.2	50-150		
Carbon Tetrachloride	46			ug/kg	50.0		91.3	70-130		
Chlorobenzene	42			ug/kg	50.0		84.2	70-130		
Chloroethane	53			ug/kg	50.0		105	60-140		
Chloroform	49			ug/kg	50.0		97.4	70-130		
Chloromethane	75			ug/kg	50.0		150	60-140		
4-Chlorotoluene	44			ug/kg	50.0		87.1	70-130		
2-Chlorotoluene	44			ug/kg	50.0		87.1	70-130		
1,2-Dibromo-3-chloropropane (DBCP)	49			ug/kg	50.0		97.2	70-130		
Dibromochloromethane	53			ug/kg	50.0		107	70-130		
1,2-Dibromoethane (EDB)	49			ug/kg	50.0		98.8	70-130		
Dibromomethane	50			ug/kg	50.0		99.7	60-140		
1,2-Dichlorobenzene	42			ug/kg	50.0		84.6	70-130		
1,3-Dichlorobenzene	44			ug/kg	50.0		88.9	70-130		
1,4-Dichlorobenzene	41			ug/kg	50.0		82.3	70-130		
1,1-Dichloroethane	42			ug/kg	50.0		84.6	70-130		
1,2-Dichloroethane	50			ug/kg	50.0		101	70-130		
trans-1,2-Dichloroethene	41			ug/kg	50.0		81.9	70-130		
cis-1,2-Dichloroethene	44			ug/kg	50.0		87.8	70-130		
1,1-Dichloroethene	33			ug/kg	50.0		65.3	70-130		
1,2-Dichloropropane	45			ug/kg	50.0		90.7	70-130		
2,2-Dichloropropane	48			ug/kg	50.0		96.2	70-130		

Quality Control
(Continued)

Volatile Organic Compounds (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B2L0087 - EPA 5035 (Continued)										
LCS (B2L0087-BS1)					Prepared & Analyzed: 12/01/22					
cis-1,3-Dichloropropene	48			ug/kg	50.0		96.3	70-130		
trans-1,3-Dichloropropene	53			ug/kg	50.0		106	70-130		
1,1-Dichloropropene	39			ug/kg	50.0		78.5	70-130		
Diethyl ether	58			ug/kg	50.0		116	60-140		
1,4-Dioxane	254			ug/kg	250		102	0-200		
Ethylbenzene	43			ug/kg	50.0		86.3	70-130		
Hexachlorobutadiene	38			ug/kg	50.0		75.1	70-130		
2-Hexanone	49			ug/kg	50.0		97.1	70-130		
Isopropylbenzene	43			ug/kg	50.0		86.5	70-130		
p-Isopropyltoluene	44			ug/kg	50.0		87.2	70-130		
Methylene Chloride	63			ug/kg	50.0		125	60-140		
4-Methyl-2-pentanone	46			ug/kg	50.0		92.1	70-130		
Naphthalene	41			ug/kg	50.0		82.4	70-130		
n-Propylbenzene	43			ug/kg	50.0		85.9	70-130		
Styrene	43			ug/kg	50.0		86.6	70-130		
1,1,1,2-Tetrachloroethane	48			ug/kg	50.0		95.4	70-130		
Tetrachloroethene	46			ug/kg	50.0		92.3	70-130		
Tetrahydrofuran	50			ug/kg	50.0		99.7	50-150		
Toluene	45			ug/kg	50.0		90.1	70-130		
1,2,4-Trichlorobenzene	41			ug/kg	50.0		82.4	70-130		
1,2,3-Trichlorobenzene	41			ug/kg	50.0		81.5	70-130		
1,1,2-Trichloroethane	49			ug/kg	50.0		98.9	70-130		
1,1,1-Trichloroethane	46			ug/kg	50.0		92.5	70-130		
Trichloroethene	45			ug/kg	50.0		90.8	70-130		
1,2,3-Trichloropropane	49			ug/kg	50.0		97.0	70-130		
1,3,5-Trimethylbenzene	45			ug/kg	50.0		89.5	70-130		
1,2,4-Trimethylbenzene	45			ug/kg	50.0		89.2	70-130		
Vinyl Chloride	39			ug/kg	50.0		78.4	60-140		
o-Xylene	43			ug/kg	50.0		85.6	70-130		
m&p-Xylene	86			ug/kg	100		85.6	70-130		
1,1,2,2-Tetrachloroethane	46			ug/kg	50.0		91.1	70-130		
tert-Amyl methyl ether	52			ug/kg	50.0		105	70-130		
1,3-Dichloropropane	49			ug/kg	50.0		98.0	70-130		
Ethyl tert-butyl ether	50			ug/kg	50.0		99.5	70-130		
Trichlorofluoromethane	48			ug/kg	50.0		95.7	70-130		
Dichlorodifluoromethane	51			ug/kg	50.0		103	60-140		
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Surrogate: 4-Bromofluorobenzene			52.5	ug/kg	50.0		105	70-130		
Surrogate: 1,2-Dichloroethane-d4			44.9	ug/kg	50.0		89.8	70-130		
Surrogate: Toluene-d8			52.3	ug/kg	50.0		105	70-130		

Quality Control
(Continued)

Volatile Organic Compounds (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B2L0087 - EPA 5035 (Continued)					Prepared & Analyzed: 12/01/22					
LCS Dup (B2L0087-BSD1)										
Acetone	63			ug/kg	50.0		127	60-140	2.19	30
Benzene	43			ug/kg	50.0		86.3	70-130	3.06	20
Bromobenzene	47			ug/kg	50.0		93.4	70-130	4.82	20
Bromochloromethane	41			ug/kg	50.0		81.6	70-130	2.83	20
Bromodichloromethane	55			ug/kg	50.0		110	70-130	3.89	20
Bromoform	52			ug/kg	50.0		104	70-130	2.72	20
Bromomethane	9			ug/kg	50.0		18.4	60-140	17.5	30
2-Butanone	65			ug/kg	50.0		129	60-140	14.4	30
tert-Butyl alcohol	33			ug/kg	50.0		66.3	70-130	12.7	20
sec-Butylbenzene	45			ug/kg	50.0		89.1	70-130	4.85	20
n-Butylbenzene	43			ug/kg	50.0		85.4	70-130	6.51	20
tert-Butylbenzene	45			ug/kg	50.0		90.1	70-130	4.68	20
Methyl t-butyl ether (MTBE)	48			ug/kg	50.0		96.1	70-130	21.1	20
Carbon Disulfide	44			ug/kg	50.0		87.2	50-150	8.68	40
Carbon Tetrachloride	47			ug/kg	50.0		93.4	70-130	2.32	20
Chlorobenzene	45			ug/kg	50.0		89.5	70-130	6.15	20
Chloroethane	48			ug/kg	50.0		96.6	60-140	8.67	30
Chloroform	51			ug/kg	50.0		102	70-130	4.48	20
Chloromethane	80			ug/kg	50.0		159	60-140	6.05	30
4-Chlorotoluene	46			ug/kg	50.0		91.7	70-130	5.14	20
2-Chlorotoluene	46			ug/kg	50.0		91.7	70-130	5.14	20
1,2-Dibromo-3-chloropropane (DBCP)	50			ug/kg	50.0		99.5	70-130	2.34	20
Dibromochloromethane	55			ug/kg	50.0		110	70-130	2.90	20
1,2-Dibromoethane (EDB)	50			ug/kg	50.0		100	70-130	1.65	20
Dibromomethane	52			ug/kg	50.0		103	60-140	3.43	30
1,2-Dichlorobenzene	45			ug/kg	50.0		90.2	70-130	6.48	20
1,3-Dichlorobenzene	46			ug/kg	50.0		93.0	70-130	4.51	20
1,4-Dichlorobenzene	44			ug/kg	50.0		87.8	70-130	6.49	20
1,1-Dichloroethane	40			ug/kg	50.0		80.9	70-130	4.49	20
1,2-Dichloroethane	53			ug/kg	50.0		106	70-130	4.76	20
trans-1,2-Dichloroethene	33			ug/kg	50.0		66.1	70-130	21.4	20
cis-1,2-Dichloroethene	45			ug/kg	50.0		89.9	70-130	2.32	20
1,1-Dichloroethene	30			ug/kg	50.0		59.9	70-130	8.63	20
1,2-Dichloropropane	46			ug/kg	50.0		91.2	70-130	0.528	20
2,2-Dichloropropane	49			ug/kg	50.0		97.7	70-130	1.49	20
cis-1,3-Dichloropropene	50			ug/kg	50.0		100	70-130	3.89	20
trans-1,3-Dichloropropene	54			ug/kg	50.0		108	70-130	2.05	20
1,1-Dichloropropene	41			ug/kg	50.0		82.2	70-130	4.63	20
Diethyl ether	54			ug/kg	50.0		109	60-140	6.46	30
1,4-Dioxane	259			ug/kg	250		104	0-200	2.03	50
Ethylbenzene	45			ug/kg	50.0		90.4	70-130	4.71	20
Hexachlorobutadiene	41			ug/kg	50.0		82.1	70-130	8.88	20
2-Hexanone	52			ug/kg	50.0		105	70-130	7.55	20
Isopropylbenzene	45			ug/kg	50.0		90.5	70-130	4.50	20
p-Isopropyltoluene	46			ug/kg	50.0		91.7	70-130	5.03	20
Methylene Chloride	47			ug/kg	50.0		93.3	60-140	29.2	30
4-Methyl-2-pentanone	48			ug/kg	50.0		95.2	70-130	3.31	20
Naphthalene	45			ug/kg	50.0		89.5	70-130	8.26	20
n-Propylbenzene	45			ug/kg	50.0		89.9	70-130	4.60	20
Styrene	45			ug/kg	50.0		90.9	70-130	4.87	20
1,1,1,2-Tetrachloroethane	49			ug/kg	50.0		98.9	70-130	3.54	20
Tetrachloroethene	47			ug/kg	50.0		94.9	70-130	2.86	20
Tetrahydrofuran	54			ug/kg	50.0		108	50-150	7.96	40
Toluene	47			ug/kg	50.0		93.4	70-130	3.57	20
1,2,4-Trichlorobenzene	45			ug/kg	50.0		89.9	70-130	8.66	20
1,2,3-Trichlorobenzene	43			ug/kg	50.0		86.4	70-130	5.79	20
1,1,2-Trichloroethane	49			ug/kg	50.0		98.9	70-130	3.54	20

