



# SITE INVESTIGATION REPORT

## FORMER ST. JOHNSBURY ARMORY

1249 Main Street St. Johnsbury, Vermont

SMS Site # 2012-4326

### PREPARED FOR:

Mr. Joseph Kasprzak  
Town of St. Johnsbury  
51 Depot Square, Suite 3  
St. Johnsbury, VT 05819

### PREPARED BY:

Atlas Technical Consultants LLC  
51 Knight Lane  
Williston, VT 05495

October 11, 2022



October 11, 2022

Atlas No. 280EM00860

Mr. Joseph Kasprzak  
Town of St. Johnsbury  
51 Depot Square, Suite 3  
St. Johnsbury, VT 05819

**Subject: Revised Site Investigation Report  
Former St. Johnsbury Armory  
1249 Main Street St. Johnsbury, VT  
SMS# 2012-4326**

Dear Mr. Kasprzak:

Atlas Technical Consultants LLC, on behalf of the Town of St. Johnsbury, Vermont (STJ) presents this Revised Site Investigation (SI) Report for the former St. Johnsbury Armory located at 1249 Main Street, St. Johnsbury, Vermont (the Site). This revised report version includes the results of additional vertical soil delineation of polycyclic aromatic hydrocarbons (PAHs) and lead and updating sections of the report that were requested by Kassandra Kimmey of the Vermont Department of Environmental Conservation (VTDEC) in a letter dated August 30, 2022. The work was completed by Atlas in accordance with the Site Investigation Work Plan prepared by Stantec Consulting Services Inc. (dated March 22, 2022) and approved by Ms. Christine Beling of the U.S. Environmental Protection Agency (EPA) and Ms. Kassandra Kimmey of VTDEC via electronic mail dated April 6, 2022. The objective of the work was to further develop and refine the conceptual site model (CSM) generated from previous site data, which was performed to evaluate environmental management requirements for a future redevelopment project, and to meet SI objectives outlined in Subchapter 3 of VTDEC's *Investigation and Remediation of Contaminated Properties Rule* (IRule), July 6, 2019.

Several prior environmental investigations were completed at the Site and documented in various reports, including a Limited Asbestos Inspection dated November 2008, a Phase I Environmental Site Assessment (ESA) dated May 2012, an Environmental Survey dated March 28, 2013, a Targeted Brownfields Assessment Report dated March 9, 2021, and a Phase I ESA dated January 20, 2022. Based on the results of these investigations, Atlas identified three (3) areas of concern (AOCs) relating to contaminant source(s) and release(s) at the Site. These AOCs included 1) potential polychlorinated biphenyls (PCBs) in exterior soils due to discharges of particulates from PCB-containing building materials; 2) the presence of PAHs and metals in exterior soils due to the presence of urban fill; and 3) the potential presence of groundwater impacts from releases from two off-site upgradient underground storage tanks (USTs) shown on historical maps.

Atlas No. 280EM00860



The following summarizes the AOCs and associated conclusions for these AOCs derived from this investigation:

- **AOC #1:** Extensive sampling of building materials has been conducted to date. Delineation of possible soil contamination has not been conducted with regard to surficial soils at the former armory. Given the presence of PCBs identified in exterior building materials the possibility exists for impact to soils surrounding the building. However, no PCBs were identified in any of the shallow soils across the Site (see Section 3.0).
- **AOC #2:** The potential presence of PAHs and metals in surficial soils at the Site was evaluated due to the likelihood of impacts resulting from the urban location of the Site. PAHs were identified in multiple areas across the site that exceeded Urban Background (UB) and Vermont Soil Standards-Non-Resident (VSS-NR) (see Section 3.0) on the east and south sides of the building. Lead was encountered in one sample (SB-9) on the south side of the building above VSS-Resident (VSS-R) but below VSS-NR.
- **AOC #3:** The potential for the presence of two (2) USTs approximately 200 feet to the west and upgradient of the Site was identified. If present these USTs would present a threat to the groundwater and soil of the Site and would pose a risk of vapor intrusion. No groundwater was encountered to a depth of 20 feet on the former St. Johnsbury Armory site. Results for soil vapor samples (collected in lieu of groundwater samples) were either non-detect or values were below Vapor Intrusion Standard (VIS)-Resident (see Section 3.0).

Based on these conclusions, Atlas recommends the following:

1. Submit this report to Kassandra Kimmey of the VTDEC.
2. Prepare a Corrective Action Plan (CAP) that addresses regulated soil and building materials that require corrective action.



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## 1. INTRODUCTION

Atlas Technical Consultants, LLC, on behalf of the town of St. Johnsbury, Vermont (Client), presents this Site Investigation (SI) Report for the former St. Johnsbury Armory located at 1249 Main Street, St. Johnsbury, Vermont. The work was completed by Atlas in accordance with the Site Investigation Work Plan prepared by Stantec Consulting Services Inc. (dated March 22, 2022) and approved by Ms. Christine Beling of the U.S. Environmental Protection Agency (EPA) and Ms. Cassandra Kimmey of the Vermont Department of Environmental Conservation (VTDEC) via electronic mail dated April 6, 2022. Additional vertical soil delineation of polycyclic aromatic hydrocarbons (PAHs) and lead was also completed in accordance with a request by VTDEC in an email dated September 6, 2022. The objective of the work was to further develop and refine the conceptual site model (CSM) generated from previous site data, which was performed to evaluate environmental management requirements for a future redevelopment project, and to meet SI objectives outlined in Subchapter 3 of VT DEC's *Investigation and Remediation of Contaminated Properties Rule* (IRule), July 6, 2019.

### 1.1 Site Information

The Site latitude and longitude is 44.41962, -72.02099. Refer to **Figure 1** for a Vicinity Map and **Figure 2** for Site Plan that depicts pertinent Site and surrounding area features. Site ownership is provided in the table below.

Property Owner	Owner Mailing Address	Owner Email	Owner Phone #
Town of St. Johnsbury	51 Depot Square St. Johnsbury, VT 05819	<a href="mailto:jkasprzak@stvt.com">jkasprzak@stvt.com</a>	802-748-3926

## 2. CONCEPTUAL SITE MODEL

The following CSM is formulated in accordance with the IRule which outlines infrastructure considerations, historical land use, geology, hydrogeology, potential source(s) of release(s), contaminant fate and transport, sensitive receptors and potential exposure pathways.

### 2.1 Site Description and History

The Site encompasses 0.44 acres and developed with a 17,720 square-foot two-story building with a basement previously used as an armory. Original construction of occurred between 1916 and 1917. The building is currently unoccupied, being vacated in 2006. Exterior areas consist of a mix of paved, concrete, and landscaped surfaces. Site topography is generally flat with a slight

slope toward the east. Prior to its current development, the property was developed with four smaller structures between 1882 and 1912.

Currently abutting property uses includes St. Andrew's Episcopal Church to the north; vacant lots, Passumpsic Financial Advisors, and Fashion Fair Beauty Salon across Main Street to the east; Kozlowski Dentistry to the south; and Grace United Methodist Church to the west. Historical surrounding property use has been house of worship, commercial, and residential.

## 2.2 Site Geology and Hydrogeology

According to the Agency of Natural Resources (ANR) Natural Resources Atlas (NRA), native surficial soils at the Site include well sorted sand, with no pebbles or boulders. Soil boring observations generally indicate fill materials consisting of topsoil, sand, silt, and gravel of varying percentages. Native soils were encountered in all borings and generally consisted of well sorted fine to medium sands and were generally encountered at two feet below ground surface (ftbgs). Bedrock geology consists of phyllite of the Waits River formation. Groundwater was not encountered during drilling and is expected to be greater than 25 ftbgs. =[

## 2.3 Source(s), Release(s) & Prior Investigations

Several prior environmental investigations were completed at the Site with the findings provided in several reports, including a Limited Asbestos Inspection dated November 2008, a Phase I Environmental Site Assessment (ESA) dated May 2012, an Environmental Survey dated March 28, 2013, a Targeted Brownfields Assessment Report dated March 9, 2021, and a Phase I ESA dated January 20, 2022. Based on the results of these investigations and the SI outlined herein, Atlas concludes the following relating to contaminant source(s) and release(s) at the Site, which are identified as areas of concern (AOCs) as previously referenced in the work plan. Additional details regarding these conclusions are provided in Section 3.0.

- **AOC #1:** Given the presence of polychlorinated biphenyls (PCBs) identified in exterior building materials, the possibility exists for impact to soils surrounding the building due to the release of PCB-containing particulates from the exterior building materials.
- **AOC #2:** Given the Site is located within an Urban Soils Background Area (USBA) as defined by VTDEC, the potential presence of PAHs and metals in surficial soils at the Site is a concern.
- **AOC #3:** The potential for the presence of two (2) underground storage tanks (USTs) approximately 200 feet to the west and upgradient of the site was identified. If present, these USTs would present a threat to the groundwater and soil of the Site, as well as a threat of vapor intrusion into the site building.

In addition to PCBs in exterior building materials, hazardous materials including asbestos and lead-based paint (LBP) have been identified in Site building materials. These hazards are beyond the scope of this SI and have been discussed under separate cover.

## 2.4 Sensitive Receptors and Exposure Pathways

Contaminants of concern that have been evaluated at the Site include volatile organic compounds (VOCs) from potential offsite UST releases, PAHs, and metals associated with development soils, and PCBs and lead associated with releases from building materials. In general, PAHs, PCBs and metals are generally hydrophobic and will tend to adsorb to shallow soil particles under typical site conditions.

Media with the potential for impact at the site include soil, groundwater, soil vapor, and indoor air. Groundwater was not encountered during the investigation and the lack of any measurable soil vapor impacts at the site during the SI suggest that groundwater has not been affected by the off-site tanks. The direct contact exposure risk to shallow soils is high based on current site conditions; additionally, any workers conducting future excavations are at an increased risk of exposure to soil contaminants. The site and surrounding area are served by municipal drinking water and therefore the risk of ingestion of contaminated groundwater is low.

### 3. INVESTIGATIVE PROCEDURES AND RESULTS

Atlas completed a SI in accordance with the VTDEC approved work plan. The following sections outline investigative procedures and results.

#### 3.1 Soil Borings & Soil Sampling

On April 25 and 26, 2022, Atlas oversaw the advancement of 11 soil borings (SB-1, SB-2, SB-3, SB-4, SB-6, SB-7, SB-9, SB-10, SB-12, SB-13, and SB-14) and 3 soil vapor points (MW-1, MW-2 and MW-3) that were originally planned to be completed as monitoring wells (discussed later) to evaluate subsurface soils associated with AOCs #1-3. Soil borings SB-5, SB-8, and SB-11 were not completed due to site access limitations (e.g., over-head utility restrictions). On September 20, 2022, an additional 3 soil borings (SB-4a, SB-6a, and SB-9a) were advanced adjacent to SB- 4, SB-6, and SB-9, respectively, to further define the vertical extent of contamination based on initial laboratory exceedances in the shallow soil samples. Refer to **Figure 3** for the boring and soil vapor point locations. The soil borings were advanced utilizing a combination of direct push technology (DPT) by Cascade Drilling Services (CDS) of Montpelier, Vermont and hand tools. The soil borings were advanced to a maximum depth of 3.5 ftbgs. The soil vapor points were advanced to a maximum depth of 20 ftbgs. Fieldnotes, photolog, and Boring logs are provided in **Appendix A**.

Soils were logged and field-screened for total organic vapors (TOVs) using a photoionization detector (PID) equipped with a 10.6 electron volt (eV) lamp. All TOVs were background (0.0 parts per million volume or ppmv) and no visual or olfactory indications of contamination (staining, odors, etc.) were observed.

Following sampling outlined below, all boring soils were returned to the subsurface.

##### 3.1.1 AOCs #1 & 2

Eleven soil borings (SB-1, SB-2, SB-3, SB-4, SB-6, SB-7, SB-9, SB-10, SB-12, SB-13, and SB-14) were advanced to 3 ftbgs and three soil borings (SB-4a, SB-6a, and SB-9a)

were subsequently advanced to 3.5 ftbgs to evaluate COCs in soils (PAHs, metals, and PCBs) associated with AOC #1 and AOC #2 in areas not previously assessed.

Soil samples were collected in each boring in accordance with the following decision matrix for the initial 11 borings:

- Sample Set A: Shallow samples (0-1.5 ftbgs) were collected from each boring to evaluate fill materials.
- Sample Set B: Deeper samples (2-3 ftbgs) were also collected at each of the locations to target native soils beneath the fill materials. These samples were held at the laboratory and were to be analyzed only if the associated Sample Set A sample exceeded Vermont Soil Standards-Urban Background (VSS-UB) Standard. Due to an oversight, select deeper samples were not analyzed during the initial mobilization in April 2022; however, deeper samples were collected and analyzed for PAHs and lead on the second mobilization in September 2022.

During the first mobilization the samples were stored on ice and submitted to Pace Analytical of East Longmeadow, MA under chain of custody for analysis of PAHs, 8 RCRA metals, and PCBs. During the second mobilization the samples were stored on ice and submitted to Pace Analytical of East Longmeadow, MA under chain of custody for analysis of PAHs and lead.

The Soil laboratory reports are provided in **Appendix B** and summary tables are provided in **Tables 1, 2 and 3**. Results are summarized below:

- PAHs: the benzo(a)pyrene Toxic Equivalency (BaP-TEQ) exceeded the VSS-UB in SB-6 (0-1.5') and the Vermont Soil Standards-Non-Resident (VSS-NR) Standard in SB-4 (0-1.5') and SB-9 (0-1.5'). Deeper adjacent samples SB-4a (2-3.5'), SB-6a (2.5-3.5'), and SB-9a (2.5-3.5') that were subsequently collected to define the vertical extent of contamination were all below the applicable VSS-UB standard.
- Barium, chromium and lead were detected in all samples below Vermont Soil Standards-Resident (VSS-R) with the exception of lead in SB-9 (0-1.5'), which exceeded VSS-R. The lead concentration in the deeper adjacent sample SB-9a (2.5-3.5') was below VSS-R. Arsenic was detected in SB-9 (0-1.5') only, but was below the VSS-R. Mercury was detected in all samples except SB-7 (0-1.5'). All detected concentrations were below VSS-R.
- No PCBs were detected above method detection limits (MDLs) in any of the samples.

These data were utilized to generate contaminant distribution maps for PAHs and lead in soil as illustrated in **Figures 3 and 4**, respectively.

It should be noted that in addition to the VSS-R exceedance for lead in SB-9 (0-1.5'), several samples (SB-4 (0-1.5'), SB-6 (0-1.5'), SB-12 (0-1.5'), and SB-14 (0-1.5')) exceeded the "Rule of 20" toxicity value set forth in RCRA (100 mg/kg). As such, these

soils are unregulated if left in place but would require toxicity characteristic leaching procedure (TCLP) testing prior to offsite transport and disposal.

### 3.1.2 AOC #3

Three of the soil borings were proposed to be completed as groundwater monitoring wells (MW-1, MW-2 and MW-3); however, groundwater was not encountered to a depth of 20 ftbgs in these areas and, therefore, no monitoring wells were installed consistent with the work plan. In lieu of a monitoring well, in each proposed monitoring well location a soil vapor point was installed. Each sampling point consisted of a dedicated vapor point connected to polyethylene tubing and capped at the surface. The boring was then sealed from surface vapors utilizing a bentonite slurry. Prior to sampling, each point was helium leak tested to confirm the sealability of the point and screened for TOVs with a 10.6 eV lamp. The samples were collected into 3L Summa canisters with 200 milliliter per minute (ml/min) flow controllers over a 30-minute period and submitted to Contest (Pace Analytical Laboratory) of East Longmeadow, Massachusetts under chain of custody for quantitative analysis of VOCs according to US EPA Method TO-15. The soil vapor laboratory report is provided in **Appendix C** which includes additional sampling detail, and summary tables for results with detectable concentrations are provided in **Table 4**. Results are summarized below:

- VOCs were detected in the samples but none exceeded the applicable VIS.

These results indicate that contaminants of concern (COCs) associated with AOC #3 were not detected above applicable standards. However, it should be noted that tetrachloroethene (aka perchloroethene or PCE) was detected in soil vapors below VIS-SSSG-R (21 micrograms per cubic meter or  $\mu\text{g}/\text{m}^3$ ) in all three soil vapor points at a depth of 20 ftbgs with the highest concentration (10 micrograms per cubic meter or  $\mu\text{g}/\text{m}^3$ ) at MW-3. The source is unknown but could be related to impacts to groundwater (expected to be greater than 25 ftbgs) from offsite former dry cleaning releases. Additional investigation would be required to determine the source of these vapors. Although soil vapor conditions directly underneath the basement slab of the Site building (assumed to be 5 ftbgs) have not been evaluated, since PCE has a vapor density greater than air, in the absence of preferential pathways, one would expect higher concentrations with depth. As such, the risk to indoor air quality in the Site building appears to be low.

### 3.2 Quality Assurance/Quality Control

One duplicate soil sample for PAH analysis was submitted for quality assurance/quality control (QA/QC) purposes (see Table 1). The relative percent difference (RPD) between the duplicate sample and the parent samples were generally within the EPA-recommended 50% for non-aqueous samples with some exceptions as follows: fluorene at 52% and pyrene at 53%. These percentages are slightly outside the EPA-recommended values but neither of these compounds exceeded VT regulatory standards; therefore, Atlas considers these data to be usable.



### 3.3 Standard Operating Procedures

Atlas SOPs for this investigation are listed below and copies provided in Appendix D.

- SOP 1.0 Drilling Equipment Standards
- SOP 4.0 General Sampling Procedures for Aqueous & Solid Matrices
- SOP 5.0 Subsurface Soil Sample Collection Procedures
- SOP 10.0 Decontamination Procedures
- SOP 11.0 Sample Custody Procedures
- SOP 21.0 Installation & Sampling of Sub-slab Vapor Points

### 3.4 Work Plan Deviations and Data Gaps

Work plan deviations include the following:

- Monitoring wells were not installed and groundwater was not sampled as groundwater was not encountered to a depth of 20 ftbgs in the areas where wells were proposed; therefore, soil vapor samples were collected at each location in accordance with the work plan.
- Due to overhead power lines limiting drill rig access, only 11 soil borings were completed instead of the original 14 borings that were proposed. The lack of the 3 borings did not significantly change our conclusions or CSM because there was adequate subsurface data from the remaining borings.
- The vertical and horizontal extent of PAH and lead contaminated soils outside the areas represented by the existing soil borings is currently unknown and is therefore considered a data gap. However, the assumed extents based on the current dataset is provided in the figures and given the proposed remedial approach of soil excavation with off-site disposal, in concert with capping of any residual contamination as outlined in the CAP (submitted under separate cover), further delineation of the COCs in soil is not proposed.

## 4. CONCLUSIONS & RECOMMENDATIONS

On behalf of the Town of St. Johnsbury, Atlas presents this SI report to document subsurface investigations at the former St. Johnsbury Armory. In accordance with the approved work plan, Atlas oversaw the installation of soil borings and soil vapor points and the sampling/analyses of soil and soil vapor. Based on the results, Atlas concludes the following:

- No visual or olfactory evidence of contaminated soils was identified. Additionally, all PID readings were background (0.0 ppmv).
- Soil vapor results showed either non-detect or values below VISV-R.
- Soils tested for PCBs were non-detect in soil borings across the Site.

- For soils tested for PAHs, BaP-TEQ exceeded VSS-UB/NR at some locations in shallow soils (0-1.5'); however, corresponding deeper samples (2-3.5' or 2.5-3.5') were below the applicable VSS-UB.
- Generally, soils tested for metals were either non-detect or below VSS-UB/NR; however, lead in SB-09 (0-1.5') exceeded VSS-R, but not in the corresponding deeper sample (SB-9a (2.5-3.5')). Several other samples exceeded the "Rule of 20" limit of 100 mg/kg.

Based on these conclusions, Atlas recommends the following:

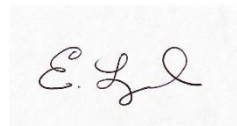
1. Submit a copy of this report to Kassandra Kimmey of the VTDEC.
2. Prepare a Corrective Action Plan (CAP) that addresses regulated soil and regulated building materials (RBMs) that require corrective action.

## 5. SIGNATURES & CERTIFICATION

This report has been prepared by the employees of Atlas Technical Consultants, LLC whose signatures appear below. Requests for information on the contents of this report should be directed to these individuals.

I certify under penalty of perjury that I am an environmental professional and that all content contained within this deliverable is to the best of my knowledge true and correct.

Respectfully submitted,  
**Atlas Technical Consultants LLC**



Emma Lyford  
Staff Scientist

Attachments



Joseph Hayes  
Operations Manager

## FIGURES



### LEGEND

- Rare Threatened Endangered
  - Threatened or Endangered
  - Rare
- Wetland - VSWI
  - Class 1 Wetland
  - Class 2 Wetland
  - Buffer
- Wetlands Advisory Layer
- Hazardous Site
- Hazardous Waste Generators
- Brownfields
- Salvage Yard
- Aboveground Storage Tank
- Underground Storage Tank (w/)
- Dry Cleaner
- Private Wells
  - GPS Located
  - Screen Digitized
  - E911 Address Matched
  - Welldriller/Clarion
  - Unknown Location Method
  - Incorrectly Located
- Public Water Sources
  - Active
  - Proposed
  - Inactive
- Ground Water SPA
  - Active
  - Shaded SPA

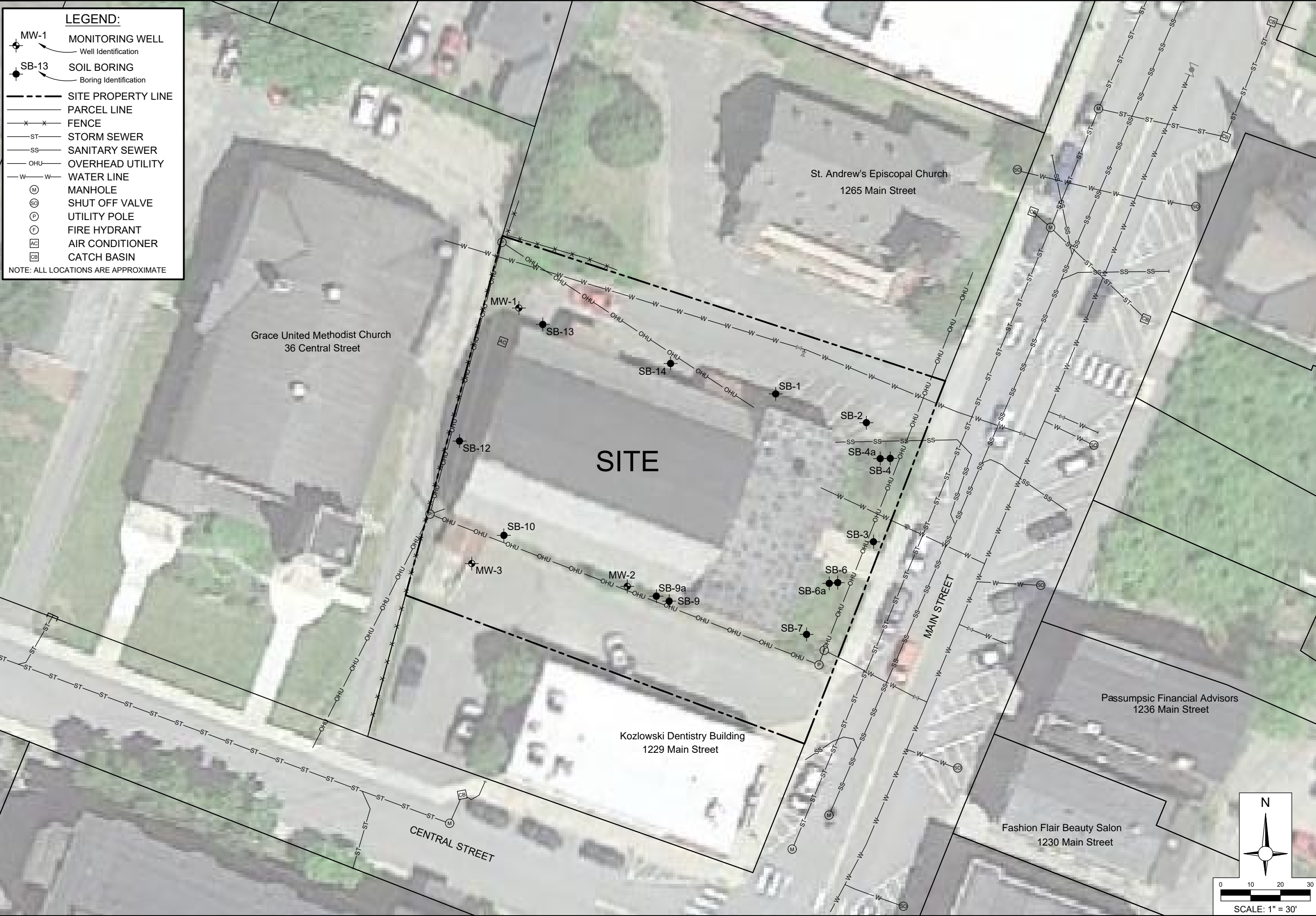
1: 4,870  
August 5, 2022

247.0 0 124.00 247.0 Meters  
 WGS\_1984\_Web\_Mercator\_Auxiliary\_Sphere 1" = 406 Ft. 1cm = 49 Meters  
 © Vermont Agency of Natural Resources THIS MAP IS NOT TO BE USED FOR NAVIGATION

DISCLAIMER: This map is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. ANR and the State of Vermont make no representations of any kind, including but not limited to, the warranties of merchantability, or fitness for a particular use, nor are any such warranties to be implied with respect to the data on this map.

### NOTES

Former St. Johnsbury Army  
 1249 Main St, St Johnsbury, VT  
 VTDEC Site #2012-4326



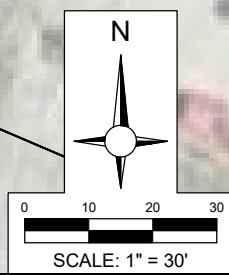
**LEGEND:**

- MONITORING WELL  
Well Identification
- SOIL BORING  
Boring Identification
- SITE PROPERTY LINE
- PARCEL LINE
- FENCE
- STORM SEWER
- SANITARY SEWER
- OVERHEAD UTILITY
- WATER LINE
- MANHOLE
- SHUT OFF VALVE
- UTILITY POLE
- FIRE HYDRANT
- AIR CONDITIONER
- CATCH BASIN

NOTE: ALL LOCATIONS ARE APPROXIMATE

**SITE MAP**  
 FORMER ST. JOHNSBURY ARMORY  
 1249 MAIN STREET  
 ST. JOHNSBURY, VERMONT

Project Number: 280EM00946	
Date: 10/04/2022	
Drn. By: DH	Ckd. By: EU
Scale: AS SHOWN	
Figure: <b>2</b>	



HY202211 OTHER OFFICES/VERMONT/ST. JOHNSBURY/280EM00946-SITE.DWG, FIG2

**LEGEND:**

- MW-1 MONITORING WELL  
Well Identification
- SB-13 SOIL BORING  
Boring Identification
- SITE PROPERTY LINE
- PARCEL LINE
- x-x- FENCE
- ST- STORM SEWER
- SS- SANITARY SEWER
- OHU- OVERHEAD UTILITY
- W-W- WATER LINE
- (M) MANHOLE
- (S) SHUT OFF VALVE
- (P) UTILITY POLE
- (F) FIRE HYDRANT
- (AC) AIR CONDITIONER
- (CB) CATCH BASIN

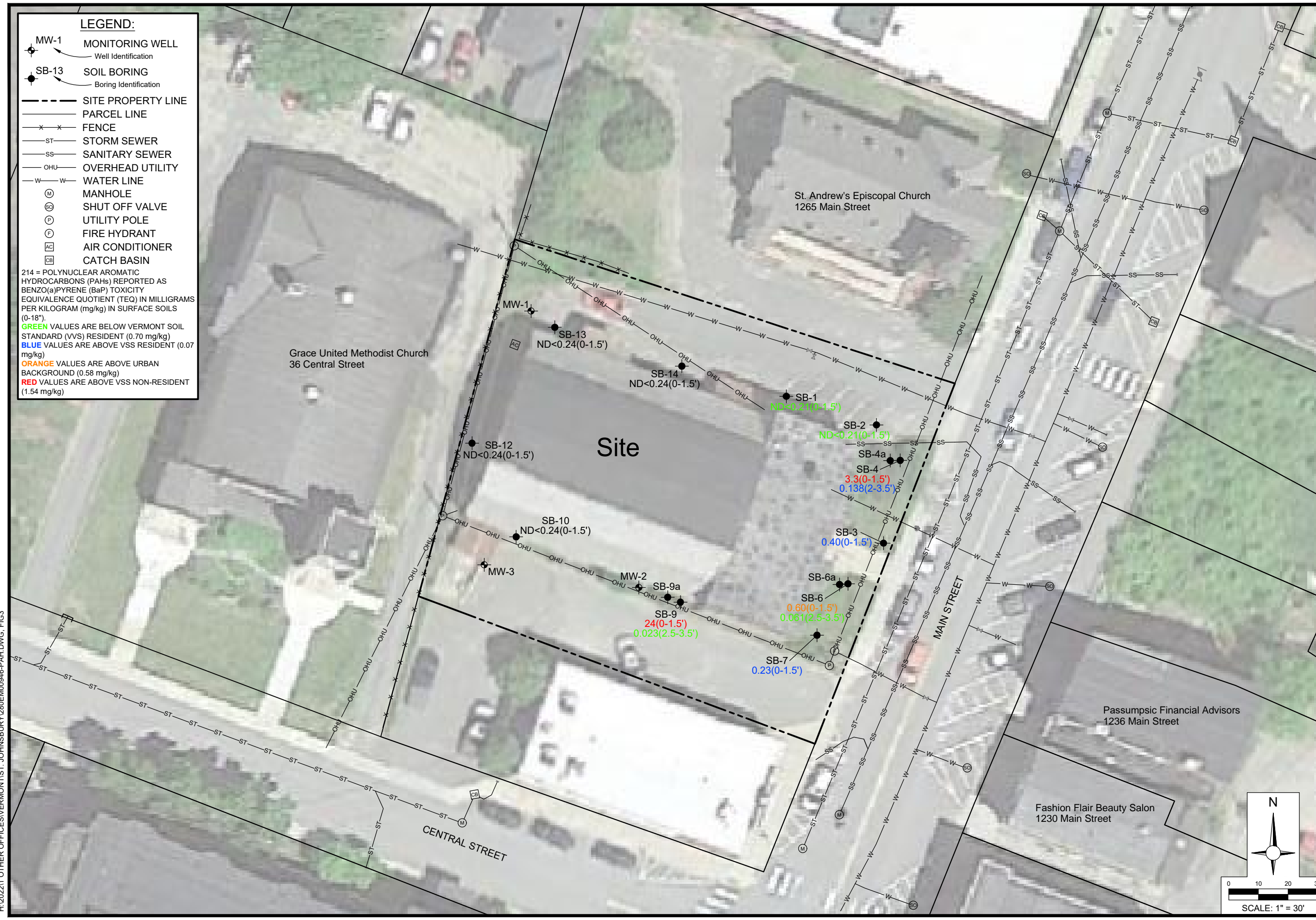
214 = POLYNUCLEAR AROMATIC HYDROCARBONS (PAHs) REPORTED AS BENZO(a)PYRENE (BaP) TOXICITY EQUIVALENCE QUOTIENT (TEQ) IN MILLIGRAMS PER KILOGRAM (mg/kg) IN SURFACE SOILS (0-18").

GREEN VALUES ARE BELOW VERMONT SOIL STANDARD (VSS) RESIDENT (0.70 mg/kg)

BLUE VALUES ARE ABOVE VSS RESIDENT (0.07 mg/kg)

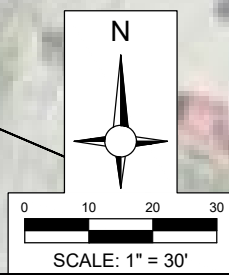
ORANGE VALUES ARE ABOVE URBAN BACKGROUND (0.58 mg/kg)

RED VALUES ARE ABOVE VSS NON-RESIDENT (1.54 mg/kg)



**CONTAMINANT DISTRIBUTION MAP -  
PAHs IN SOIL**  
FORMER ST. JOHNSBURY ARMORY  
1249 MAIN STREET  
ST. JOHNSBURY, VERMONT

Project Number: 280EM00946	
Date: 10/06/2022	
Drn. By: DH	Ckd. By: EU
Scale: AS SHOWN	





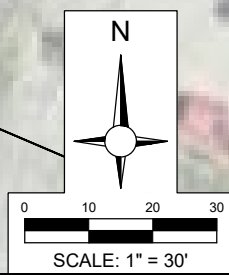
**LEGEND:**

- MW-1 MONITORING WELL  
Well Identification
- SB-13 SOIL BORING  
Boring Identification
- SITE PROPERTY LINE
- PARCEL LINE
- x-x- FENCE
- ST- STORM SEWER
- SS- SANITARY SEWER
- OHU- OVERHEAD UTILITY
- W- WATER LINE
- (M) MANHOLE
- (S) SHUT OFF VALVE
- (P) UTILITY POLE
- (F) FIRE HYDRANT
- (AC) AIR CONDITIONER
- (CB) CATCH BASIN

105 = LEAD CONCENTRATION IN SOIL IN MILLIGRAMS PER KILOGRAM (mg/kg).  
**GREEN** VALUES ARE BELOW RCRA "RULE OF 20" (100 mg/kg)  
**BLUE** VALUES EXCEED RCRA "RULE OF 20" (100 mg/kg)  
**ORANGE** VALUES ARE ABOVE VERMONT SOIL STANDARDS FOR RESIDENT SOILS (VSS-R, 400 mg/kg)  
**RED** VALUES ARE ABOVE VSS FOR NON-RESIDENTIAL SOILS (VSS-NR, 800 mg/kg)  
 COMPOSITE SAMPLES WERE COLLECTED IN MAY 2021 BY EVERGREEN ON BEHALF OF VERMONT HOUSING AND CONSERVATION BOARD (VHCB). SOIL BORINGS COMPLETED BY ATC IN AUGUST 2021.

