Phase II Environmental Site Assessment Report: Turning Point Center of Central Vermont, 18 South Main Street, Barre, Vermont

March 10, 2023

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Title and Approval Page

Document Title

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Executive Summary

This Phase II Environmental Site Assessment (ESA) Report has been prepared by Stone Environmental, Inc. (Stone) on behalf of Turning Point Center of Central Vermont (TPC) and commissioned by Central Vermont Regional Planning Commission (CVRPC) to document recent environmental assessment work performed at the property located at 18 South Main Street, Barre, Vermont (the Site). TPC is the prospective purchaser of the Site, and the redevelopment plan includes a complete renovation of the existing building, a building addition, installation of a retaining wall and improvements to the exterior grounds and existing parking lot to create a model recovery center near the downtown center of the City of Barre. TPC enrolled in the Brownfields Revitalization and Environmental Liability Limitation Act (BRELLA) program with the Vermont Department of Environmental Conservation (VT DEC) on October 7, 2021. This Phase II ESA commissioned by CVRPC is made possible in part by a grant from the State of Vermont through the Agency of Commerce and Community Development, Department of Economic Development. This Phase II ESA Report was revised to incorporate comments received from the VT DEC on March 10, 2023.

The Phase II ESA was completed to determine whether recognized environmental conditions (RECs) identified during a Phase I ESA (Stone, 2021) constitute actual releases of petroleum and/or hazardous substances to the environment. RECs identified in the Phase I ESA include:

- REC #1: The adjoining property to the south is a hazardous waste site known as the Cumberland Farms (SMS # 98-2415) and previously operated as an automotive service garage.

The Site is comprised of one, 0.30-acre parcel bound to the north by an apartment building, known as the Tilden House and owned by the Barre Hosing Authority, and to the south by a commercial plaza, owned by Barre Pharmacy, LLC. The commercial plaza includes a vacant space, formerly occupied by a pharmacy. The commercial plaza is currently occupied by a restaurant, known as Basil's Pizzeria and Restaurant, and was historically used as a Cumberland Farms gasoline station and as an automotive service garage. Main Street adjoins the Site to the west and Spaulding Street adjoins the Site to the east. Properties located to the west across Main Street include a Shell gasoline station and a religious institution, the Evangelical Free Church. Properties to the east across Spaulding Street include the McFarland building owned by the State of Vermont-Building and General Services.

The Site is improved with a mixed-use commercial and residential building that is currently vacant. The Site was historically used as a residential dwelling, office space, a physician office, a hair salon and tanning studio, and the Site was most recently used as a thrift store on the first floor and a residential apartment on the second floor. The Site is accessed with an asphalt paved driveway from Main Street located south of the building. A parking lot is present in the rear of the building on the eastern portion of the parcel. The balance of the Site comprises greenspace to the north and west of the building. There is a small, wooded area on the eastern portion of the Site with a steep slope rising to Spaulding Street.

Phase II ESA field work was completed between October 17 and November 11, 2022, and included assessments of contaminants in soil, groundwater, soil gas, and indoor air. Additionally, a geotechnical evaluation was completed during the Phase II ESA field work. Soil samples were analyzed for volatile organic

compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), and priority pollutant metals (PP metals). Groundwater and soil gas samples were analyzed for VOCs and indoor air samples were analyzed for polychlorinated biphenyl (PCBs).

Soil results indicate there has been a release of PAHs and metals, including lead and mercury, to surface and subsurface soils at the Site. The release(s) is likely due to the placement of historical fill materials at the Site and/or the historical use of coal as a heat source for the building. Residual petroleum impacts migrating from the adjacent property formerly used as a Cumberland Farms gasoline station is evident based on soil gas and groundwater results. Naphthalene was detected in soil gas along the Site boundary above applicable standards and methyl tert-butyl ether (MTBE) was detected in groundwater, albeit at a low level.

Based on the findings of the Phase II ESA, Stone makes the following conclusions:

1. Fill soils containing PAHs, lead, and mercury exceeding resident and non-resident Vermont Soil Standards (VSS) are present within surface and subsurface soils at the Site.
    i. Under current site conditions, there is low risk to Site users since most of the Site soil is below asphalt pavement.
    ii. Contaminated soils will be encountered during the Site redevelopment based on the proposed depth of excavation.
2. Residual petroleum impacts migrating from the adjacent property to the south have been identified at the Site. Naphthalene is present at a concentration above the resident Vapor Intrusion Standard (VIS) in soil gas along the southern Site boundary. Additionally, MTBE was detected in groundwater along the southern property boundary but at a concentration well below the Vermont Groundwater Enforcement Standard (VGES). No other VOCs were detected in groundwater above the laboratory reporting limit. The extent of soil gas exceeding the VIS has been defined and is limited to the boundary shared with 20 South Main Street. The adjoining property was historically used as a filling station and automotive service garage. The absence of naphthalene in soil and groundwater at the Site suggests that naphthalene in soil gas is residual from a historic release on the adjoining property.
    i. The Site building does not appear to be at risk of vapor intrusion based on the absence of naphthalene exceeding the VIS for sub-slab soil gas.
3. PCBs were not detected in indoor air and are not a contaminant of concern within the Site building.
4. Chloroform is present in soil gas at the property above the resident VIS. Chloroform is a common byproduct from the disinfection of drinking water treated with chlorine. A leak in the municipal water system is a likely source for the elevated chloroform in soil gas on the southwestern portion of the Site.