Quality Control
(Continued)

Volatile Organic Compounds (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B2L0087 - EPA 5035 (Continued)										
LCS Dup (B2L0087-BSD1)					Prepared & Analyzed: 12/01/22					
1,1,1-Trichloroethane	48			ug/kg	50.0		95.4	70-130	3.09	20
Trichloroethene	48			ug/kg	50.0		95.1	70-130	4.58	20
1,2,3-Trichloropropane	50			ug/kg	50.0		99.4	70-130	2.42	20
1,3,5-Trimethylbenzene	47			ug/kg	50.0		93.9	70-130	4.82	20
1,2,4-Trimethylbenzene	47			ug/kg	50.0		94.1	70-130	5.34	20
Vinyl Chloride	41			ug/kg	50.0		82.8	60-140	5.49	30
o-Xylene	45			ug/kg	50.0		89.7	70-130	4.65	20
m&p-Xylene	89			ug/kg	100		88.5	70-130	3.32	20
1,1,2,2-Tetrachloroethane	47			ug/kg	50.0		93.4	70-130	2.58	20
tert-Amyl methyl ether	54			ug/kg	50.0		107	70-130	2.55	20
1,3-Dichloropropane	50			ug/kg	50.0		99.2	70-130	1.16	20
Ethyl tert-butyl ether	52			ug/kg	50.0		104	70-130	4.88	20
Trichlorofluoromethane	49			ug/kg	50.0		97.5	70-130	1.82	20
Dichlorodifluoromethane	55			ug/kg	50.0		111	60-140	7.56	30
<i>Surrogate: 4-Bromofluorobenzene</i>			<i>51.9</i>	<i>ug/kg</i>	<i>50.0</i>		<i>104</i>	<i>70-130</i>		
<i>Surrogate: 1,2-Dichloroethane-d4</i>			<i>47.4</i>	<i>ug/kg</i>	<i>50.0</i>		<i>94.7</i>	<i>70-130</i>		
<i>Surrogate: Toluene-d8</i>			<i>52.7</i>	<i>ug/kg</i>	<i>50.0</i>		<i>105</i>	<i>70-130</i>		

Batch: B2L0092 - Purge-Trap

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Blank (B2L0092-BLK1)					Prepared: 11/30/22 Analyzed: 12/01/22					
Acetone	ND		20	ug/kg						
Benzene	ND		1	ug/kg						
Bromobenzene	ND		1	ug/kg						
Bromochloromethane	ND		1	ug/kg						
Bromodichloromethane	ND		1	ug/kg						
Bromoform	ND		1	ug/kg						
Bromomethane	ND		1	ug/kg						
2-Butanone	ND		5	ug/kg						
tert-Butyl alcohol	ND		5	ug/kg						
sec-Butylbenzene	ND		1	ug/kg						
n-Butylbenzene	ND		1	ug/kg						
tert-Butylbenzene	ND		1	ug/kg						
Methyl t-butyl ether (MTBE)	ND		1	ug/kg						
Carbon Disulfide	ND		1	ug/kg						
Carbon Tetrachloride	ND		1	ug/kg						
Chlorobenzene	ND		1	ug/kg						
Chloroethane	ND		1	ug/kg						
Chloroform	ND		1	ug/kg						
Chloromethane	ND		1	ug/kg						
4-Chlorotoluene	ND		1	ug/kg						
2-Chlorotoluene	ND		1	ug/kg						
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	ug/kg						
Dibromochloromethane	ND		1	ug/kg						
1,2-Dibromoethane (EDB)	ND		1	ug/kg						
Dibromomethane	ND		1	ug/kg						
1,2-Dichlorobenzene	ND		1	ug/kg						
1,3-Dichlorobenzene	ND		1	ug/kg						
1,4-Dichlorobenzene	ND		1	ug/kg						
1,1-Dichloroethane	ND		1	ug/kg						
1,2-Dichloroethane	ND		1	ug/kg						
trans-1,2-Dichloroethene	ND		1	ug/kg						
cis-1,2-Dichloroethene	ND		1	ug/kg						
1,1-Dichloroethene	ND		1	ug/kg						
1,2-Dichloropropane	ND		1	ug/kg						
2,2-Dichloropropane	ND		1	ug/kg						
cis-1,3-Dichloropropene	ND		1	ug/kg						
trans-1,3-Dichloropropene	ND		1	ug/kg						

Quality Control
(Continued)

Volatile Organic Compounds (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B2L0092 - Purge-Trap (Continued)										
Blank (B2L0092-BLK1)										
					Prepared: 11/30/22 Analyzed: 12/01/22					
1,1-Dichloropropene	ND		1	ug/kg						
1,3-Dichloropropene (cis + trans)	ND		2	ug/kg						
Diethyl ether	ND		5	ug/kg						
1,4-Dioxane	ND		100	ug/kg						
Ethylbenzene	ND		1	ug/kg						
Hexachlorobutadiene	ND		1	ug/kg						
2-Hexanone	ND		5	ug/kg						
Isopropylbenzene	ND		1	ug/kg						
p-Isopropyltoluene	ND		1	ug/kg						
Methylene Chloride	ND		2	ug/kg						
4-Methyl-2-pentanone	ND		5	ug/kg						
Naphthalene	ND		1	ug/kg						
n-Propylbenzene	ND		1	ug/kg						
Styrene	ND		1	ug/kg						
1,1,1,2-Tetrachloroethane	ND		1	ug/kg						
Tetrachloroethene	ND		1	ug/kg						
Tetrahydrofuran	ND		5	ug/kg						
Toluene	ND		1	ug/kg						
1,2,4-Trichlorobenzene	ND		1	ug/kg						
1,2,3-Trichlorobenzene	ND		1	ug/kg						
1,1,2-Trichloroethane	ND		1	ug/kg						
1,1,1-Trichloroethane	ND		1	ug/kg						
Trichloroethene	ND		1	ug/kg						
1,2,3-Trichloropropane	ND		1	ug/kg						
1,3,5-Trimethylbenzene	ND		1	ug/kg						
1,2,4-Trimethylbenzene	ND		1	ug/kg						
Vinyl Chloride	ND		1	ug/kg						
o-Xylene	ND		1	ug/kg						
m&p-Xylene	ND		2	ug/kg						
Total xylenes	ND		1	ug/kg						
1,1,2,2-Tetrachloroethane	ND		1	ug/kg						
tert-Amyl methyl ether	ND		1	ug/kg						
1,3-Dichloropropane	ND		1	ug/kg						
Ethyl tert-butyl ether	ND		1	ug/kg						
Diisopropyl ether	ND		1	ug/kg						
Trichlorofluoromethane	ND		1	ug/kg						
Dichlorodifluoromethane	ND		1	ug/kg						
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<i>Surrogate: 4-Bromofluorobenzene</i>			52.2	ug/l	50.0		104	70-130		
<i>Surrogate: 1,2-Dichloroethane-d4</i>			49.0	ug/l	50.0		98.0	70-130		
<i>Surrogate: Toluene-d8</i>			48.6	ug/l	50.0		97.3	70-130		