**CONTAMINANT DISTRIBUTION MAP -  
 LEAD IN SOIL**  
 FORMER ST. JOHNSBURY ARMOY  
 1249 MAIN STREET  
 ST. JOHNSBURY, VERMONT

Project Number: 280EM00946	
Date: 10/06/2022	
Drn. By: DH	Ckd. By: EU
Scale: AS SHOWN	



HY202211 OTHER OFFICES/VERMONT/ST. JOHNSBURY/280EM00946-PB.DWG, FIG4

## TABLES

TABLE 1  
SOIL QUALITY RESULTS - POLYCYCLIC AROMATIC HYDROCARBONS  
FORMER ST JOHNSBURY ARMORY, ST JOHNSBURY, VT

Compound	BaP TEQ	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene (BaP)	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Pyrene	VSS					
																			Resident	Urban Background	Non-Resident			
	0.07	NS	NS	NS	NS	TEQ	NS	NS	NS	NS	NS	2,301	2,301	NS	NS	2.7	NS	NS	NS					
	0.58	NS	NS	NS	NS	TEQ	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS				
	1.54	NS	NS	NS	NS	TEQ	NS	NS	NS	NS	NS	26,371	26,371	NS	NS	16	NS	NS	NS	NS				
	--	--	--	--	0.1	1	0.1	--	0.01	0.01	1	--	--	0.1	--	--	--	--	--	--				
Sample ID:	Sample Depth (fbgs):	Sample Date:																						
SB-1	0-1.5	04/25/22	ND<0.21	ND<0.18	ND<0.18	ND<0.18	ND<0.18	ND<0.18	ND<0.18	ND<0.18	ND<0.18	ND<0.18	ND<0.18	ND<0.18	ND<0.18	ND<0.18	ND<0.18	ND<0.18	ND<0.18	ND<0.18	ND<0.18	ND<0.18	ND<0.18	
SB-2	0-1.5	04/25/22	ND<0.21	ND<0.18	ND<0.18	ND<0.18	ND<0.18	ND<0.18	ND<0.18	ND<0.18	ND<0.18	ND<0.18	ND<0.18	ND<0.18	ND<0.18	ND<0.18	ND<0.18	ND<0.18	ND<0.18	ND<0.18	ND<0.18	ND<0.18	ND<0.18	
SB-3	0-1.5	04/25/22	0.40	ND<0.18	ND<0.18	ND<0.18	0.19	0.24	0.31	ND<0.18	ND<0.18	0.23	ND<0.18	0.37	ND<0.18	ND<0.18	ND<0.18	ND<0.18	ND<0.18	ND<0.18	0.20	0.38		
SB-4	0-1.5	04/25/22	3.3	ND<0.19	ND<0.19	0.64	2.4	2.3	2.8	1.0	1.1	2.3	0.36	4.8	ND<0.19	1.3	ND<0.19	ND<0.19	ND<0.19	2.8	3.6			
SB-4a	2-3.5	09/20/22	0.138	ND<0.012	ND<0.018	ND<0.022	0.075	0.0737	0.0854	0.0387	0.0339 J	0.0756	0.0393	0.149	ND<0.016	0.077	NA	ND<0.010	0.0758	0.123				
SB-6	0-1.5	04/25/22	0.60	ND<0.20	ND<0.20	ND<0.20	0.34	0.38	0.49	0.23	ND<0.20	0.38	ND<0.20	0.77	ND<0.20	0.34	ND<0.20	ND<0.20	ND<0.20	0.53	0.63			
SB-6a	2.5-3.5	09/20/22	0.061	ND<0.012	ND<0.018	ND<0.022	0.0342 J	0.039	0.0506	0.0289 J	0.0169 J	0.0356	ND<0.015	0.0621	ND<0.016	0.0598	NA	ND<0.0098	0.0247 J	0.0539				
SB-7	0-1.5	04/25/22	0.23	ND<0.18	ND<0.18	ND<0.18	ND<0.18	ND<0.18	0.21	ND<0.18	ND<0.18	ND<0.18	ND<0.18	0.28	ND<0.18	0.20	ND<0.18	ND<0.18	ND<0.18	0.23				
SB-9	0-1.5	04/25/22	24	6.8	0.21	15	19	16	19	7.2	7.0	17	2.7	49	7.1	9.9	2.9	4.4	58	38				
SB-9a	2.5-3.5	09/20/22	0.023	ND<0.012	ND<0.018	ND<0.021	0.0126 J	ND<0.016	0.0150 J	ND<0.017	ND<0.016	0.0127 J	ND<0.015	0.0208 J	ND<0.016	0.0416	NA	ND<0.0098	ND<0.012	0.0177 J				
SB-10	0-1.5	04/25/22	ND<0.24	ND<0.21	ND<0.21	ND<0.21	ND<0.21	ND<0.21	ND<0.21	ND<0.21	ND<0.21	ND<0.21	ND<0.21	ND<0.21	ND<0.21	ND<0.21	ND<0.21	ND<0.21	ND<0.21	ND<0.21	ND<0.21	ND<0.21	ND<0.21	
SB-12	0-1.5	04/25/22	ND<0.24	ND<0.21	ND<0.21	ND<0.21	ND<0.21	ND<0.21	ND<0.21	ND<0.21	ND<0.21	ND<0.21	ND<0.21	ND<0.21	ND<0.21	ND<0.21	ND<0.21	ND<0.21	ND<0.21	ND<0.21	ND<0.21	ND<0.21	ND<0.21	
SB-13	0-1.5	04/25/22	ND<0.23	ND<0.20	ND<0.20	ND<0.20	ND<0.20	ND<0.20	ND<0.20	ND<0.20	ND<0.20	ND<0.20	ND<0.20	ND<0.20	ND<0.20	ND<0.20	ND<0.20	ND<0.20	ND<0.20	ND<0.20	ND<0.20	ND<0.20	ND<0.20	
SB-14	0-1.5	04/25/22	ND<0.23	ND<0.20	ND<0.20	ND<0.20	ND<0.20	ND<0.20	ND<0.20	ND<0.20	ND<0.20	ND<0.20	ND<0.20	ND<0.20	ND<0.20	ND<0.20	ND<0.20	ND<0.20	ND<0.20	ND<0.20	ND<0.20	ND<0.20	ND<0.20	

QA/QC Samples:

Duplicate (SB-9)	2.5-3.5	09/20/22	0.024	ND<0.014	ND<0.021	ND<0.025	0.0200 J	ND<0.018	0.0244 J	ND<0.020	ND<0.019	0.0183 J	ND<0.018	0.0353 J	ND<0.019	ND<0.019	ND<0.018	ND<0.011	0.0286 J	0.0306 J		
		RPD	4%	--	--	--	45%	--	48%	--	--	36%	--	52%	--	--	--	--	--	--	53%	

NOTES:

All results provided in milligrams per kilogram (mg/kg) or parts per million (ppm), analyzed by EPA Method 8270

Bold values indicate detections

NE = not encountered

VSS = Vermont Soil Standards (IRULE, July 2019)

TEF = Toxicity Equivalency Factor, TEQ = Toxicity Equivalency Quotient

BaP TEQ values were calculated from select PAH analytical concentrations as shown multiplied by the corresponding TEF and summed

TEF compounds that are non-detect were estimated based on half of the provided laboratory limit

BaP TEQ values are compared to VSS for Resident Soils, Non-Resident Soils and Urban Background Values

Green shaded values are below Resident Values

Blue shaded values indicate exceedance of Resident Values

Orange shaded values indicate exceedance of Urban Background Values

Red shaded values indicate exceedance of Non-Resident Values

ND = not detected above stated method detection limit (MDL)

NS = no standard available

NA = not analyzed

J = estimated value below laboratory reporting limit (RL)

fbgs = feet below ground surface

RPD = relative percent difference

**TABLE 2**  
**SOIL QUALITY RESULTS - PCBs**  
**FORMER ST JOHNSBURY ARMORY, ST JOHNSBURY, VT**

Sample ID:	Depth (fbgs):	Date:	Analyte									
			Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	Arochlor 1262	Arochlor 1268	
SB-1	0-1.5	04/25/22	ND<0.081	ND<0.081	ND<0.081	ND<0.081	ND<0.081	ND<0.081	ND<0.081	ND<0.081	ND<0.081	ND<0.081
SB-2	0-1.5	04/25/22	ND<0.082	ND<0.082	ND<0.082	ND<0.082	ND<0.082	ND<0.082	ND<0.082	ND<0.082	ND<0.082	ND<0.082
SB-3	0-1.5	04/25/22	ND<0.084	ND<0.084	ND<0.084	ND<0.084	ND<0.084	ND<0.084	ND<0.084	ND<0.084	ND<0.084	ND<0.084
SB-4	0-1.5	04/25/22	ND<0.092	ND<0.092	ND<0.092	ND<0.092	ND<0.092	ND<0.092	ND<0.092	ND<0.092	ND<0.092	ND<0.092
SB-6	0-1.5	04/25/22	ND<0.094	ND<0.094	ND<0.094	ND<0.094	ND<0.094	ND<0.094	ND<0.094	ND<0.094	ND<0.094	ND<0.094
SB-7	0-1.5	04/25/22	ND<0.083	ND<0.083	ND<0.083	ND<0.083	ND<0.083	ND<0.083	ND<0.083	ND<0.083	ND<0.083	ND<0.083
SB-9	0-1.5	04/25/22	ND<0.087	ND<0.087	ND<0.087	ND<0.087	ND<0.087	ND<0.087	ND<0.087	ND<0.087	ND<0.087	ND<0.087
SB-10	0-1.5	04/25/22	ND<0.095	ND<0.095	ND<0.095	ND<0.095	ND<0.095	ND<0.095	ND<0.095	ND<0.095	ND<0.095	ND<0.095
SB-12	0-1.5	04/25/22	ND<0.096	ND<0.096	ND<0.096	ND<0.096	ND<0.096	ND<0.096	ND<0.096	ND<0.096	ND<0.096	ND<0.096
SB-13	0-1.5	04/25/22	ND<0.092	ND<0.092	ND<0.092	ND<0.092	ND<0.092	ND<0.092	ND<0.092	ND<0.092	ND<0.092	ND<0.092
SB-14	0-1.5	04/25/22	ND<0.090	ND<0.090	ND<0.090	ND<0.090	ND<0.090	ND<0.090	ND<0.090	ND<0.090	ND<0.090	ND<0.090

NOTES:

Polychlorinated biphenyls (PCBs) soil quality results, provided in mg/kg = milligrams per kilogram, analyzed by EPA Method 8082 w/soxhlet extractio

Bold values indicate detections

VSS = Vermont Soil Standards (IRULE, July 2019)

Blue shaded values indicate exceedance of VSS Resident Values (VSS-R) = 0.144 mg/kg

Orange shaded values indicate exceedance of VSS Non-Resident Values (VSS-NR) = 0.68 mg/kg

Red shaded values indicate exceedance of EPA High Occupancy Cleanup Standards (EPA-HOCS) = 1.0 mg/kg

ND = not detected above provided detection limit

fbgs = feet below ground surface

**TABLE 3**  
**SOIL QUALITY RESULTS - METALS**  
**FORMER ST JOHNSBURY ARMORY, ST JOHNSBURY, VT**

			Analyte							
			Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
VSS Resident			16	11,247	6.9	40,223	400	3.1	366	237
VSS Non-Resident			16	127,382	87	360,223	800	3.1	4,900	2,483
Sample ID:	Depth (fbgs):	Date:								
SB-1	0-1.5	04/25/22	ND<3.3	<b>45</b>	ND<0.33	<b>15</b>	<b>20</b>	<b>0.043</b>	ND<3.3	ND<0.33
SB-2	0-1.5	04/25/22	ND<3.3	<b>39</b>	ND<0.33	<b>17</b>	<b>26</b>	<b>0.079</b>	ND<3.3	ND<0.33
SB-3	0-1.5	04/25/22	ND<3.6	<b>24</b>	ND<0.36	<b>17</b>	<b>24</b>	<b>0.097</b>	ND<3.6	ND<0.36
SB-4	0-1.5	04/25/22	ND<3.7	<b>64</b>	ND<0.37	<b>12</b>	<b>160</b>	<b>0.54</b>	ND<3.7	ND<0.37
SB-6	0-1.5	04/25/22	ND<3.8	<b>60</b>	ND<0.38	<b>17</b>	<b>110</b>	<b>0.18</b>	ND<3.8	ND<0.38
SB-7	0-1.5	04/25/22	ND<3.4	<b>30</b>	ND<0.34	<b>13</b>	<b>28</b>	ND<0.027	ND<3.4	ND<0.34
SB-9	0-1.5	04/25/22	<b>4.7</b>	<b>35</b>	ND<0.36	<b>13</b>	<b>730</b>	<b>0.36</b>	ND<3.6	ND<0.36
SB-9a	2.5-3.5	09/20/22	NA	NA	NA	NA	<b>20.5</b>	NA	NA	NA
SB-10	0-1.5	04/25/22	ND<4.0	<b>58</b>	<b>1.0</b>	<b>11</b>	<b>23</b>	<b>0.099</b>	ND<4.0	ND<0.40
SB-12	0-1.5	04/25/22	ND<3.9	<b>48</b>	ND<0.39	<b>12</b>	<b>260</b>	<b>0.33</b>	ND<3.9	ND<0.39
SB-13	0-1.5	04/25/22	ND<3.9	<b>38</b>	ND<0.39	<b>21</b>	<b>9.3</b>	<b>0.048</b>	ND<3.9	ND<0.39
SB-14	0-1.5	04/25/22	ND<3.7	<b>120</b>	<b>0.50</b>	<b>14</b>	<b>290</b>	<b>0.98</b>	ND<3.7	<b>0.93</b>

NOTES:

All results provided in milligrams per kilogram (mg/kg) or parts per million (ppm)

All samples analyzed by EPA Methods 6010/7470

Bold values indicate detections

VSS = Vermont Soil Standards (IRULE, July 2019)

Blue shaded values indicate exceedance of Resident Values

Red shaded values indicate exceedance of Non-Resident Values

ND = not detected above provided detection limit

NA = not analyzed

fbgs = feet below ground surface

RPD = relative percent difference

**Table 4**  
**Soil Vapor Analytical Results**  
**Former St Johnsbury Armory**

		Sample Location	MW-1	MW-2	MW-3
		Sample date:	5/4/2022	5/4/2022	5/4/2022
		Sample method:	Vapor Implant	Vapor Implant	Vapor Implant
		PID:	0.1	0.2	0.6
		Sample elevation:	198	201.5	192.6
Compound	VIS Resident	VIS Non-resident			
Tetrachloroethene (PCE)	21	170	9.20	6.6	9.5
Trichloroethene (TCE)	6.7	23	ND<1.1	ND<1.1	ND<1.1
cis-1,2-Dichloroethene	NS	NS	ND<0.79	ND<0.79	ND<0.79
trans-1,2-Dichloroethene	NS	NS	ND<0.79	ND<0.79	ND<0.79
Vinyl chloride	3.7	62	ND<0.51	ND<0.51	ND<0.51
Carbon tetrachloride	5.7	45	ND<1.3	ND<1.3	ND<1.3
Chloroform	1.3	12	ND<0.98	ND<0.98	ND<0.98
Benzene	4.3	35	1.0	1.9	1.5
Chloroethane	<b>330,000</b>	<b>1,200,000</b>	ND<0.53	ND<0.53	ND<0.53
Methylene chloride	<b>3,400</b>	<b>41,000</b>	7.3	ND<6.9	ND<6.9

**Notes:**

All samples analyzed by EPA method TO-15, reported in micrograms per cubic meter (ug/m3)  
 2019 Vermont Vapor Intrusion Standards (VIS) are from Appendix A of  
 the Investigation and Remediation of Contaminated Properties Rule, July 2019; residential and industrial subslab soil gas  
 Green shaded values exceed VIS resident and red shaded values exceed VIS Non-resident  
 BRL = Not detect at or above stated laboratory reporting limit                      samples in ug/m3  
 Italicized values indicate report limit exceeds VIS  
 ND=Not detected at or above reporting limit (RL)

**APPENDIX A  
PHOTO LOG  
FIELDNOTES/BORING LOGS**

**Client Name:**  
Stantec

**Site Location:**  
*Saint Johnsbury Armory*  
1249 Main Street,  
Saint Johnsbury, Vermont

**Atlas Project #:**  
280EM00860

**Photograph #1**

**Description:**

*Drill rig set up on  
MW-1.*



**Photograph #2**

**Description:**

*Native sand located  
approximately 2 to 3  
fbs.*



# PHOTOGRAPHS

**Client Name:**  
Stantec

**Site Location:**  
*Saint Johnsbury Armory*  
1249 Main Street,  
Saint Johnsbury, Vermont

**Atlas Project #:**  
280EM00860

**Photograph #3**

**Description:**

*Completed MW-3.*



**Photograph #4**

**Description:**

*Front of the site, near SB-4.*



280BS00

E.L. on site 805am  
40° cloudy

Soil boring & MW overnight  
4.25.22

810am - E.L. looked over site utilities marked by Tyler Button, and adjusted SBs & MWS accordingly.

825am - CASCADE on site

830am - ~~for~~ tail gate mtg w/ NICK & Chris from CASCADE

900am - <sup>Calibrate PIP photocheck TIGER#2</sup> began SB

↳ only enough for 2 SVPs. <sup>material</sup>

	depth	time
SB-13	3.0	915
SB-12		930
SB-14		945
SB-1		1000
SB-2		1015
SB-4		1035
SB-3		1045
SB-6		1110
SB-7		1120
SB-9		1130
SB-10	↓	1145
SVP-1	20.0	
SVP-7	20.0	
SVP-3	20.0	

EL off site 4pm

G. Pl



51 KNIGHT LANE  
WILLISTON, VERMONT 05495 (802) 862-1980  
(737) 207-8272 - FAX

**BORING / WELL IDENTIFICATION:** SVP-1

SITE NAME: St. J. Armory  
SITE LOCATION: 1249 main st St. J. VT  
INSTALLATION DATE: 4.26.27  
JOB NUMBER: 280EM0860

WELL DEPTH:	BORING DEPTH: 20.0'	ATLAS REPRESENTATIVE: Emma L.
DEPTH TO WATER (DURING DRILLING):		DRILLING COMPANY: CASCADE
SCREEN DIAMETER:	DEPTH:	SAMPLING METHOD: DPT
SCREEN TYPE/SIZE:		REFERENCE POINT (RP):
RISER DIAMETER:	DEPTH:	ELEVATION OF RP:
RISER TYPE/SIZE:		
REMARKS:		

DEPTH (IN FEET)	RECOVERY (FT)	SAMPLE DESCRIPTION AND NOTES	STRA TA CHANGE	PID (PPM)	WELL PROFILE	LEGEND
0		6" gravel base		00		Concrete
1		d. br. silty sand w/ trace gravel		00		Native
2	2/5			00		Bentonite
3				00		Filter Sand
4				00		Riser
5				00		Screen
6		br. med sand trace silt		00		Water level
7	4/5	br. silt (wet)		00		
8				00		
9				00		
10		l. br-grey fine sand (DRY)		00		
11		br. med. sand, trace fine sand		00		
12	3.5/5			00		
13				00		
14				00		
15				00		
16				00		
17	4/5			00		
18		br. fine sand, trace silt		00		
19				00		
20				00		

<b>PROPORTIONS USED</b> AND 33-50% SOME 20-33% LITTLE 10-20% TRACE 0-10%	<b>BLOW COUNT (COHESIVE SOILS)</b> <2 VERY SOFT 2-4 SOFT 4-8 MEDIUM STIFF 8-15 STIFF 15-30 VERY STIFF >30 HARD	<b>BLOW COUNT (GRANULAR SOILS)</b> 0-4 VERY LOOSE 4-10 LOOSE 10-30 MEDIUM DENSE 30-50 DENSE >50 VERY DENSE	<b>Notes</b> PID used IonScience Tiger
--	--	---	---

SVC - KODIRISUI & SONS INC.



51 KNIGHT LANE  
WILLISTON, VERMONT 05495 (802) 862-1980  
(737) 207-8272 - FAX

**BORING / WELL IDENTIFICATION:** SVP-2

SITE NAME: St. J. Armory  
SITE LOCATION: 1249 Main St St. J VT  
INSTALLATION DATE: 4.25.22  
JOB NUMBER: 280EM00860

WELL DEPTH:	BORING DEPTH:	20.0	ATLAS REPRESENTATIVE:	Emma L.
DEPTH TO WATER (DURING DRILLING):	DRILLING COMPANY:		CASCADE	
SCREEN DIAMETER:	DEPTH:		SAMPLING METHOD:	DPT
SCREEN TYPE/SIZE:	DEPTH:		REFERENCE POINT (RP):	
RISER DIAMETER:	DEPTH:		ELEVATION OF RP:	
RISER TYPE/SIZE:				
REMARKS:				

DEPTH (IN FEET)	RECOVERY (FT)	SAMPLE DESCRIPTION AND NOTES	STRATA CHANGE	PID (PPM)	WELL PROFILE	LEGEND
0		d. br. silty sand w/gravel		0 0		Concrete
1				0 0		Native
2	3/5	med. br med. sand w/coarse sand and trace fine sand		0 0		Bentonite
3				0 0		Filter Sand
4				0 0		Riser
5				0 0		Screen
6				0 0		Water level
7	4/5	l. br. fine sand w/ trace med sand		0 0		
8				0 0		
9				0 0		
10				0 0		
11				0 0		
12	3/5			0 0		
13		d. br. silt layer (wet) ~4"		0 0		
14		l. grey fine sand (DRY)		0 0		
15				0 0		
16				0 0		
17	4.5/5			0 0		
18				0 0		
19				0 0		
20				0 0		

<b>PROPORTIONS USED</b> AND 33-50% SOME 20-33% LITTLE 10-20% TRACE 0-10%	<b>BLOW COUNT (COHESIVE SOILS)</b> <2 VERY SOFT 2-4 SOFT 4-8 MEDIUM STIFF 8-15 STIFF 15-30 VERY STIFF >30 HARD	<b>BLOW COUNT (GRANULAR SOILS)</b> 0-4 VERY LOOSE 4-10 LOOSE 10-30 MEDIUM DENSE 30-50 DENSE >50 VERY DENSE	Notes PID used IonScience Tiger
--	--	---	------------------------------------

BORING / WELL IDENTIFICATION:

**ATLAS**  
 51 KNIGHT LANE  
 WILLISTON, VERMONT 05495  
 (802) 862-1980  
 (737) 207-8272 - FAX

BORING / WELL IDENTIFICATION: **SVP-3**

SITE NAME:	St. J Armory
SITE LOCATION:	1249 Main St St J VT
INSTALLATION DATE:	4.25.22
JOB NUMBER:	280EM00860
ATLAS REPRESENTATIVE:	Emma L.
DRILLING COMPANY:	CASCADE
SAMPLING METHOD:	DPT
REFERENCE POINT (RP):	
ELEVATION OF RP:	

WELL DEPTH:		BORING DEPTH:	20.0'
DEPTH TO WATER (DURING DRILLING):			
SCREEN DIAMETER:		DEPTH:	
SCREEN TYPE/SIZE:			
RISER DIAMETER:		DEPTH:	
RISER TYPE/SIZE:			
REMARKS:			

DEPTH (IN FEET)	RECOVERY (FT)	SAMPLE DESCRIPTION AND NOTES	STRATA CHANGE	PID (PPM)	WELL PROFILE	LEGEND
0		d. br. silty sand w/ gravel		0.0		Concrete
1		br. coarse sand, trace fine gravel		0.0		Native
2	5/5	l. br. fine sand		0.0		Bentonite
3				0.0		Filter Sand
4				0.0		Riser
5				0.0		Screen
6				0.0		Water level
7	4.5/5			0.0		
8				0.0		
9				0.0		
10				0.0		
11				0.0		
12	3.5/5	d. br. wet silt		0.0		hydrated bentonite
13		very light br/gray fine sand (dry)		0.0		
14				0.0		
15				0.0		
16				0.0		
17				0.0		
18	4.5/5			0.0		
19				0.0		
20				0.0	6\"/>	

<b>PROPORTIONS USED</b> AND 33-50% SOME 20-33% LITTLE 10-20% TRACE 0-10%	<b>BLOW COUNT (COHESIVE SOILS)</b> <2 VERY SOFT 2-4 SOFT 4-8 MEDIUM STIFF 8-15 STIFF 15-30 VERY STIFF >30 HARD	<b>BLOW COUNT (GRANULAR SOILS)</b> 0-4 VERY LOOSE 4-10 LOOSE 10-30 MEDIUM DENSE 30-50 DENSE >50 VERY DENSE	Notes PID used IonScience Tiger
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# ATLAS

51 KNIGHT LANE  
WILLISTON, VERMONT 05495

(802) 862-1980  
(737) 207-8272 - FAX

**BORING / WELL IDENTIFICATION:**

SB-1

SITE NAME: St. J Armory

SITE LOCATION: 1249 Main St St J VT

INSTALLATION DATE: 4.25.22 / 1000

JOB NUMBER: 280 BS

WELL DEPTH: / BORING DEPTH: 3.0' ATLAS REPRESENTATIVE: Emma L

DEPTH TO WATER (DURING DRILLING): / DRILLING COMPANY: CASCADE

SCREEN DIAMETER: / DEPTH: / SAMPLING METHOD: DPT

SCREEN TYPE/SIZE: / RISER DIAMETER: / REFERENCE POINT (RP):

RISER TYPE/SIZE: / ELEVATION OF RP:

REMARKS: /

DEPTH (IN FEET)	RECOVERY (FT)	SAMPLE DESCRIPTION AND NOTES	STRATA CHANGE	PID (PPM)	WELL PROFILE	LEGEND
0		6" grey gravel base		0.0		Concrete
1	3/3	d. br silty sand w/ trace fine gravel		0.0		Native
2				0.0		
3		↓			0.0	
4						Bentonite
5						Filter Sand
6						Riser
7						Screen
8						
9						
10						Water level
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

<b>PROPORTIONS USED</b> AND 33-50% SOME 20-33% LITTLE 10-20% TRACE 0-10%	<b>BLOW COUNT (COHESIVE SOILS)</b> <2 VERY SOFT 2-4 SOFT 4-8 MEDIUM STIFF 8-15 STIFF 15-30 VERY STIFF >30 HARD	<b>BLOW COUNT (GRANULAR SOILS)</b> 0-4 VERY LOOSE 4-10 LOOSE 10-30 MEDIUM DENSE 30-50 DENSE >50 VERY DENSE	<b>Notes:</b> PID used: IonScience Tiger
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51 KNIGHT LANE  
WILLISTON, VERMONT 05495

(802) 862-1980  
(737) 207-8272 - FAX

**BORING / WELL IDENTIFICATION:** SB-2

SITE NAME: St. J. Armory  
 SITE LOCATION: 1249 Main St. St. J. VT  
 INSTALLATION DATE: 4.25.22  
 JOB NUMBER: 250 Em00860

WELL DEPTH: / BORING DEPTH: 30'  
 ATLAS REPRESENTATIVE: Emma L.  
 DRILLING COMPANT: CASCADE  
 SAMPLING METHOD: DPT  
 REMARKS:

DEPTH (IN FEET)	RECOVERY (FT)	SAMPLE DESCRIPTION AND NOTES	STRA TA CHAN GE	PID (PPM)	WELL PROFILE	LEGEND
0		6" l. grey gravel base		0.0		Concrete
1	3/3	d. br silty sand w/ trace gravel		0.0		Native
2		↓ 1. br - orange fine-medium sand		0.0		Bentonite
3						Filter Sand
4						Riser
5						Screen
6						Water level
7						
8						
9						
10						
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12						
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<b>PROPORTIONS USED AND</b> 33-50% SOME 20-33% LITTLE 10-20% TRACE 0-10%	<b>BLOW COUNT (COHESIVE SOILS)</b> <2 VERY SOFT 2-4 SOFT 4-8 MEDIUM STIFF 8-15 STIFF 15-30 VERY STIFF >30 HARD	<b>BLOW COUNT (GRANULAR SOILS)</b> 0-4 VERY LOOSE 4-10 LOOSE 10-30 MEDIUM DENSE 30-50 DENSE >50 VERY DENSE	Notes PID used: IonScience Tiger
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51 KNIGHT LANE  
WILLISTON, VERMONT 05495 (802) 862-1980  
(737) 207-8272 - FAX

**BORING / WELL IDENTIFICATION: SB-3**

SITE NAME: *St. J. Armory*  
 SITE LOCATION: *1249 Main St St. J. VT*  
 INSTALLATION DATE: *4.25.22*  
 JOB NUMBER: *280EM00060*

WELL DEPTH:	<i>NIA</i>	BORING DEPTH:	<i>3.0'</i>	ATLAS REPRESENTATIVE:	<i>Emma L</i>
DEPTH TO WATER (DURING DRILLING):		DRILLING COMPANY:		<i>CASCADE</i>	
SCREEN DIAMETER:		SAMPLING METHOD:		<i>DPT</i>	
SCREEN TYPE/SIZE:		REFERENCE POINT (RP):			
RISER DIAMETER:		ELEVATION OF RP:			
RISER TYPE/SIZE:					
REMARKS:					

DEPTH (IN FEET)	RECOVERY (FT)	SAMPLE DESCRIPTION AND NOTES	STRATA CHANGE	PID (PPM)	WELL PROFILE	LEGEND
0		<i>d. br. Topsoil, brick pieces</i>		<i>0.0</i>		Concrete
1	<i>3/13</i>	<i>l. br fine - medium sand</i>		<i>0.0</i>		Native
2		<i>d. br. fine dense sand</i>		<i>0.0</i>		Bentonite
3						Filter Sand
4						Riser
5						Screen
6						Water level
7						
8						
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14						
15						
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17						
18						
19						
20						

<b>PROPORTIONS USED</b> AND 33-50% SOME 20-33% LITTLE 10-20% TRACE 0-10%	<b>BLOW COUNT (COHESIVE SOILS)</b> <2 VERY SOFT 2-4 SOFT 4-8 MEDIUM STIFF 8-15 STIFF 15-30 VERY STIFF >30 HARD	<b>BLOW COUNT (GRANULAR SOILS)</b> 0-4 VERY LOOSE 4-10 LOOSE 10-30 MEDIUM DENSE 30-50 DENSE >50 VERY DENSE	Notes PID used IonScience Tiger
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IDENTIFICATION: 20



51 KNIGHT LANE  
WILLISTON, VERMONT 05495  
(802) 862-1980  
(737) 207-8272 - FAX

BORING / WELL IDENTIFICATION: SB-4

SITE NAME: St. J. Armory  
SITE LOCATION: 1249 Main St St. J VT  
INSTALLATION DATE: 4.25.22  
JOB NUMBER: 280 EM00860  
ATLAS REPRESENTATIVE: Emma L.  
DRILLING COMPANY: CASCADE

WELL DEPTH: 3.0'  
DEPTH TO WATER (DURING DRILLING):  
SCREEN DIAMETER:  
SCREEN TYPE/SIZE:  
RISER DIAMETER:  
RISER TYPE/SIZE:  
REMARKS:

DEPTH (IN FEET)	RECOVERY (FT)	SAMPLE DESCRIPTION AND NOTES	STRATA CHANGE	PID (PPM)	WELL PROFILE	LEGEND
0		d. br Topsoil w/ gravel		0.0		Concrete
1		d. br silty sand w/ gravel (brick pieces)		0.0		Native
2		l. br fine sand trace med. sand		0.0		Bentonite
3						Filter Sand
4						Riser
5						Screen
6						Water level
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PROPOF AND SOME LITTLE TRACE

PROPORTIONS USED AND SOME LITTLE TRACE

BLOW COUNT (COHESIVE SOILS)

BLOW COUNT (GRANULAR SOILS)

Notes  
PID used IonScience Tiger

1-800-551-8811  
 1-800-551-8811  
 www.takemoreeyes.com

**BORING / WELL IDENTIFICATION:** SB-13

SITE NAME: St. J. Armory  
 LOCATION: 1249 main st St J VT



51 KNIGHT LANE  
 WILLISTON, VERMONT 05495 (802) 862-1980  
 (737) 207-8272 - FAX

**BORING / WELL IDENTIFICATION:** SB-6

SITE NAME: St J. Armory  
 SITE LOCATION: 1249 main st St.J VT  
 INSTALLATION DATE: 4.25.22  
 JOB NUMBER: 250 Em00860

WELL DEPTH: \_\_\_\_\_  
 DEPTH TO WATER (DURING DRILLING): \_\_\_\_\_  
 SCREEN DIAMETER: \_\_\_\_\_  
 SCREEN TYPE/SIZE: \_\_\_\_\_  
 RISER DIAMETER: \_\_\_\_\_  
 RISER TYPE/SIZE: \_\_\_\_\_  
 REMARKS: \_\_\_\_\_

BORING DEPTH: 3.0'  
 DEPTH: None  
 ATLAS REPRESENTATIVE: Emma L.  
 DRILLING COMPANY: CASCADE  
 SAMPLING METHOD: DPT  
 REFERENCE POINT (RP): \_\_\_\_\_  
 ELEVATION OF RP: \_\_\_\_\_

DEPTH (IN FEET)	RECOVERY (FT)	SAMPLE DESCRIPTION AND NOTES	STRATA CHANGE	PID (PPM)	WELL PROFILE	LEGEND
0						
1	3/3	7" d. br Topsoil w/ organics		0.0		Concrete
2		L. br fine sand w/ med. sand		0.0		Native
3		"some pavement/brick pieces"		0.0		Bentonite
4						Filter Sand
5						Riser
6						Screen
7						Water level
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

PROPORTIONS USED  
 AND 33-50%  
 SOME 20-33%  
 LITTLE 10-20%  
 TRACE 0-10%

BLOW COUNT (COHESIVE SOILS)  
 <2 VERY SOFT  
 2-4 SOFT  
 4-8 MEDIUM STIFF  
 8-15 STIFF  
 15-30 VERY STIFF  
 >30 HARD