Based on these conclusions, Stone makes the following recommendations:

1. Stone recommends the development of a Corrective Action Plan (CAP) to mitigate direct contact exposure risks to surficial soils, inhalation risks posed by soil gas, and to manage soils during redevelopment activities. Proposed corrective actions could include the installation of engineered barriers and the implementation of institutional controls. Soil management will be required during Site redevelopment. The Site meets the exemption criteria for an Evaluation of Corrective Action Alternatives (ECAA), as outlined in § 35-604 of the IRule.

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Cover Photo:
Façade of Site Building, Photo taken by Stone Environmental, Inc. June 28, 2021.

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1. Introduction

This Phase II Environmental Site Assessment (ESA) Report has been prepared by Stone Environmental, Inc. (Stone) on behalf of Turning Point Center of Central Vermont (TPC) and commissioned by Central Vermont Regional Planning Commission (CVPRC) to document recent environmental assessment work performed at the property located at 18 South Main Street, Barre, Vermont (the Site; Figure 1 in Appendix A). The work detailed herein was performed in accordance with the Work Plan titled *Phase II ESA Work Plan, 18 South Main Street, Barre, Vermont,* and dated September 26, 2022. This Phase II ESA commissioned by CVRPC is made possible in part by a grant from the State of Vermont through the Agency of Commerce and Community Development, Department of Economic Development.

The Phase II ESA was completed to determine whether recognized environmental conditions (RECs) identified during a Phase I ESA (Stone, 2021) constitute actual releases of petroleum and/or hazardous substances to the environment. RECs identified in the Phase I ESA include:

- REC #1: The adjoining property to the south is a hazardous waste site known as the Cumberland Farms (SMS # 98-2415) and previously operated as an automotive service garage.

1.1. Site Description

The Site is located at 44.195617° north latitude and -72.500623° west longitude at an elevation of approximately 616 feet above sea level in the City of Barre, Washington County, Vermont. The Site is comprised of one, 0.30-acre parcel located at 18 South Main Street. The Site is zoned in the commercial district in the City of Barre, Vermont (Figure 2, Appendix A). The Site is improved with a mixed-use commercial and residential building that is currently vacant. The Site building is one and a half stories and approximately 2,745-square feet with a small attic space and a basement. The building was constructed in 1889 with wood construction and has a poured basement slab with stone foundation. The eastern portion of the building is an addition constructed in 1900 with slab on grade construction. The building is served by municipal water and sewer.

The Site is accessed with an asphalt paved driveway from Main Street located south of the building. A parking lot is present in the rear of the building on the eastern portion of the parcel. The balance of the Site comprises greenspace to the north and west of the building. There is a small, wooded area on the eastern portion of the Site with a steep slope rising to Spaulding Street.

Adjoining properties include an apartment building to the north, known as the Tilden House and owned by the Barre Hosing Authority, and a commercial plaza to the south, owned by Barre Pharmacy, LLC. The commercial plaza includes a vacant space, formerly occupied by a pharmacy. The commercial plaza is currently occupied by a restaurant, known as Basil's Pizzeria and Restaurant. Main Street adjoins the Site to the west and Spaulding Street adjoins the Site to the east. Properties located to the west across Main Street include a Shell gasoline station and a religious institution, the Evangelical Free Church. Properties to the east across Spaulding Street include the McFarland building owned by the State of Vermont- Building and

General Services. The surrounding area consists of mixed-use commercial/residential properties with the City of Barre downtown area located to the north.

The current Site owner is David Lawrence with the following contact information:

David Lawrence
PO Box 52
East Barre, Vermont, 05649

1.2. Site Redevelopment Plan

The Site redevelopment plan includes renovating the existing structure, demolishing the rear addition, and constructing an approximately 4,650 square foot addition with a full basement. A new walkway and entrance will be installed on the northern side of the building. The access drive will be improved, and the parking lot will be reconfigured to include additional spaces. A retaining wall is planned on the east side of the Site for slope stabilization and to facilitate the reconfiguration of the parking lot. Landscaping will occur on the side and front yards to allow for a picnic area and garden.

1.3. Historical Site and Adjoining Properties Land Use

The Site was first developed in 1889 with a residential dwelling. An addition was constructed in 1900. The Site was used as office space and a physician office starting in approximately 1933 until approximately 1984. The Site continued use as an office space and was used by the Center on Aging until approximately 1998. The Site was purchased by a hair salon and tanning studio in 1997 and was renovated following the use as an office space. The hair salon and tanning studio operated until approximately 2012. The Site was most recently used as a thrift store on the first floor and a residential apartment on the second floor.