Quality Control
(Continued)

Volatile Organic Compounds (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B2L0092 - Purge-Trap (Continued)										
LCS (B2L0092-BS1)										
					Prepared: 11/30/22 Analyzed: 12/01/22					
Acetone	59			ug/l	50.0		117	70-130		
Benzene	47			ug/l	50.0		93.7	70-130		
Bromobenzene	54			ug/l	50.0		107	70-130		
Bromochloromethane	47			ug/l	50.0		93.1	70-130		
Bromodichloromethane	53			ug/l	50.0		105	70-130		
Bromoform	52			ug/l	50.0		105	70-130		
Bromomethane	40			ug/l	50.0		80.6	70-130		
2-Butanone	38			ug/l	50.0		76.3	70-130		
tert-Butyl alcohol	91			ug/l	50.0		182	70-130		
sec-Butylbenzene	52			ug/l	50.0		104	70-130		
n-Butylbenzene	53			ug/l	50.0		105	70-130		
tert-Butylbenzene	53			ug/l	50.0		107	70-130		
Methyl t-butyl ether (MTBE)	44			ug/l	50.0		88.1	70-130		
Carbon Disulfide	45			ug/l	50.0		89.1	70-130		
Carbon Tetrachloride	51			ug/l	50.0		103	70-130		
Chlorobenzene	50			ug/l	50.0		99.2	70-130		
Chloroethane	68			ug/l	50.0		136	70-130		
Chloroform	48			ug/l	50.0		95.8	70-130		
Chloromethane	51			ug/l	50.0		103	70-130		
4-Chlorotoluene	52			ug/l	50.0		104	70-130		
2-Chlorotoluene	52			ug/l	50.0		104	70-130		
1,2-Dibromo-3-chloropropane (DBCP)	56			ug/l	50.0		112	70-130		
Dibromochloromethane	52			ug/l	50.0		103	70-130		
1,2-Dibromoethane (EDB)	54			ug/l	50.0		108	70-130		
Dibromomethane	53			ug/l	50.0		107	70-130		
1,2-Dichlorobenzene	54			ug/l	50.0		108	70-130		
1,3-Dichlorobenzene	53			ug/l	50.0		107	70-130		
1,4-Dichlorobenzene	53			ug/l	50.0		107	70-130		
1,1-Dichloroethane	45			ug/l	50.0		90.7	70-130		
1,2-Dichloroethane	50			ug/l	50.0		99.8	70-130		
trans-1,2-Dichloroethene	46			ug/l	50.0		91.1	70-130		
cis-1,2-Dichloroethene	45			ug/l	50.0		90.4	70-130		
1,1-Dichloroethene	37			ug/l	50.0		73.4	70-130		
1,2-Dichloropropane	48			ug/l	50.0		95.0	70-130		
2,2-Dichloropropane	41			ug/l	50.0		81.9	70-130		
cis-1,3-Dichloropropene	50			ug/l	50.0		99.7	70-130		
trans-1,3-Dichloropropene	49			ug/l	50.0		97.0	70-130		
1,1-Dichloropropene	46			ug/l	50.0		91.8	70-130		
Diethyl ether	48			ug/l	50.0		95.2	70-130		
1,4-Dioxane	276			ug/l	250		110	0-200		
Ethylbenzene	49			ug/l	50.0		98.5	70-130		
Hexachlorobutadiene	53			ug/l	50.0		106	70-130		
2-Hexanone	41			ug/l	50.0		82.9	70-130		
Isopropylbenzene	52			ug/l	50.0		105	70-130		
p-Isopropyltoluene	53			ug/l	50.0		106	70-130		
Methylene Chloride	46			ug/l	50.0		91.4	60-140		
4-Methyl-2-pentanone	45			ug/l	50.0		90.5	70-130		
Naphthalene	54			ug/l	50.0		109	70-130		
n-Propylbenzene	53			ug/l	50.0		107	70-130		
Styrene	53			ug/l	50.0		107	70-130		
1,1,1,2-Tetrachloroethane	51			ug/l	50.0		103	70-130		
Tetrachloroethene	50			ug/l	50.0		100	70-130		
Tetrahydrofuran	51			ug/l	50.0		102	70-130		
Toluene	49			ug/l	50.0		98.1	70-130		
1,2,4-Trichlorobenzene	54			ug/l	50.0		109	70-130		
1,2,3-Trichlorobenzene	55			ug/l	50.0		109	70-130		
1,1,2-Trichloroethane	53			ug/l	50.0		105	70-130		

Quality Control
(Continued)

Volatile Organic Compounds (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B2L0092 - Purge-Trap (Continued)										
LCS (B2L0092-BS1)										
					Prepared: 11/30/22 Analyzed: 12/01/22					
1,1,1-Trichloroethane	52			ug/l	50.0		103	70-130		
Trichloroethene	49			ug/l	50.0		98.7	70-130		
1,2,3-Trichloropropane	54			ug/l	50.0		109	70-130		
1,3,5-Trimethylbenzene	53			ug/l	50.0		106	70-130		
1,2,4-Trimethylbenzene	53			ug/l	50.0		105	70-130		
Vinyl Chloride	52			ug/l	50.0		104	70-130		
o-Xylene	50			ug/l	50.0		99.9	70-130		
m&p-Xylene	100			ug/l	100		99.7	70-130		
1,1,2,2-Tetrachloroethane	49			ug/l	50.0		97.5	70-130		
tert-Amyl methyl ether	38			ug/l	50.0		75.9	70-130		
1,3-Dichloropropane	51			ug/l	50.0		103	70-130		
Ethyl tert-butyl ether	40			ug/l	50.0		80.0	70-130		
Diisopropyl ether	43			ug/l	50.0		85.3	70-130		
Trichlorofluoromethane	55			ug/l	50.0		111	70-130		
Dichlorodifluoromethane	61			ug/l	50.0		123	70-130		
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Surrogate: 4-Bromofluorobenzene			50.4	ug/l	50.0		101	70-130		
Surrogate: 1,2-Dichloroethane-d4			46.4	ug/l	50.0		92.8	70-130		
Surrogate: Toluene-d8			51.0	ug/l	50.0		102	70-130		
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LCS Dup (B2L0092-BSD1)										
					Prepared: 11/30/22 Analyzed: 12/01/22					
Acetone	72			ug/l	50.0		144	70-130	20.2	30
Benzene	47			ug/l	50.0		94.9	70-130	1.32	30
Bromobenzene	54			ug/l	50.0		107	70-130	0.130	30
Bromochloromethane	49			ug/l	50.0		97.7	70-130	4.88	30
Bromodichloromethane	54			ug/l	50.0		108	70-130	1.92	30
Bromoform	56			ug/l	50.0		112	70-130	6.64	30
Bromomethane	53			ug/l	50.0		107	70-130	27.8	30
2-Butanone	39			ug/l	50.0		77.2	70-130	1.07	30
tert-Butyl alcohol	99			ug/l	50.0		198	70-130	8.52	30
sec-Butylbenzene	53			ug/l	50.0		105	70-130	0.611	30
n-Butylbenzene	53			ug/l	50.0		106	70-130	0.114	30
tert-Butylbenzene	53			ug/l	50.0		107	70-130	0.0561	30
Methyl t-butyl ether (MTBE)	44			ug/l	50.0		88.3	70-130	0.317	30
Carbon Disulfide	47			ug/l	50.0		94.7	70-130	6.11	30
Carbon Tetrachloride	52			ug/l	50.0		104	70-130	1.16	30
Chlorobenzene	49			ug/l	50.0		98.1	70-130	1.10	30
Chloroethane	61			ug/l	50.0		121	70-130	11.7	30
Chloroform	48			ug/l	50.0		96.6	70-130	0.873	30
Chloromethane	53			ug/l	50.0		107	70-130	3.84	30
4-Chlorotoluene	52			ug/l	50.0		105	70-130	0.575	30
2-Chlorotoluene	52			ug/l	50.0		105	70-130	0.575	30
1,2-Dibromo-3-chloropropane (DBCP)	55			ug/l	50.0		111	70-130	1.69	30
Dibromochloromethane	53			ug/l	50.0		107	70-130	3.48	30
1,2-Dibromoethane (EDB)	54			ug/l	50.0		108	70-130	0.203	30
Dibromomethane	54			ug/l	50.0		108	70-130	0.801	30
1,2-Dichlorobenzene	53			ug/l	50.0		105	70-130	2.81	30
1,3-Dichlorobenzene	53			ug/l	50.0		106	70-130	0.921	30
1,4-Dichlorobenzene	52			ug/l	50.0		104	70-130	2.39	30
1,1-Dichloroethane	47			ug/l	50.0		93.6	70-130	3.17	30
1,2-Dichloroethane	49			ug/l	50.0		98.7	70-130	1.17	30
trans-1,2-Dichloroethene	44			ug/l	50.0		88.7	70-130	2.71	30
cis-1,2-Dichloroethene	47			ug/l	50.0		93.6	70-130	3.46	30
1,1-Dichloroethene	40			ug/l	50.0		80.0	70-130	8.63	30
1,2-Dichloropropane	48			ug/l	50.0		95.1	70-130	0.0842	30
2,2-Dichloropropane	41			ug/l	50.0		82.0	70-130	0.146	30
cis-1,3-Dichloropropene	49			ug/l	50.0		97.3	70-130	2.44	30
trans-1,3-Dichloropropene	51			ug/l	50.0		103	70-130	5.92	30