BLOW COUNT (GRANULAR SOILS)  
 0-4 VERY LOOSE  
 4-10 LOOSE  
 10-30 MEDIUM DENSE  
 30-50 DENSE  
 >50 VERY DENSE

Notes  
 PID used. IonScience Tiger

www.ionkemoteyresort.com



51 KNIGHT LANE  
WILLISTON, VERMONT 05495  
(802) 862-1980  
(737) 207-8272 - FAX

**BORING / WELL IDENTIFICATION:**

SB-7


SITE NAME: *St. J Armory*  
 SITE LOCATION: *1249 Main St St. J VT*  
 INSTALLATION DATE: *4 25. 22*  
 JOB NUMBER: *280 EM 00860*

WELL DEPTH:	BORING DEPTH:	ATLAS REPRESENTATIVE:
DEPTH TO WATER (DURING DRILLING):	<i>3.0'</i>	<i>Emma L.</i>
SCREEN DIAMETER:	DEPTH:	DRILLING COMPANY:
SCREEN TYPE/SIZE:		<i>CASCADE</i>
RISER DIAMETER:	DEPTH:	SAMPLING METHOD:
RISER TYPE/SIZE:		<i>DPT</i>
REMARKS:		REFERENCE POINT (RP):
		ELEVATION OF RP:

DEPTH (IN FEET)	RECOVERY (FT)	SAMPLE DESCRIPTION AND NOTES	STRATA CHANGE	PID (PPM)	WELL PROFILE	LEGEND
0		<i>6" d. br. Topsoil</i>		<i>0.0</i>		Concrete
1	<i>3/3</i>	<i>cl. br. silty sand w/ gravel</i>		<i>0.0</i>		Native
2		↓		<i>0.0</i>		Bentonite
3						Filter Sand
4						Riser
5						Screen
6						Water level
7						
8						
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20						

<b>PROPORTIONS USED</b> AND 33-50% SOME 20-33% LITTLE 10-20% TRACE 0-10%	<b>BLOW COUNT (COHESIVE SOILS)</b> <2 VERY SOFT 2-4 SOFT 4-8 MEDIUM STIFF 8-15 STIFF 15-30 VERY STIFF >30 HARD	<b>BLOW COUNT (GRANULAR SOILS)</b> 0-4 VERY LOOSE 4-10 LOOSE 10-30 MEDIUM DENSE 30-50 DENSE >50 VERY DENSE	<b>Notes</b> PID used IonScience Tiger
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BORING / WELL IDENTIFICATION


		BORING / WELL IDENTIFICATION: <b>SB-9</b>	
		SITE NAME:	St. J Armory
51 KNIGHT LANE WILLISTON, VERMONT 05495 (802) 862-1980 (737) 207-8272 - FAX		SITE LOCATION:	1249 main st St. J VT
		INSTALLATION DATE:	4.25.22
WELL DEPTH:		BORING DEPTH:	3.0'
DEPTH TO WATER (DURING DRILLING):		ATLAS REPRESENTATIVE:	Emma L.
SCREEN DIAMETER:	DEPTH:	DRILLING COMPANY:	CASCADE
SCREEN TYPE/SIZE:	DEPTH:	SAMPLING METHOD:	DPT
RISER DIAMETER:	DEPTH:	REFERENCE POINT (RP):	
RISER TYPE/SIZE:	DEPTH:	ELEVATION OF RP:	
REMARKS:			

DEPTH (IN FEET)	RECOVERY (FT)	SAMPLE DESCRIPTION AND NOTES	STRATA CHANGE	PID (PPM)	WELL PROFILE	LEGEND
0		Grey fine sand w/ trace silt		0.0		Concrete
1	3/3	d. br silty sand w/ 1" layer of l. br		0.0		Native
2		fine sand @ 2.0' bgs		0.0		Bentonite
3						Filter Sand
4						Riser
5						Screen
6						Water level
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
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19						
20						

PROPORTIONS USED AND 33-50% SOME 20-33% LITTLE 10-20% TRACE 0-10%	BLOW COUNT (COHESIVE SOILS) <2 VERY SOFT 2-4 SOFT 4-8 MEDIUM STIFF 8-15 STIFF 15-30 VERY STIFF >30 HARD	BLOW COUNT (GRANULAR SOILS) 0-4 VERY LOOSE 4-10 LOOSE 10-30 MEDIUM DENSE 30-50 DENSE >50 VERY DENSE	Notes PID used IonScience Tiger
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# ATLAS

BORING / WELL IDENTIFICATION: **CA-12**

		BORING / WELL IDENTIFICATION: <b>SB-10</b>	
		SITE NAME:	<b>St. J Armeny</b>
51 KNIGHT LANE (802) 862-1980 WILLISTON, VERMONT 05495 (737) 207-8272 - FAX		SITE LOCATION:	<b>1249 Main St. St. J VT</b>
		INSTALLATION DATE:	<b>4.25.22</b>
		JOB NUMBER:	<b>250Em00860</b>
WELL DEPTH:		BORING DEPTH:	<b>3.0'</b>
DEPTH TO WATER (DURING DRILLING):		ATLAS REPRESENTATIVE:	<b>Emma L.</b>
SCREEN DIAMETER:		DRILLING COMPANY:	<b>CASCADE</b>
SCREEN TYPE/SIZE:		SAMPLING METHOD:	<b>DPI</b>
RISER DIAMETER:		REFERENCE POINT (RP):	
RISER TYPE/SIZE:		ELEVATION OF RP:	
REMARKS:			

DEPTH (IN FEET)	RECOVERY (FT)	SAMPLE DESCRIPTION AND NOTES	STRATA CHANGE	PID (PPM)	WELL PROFILE	LEGEND
0		d. br. silty sand w/ gravel		0.0		Concrete
1	3/3	↓		0.0		Native
2				0.0		Bentonite
3				<b>0 E.L.</b>		Filter Sand
4						Riser
5						Screen
6						Water level
7						
8						
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<b>PROPORTIONS USED</b> AND 33-50% SOME 20-33% LITTLE 10-20% TRACE 0-10%	<b>BLOW COUNT (COHESIVE SOILS)</b> <2 VERY SOFT 2-4 SOFT 4-8 MEDIUM STIFF 8-15 STIFF 15-30 VERY STIFF >30 HARD	<b>BLOW COUNT (GRANULAR SOILS)</b> 0-4 VERY LOOSE 4-10 LOOSE 10-30 MEDIUM DENSE 30-50 DENSE >50 VERY DENSE	Notes PID used IonScience Tiger
--	--	---	------------------------------------

		BORING / WELL IDENTIFICATION:	
		SB-12	
51 KNIGHT LANE WILLISTON, VERMONT 05495		(802) 862-1980 (737) 207-8272 - FAX	
WELL DEPTH: /		BORING DEPTH: 3.0'	ATLAS REPRESENTATIVE: Emma L.
DEPTH TO WATER (DURING DRILLING): /		DRILLING COMPANY: CASCADE	
SCREEN DIAMETER: /		DEPTH: /	SAMPLING METHOD: DPT
RISER DIAMETER: /		DEPTH: /	REFERENCE POINT (RP):
RISER TYPE/SIZE: /		ELEVATION OF RP:	
REMARKS:			

51 KNIGHT  
WILLISTON

WELL DEPTH  
DEPTH TO  
SCREEN DIAMETER  
SCREEN TYPE/SIZE  
RISER DIAMETER  
RISER TYPE/SIZE  
REMARKS

DEPTH (IN FEET)	RECOVERY (FT)	SAMPLE DESCRIPTION AND NOTES	STRATA CHANGE	PID (PPM)	WELL PROFILE	LEGEND
0		Topsoil: d. br. ss w/ rootlets		0.0		Concrete
1		1. br - orange fine-med sand		0.0		Native
2				0.0		Bentonite
3				0.0		Filter Sand
4						Riser
5						Screen
6						Water level
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PROPORTIONS USED AND 33-50% SOME 20-33% LITTLE 10-20% TRACE 0-10%	BLOW COUNT (COHESIVE SOILS) <2 VERY SOFT 2-4 SOFT 4-8 MEDIUM STIFF 8-15 STIFF 15-30 VERY STIFF >30 HARD	BLOW COUNT (GRANULAR SOILS) 0-4 VERY LOOSE 4-10 LOOSE 10-30 MEDIUM DENSE 30-50 DENSE >50 VERY DENSE	Notes: PID used: IonScience Tiger
---	---	--	--------------------------------------

BORING / WELL IDENTIFICATION:

**ATLAS**  
 51 KNIGHT LANE  
 WILLISTON, VERMONT 05495  
 (802) 862-1980  
 (737) 207-8272 - FAX

**BORING / WELL IDENTIFICATION:** **SB-13**

SITE NAME: *St. J. Armory*

SITE LOCATION: *1249 main st St J VT*

INSTALLATION DATE: *4.25.22*

JOB NUMBER: *280BS*

ATLAS REPRESENTATIVE: *Emmal*

DRILLING COMPANY: *CASCADE*

SAMPLING METHOD: *DPT*

REFERENCE POINT (RP):

ELEVATION OF RP:

WELL DEPTH: *N/A* BORING DEPTH: *3.0'*

DEPTH TO WATER (DURING DRILLING): *none*

SCREEN DIAMETER: *N/A* DEPTH: *0*

SCREEN TYPE/SIZE: *N/A*

RISER DIAMETER: *N/A* DEPTH: *0*

RISER TYPE/SIZE: *N/A*

DEPTH (IN FEET)	RECOVERY (FT)	SAMPLE DESCRIPTION AND NOTES	STRATA CHANGE	PID (PPM)	WELL PROFILE	LEGEND
0		<i>2. grey gravel base ~2"</i>		<i>0.2</i>		Concrete
1		<i>1. br medium sand</i>		<i>0.0</i>		Native
2				<i>0.0</i>		Bentonite
3		<i>3" brown silty sand seen</i>	<i>x</i>	<i>0.0</i>		Filter Sand
4				<i>0.0</i>		Riser
5						Screen
6						Water level
7						
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<p>PROPORTIONS USED</p> <p>AND 33-50%</p> <p>SOME 20-33%</p> <p>LITTLE 10-20%</p> <p>TRACE 0-10%</p>	<p>BLOW COUNT (COHESIVE SOILS)</p> <p>&lt;2 VERY SOFT</p> <p>2-4 SOFT</p> <p>4-8 MEDIUM STIFF</p> <p>8-15 STIFF</p> <p>15-30 VERY STIFF</p> <p>&gt;30 HARD</p>	<p>BLOW COUNT (GRANULAR SOILS)</p> <p>0-4 VERY LOOSE</p> <p>4-10 LOOSE</p> <p>10-30 MEDIUM DENSE</p> <p>30-50 DENSE</p> <p>&gt;50 VERY DENSE</p>	<p>Notes:</p> <p>PID used: IonScience Tiger</p>
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**ATLAS**  
 51 KNIGHT LANE  
 WILLISTON, VERMONT 05495  
 (802) 862-1980  
 (737) 207-8272 - FAX

**BORING / WELL IDENTIFICATION:** SB-14

SITE NAME: St. J. Armory  
 SITE LOCATION: 1249 Main St St. J VT  
 INSTALLATION DATE: 4.25.22 / 1945

JOB NUMBER:  
 ATLAS REPRESENTATIVE: Emma L.  
 DRILLING COMPANY: CASCADE  
 SAMPLING METHOD: DPT  
 REFERENCE POINT (RP):  
 ELEVATION OF RP:

DEPTH (IN FEET)	RECOVERY (FT)	SAMPLE DESCRIPTION AND NOTES	STRATA CHANGE	PID (PPM)	WELL PROFILE	LEGEND
0		d. brown silty sand w/ trace gravel		0.0		Concrete
1		1. br - orange fine - medium sand		0.0		Native
2		↓		0.0		Bentonite
3						Filter Sand
4						Riser
5						Screen
6						Water level
7						
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<b>PROPORTIONS USED</b> AND 33-50% SOME 20-33% LITTLE 10-20% TRACE 0-10%	<b>BLOW COUNT (COHESIVE SOILS)</b> <2 VERY SOFT 2-4 SOFT 4-8 MEDIUM STIFF 8-15 STIFF 15-30 VERY STIFF >30 HARD		<b>BLOW COUNT (GRANULAR SOILS)</b> 0-4 VERY LOOSE 4-10 LOOSE 10-30 MEDIUM DENSE 30-50 DENSE >50 VERY DENSE		Notes: PID used: IonScience Tiger
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### Appendix 07-04: Tailgate Safety Meeting Form

Site Name & Number: St. J Armory

ATC Project Number: \_\_\_\_\_

Date & Time of Meeting: 4/25/22 830am

Name of Presenter: Emma

Work Being Performed: Sp. 1 bdrngs

**NOTE:** On the initial day of the project, the Project Manager or designee should conduct a visual inspection of the project site prior to the Tailgate Safety Meeting. This inspection should include a review of project site equipment, hazards, specific job tasks, activities or operations to be performed for that day. These specific items must be covered during the Tailgate Safety Meeting. For subsequent days, any changes to the site or operations must be covered in the Tailgate Safety Meeting. In addition, "Task-Specific" Job Safety Analysis (JSA) for the tasks/activities at the project site must be integrated into the HASP and Tailgate discussions. Tailgate Meetings should be performed each day. Employees, client representatives and subcontractors must review the Tailgate Safety Meeting, be briefed on the topics and acknowledge the HSE topics by signing this form.

- Are all employees physically able to perform their job duties?  Any "Shared Learning" items?
- Emergency evacuation area identified?  Has PPE been checked?
- Subcontractor interactions or questions?

Itemize the Specific Topics Discussed (if more space is needed use the back of this page):

Slips trips falls		
utilities		
Traffic		

**Client Requirements** - By checking the box to the left, the presenter of the Tailgate Meeting acknowledges that all client-specific requirements have been completed for both ATC and Subcontractor employees.

By signing this Tailgate Safety Meeting form, you are acknowledging that you have read, reviewed and understand the health and safety topics discussed on this form.

Print Name	Signature	Company	Date
Emma Lyford	<i>[Signature]</i>	Atlas	4.25.22
Chris Aldred	<i>[Signature]</i>	Ch2cad	4.25.22
Nick Picciuto	<i>[Signature]</i>	cascode	4.25.22

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SBC - KUNIA

**APPENDIX B**

**SOIL LABORATORY ANALYTICAL REPORT**

May 16, 2022

Jesse Stratton  
ATC Group Services LLC - Vermont  
51 Knight Lane, PO Box 1486  
Williston, VT 05495

Project Location: 1249 Main St, St. J., VT  
Client Job Number:  
Project Number: [none]  
Laboratory Work Order Number: 22D2009

Enclosed are results of analyses for samples as received by the laboratory on April 27, 2022. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Kaitlyn A. Feliciano  
Project Manager

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39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

 ATC Group Services LLC - Vermont  
 51 Knight Lane, PO Box 1486  
 Williston, VT 05495  
 ATTN: Jesse Stratton

REPORT DATE: 5/16/2022

PURCHASE ORDER NUMBER: 2204382

PROJECT NUMBER: [none]

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 22D2009

The results of analyses performed on the following samples submitted to CON-TEST, a Pace Analytical Laboratory, are found in this report.

PROJECT LOCATION: 1249 Main St, St. J., VT

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
SB-1 (0-1.5)	22D2009-01	Soil		SM 2540G SW-846 8270E	
SB-2 (0-1.5)	22D2009-02	Soil		SM 2540G SW-846 8270E	
SB-3 (0-1.5)	22D2009-03	Soil		SM 2540G SW-846 8270E	
SB-4 (0-1.5)	22D2009-04	Soil		SM 2540G SW-846 8270E	
SB-6 (0-1.5)	22D2009-05	Soil		SM 2540G SW-846 8270E	
SB-7 (0-1.5)	22D2009-06	Soil		SM 2540G SW-846 8270E	
SB-9 (0-1.5)	22D2009-07	Soil		SM 2540G SW-846 8270E	
SB-10 (0-1.5)	22D2009-08	Soil		SM 2540G SW-846 8270E	
SB-12 (0-1.5)	22D2009-09	Soil		SM 2540G SW-846 8270E	
SB-13 (0-1.5)	22D2009-10	Soil		SM 2540G SW-846 8270E	
SB-14 (0-1.5)	22D2009-11	Soil		SM 2540G SW-846 8270E	

**CASE NARRATIVE SUMMARY**

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

For method 8270E, only PAHs were requested and reported.

**SW-846 8270E**

**Qualifications:**

**H-13**

Sample analysis performed past the recommended holding time due to a laboratory error.

**Analyte & Samples(s) Qualified:**

22D2009-10[SB-13 (0-1.5)]

**V-06**

Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side for this compound.

**Analyte & Samples(s) Qualified:**

**Dibenz(a,h)anthracene**

22D2009-04[SB-4 (0-1.5)], 22D2009-05[SB-6 (0-1.5)], 22D2009-06[SB-7 (0-1.5)], 22D2009-07[SB-9 (0-1.5)], 22D2009-08[SB-10 (0-1.5)], 22D2009-09[SB-12 (0-1.5)], 22D2009-11[SB-14 (0-1.5)], B307842-BLK1, B307842-BS1, B307842-BSD1, B308077-BS1, B308077-BSD1, S071350-CCV1, S071411-CCV1, S071434-CCV1, S071499-CCV1, S071502-CCV1, S071503-CCV1, S071533-CCV1

**Indeno(1,2,3-cd)pyrene**

S071434-CCV1

**V-20**

Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

**Analyte & Samples(s) Qualified:**

**Dibenz(a,h)anthracene**

22D2009-10[SB-13 (0-1.5)], B308077-BLK1

The results of analyses reported only relate to samples submitted to Con-Test, a Pace Analytical Laboratory, for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Tod E. Kopycinski  
Laboratory Director

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22D2009

Date Received: 4/27/2022

Field Sample #: SB-1 (0-1.5)

Sampled: 4/25/2022 10:00

Sample ID: 22D2009-01

Sample Matrix: Soil

## Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 2:21	IMR
Acenaphthylene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 2:21	IMR
Anthracene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 2:21	IMR
Benzo(a)anthracene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 2:21	IMR
Benzo(a)pyrene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 2:21	IMR
Benzo(b)fluoranthene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 2:21	IMR
Benzo(g,h,i)perylene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 2:21	IMR
Benzo(k)fluoranthene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 2:21	IMR
Chrysene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 2:21	IMR
Dibenz(a,h)anthracene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 2:21	IMR
Fluoranthene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 2:21	IMR
Fluorene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 2:21	IMR
Indeno(1,2,3-cd)pyrene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 2:21	IMR
2-Methylnaphthalene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 2:21	IMR
Naphthalene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 2:21	IMR
Phenanthrene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 2:21	IMR
Pyrene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 2:21	IMR
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Nitrobenzene-d5		69.4	30-130					5/12/22 2:21	
2-Fluorobiphenyl		88.5	30-130					5/12/22 2:21	
p-Terphenyl-d14		92.5	30-130					5/12/22 2:21	

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Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22D2009

Date Received: 4/27/2022

Field Sample #: SB-1 (0-1.5)

Sampled: 4/25/2022 10:00

Sample ID: 22D2009-01

Sample Matrix: Soil

**Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	96.5		% Wt	1		SM 2540G	5/10/22	5/10/22 21:28	HYF

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Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22D2009

Date Received: 4/27/2022

Field Sample #: SB-2 (0-1.5)

Sampled: 4/25/2022 10:15

Sample ID: 22D2009-02

Sample Matrix: Soil

## Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 2:46	IMR
Acenaphthylene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 2:46	IMR
Anthracene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 2:46	IMR
Benzo(a)anthracene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 2:46	IMR
Benzo(a)pyrene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 2:46	IMR
Benzo(b)fluoranthene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 2:46	IMR
Benzo(g,h,i)perylene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 2:46	IMR
Benzo(k)fluoranthene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 2:46	IMR
Chrysene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 2:46	IMR
Dibenz(a,h)anthracene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 2:46	IMR
Fluoranthene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 2:46	IMR
Fluorene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 2:46	IMR
Indeno(1,2,3-cd)pyrene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 2:46	IMR
2-Methylnaphthalene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 2:46	IMR
Naphthalene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 2:46	IMR
Phenanthrene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 2:46	IMR
Pyrene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 2:46	IMR
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Nitrobenzene-d5		59.2	30-130					5/12/22 2:46	
2-Fluorobiphenyl		83.0	30-130					5/12/22 2:46	
p-Terphenyl-d14		86.1	30-130					5/12/22 2:46	

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Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22D2009

Date Received: 4/27/2022

Field Sample #: SB-2 (0-1.5)

Sampled: 4/25/2022 10:15

Sample ID: 22D2009-02

Sample Matrix: Soil

**Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	96.7		% Wt	1		SM 2540G	5/10/22	5/10/22 21:28	HYF

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Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22D2009

Date Received: 4/27/2022

Field Sample #: SB-3 (0-1.5)

Sampled: 4/25/2022 10:45

Sample ID: 22D2009-03

Sample Matrix: Soil

## Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 3:13	IMR
Acenaphthylene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 3:13	IMR
Anthracene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 3:13	IMR
Benzo(a)anthracene	0.19	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 3:13	IMR
Benzo(a)pyrene	0.24	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 3:13	IMR
Benzo(b)fluoranthene	0.31	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 3:13	IMR
Benzo(g,h,i)perylene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 3:13	IMR
Benzo(k)fluoranthene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 3:13	IMR
Chrysene	0.23	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 3:13	IMR
Dibenz(a,h)anthracene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 3:13	IMR
Fluoranthene	0.37	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 3:13	IMR
Fluorene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 3:13	IMR
Indeno(1,2,3-cd)pyrene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 3:13	IMR
2-Methylnaphthalene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 3:13	IMR
Naphthalene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 3:13	IMR
Phenanthrene	0.20	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 3:13	IMR
Pyrene	0.38	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 3:13	IMR
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Nitrobenzene-d5		58.5	30-130					5/12/22 3:13	
2-Fluorobiphenyl		79.0	30-130					5/12/22 3:13	
p-Terphenyl-d14		83.8	30-130					5/12/22 3:13	

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Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22D2009

Date Received: 4/27/2022

Field Sample #: SB-3 (0-1.5)

Sampled: 4/25/2022 10:45

Sample ID: 22D2009-03

Sample Matrix: Soil

**Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	92.0		% Wt	1		SM 2540G	5/10/22	5/10/22 21:28	HYF

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Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22D2009

Date Received: 4/27/2022

Field Sample #: SB-4 (0-1.5)

Sampled: 4/25/2022 10:35

Sample ID: 22D2009-04

Sample Matrix: Soil

## Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	0.19	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 10:40	BGL
Acenaphthylene	ND	0.19	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 10:40	BGL
Anthracene	0.64	0.19	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 10:40	BGL
Benzo(a)anthracene	2.4	0.19	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 10:40	BGL
Benzo(a)pyrene	2.3	0.19	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 10:40	BGL
Benzo(b)fluoranthene	2.8	0.19	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 10:40	BGL
Benzo(g,h,i)perylene	1.0	0.19	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 10:40	BGL
Benzo(k)fluoranthene	1.1	0.19	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 10:40	BGL
Chrysene	2.3	0.19	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 10:40	BGL
Dibenz(a,h)anthracene	0.36	0.19	mg/Kg dry	1	V-06	SW-846 8270E	5/6/22	5/12/22 10:40	BGL
Fluoranthene	4.8	0.38	mg/Kg dry	2		SW-846 8270E	5/6/22	5/12/22 17:51	BGL
Fluorene	ND	0.19	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 10:40	BGL
Indeno(1,2,3-cd)pyrene	1.3	0.19	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 10:40	BGL
2-Methylnaphthalene	ND	0.19	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 10:40	BGL
Naphthalene	ND	0.19	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 10:40	BGL
Phenanthrene	2.8	0.19	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 10:40	BGL
Pyrene	3.6	0.19	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 10:40	BGL
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Nitrobenzene-d5		42.9	30-130					5/12/22 10:40	
Nitrobenzene-d5		39.4	30-130					5/12/22 17:51	
2-Fluorobiphenyl		45.6	30-130					5/12/22 10:40	
2-Fluorobiphenyl		39.8	30-130					5/12/22 17:51	
p-Terphenyl-d14		43.1	30-130					5/12/22 10:40	
p-Terphenyl-d14		39.6	30-130					5/12/22 17:51	

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Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22D2009

Date Received: 4/27/2022

Field Sample #: SB-4 (0-1.5)

Sampled: 4/25/2022 10:35

Sample ID: 22D2009-04

Sample Matrix: Soil

**Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	87.3		% Wt	1		SM 2540G	5/10/22	5/10/22 21:28	HYF

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Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22D2009

Date Received: 4/27/2022

Field Sample #: SB-6 (0-1.5)

Sampled: 4/25/2022 11:10

Sample ID: 22D2009-05

Sample Matrix: Soil

## Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	0.20	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 11:06	BGL
Acenaphthylene	ND	0.20	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 11:06	BGL
Anthracene	ND	0.20	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 11:06	BGL
Benzo(a)anthracene	0.34	0.20	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 11:06	BGL
Benzo(a)pyrene	0.38	0.20	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 11:06	BGL
Benzo(b)fluoranthene	0.49	0.20	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 11:06	BGL
Benzo(g,h,i)perylene	0.23	0.20	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 11:06	BGL
Benzo(k)fluoranthene	ND	0.20	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 11:06	BGL
Chrysene	0.38	0.20	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 11:06	BGL
Dibenz(a,h)anthracene	ND	0.20	mg/Kg dry	1	V-06	SW-846 8270E	5/6/22	5/12/22 11:06	BGL
Fluoranthene	0.77	0.20	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 11:06	BGL
Fluorene	ND	0.20	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 11:06	BGL
Indeno(1,2,3-cd)pyrene	0.34	0.20	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 11:06	BGL
2-Methylnaphthalene	ND	0.20	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 11:06	BGL
Naphthalene	ND	0.20	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 11:06	BGL
Phenanthrene	0.53	0.20	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 11:06	BGL
Pyrene	0.63	0.20	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 11:06	BGL
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Nitrobenzene-d5		67.3	30-130					5/12/22 11:06	
2-Fluorobiphenyl		70.1	30-130					5/12/22 11:06	
p-Terphenyl-d14		69.8	30-130					5/12/22 11:06	

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Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22D2009

Date Received: 4/27/2022

Field Sample #: SB-6 (0-1.5)

Sampled: 4/25/2022 11:10

Sample ID: 22D2009-05

Sample Matrix: Soil

**Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	83.3		% Wt	1		SM 2540G	5/10/22	5/10/22 21:28	HYF

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22D2009

Date Received: 4/27/2022

Field Sample #: SB-7 (0-1.5)

Sampled: 4/25/2022 11:20

Sample ID: 22D2009-06

Sample Matrix: Soil

## Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 11:32	BGL
Acenaphthylene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 11:32	BGL
Anthracene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 11:32	BGL
Benzo(a)anthracene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 11:32	BGL
Benzo(a)pyrene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 11:32	BGL
Benzo(b)fluoranthene	0.21	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 11:32	BGL
Benzo(g,h,i)perylene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 11:32	BGL
Benzo(k)fluoranthene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 11:32	BGL
Chrysene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 11:32	BGL
Dibenz(a,h)anthracene	ND	0.18	mg/Kg dry	1	V-06	SW-846 8270E	5/6/22	5/12/22 11:32	BGL
Fluoranthene	0.28	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 11:32	BGL
Fluorene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 11:32	BGL
Indeno(1,2,3-cd)pyrene	0.20	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 11:32	BGL
2-Methylnaphthalene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 11:32	BGL
Naphthalene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 11:32	BGL
Phenanthrene	ND	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 11:32	BGL
Pyrene	0.23	0.18	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 11:32	BGL
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Nitrobenzene-d5		67.0	30-130					5/12/22 11:32	
2-Fluorobiphenyl		70.8	30-130					5/12/22 11:32	
p-Terphenyl-d14		74.5	30-130					5/12/22 11:32	

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22D2009

Date Received: 4/27/2022

Field Sample #: SB-7 (0-1.5)

Sampled: 4/25/2022 11:20

Sample ID: 22D2009-06

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	95.3		% Wt	1		SM 2540G	5/10/22	5/10/22 21:29	HYF

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22D2009

Date Received: 4/27/2022

Field Sample #: SB-9 (0-1.5)

Sampled: 4/25/2022 11:30

Sample ID: 22D2009-07

Sample Matrix: Soil

## Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	6.8	3.8	mg/Kg dry	20		SW-846 8270E	5/6/22	5/13/22 19:53	BGL
Acenaphthylene	0.21	0.19	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 11:58	BGL
Anthracene	15	3.8	mg/Kg dry	20		SW-846 8270E	5/6/22	5/13/22 19:53	BGL
Benzo(a)anthracene	19	3.8	mg/Kg dry	20		SW-846 8270E	5/6/22	5/13/22 19:53	BGL
Benzo(a)pyrene	16	3.8	mg/Kg dry	20		SW-846 8270E	5/6/22	5/13/22 19:53	BGL
Benzo(b)fluoranthene	19	3.8	mg/Kg dry	20		SW-846 8270E	5/6/22	5/13/22 19:53	BGL
Benzo(g,h,i)perylene	7.2	3.8	mg/Kg dry	20		SW-846 8270E	5/6/22	5/13/22 19:53	BGL
Benzo(k)fluoranthene	7.0	3.8	mg/Kg dry	20		SW-846 8270E	5/6/22	5/13/22 19:53	BGL
Chrysene	17	3.8	mg/Kg dry	20		SW-846 8270E	5/6/22	5/13/22 19:53	BGL
Dibenz(a,h)anthracene	2.7	0.19	mg/Kg dry	1	V-06	SW-846 8270E	5/6/22	5/12/22 11:58	BGL
Fluoranthene	49	3.8	mg/Kg dry	20		SW-846 8270E	5/6/22	5/13/22 19:53	BGL
Fluorene	7.1	3.8	mg/Kg dry	20		SW-846 8270E	5/6/22	5/13/22 19:53	BGL
Indeno(1,2,3-cd)pyrene	9.9	3.8	mg/Kg dry	20		SW-846 8270E	5/6/22	5/13/22 19:53	BGL
2-Methylnaphthalene	2.9	0.19	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 11:58	BGL
Naphthalene	4.4	0.19	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 11:58	BGL
Phenanthrene	58	3.8	mg/Kg dry	20		SW-846 8270E	5/6/22	5/13/22 19:53	BGL
Pyrene	38	3.8	mg/Kg dry	20		SW-846 8270E	5/6/22	5/13/22 19:53	BGL
Surrogates	% Recovery		Recovery Limits		Flag/Qual				
Nitrobenzene-d5	66.7		30-130				5/12/22 11:58		
Nitrobenzene-d5	67.2		30-130				5/13/22 19:53		
2-Fluorobiphenyl	67.4		30-130				5/12/22 11:58		
2-Fluorobiphenyl	78.4		30-130				5/13/22 19:53		
p-Terphenyl-d14	82.2		30-130				5/12/22 11:58		
p-Terphenyl-d14	87.8		30-130				5/13/22 19:53		

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22D2009

Date Received: 4/27/2022

Field Sample #: SB-9 (0-1.5)

Sampled: 4/25/2022 11:30

Sample ID: 22D2009-07

Sample Matrix: Soil

**Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	88.7		% Wt	1		SM 2540G	5/10/22	5/10/22 21:29	HYF

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22D2009

Date Received: 4/27/2022

Field Sample #: SB-10 (0-1.5)

Sampled: 4/25/2022 11:45

Sample ID: 22D2009-08

Sample Matrix: Soil

## Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	0.21	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 12:24	BGL
Acenaphthylene	ND	0.21	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 12:24	BGL
Anthracene	ND	0.21	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 12:24	BGL
Benzo(a)anthracene	ND	0.21	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 12:24	BGL
Benzo(a)pyrene	ND	0.21	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 12:24	BGL
Benzo(b)fluoranthene	ND	0.21	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 12:24	BGL
Benzo(g,h,i)perylene	ND	0.21	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 12:24	BGL
Benzo(k)fluoranthene	ND	0.21	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 12:24	BGL
Chrysene	ND	0.21	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 12:24	BGL
Dibenz(a,h)anthracene	ND	0.21	mg/Kg dry	1	V-06	SW-846 8270E	5/6/22	5/12/22 12:24	BGL
Fluoranthene	ND	0.21	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 12:24	BGL
Fluorene	ND	0.21	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 12:24	BGL
Indeno(1,2,3-cd)pyrene	ND	0.21	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 12:24	BGL
2-Methylnaphthalene	ND	0.21	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 12:24	BGL
Naphthalene	ND	0.21	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 12:24	BGL
Phenanthrene	ND	0.21	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 12:24	BGL
Pyrene	ND	0.21	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 12:24	BGL
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Nitrobenzene-d5		58.4	30-130					5/12/22 12:24	
2-Fluorobiphenyl		59.0	30-130					5/12/22 12:24	
p-Terphenyl-d14		66.1	30-130					5/12/22 12:24	

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22D2009

Date Received: 4/27/2022

Sampled: 4/25/2022 11:45

Field Sample #: SB-10 (0-1.5)

Sample ID: 22D2009-08

Sample Matrix: Soil

**Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	81.3		% Wt	1		SM 2540G	5/10/22	5/10/22 21:29	HYF

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22D2009

Date Received: 4/27/2022

Field Sample #: SB-12 (0-1.5)