Quality Control
(Continued)

Volatile Organic Compounds (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B2L0092 - Purge-Trap (Continued)										
LCS Dup (B2L0092-BSD1)										
					Prepared: 11/30/22 Analyzed: 12/01/22					
1,1-Dichloropropene	44			ug/l	50.0		87.1	70-130	5.32	30
Diethyl ether	49			ug/l	50.0		97.8	70-130	2.74	30
1,4-Dioxane	304			ug/l	250		121	0-200	9.52	40
Ethylbenzene	49			ug/l	50.0		99.0	70-130	0.466	30
Hexachlorobutadiene	54			ug/l	50.0		107	70-130	0.881	30
2-Hexanone	43			ug/l	50.0		85.2	70-130	2.78	30
Isopropylbenzene	53			ug/l	50.0		107	70-130	2.12	30
p-Isopropyltoluene	53			ug/l	50.0		106	70-130	0.208	30
Methylene Chloride	48			ug/l	50.0		95.1	60-140	3.95	30
4-Methyl-2-pentanone	45			ug/l	50.0		89.4	70-130	1.27	30
Naphthalene	53			ug/l	50.0		106	70-130	2.53	30
n-Propylbenzene	53			ug/l	50.0		107	70-130	0.131	30
Styrene	54			ug/l	50.0		107	70-130	0.728	30
1,1,1,2-Tetrachloroethane	51			ug/l	50.0		103	70-130	0.136	30
Tetrachloroethene	51			ug/l	50.0		103	70-130	2.29	30
Tetrahydrofuran	50			ug/l	50.0		101	70-130	1.46	30
Toluene	49			ug/l	50.0		97.6	70-130	0.490	30
1,2,4-Trichlorobenzene	54			ug/l	50.0		107	70-130	1.22	30
1,2,3-Trichlorobenzene	53			ug/l	50.0		106	70-130	2.86	30
1,1,2-Trichloroethane	53			ug/l	50.0		106	70-130	0.342	30
1,1,1-Trichloroethane	52			ug/l	50.0		105	70-130	1.50	30
Trichloroethene	49			ug/l	50.0		97.6	70-130	1.04	30
1,2,3-Trichloropropane	54			ug/l	50.0		108	70-130	0.793	30
1,3,5-Trimethylbenzene	53			ug/l	50.0		106	70-130	0.282	30
1,2,4-Trimethylbenzene	52			ug/l	50.0		105	70-130	0.304	30
Vinyl Chloride	53			ug/l	50.0		105	70-130	0.687	30
o-Xylene	51			ug/l	50.0		103	70-130	3.00	30
m&p-Xylene	100			ug/l	100		99.5	70-130	0.171	30
1,1,2,2-Tetrachloroethane	50			ug/l	50.0		99.5	70-130	2.05	30
tert-Amyl methyl ether	33			ug/l	50.0		66.8	70-130	12.8	30
1,3-Dichloropropane	49			ug/l	50.0		97.8	70-130	4.93	30
Ethyl tert-butyl ether	36			ug/l	50.0		72.4	70-130	9.94	30
Diisopropyl ether	44			ug/l	50.0		88.6	70-130	3.84	30
Trichlorofluoromethane	57			ug/l	50.0		113	70-130	2.46	30
Dichlorodifluoromethane	59			ug/l	50.0		119	70-130	3.15	30
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Surrogate: 4-Bromofluorobenzene			51.5	ug/l	50.0		103	70-130		
Surrogate: 1,2-Dichloroethane-d4			47.0	ug/l	50.0		94.0	70-130		
Surrogate: Toluene-d8			49.2	ug/l	50.0		98.5	70-130		

Quality Control
(Continued)

Volatile Petroleum Hydrocarbons (MADEP-VPH)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B2K1369 - MADEP VPH										
LCS (B2K1369-BS1)					Prepared & Analyzed: 11/29/22					
Benzene	2.3		0.2	mg/kg	2.50		92.6	70-130		
Ethylbenzene	2.4		0.2	mg/kg	2.50		97.5	70-130		
Methyl t-butyl ether (MTBE)	2.3		0.05	mg/kg	2.50		92.7	70-130		
Naphthalene	2.1		0.5	mg/kg	2.50		84.6	70-130		
Toluene	2.4		0.2	mg/kg	2.50		95.5	70-130		
m&p-Xylene	5.0		0.5	mg/kg	5.00		101	70-130		
2-Methylpentane	2.4		250	mg/kg	2.50		94.4	70-130		
n-Nonane	2.2		250	mg/kg	2.50		87.9	70-130		
o-Xylene	2.5		0.5	mg/kg	2.50		100	70-130		
Decane	2.2		250	mg/kg	2.50		88.0	70-130		
C5-C8 Aliphatic Hydrocarbons	ND		5.0	mg/kg				70-130		
n-Butylcyclohexane	2.3		250	mg/kg	2.50		91.0	70-130		
n-Pentane	2.3		250	mg/kg	2.50		91.9	70-130		
C9-C12 Aliphatic Hydrocarbons	ND		5.0	mg/kg				70-130		
1,2,4-Trimethylbenzene	2.7		0.5	mg/kg	2.50		109	70-130		
VPH_LCS_Aliphatic_C5-C8	7.0		0.5	mg/kg	7.50		93.0	70-130		
C9-C10 Aromatic Hydrocarbons	ND		5.0	mg/kg	2.50			70-130		
VPH_LCS_Aliphatic_C9-C12	4.5		0.5	mg/kg	5.00		89.5	70-130		
VPH_LCS_Aromatic_C9-C10	2.7		0.5	mg/kg	2.50		109	70-130		
<i>Surrogate: 2,5-Dibromotoluene-PID</i>			<i>37.0</i>	<i>ug/l</i>	<i>50.0</i>		<i>73.9</i>	<i>70-130</i>		
<i>Surrogate: 2,5-Dibromotoluene-FID</i>			<i>36.5</i>	<i>ug/l</i>	<i>50.0</i>		<i>73.1</i>	<i>70-130</i>		
LCS Dup (B2K1369-BSD1)					Prepared & Analyzed: 11/29/22					
Benzene	2.3		0.2	mg/kg	2.50		92.0	70-130	0.628	25
Ethylbenzene	2.4		0.2	mg/kg	2.50		97.9	70-130	0.409	25
Methyl t-butyl ether (MTBE)	2.3		0.05	mg/kg	2.50		92.3	70-130	0.389	25
Naphthalene	2.2		0.5	mg/kg	2.50		86.9	70-130	2.68	25
Toluene	2.4		0.2	mg/kg	2.50		95.2	70-130	0.315	25
m&p-Xylene	5.1		0.5	mg/kg	5.00		101	70-130	0.554	25
2-Methylpentane	2.4		250	mg/kg	2.50		94.0	70-130	0.425	25
n-Nonane	2.2		250	mg/kg	2.50		88.5	70-130	0.771	25
o-Xylene	2.5		0.5	mg/kg	2.50		101	70-130	0.714	25
Decane	2.4		250	mg/kg	2.50		94.2	70-130	6.74	25
C5-C8 Aliphatic Hydrocarbons	ND		5.0	mg/kg				70-130		25
n-Butylcyclohexane	2.2		250	mg/kg	2.50		89.7	70-130	1.39	25
C9-C12 Aliphatic Hydrocarbons	ND		5.0	mg/kg				70-130		25
n-Pentane	2.3		250	mg/kg	2.50		91.9	70-130	0.0871	25
1,2,4-Trimethylbenzene	2.8		0.5	mg/kg	2.50		111	70-130	1.99	25
C9-C10 Aromatic Hydrocarbons	ND		5.0	mg/kg	2.50			70-130		25
VPH_LCS_Aliphatic_C5-C8	7.0		0.5	mg/kg	7.50		92.7	70-130	0.388	25
VPH_LCS_Aliphatic_C9-C12	4.6		0.5	mg/kg	5.00		91.9	70-130	2.69	25
VPH_LCS_Aromatic_C9-C10	2.8		0.5	mg/kg	2.50		111	70-130	1.99	25
<i>Surrogate: 2,5-Dibromotoluene-PID</i>			<i>35.8</i>	<i>ug/l</i>	<i>50.0</i>		<i>71.6</i>	<i>70-130</i>		
<i>Surrogate: 2,5-Dibromotoluene-FID</i>			<i>37.2</i>	<i>ug/l</i>	<i>50.0</i>		<i>74.3</i>	<i>70-130</i>		

Quality Control
(Continued)

Volatile Petroleum Hydrocarbons (MADEP-VPH) (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B2K1369 - MADEP VPH (Continued)										
Matrix Spike (B2K1369-MS1)			Source: 2K18040-02			Prepared & Analyzed: 11/29/22				
Benzene	2.2		0.3	mg/kg dry	2.76	ND	79.8	70-130		
Ethylbenzene	2.4		0.3	mg/kg dry	2.76	ND	86.4	70-130		
Methyl t-butyl ether (MTBE)	2.3		0.06	mg/kg dry	2.76	ND	84.3	70-130		
Naphthalene	2.6		0.6	mg/kg dry	2.76	ND	92.6	70-130		
Toluene	2.2		0.3	mg/kg dry	2.76	ND	80.5	70-130		
m&p-Xylene	4.6		0.6	mg/kg dry	5.52	ND	83.7	70-130		
2-Methylpentane	2.6		302	mg/kg dry	2.76	ND	94.0	70-130		
n-Nonane	2.1		302	mg/kg dry	2.76	ND	77.5	70-130		
o-Xylene	2.4		0.6	mg/kg dry	2.76	ND	88.2	70-130		
Decane	2.3		302	mg/kg dry	2.76	ND	82.3	70-130		
C5-C8 Aliphatic Hydrocarbons	ND		6.0	mg/kg dry		ND		70-130		
n-Butylcyclohexane	2.2		302	mg/kg dry	2.76	ND	79.1	70-130		
C9-C12 Aliphatic Hydrocarbons	ND		6.0	mg/kg dry		ND		70-130		
n-Pentane	2.3		302	mg/kg dry	2.76	ND	82.6	70-130		
1,2,4-Trimethylbenzene	3.0		0.6	mg/kg dry	2.76	ND	107	70-130		
C9-C10 Aromatic Hydrocarbons	ND		6.0	mg/kg dry	2.76	ND		70-130		
VPH_LCS_Aliphatic_C5-C8	6.8		0.6	mg/kg dry	8.28	ND	82.7	70-130		
VPH_LCS_Aliphatic_C9-C12	4.2		0.6	mg/kg dry	5.52	ND	76.5	70-130		
VPH_LCS_Aromatic_C9-C10	2.8		0.6	mg/kg dry	2.76	ND	100	70-130		
<i>Surrogate: 2,5-Dibromotoluene-PID</i>			<i>37.4</i>	<i>ug/l</i>	<i>50.0</i>		<i>74.7</i>	<i>70-130</i>		
<i>Surrogate: 2,5-Dibromotoluene-FID</i>			<i>38.9</i>	<i>ug/l</i>	<i>50.0</i>		<i>77.8</i>	<i>70-130</i>		
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Matrix Spike Dup (B2K1369-MSD1)			Source: 2K18040-02			Prepared & Analyzed: 11/29/22				
Benzene	2.2		0.3	mg/kg dry	2.76	ND	79.8	70-130	0.00	25
Ethylbenzene	2.2		0.3	mg/kg dry	2.76	ND	81.0	70-130	6.46	25
Methyl t-butyl ether (MTBE)	2.2		0.06	mg/kg dry	2.76	ND	81.5	70-130	3.43	25
Naphthalene	2.6		0.6	mg/kg dry	2.76	ND	92.6	70-130	0.00	25
Toluene	2.2		0.3	mg/kg dry	2.76	ND	80.5	70-130	0.00	25
m&p-Xylene	4.6		0.6	mg/kg dry	5.52	ND	83.7	70-130	0.00	25
2-Methylpentane	2.3		302	mg/kg dry	2.76	ND	84.4	70-130	10.8	25
n-Nonane	2.1		302	mg/kg dry	2.76	ND	77.5	70-130	0.00	25
o-Xylene	2.3		0.6	mg/kg dry	2.76	ND	83.2	70-130	5.87	25
Decane	2.0		302	mg/kg dry	2.76	ND	73.9	70-130	10.7	25
C5-C8 Aliphatic Hydrocarbons	ND		6.0	mg/kg dry		ND		70-130		25
n-Butylcyclohexane	2.2		302	mg/kg dry	2.76	ND	79.1	70-130	0.00	25
n-Pentane	2.3		302	mg/kg dry	2.76	ND	82.6	70-130	0.00	25
C9-C12 Aliphatic Hydrocarbons	ND		6.0	mg/kg dry		ND		70-130		25
1,2,4-Trimethylbenzene	2.8		0.6	mg/kg dry	2.76	ND	100	70-130	6.92	25
VPH_LCS_Aliphatic_C5-C8	6.8		0.6	mg/kg dry	8.28	ND	82.7	70-130	0.00	25
C9-C10 Aromatic Hydrocarbons	ND		6.0	mg/kg dry	2.76	ND		70-130		25
VPH_LCS_Aliphatic_C9-C12	4.2		0.6	mg/kg dry	5.52	ND	76.5	70-130	0.00	25
VPH_LCS_Aromatic_C9-C10	2.8		0.6	mg/kg dry	2.76	ND	100	70-130	0.00	25
<i>Surrogate: 2,5-Dibromotoluene-PID</i>			<i>37.4</i>	<i>ug/l</i>	<i>50.0</i>		<i>74.7</i>	<i>70-130</i>		
<i>Surrogate: 2,5-Dibromotoluene-FID</i>			<i>38.9</i>	<i>ug/l</i>	<i>50.0</i>		<i>77.8</i>	<i>70-130</i>		

**Quality Control
(Continued)**

Polychlorinated Biphenyls (PCBs)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B2K1075 - EPA 3546										
Blank (B2K1075-BLK1)										
					Prepared: 11/21/22 Analyzed: 11/30/22					
Aroclor-1016	ND		66	ug/kg						
Aroclor-1221	ND		66	ug/kg						
Aroclor-1232	ND		66	ug/kg						
Aroclor-1242	ND		66	ug/kg						
Aroclor-1248	ND		66	ug/kg						
Aroclor-1254	ND		66	ug/kg						
Aroclor-1260	ND		66	ug/kg						
Aroclor-1262	ND		66	ug/kg						
Aroclor-1268	ND		66	ug/kg						
PCBs (Total)	ND		66	ug/kg						

<i>Surrogate: 2,4,5,6-Tetrachloro-m-xylene (TCMX)</i>			12.3	ug/kg	13.3		92.1	36.2-130		
<i>Surrogate: Decachlorobiphenyl (DCBP)</i>			13.6	ug/kg	13.3		102	43.3-130		
LCS (B2K1075-BS1)										
					Prepared: 11/21/22 Analyzed: 11/30/22					
Aroclor-1016	160		66	ug/kg	167		95.8	58.2-125		
Aroclor-1242	ND		66	ug/kg				58.2-125		
Aroclor-1260	156		66	ug/kg	167		93.8	65.5-130		