Sampled: 4/25/2022 09:30

Sample ID: 22D2009-09

Sample Matrix: Soil

## Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	0.21	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 12:50	BGL
Acenaphthylene	ND	0.21	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 12:50	BGL
Anthracene	ND	0.21	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 12:50	BGL
Benzo(a)anthracene	ND	0.21	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 12:50	BGL
Benzo(a)pyrene	ND	0.21	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 12:50	BGL
Benzo(b)fluoranthene	ND	0.21	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 12:50	BGL
Benzo(g,h,i)perylene	ND	0.21	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 12:50	BGL
Benzo(k)fluoranthene	ND	0.21	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 12:50	BGL
Chrysene	ND	0.21	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 12:50	BGL
Dibenz(a,h)anthracene	ND	0.21	mg/Kg dry	1	V-06	SW-846 8270E	5/6/22	5/12/22 12:50	BGL
Fluoranthene	ND	0.21	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 12:50	BGL
Fluorene	ND	0.21	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 12:50	BGL
Indeno(1,2,3-cd)pyrene	ND	0.21	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 12:50	BGL
2-Methylnaphthalene	ND	0.21	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 12:50	BGL
Naphthalene	ND	0.21	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 12:50	BGL
Phenanthrene	ND	0.21	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 12:50	BGL
Pyrene	ND	0.21	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 12:50	BGL
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Nitrobenzene-d5		33.1	30-130					5/12/22 12:50	
2-Fluorobiphenyl		34.5	30-130					5/12/22 12:50	
p-Terphenyl-d14		36.0	30-130					5/12/22 12:50	

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22D2009

Date Received: 4/27/2022

Field Sample #: SB-12 (0-1.5)

Sampled: 4/25/2022 09:30

Sample ID: 22D2009-09

Sample Matrix: Soil

**Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	80.5		% Wt	1		SM 2540G	5/10/22	5/10/22 21:29	HYF

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22D2009

Date Received: 4/27/2022

Field Sample #: SB-13 (0-1.5)

Sampled: 4/25/2022 09:15

Sample ID: 22D2009-10

Sample Matrix: Soil

Sample Flags: H-13

**Semivolatile Organic Compounds by GC/MS**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	0.20	mg/Kg dry	1		SW-846 8270E	5/10/22	5/11/22 19:39	BGL
Acenaphthylene	ND	0.20	mg/Kg dry	1		SW-846 8270E	5/10/22	5/11/22 19:39	BGL
Anthracene	ND	0.20	mg/Kg dry	1		SW-846 8270E	5/10/22	5/11/22 19:39	BGL
Benzo(a)anthracene	ND	0.20	mg/Kg dry	1		SW-846 8270E	5/10/22	5/11/22 19:39	BGL
Benzo(a)pyrene	ND	0.20	mg/Kg dry	1		SW-846 8270E	5/10/22	5/11/22 19:39	BGL
Benzo(b)fluoranthene	ND	0.20	mg/Kg dry	1		SW-846 8270E	5/10/22	5/11/22 19:39	BGL
Benzo(g,h,i)perylene	ND	0.20	mg/Kg dry	1		SW-846 8270E	5/10/22	5/11/22 19:39	BGL
Benzo(k)fluoranthene	ND	0.20	mg/Kg dry	1		SW-846 8270E	5/10/22	5/11/22 19:39	BGL
Chrysene	ND	0.20	mg/Kg dry	1		SW-846 8270E	5/10/22	5/11/22 19:39	BGL
Dibenz(a,h)anthracene	ND	0.20	mg/Kg dry	1	V-20	SW-846 8270E	5/10/22	5/11/22 19:39	BGL
Fluoranthene	ND	0.20	mg/Kg dry	1		SW-846 8270E	5/10/22	5/11/22 19:39	BGL
Fluorene	ND	0.20	mg/Kg dry	1		SW-846 8270E	5/10/22	5/11/22 19:39	BGL
Indeno(1,2,3-cd)pyrene	ND	0.20	mg/Kg dry	1		SW-846 8270E	5/10/22	5/11/22 19:39	BGL
2-Methylnaphthalene	ND	0.20	mg/Kg dry	1		SW-846 8270E	5/10/22	5/11/22 19:39	BGL
Naphthalene	ND	0.20	mg/Kg dry	1		SW-846 8270E	5/10/22	5/11/22 19:39	BGL
Phenanthrene	ND	0.20	mg/Kg dry	1		SW-846 8270E	5/10/22	5/11/22 19:39	BGL
Pyrene	ND	0.20	mg/Kg dry	1		SW-846 8270E	5/10/22	5/11/22 19:39	BGL
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Nitrobenzene-d5		60.8	30-130					5/11/22 19:39	
2-Fluorobiphenyl		62.4	30-130					5/11/22 19:39	
p-Terphenyl-d14		67.8	30-130					5/11/22 19:39	

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Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22D2009

Date Received: 4/27/2022

Sampled: 4/25/2022 09:15

Field Sample #: SB-13 (0-1.5)

Sample ID: 22D2009-10

Sample Matrix: Soil

**Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	85.6		% Wt	1		SM 2540G	5/10/22	5/10/22 21:29	HYF

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22D2009

Date Received: 4/27/2022

Field Sample #: SB-14 (0-1.5)

Sampled: 4/25/2022 09:45

Sample ID: 22D2009-11

Sample Matrix: Soil

## Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	0.20	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 18:43	BGL
Acenaphthylene	ND	0.20	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 18:43	BGL
Anthracene	ND	0.20	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 18:43	BGL
Benzo(a)anthracene	ND	0.20	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 18:43	BGL
Benzo(a)pyrene	ND	0.20	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 18:43	BGL
Benzo(b)fluoranthene	ND	0.20	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 18:43	BGL
Benzo(g,h,i)perylene	ND	0.20	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 18:43	BGL
Benzo(k)fluoranthene	ND	0.20	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 18:43	BGL
Chrysene	ND	0.20	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 18:43	BGL
Dibenz(a,h)anthracene	ND	0.20	mg/Kg dry	1	V-06	SW-846 8270E	5/6/22	5/12/22 18:43	BGL
Fluoranthene	ND	0.20	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 18:43	BGL
Fluorene	ND	0.20	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 18:43	BGL
Indeno(1,2,3-cd)pyrene	ND	0.20	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 18:43	BGL
2-Methylnaphthalene	ND	0.20	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 18:43	BGL
Naphthalene	ND	0.20	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 18:43	BGL
Phenanthrene	ND	0.20	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 18:43	BGL
Pyrene	ND	0.20	mg/Kg dry	1		SW-846 8270E	5/6/22	5/12/22 18:43	BGL
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Nitrobenzene-d5		66.9	30-130					5/12/22 18:43	
2-Fluorobiphenyl		69.3	30-130					5/12/22 18:43	
p-Terphenyl-d14		70.6	30-130					5/12/22 18:43	

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Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22D2009

Date Received: 4/27/2022

Sampled: 4/25/2022 09:45

Field Sample #: SB-14 (0-1.5)

Sample ID: 22D2009-11

Sample Matrix: Soil

**Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	85.5		% Wt	1		SM 2540G	5/10/22	5/10/22 21:29	HYF

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

**Sample Extraction Data**
**Prep Method: % Solids    Analytical Method: SM 2540G**

Lab Number [Field ID]	Batch	Date
22D2009-01 [SB-1 (0-1.5)]	B308061	05/10/22
22D2009-02 [SB-2 (0-1.5)]	B308061	05/10/22
22D2009-03 [SB-3 (0-1.5)]	B308061	05/10/22
22D2009-04 [SB-4 (0-1.5)]	B308061	05/10/22
22D2009-05 [SB-6 (0-1.5)]	B308061	05/10/22
22D2009-06 [SB-7 (0-1.5)]	B308061	05/10/22
22D2009-07 [SB-9 (0-1.5)]	B308061	05/10/22
22D2009-08 [SB-10 (0-1.5)]	B308061	05/10/22
22D2009-09 [SB-12 (0-1.5)]	B308061	05/10/22
22D2009-10 [SB-13 (0-1.5)]	B308061	05/10/22
22D2009-11 [SB-14 (0-1.5)]	B308061	05/10/22

**Prep Method: SW-846 3546    Analytical Method: SW-846 8270E**

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
22D2009-01 [SB-1 (0-1.5)]	B307842	30.0	1.00	05/06/22
22D2009-02 [SB-2 (0-1.5)]	B307842	30.0	1.00	05/06/22
22D2009-03 [SB-3 (0-1.5)]	B307842	30.3	1.00	05/06/22
22D2009-04 [SB-4 (0-1.5)]	B307842	30.5	1.00	05/06/22
22D2009-04RE1 [SB-4 (0-1.5)]	B307842	30.5	1.00	05/06/22
22D2009-05 [SB-6 (0-1.5)]	B307842	30.2	1.00	05/06/22
22D2009-06 [SB-7 (0-1.5)]	B307842	30.4	1.00	05/06/22
22D2009-07 [SB-9 (0-1.5)]	B307842	30.1	1.00	05/06/22
22D2009-07RE1 [SB-9 (0-1.5)]	B307842	30.1	1.00	05/06/22
22D2009-08 [SB-10 (0-1.5)]	B307842	30.4	1.00	05/06/22
22D2009-09 [SB-12 (0-1.5)]	B307842	30.3	1.00	05/06/22
22D2009-11 [SB-14 (0-1.5)]	B307842	30.4	1.00	05/06/22

**Prep Method: SW-846 3546    Analytical Method: SW-846 8270E**

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
22D2009-10 [SB-13 (0-1.5)]	B308077	30.0	1.00	05/10/22

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

**QUALITY CONTROL**
**Semivolatile Organic Compounds by GC/MS - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B307842 - SW-846 3546</b>										
<b>Blank (B307842-BLK1)</b>										
Prepared: 05/06/22 Analyzed: 05/09/22										
Acenaphthene	ND	0.17	mg/Kg wet							
Acenaphthylene	ND	0.17	mg/Kg wet							
Anthracene	ND	0.17	mg/Kg wet							
Benzo(a)anthracene	ND	0.17	mg/Kg wet							
Benzo(a)pyrene	ND	0.17	mg/Kg wet							
Benzo(b)fluoranthene	ND	0.17	mg/Kg wet							
Benzo(g,h,i)perylene	ND	0.17	mg/Kg wet							
Benzo(k)fluoranthene	ND	0.17	mg/Kg wet							
Chrysene	ND	0.17	mg/Kg wet							
Dibenz(a,h)anthracene	ND	0.17	mg/Kg wet							V-06
Fluoranthene	ND	0.17	mg/Kg wet							
Fluorene	ND	0.17	mg/Kg wet							
Indeno(1,2,3-cd)pyrene	ND	0.17	mg/Kg wet							
2-Methylnaphthalene	ND	0.17	mg/Kg wet							
Naphthalene	ND	0.17	mg/Kg wet							
Phenanthrene	ND	0.17	mg/Kg wet							
Pyrene	ND	0.17	mg/Kg wet							
Surrogate: Nitrobenzene-d5	2.63		mg/Kg wet	3.32		79.3	30-130			
Surrogate: 2-Fluorobiphenyl	2.65		mg/Kg wet	3.32		79.7	30-130			
Surrogate: p-Terphenyl-d14	2.94		mg/Kg wet	3.32		88.6	30-130			
<b>LCS (B307842-BS1)</b>										
Prepared: 05/06/22 Analyzed: 05/09/22										
Acenaphthene	1.24	0.17	mg/Kg wet	1.64		75.1	40-140			
Acenaphthylene	1.27	0.17	mg/Kg wet	1.64		77.0	40-140			
Anthracene	1.31	0.17	mg/Kg wet	1.64		79.6	40-140			
Benzo(a)anthracene	1.32	0.17	mg/Kg wet	1.64		80.0	40-140			
Benzo(a)pyrene	1.40	0.17	mg/Kg wet	1.64		85.0	40-140			
Benzo(b)fluoranthene	1.54	0.17	mg/Kg wet	1.64		93.8	40-140			
Benzo(g,h,i)perylene	1.17	0.17	mg/Kg wet	1.64		70.9	40-140			
Benzo(k)fluoranthene	1.47	0.17	mg/Kg wet	1.64		89.7	40-140			
Chrysene	1.28	0.17	mg/Kg wet	1.64		77.6	40-140			
Dibenz(a,h)anthracene	1.31	0.17	mg/Kg wet	1.64		79.8	40-140			V-06
Fluoranthene	1.36	0.17	mg/Kg wet	1.64		82.5	40-140			
Fluorene	1.32	0.17	mg/Kg wet	1.64		80.3	40-140			
Indeno(1,2,3-cd)pyrene	1.25	0.17	mg/Kg wet	1.64		76.0	40-140			
2-Methylnaphthalene	1.30	0.17	mg/Kg wet	1.64		79.0	40-140			
Naphthalene	1.20	0.17	mg/Kg wet	1.64		73.2	40-140			
Phenanthrene	1.31	0.17	mg/Kg wet	1.64		79.8	40-140			
Pyrene	1.25	0.17	mg/Kg wet	1.64		76.3	40-140			
Surrogate: Nitrobenzene-d5	2.62		mg/Kg wet	3.29		79.5	30-130			
Surrogate: 2-Fluorobiphenyl	2.76		mg/Kg wet	3.29		84.0	30-130			
Surrogate: p-Terphenyl-d14	2.94		mg/Kg wet	3.29		89.5	30-130			

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**QUALITY CONTROL**
**Semivolatile Organic Compounds by GC/MS - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B307842 - SW-846 3546</b>										
<b>LCS Dup (B307842-BSD1)</b>										
Prepared: 05/06/22 Analyzed: 05/09/22										
Acenaphthene	1.20	0.17	mg/Kg wet	1.66		72.1	40-140	3.08	30	
Acenaphthylene	1.22	0.17	mg/Kg wet	1.66		73.5	40-140	3.74	30	
Anthracene	1.24	0.17	mg/Kg wet	1.66		74.4	40-140	5.73	30	
Benzo(a)anthracene	1.26	0.17	mg/Kg wet	1.66		75.8	40-140	4.37	30	
Benzo(a)pyrene	1.32	0.17	mg/Kg wet	1.66		79.6	40-140	5.62	30	
Benzo(b)fluoranthene	1.45	0.17	mg/Kg wet	1.66		87.5	40-140	5.92	30	
Benzo(g,h,i)perylene	1.17	0.17	mg/Kg wet	1.66		70.3	40-140	0.142	30	
Benzo(k)fluoranthene	1.39	0.17	mg/Kg wet	1.66		83.7	40-140	5.86	30	
Chrysene	1.23	0.17	mg/Kg wet	1.66		73.9	40-140	3.92	30	
Dibenz(a,h)anthracene	1.30	0.17	mg/Kg wet	1.66		78.5	40-140	0.625	30	V-06
Fluoranthene	1.29	0.17	mg/Kg wet	1.66		77.8	40-140	4.82	30	
Fluorene	1.28	0.17	mg/Kg wet	1.66		77.2	40-140	3.02	30	
Indeno(1,2,3-cd)pyrene	1.24	0.17	mg/Kg wet	1.66		74.9	40-140	0.465	30	
2-Methylnaphthalene	1.25	0.17	mg/Kg wet	1.66		75.0	40-140	4.20	30	
Naphthalene	1.15	0.17	mg/Kg wet	1.66		69.1	40-140	4.69	30	
Phenanthrene	1.24	0.17	mg/Kg wet	1.66		74.4	40-140	6.04	30	
Pyrene	1.22	0.17	mg/Kg wet	1.66		73.3	40-140	2.99	30	
Surrogate: Nitrobenzene-d5	2.56		mg/Kg wet	3.32		77.0	30-130			
Surrogate: 2-Fluorobiphenyl	2.68		mg/Kg wet	3.32		80.6	30-130			
Surrogate: p-Terphenyl-d14	2.83		mg/Kg wet	3.32		85.0	30-130			
<b>Batch B308077 - SW-846 3546</b>										
<b>Blank (B308077-BLK1)</b>										
Prepared: 05/10/22 Analyzed: 05/11/22										
Acenaphthene	ND	0.17	mg/Kg wet							
Acenaphthylene	ND	0.17	mg/Kg wet							
Anthracene	ND	0.17	mg/Kg wet							
Benzo(a)anthracene	ND	0.17	mg/Kg wet							
Benzo(a)pyrene	ND	0.17	mg/Kg wet							
Benzo(b)fluoranthene	ND	0.17	mg/Kg wet							
Benzo(g,h,i)perylene	ND	0.17	mg/Kg wet							
Benzo(k)fluoranthene	ND	0.17	mg/Kg wet							
Chrysene	ND	0.17	mg/Kg wet							
Dibenz(a,h)anthracene	ND	0.17	mg/Kg wet							V-20
Fluoranthene	ND	0.17	mg/Kg wet							
Fluorene	ND	0.17	mg/Kg wet							
Indeno(1,2,3-cd)pyrene	ND	0.17	mg/Kg wet							
2-Methylnaphthalene	ND	0.17	mg/Kg wet							
Naphthalene	ND	0.17	mg/Kg wet							
Phenanthrene	ND	0.17	mg/Kg wet							
Pyrene	ND	0.17	mg/Kg wet							
Surrogate: Nitrobenzene-d5	3.18		mg/Kg wet	3.33		95.5	30-130			
Surrogate: 2-Fluorobiphenyl	3.28		mg/Kg wet	3.33		98.5	30-130			
Surrogate: p-Terphenyl-d14	3.62		mg/Kg wet	3.33		108	30-130			

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**QUALITY CONTROL**
**Semivolatile Organic Compounds by GC/MS - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B308077 - SW-846 3546</b>										
<b>LCS (B308077-BS1)</b>										
Prepared: 05/10/22 Analyzed: 05/11/22										
Acenaphthene	1.22	0.17	mg/Kg wet	1.67		73.2	40-140			
Acenaphthylene	1.27	0.17	mg/Kg wet	1.67		76.3	40-140			
Anthracene	1.33	0.17	mg/Kg wet	1.67		79.9	40-140			
Benzo(a)anthracene	1.36	0.17	mg/Kg wet	1.67		81.8	40-140			
Benzo(a)pyrene	1.41	0.17	mg/Kg wet	1.67		84.8	40-140			
Benzo(b)fluoranthene	1.44	0.17	mg/Kg wet	1.67		86.4	40-140			
Benzo(g,h,i)perylene	1.64	0.17	mg/Kg wet	1.67		98.7	40-140			
Benzo(k)fluoranthene	1.37	0.17	mg/Kg wet	1.67		82.0	40-140			
Chrysene	1.30	0.17	mg/Kg wet	1.67		78.2	40-140			
Dibenz(a,h)anthracene	1.84	0.17	mg/Kg wet	1.67		111	40-140			V-06
Fluoranthene	1.38	0.17	mg/Kg wet	1.67		83.0	40-140			
Fluorene	1.35	0.17	mg/Kg wet	1.67		80.9	40-140			
Indeno(1,2,3-cd)pyrene	1.71	0.17	mg/Kg wet	1.67		103	40-140			
2-Methylnaphthalene	1.26	0.17	mg/Kg wet	1.67		75.4	40-140			
Naphthalene	1.12	0.17	mg/Kg wet	1.67		67.3	40-140			
Phenanthrene	1.33	0.17	mg/Kg wet	1.67		80.0	40-140			
Pyrene	1.29	0.17	mg/Kg wet	1.67		77.6	40-140			
Surrogate: Nitrobenzene-d5	2.44		mg/Kg wet	3.33		73.2	30-130			
Surrogate: 2-Fluorobiphenyl	2.73		mg/Kg wet	3.33		81.8	30-130			
Surrogate: p-Terphenyl-d14	2.95		mg/Kg wet	3.33		88.6	30-130			
<b>LCS Dup (B308077-BSD1)</b>										
Prepared: 05/10/22 Analyzed: 05/11/22										
Acenaphthene	1.24	0.17	mg/Kg wet	1.67		74.4	40-140	1.60	30	
Acenaphthylene	1.28	0.17	mg/Kg wet	1.67		76.8	40-140	0.575	30	
Anthracene	1.31	0.17	mg/Kg wet	1.67		78.3	40-140	2.02	30	
Benzo(a)anthracene	1.33	0.17	mg/Kg wet	1.67		79.9	40-140	2.35	30	
Benzo(a)pyrene	1.41	0.17	mg/Kg wet	1.67		84.4	40-140	0.473	30	
Benzo(b)fluoranthene	1.44	0.17	mg/Kg wet	1.67		86.5	40-140	0.162	30	
Benzo(g,h,i)perylene	1.62	0.17	mg/Kg wet	1.67		97.3	40-140	1.43	30	
Benzo(k)fluoranthene	1.40	0.17	mg/Kg wet	1.67		83.7	40-140	2.12	30	
Chrysene	1.26	0.17	mg/Kg wet	1.67		75.6	40-140	3.46	30	
Dibenz(a,h)anthracene	1.83	0.17	mg/Kg wet	1.67		110	40-140	0.472	30	V-06
Fluoranthene	1.38	0.17	mg/Kg wet	1.67		82.8	40-140	0.217	30	
Fluorene	1.36	0.17	mg/Kg wet	1.67		81.5	40-140	0.739	30	
Indeno(1,2,3-cd)pyrene	1.71	0.17	mg/Kg wet	1.67		102	40-140	0.215	30	
2-Methylnaphthalene	1.32	0.17	mg/Kg wet	1.67		79.4	40-140	5.19	30	
Naphthalene	1.21	0.17	mg/Kg wet	1.67		72.7	40-140	7.72	30	
Phenanthrene	1.32	0.17	mg/Kg wet	1.67		79.1	40-140	1.06	30	
Pyrene	1.27	0.17	mg/Kg wet	1.67		76.2	40-140	1.85	30	
Surrogate: Nitrobenzene-d5	2.67		mg/Kg wet	3.33		80.2	30-130			
Surrogate: 2-Fluorobiphenyl	2.74		mg/Kg wet	3.33		82.1	30-130			
Surrogate: p-Terphenyl-d14	2.85		mg/Kg wet	3.33		85.4	30-130			

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**FLAG/QUALIFIER SUMMARY**

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
H-13	Sample analysis performed past the recommended holding time due to a laboratory error.
V-06	Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side for this compound.
V-20	Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

**CERTIFICATIONS**
**Certified Analyses included in this Report**

Analyte	Certifications
<b><i>SW-846 8270E in Soil</i></b>	
Acenaphthene	CT,NY,NH,ME,NC,VA
Acenaphthylene	CT,NY,NH,ME,NC,VA
Anthracene	CT,NY,NH,ME,NC,VA
Benzo(a)anthracene	CT,NY,NH,ME,NC,VA
Benzo(a)pyrene	CT,NY,NH,ME,NC,VA
Benzo(b)fluoranthene	CT,NY,NH,ME,NC,VA
Benzo(g,h,i)perylene	CT,NY,NH,ME,NC,VA
Benzo(k)fluoranthene	CT,NY,NH,ME,NC,VA
Chrysene	CT,NY,NH,ME,NC,VA
Dibenz(a,h)anthracene	CT,NY,NH,ME,NC,VA
Fluoranthene	CT,NY,NH,ME,NC,VA
Fluorene	CT,NY,NH,ME,NC,VA
Indeno(1,2,3-cd)pyrene	CT,NY,NH,ME,NC,VA
2-Methylnaphthalene	CT,NY,NH,ME,NC,VA
Naphthalene	CT,NY,NH,ME,NC,VA
Phenanthrene	CT,NY,NH,ME,NC,VA
Pyrene	CT,NY,NH,ME,NC,VA
<b><i>SW-846 8270E in Water</i></b>	
Acenaphthene	CT,NY,NH,ME,NC,VA
Acenaphthylene	CT,NY,NH,ME,NC,VA
Anthracene	CT,NY,NH,ME,NC,VA
Benzo(a)anthracene	CT,NY,NH,ME,NC,VA
Benzo(a)pyrene	CT,NY,NH,ME,NC,VA
Benzo(b)fluoranthene	CT,NY,NH,ME,NC,VA
Benzo(g,h,i)perylene	CT,NY,NH,ME,NC,VA
Benzo(k)fluoranthene	CT,NY,NH,ME,NC,VA
Chrysene	CT,NY,NH,ME,NC,VA
Dibenz(a,h)anthracene	CT,NY,NH,ME,NC,VA
Fluoranthene	CT,NY,NH,ME,NC,VA
Fluorene	CT,NY,NH,ME,NC,VA
Indeno(1,2,3-cd)pyrene	CT,NY,NH,ME,NC,VA
2-Methylnaphthalene	CT,NY,NH,ME,NC,VA
Naphthalene	CT,NY,NH,ME,NC,VA
Phenanthrene	CT,NY,NH,ME,NC,VA
Pyrene	CT,NY,NH,ME,NC,VA

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Con-Test, a Pace Environmental Laboratory, operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2024
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2023
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2023
RI	Rhode Island Department of Health	LAO00373	12/30/2022
NC	North Carolina Div. of Water Quality	652	12/31/2022
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2022
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022



Phone: 413-525-2332  
Fax: 413-525-6405

Access COC's and Support Requests

Address: **Atlas**  
51 Knight Ln Wulston, VT  
Phone: 802-862-1980  
Project Location: 1249 Main St St. J. VT  
Project Number:  
Project Manager: **Jesse Stratton**  
Pace Quote Name/Number: 2204382  
Invoice Recipient:  
Sampled By: **Emma Lyford**

ANALYSIS REQUESTED

Pace Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	Matrix Code	Conc. Code	DISPOSABLE SAMPLES				ENCORE	Preservation Code	
							VIALS	GLASS	PLASTIC	BACTERIA			
6	SB-7 0-1.5'	4-25-22	1120	Grab	S	UIVE	X						
7	SB-7 0-1.5'	1120			S		X						
8	SB-9 2-3'	1130			S		X						
9	SB-10 0-1.5'	1145			S		X						
9	SB-10 2-3'	1145			S		X						
10	SB-12 0-1.5'	930			S		X						
10	SB-12 2-3'	930			S		X						
10	SB-13 0-1.5'	915			S		X						
10	SB-13 2-3'	915			S		X						

PAH  
Extract & Held

PCB ONLY

SOXHLET  
NON SOXHLET

Field Filtered  
Lab to Filter

Field Filtered  
Lab to Filter

Format: PDF  
Other: EXCEL

CLP Like Data Pkg Required:

Email To:  
Fax To #:

Client Comments:

10:25 am

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MA MCF Required  
MCP Certification Form Required  
CT RCP Required  
RCP Certification Form Required

MA State DW Required

PWSID #

Project Entity

Government  
Federal  
City

Municipality  
21 J  
Brownfield

AMWRA  
School  
MBTA

WRTA  
Chromatogram  
AIHA-LAP, LLC

MA MCF Required  
MCP Certification Form Required  
CT RCP Required  
RCP Certification Form Required

MA State DW Required

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MBTA

WRTA  
Chromatogram  
AIHA-LAP, LLC

Disclaimer: Pace Analytical is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Pace Analytical values your partnership on each project and will try to assist with missing information, but will not be held accountable.

ANALYSIS REQUESTED

7-Day PFAS 10-Day (std)  10-Day  Due Date:   
 1-Day  3-Day  4-Day    
 2-Day    
 Format: PDF  EXCEL    
 Other: SOXHLET    
 CLP Like Data Pkg Required:    
 Email To:   
 Fax To #:

Address: **Atlas**  
 51 Knight Lane Wuxton, VT  
 Phone: 802-862-1980  
 Project Location: **St. J. Army**  
 Project Number: **1249 Main St. J. VT**  
 Project Manager: **Jesse Strout**  
 Invoice Number: **3204382**  
 Sampled By: **Emma Lyford**

Pace Work Order #	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE
K	SB-14 0-1.5'	4.25.22	9:45	GRAB	S	WILE		X			
	SB-14 2-3'	↓	9:15	GRAB	S	WILE		X			

Preservation Code	Courier Use Only	Total Number Of:
VIALS		
GLASS		
PLASTIC		
BACTERIA		
ENCORE		

Glassware in the fridge? Y/N

Glassware in freezer? Y/N

Prepackaged Cooler? Y/N

\*Pace Analytical is not responsible for missing samples from prepacked coolers

1 Matrix Codes:  
 GW = Ground Water  
 WW = Waste Water  
 DW = Drinking Water  
 A = Air  
 S = Soil  
 SL = Sludge  
 SOL = Solid  
 O = Other (please define)

2 Preservation Codes:  
 I = Iced  
 H = HCL  
 M = Methanol  
 N = Nitric Acid  
 S = Sulfuric Acid  
 B = Sodium Bisulfate  
 X = Sodium Hydroxide  
 T = Sodium Thiosulfate  
 O = Other (please define)

Client Comments: 10:25 AM

Relinquished by: (Signature) [Signature] Date/Time: 4-26-22

Received by: (Signature) [Signature] Date/Time: 4-27-22

Relinquished by: (Signature) [Signature] Date/Time: 4-27-22

Received by: (Signature) [Signature] Date/Time: 4/27/22

Relinquished by: (Signature) [Signature] Date/Time: 4/27/22

Received by: (Signature) [Signature] Date/Time: 4/27/22

Relinquished by: (Signature) [Signature] Date/Time: 4/27/22

Received by: (Signature) [Signature] Date/Time: 4/27/22

Project Entity: Government  Federal  City  Municipality  21 J  Brownfield  AWRA  School  MBTA  WRTA  Other  Chromatogram  ALPHA-LAP, LLC

MA MCP Required  MA State DW Required   
 MCP Certification Form Required   
 CT RCP Required   
 RCP Certification Form Required

NECAC and ALPHA-LAP, LLC Accredited

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I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples \_\_\_\_\_



**con-test**  
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

**Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False**

Client Atlas  
 Received By [Signature] Date 4/27/22 Time 1700

How were the samples received?  
 In Cooler T No Cooler \_\_\_\_\_ On Ice T No Ice \_\_\_\_\_  
 Direct from Sampling \_\_\_\_\_ Ambient \_\_\_\_\_ Melted Ice \_\_\_\_\_

Were samples within Temperature? 2-6°C T By Gun # 3 Actual Temp - 20  
 By Blank # \_\_\_\_\_ Actual Temp - \_\_\_\_\_

Was Custody Seal Intact? T Were Samples Tampered with? n/a  
 Was COC Relinquished? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T  
 Did COC include all pertinent information? Client T Analysis T Sampler Name T  
 Project T ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T  
 Are there Lab to Filters? F Who was notified? \_\_\_\_\_  
 Are there Rushes? F Who was notified? \_\_\_\_\_  
 Are there Short Holds? F Who was notified? \_\_\_\_\_

Is there enough Volume? T  
 Is there Headspace where applicable? n/a MS/MSD? F  
 Proper Media/Containers Used? T Is splitting samples required? F  
 Were trip blanks received? F On COC? F  
 Do all samples have the proper pH? \_\_\_\_\_ Acid n/a Base n/a

Vials	#	Containers:	#	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic		8oz <del>Amb</del> Clear
Meoh-		250 mL Amb.		250 mL Plastic		4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria		2oz Amb/Clear
DI-		Other Glass		Other Plastic		Encore
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:
Sulfuric-		Perchlorate		Ziplock		

**Unused Media**

Vials	#	Containers:	#	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic		4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear
DI-		Other Plastic		Other Glass		Encore
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:
Sulfuric-		Perchlorate		Ziplock		

Comments:

May 24, 2022

Jesse Stratton  
ATC Group Services LLC - Vermont  
51 Knight Lane, PO Box 1486  
Williston, VT 05495

Project Location: 1249 Main St, St. J., VT  
Client Job Number:  
Project Number: [none]  
Laboratory Work Order Number: 22E0872

Enclosed are results of analyses for samples as received by the laboratory on May 13, 2022. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Kaitlyn A. Feliciano  
Project Manager

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ATC Group Services LLC - Vermont  
51 Knight Lane, PO Box 1486  
Williston, VT 05495  
ATTN: Jesse Stratton

REPORT DATE: 5/24/2022

PURCHASE ORDER NUMBER:

PROJECT NUMBER: [none]

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 22E0872

The results of analyses performed on the following samples submitted to CON-TEST, a Pace Analytical Laboratory, are found in this report.

PROJECT LOCATION: 1249 Main St, St. J., VT

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
SB-1 (0-1.5)	22E0872-01	Soil		SM 2540G SW-846 6010D SW-846 7471B SW-846 8082A	
SB-2 (0-1.5)	22E0872-02	Soil		SM 2540G SW-846 6010D SW-846 7471B SW-846 8082A	
SB-3 (0-1.5)	22E0872-03	Soil		SM 2540G SW-846 6010D SW-846 7471B SW-846 8082A	
SB-4 (0-1.5)	22E0872-04	Soil		SM 2540G SW-846 6010D SW-846 7471B SW-846 8082A	
SB-6 (0-1.5)	22E0872-05	Soil		SM 2540G SW-846 6010D SW-846 7471B SW-846 8082A	
SB-7 (0-1.5)	22E0872-06	Soil		SM 2540G SW-846 6010D SW-846 7471B SW-846 8082A	
SB-9 (0-1.5)	22E0872-07	Soil		SM 2540G SW-846 6010D SW-846 7471B SW-846 8082A	
SB-10 (0-1.5)	22E0872-08	Soil		SM 2540G SW-846 6010D SW-846 7471B SW-846 8082A	
SB-12 (0-1.5)	22E0872-09	Soil		SM 2540G SW-846 6010D SW-846 7471B SW-846 8082A	
SB-13 (0-1.5)	22E0872-10	Soil		SM 2540G SW-846 6010D SW-846 7471B SW-846 8082A	

ATC Group Services LLC - Vermont  
51 Knight Lane, PO Box 1486  
Williston, VT 05495  
ATTN: Jesse Stratton

REPORT DATE: 5/24/2022

PURCHASE ORDER NUMBER:

PROJECT NUMBER: [none]

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**ANALYTICAL SUMMARY**

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WORK ORDER NUMBER: 22E0872

The results of analyses performed on the following samples submitted to CON-TEST, a Pace Analytical Laboratory, are found in this report.

PROJECT LOCATION: 1249 Main St, St. J., VT

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
SB-14 (0-1.5)	22E0872-11	Soil		SM 2540G SW-846 6010D SW-846 7471B SW-846 8082A	

**CASE NARRATIVE SUMMARY**

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

**SW-846 6010D****Qualifications:****M-10**

The reporting limit verification for the AIHA lead program is outside of control limits for this element. Any reported result at or near the detection limit may be biased on the high side.