<i>Surrogate: 2,4,5,6-Tetrachloro-m-xylene (TCMX)</i>			11.5	ug/kg	13.3		86.6	36.2-130		
<i>Surrogate: Decachlorobiphenyl (DCBP)</i>			18.7	ug/kg	13.3		140	43.3-130		
LCS Dup (B2K1075-BSD1)										
					Prepared: 11/21/22 Analyzed: 11/30/22					
Aroclor-1016	ND		66	ug/kg	167			58.2-125		20
Aroclor-1242	ND		66	ug/kg				58.2-125		20
Aroclor-1260	ND		66	ug/kg	167			65.5-130		20

<i>Surrogate: 2,4,5,6-Tetrachloro-m-xylene (TCMX)</i>			12.1	ug/kg	13.3		90.8	36.2-130		
<i>Surrogate: Decachlorobiphenyl (DCBP)</i>			12.8	ug/kg	13.3		95.9	43.3-130		

Quality Control
(Continued)

Extractable Petroleum Hydrocarbons (MADEP-EPH)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B2K1298 - EPA 3546										
Blank (B2K1298-BLK1)										
					Prepared: 11/27/22 Analyzed: 11/29/22					
Unadjusted C11-C22 Aromatic Hydrocarbons	ND		6.67	mg/kg						
Naphthalene	ND		0.33	mg/kg						
2-Methylnaphthalene	ND		0.33	mg/kg						
Phenanthrene	ND		0.33	mg/kg						
Acenaphthene	ND		0.33	mg/kg						
Acenaphthylene	ND		0.33	mg/kg						
Fluorene	ND		0.33	mg/kg						
Anthracene	ND		0.33	mg/kg						
Fluoranthene	ND		0.33	mg/kg						
Pyrene	ND		0.33	mg/kg						
Benzo(a)anthracene	ND		0.33	mg/kg						
Chrysene	ND		0.33	mg/kg						
Benzo(b)fluoranthene	ND		0.33	mg/kg						
Benzo(k)fluoranthene	ND		0.33	mg/kg						
Benzo(a)pyrene	ND		0.33	mg/kg						
Indeno(1,2,3-cd)pyrene	ND		0.33	mg/kg						
Dibenz(a,h)anthracene	ND		0.33	mg/kg						
Benzo(g,h,i)perylene	ND		0.33	mg/kg						
C9-C18 Aliphatic Hydrocarbons	ND		13.3	mg/kg						
C19-C36 Aliphatic Hydrocarbons	ND		13.3	mg/kg						
C11-C22 Aromatic Hydrocarbons	ND		6.67	mg/kg						
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Surrogate: Chlorooctadecane			4.92	mg/kg	8.33		59.1	40-140		
Surrogate: o-Terphenyl			5.58	mg/kg	8.33		67.0	40-140		
Surrogate: 2-Fluorobiphenyl			2.86	mg/kg	3.33		85.8	40-140		
Surrogate: 2-Bromonaphthalene			2.81	mg/kg	3.33		84.2	40-140		
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LCS (B2K1298-BS1)										
					Prepared: 11/27/22 Analyzed: 11/29/22					
Naphthalene	1.52		0.33	mg/kg	2.67		57.0	40-140		
2-Methylnaphthalene	1.50		0.33	mg/kg	2.67		56.1	40-140		
Phenanthrene	1.53		0.33	mg/kg	2.67		57.3	40-140		
Acenaphthene	1.52		0.33	mg/kg	2.67		56.9	40-140		
Acenaphthylene	1.49		0.33	mg/kg	2.67		55.8	40-140		
Fluorene	1.45		0.33	mg/kg	2.67		54.3	40-140		
Anthracene	1.57		0.33	mg/kg	2.67		58.9	40-140		
Fluoranthene	1.64		0.33	mg/kg	2.67		61.6	40-140		
Pyrene	1.66		0.33	mg/kg	2.67		62.1	40-140		
Benzo(a)anthracene	1.66		0.33	mg/kg	2.67		62.2	40-140		
Chrysene	1.70		0.33	mg/kg	2.67		63.7	40-140		
Benzo(b)fluoranthene	1.66		0.33	mg/kg	2.67		62.1	40-140		
Benzo(k)fluoranthene	1.72		0.33	mg/kg	2.67		64.6	40-140		
Benzo(a)pyrene	1.62		0.33	mg/kg	2.67		60.7	40-140		
Indeno(1,2,3-cd)pyrene	1.55		0.33	mg/kg	2.67		58.3	40-140		
Dibenz(a,h)anthracene	1.57		0.33	mg/kg	2.67		59.0	40-140		
Benzo(g,h,i)perylene	1.70		0.33	mg/kg	2.67		63.9	40-140		
EPH_LCS_Aliphatic_C19-C36	16.0		0.00	mg/kg	21.3		74.9	40-140		
EPH_LCS_Aliphatic_C9-C18	8.69		0.00	mg/kg	16.0		54.3	40-140		
EPH_LCS_Aromatic_C11-C22	27.1		0.00	mg/kg	45.3		59.7	40-140		
Nonane	1.03		0.33	mg/kg	2.67		38.7	30-140		
Decane	1.36		0.33	mg/kg	2.67		50.8	40-140		
Dodecane	1.56		0.33	mg/kg	2.67		58.5	40-140		
Tetradecane	1.51		0.33	mg/kg	2.67		56.6	40-140		
Hexadecane	1.54		0.33	mg/kg	2.67		57.6	40-140		
Octadecane	1.70		0.33	mg/kg	2.67		63.7	40-140		
Nonadecane	1.76		0.33	mg/kg	2.67		65.8	40-140		
Eicosane	1.82		0.33	mg/kg	2.67		68.2	40-140		
Docosane	1.89		0.33	mg/kg	2.67		70.8	40-140		
Tetracosane	1.92		0.33	mg/kg	2.67		71.8	40-140		

Quality Control
(Continued)

Extractable Petroleum Hydrocarbons (MADEP-EPH) (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B2K1298 - EPA 3546 (Continued)										
LCS (B2K1298-BS1)										
					Prepared: 11/27/22 Analyzed: 11/29/22					
Hexacosane	1.93		0.33	mg/kg	2.67		72.5	40-140		
Octacosane	1.99		0.33	mg/kg	2.67		74.5	40-140		
Triacotane	2.14		0.33	mg/kg	2.67		80.3	40-140		
Hexatriacontane	2.54		0.33	mg/kg	2.67		95.1	40-140		

<i>Surrogate: Chlorooctadecane</i>			<i>5.43</i>	mg/kg	<i>8.33</i>		<i>65.2</i>	<i>40-140</i>		
<i>Surrogate: o-Terphenyl</i>			<i>5.31</i>	mg/kg	<i>8.33</i>		<i>63.7</i>	<i>40-140</i>		
<i>Surrogate: 2-Fluorobiphenyl</i>			<i>2.48</i>	mg/kg	<i>3.33</i>		<i>74.4</i>	<i>40-140</i>		
<i>Surrogate: 2-Bromonaphthalene</i>			<i>2.41</i>	mg/kg	<i>3.33</i>		<i>72.2</i>	<i>40-140</i>		
LCS Dup (B2K1298-BSD1)										
					Prepared: 11/27/22 Analyzed: 11/29/22					
Naphthalene	1.34		0.33	mg/kg	2.67		50.2	40-140	12.8	25
2-Methylnaphthalene	1.32		0.33	mg/kg	2.67		49.6	40-140	12.2	25
Phenanthrene	1.48		0.33	mg/kg	2.67		55.5	40-140	3.19	25
Acenaphthene	1.38		0.33	mg/kg	2.67		51.7	40-140	9.67	25
Acenaphthylene	1.34		0.33	mg/kg	2.67		50.2	40-140	10.6	25
Fluorene	1.35		0.33	mg/kg	2.67		50.7	40-140	6.95	25
Anthracene	1.54		0.33	mg/kg	2.67		57.7	40-140	2.14	25
Fluoranthene	1.60		0.33	mg/kg	2.67		59.8	40-140	2.88	25
Pyrene	1.61		0.33	mg/kg	2.67		60.4	40-140	2.69	25
Benzo(a)anthracene	1.63		0.33	mg/kg	2.67		60.9	40-140	2.03	25
Chrysene	1.72		0.33	mg/kg	2.67		64.3	40-140	0.976	25
Benzo(b)fluoranthene	1.64		0.33	mg/kg	2.67		61.3	40-140	1.30	25
Benzo(k)fluoranthene	1.69		0.33	mg/kg	2.67		63.6	40-140	1.60	25
Benzo(a)pyrene	1.62		0.33	mg/kg	2.67		60.6	40-140	0.0824	25
Indeno(1,2,3-cd)pyrene	1.54		0.33	mg/kg	2.67		57.6	40-140	1.08	25
Dibenz(a,h)anthracene	1.56		0.33	mg/kg	2.67		58.4	40-140	1.02	25
Benzo(g,h,i)perylene	1.69		0.33	mg/kg	2.67		63.2	40-140	1.14	25
EPH_LCS_Aliphatic_C19-C36	15.6		0.00	mg/kg	21.3		73.1	40-140	2.34	25
EPH_LCS_Aliphatic_C9-C18	7.74		0.00	mg/kg	16.0		48.4	40-140	11.5	25
EPH_LCS_Aromatic_C11-C22	26.0		0.00	mg/kg	45.3		57.4	40-140	3.90	25
Nonane	0.81		0.33	mg/kg	2.67		30.2	30-140	24.5	25
Decane	1.13		0.33	mg/kg	2.67		42.4	40-140	18.0	25
Dodecane	1.36		0.33	mg/kg	2.67		51.2	40-140	13.3	25
Tetradecane	1.38		0.33	mg/kg	2.67		51.6	40-140	9.24	25
Hexadecane	1.44		0.33	mg/kg	2.67		53.9	40-140	6.68	25
Octadecane	1.63		0.33	mg/kg	2.67		61.1	40-140	4.17	25
Nonadecane	1.69		0.33	mg/kg	2.67		63.6	40-140	3.52	25
Eicosane	1.77		0.33	mg/kg	2.67		66.5	40-140	2.63	25
Docosane	1.85		0.33	mg/kg	2.67		69.4	40-140	1.96	25
Tetracosane	1.87		0.33	mg/kg	2.67		70.3	40-140	2.18	25
Hexacosane	1.90		0.33	mg/kg	2.67		71.2	40-140	1.70	25
Octacosane	1.96		0.33	mg/kg	2.67		73.4	40-140	1.49	25
Triacotane	2.11		0.33	mg/kg	2.67		79.2	40-140	1.41	25
Hexatriacontane	2.44		0.33	mg/kg	2.67		91.6	40-140	3.69	25