**Analyte & Samples(s) Qualified:****Lead**

22E0872-01[SB-1 (0-1.5)], 22E0872-02[SB-2 (0-1.5)], 22E0872-03[SB-3 (0-1.5)], 22E0872-04[SB-4 (0-1.5)], 22E0872-05[SB-6 (0-1.5)], 22E0872-06[SB-7 (0-1.5)], 22E0872-07[SB-9 (0-1.5)], 22E0872-08[SB-10 (0-1.5)], 22E0872-09[SB-12 (0-1.5)], 22E0872-10[SB-13 (0-1.5)], 22E0872-11[SB-14 (0-1.5)], B308384-SRM1, B308402-SRM1

The results of analyses reported only relate to samples submitted to Con-Test, a Pace Analytical Laboratory, for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Lisa A. Worthington  
Technical Representative

Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22E0872

Date Received: 5/13/2022

Field Sample #: SB-1 (0-1.5)

Sampled: 4/25/2022 10:00

Sample ID: 22E0872-01

Sample Matrix: Soil

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.081	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 17:10	TG
Aroclor-1221 [1]	ND	0.081	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 17:10	TG
Aroclor-1232 [1]	ND	0.081	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 17:10	TG
Aroclor-1242 [1]	ND	0.081	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 17:10	TG
Aroclor-1248 [1]	ND	0.081	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 17:10	TG
Aroclor-1254 [1]	ND	0.081	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 17:10	TG
Aroclor-1260 [1]	ND	0.081	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 17:10	TG
Aroclor-1262 [1]	ND	0.081	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 17:10	TG
Aroclor-1268 [1]	ND	0.081	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 17:10	TG
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Decachlorobiphenyl [1]		98.5	30-150					5/16/22 17:10	
Decachlorobiphenyl [2]		87.7	30-150					5/16/22 17:10	
Tetrachloro-m-xylene [1]		82.3	30-150					5/16/22 17:10	
Tetrachloro-m-xylene [2]		81.0	30-150					5/16/22 17:10	

Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22E0872

Date Received: 5/13/2022

Field Sample #: SB-1 (0-1.5)

Sampled: 4/25/2022 10:00

Sample ID: 22E0872-01

Sample Matrix: Soil

**Metals Analyses (Total)**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	3.3	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 22:49	QNW
Barium	45	1.6	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 22:49	QNW
Cadmium	ND	0.33	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 22:49	QNW
Chromium	15	0.65	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 22:49	QNW
Lead	20	0.49	mg/Kg dry	1	M-10	SW-846 6010D	5/13/22	5/16/22 22:49	QNW
Mercury	0.043	0.025	mg/Kg dry	1		SW-846 7471B	5/18/22	5/19/22 13:07	MJH
Selenium	ND	3.3	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 22:49	QNW
Silver	ND	0.33	mg/Kg dry	1		SW-846 6010D	5/13/22	5/23/22 16:43	QNW

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22E0872

Date Received: 5/13/2022

Field Sample #: SB-1 (0-1.5)

Sampled: 4/25/2022 10:00

Sample ID: 22E0872-01

Sample Matrix: Soil

**Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	96.5		% Wt	1		SM 2540G	5/10/22	5/10/22 21:09	AMM2

Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22E0872

Date Received: 5/13/2022

Field Sample #: SB-2 (0-1.5)

Sampled: 4/25/2022 10:15

Sample ID: 22E0872-02

Sample Matrix: Soil

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.082	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 17:28	TG
Aroclor-1221 [1]	ND	0.082	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 17:28	TG
Aroclor-1232 [1]	ND	0.082	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 17:28	TG
Aroclor-1242 [1]	ND	0.082	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 17:28	TG
Aroclor-1248 [1]	ND	0.082	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 17:28	TG
Aroclor-1254 [1]	ND	0.082	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 17:28	TG
Aroclor-1260 [1]	ND	0.082	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 17:28	TG
Aroclor-1262 [1]	ND	0.082	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 17:28	TG
Aroclor-1268 [1]	ND	0.082	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 17:28	TG
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Decachlorobiphenyl [1]		99.7	30-150					5/16/22 17:28	
Decachlorobiphenyl [2]		87.8	30-150					5/16/22 17:28	
Tetrachloro-m-xylene [1]		84.8	30-150					5/16/22 17:28	
Tetrachloro-m-xylene [2]		81.7	30-150					5/16/22 17:28	

Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22E0872

Date Received: 5/13/2022

Field Sample #: SB-2 (0-1.5)

Sampled: 4/25/2022 10:15

Sample ID: 22E0872-02

Sample Matrix: Soil

**Metals Analyses (Total)**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	3.3	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 22:55	QNW
Barium	39	1.6	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 22:55	QNW
Cadmium	ND	0.33	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 22:55	QNW
Chromium	17	0.65	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 22:55	QNW
Lead	26	0.49	mg/Kg dry	1	M-10	SW-846 6010D	5/13/22	5/16/22 22:55	QNW
Mercury	0.079	0.025	mg/Kg dry	1		SW-846 7471B	5/18/22	5/19/22 13:10	MJH
Selenium	ND	3.3	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 22:55	QNW
Silver	ND	0.33	mg/Kg dry	1		SW-846 6010D	5/13/22	5/23/22 16:50	QNW

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22E0872

Date Received: 5/13/2022

Field Sample #: SB-2 (0-1.5)

Sampled: 4/25/2022 10:15

Sample ID: 22E0872-02

Sample Matrix: Soil

**Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	96.7		% Wt	1		SM 2540G	5/10/22	5/10/22 21:09	AMM2

Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22E0872

Date Received: 5/13/2022

Field Sample #: SB-3 (0-1.5)

Sampled: 4/25/2022 10:45

Sample ID: 22E0872-03

Sample Matrix: Soil

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.084	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 17:45	TG
Aroclor-1221 [1]	ND	0.084	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 17:45	TG
Aroclor-1232 [1]	ND	0.084	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 17:45	TG
Aroclor-1242 [1]	ND	0.084	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 17:45	TG
Aroclor-1248 [1]	ND	0.084	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 17:45	TG
Aroclor-1254 [1]	ND	0.084	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 17:45	TG
Aroclor-1260 [1]	ND	0.084	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 17:45	TG
Aroclor-1262 [1]	ND	0.084	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 17:45	TG
Aroclor-1268 [1]	ND	0.084	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 17:45	TG
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Decachlorobiphenyl [1]		100	30-150					5/16/22 17:45	
Decachlorobiphenyl [2]		88.2	30-150					5/16/22 17:45	
Tetrachloro-m-xylene [1]		80.1	30-150					5/16/22 17:45	
Tetrachloro-m-xylene [2]		77.7	30-150					5/16/22 17:45	

Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22E0872

Date Received: 5/13/2022

Field Sample #: SB-3 (0-1.5)

Sampled: 4/25/2022 10:45

Sample ID: 22E0872-03

Sample Matrix: Soil

**Metals Analyses (Total)**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	3.6	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 23:02	QNW
Barium	24	1.8	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 23:02	QNW
Cadmium	ND	0.36	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 23:02	QNW
Chromium	17	0.72	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 23:02	QNW
Lead	24	0.54	mg/Kg dry	1	M-10	SW-846 6010D	5/13/22	5/16/22 23:02	QNW
Mercury	0.097	0.026	mg/Kg dry	1		SW-846 7471B	5/18/22	5/19/22 13:12	MJH
Selenium	ND	3.6	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 23:02	QNW
Silver	ND	0.36	mg/Kg dry	1		SW-846 6010D	5/13/22	5/23/22 16:57	QNW

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Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22E0872

Date Received: 5/13/2022

Field Sample #: SB-3 (0-1.5)

Sampled: 4/25/2022 10:45

Sample ID: 22E0872-03

Sample Matrix: Soil

**Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	92.0		% Wt	1		SM 2540G	5/10/22	5/10/22 21:09	AMM2

Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22E0872

Date Received: 5/13/2022

Field Sample #: SB-4 (0-1.5)

Sampled: 4/25/2022 10:35

Sample ID: 22E0872-04

Sample Matrix: Soil

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.092	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 18:03	TG
Aroclor-1221 [1]	ND	0.092	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 18:03	TG
Aroclor-1232 [1]	ND	0.092	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 18:03	TG
Aroclor-1242 [1]	ND	0.092	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 18:03	TG
Aroclor-1248 [1]	ND	0.092	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 18:03	TG
Aroclor-1254 [1]	ND	0.092	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 18:03	TG
Aroclor-1260 [1]	ND	0.092	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 18:03	TG
Aroclor-1262 [1]	ND	0.092	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 18:03	TG
Aroclor-1268 [1]	ND	0.092	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 18:03	TG
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Decachlorobiphenyl [1]		88.4	30-150					5/16/22 18:03	
Decachlorobiphenyl [2]		87.3	30-150					5/16/22 18:03	
Tetrachloro-m-xylene [1]		82.4	30-150					5/16/22 18:03	
Tetrachloro-m-xylene [2]		81.0	30-150					5/16/22 18:03	

Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22E0872

Date Received: 5/13/2022

Field Sample #: SB-4 (0-1.5)

Sampled: 4/25/2022 10:35

Sample ID: 22E0872-04

Sample Matrix: Soil

**Metals Analyses (Total)**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	3.7	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 23:09	QNW
Barium	64	1.8	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 23:09	QNW
Cadmium	ND	0.37	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 23:09	QNW
Chromium	12	0.73	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 23:09	QNW
Lead	160	0.55	mg/Kg dry	1	M-10	SW-846 6010D	5/13/22	5/16/22 23:09	QNW
Mercury	0.54	0.032	mg/Kg dry	1		SW-846 7471B	5/15/22	5/17/22 14:46	MJH
Selenium	ND	3.7	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 23:09	QNW
Silver	ND	0.37	mg/Kg dry	1		SW-846 6010D	5/13/22	5/23/22 17:04	QNW

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Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22E0872

Date Received: 5/13/2022

Field Sample #: SB-4 (0-1.5)

Sampled: 4/25/2022 10:35

Sample ID: 22E0872-04

Sample Matrix: Soil

**Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	87.3		% Wt	1		SM 2540G	5/10/22	5/10/22 21:09	AMM2

Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22E0872

Date Received: 5/13/2022

Field Sample #: SB-6 (0-1.5)

Sampled: 4/25/2022 11:10

Sample ID: 22E0872-05

Sample Matrix: Soil

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.094	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 18:21	TG
Aroclor-1221 [1]	ND	0.094	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 18:21	TG
Aroclor-1232 [1]	ND	0.094	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 18:21	TG
Aroclor-1242 [1]	ND	0.094	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 18:21	TG
Aroclor-1248 [1]	ND	0.094	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 18:21	TG
Aroclor-1254 [2]	ND	0.094	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 18:21	TG
Aroclor-1260 [1]	ND	0.094	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 18:21	TG
Aroclor-1262 [1]	ND	0.094	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 18:21	TG
Aroclor-1268 [1]	ND	0.094	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 18:21	TG
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Decachlorobiphenyl [1]		105	30-150					5/16/22 18:21	
Decachlorobiphenyl [2]		92.4	30-150					5/16/22 18:21	
Tetrachloro-m-xylene [1]		83.4	30-150					5/16/22 18:21	
Tetrachloro-m-xylene [2]		81.1	30-150					5/16/22 18:21	

Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22E0872

Date Received: 5/13/2022

Field Sample #: SB-6 (0-1.5)

Sampled: 4/25/2022 11:10

Sample ID: 22E0872-05

Sample Matrix: Soil

**Metals Analyses (Total)**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	3.8	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 23:16	QNW
Barium	60	1.9	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 23:16	QNW
Cadmium	ND	0.38	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 23:16	QNW
Chromium	17	0.75	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 23:16	QNW
Lead	110	0.56	mg/Kg dry	1	M-10	SW-846 6010D	5/13/22	5/16/22 23:16	QNW
Mercury	0.18	0.032	mg/Kg dry	1		SW-846 7471B	5/15/22	5/17/22 14:47	MJH
Selenium	ND	3.8	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 23:16	QNW
Silver	ND	0.38	mg/Kg dry	1		SW-846 6010D	5/13/22	5/23/22 17:11	QNW

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Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22E0872

Date Received: 5/13/2022

Field Sample #: SB-6 (0-1.5)

Sampled: 4/25/2022 11:10

Sample ID: 22E0872-05

Sample Matrix: Soil

**Conventional Chemistry Parameters by EPA/PHA/SW-846 Methods (Total)**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	83.3		% Wt	1		SM 2540G	5/10/22	5/10/22 21:09	AMM2

Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22E0872

Date Received: 5/13/2022

Field Sample #: SB-7 (0-1.5)

Sampled: 4/25/2022 11:20

Sample ID: 22E0872-06

Sample Matrix: Soil

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.083	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 18:38	TG
Aroclor-1221 [1]	ND	0.083	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 18:38	TG
Aroclor-1232 [1]	ND	0.083	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 18:38	TG
Aroclor-1242 [1]	ND	0.083	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 18:38	TG
Aroclor-1248 [1]	ND	0.083	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 18:38	TG
Aroclor-1254 [1]	ND	0.083	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 18:38	TG
Aroclor-1260 [1]	ND	0.083	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 18:38	TG
Aroclor-1262 [1]	ND	0.083	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 18:38	TG
Aroclor-1268 [1]	ND	0.083	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 18:38	TG
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Decachlorobiphenyl [1]		102	30-150					5/16/22 18:38	
Decachlorobiphenyl [2]		90.9	30-150					5/16/22 18:38	
Tetrachloro-m-xylene [1]		88.7	30-150					5/16/22 18:38	
Tetrachloro-m-xylene [2]		86.4	30-150					5/16/22 18:38	

Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22E0872

Date Received: 5/13/2022

Field Sample #: SB-7 (0-1.5)

Sampled: 4/25/2022 11:20

Sample ID: 22E0872-06

Sample Matrix: Soil

**Metals Analyses (Total)**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	3.4	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 18:49	QNW
Barium	30	1.7	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 18:49	QNW
Cadmium	ND	0.34	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 18:49	QNW
Chromium	13	0.68	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 18:49	QNW
Lead	28	0.51	mg/Kg dry	1	M-10	SW-846 6010D	5/13/22	5/16/22 18:49	QNW
Mercury	ND	0.027	mg/Kg dry	1		SW-846 7471B	5/15/22	5/17/22 14:49	MJH
Selenium	ND	3.4	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 18:49	QNW
Silver	ND	0.34	mg/Kg dry	1		SW-846 6010D	5/13/22	5/19/22 17:09	ATP

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Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22E0872

Date Received: 5/13/2022

Field Sample #: SB-7 (0-1.5)

Sampled: 4/25/2022 11:20

Sample ID: 22E0872-06

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	95.3		% Wt	1		SM 2540G	5/10/22	5/10/22 21:09	AMM2

Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22E0872

Date Received: 5/13/2022

Field Sample #: SB-9 (0-1.5)

Sampled: 4/25/2022 11:30

Sample ID: 22E0872-07

Sample Matrix: Soil

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.087	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 18:56	TG
Aroclor-1221 [1]	ND	0.087	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 18:56	TG
Aroclor-1232 [1]	ND	0.087	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 18:56	TG
Aroclor-1242 [1]	ND	0.087	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 18:56	TG
Aroclor-1248 [1]	ND	0.087	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 18:56	TG
Aroclor-1254 [1]	ND	0.087	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 18:56	TG
Aroclor-1260 [1]	ND	0.087	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 18:56	TG
Aroclor-1262 [1]	ND	0.087	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 18:56	TG
Aroclor-1268 [1]	ND	0.087	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 18:56	TG
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Decachlorobiphenyl [1]		92.5	30-150					5/16/22 18:56	
Decachlorobiphenyl [2]		84.5	30-150					5/16/22 18:56	
Tetrachloro-m-xylene [1]		82.5	30-150					5/16/22 18:56	
Tetrachloro-m-xylene [2]		80.2	30-150					5/16/22 18:56	

Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22E0872

Date Received: 5/13/2022

Field Sample #: SB-9 (0-1.5)

Sampled: 4/25/2022 11:30

Sample ID: 22E0872-07

Sample Matrix: Soil

**Metals Analyses (Total)**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	4.7	3.6	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 18:56	QNW
Barium	35	1.8	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 18:56	QNW
Cadmium	ND	0.36	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 18:56	QNW
Chromium	13	0.71	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 18:56	QNW
Lead	730	0.53	mg/Kg dry	1	M-10	SW-846 6010D	5/13/22	5/16/22 18:56	QNW
Mercury	0.36	0.029	mg/Kg dry	1		SW-846 7471B	5/15/22	5/17/22 14:51	MJH
Selenium	ND	3.6	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 18:56	QNW
Silver	ND	0.36	mg/Kg dry	1		SW-846 6010D	5/13/22	5/19/22 17:16	ATP

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Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22E0872

Date Received: 5/13/2022

Field Sample #: SB-9 (0-1.5)

Sampled: 4/25/2022 11:30

Sample ID: 22E0872-07

Sample Matrix: Soil

**Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	88.7		% Wt	1		SM 2540G	5/10/22	5/10/22 21:09	AMM2

Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22E0872

Date Received: 5/13/2022

Field Sample #: SB-10 (0-1.5)

Sampled: 4/25/2022 11:45

Sample ID: 22E0872-08

Sample Matrix: Soil

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.095	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 19:14	TG
Aroclor-1221 [1]	ND	0.095	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 19:14	TG
Aroclor-1232 [1]	ND	0.095	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 19:14	TG
Aroclor-1242 [1]	ND	0.095	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 19:14	TG
Aroclor-1248 [1]	ND	0.095	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 19:14	TG
Aroclor-1254 [1]	ND	0.095	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 19:14	TG
Aroclor-1260 [1]	ND	0.095	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 19:14	TG
Aroclor-1262 [1]	ND	0.095	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 19:14	TG
Aroclor-1268 [1]	ND	0.095	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 19:14	TG
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Decachlorobiphenyl [1]		100	30-150					5/16/22 19:14	
Decachlorobiphenyl [2]		88.4	30-150					5/16/22 19:14	
Tetrachloro-m-xylene [1]		78.7	30-150					5/16/22 19:14	
Tetrachloro-m-xylene [2]		76.4	30-150					5/16/22 19:14	

Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22E0872

Date Received: 5/13/2022

Field Sample #: SB-10 (0-1.5)

Sampled: 4/25/2022 11:45

Sample ID: 22E0872-08

Sample Matrix: Soil

**Metals Analyses (Total)**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	4.0	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 19:03	QNW
Barium	58	2.0	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 19:03	QNW
Cadmium	1.0	0.40	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 19:03	QNW
Chromium	11	0.80	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 19:03	QNW
Lead	23	0.60	mg/Kg dry	1	M-10	SW-846 6010D	5/13/22	5/16/22 19:03	QNW
Mercury	0.099	0.033	mg/Kg dry	1		SW-846 7471B	5/15/22	5/17/22 14:53	MJH
Selenium	ND	4.0	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 19:03	QNW
Silver	ND	0.40	mg/Kg dry	1		SW-846 6010D	5/13/22	5/19/22 17:23	ATP

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Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22E0872

Date Received: 5/13/2022

Field Sample #: SB-10 (0-1.5)

Sampled: 4/25/2022 11:45

Sample ID: 22E0872-08

Sample Matrix: Soil

**Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	81.3		% Wt	1		SM 2540G	5/10/22	5/10/22 21:09	AMM2

Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22E0872

Date Received: 5/13/2022

Field Sample #: SB-12 (0-1.5)

Sampled: 4/25/2022 09:30

Sample ID: 22E0872-09

Sample Matrix: Soil

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.096	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 19:31	TG
Aroclor-1221 [1]	ND	0.096	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 19:31	TG
Aroclor-1232 [1]	ND	0.096	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 19:31	TG
Aroclor-1242 [1]	ND	0.096	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 19:31	TG
Aroclor-1248 [1]	ND	0.096	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 19:31	TG
Aroclor-1254 [1]	ND	0.096	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 19:31	TG
Aroclor-1260 [1]	ND	0.096	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 19:31	TG
Aroclor-1262 [1]	ND	0.096	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 19:31	TG
Aroclor-1268 [1]	ND	0.096	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 19:31	TG
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Decachlorobiphenyl [1]		102	30-150					5/16/22 19:31	
Decachlorobiphenyl [2]		90.2	30-150					5/16/22 19:31	
Tetrachloro-m-xylene [1]		81.0	30-150					5/16/22 19:31	
Tetrachloro-m-xylene [2]		79.1	30-150					5/16/22 19:31	

Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22E0872

Date Received: 5/13/2022

Field Sample #: SB-12 (0-1.5)

Sampled: 4/25/2022 09:30

Sample ID: 22E0872-09

Sample Matrix: Soil

**Metals Analyses (Total)**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	3.9	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 19:10	QNW
Barium	48	1.9	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 19:10	QNW
Cadmium	ND	0.39	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 19:10	QNW
Chromium	12	0.78	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 19:10	QNW
Lead	260	0.58	mg/Kg dry	1	M-10	SW-846 6010D	5/13/22	5/16/22 19:10	QNW
Mercury	0.33	0.034	mg/Kg dry	1		SW-846 7471B	5/15/22	5/17/22 14:54	MJH
Selenium	ND	3.9	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 19:10	QNW
Silver	ND	0.39	mg/Kg dry	1		SW-846 6010D	5/13/22	5/19/22 17:30	ATP

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22E0872

Date Received: 5/13/2022

Sampled: 4/25/2022 09:30

Field Sample #: SB-12 (0-1.5)

Sample ID: 22E0872-09

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	80.5		% Wt	1		SM 2540G	5/10/22	5/10/22 21:09	AMM2

Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22E0872

Date Received: 5/13/2022

Field Sample #: SB-13 (0-1.5)

Sampled: 4/25/2022 09:15

Sample ID: 22E0872-10

Sample Matrix: Soil

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.092	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 19:49	TG
Aroclor-1221 [1]	ND	0.092	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 19:49	TG
Aroclor-1232 [1]	ND	0.092	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 19:49	TG
Aroclor-1242 [1]	ND	0.092	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 19:49	TG
Aroclor-1248 [1]	ND	0.092	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 19:49	TG
Aroclor-1254 [1]	ND	0.092	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 19:49	TG
Aroclor-1260 [1]	ND	0.092	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 19:49	TG
Aroclor-1262 [1]	ND	0.092	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 19:49	TG
Aroclor-1268 [1]	ND	0.092	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 19:49	TG
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Decachlorobiphenyl [1]		103	30-150					5/16/22 19:49	
Decachlorobiphenyl [2]		91.4	30-150					5/16/22 19:49	
Tetrachloro-m-xylene [1]		83.6	30-150					5/16/22 19:49	
Tetrachloro-m-xylene [2]		81.7	30-150					5/16/22 19:49	

Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22E0872

Date Received: 5/13/2022

Field Sample #: SB-13 (0-1.5)

Sampled: 4/25/2022 09:15

Sample ID: 22E0872-10

Sample Matrix: Soil

**Metals Analyses (Total)**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	3.9	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 19:17	QNW
Barium	38	1.9	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 19:17	QNW
Cadmium	ND	0.39	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 19:17	QNW
Chromium	21	0.78	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 19:17	QNW
Lead	9.3	0.58	mg/Kg dry	1	M-10	SW-846 6010D	5/13/22	5/16/22 19:17	QNW
Mercury	0.048	0.034	mg/Kg dry	1		SW-846 7471B	5/15/22	5/17/22 14:56	MJH
Selenium	ND	3.9	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 19:17	QNW
Silver	ND	0.39	mg/Kg dry	1		SW-846 6010D	5/13/22	5/19/22 17:38	ATP

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22E0872

Date Received: 5/13/2022

Field Sample #: SB-13 (0-1.5)

Sampled: 4/25/2022 09:15

Sample ID: 22E0872-10

Sample Matrix: Soil

**Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	85.6		% Wt	1		SM 2540G	5/10/22	5/10/22 21:09	AMM2

Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22E0872

Date Received: 5/13/2022

Field Sample #: SB-14 (0-1.5)

Sampled: 4/25/2022 09:45

Sample ID: 22E0872-11

Sample Matrix: Soil

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.090	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 20:07	TG
Aroclor-1221 [1]	ND	0.090	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 20:07	TG
Aroclor-1232 [1]	ND	0.090	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 20:07	TG
Aroclor-1242 [1]	ND	0.090	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 20:07	TG
Aroclor-1248 [1]	ND	0.090	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 20:07	TG
Aroclor-1254 [1]	ND	0.090	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 20:07	TG
Aroclor-1260 [1]	ND	0.090	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 20:07	TG
Aroclor-1262 [1]	ND	0.090	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 20:07	TG
Aroclor-1268 [1]	ND	0.090	mg/Kg dry	4		SW-846 8082A	5/13/22	5/16/22 20:07	TG
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Decachlorobiphenyl [1]		99.0	30-150					5/16/22 20:07	
Decachlorobiphenyl [2]		87.7	30-150					5/16/22 20:07	
Tetrachloro-m-xylene [1]		84.0	30-150					5/16/22 20:07	
Tetrachloro-m-xylene [2]		81.4	30-150					5/16/22 20:07	

Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22E0872

Date Received: 5/13/2022

Field Sample #: SB-14 (0-1.5)

Sampled: 4/25/2022 09:45

Sample ID: 22E0872-11

Sample Matrix: Soil

**Metals Analyses (Total)**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	3.7	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 19:24	QNW
Barium	120	1.8	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 19:24	QNW
Cadmium	0.50	0.37	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 19:24	QNW
Chromium	14	0.74	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 19:24	QNW
Lead	290	0.55	mg/Kg dry	1	M-10	SW-846 6010D	5/13/22	5/16/22 19:24	QNW
Mercury	0.98	0.030	mg/Kg dry	1		SW-846 7471B	5/15/22	5/17/22 14:58	MJH
Selenium	ND	3.7	mg/Kg dry	1		SW-846 6010D	5/13/22	5/16/22 19:24	QNW
Silver	0.93	0.37	mg/Kg dry	1		SW-846 6010D	5/13/22	5/19/22 17:45	ATP

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

Project Location: 1249 Main St, St. J., VT

Sample Description:

Work Order: 22E0872

Date Received: 5/13/2022

Field Sample #: SB-14 (0-1.5)

Sampled: 4/25/2022 09:45

Sample ID: 22E0872-11

Sample Matrix: Soil

**Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	85.5		% Wt	1		SM 2540G	5/10/22	5/10/22 21:09	AMM2

**Sample Extraction Data**
**Prep Method: % Solids Analytical Method: SM 2540G**

Lab Number [Field ID]	Batch	Date
22E0872-01 [SB-1 (0-1.5)]	B308061	05/10/22
22E0872-02 [SB-2 (0-1.5)]	B308061	05/10/22
22E0872-03 [SB-3 (0-1.5)]	B308061	05/10/22
22E0872-04 [SB-4 (0-1.5)]	B308061	05/10/22
22E0872-05 [SB-6 (0-1.5)]	B308061	05/10/22
22E0872-06 [SB-7 (0-1.5)]	B308061	05/10/22
22E0872-07 [SB-9 (0-1.5)]	B308061	05/10/22
22E0872-08 [SB-10 (0-1.5)]	B308061	05/10/22
22E0872-09 [SB-12 (0-1.5)]	B308061	05/10/22
22E0872-10 [SB-13 (0-1.5)]	B308061	05/10/22
22E0872-11 [SB-14 (0-1.5)]	B308061	05/10/22

**Prep Method: SW-846 3050B Analytical Method: SW-846 6010D**

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
22E0872-06 [SB-7 (0-1.5)]	B308384	1.54	50.0	05/13/22
22E0872-07 [SB-9 (0-1.5)]	B308384	1.58	50.0	05/13/22
22E0872-08 [SB-10 (0-1.5)]	B308384	1.54	50.0	05/13/22
22E0872-09 [SB-12 (0-1.5)]	B308384	1.60	50.0	05/13/22
22E0872-10 [SB-13 (0-1.5)]	B308384	1.50	50.0	05/13/22
22E0872-11 [SB-14 (0-1.5)]	B308384	1.59	50.0	05/13/22

**Prep Method: SW-846 3050B Analytical Method: SW-846 6010D**

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
22E0872-01 [SB-1 (0-1.5)]	B308402	1.58	50.0	05/13/22
22E0872-02 [SB-2 (0-1.5)]	B308402	1.58	50.0	05/13/22
22E0872-03 [SB-3 (0-1.5)]	B308402	1.51	50.0	05/13/22
22E0872-04 [SB-4 (0-1.5)]	B308402	1.56	50.0	05/13/22
22E0872-05 [SB-6 (0-1.5)]	B308402	1.60	50.0	05/13/22

**Prep Method: SW-846 7471 Analytical Method: SW-846 7471B**

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
22E0872-04 [SB-4 (0-1.5)]	B308444	0.530	50.0	05/15/22
22E0872-05 [SB-6 (0-1.5)]	B308444	0.561	50.0	05/15/22
22E0872-06 [SB-7 (0-1.5)]	B308444	0.574	50.0	05/15/22
22E0872-07 [SB-9 (0-1.5)]	B308444	0.579	50.0	05/15/22
22E0872-08 [SB-10 (0-1.5)]	B308444	0.565	50.0	05/15/22
22E0872-09 [SB-12 (0-1.5)]	B308444	0.555	50.0	05/15/22
22E0872-10 [SB-13 (0-1.5)]	B308444	0.519	50.0	05/15/22
22E0872-11 [SB-14 (0-1.5)]	B308444	0.580	50.0	05/15/22

**Prep Method: SW-846 7471 Analytical Method: SW-846 7471B**

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
22E0872-01 [SB-1 (0-1.5)]	B308717	0.621	50.0	05/18/22
22E0872-02 [SB-2 (0-1.5)]	B308717	0.618	50.0	05/18/22
22E0872-03 [SB-3 (0-1.5)]	B308717	0.624	50.0	05/18/22

**Sample Extraction Data**

Prep Method: SW-846 3540C Analytical Method: SW-846 8082A

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
22E0872-01 [SB-1 (0-1.5)]	B308413	10.2	10.0	05/13/22
22E0872-02 [SB-2 (0-1.5)]	B308413	10.1	10.0	05/13/22
22E0872-03 [SB-3 (0-1.5)]	B308413	10.3	10.0	05/13/22
22E0872-04 [SB-4 (0-1.5)]	B308413	10.0	10.0	05/13/22
22E0872-05 [SB-6 (0-1.5)]	B308413	10.2	10.0	05/13/22
22E0872-06 [SB-7 (0-1.5)]	B308413	10.1	10.0	05/13/22
22E0872-07 [SB-9 (0-1.5)]	B308413	10.4	10.0	05/13/22
22E0872-08 [SB-10 (0-1.5)]	B308413	10.4	10.0	05/13/22
22E0872-09 [SB-12 (0-1.5)]	B308413	10.4	10.0	05/13/22
22E0872-10 [SB-13 (0-1.5)]	B308413	10.2	10.0	05/13/22
22E0872-11 [SB-14 (0-1.5)]	B308413	10.4	10.0	05/13/22

**QUALITY CONTROL**
**Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B308413 - SW-846 3540C**
**Blank (B308413-BLK1)**

Prepared: 05/13/22 Analyzed: 05/16/22

Aroclor-1016	ND	0.020	mg/Kg wet							
Aroclor-1016 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1221	ND	0.020	mg/Kg wet							
Aroclor-1221 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1232	ND	0.020	mg/Kg wet							
Aroclor-1232 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1242	ND	0.020	mg/Kg wet							
Aroclor-1242 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1248	ND	0.020	mg/Kg wet							
Aroclor-1248 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1254	ND	0.020	mg/Kg wet							
Aroclor-1254 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1260	ND	0.020	mg/Kg wet							
Aroclor-1260 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1262	ND	0.020	mg/Kg wet							
Aroclor-1262 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1268	ND	0.020	mg/Kg wet							
Aroclor-1268 [2C]	ND	0.020	mg/Kg wet							
Surrogate: Decachlorobiphenyl	0.211		mg/Kg wet	0.200		106	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.181		mg/Kg wet	0.200		90.5	30-150			
Surrogate: Tetrachloro-m-xylene	0.157		mg/Kg wet	0.200		78.6	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.156		mg/Kg wet	0.200		77.8	30-150			

**LCS (B308413-BS1)**

Prepared: 05/13/22 Analyzed: 05/16/22

Aroclor-1016	0.15	0.020	mg/Kg wet	0.200		73.8	40-140			
Aroclor-1016 [2C]	0.15	0.020	mg/Kg wet	0.200		74.7	40-140			
Aroclor-1260	0.19	0.020	mg/Kg wet	0.200		93.8	40-140			
Aroclor-1260 [2C]	0.16	0.020	mg/Kg wet	0.200		79.3	40-140			
Surrogate: Decachlorobiphenyl	0.211		mg/Kg wet	0.200		106	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.182		mg/Kg wet	0.200		91.2	30-150			
Surrogate: Tetrachloro-m-xylene	0.138		mg/Kg wet	0.200		69.2	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.136		mg/Kg wet	0.200		68.1	30-150			

**LCS Dup (B308413-BSD1)**

Prepared: 05/13/22 Analyzed: 05/16/22

Aroclor-1016	0.15	0.020	mg/Kg wet	0.200		77.3	40-140	4.66	30	
Aroclor-1016 [2C]	0.15	0.020	mg/Kg wet	0.200		77.1	40-140	3.17	30	
Aroclor-1260	0.19	0.020	mg/Kg wet	0.200		95.1	40-140	1.40	30	
Aroclor-1260 [2C]	0.16	0.020	mg/Kg wet	0.200		80.9	40-140	2.00	30	
Surrogate: Decachlorobiphenyl	0.214		mg/Kg wet	0.200		107	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.185		mg/Kg wet	0.200		92.3	30-150			
Surrogate: Tetrachloro-m-xylene	0.157		mg/Kg wet	0.200		78.7	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.155		mg/Kg wet	0.200		77.7	30-150			

**QUALITY CONTROL**
**Metals Analyses (Total) - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B308384 - SW-846 3050B**
**Blank (B308384-BLK1)**

Prepared: 05/13/22 Analyzed: 05/16/22

Arsenic	ND	3.3	mg/Kg wet							
Barium	ND	1.7	mg/Kg wet							
Cadmium	ND	0.33	mg/Kg wet							
Chromium	ND	0.66	mg/Kg wet							
Lead	ND	0.50	mg/Kg wet							
Selenium	ND	3.3	mg/Kg wet							
Silver	ND	0.33	mg/Kg wet							

**LCS (B308384-BS1)**

Prepared: 05/13/22 Analyzed: 05/16/22

Arsenic	135	10	mg/Kg wet	140		96.1	82.9-117.9			
Barium	226	5.0	mg/Kg wet	202		112	81.2-118.3			
Cadmium	94.9	1.0	mg/Kg wet	97.9		97.0	80-119.5			
Chromium	59.1	2.0	mg/Kg wet	60.4		97.9	80.3-119.7			
Lead	58.6	1.5	mg/Kg wet	56.7		103	82.9-116.9			
Selenium	33.4	10	mg/Kg wet	35.5		93.9	77.5-122.3			
Silver	19.8	1.0	mg/Kg wet	20.4		96.9	79.4-121.1			

**LCS Dup (B308384-BSD1)**

Prepared: 05/13/22 Analyzed: 05/16/22

Arsenic	129	9.9	mg/Kg wet	140		91.8	82.9-117.9	4.54	30	
Barium	203	4.9	mg/Kg wet	202		101	81.2-118.3	10.7	20	
Cadmium	91.7	0.99	mg/Kg wet	97.9		93.7	80-119.5	3.46	20	
Chromium	60.2	2.0	mg/Kg wet	60.4		99.6	80.3-119.7	1.74	30	
Lead	54.5	1.5	mg/Kg wet	56.7		96.1	82.9-116.9	7.22	30	
Selenium	34.2	9.9	mg/Kg wet	35.5		96.3	77.5-122.3	2.45	30	
Silver	18.7	0.99	mg/Kg wet	20.4		91.9	79.4-121.1	5.28	30	

**Reference (B308384-SRM1) MRL CHECK**

Prepared: 05/13/22 Analyzed: 05/16/22

Lead	0.655	0.50	mg/Kg wet	0.497		132	* 80-120			M-10
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**Batch B308402 - SW-846 3050B**
**Blank (B308402-BLK1)**

Prepared: 05/13/22 Analyzed: 05/16/22

Arsenic	ND	3.3	mg/Kg wet							
Barium	ND	1.7	mg/Kg wet							
Cadmium	ND	0.33	mg/Kg wet							
Chromium	ND	0.66	mg/Kg wet							
Lead	ND	0.50	mg/Kg wet							
Selenium	ND	3.3	mg/Kg wet							
Silver	ND	0.33	mg/Kg wet							

**LCS (B308402-BS1)**

Prepared: 05/13/22 Analyzed: 05/16/22

Arsenic	120	10	mg/Kg wet	140		85.5	82.9-117.9			
Barium	188	5.0	mg/Kg wet	202		93.3	81.2-118.3			
Cadmium	88.7	1.0	mg/Kg wet	97.9		90.6	80-119.5			
Chromium	53.6	2.0	mg/Kg wet	60.4		88.7	80.3-119.7			
Lead	49.9	1.5	mg/Kg wet	56.7		88.0	82.9-116.9			
Selenium	31.4	10	mg/Kg wet	35.5		88.6	77.5-122.3			
Silver	17.7	1.0	mg/Kg wet	20.4		86.9	79.4-121.1			

**QUALITY CONTROL**
**Metals Analyses (Total) - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B308402 - SW-846 3050B</b>										
<b>LCS Dup (B308402-BSD1)</b>										
Prepared: 05/13/22 Analyzed: 05/16/22										
Arsenic	140	9.9	mg/Kg wet	140		100	82.9-117.9	15.7	30	
Barium	221	4.9	mg/Kg wet	202		110	81.2-118.3	16.1	20	
Cadmium	102	0.99	mg/Kg wet	97.9		104	80-119.5	13.5	20	
Chromium	62.8	2.0	mg/Kg wet	60.4		104	80.3-119.7	15.8	30	
Lead	58.5	1.5	mg/Kg wet	56.7		103	82.9-116.9	15.9	30	
Selenium	36.4	9.9	mg/Kg wet	35.5		103	77.5-122.3	14.6	30	
Silver	21.3	0.99	mg/Kg wet	20.4		104	79.4-121.1	18.0	30	
<b>Reference (B308402-SRM1) MRL CHECK</b>										
Prepared: 05/13/22 Analyzed: 05/16/22										
Lead	0.629	0.50	mg/Kg wet	0.495		127	* 80-120			M-10
<b>Batch B308444 - SW-846 7471</b>										
<b>Blank (B308444-BLK1)</b>										
Prepared: 05/15/22 Analyzed: 05/17/22										
Mercury	ND	0.025	mg/Kg wet							
<b>LCS (B308444-BS1)</b>										
Prepared: 05/15/22 Analyzed: 05/17/22										
Mercury	18.9	0.75	mg/Kg wet	16.5		115	74.5-124.8			
<b>LCS Dup (B308444-BSD1)</b>										
Prepared: 05/15/22 Analyzed: 05/17/22										
Mercury	19.9	0.74	mg/Kg wet	16.5		121	74.5-124.8	5.12	20	
<b>Batch B308717 - SW-846 7471</b>										
<b>Blank (B308717-BLK1)</b>										
Prepared: 05/18/22 Analyzed: 05/19/22										
Mercury	ND	0.025	mg/Kg wet							
<b>LCS (B308717-BS1)</b>										
Prepared: 05/18/22 Analyzed: 05/19/22										
Mercury	18.9	0.74	mg/Kg wet	16.5		115	74.5-124.8			
<b>LCS Dup (B308717-BSD1)</b>										
Prepared: 05/18/22 Analyzed: 05/19/22										
Mercury	18.0	0.69	mg/Kg wet	16.5		109	74.5-124.8	4.96	20	





**FLAG/QUALIFIER SUMMARY**

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
M-10	The reporting limit verification for the AIHA lead program is outside of control limits for this element. Any reported result at or near the detection limit may be biased on the high side.

**CERTIFICATIONS**
**Certified Analyses included in this Report**

Analyte	Certifications
<b><i>SW-846 6010D in Soil</i></b>	
Arsenic	CT,NH,NY,ME,VA,NC
Barium	CT,NH,NY,ME,VA,NC
Cadmium	CT,NH,NY,ME,VA,NC
Chromium	CT,NH,NY,ME,VA,NC
Lead	CT,NH,NY,AIHA,ME,VA,NC
Selenium	CT,NH,NY,ME,VA,NC
Silver	CT,NH,NY,ME,VA,NC
<b><i>SW-846 7471B in Soil</i></b>	
Mercury	CT,NH,NY,NC,ME,VA
<b><i>SW-846 8082A in Soil</i></b>	
Aroclor-1016	CT,NH,NY,ME,NC,VA,PA
Aroclor-1016 [2C]	CT,NH,NY,ME,NC,VA,PA
Aroclor-1221	CT,NH,NY,ME,NC,VA,PA
Aroclor-1221 [2C]	CT,NH,NY,ME,NC,VA,PA
Aroclor-1232	CT,NH,NY,ME,NC,VA,PA
Aroclor-1232 [2C]	CT,NH,NY,ME,NC,VA,PA
Aroclor-1242	CT,NH,NY,ME,NC,VA,PA
Aroclor-1242 [2C]	CT,NH,NY,ME,NC,VA,PA
Aroclor-1248	CT,NH,NY,ME,NC,VA,PA
Aroclor-1248 [2C]	CT,NH,NY,ME,NC,VA,PA
Aroclor-1254	CT,NH,NY,ME,NC,VA,PA
Aroclor-1254 [2C]	CT,NH,NY,ME,NC,VA,PA
Aroclor-1260	CT,NH,NY,ME,NC,VA,PA
Aroclor-1260 [2C]	CT,NH,NY,ME,NC,VA,PA
Aroclor-1262	NY,NC,VA,PA
Aroclor-1262 [2C]	NY,NC,VA,PA
Aroclor-1268	NY,NC,VA,PA
Aroclor-1268 [2C]	NY,NC,VA,PA

Con-Test, a Pace Environmental Laboratory, operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2024
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2023
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2023
RI	Rhode Island Department of Health	LAO00373	12/30/2022
NC	North Carolina Div. of Water Quality	652	12/31/2022
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2022
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022



39 Spruce Street  
 East Longmeadow, MA 01028

http://www.pacelabs.com

Phone: 413-525-2332  
 Fax: 413-525-6405  
 Access COC's and Support Requests

Address: 51 Knight Ln, WILUston, VT  
 Phone: 802-862-1980  
 Project Location: 1249 Main St, ST. J. Armony, VT

Pace Analytical		CHAIR OF CUSTODY RECORD		ANALYSIS REQUESTED	
Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	Matrix Code	Conc. Code
6 SB-7 0-1.5'	4-25-22 11:20	4-25-22 11:20	GRAB	S	U/VE
7 SB-7 0-1.5'	4-25-22 11:30	4-25-22 11:30		S	
8 SB-9 2-3'	4-25-22 11:30	4-25-22 11:30		S	
9 SB-10 2-3'	4-25-22 11:45	4-25-22 11:45		S	
10 SB-12 0-1.5'	4-25-22 9:30	4-25-22 9:30		S	
SB-13 0-1.5'	4-25-22 9:15	4-25-22 9:15		S	
SB-13 2-3'	4-25-22 9:15	4-25-22 9:15		S	

Project Name/Number	Project Location	Project Manager	Invoice Recipient	Sampled By
Atlas	51 Knight Ln, WILUston, VT	Jesse Stratton	Jesse Stratton	Emma Lyford

Relinquished by (signature)	Date/Time	Received by (signature)	Date/Time
[Signature]	4-26-22	[Signature]	4-27-22
[Signature]	4-27-22	[Signature]	4-27-22
[Signature]	4-27-22	[Signature]	4-27-22
[Signature]	4-27-22	[Signature]	4-27-22
[Signature]	4-27-22	[Signature]	4-27-22

Project Entity	Government	Federal	City	Municipality	21 J	Brownfield	AWRA	School	MBTA	WRMA	Chromatogram	AIHA-LAP, LLC
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

MA State DW Required	MA State DW Required	MA State DW Required
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Client Comments: 10:25 am

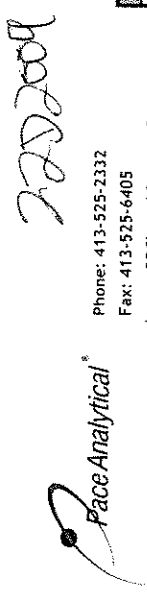
Special Requirements: MA MCP Required, MCP Certification Form Required, CT RCP Required, RCP Certification Form Required

Preservation Codes: I = Iced, H = HCL, M = Methanol, N = Nitric Acid, S = Sulfuric Acid, B = Sodium Bisulfate, X = Sodium Hydroxide, T = Sodium Thiosulfate, O = Other (please define)

Matrix Codes: GW = Ground Water, WW = Waste Water, DW = Drinking Water, A = Air, S = Soil, SL = Sludge, SOL = Solid, O = Other (please define)

Preservation Codes: I = Iced, H = HCL, M = Methanol, N = Nitric Acid, S = Sulfuric Acid, B = Sodium Bisulfate, X = Sodium Hydroxide, T = Sodium Thiosulfate, O = Other (please define)

Disclaimer: Pace Analytical is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Pace Analytical values your partnership on each project and will try to assist with missing information, but will not be held accountable.



Phone: 413-525-2332  
Fax: 413-525-6405

Access, COC's, and Support Requests

Address: Atlas  
51 Knight Lane Wuxton, VT  
Phone: 802-862-1980  
St. J. Armony  
Project Location: 1249 Main St. St. J. VT  
Project Number:  
Project Manager: Jesse Strout  
Pace Quote Name/Number: 3204382  
Invoice Recipient:  
Sampled By: Emma Lyford

<http://www.pacelabs.com>

39 Spruce Street  
East Longmeadow, MA 01028

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Page 3 of 3

ANALYSIS REQUESTED

7-Day PFAS 10-Day (std)  10-Day  Due Date:  
1-Day  3-Day   
2-Day  4-Day   
Format: PDF  EXCEL   
Other: SOXHLET   
CLP Like Data Pkg Required:   
Email To:  
Fax To #:

Field Filtered Lab to Filter   
Field Filtered Lab to Filter   
PCB ONLY  
NON SOXHLET   
NON SOXHLET

Pace Work Order #	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE
K	SB-14 0-1.5'	4.25.22	9:45	GRAB	S	WILE		X			
	SB-14 2-3'	4.25.22	9:15	GRAB	S	WILE		X			

PAH X  
Extract & Hold X

Received by: (signature) [Signature] Date/Time: 4-26-22  
Received by: (signature) [Signature] Date/Time: 4-27-22  
Relinquished by: (signature) [Signature] Date/Time: 4-27-22  
Received by: (signature) [Signature] Date/Time: 4/27/22  
Relinquished by: (signature) [Signature] Date/Time: 4/27/22  
Received by: (signature) [Signature] Date/Time: 4/27/22  
Relinquished by: (signature) [Signature] Date/Time: 4/27/22

Client Comments: 10:25 a.m

MA MCP Required   
MCP Certification Form Required   
CT RCP Required   
RCP Certification Form Required   
MA State DW Required

Project Entity: Government  Federal  City   
Municipality: 21 J Brownfield  
City: Brownfield

Other:  Chromatogram   
 WRTA  MBTA   
 AWRA School

1 Preservation Code  
Total Number Of:  
VIALS \_\_\_\_\_  
GLASS \_\_\_\_\_  
PLASTIC \_\_\_\_\_  
BACTERIA \_\_\_\_\_  
ENCORE \_\_\_\_\_  
Glassware in the fridge? Y/N  
Glassware in freezer? Y/N  
Prepackaged Cooler? Y/N  
\*Pace Analytical is not responsible for missing samples from prepacked coolers  
1 Matrix Codes:  
GW = Ground Water  
WW = Waste Water  
DW = Drinking Water  
A = Air  
S = Soil  
SL = Sludge  
SOL = Solid  
O = Other (please define)  
2 Preservation Codes:  
I = Iced  
H = HCL  
M = Methanol  
N = Nitric Acid  
S = Sulfuric Acid  
B = Sodium Bisulfate  
X = Sodium Hydroxide  
T = Sodium Thiosulfate  
O = Other (please define)

Please use the following codes to indicate possible sample concentration within the Conc Code column above:  
H - High; M - Medium; L - Low; C - Clean; U - Unknown

NECAC and ALPHA-DAP, LLC Accredited

Disclaimer: Pace Analytical is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Pace Analytical values your partnership on each project and will try to assist with missing information, but will not be held accountable.

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples \_\_\_\_\_



**con-test**<sup>®</sup>  
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

**Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False**

Client Atlas  
 Received By [Signature] Date 4/27/22 Time 1700

How were the samples received?  
 In Cooler T No Cooler \_\_\_\_\_ On Ice T No Ice \_\_\_\_\_  
 Direct from Sampling \_\_\_\_\_ Ambient \_\_\_\_\_ Melted Ice \_\_\_\_\_

Were samples within Temperature? 2-6°C T By Gun # 3 Actual Temp - 20  
 By Blank # \_\_\_\_\_ Actual Temp - \_\_\_\_\_

Was Custody Seal Intact? T Were Samples Tampered with? n/a  
 Was COC Relinquished? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T  
 Did COC include all pertinent information? Client T Analysis T Sampler Name T  
 Project T ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T  
 Are there Lab to Filters? F Who was notified? \_\_\_\_\_  
 Are there Rushes? F Who was notified? \_\_\_\_\_  
 Are there Short Holds? F Who was notified? \_\_\_\_\_

Is there enough Volume? T  
 Is there Headspace where applicable? n/a MS/MSD? F  
 Proper Media/Containers Used? T Is splitting samples required? F  
 Were trip blanks received? F On COC? F  
 Do all samples have the proper pH? \_\_\_\_\_ Acid n/a Base n/a

Vials	#	Containers:	#	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic		8oz <del>Amb</del> Clear
Meoh-		250 mL Amb.		250 mL Plastic		4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria		2oz Amb/Clear
DI-		Other Glass		Other Plastic		Encore
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:
Sulfuric-		Perchlorate		Ziplock		

**Unused Media**

Vials	#	Containers:	#	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic		4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear
DI-		Other Plastic		Other Glass		Encore
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:
Sulfuric-		Perchlorate		Ziplock		

Comments:

**APPENDIX C**

**SOIL VAPOR LABORATORY ANALYTICAL REPORT**

May 12, 2022

Jesse Stratton  
ATC Group Services LLC - Vermont  
51 Knight Lane, PO Box 1486  
Williston, VT 05495

Project Location: St Johnsbury, VT  
Client Job Number:  
Project Number: 280EM00860  
Laboratory Work Order Number: 22E0444

Enclosed are results of analyses for samples as received by the laboratory on May 5, 2022. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Kaitlyn A. Feliciano  
Project Manager

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ATC Group Services LLC - Vermont  
51 Knight Lane, PO Box 1486  
Williston, VT 05495  
ATTN: Jesse Stratton

REPORT DATE: 5/12/2022

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 280EM00860

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 22E0444

The results of analyses performed on the following samples submitted to CON-TEST, a Pace Analytical Laboratory, are found in this report.

PROJECT LOCATION: St Johnsbury, VT

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
MW-01	22E0444-01	Soil Gas		EPA 3C EPA TO-15	
MW-02	22E0444-02	Soil Gas		EPA 3C EPA TO-15	
MW-03	22E0444-03	Soil Gas		EPA 3C EPA TO-15	

**CASE NARRATIVE SUMMARY**

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

**EPA TO-15**

**Qualifications:**

**L-01**

Laboratory fortified blank/laboratory control sample recovery outside of control limits. Data validation is not affected since all results are "not detected" for all samples in this batch for this compound and bias is on the high side.

**Analyte & Samples(s) Qualified:**

**1,2-Dichloro-1,1,2,2-tetrafluoroeth:**

B308166-BS1

**Bromomethane**

B308166-BS1

**L-05**

Laboratory fortified blank/laboratory control sample recovery is outside of control limits. Reported value for this compound is likely to be biased on the high side.

**Analyte & Samples(s) Qualified:**

**Dichlorodifluoromethane (Freon 12)**

22E0444-01[MW-01], 22E0444-02[MW-02], 22E0444-03[MW-03], B308166-BLK1, B308166-BS1

**V-06**

Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side for this compound.

**Analyte & Samples(s) Qualified:**

**Dichlorodifluoromethane (Freon 12)**

22E0444-01[MW-01], 22E0444-02[MW-02], 22E0444-03[MW-03], B308166-BLK1, B308166-BS1, S071394-CCV1

**V-20**

Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

**Analyte & Samples(s) Qualified:**

**1,2-Dichloro-1,1,2,2-tetrafluoroeth:**

B308166-BS1, S071394-CCV1

**Bromomethane**

B308166-BS1, S071394-CCV1

The results of analyses reported only relate to samples submitted to Con-Test, a Pace Analytical Laboratory, for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Lisa A. Worthington  
Technical Representative

**ANALYTICAL RESULTS**

Project Location: St Johnsbury, VT  
 Date Received: 5/5/2022  
**Field Sample #: MW-01**  
**Sample ID: 22E0444-01**  
 Sample Matrix: Soil Gas  
 Sampled: 5/4/2022 14:06

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 2287  
 Canister Size: 3 liter  
 Flow Controller ID: 4246  
 Sample Type: 30 min

**Work Order: 22E0444**  
 Initial Vacuum(in Hg): -27  
 Final Vacuum(in Hg): -4  
 Receipt Vacuum(in Hg): -6.1  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA 3C**

Analyte	%		Flag/Qual	Dilution	Date/Time		Analyst
	Results	RL			Analyzed		
Helium	ND	0.40		1	5/11/22 9:57		TPH

**ANALYTICAL RESULTS**

 Project Location: St Johnsbury, VT  
 Date Received: 5/5/2022  
**Field Sample #: MW-01**  
**Sample ID: 22E0444-01**  
 Sample Matrix: Soil Gas  
 Sampled: 5/4/2022 14:06

 Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 2287  
 Canister Size: 3 liter  
 Flow Controller ID: 4246  
 Sample Type: 30 min

**Work Order: 22E0444**  
 Initial Vacuum(in Hg): -27  
 Final Vacuum(in Hg): -4  
 Receipt Vacuum(in Hg): -6.1  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv		Flag/Qual	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Acetone	12	8.0		29	19	4	5/10/22	16:36	BRF
Benzene	0.32	0.20		1.0	0.64	4	5/10/22	16:36	BRF
Benzyl chloride	ND	0.20		ND	1.0	4	5/10/22	16:36	BRF
Bromodichloromethane	ND	0.20		ND	1.3	4	5/10/22	16:36	BRF
Bromoform	ND	0.20		ND	2.1	4	5/10/22	16:36	BRF
Bromomethane	ND	0.20		ND	0.78	4	5/10/22	16:36	BRF
1,3-Butadiene	ND	0.20		ND	0.44	4	5/10/22	16:36	BRF
2-Butanone (MEK)	ND	8.0		ND	24	4	5/10/22	16:36	BRF
Carbon Disulfide	ND	2.0		ND	6.2	4	5/10/22	16:36	BRF
Carbon Tetrachloride	ND	0.20		ND	1.3	4	5/10/22	16:36	BRF
Chlorobenzene	ND	0.20		ND	0.92	4	5/10/22	16:36	BRF
Chloroethane	ND	0.20		ND	0.53	4	5/10/22	16:36	BRF
Chloroform	ND	0.20		ND	0.98	4	5/10/22	16:36	BRF
Chloromethane	ND	0.40		ND	0.83	4	5/10/22	16:36	BRF
Cyclohexane	ND	0.20		ND	0.69	4	5/10/22	16:36	BRF
Dibromochloromethane	ND	0.20		ND	1.7	4	5/10/22	16:36	BRF
1,2-Dibromoethane (EDB)	ND	0.20		ND	1.5	4	5/10/22	16:36	BRF
1,2-Dichlorobenzene	ND	0.20		ND	1.2	4	5/10/22	16:36	BRF
1,3-Dichlorobenzene	ND	0.20		ND	1.2	4	5/10/22	16:36	BRF
1,4-Dichlorobenzene	ND	0.20		ND	1.2	4	5/10/22	16:36	BRF
Dichlorodifluoromethane (Freon 12)	1.2	0.20	V-06, L-05	5.9	0.99	4	5/10/22	16:36	BRF
1,1-Dichloroethane	ND	0.20		ND	0.81	4	5/10/22	16:36	BRF
1,2-Dichloroethane	ND	0.20		ND	0.81	4	5/10/22	16:36	BRF
1,1-Dichloroethylene	ND	0.20		ND	0.79	4	5/10/22	16:36	BRF
cis-1,2-Dichloroethylene	ND	0.20		ND	0.79	4	5/10/22	16:36	BRF
trans-1,2-Dichloroethylene	ND	0.20		ND	0.79	4	5/10/22	16:36	BRF
1,2-Dichloropropane	ND	0.20		ND	0.92	4	5/10/22	16:36	BRF
cis-1,3-Dichloropropene	ND	0.20		ND	0.91	4	5/10/22	16:36	BRF
trans-1,3-Dichloropropene	ND	0.20		ND	0.91	4	5/10/22	16:36	BRF
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	ND	0.20		ND	1.4	4	5/10/22	16:36	BRF
1,4-Dioxane	ND	2.0		ND	7.2	4	5/10/22	16:36	BRF
Ethanol	8.6	8.0		16	15	4	5/10/22	16:36	BRF
Ethyl Acetate	ND	2.0		ND	7.2	4	5/10/22	16:36	BRF
Ethylbenzene	0.74	0.20		3.2	0.87	4	5/10/22	16:36	BRF
4-Ethyltoluene	ND	0.20		ND	0.98	4	5/10/22	16:36	BRF
Heptane	0.33	0.20		1.3	0.82	4	5/10/22	16:36	BRF
Hexachlorobutadiene	ND	0.20		ND	2.1	4	5/10/22	16:36	BRF

**ANALYTICAL RESULTS**

 Project Location: St Johnsbury, VT  
 Date Received: 5/5/2022  
**Field Sample #: MW-01**  
**Sample ID: 22E0444-01**  
 Sample Matrix: Soil Gas  
 Sampled: 5/4/2022 14:06

 Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 2287  
 Canister Size: 3 liter  
 Flow Controller ID: 4246  
 Sample Type: 30 min

**Work Order: 22E0444**  
 Initial Vacuum(in Hg): -27  
 Final Vacuum(in Hg): -4  
 Receipt Vacuum(in Hg): -6.1  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv		Flag/Qual	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Hexane	ND	8.0		ND	28	4	5/10/22 16:36	BRF	
2-Hexanone (MBK)	ND	0.20		ND	0.82	4	5/10/22 16:36	BRF	
Isopropanol	87	8.0		210	20	4	5/10/22 16:36	BRF	
Methyl tert-Butyl Ether (MTBE)	ND	0.20		ND	0.72	4	5/10/22 16:36	BRF	
Methylene Chloride	2.1	2.0		7.3	6.9	4	5/10/22 16:36	BRF	
4-Methyl-2-pentanone (MIBK)	ND	0.20		ND	0.82	4	5/10/22 16:36	BRF	
Naphthalene	ND	0.20		ND	1.0	4	5/10/22 16:36	BRF	
Propene	ND	8.0		ND	14	4	5/10/22 16:36	BRF	
Styrene	ND	0.20		ND	0.85	4	5/10/22 16:36	BRF	
1,1,2,2-Tetrachloroethane	ND	0.20		ND	1.4	4	5/10/22 16:36	BRF	
Tetrachloroethylene	1.4	0.20		9.2	1.4	4	5/10/22 16:36	BRF	
Tetrahydrofuran	ND	2.0		ND	5.9	4	5/10/22 16:36	BRF	
Toluene	4.5	0.20		17	0.75	4	5/10/22 16:36	BRF	
1,2,4-Trichlorobenzene	ND	0.20		ND	1.5	4	5/10/22 16:36	BRF	
1,1,1-Trichloroethane	ND	0.20		ND	1.1	4	5/10/22 16:36	BRF	
1,1,2-Trichloroethane	ND	0.20		ND	1.1	4	5/10/22 16:36	BRF	
Trichloroethylene	ND	0.20		ND	1.1	4	5/10/22 16:36	BRF	
Trichlorofluoromethane (Freon 11)	ND	0.80		ND	4.5	4	5/10/22 16:36	BRF	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.80		ND	6.1	4	5/10/22 16:36	BRF	
1,2,4-Trimethylbenzene	0.37	0.20		1.8	0.98	4	5/10/22 16:36	BRF	
1,3,5-Trimethylbenzene	ND	0.20		ND	0.98	4	5/10/22 16:36	BRF	
Vinyl Acetate	ND	4.0		ND	14	4	5/10/22 16:36	BRF	
Vinyl Chloride	ND	0.20		ND	0.51	4	5/10/22 16:36	BRF	
m&p-Xylene	1.6	0.40		6.9	1.7	4	5/10/22 16:36	BRF	
o-Xylene	0.56	0.20		2.4	0.87	4	5/10/22 16:36	BRF	

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	103	70-130	5/10/22 16:36

**ANALYTICAL RESULTS**

Project Location: St Johnsbury, VT  
 Date Received: 5/5/2022  
**Field Sample #: MW-02**  
**Sample ID: 22E0444-02**  
 Sample Matrix: Soil Gas  
 Sampled: 5/4/2022 14:23

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 2393  
 Canister Size: 3 liter  
 Flow Controller ID: 4349  
 Sample Type: 30 min

**Work Order: 22E0444**  
 Initial Vacuum(in Hg): -25.5  
 Final Vacuum(in Hg): -0  
 Receipt Vacuum(in Hg): -0.7  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA 3C**

Analyte	%		Flag/Qual	Dilution	Date/Time		Analyst
	Results	RL			Analyzed		
Helium	ND	0.40		1	5/11/22 10:09		TPH

**ANALYTICAL RESULTS**

 Project Location: St Johnsbury, VT  
 Date Received: 5/5/2022  
**Field Sample #: MW-02**  
**Sample ID: 22E0444-02**  
 Sample Matrix: Soil Gas  
 Sampled: 5/4/2022 14:23

 Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 2393  
 Canister Size: 3 liter  
 Flow Controller ID: 4349  
 Sample Type: 30 min

**Work Order: 22E0444**  
 Initial Vacuum(in Hg): -25.5  
 Final Vacuum(in Hg): -0  
 Receipt Vacuum(in Hg): -0.7  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv		Flag/Qual	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Acetone	ND	8.0		ND	19	4	5/10/22 17:16	BRF	
Benzene	0.59	0.20		1.9	0.64	4	5/10/22 17:16	BRF	
Benzyl chloride	ND	0.20		ND	1.0	4	5/10/22 17:16	BRF	
Bromodichloromethane	ND	0.20		ND	1.3	4	5/10/22 17:16	BRF	
Bromoform	ND	0.20		ND	2.1	4	5/10/22 17:16	BRF	
Bromomethane	ND	0.20		ND	0.78	4	5/10/22 17:16	BRF	
1,3-Butadiene	ND	0.20		ND	0.44	4	5/10/22 17:16	BRF	
2-Butanone (MEK)	ND	8.0		ND	24	4	5/10/22 17:16	BRF	
Carbon Disulfide	ND	2.0		ND	6.2	4	5/10/22 17:16	BRF	
Carbon Tetrachloride	ND	0.20		ND	1.3	4	5/10/22 17:16	BRF	
Chlorobenzene	ND	0.20		ND	0.92	4	5/10/22 17:16	BRF	
Chloroethane	ND	0.20		ND	0.53	4	5/10/22 17:16	BRF	
Chloroform	ND	0.20		ND	0.98	4	5/10/22 17:16	BRF	
Chloromethane	ND	0.40		ND	0.83	4	5/10/22 17:16	BRF	
Cyclohexane	7.2	0.20		25	0.69	4	5/10/22 17:16	BRF	
Dibromochloromethane	ND	0.20		ND	1.7	4	5/10/22 17:16	BRF	
1,2-Dibromoethane (EDB)	ND	0.20		ND	1.5	4	5/10/22 17:16	BRF	
1,2-Dichlorobenzene	ND	0.20		ND	1.2	4	5/10/22 17:16	BRF	
1,3-Dichlorobenzene	ND	0.20		ND	1.2	4	5/10/22 17:16	BRF	
1,4-Dichlorobenzene	ND	0.20		ND	1.2	4	5/10/22 17:16	BRF	
Dichlorodifluoromethane (Freon 12)	8.1	0.20	L-05, V-06	40	0.99	4	5/10/22 17:16	BRF	
1,1-Dichloroethane	ND	0.20		ND	0.81	4	5/10/22 17:16	BRF	
1,2-Dichloroethane	ND	0.20		ND	0.81	4	5/10/22 17:16	BRF	
1,1-Dichloroethylene	ND	0.20		ND	0.79	4	5/10/22 17:16	BRF	
cis-1,2-Dichloroethylene	ND	0.20		ND	0.79	4	5/10/22 17:16	BRF	
trans-1,2-Dichloroethylene	ND	0.20		ND	0.79	4	5/10/22 17:16	BRF	
1,2-Dichloropropane	ND	0.20		ND	0.92	4	5/10/22 17:16	BRF	
cis-1,3-Dichloropropene	ND	0.20		ND	0.91	4	5/10/22 17:16	BRF	
trans-1,3-Dichloropropene	ND	0.20		ND	0.91	4	5/10/22 17:16	BRF	
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	ND	0.20		ND	1.4	4	5/10/22 17:16	BRF	
1,4-Dioxane	ND	2.0		ND	7.2	4	5/10/22 17:16	BRF	
Ethanol	ND	8.0		ND	15	4	5/10/22 17:16	BRF	
Ethyl Acetate	ND	2.0		ND	7.2	4	5/10/22 17:16	BRF	
Ethylbenzene	0.70	0.20		3.0	0.87	4	5/10/22 17:16	BRF	
4-Ethyltoluene	ND	0.20		ND	0.98	4	5/10/22 17:16	BRF	
Heptane	0.55	0.20		2.3	0.82	4	5/10/22 17:16	BRF	
Hexachlorobutadiene	ND	0.20		ND	2.1	4	5/10/22 17:16	BRF	

**ANALYTICAL RESULTS**

 Project Location: St Johnsbury, VT  
 Date Received: 5/5/2022  
**Field Sample #: MW-02**  
**Sample ID: 22E0444-02**  
 Sample Matrix: Soil Gas  
 Sampled: 5/4/2022 14:23

 Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 2393  
 Canister Size: 3 liter  
 Flow Controller ID: 4349  
 Sample Type: 30 min