<i>Surrogate: Chlorooctadecane</i>			<i>5.19</i>	mg/kg	<i>8.33</i>		<i>62.3</i>	<i>40-140</i>		
<i>Surrogate: o-Terphenyl</i>			<i>5.06</i>	mg/kg	<i>8.33</i>		<i>60.7</i>	<i>40-140</i>		
<i>Surrogate: 2-Fluorobiphenyl</i>			<i>2.41</i>	mg/kg	<i>3.33</i>		<i>72.2</i>	<i>40-140</i>		
<i>Surrogate: 2-Bromonaphthalene</i>			<i>2.34</i>	mg/kg	<i>3.33</i>		<i>70.2</i>	<i>40-140</i>		

Quality Control
(Continued)

Extractable Petroleum Hydrocarbons (MADEP-EPH) (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B2K1298 - EPA 3546 (Continued)										
Matrix Spike (B2K1298-MS1)										
			Source: 2K18040-02			Prepared: 11/27/22	Analyzed: 11/30/22			
Naphthalene	1.61		0.36	mg/kg dry	2.92	ND	55.0	40-140		
2-Methylnaphthalene	1.50		0.36	mg/kg dry	2.92	ND	51.2	40-140		
Phenanthrene	1.57		0.36	mg/kg dry	2.92	ND	53.8	40-140		
Acenaphthene	1.52		0.36	mg/kg dry	2.92	ND	52.0	40-140		
Acenaphthylene	1.72		0.36	mg/kg dry	2.92	ND	58.7	40-140		
Fluorene	1.54		0.36	mg/kg dry	2.92	ND	52.8	40-140		
Anthracene	1.49		0.36	mg/kg dry	2.92	ND	51.0	40-140		
Fluoranthene	1.72		0.36	mg/kg dry	2.92	ND	58.7	40-140		
Pyrene	1.61		0.36	mg/kg dry	2.92	ND	55.1	40-140		
Benzo(a)anthracene	1.83		0.36	mg/kg dry	2.92	ND	62.6	40-140		
Chrysene	1.91		0.36	mg/kg dry	2.92	ND	65.2	40-140		
Benzo(b)fluoranthene	1.69		0.36	mg/kg dry	2.92	ND	57.6	40-140		
Benzo(k)fluoranthene	1.81		0.36	mg/kg dry	2.92	ND	62.0	40-140		
Benzo(a)pyrene	1.66		0.36	mg/kg dry	2.92	ND	56.8	40-140		
Indeno(1,2,3-cd)pyrene	1.46		0.36	mg/kg dry	2.92	ND	50.1	40-140		
Dibenz(a,h)anthracene	1.46		0.36	mg/kg dry	2.92	ND	49.8	40-140		
Benzo(g,h,i)perylene	1.94		0.36	mg/kg dry	2.92	ND	66.4	40-140		
EPH_LCS_Aliphatic_C19-C36	12.2		0.00	mg/kg dry	23.4	ND	52.2	40-140		
EPH_LCS_Aliphatic_C9-C18	7.14		0.00	mg/kg dry	17.5	ND	40.7	40-140		
EPH_LCS_Aromatic_C11-C22	28.0		0.00	mg/kg dry	49.7	ND	56.4	40-140		
Nonane	0.95		0.36	mg/kg dry	2.92	ND	32.6	30-140		
Decane	1.20		0.36	mg/kg dry	2.92	ND	41.1	40-140		
Dodecane	1.28		0.36	mg/kg dry	2.92	ND	43.9	40-140		
Tetradecane	1.25		0.36	mg/kg dry	2.92	ND	42.7	40-140		
Hexadecane	1.19		0.36	mg/kg dry	2.92	ND	40.7	40-140		
Octadecane	1.27		0.36	mg/kg dry	2.92	ND	43.3	40-140		
Nonadecane	1.33		0.36	mg/kg dry	2.92	ND	45.5	40-140		
Eicosane	1.42		0.36	mg/kg dry	2.92	ND	48.5	40-140		
Docosane	1.49		0.36	mg/kg dry	2.92	ND	50.9	40-140		
Tetracosane	1.50		0.36	mg/kg dry	2.92	ND	51.4	40-140		
Hexacosane	1.52		0.36	mg/kg dry	2.92	ND	51.9	40-140		
Octacosane	1.56		0.36	mg/kg dry	2.92	ND	53.2	40-140		
Triacotane	1.66		0.36	mg/kg dry	2.92	ND	56.7	40-140		
Hexatriacontane	1.73		0.36	mg/kg dry	2.92	ND	59.2	40-140		
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Surrogate: Chlorooctadecane			ND	mg/kg dry	9.14			40-140		
Surrogate: o-Terphenyl			3.74	mg/kg dry	9.14		40.9	40-140		
Surrogate: 2-Fluorobiphenyl			2.52	mg/kg dry	3.65		69.0	40-140		
Surrogate: 2-Bromonaphthalene			2.46	mg/kg dry	3.65		67.3	40-140		

Quality Control
(Continued)

Extractable Petroleum Hydrocarbons (MADEP-EPH) (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B2K1298 - EPA 3546 (Continued)										
Matrix Spike Dup (B2K1298-MSD1)			Source: 2K18040-02		Prepared: 11/27/22 Analyzed: 11/30/22					
Naphthalene	1.64		0.36	mg/kg dry	2.92	ND	56.1	40-140	2.03	25
2-Methylnaphthalene	1.65		0.36	mg/kg dry	2.92	ND	56.5	40-140	9.74	25
Phenanthrene	1.69		0.36	mg/kg dry	2.92	ND	57.7	40-140	7.09	25
Acenaphthene	1.70		0.36	mg/kg dry	2.92	ND	58.1	40-140	11.1	25
Acenaphthylene	1.66		0.36	mg/kg dry	2.92	ND	56.8	40-140	3.25	25
Fluorene	1.60		0.36	mg/kg dry	2.92	ND	54.6	40-140	3.40	25
Anthracene	1.80		0.36	mg/kg dry	2.92	ND	61.7	40-140	19.0	25
Fluoranthene	1.90		0.36	mg/kg dry	2.92	ND	65.1	40-140	10.2	25
Pyrene	1.93		0.36	mg/kg dry	2.92	ND	66.1	40-140	18.2	25
Benzo(a)anthracene	1.94		0.36	mg/kg dry	2.92	ND	66.5	40-140	6.16	25
Chrysene	2.05		0.36	mg/kg dry	2.92	ND	70.0	40-140	7.17	25
Benzo(b)fluoranthene	1.91		0.36	mg/kg dry	2.92	ND	65.5	40-140	12.7	25
Benzo(k)fluoranthene	2.00		0.36	mg/kg dry	2.92	ND	68.5	40-140	9.92	25
Benzo(a)pyrene	1.87		0.36	mg/kg dry	2.92	ND	64.1	40-140	12.1	25
Indeno(1,2,3-cd)pyrene	1.75		0.36	mg/kg dry	2.92	ND	59.7	40-140	17.6	25
Dibenz(a,h)anthracene	1.82		0.36	mg/kg dry	2.92	ND	62.3	40-140	22.3	25
Benzo(g,h,i)perylene	1.96		0.36	mg/kg dry	2.92	ND	67.0	40-140	0.900	25
EPH_LCS_Aliphatic_C19-C36	15.4		0.00	mg/kg dry	23.4	ND	65.7	40-140	22.9	25
EPH_LCS_Aliphatic_C9-C18	8.38		0.00	mg/kg dry	17.5	ND	47.8	40-140	15.9	25
EPH_LCS_Aromatic_C11-C22	30.9		0.00	mg/kg dry	49.7	ND	62.1	40-140	9.70	25
Nonane	1.11		0.36	mg/kg dry	2.92	ND	37.9	30-140	15.0	25
Decane	1.36		0.36	mg/kg dry	2.92	ND	46.4	40-140	12.1	25
Dodecane	1.49		0.36	mg/kg dry	2.92	ND	51.0	40-140	15.0	25
Tetradecane	1.45		0.36	mg/kg dry	2.92	ND	49.7	40-140	15.2	25
Hexadecane	1.42		0.36	mg/kg dry	2.92	ND	48.6	40-140	17.6	25
Octadecane	1.55		0.36	mg/kg dry	2.92	ND	53.0	40-140	20.2	25
Nonadecane	1.66		0.36	mg/kg dry	2.92	ND	56.8	40-140	22.1	25
Eicosane	1.77		0.36	mg/kg dry	2.92	ND	60.5	40-140	22.1	25
Docosane	1.87		0.36	mg/kg dry	2.92	ND	64.1	40-140	23.0	25
Tetracosane	1.90		0.36	mg/kg dry	2.92	ND	65.0	40-140	23.5	25
Hexacosane	1.92		0.36	mg/kg dry	2.92	ND	65.8	40-140	23.6	25
Octacosane	1.98		0.36	mg/kg dry	2.92	ND	67.6	40-140	23.7	25
Triacotane	2.09		0.36	mg/kg dry	2.92	ND	71.4	40-140	22.8	25
Hexatriacontane	2.16		0.36	mg/kg dry	2.92	ND	74.0	40-140	22.3	25
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Surrogate: Chlorooctadecane			5.12	mg/kg dry	9.14		56.0	40-140		
Surrogate: o-Terphenyl			5.47	mg/kg dry	9.14		59.8	40-140		
Surrogate: 2-Fluorobiphenyl			2.86	mg/kg dry	3.65		78.2	40-140		
Surrogate: 2-Bromonaphthalene			2.82	mg/kg dry	3.65		77.1	40-140		

Notes and Definitions

Item	Definition
Wet	Sample results reported on a wet weight basis.
ND	Analyte NOT DETECTED at or above the reporting limit.



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29201

78 Interstate Drive, West Springfield, MA 01089
 108 Myrtle Street, #502, North Quincy, MA 02171
 317 Iron Horse Way, Suite 204, Providence, RI 02908

80 Washington Street, Suite 301, Poughkeepsie, NY
 Other _____

CHAIN-OF-CUSTODY RECORD 42226

Turnaround
 24-Hour* 72-Hour* Other _____ (days)
 48-Hour* Standard (____ days) *Surcharge Applies

PROJECT NAME: Shutesbury VIC Investigation PROJECT LOCATION: Shutesbury, MA PROJECT NUMBER: 20091032.A22 LABORATORY: Netlabs

REPORT TO: Matt Kissane mkissane@fnd.com
INVOICE TO: " " " "

P.O. NO.: 170820091032.A22

Sampler's Signature: [Signature] Date: 11/18/22

Source Codes:
MW=Monitoring Well PW=Potable Water T=Treatment Facility S=Soil B=Sediment
SW=Surface Water ST=Stormwater W=Waste A=Air C=Concrete
X=Other Aqueous

Analysis Request
Containers
VOCs
EPH w/ Target Compounds
UPH
Select Metals (Ar, Ba, Cd, Cr, Pb, Hg, Ni, Se, Zn)
PCBs
Soil YOA Vial methanol
Soil YOA Vial water Na₂(SO₄)₂
Glass Soil Container (____) oz
Other: Soil IAA
Water YOA Vial Stir bar
Glass Amber (____) ml As is HCl
Plastic - As is, 230 ml As is H₂SO₄
Plastic - H₂SO₄, 250 ml 500 1000 ml
Plastic - HNO₃, 250 ml 500 ml Filtered 0.45µ 10µ

Item No.	Transfer Check				Sample Number	Source Code	Date Sampled	Time Sampled	Analysis Request										Comments					
	1	2	3	4					VOCs	EPH	UPH	Select Metals	PCBs	Soil YOA	Glass Soil	Other	Water YOA	Glass Amber		Plastic				
1	x	•••	•	•	1708221118-01	S	11/18/22	1115	X	X	X	X	X											TP-1
2	x	•••	•	•	1708221118-04	S	11/18/22	1225	X	X	X	X	X											TP-2
3	x				1708221118-TB	X	-	-	X															

Transfer Number	Relinquished By	Accepted By	Date	Time	Charge Exceptions: <input type="checkbox"/> CI Tax Exempt <input type="checkbox"/> QA/QC <input type="checkbox"/> Other _____ ____ Duplicates ____ Blanks (Item Nos: _____)
1	<u>Evan Konowicz</u>	<u>Quincy Fridge</u>	<u>11/18/22</u>	<u>1600</u>	Reporting and Detection Limit Requirements: <input type="checkbox"/> RCP Deliverables <input type="checkbox"/> MCP CAM Cert. <u>RCS-1</u>
2		<u>Je M</u>	<u>11/21/22</u>	<u>1030</u>	
3	<u>Je M</u>		<u>11/21/22</u>	<u>1613</u>	Additional Comments: <u>A</u>
4		<u>Amyanna Teramini</u>	<u>11/21/22</u>	<u>1630</u>	

MassDEP Analytical Protocol Certification Form

Laboratory Name: New England Testing Laboratory, Inc.

Project #: 20091032.A22

Project Location: Shutesbury, MA

RTN:

This Form provides certifications for the following data set: list Laboratory Sample ID Number(s):
2K21016

Matrices: Groundwater/Surface Water Soil/Sediment Drinking Water Air Other:

CAM Protocol (check all that apply below):

8260 VOC CAM II A <input checked="" type="checkbox"/>	7470/7471 Hg CAM III B <input checked="" type="checkbox"/>	MassDEP VPH (GC/PID/FID) CAM IV A <input checked="" type="checkbox"/>	8082 PCB CAM V A <input checked="" type="checkbox"/>	9014 Total Cyanide/PAC CAM VI A <input type="checkbox"/>	6860 Perchlorate CAM VIII B <input type="checkbox"/>
8270 SVOC CAM II B <input type="checkbox"/>	7010 Metals CAM III C <input type="checkbox"/>	MassDEP VPH (GC/MS) CAM IV C <input type="checkbox"/>	8081 Pesticides CAM V B <input type="checkbox"/>	7196 Hex Cr CAM VI B <input type="checkbox"/>	MassDEP APH CAM IX A <input type="checkbox"/>
6010 Metals CAM III A <input checked="" type="checkbox"/>	6020 Metals CAM III D <input type="checkbox"/>	MassDEP EPH CAM IV B <input checked="" type="checkbox"/>	8151 Herbicides CAM V C <input type="checkbox"/>	8330 Explosives CAM VIII A <input type="checkbox"/>	TO-15 VOC CAM IX B <input type="checkbox"/>

Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
E	VPH, EPH, APH, and TO-15 only a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Responses to Questions G, H and I below are required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ¹
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Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.

H	Were all QC performance standards specified in the CAM protocol(s) achieved?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ¹
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ¹

¹All negative responses must be addressed in an attached laboratory narrative.

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, is accurate and complete.

Signature: 

Position: Laboratory Director

Printed Name: Richard Warila

Date: 12/2/2022