**Work Order: 22E0444**  
 Initial Vacuum(in Hg): -25.5  
 Final Vacuum(in Hg): -0  
 Receipt Vacuum(in Hg): -0.7  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv		Flag/Qual	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Hexane	ND	8.0		ND	28	4	5/10/22 17:16	BRF	
2-Hexanone (MBK)	ND	0.20		ND	0.82	4	5/10/22 17:16	BRF	
Isopropanol	120	8.0		290	20	4	5/10/22 17:16	BRF	
Methyl tert-Butyl Ether (MTBE)	ND	0.20		ND	0.72	4	5/10/22 17:16	BRF	
Methylene Chloride	ND	2.0		ND	6.9	4	5/10/22 17:16	BRF	
4-Methyl-2-pentanone (MIBK)	ND	0.20		ND	0.82	4	5/10/22 17:16	BRF	
Naphthalene	ND	0.20		ND	1.0	4	5/10/22 17:16	BRF	
Propene	ND	8.0		ND	14	4	5/10/22 17:16	BRF	
Styrene	ND	0.20		ND	0.85	4	5/10/22 17:16	BRF	
1,1,2,2-Tetrachloroethane	ND	0.20		ND	1.4	4	5/10/22 17:16	BRF	
Tetrachloroethylene	0.98	0.20		6.6	1.4	4	5/10/22 17:16	BRF	
Tetrahydrofuran	ND	2.0		ND	5.9	4	5/10/22 17:16	BRF	
Toluene	4.3	0.20		16	0.75	4	5/10/22 17:16	BRF	
1,2,4-Trichlorobenzene	ND	0.20		ND	1.5	4	5/10/22 17:16	BRF	
1,1,1-Trichloroethane	ND	0.20		ND	1.1	4	5/10/22 17:16	BRF	
1,1,2-Trichloroethane	ND	0.20		ND	1.1	4	5/10/22 17:16	BRF	
Trichloroethylene	ND	0.20		ND	1.1	4	5/10/22 17:16	BRF	
Trichlorofluoromethane (Freon 11)	ND	0.80		ND	4.5	4	5/10/22 17:16	BRF	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.80		ND	6.1	4	5/10/22 17:16	BRF	
1,2,4-Trimethylbenzene	0.38	0.20		1.8	0.98	4	5/10/22 17:16	BRF	
1,3,5-Trimethylbenzene	ND	0.20		ND	0.98	4	5/10/22 17:16	BRF	
Vinyl Acetate	ND	4.0		ND	14	4	5/10/22 17:16	BRF	
Vinyl Chloride	ND	0.20		ND	0.51	4	5/10/22 17:16	BRF	
m&p-Xylene	1.9	0.40		8.2	1.7	4	5/10/22 17:16	BRF	
o-Xylene	0.46	0.20		2.0	0.87	4	5/10/22 17:16	BRF	

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	102	70-130	5/10/22 17:16

**ANALYTICAL RESULTS**

Project Location: St Johnsbury, VT  
 Date Received: 5/5/2022  
**Field Sample #: MW-03**  
**Sample ID: 22E0444-03**  
 Sample Matrix: Soil Gas  
 Sampled: 5/4/2022 14:15

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 2263  
 Canister Size: 3 liter  
 Flow Controller ID: 4233  
 Sample Type: 30 min

**Work Order: 22E0444**  
 Initial Vacuum(in Hg): -29  
 Final Vacuum(in Hg): -6  
 Receipt Vacuum(in Hg): -5  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA 3C**

Analyte	%		Flag/Qual	Dilution	Date/Time		Analyst
	Results	RL			Analyzed		
Helium	ND	0.40		1	5/11/22 10:19		TPH

**ANALYTICAL RESULTS**

 Project Location: St Johnsbury, VT  
 Date Received: 5/5/2022  
**Field Sample #: MW-03**  
**Sample ID: 22E0444-03**  
 Sample Matrix: Soil Gas  
 Sampled: 5/4/2022 14:15

 Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 2263  
 Canister Size: 3 liter  
 Flow Controller ID: 4233  
 Sample Type: 30 min

**Work Order: 22E0444**  
 Initial Vacuum(in Hg): -29  
 Final Vacuum(in Hg): -6  
 Receipt Vacuum(in Hg): -5  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv		Flag/Qual	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Acetone	16	8.0		38	19	4	5/10/22	17:56	BRF
Benzene	0.46	0.20		1.5	0.64	4	5/10/22	17:56	BRF
Benzyl chloride	ND	0.20		ND	1.0	4	5/10/22	17:56	BRF
Bromodichloromethane	ND	0.20		ND	1.3	4	5/10/22	17:56	BRF
Bromoform	ND	0.20		ND	2.1	4	5/10/22	17:56	BRF
Bromomethane	ND	0.20		ND	0.78	4	5/10/22	17:56	BRF
1,3-Butadiene	ND	0.20		ND	0.44	4	5/10/22	17:56	BRF
2-Butanone (MEK)	ND	8.0		ND	24	4	5/10/22	17:56	BRF
Carbon Disulfide	ND	2.0		ND	6.2	4	5/10/22	17:56	BRF
Carbon Tetrachloride	ND	0.20		ND	1.3	4	5/10/22	17:56	BRF
Chlorobenzene	ND	0.20		ND	0.92	4	5/10/22	17:56	BRF
Chloroethane	ND	0.20		ND	0.53	4	5/10/22	17:56	BRF
Chloroform	ND	0.20		ND	0.98	4	5/10/22	17:56	BRF
Chloromethane	ND	0.40		ND	0.83	4	5/10/22	17:56	BRF
Cyclohexane	ND	0.20		ND	0.69	4	5/10/22	17:56	BRF
Dibromochloromethane	ND	0.20		ND	1.7	4	5/10/22	17:56	BRF
1,2-Dibromoethane (EDB)	ND	0.20		ND	1.5	4	5/10/22	17:56	BRF
1,2-Dichlorobenzene	ND	0.20		ND	1.2	4	5/10/22	17:56	BRF
1,3-Dichlorobenzene	ND	0.20		ND	1.2	4	5/10/22	17:56	BRF
1,4-Dichlorobenzene	ND	0.20		ND	1.2	4	5/10/22	17:56	BRF
Dichlorodifluoromethane (Freon 12)	4.2	0.20	L-05, V-06	21	0.99	4	5/10/22	17:56	BRF
1,1-Dichloroethane	ND	0.20		ND	0.81	4	5/10/22	17:56	BRF
1,2-Dichloroethane	ND	0.20		ND	0.81	4	5/10/22	17:56	BRF
1,1-Dichloroethylene	ND	0.20		ND	0.79	4	5/10/22	17:56	BRF
cis-1,2-Dichloroethylene	ND	0.20		ND	0.79	4	5/10/22	17:56	BRF
trans-1,2-Dichloroethylene	ND	0.20		ND	0.79	4	5/10/22	17:56	BRF
1,2-Dichloropropane	ND	0.20		ND	0.92	4	5/10/22	17:56	BRF
cis-1,3-Dichloropropene	ND	0.20		ND	0.91	4	5/10/22	17:56	BRF
trans-1,3-Dichloropropene	ND	0.20		ND	0.91	4	5/10/22	17:56	BRF
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	ND	0.20		ND	1.4	4	5/10/22	17:56	BRF
1,4-Dioxane	ND	2.0		ND	7.2	4	5/10/22	17:56	BRF
Ethanol	ND	8.0		ND	15	4	5/10/22	17:56	BRF
Ethyl Acetate	4.4	2.0		16	7.2	4	5/10/22	17:56	BRF
Ethylbenzene	0.84	0.20		3.7	0.87	4	5/10/22	17:56	BRF
4-Ethyltoluene	ND	0.20		ND	0.98	4	5/10/22	17:56	BRF
Heptane	0.49	0.20		2.0	0.82	4	5/10/22	17:56	BRF
Hexachlorobutadiene	ND	0.20		ND	2.1	4	5/10/22	17:56	BRF

**ANALYTICAL RESULTS**

 Project Location: St Johnsbury, VT  
 Date Received: 5/5/2022  
**Field Sample #: MW-03**  
**Sample ID: 22E0444-03**  
 Sample Matrix: Soil Gas  
 Sampled: 5/4/2022 14:15

 Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 2263  
 Canister Size: 3 liter  
 Flow Controller ID: 4233  
 Sample Type: 30 min

**Work Order: 22E0444**  
 Initial Vacuum(in Hg): -29  
 Final Vacuum(in Hg): -6  
 Receipt Vacuum(in Hg): -5  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv		Flag/Qual	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Hexane	ND	8.0		ND	28	4	5/10/22 17:56	BRF	
2-Hexanone (MBK)	ND	0.20		ND	0.82	4	5/10/22 17:56	BRF	
Isopropanol	79	8.0		200	20	4	5/10/22 17:56	BRF	
Methyl tert-Butyl Ether (MTBE)	ND	0.20		ND	0.72	4	5/10/22 17:56	BRF	
Methylene Chloride	ND	2.0		ND	6.9	4	5/10/22 17:56	BRF	
4-Methyl-2-pentanone (MIBK)	ND	0.20		ND	0.82	4	5/10/22 17:56	BRF	
Naphthalene	ND	0.20		ND	1.0	4	5/10/22 17:56	BRF	
Propene	ND	8.0		ND	14	4	5/10/22 17:56	BRF	
Styrene	ND	0.20		ND	0.85	4	5/10/22 17:56	BRF	
1,1,2,2-Tetrachloroethane	ND	0.20		ND	1.4	4	5/10/22 17:56	BRF	
Tetrachloroethylene	1.4	0.20		9.5	1.4	4	5/10/22 17:56	BRF	
Tetrahydrofuran	ND	2.0		ND	5.9	4	5/10/22 17:56	BRF	
Toluene	6.1	0.20		23	0.75	4	5/10/22 17:56	BRF	
1,2,4-Trichlorobenzene	ND	0.20		ND	1.5	4	5/10/22 17:56	BRF	
1,1,1-Trichloroethane	ND	0.20		ND	1.1	4	5/10/22 17:56	BRF	
1,1,2-Trichloroethane	ND	0.20		ND	1.1	4	5/10/22 17:56	BRF	
Trichloroethylene	ND	0.20		ND	1.1	4	5/10/22 17:56	BRF	
Trichlorofluoromethane (Freon 11)	ND	0.80		ND	4.5	4	5/10/22 17:56	BRF	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.80		ND	6.1	4	5/10/22 17:56	BRF	
1,2,4-Trimethylbenzene	0.40	0.20		1.9	0.98	4	5/10/22 17:56	BRF	
1,3,5-Trimethylbenzene	ND	0.20		ND	0.98	4	5/10/22 17:56	BRF	
Vinyl Acetate	ND	4.0		ND	14	4	5/10/22 17:56	BRF	
Vinyl Chloride	ND	0.20		ND	0.51	4	5/10/22 17:56	BRF	
m&p-Xylene	1.8	0.40		8.0	1.7	4	5/10/22 17:56	BRF	
o-Xylene	0.62	0.20		2.7	0.87	4	5/10/22 17:56	BRF	

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	105	70-130	5/10/22 17:56

**Sample Extraction Data**
**Prep Method: TO-15 Prep      Analytical Method: EP**

Lab Number [Field ID]	Batch	Pressure Dilution	Pre Dilution	Pre-Dil Initial mL	Pre-Dil Final mL	Default Injection mL	Actual Injection mL	Date
22E0444-01 [MW-01]	B308172	1.5	1	N/A	1000	0.5	0.75	05/11/22
22E0444-02 [MW-02]	B308172	1.5	1	N/A	1000	0.5	0.75	05/11/22
22E0444-03 [MW-03]	B308172	1.5	1	N/A	1000	0.5	0.75	05/11/22

**Prep Method: TO-15 Prep      Analytical Method: EP**

Lab Number [Field ID]	Batch	Pressure Dilution	Pre Dilution	Pre-Dil Initial mL	Pre-Dil Final mL	Default Injection mL	Actual Injection mL	Date
22E0444-01 [MW-01]	B308166	1.5	1	N/A	1000	400	150	05/10/22
22E0444-02 [MW-02]	B308166	1.5	1	N/A	1000	400	150	05/10/22
22E0444-03 [MW-03]	B308166	1.5	1	N/A	1000	400	150	05/10/22

**QUALITY CONTROL**
**Miscellaneous Air Analyses - Quality Control**

Analyte	%		ug/m3		Spike Level	Source	%REC	RPD	Flag/Qual
	Results	RL	Results	RL	%	Result	Limits	RPD	

**Batch B308172 - TO-15 Prep**
**Blank (B308172-BLK1)**

Prepared &amp; Analyzed: 05/11/22

Helium ND 0.40

**LCS (B308172-BS1)**

Prepared &amp; Analyzed: 05/11/22

Helium 0.539 0.500 108 70-130

**QUALITY CONTROL**
**Air Toxics by EPA Compendium Methods - Quality Control**

Analyte	ppbv		ug/m3		Spike Level	Source	%REC	RPD	Flag/Qual
	Results	RL	Results	RL	ppbv	Result	Limits	RPD	

**Batch B308166 - TO-15 Prep**
**Blank (B308166-BLK1)**

Prepared &amp; Analyzed: 05/10/22

Acetone	ND	1.4
Benzene	ND	0.035
Benzyl chloride	ND	0.035
Bromodichloromethane	ND	0.035
Bromoform	ND	0.035
Bromomethane	ND	0.035
1,3-Butadiene	ND	0.035
2-Butanone (MEK)	ND	1.4
Carbon Disulfide	ND	0.35
Carbon Tetrachloride	ND	0.035
Chlorobenzene	ND	0.035
Chloroethane	ND	0.035
Chloroform	ND	0.035
Chloromethane	ND	0.070
Cyclohexane	ND	0.035
Dibromochloromethane	ND	0.035
1,2-Dibromoethane (EDB)	ND	0.035
1,2-Dichlorobenzene	ND	0.035
1,3-Dichlorobenzene	ND	0.035
1,4-Dichlorobenzene	ND	0.035
Dichlorodifluoromethane (Freon 12)	ND	0.035
1,1-Dichloroethane	ND	0.035
1,2-Dichloroethane	ND	0.035
1,1-Dichloroethylene	ND	0.035
cis-1,2-Dichloroethylene	ND	0.035
trans-1,2-Dichloroethylene	ND	0.035
1,2-Dichloropropane	ND	0.035
cis-1,3-Dichloropropene	ND	0.035
trans-1,3-Dichloropropene	ND	0.035
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	ND	0.035
1,4-Dioxane	ND	0.35
Ethanol	ND	1.4
Ethyl Acetate	ND	0.35
Ethylbenzene	ND	0.035
4-Ethyltoluene	ND	0.035
Heptane	ND	0.035
Hexachlorobutadiene	ND	0.035
Hexane	ND	1.4
2-Hexanone (MBK)	ND	0.035
Methyl tert-Butyl Ether (MTBE)	ND	0.035
Methylene Chloride	ND	0.35
4-Methyl-2-pentanone (MIBK)	ND	0.035
Naphthalene	ND	0.035
Propene	ND	1.4
Styrene	ND	0.035
1,1,2,2-Tetrachloroethane	ND	0.035

L-05, V-06

**QUALITY CONTROL**
**Air Toxics by EPA Compendium Methods - Quality Control**

Analyte	ppbv		ug/m3		Spike Level	Source	%REC	%REC	RPD	RPD	Flag/Qual
	Results	RL	Results	RL	ppbv	Result	Limits	RPD	Limit		

**Batch B308166 - TO-15 Prep**
**Blank (B308166-BLK1)**

Prepared &amp; Analyzed: 05/10/22

Tetrachloroethylene	ND	0.035
Tetrahydrofuran	ND	0.35
Toluene	ND	0.035
1,2,4-Trichlorobenzene	ND	0.035
1,1,1-Trichloroethane	ND	0.035
1,1,2-Trichloroethane	ND	0.035
Trichloroethylene	ND	0.035
Trichlorofluoromethane (Freon 11)	ND	0.14
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.14
1,2,4-Trimethylbenzene	ND	0.035
1,3,5-Trimethylbenzene	ND	0.035
Vinyl Acetate	ND	0.70
Vinyl Chloride	ND	0.035
m&p-Xylene	ND	0.070
o-Xylene	ND	0.035

*Surrogate: 4-Bromofluorobenzene (1)*

8.27

8.00

103

70-130

**LCS (B308166-BS1)**

Prepared &amp; Analyzed: 05/10/22

Acetone	5.14		5.00	103	70-130
Benzene	4.44		5.00	88.9	70-130
Benzyl chloride	4.78		5.00	95.6	70-130
Bromodichloromethane	4.52		5.00	90.3	70-130
Bromoform	6.08		5.00	122	70-130
Bromomethane	6.54		5.00	131 *	70-130
1,3-Butadiene	5.86		5.00	117	70-130
2-Butanone (MEK)	4.49		5.00	89.8	70-130
Carbon Disulfide	5.96		5.00	119	70-130
Carbon Tetrachloride	4.92		5.00	98.3	70-130
Chlorobenzene	4.84		5.00	96.8	70-130
Chloroethane	6.06		5.00	121	70-130
Chloroform	5.68		5.00	114	70-130
Chloromethane	5.45		5.00	109	70-130
Cyclohexane	4.22		5.00	84.5	70-130
Dibromochloromethane	5.31		5.00	106	70-130
1,2-Dibromoethane (EDB)	4.79		5.00	95.7	70-130
1,2-Dichlorobenzene	4.94		5.00	98.8	70-130
1,3-Dichlorobenzene	5.03		5.00	101	70-130
1,4-Dichlorobenzene	5.02		5.00	100	70-130
Dichlorodifluoromethane (Freon 12)	6.75		5.00	135 *	70-130
1,1-Dichloroethane	5.25		5.00	105	70-130
1,2-Dichloroethane	5.44		5.00	109	70-130
1,1-Dichloroethylene	5.64		5.00	113	70-130
cis-1,2-Dichloroethylene	5.06		5.00	101	70-130
trans-1,2-Dichloroethylene	5.14		5.00	103	70-130
1,2-Dichloropropane	3.82		5.00	76.3	70-130
cis-1,3-Dichloropropene	4.01		5.00	80.2	70-130

L-01, V-20

L-05, V-06

**QUALITY CONTROL**
**Air Toxics by EPA Compendium Methods - Quality Control**

Analyte	ppbv		ug/m3		Spike Level	Source	%REC	%REC	RPD	RPD	Flag/Qual
	Results	RL	Results	RL	ppbv	Result	Limits	RPD	Limit		

**Batch B308166 - TO-15 Prep**
**LCS (B308166-BS1)**

Prepared &amp; Analyzed: 05/10/22

trans-1,3-Dichloropropene	4.15				5.00		82.9	70-130			
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	6.64				5.00		133 *	70-130			L-01, V-20
1,4-Dioxane	4.67				5.00		93.4	70-130			
Ethanol	4.78				5.00		95.7	70-130			
Ethyl Acetate	5.41				5.00		108	70-130			
Ethylbenzene	4.80				5.00		95.9	70-130			
4-Ethyltoluene	4.97				5.00		99.4	70-130			
Heptane	3.90				5.00		77.9	70-130			
Hexachlorobutadiene	4.85				5.00		96.9	70-130			
Hexane	5.17				5.00		103	70-130			
2-Hexanone (MBK)	3.70				5.00		73.9	70-130			
Methyl tert-Butyl Ether (MTBE)	5.36				5.00		107	70-130			
Methylene Chloride	4.84				5.00		96.7	70-130			
4-Methyl-2-pentanone (MIBK)	3.51				5.00		70.1	70-130			
Naphthalene	4.70				5.00		94.0	70-130			
Propene	4.82				5.00		96.3	70-130			
Styrene	4.79				5.00		95.9	70-130			
1,1,2,2-Tetrachloroethane	4.31				5.00		86.1	70-130			
Tetrachloroethylene	5.06				5.00		101	70-130			
Tetrahydrofuran	5.30				5.00		106	70-130			
Toluene	4.90				5.00		98.1	70-130			
1,2,4-Trichlorobenzene	5.19				5.00		104	70-130			
1,1,1-Trichloroethane	4.37				5.00		87.4	70-130			
1,1,2-Trichloroethane	4.76				5.00		95.2	70-130			
Trichloroethylene	4.42				5.00		88.3	70-130			
Trichlorofluoromethane (Freon 11)	5.96				5.00		119	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	6.31				5.00		126	70-130			
1,2,4-Trimethylbenzene	4.81				5.00		96.2	70-130			
1,3,5-Trimethylbenzene	4.86				5.00		97.1	70-130			
Vinyl Acetate	4.31				5.00		86.3	70-130			
Vinyl Chloride	6.11				5.00		122	70-130			
m&p-Xylene	9.78				10.0		97.8	70-130			
o-Xylene	4.82				5.00		96.3	70-130			
<i>Surrogate: 4-Bromofluorobenzene (1)</i>	8.35				8.00		104	70-130			

**FLAG/QUALIFIER SUMMARY**

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
L-01	Laboratory fortified blank/laboratory control sample recovery outside of control limits. Data validation is not affected since all results are "not detected" for all samples in this batch for this compound and bias is on the high side.
L-05	Laboratory fortified blank/laboratory control sample recovery is outside of control limits. Reported value for this compound is likely to be biased on the high side.
V-06	Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side for this compound.
V-20	Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

**INTERNAL STANDARD AREA AND RT SUMMARY**
**EPA TO-15**

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
<b>Initial Cal Check (S070426-ICV1)</b>			Lab File ID: G22A104022.D			Analyzed: 04/15/22 00:54			
Bromochloromethane (1)	1864849	8.485	1814308	8.485	103	60 - 140	0.0000	+/-0.50	
1,4-Difluorobenzene (1)	3396119	10.259	3274776	10.259	104	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5 (1)	3122096	14.63	3056122	14.63	102	60 - 140	0.0000	+/-0.50	

**INTERNAL STANDARD AREA AND RT SUMMARY**
**EPA TO-15**

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
<b>Calibration Check (S071394-CCV1)</b>			Lab File ID: G22A130005.D			Analyzed: 05/10/22 10:28			
Bromochloromethane (1)	1422784	8.485	1814308	8.485	78	60 - 140	0.0000	+/-0.50	
1,4-Difluorobenzene (1)	3368233	10.259	3274776	10.259	103	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5 (1)	3004022	14.63	3056122	14.63	98	60 - 140	0.0000	+/-0.50	
<b>LCS (B308166-BS1)</b>			Lab File ID: G22A130006.D			Analyzed: 05/10/22 11:07			
Bromochloromethane (1)	1409294	8.485	1422784	8.485	99	60 - 140	0.0000	+/-0.50	
1,4-Difluorobenzene (1)	3369625	10.259	3368233	10.259	100	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5 (1)	3001452	14.63	3004022	14.63	100	60 - 140	0.0000	+/-0.50	
<b>Blank (B308166-BLK1)</b>			Lab File ID: G22A130009.D			Analyzed: 05/10/22 13:16			
Bromochloromethane (1)	1363069	8.491	1422784	8.485	96	60 - 140	0.0060	+/-0.50	
1,4-Difluorobenzene (1)	3193155	10.259	3368233	10.259	95	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5 (1)	2892168	14.63	3004022	14.63	96	60 - 140	0.0000	+/-0.50	
<b>MW-01 (22E0444-01)</b>			Lab File ID: G22A130014.D			Analyzed: 05/10/22 16:36			
Bromochloromethane (1)	1368177	8.491	1422784	8.485	96	60 - 140	0.0060	+/-0.50	
1,4-Difluorobenzene (1)	3165735	10.259	3368233	10.259	94	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5 (1)	2775888	14.63	3004022	14.63	92	60 - 140	0.0000	+/-0.50	
<b>MW-02 (22E0444-02)</b>			Lab File ID: G22A130015.D			Analyzed: 05/10/22 17:16			
Bromochloromethane (1)	1354988	8.491	1422784	8.485	95	60 - 140	0.0060	+/-0.50	
1,4-Difluorobenzene (1)	3232575	10.259	3368233	10.259	96	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5 (1)	2884071	14.63	3004022	14.63	96	60 - 140	0.0000	+/-0.50	
<b>MW-03 (22E0444-03)</b>			Lab File ID: G22A130016.D			Analyzed: 05/10/22 17:56			
Bromochloromethane (1)	1355250	8.491	1422784	8.485	95	60 - 140	0.0060	+/-0.50	
1,4-Difluorobenzene (1)	3182938	10.259	3368233	10.259	94	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5 (1)	2842534	14.63	3004022	14.63	95	60 - 140	0.0000	+/-0.50	

## CONTINUING CALIBRATION CHECK

## EPA TO-15

## S071394-CCV1

COMPOUND	TYPE	CONC. (ppbv)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Acetone	A	5.00	5.22	0.9627142	1.004457		4.3	30
Benzene	A	5.00	4.45	0.9673924	0.8617922		-10.9	30
Benzyl chloride	A	5.00	4.98	1.020517	1.017341		-0.3	30
Bromodichloromethane	A	5.00	4.57	0.7088833	0.6479105		-8.6	30
Bromoform	A	5.00	6.27	0.4161769	0.5220707		25.4	30
Bromomethane	A	5.00	6.68	0.3787841	0.5056464		33.5	30 *
1,3-Butadiene	A	5.00	6.06	0.4187761	0.5076593		21.2	30
2-Butanone (MEK)	A	5.00	4.46	1.530296	1.364573		-10.8	30
Carbon Disulfide	A	5.00	5.69	1.573446	1.791004		13.8	30
Carbon Tetrachloride	A	5.00	4.99	0.5079007	0.5068723		-0.2	30
Chlorobenzene	A	5.00	5.01	0.8200497	0.82241		0.3	30
Chloroethane	A	5.00	6.14	0.2543488	0.3125118		22.9	30
Chloroform	A	5.00	5.68	1.27954	1.453759		13.6	30
Chloromethane	A	5.00	5.54	0.5506086	0.6105764		10.9	30
Cyclohexane	A	5.00	4.21	0.4116652	0.3464264		-15.8	30
Dibromochloromethane	A	5.00	5.36	0.5601445	0.6004164		7.2	30
1,2-Dibromoethane (EDB)	A	5.00	4.91	0.597506	0.5865603		-1.8	30
1,2-Dichlorobenzene	A	5.00	5.24	0.6077766	0.6376172		4.9	30
1,3-Dichlorobenzene	A	5.00	5.30	0.6641816	0.7042718		6.0	30
1,4-Dichlorobenzene	A	5.00	5.24	0.6520986	0.6834565		4.8	30
Dichlorodifluoromethane (Freon 12)	A	5.00	6.86	1.22902	1.68749		37.3	30 *
1,1-Dichloroethane	A	5.00	5.11	1.204909	1.23162		2.2	30
1,2-Dichloroethane	A	5.00	5.40	0.8878476	0.9593372		8.1	30
1,1-Dichloroethylene	A	5.00	5.40	1.020229	1.100873		7.9	30
cis-1,2-Dichloroethylene	A	5.00	5.08	0.9049676	0.9190072		1.6	30
trans-1,2-Dichloroethylene	A	5.00	5.09	0.925489	0.9421124		1.8	30
1,2-Dichloropropane	A	5.00	3.81	0.4332879	0.3299843		-23.8	30
cis-1,3-Dichloropropene	A	5.00	4.15	0.5982938	0.4960526		-17.1	30
trans-1,3-Dichloropropene	A	5.00	4.22	0.5325488	0.4495143		-15.6	30
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	A	5.00	6.90	1.144034	1.579253		38.0	30 *
1,4-Dioxane	A	5.00	4.67	0.186424	0.1742483		-6.5	30
Ethanol	A	5.00	5.41	0.1988086	0.2150331		8.2	30
Ethyl Acetate	A	5.00	5.21	0.1966074	0.2048502		4.2	30
Ethylbenzene	A	5.00	4.96	1.461224	1.449537		-0.8	30
4-Ethyltoluene	A	5.00	5.15	1.416927	1.458801		3.0	30
Heptane	A	5.00	3.88	0.3500786	0.2715394		-22.4	30
Hexachlorobutadiene	A	5.00	5.47	0.3611528	0.3953207		9.5	30
Hexane	A	5.00	5.08	0.8594496	0.8421146		1.7	30

## CONTINUING CALIBRATION CHECK

## EPA TO-15

## S071394-CCV1

COMPOUND	TYPE	CONC. (ppbv)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
2-Hexanone (MBK)	A	5.00	3.78	0.9888817	0.748256		-24.3	30
Methyl tert-Butyl Ether (MTBE)	A	5.00	5.37	1.586632	1.704157		7.4	30
Methylene Chloride	A	5.00	4.74	0.8371906	0.7936688		-5.2	30
4-Methyl-2-pentanone (MIBK)	A	5.00	3.60	0.9980745	0.7191232		-27.9	30
Naphthalene	A	5.00	5.06	1.038849	1.05072		1.1	30
Propene	A	5.00	4.95	0.5367406	0.5317147		-0.9	30
Styrene	A	5.00	5.00	0.8178933	0.8186193		0.09	30
1,1,2,2-Tetrachloroethane	A	5.00	4.52	0.9927304	0.898428		-9.5	30
Tetrachloroethylene	A	5.00	5.17	0.4134848	0.4274781		3.4	30
Tetrahydrofuran	A	5.00	5.34	0.2687059	0.2867314		6.7	30
Toluene	A	5.00	4.95	1.150729	1.138317		-1.1	30
1,2,4-Trichlorobenzene	A	5.00	5.66	0.4001094	0.4527269		13.2	30
1,1,1-Trichloroethane	A	5.00	4.57	0.6090453	0.556142		-8.7	30
1,1,2-Trichloroethane	A	5.00	4.75	0.4085413	0.3882784		-5.0	30
Trichloroethylene	A	5.00	4.45	0.4149349	0.3693146		-11.0	30
Trichlorofluoromethane (Freon 11)	A	5.00	6.00	1.067097	1.280745		20.0	30
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	A	5.00	6.29	1.019497	1.282387		25.8	30
1,2,4-Trimethylbenzene	A	5.00	5.08	1.162167	1.181098		1.6	30
1,3,5-Trimethylbenzene	A	5.00	5.05	1.19084	1.20372		1.1	30
Vinyl Acetate	A	5.00	4.48	1.948888	1.746946		-10.4	30
Vinyl Chloride	A	5.00	5.98	0.5517783	0.6603358		19.7	30
m&p-Xylene	A	10.0	10.0	1.138071	1.139958		0.2	30
o-Xylene	A	5.00	4.92	1.176972	1.158257		-1.6	30

# Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

\* Values outside of QC limits

**CONTINUING CALIBRATION CHECK**

**EPA 3C**

**S071398-CCV1**

COMPOUND	TYPE	CONC. (%)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Helium	A	0.500	0.529	1066966	1129882		5.9	30

# Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

\* Values outside of QC limits

**CONTINUING CALIBRATION CHECK**

**EPA 3C**

**S071398-CCV2**

COMPOUND	TYPE	CONC. (%)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Helium	A	0.500	0.521	1066966	1111836		4.2	30

# Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

\* Values outside of QC limits

**CERTIFICATIONS**
**Certified Analyses included in this Report**

Analyte	Certifications
<i>EPA TO-15 in Air</i>	
Acetone	AIHA,NY,ME,NH
Benzene	AIHA,FL,NJ,NY,ME,NH,VA
Benzyl chloride	AIHA,FL,NJ,NY,ME,NH,VA
Bromodichloromethane	AIHA,NJ,NY,ME,NH,VA
Bromoform	AIHA,NJ,NY,ME,NH,VA
Bromomethane	AIHA,FL,NJ,NY,ME,NH
1,3-Butadiene	AIHA,NJ,NY,ME,NH,VA
2-Butanone (MEK)	AIHA,FL,NJ,NY,ME,NH,VA
Carbon Disulfide	AIHA,NJ,NY,ME,NH,VA
Carbon Tetrachloride	AIHA,FL,NJ,NY,ME,NH,VA
Chlorobenzene	AIHA,FL,NJ,NY,ME,NH,VA
Chloroethane	AIHA,FL,NJ,NY,ME,NH,VA
Chloroform	AIHA,FL,NJ,NY,ME,NH,VA
Chloromethane	AIHA,FL,NJ,NY,ME,NH,VA
Cyclohexane	AIHA,NJ,NY,ME,NH,VA
Dibromochloromethane	AIHA,NY,ME,NH
1,2-Dibromoethane (EDB)	AIHA,NJ,NY,ME,NH
1,2-Dichlorobenzene	AIHA,FL,NJ,NY,ME,NH,VA
1,3-Dichlorobenzene	AIHA,NJ,NY,ME,NH
1,4-Dichlorobenzene	AIHA,FL,NJ,NY,ME,NH,VA
Dichlorodifluoromethane (Freon 12)	AIHA,NY,ME,NH
1,1-Dichloroethane	AIHA,FL,NJ,NY,ME,NH,VA
1,2-Dichloroethane	AIHA,FL,NJ,NY,ME,NH,VA
1,1-Dichloroethylene	AIHA,FL,NJ,NY,ME,NH,VA
cis-1,2-Dichloroethylene	AIHA,FL,NY,ME,NH,VA
trans-1,2-Dichloroethylene	AIHA,NJ,NY,ME,NH,VA
1,2-Dichloropropane	AIHA,FL,NJ,NY,ME,NH,VA
cis-1,3-Dichloropropene	AIHA,FL,NJ,NY,ME,NH,VA
trans-1,3-Dichloropropene	AIHA,NY,ME,NH
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	AIHA,NJ,NY,ME,NH,VA
1,4-Dioxane	AIHA,NJ,NY,ME,NH,VA
Ethanol	AIHA
Ethyl Acetate	AIHA
Ethylbenzene	AIHA,FL,NJ,NY,ME,NH,VA
4-Ethyltoluene	AIHA,NJ
Heptane	AIHA,NJ,NY,ME,NH,VA
Hexachlorobutadiene	AIHA,NJ,NY,ME,NH,VA
Hexane	AIHA,FL,NJ,NY,ME,NH,VA
2-Hexanone (MBK)	AIHA
Isopropanol	AIHA,NY,ME,NH
Methyl tert-Butyl Ether (MTBE)	AIHA,FL,NJ,NY,ME,NH,VA
Methylene Chloride	AIHA,FL,NJ,NY,ME,NH,VA
4-Methyl-2-pentanone (MIBK)	AIHA,FL,NJ,NY,ME,NH
Naphthalene	NY,ME,NH
Propene	AIHA
Styrene	AIHA,FL,NJ,NY,ME,NH,VA
1,1,2,2-Tetrachloroethane	AIHA,FL,NJ,NY,ME,NH,VA

**CERTIFICATIONS**
**Certified Analyses included in this Report**

Analyte	Certifications
<i>EPA TO-15 in Air</i>	
Tetrachloroethylene	AIHA,FL,NJ,NY,ME,NH,VA
Tetrahydrofuran	AIHA
Toluene	AIHA,FL,NJ,NY,ME,NH,VA
1,2,4-Trichlorobenzene	AIHA,NJ,NY,ME,NH,VA
1,1,1-Trichloroethane	AIHA,FL,NJ,NY,ME,NH,VA
1,1,2-Trichloroethane	AIHA,FL,NJ,NY,ME,NH,VA
Trichloroethylene	AIHA,FL,NJ,NY,ME,NH,VA
Trichlorofluoromethane (Freon 11)	AIHA,NY,ME,NH
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	AIHA,NJ,NY,ME,NH,VA
1,2,4-Trimethylbenzene	AIHA,NJ,NY,ME,NH
1,3,5-Trimethylbenzene	AIHA,NJ,NY,ME,NH
Vinyl Acetate	AIHA,FL,NJ,NY,ME,NH,VA
Vinyl Chloride	AIHA,FL,NJ,NY,ME,NH,VA
m&p-Xylene	AIHA,FL,NJ,NY,ME,NH,VA
o-Xylene	AIHA,FL,NJ,NY,ME,NH,VA

Con-Test, a Pace Environmental Laboratory, operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2024
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2023
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2023
RI	Rhode Island Department of Health	LAO00373	12/30/2022
NC	North Carolina Div. of Water Quality	652	12/31/2022
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2022
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022

22E0444



Address: 51 Knight Lane, Williston VT 05495

Phone: 802-862-1980

Project Location: 51 Johnsonbury Armyory

Project Number: 280EMC0860

Project Manager: Jeanne Streiten

Pace Quote Name/Number:

Invoice Recipient:

Sampled By: Mark Emerson

Due Date:  7-Day  10-Day

1-Day  3-Day  2-Day  4-Day

Format: PDF  EXCEL

Other:

CLP Like Data Pkg Required:

Email To:

Fax To #:

Lab Use	Pace Work Order #	Client Sample ID / Description	Collection Data		Duration	Flow Rate	Matrix	Volume
			Beginning Date/Time	Ending Date/Time				
1		MW-01	5/4/22 1350	5/4/22 1420	30	200 L/min	56	3
2		MW-02	5/4/22 1420	5/4/22 1450	32	↓	59	↓
3		MW-03	5/4/22 1450	5/4/22 1515	32	↓	86	↓

ANALYSIS REQUESTED: SP4 MW 3C MJD - Hg

Initial Pressure: 29.4 Final Pressure: 29.4

Summa Can ID: 2287 Flow Controller ID: 4246

Summa Can ID: 2393 Flow Controller ID: 4349

Summa Can ID: 2263 Flow Controller ID: 4233

Lab Receipt Pressure	" Hg
Initial Pressure	29.4
Final Pressure	29.4

Please use the following codes to indicate possible sample concentration within the Conc Code column above:  
H - High; M - Medium; L - Low; C - Clean; U - Unknown

Matrix Codes:  
SG = SOIL GAS  
IA = INDOOR AIR  
AMB = AMBIENT  
SS = SUB SLAB  
D = DUP  
BL = BLANK  
O = Other

Relinquished by: (signature) [Signature] Date/Time: 5/4/22 1515

Received by: (signature) [Signature] Date/Time: 5/4/22 1545

Relinquished by: (signature) [Signature] Date/Time: 5/4/22 1600

Received by: (signature) [Signature] Date/Time: 5/5/22 0900

Relinquished by: (signature) [Signature] Date/Time: 5/5/22 1515

Received by: (signature) [Signature] Date/Time: 5/5/22 1515

Special Requirements:

MA MCP Required

MCP Certification Form Required

CT RCP Required

RCP Certification Form Required

Other:

Project Entity:

Government  Federal  City

Municipality  21 J  Brownfield

MWRA  School  MBTA

WRTA

Chromatogram  ALHA-LAP, LLC

PCB ONLY  Soxhlet  Non Soxhlet

NEIAC and AIHA-LAP, LLC Accredited

Pace Analytical logo

Please fill out completely, sign, date and retain the yellow copy for your records

Summa canisters and flow controllers must be returned within 15 days of receipt or rental fees will apply

For summa canister and flow controller information, please refer to Con-Test's Air Media Agreement



**APPENDIX D**  
**STANDARD OPERATING PROCEDURES**

## **SOP 1.0 DRILLING EQUIPMENT STANDARDS**

### **1.1 EQUIPMENT DECONTAMINATION**

All drilling equipment and associated tools, including but not limited to, augers, flush-threaded casing, drill rods, sampling equipment, wrenches, etc., that may have come in contact with any material which could cause contamination shall be decontaminated using a high pressure detergent steam cleaning equipment, followed by, if needed a nanograde methanol swabbing. This will be followed by a distilled or controlled water rinse. The control water shall be obtained from a source approved by the supervising field representative.

### **1.2 EQUIPMENT AND MATERIALS**

All equipment will be in good repair and in proper working order with no visible signs of oil or hydraulic fluid leaks.

The drill rig shall be capable of providing a power driven sectional hollow stem auger and/or flush-threaded casing with a minimum inside diameter of 2 1/2 inches to a minimum depth of 60 feet. In addition, the following equipment shall be available:

- Drill Rods, minimum size equivalent to the "A" Rod, (1 5/8 inches O.D. and 1 1/8 I.D.);
- 1b. Drive Hammer and 300 lb. Drive Hammer;
- Split-spoon Samplers;
- Hollow Stem Auger Plug;
- Roller Bit and Diamond Corer Bit;
- Water Tank and Pump;
- Any other equipment needed to successfully complete job.

## SOP 4.0 GENERAL SAMPLING PROCEDURES FOR AQUEOUS AND SOLID MATRICES

- During field sampling activities, the following applicable procedures will be practiced for sample collection:
- Whenever possible, samples will be collected first from the location expected to be least contaminated. Samples that are expected to be most contaminated will be collected last.
- Accurate and detailed field notes will be maintained in a bound field notebook. Soil samples will be examined and logged in the field.
- Sampling procedures will be performed with the overall intent of collecting representative samples and minimizing sample disturbance.
- Soil samples will be selected for analysis based on the results of qualitative field screening for total volatile organic vapors, visual and olfactory observations, and the depth of the water table.
- Sample containers will be labeled with the site name, project number and date prior to being filled with a sample.
- All sample collection, handling, and shipping information will be recorded in a field notebook.
- Groundwater samples will be logged, using the attached *Groundwater Sampling Log*. Samples of other matrices (sediment, surface water, soil, etc.) will be logged, using the attached *Field Sampling Log*.
- All samples should be collected according the specific requirements of the intended analytical method. Tables 1 and 2 provide lists of sample containers, preservation and holding time requirements for aqueous and soil/sediment samples, respectively.
- All samples will be placed in a chilled, thermally-insulated container containing ice. Blue ice, ice packs, or ice substitutes are not able to reach and maintain the required temperature until receipt at a laboratory.
- All soil samples for volatile organic compound analysis must be collected, preserved, and handled accordingly to SW846 Method 5035. The procedures are outlined in attached memorandum from Spectrum Analytical.
- All samples to be analyzed by Massachusetts Department of Environmental Protection methodologies for Volatile Petroleum Hydrocarbons (VPH) and Extractable Petroleum Hydrocarbons (EPH) will be collected according the published MADEP procedures outlined in the attached memorandum from Spectrum Analytical, Inc.

## **SOP 5.0 SUBSURFACE SOIL SAMPLE COLLECTION PROCEDURES**

Subsurface soil samples will be collected during the performance of soil borings and soil probes in order to determine the nature and extent of contamination. Soil sampling protocols are based on standard methods found in the following documents: MADEP (1991), USEPA (1991), USEPA (1993) and ASTM Designation: D 1586-84.

### **5.1 MATERIALS**

The following materials will be available during subsurface soil sampling:

- health and safety equipment;
- disposable gloves;
- sample retrieval device (split-spoon sampler, macro-core sampler);
- map of the Site;
- field book;
- aluminum foil and zip-lock type bags;
- stainless steel sampling tool and bowl;
- polyethylene sheeting;
- knife;
- sample containers;
- photoionization detector;
- paper towels;
- chain-of-custody forms;
- cooler and ice;
- decontamination equipment and supplies (non-phosphate detergent, potable water, methanol and 10% nitric acid rinses, buckets, brushes, etc.).

## **SOP 5.10 SUBSURFACE SOIL SAMPLE COLLECTION USING HOLLOW-STEM AUGERING**

The following applicable procedures will be followed during collection of subsurface soil samples during hollow-stem augering.

- Representative subsurface soil samples will be collected by using a hollow-stem auger drilling technique and a 24-inch long, 1 3/8-inch inside diameter split-spoon sampler. A larger inside diameter split-spoon sampler may be used to improve the amount of recovery; an optional plastic liner may also be inserted into the inside of the larger diameter split-spoon samplers. Samples obtained from the split-spoon sampler are suitable for physical and chemical analysis.
- The split-spoon sampler will be made of carbon steel. Other equipment used during sampling such as mixing bowls and sampling tools will be made of stainless steel.
- Split-spoon samplers will be advanced according to the standard penetration test (as described in the ASTM Designation: D 1586-84) with the exception that the split-spoon will be advanced a full two feet, or until refusal. Refusal will be defined as driving the split-spoon sampler six inches or less with a blow count of 50. The sampler will be driven by a 140-pound hammer with a vertical free drop of 30 inches. The blow counts obtained by performing the standard penetration test will be used to characterize soil density or soil consistency. The number of blow counts will be recorded in a field book and transferred to a boring log (figure attached).
- Split-spoon samples will be collected at five-foot intervals. In some conditions a surface sample (0-2 feet) may need to be collected. Based on site-specific conditions, samples may be collected continuously or at changes in geologic strata.
- Upon retrieval of the split-spoon sampler, the following applicable procedures will be completed.
  - The split-spoon sampler will be loosened by the drillers and opened by the inspector. The inspector will scan for total volatile organic vapors using a Photoionization Detector (PID) or a Flame Ionization Detector (FID), if specified. The length of recovery will be measured. This information will be recorded in a bound field book or field boring log.
  - Soil will be described and logged in the field according to the modified Burmister system. The soil description will be given in the following format: soil name; sorting and plasticity; particle size distribution, shape, and angularity; color; moisture content; density or consistency. This information will be recorded in a bound field book and transferred to a boring log or directly in a field boring log.
  - Soil samples will be examined for the presence of any identifiable components of artificial fill, and odor, sheen, or other abnormalities indicative of the presence of contamination.
  - Samples for the analysis for volatile organic compounds (VOCs and VPH) will be collected as soon as possible directly from the split-spoon sampler using a decontaminated stainless steel sampling tool. No mixing of the soil sample will occur.
  - Representative samples shall be transferred by clean spoon to 15 ml of MeOH contained in 40ml amber VOAs with teflon septum. The level of MeOH prior to sample addition shall be marked. Soil shall be added to at least this line on the VOA. A duplicate VOA shall be collected and submitted for each sample as standard procedure. Additional soil from the

- sample location shall be submitted in a separate container (2-4 oz glass jar) without preservation solution for dry weight determination purposes for each set of MeOH preserved VOAs.
- Loose soil will be removed from the glass threads of the vial with a paper towel to ensure a good seal. The cap will be secured tightly. The sample containers will immediately be placed in a chilled, thermally insulated container. The container will include a trip blank consisting of methanol in a 40-ml vial.
  - **Alternative for VOC and VPH:** If the optional plastic liner is used a hole will be drilled through the side of the liner, allowing for the collection of a sub-sample using a stainless steel syringe. This sub-sample can be placed into a 40-ml VOA vial, filling the vial 1/2 full, and then covering the vial with foil prior to capping with the teflon-lined cap.
  - Duplicate samples for the field screening for total organic vapors will be collected from each split-spoon sampler by filling two 8-ounce glass soil jars half full with soil and covering the jar with a double layer of aluminum foil and securing the lid over the foil. The sample will be screened by using a PID or FID according to jar headspace analytical screening protocol (MA DEP #WSC-401-91). The jars will be labeled with the job designation, boring number, sample depth, blow count, and screening result.
- Discrete grab soil samples collected for laboratory analysis for semivolatile organic compounds, PCBs, pesticides, and inorganic compounds will be homogenized by mixing the soil in a stainless steel bowl or a polyethylene bag prior to filling the sample container. The cap will be secured tightly. No chemical preservation is necessary.
  - Composite soil samples collected for laboratory analysis for semivolatile organic compounds, PCBs, pesticides, and inorganic compounds will be composed of discrete grab samples placed in a stainless steel bowl or polyethylene bag for mixing. The soil will then be placed on a 1-meter square piece of polyethylene sheeting and rolled backward and forward by lifting and releasing corners of the sheet. The sample will be spread out on the sheet and divided into quarters. Soil will be collected from each quarter consecutively until the sample containers are full.
  - Sample containers will be checked to see that a Teflon liner is present in the cap prior to filling. ATC Standard Operating Procedure (SOP) # 4.00 should be referred to for types of containers necessary for different analyses.
  - All sample containers will be labeled with the following information: site; project number; boring number; sample interval or depth; sample matrix; date; time of collection; testing parameters; grab or composite sample; initials of sampling personnel.
- Sample containers will be capped immediately after filling and cooled to 4°C by placing them into a chilled, thermally insulated container for transport to the laboratory.
  - All equipment used to collect samples for analysis will be either decontaminated before each use or dedicated to a particular sample location after initial decontamination.
  - In case of gross contamination, soil will be drummed, labeled “Remediation Waste”, and disposed of according to applicable municipal, state, and federal regulations.

## SOP 5.20 SUBSURFACE SOIL SAMPLE COLLECTION USING AN EARTHPROBE™

The following applicable procedures will be performed during collection of soil samples using a 24-inch large bore sampler.

- Representative subsurface soil samples will be collected in 2-foot intervals by direct push using a clean, decontaminated 24-inch long, 2-inch outside diameter, nickel-plated large bore sampler containing a dedicated 24-inch long by 1.125-inch inside diameter PETG clear plastic liner. Samples obtained from the large bore sampler are suitable for physical and chemical analysis.
- Other equipment used during sampling such as mixing bowls and sampling tools will be made of stainless steel.
- The large bore sampler will be advanced from the surface to the depth of interest. The sampler remains completely sealed while it is pushed or driven to the desired sampling depth. A piston stop-pin at the trailing end of the sampler is removed by means of extension rods inserted through the probe rods after the sampler is driven to the depth at which sampling is to begin. This enables the piston to retract into the sample tube as it is displaced by soil while the sample is collected.
- Upon retrieval of the large bore sampler, the following applicable procedures will be followed.
  - The liner will be removed from the sampler and cut open with a pre-decontaminated knife. The soil will be scanned for total volatile organic vapors using a PID or FID and the length of recovery will be measured. This information will be recorded on a boring log. **Alternative:** A hole will be drilled through the side of the liner, allowing for the collection of a sub-sample using a stainless steel syringe.
  - Soil will be described and logged according to a modified Burmister system. The soil description will be given in the following format: soil name; sorting and plasticity; particle size distribution, shape, and angularity; color; moisture content; density or consistency. This information will be recorded in a field book and/or on a boring log.
  - Duplicate samples for field screening for total organic vapors will be collected by filling two 8-ounce glass soil jars half full with soil and covering the jar with a double layer of aluminum foil and securing the lid over the foil. One sample will be collected from the top portion of the recovered soil and one from the bottom portion. The sample will be screened by using a PID or FID according to the Jar Headspace Analytical Screening Procedure found in the Massachusetts Department of Environmental Protection (DEP) Interim Remediation Waste Management Policy for Petroleum Contaminated Soils #WSC-94-400. **Alternative:** If a sample is collected with a stainless steel syringe, this sub-sample can be placed into a 40-ml VOA vial, filling the vial 1/2 full, and then covering the vial with foil prior to capping with the teflon-lined cap.
- Samples for analysis for volatile organic compounds (VOCs and VPH) will be collected directly from the liner using a decontaminated stainless steel tool. No mixing of the soil sample will occur.
- Representative samples shall be transferred by clean spoon to 15 ml of MeOH contained in 40ml amber VOAs with teflon septum. The level of MeOH prior to sample addition shall be marked. Soil shall be added to at least this line on the VOA. A duplicate VOA shall be collected and submitted for each sample as standard procedure. Additional soil from the sample location shall

be submitted in a separate container (2-4 oz glass jar) without preservation solution for dry weight determination purposes for each set of MeOH preserved VOAs.

- Loose soil will be removed from the glass threads of the vial with a paper towel to ensure a good seal. The cap will be secured tightly. The sample containers will immediately be placed in a chilled, thermally insulated container. The container will include a trip blank consisting of methanol in a 40-ml vial.
- Grab samples of soils collected from the sampler for laboratory analysis for semivolatile organic compounds, PCBs, pesticides, and inorganics will be homogenized by mixing the soil in a stainless steel bowl or a polyethylene bag, or by the following method, if specified. The soil will be placed on a 1-meter square piece of polyethylene sheeting and rolled backward and forward by lifting and releasing the corners of the sheet. The sample will be spread out on the sheet and divided into quarters. Soil will be collected from each quarter consecutively until the sample containers are full. The container lid will be secured tightly. No chemical preservation is necessary.
- Sample containers will be checked to see that a Teflon liner is present in the cap prior to filling. ATC Standard Operating Procedure (SOP) # 4.00 should be referenced for selection of proper sample containers and preservation methods for each analytical method.
- All sample containers will be labeled with the following information: site; project number; earth probe number; sample interval or depth; sample matrix; date; time of collection; testing parameters; grab or composite sample; initials of sampling personnel.
- Sample containers will be capped immediately after filling and cooled to 4°C by placing them into a chilled, thermally insulated container for transport to the laboratory.
- All equipment used to collect samples for analysis will be either decontaminated before each use or dedicated to a particular sample location after initial decontamination according to the attached procedures.

## SOP 5.30 SUBSURFACE SOIL SAMPLE COLLECTION USING AN EARTHPROBE™

The following applicable procedures will be performed during collection of soil samples using a 48-inch macro-core sampler:

- Representative subsurface soil samples will be collected in 4-foot intervals by direct push using a clean, decontaminated 48-inch long, 2-inch outside diameter, nickel-plated macro-core sampler containing a dedicated 45-inch long by 1.5-inch inside diameter PETG clear plastic liner. Samples obtained from the macro-core sampler are suitable for physical and chemical analysis.
- Other equipment used during sampling such as mixing bowls and sampling tools will be made of stainless steel.
- The macro-core sampler will be advanced from the surface to a depth of 4 feet. In order to collect samples below four feet, the soil above the sampling interval must be removed. If the borehole remains open samples can be collected continuously to the desired depth.
- Careful visual inspection of the sample will be performed to identify different soil in the top of the sampler that may have been caused by soil sloughing into the open borehole. In this case the judgment of the sampler must be used before completing boring logs or collecting representative soil sample. If the borehole does not stay open or if the sloughing of soils is excessive, the integrity of the soil samples is jeopardized and the 24-inch large bore sampler should be used for sampling below the initial 0- to 4-foot interval.
- Upon retrieval of the macro-core sampler, the following applicable procedures will be followed:
  - The liner will be removed from the sampler and cut open with a pre-decontaminated knife. The soil will be scanned for total volatile organic vapors using a PID or FID and the length of recovery will be measured. This information will be recorded on a boring log. **Alternative:** A hole will be drilled through the side of the liner, allowing for the collection of a sub-sample using a stainless steel syringe.
  - Soil will be described and logged according to a modified Burmister system. The soil description will be given in the following format: soil name; sorting and plasticity; particle size distribution, shape, and angularity; color; moisture content; density or consistency. This information will be recorded in a field book and/or on a boring log.
  - Duplicate samples for field screening for total organic vapors will be collected by filling two 8-ounce glass soil jars half full with soil and covering the jar with a double layer of aluminum foil and securing the lid over the foil. One sample will be collected from the top portion of the recovered soil and one from the bottom portion. The sample will be screened by using a PID or FID according to the Jar Headspace Analytical Screening Procedure found in the Massachusetts Department of Environmental Protection (DEP) Interim Remediation Waste Management Policy for Petroleum Contaminated Soils #WSC-94-400. **Alternative:** If a sample is collected with a stainless steel syringe, this sub-sample can be placed into a 40-ml VOA vial, filling the vial 1/2 full, and then covering the vial with foil prior to capping with the teflon-lined cap.

- Samples for analysis for volatile organic compounds (VOCs and VPH) will be collected directly from the liner using a decontaminated stainless steel tool. No mixing of the soil sample will occur.
- Representative samples shall be transferred by clean spoon to 15 ml of MeOH contained in 40ml amber VOAs with teflon septum. The level of MeOH prior to sample addition shall be marked. Soil shall be added to at least this line on the VOA. A duplicate VOA shall be collected and submitted for each sample as standard procedure. Additional soil from the sample location shall be submitted in a separate container (2-4 oz glass jar) without preservation solution for dry weight determination purposes for each set of MeOH preserved VOAs.
- Loose soil will be removed from the glass threads of the vial with a paper towel to ensure a good seal. The cap will be secured tightly. The sample containers will immediately be placed in a chilled, thermally insulated container. The container will include a trip blank consisting of methanol in a 40-ml vial.
- Grab samples of soils collected from the sampler for laboratory analysis for semivolatile organic compounds, PCBs, pesticides, TPH, EPH, and inorganics will be composited by homogenized by mixing the soil in a stainless steel bowl or a polyethylene bag, or by the following method, if specified. The soil will be placed on a 1-meter square piece of polyethylene sheeting and rolled backward and forward by lifting and releasing the corners of the sheet. The sample will be spread out on the sheet and divided into quarters. Soil will be collected from each quarter consecutively until the sample containers are full. The container lid will be secured tightly. No chemical preservation is necessary.
- Sample containers will be checked to see that a Teflon liner is present in the cap prior to filling. ATC Standard Operating Procedure (SOP) # 4.00 should be referenced for selection of proper sample containers and preservation methods for each analytical method.
- All sample containers will be labeled with the following information: site; project number; earth probe number; sample interval or depth; sample matrix; date; time of collection; testing parameters; grab or composite sample; initials of sampling personnel.
- Sample containers will be capped immediately after filling and cooled to 4°C by placing them into a chilled, thermally insulated container for transport to the laboratory.
- All equipment used to collect samples for analysis will be either decontaminated before each use or dedicated to a particular sample location after initial decontamination according to the attached procedures.

## **SOP 10.00 DECONTAMINATION**

Decontamination will be performed in order to: minimize the spread of contaminants on the Site and from one sampling location to another; reduce the potential exposure of field personnel to contaminants; and to ensure good data quality and reliability. Decontamination of all field analytical testing and sampling equipment will be performed according to the following procedures. These procedures are based on ASTM Designation D 5088-90, USEPA CERCLA QAPP Review Guidance, 1987.

Equipment cleaning procedures include pre-field, field, and post-field decontamination. Non-disposable equipment will be decontaminated after completing each sampling event. In cases of gross contamination (free phase product), rinse water will be contained for proper disposal according to municipal, state, and federal regulations. Decontamination procedures will be monitored through sampling and analysis when quality assurance/quality control checks are necessary.

Equipment will be dedicated to each sampling point and decontamination will be performed at the off-site facility as much as possible.

Decontaminated equipment will be rested on polyethylene sheeting at each sampling point.

Samplers will use new disposable gloves at each sampling point.

Potable water from the public water supply will be used for control rinse water.

A certified laboratory supply of deionized water will be used for decontamination of field testing and sampling equipment and for the collection of rinsate blanks. Deionized water will be stored in Nalgene, glass, or Teflon containers. The storage area containing the deionized water will be separated from the storage area for solvents.

Equipment rinsate blanks will be collected when a quality control check of the decontamination procedure is necessary. This check will not be performed if dedicated equipment is used. One blank will be collected at least once during a sampling event for each different piece of sampling equipment used. Rinsate blanks will be prepared by pouring deionized water over the decontaminated piece of equipment and collecting it in the sample container. The equipment rinsate blank will be analyzed for the same analytes as the samples that have been collected with that piece of equipment.

### **10.1 MATERIALS**

- health and safety equipment;
- laboratory-supplied deionized water;
- phosphate-free detergent (Alconox, Liquinox);
- potable water (municipal water source);
- methanol;
- Hexane;
- Acetone;
- nitric acid rinse solution;
- wash basins;
- inert brushes;
- polyethylene sheeting;
- large heavy duty garbage bags;
- spray bottles;

- zip-lock bags;
- paper towels/Handiwipes;
- disposable gloves.

## 10.2 DECONTAMINATION PROCEDURES

- Stainless steel bailers will be disassembled, soaked in hot potable water and scrubbed with a brush in "Alconox" detergent and potable water, and rinsed with clean potable water at the company's facility. Bailers will be allowed to air dry in a vertical position in a contaminant-free environment.
- Prior to the sampling event, bailers used for the collection of samples which will undergo analysis for total petroleum hydrocarbons and volatile organic compounds will be rinsed with hot potable water followed by a 10% methanol solution of pesticide grade methanol and deionized water, followed by a final rinse with deionized water. The volume of deionized water will be at least five times the volume of the methanol. Bailers used for the collection of samples which will undergo analysis for semi-volatile organic compounds, PCBs, and pesticides will be rinsed with a technical grade acetone followed by a pesticide grade hexane, and a final deionized water rinse as above. Bailers used for the collection of groundwater samples which will undergo analysis for metals will be rinsed with 10 per cent nitric acid solution prepared from reagent grade nitric acid and deionized water followed by a potable water rinse, and a final deionized water rinse.
- Bailers will be wrapped in an inert material (i.e. plastic bags) and stored in a clean environment during transport to the Site.
- Following sample collection, the stainless-steel bailers will be rinsed with clean potable water and placed in a plastic bag for transport to the company's facility where decontamination will take place.
- Soil and sediment sampling equipment (stainless steel sampling scoop, tool, and bowl, split-spoon and macro-core sampler, knife) will be decontaminated in the field after each use.
- Soil and sediment sampling equipment will be decontaminated as follows: scrubbed with inert brushes in a bucket containing phosphate-free detergent and potable water; rinsed with potable water; rinsed with pesticide grade methanol; and finally rinsed with deionized water. The final potable water and deionized water rinse volumes will equal 5 times the volume of the methanol rinse. The equipment will be allowed to air dry and will be stored in a clean environment until reused.
- Non-dedicated field equipment used for the collection of samples to be analyzed for metals and filtering apparatus will be cleaned prior to each use by using a phosphate-free detergent solution, a potable water rinse, followed by a 10 percent nitric acid rinse solution prepared from reagent grade nitric acid and deionized water, a potable water rinse, and a final rinse with deionized water. Used filters will be properly disposed of.
- The YSI Water Quality Monitoring System™, Geotech Multi Parameter™ meter, interface probe, down-hole slug test equipment, QED Water Wizard well development equipment, and other measuring instruments will be decontaminated between uses by rinsing with Alconox or Liquinox, followed by potable water and deionized water rinses. A methanol rinse will be utilized prior to the deionized water rinse in the event of gross contamination such as contact with free-phase product.
- The drill rig and earthprobe and all drilling equipment and associated tools, including but not limited to augers, drill casing, drill rods, sampling equipment, and wrenches, will be steam cleaned prior to

beginning the drilling on the Site. This cleaning will consist of using a high pressure detergent steam cleaning equipment, followed by a nanograde methanol swabbing if gross contamination was present. This will be followed by a controlled water rinse. Any down-hole equipment (auger flights, rods, sampling equipment, etc.) coming in contact with gross contamination (i.e. free phase product) will be steam-cleaned between uses. Otherwise equipment will be scrubbed manually with potable water and Alconox as needed to remove soil between uses.

- Sampling equipment and probes will be decontaminated in an area covered by polyethylene sheeting adjacent to the sampling location.
- In cases of gross contamination (i.e. free phase product) rinse water will be collected for proper disposal according to municipal, state or federal regulations. Contaminated solids (disposable gloves, clothing, polyethylene tubing and sheeting, etc.) will be collected and characterized for proper disposal.
- Decontamination procedures will be fully documented in the field notebook. The following information should be recorded: Site location, date, time and weather; sample location where equipment used; location where decontamination was performed; field personnel performing the decontamination; decontamination procedures; disposal of rinse water if necessary; samples collected for QA/QC and analytical results.
- Health and safety procedures associated with decontamination are found in the Health and Safety Plan.

## SOP 11.00 SAMPLE CUSTODY PROCEDURES

- Sample custody procedures will be followed in order to create an accurate written record. This record can be used to trace the possession and handling of all samples from collection, through all transfers of custody until the samples are delivered to the analytical laboratory. Custody for samples will be maintained by field personnel collecting the samples until they are properly transferred. The following procedures are based on ASTM Designation D 4840-88, standard methods found in DEP (1991), and USPEA (1987) guidance documents.
- A self-adhesive waterproof sample label will be affixed to each sample container before or immediately thereafter sample collection. A waterproof pen will be used to record information on the label. The label should include a unique identifier and may include the following information:

Project Number  
Sample ID Number  
Sample Location  
Sample Matrix  
Date and Time of Sample Collection  
Designation as Grab or Composite Sample  
Parameters to be Tested  
Preservative  
Initials of Sampler

- All sample containers will be supplied by a state-certified laboratory. Commercially purchased sample containers will be pre-cleaned and quality controlled according to EPA recommended washing procedures and specifications (Level I and/or Level A according to the vendor's specifications).
- Chemical preservatives will be added to the sample containers by the state-certified laboratory providing the containers. Tables 1 and 2 indicate the type of preservation which will be used.
- Chain-of-custody records will be filled out by the sampler using information from the sample labels and field notes made at time of sample collection. The chain-of-custody will include the dates and times of collection and receipt. The chain-of-custody will document any tampering that may have occurred; if there are no such comments then no tampering was observed. An example of the chain of custody (provided by Spectrum Analytical, Inc. of Agawam, Massachusetts) is included.
- One chain-of-custody record will be used for each packaged lot of samples. Where the chain-of-custody consists of more than one page, each page will be sequentially numbered and show the total number of pages. More than one chain-of-custody may be used for one packaged lot.
- Samples will be stored in a thermally insulated container with ice until released to the laboratory, a courier, or transferred to a dedicated and secured sample storage refrigerator. Each cooler will contain sufficient ice to insure that a 4°C temperature is maintained, and will be packed in a manner to prevent damage to the sample containers. The field chain-of-custody records, completed at the time of sample collection, will be placed inside the cooler for transport to the laboratory. These forms will be sealed in a zip-lock type plastic bag to protect them against moisture.
- The chain-of-custody form will be signed by the relinquishing party and the receiving party. The reason for transfer (i.e. courier, shipment of sample) will be indicated each time the sample custody

changes.

- The method of shipment to the laboratory will be noted on the chain-of-custody (i.e. hand delivered to laboratory, laboratory courier, commercial shipping). When a commercial shipper is used for sample transport, the chain-of-custody will be signed as relinquished to the shipper, sealed in a zip-lock type bag to protect it from moisture, and placed inside the cooler. The shippers package handling number will be noted on the chain-of-custody, if available. The cooler will then be sealed and a custody seal attached. A copy of the shipping papers will be maintained with the copy of the chain-of-custody.
- Upon receipt by the laboratory, internal laboratory records will document sample custody until its final disposition.

## **SOP 21: INSTALLATION OF SUBSURFACE VAPOR IMPLANTS TO EVALUATE SOIL VAPORS**

This SOP documents the installation and sampling of soil vapor points utilizing vapor implants for use during site characterization and/or vapor intrusion assessments. The data derived from this procedure will assist in evaluating the presence of source mass and/or determining if the vapor intrusion pathway is completed in situations where subsurface contamination is beneath or in close proximity to a building. These procedures should be utilized in conjunction with additional methodologies as required by State guidelines (VT ANR Vapor Intrusion Guidance, March 24, 2020) as multiple lines of evidence in addition to this procedure are required to conduct a comprehensive site characterization and vapor intrusion assessment.

### **1.0 Materials and Equipment**

The following materials and equipment will be available during installation of soil vapor points utilizing vapor implants:

- Health and safety equipment;
- Field book;
- Hand auger, pig tail auger, soil probe, or direct push technology (DPT) rig
- Plastic sheeting (for spoils)
- 2 Buckets (for spoils and decon)
- Decon brush
- Glass beads
- Driller's sand
- Bentonite (granular)
- Cement
- Mixing bin
- Water
- Alconox
- 1/4" Stainless steel implants w/tips
- 1/4" Teflon, Teflon-lined, or Nylaflo tubing
- 1/4" tubing caps
- Core drill (if subslab)
- Roadbox or floor cover

### **2.0 Installation of Soil Vapor Points Utilizing Vapor Implants**

Prior to installing any subsurface devices, request the property owner to mark all underground utilities, including any utilities buried beneath the slab (underslab utilities) if subslab points will be installed and comply with any requirements under ATC's Subsurface Work Policy #33.. Review any available design or construction plans and perform an inspection on your own of all electrical, fuel, communications, and other utility conduits and sweeps. Comply with DigSafe requirements and hire a private utility location contractor or geophysical firm to verify the owner's markings and any unknown utilities not covered by

## DigSafe.

- If installing a subslab point, use a core drill to drill through the slab, appropriately sized for the roadbox or floor cover. Clean out the concrete dust with a shop vac. Minimize tracking on floor by using plastic sheeting around the hole.
- Use a small-diameter hand auger, pig tail auger, soil probe or DPT rig to remove soil core to appropriate depth. Utilize the smallest diameter tool possible.
- Log and field-screen soils in accordance with your work plan.
- Decontaminate probe tools between points with alconox and water.
- Attach 1/4-inch Teflon, Teflon-lined Nylaflow tubing to vapor implant and install in bottom of soil core with tubing extending above the surface and capped.
- Pour glass beads into annulus space up to at least one inch above the top of the implant and add one inch of driller's sand.
- Pour granular bentonite into annulus space up to the bottom of the slab or within 4-6" of the ground surface; hydrate the bentonite by pouring water into the hole every 4-6".
- Cut and re-cap tubing as appropriate and install roadbox or floor cover.

### **3.0 Leak Testing**

Perform lead testing in accordance with SOP #27 under separate cover.

### **4.0 Field-Screening and Differential Pressure Testing**

Perform field-screening and differential pressure testing in accordance with SOP #27 under separate cover.

### **5.0 Vapor Point Sampling**

Perform vapor point sampling for offsite laboratory analyses in accordance with SOP #24 under separate cover.

#### REFERENCES:

VTDEC Vapor Intrusion Guidance, March 24, 2020