The surrounding area was developed prior to 1884. The adjoining property to the south at 20 South Main Street was initially used as a residential dwelling and then as a filling station starting in approximately 1961. The filling station was located directly on the southern parcel boundary of the Site. In approximately 1984, the building was razed, and the Cumberland Farms gas station was constructed. The gas station operated until 1999 when the underground storage tanks (USTs) were removed.

The Barre Shell gasoline station located at 15 South Main Street, across Main Street from the Site was initially used as a residential dwelling and then an automotive service garage and gasoline station starting in 1961 and currently is operating as a gasoline station.

1.4. Previous Environmental Investigations

1.4.1. Phase I Environmental Site Assessment, Dubois & King, 2012

Dubois & King (D&K) conducted a Phase I ESA on behalf of Barre Housing Authority in September 2012. D&K did not identify any RECs during the Phase I ESA.

1.4.2. Phase I ESA – 2021

Stone conducted a Phase I ESA of the Site on behalf of TPC in July 2021. RECs identified during the Phase I ESA, included:

- REC #1: The adjoining property to the south is a hazardous waste site known as the Cumberland Farms (SMS # 98-2415) and previously operated as an automotive service garage.

2. Methods

Phase II ESA field work was performed by Stone between October 17 and November 11, 2022. Field notes and soil boring logs are provided as Appendix B. A geotechnical evaluation was completed during the Phase II ESA field work and the Geotechnical Report is attached as Appendix E.

2.1. Work Plan Deviations

The following work plan deviations occurred:

1) Soil borings at locations B-1, B-5, and B-7 were terminated before reaching their target depth of 25 feet below ground surface (bgs) due to difficult drilling conditions including large cobbles and boulders encountered in the subsurface. The drilling company, Seaboard Geotechnical & Environmental Drilling Services of Chicopee, Massachusetts (Seaboard), changed tooling from hollow stem auger to drive and wash to complete boring B-10. Monitoring well MW-1 was installed at location B-1 rather than B-7 due to early refusal.
2) The sampling duration of the ambient air sample for polychlorinated biphenyl (PCBs) analysis is unknown. The SKC pump's battery died before reaching 24 hours and it is assumed the sample duration was approximately 22 hours. The data is still considered usable because PCBs were not detected in the indoor air samples.

2.2. Utility Location

Prior to intrusive investigation activities, Stone pre-marked investigation locations for Dig Safe Utility Clearance on October 11, 2022. Stone also coordinated with the Barre public works department to locate public utilities on the Site.

2.3. Soil Assessment

On October 28, October 31, and November 1, 2022, soil borings B-1, B-2, and B-4 through B-10 were advanced by Seaboard Geotechnical & Environmental Drilling Services of Chicopee, Massachusetts (Seaboard) using hollow stem auger drill rig. Drive and wash drilling techniques were used at boring location B-10 due to difficult drilling conditions. Soil boring location B-3 was not advanced during Stone's oversight; B-3 was a geotechnical boring located off-Site within Spaulding Street and was not a target of the Phase II ESA work. Soil samples were collected every 5-feet using a split-spoon soil sampler advanced in 2-foot intervals ahead of each auger segment. Upon retrieval, recovered soils were logged for color, grain size, moisture content, and visual and olfactory evidence of contamination. Stone field-screened soil from each 2-foot vertical interval for volatile organic compounds (VOCs) using a photo-ionization detector (PID) equipped with a 10.6 eV lamp. The PID was calibrated prior to the start of field activities using a 100-parts per million by volume (ppm/v) isobutylene span gas in accordance with Stone's Standard Operating Procedures (SOPs).

Soil boring depths ranged from 9 to 25 feet bgs. Two discrete soil samples were collected from six soil borings (B-1, B-4, B-5, B-7, B-9 and B-10; Figures 4 and 5). The discrete soil samples were collected no deeper than

the planned depth of excavation (approximately 10 feet bgs or deeper for building footing locations). Discrete samples were collected within presumed historical fill soils, since no visual indications of contamination were noted. Surface soil samples were collected from 0 to 1.5 feet bgs.

Additionally, soil samples were collected for VOC analysis from the interface of the vadose zone and the water table in B-1, B-4 and B-10 and at 10 feet bgs in B-9.

Table 1 below provides a summary of soil borings, soil samples collected, and the associated analytical parameters.

Table 1: Summary of Soil Borings and Samples

Location ID	Boring Depth (feet bgs)	Soil Sample ID	Sample Depth (feet bgs)	Analytes
B-1	21	B-1 (0-1.5)	0-1.5	PP metals, PAHs
		B-1 (4-6)	4-6	PP metals, PAHs
		B-1 (20)	20	VOCs
B-2	22	No sample – geotechnical boring		
B-4	25	B-4 (0-1.5)	0-1.5	PP metals, PAHs
		B-4 (4-6)	4-6	PP metals, PAHs
		B-4 (21.5) / FD-1	21.5	VOCs
B-5	16.5	B-5 (0-1.5)	0-1.5	PP metals, PAHs
		B-(4-6) / FD-2	4-6	PP metals, PAHs
B-6	18	No sample – geotechnical boring		
B-7	9	B-7 (0-1.5)	0-1.5	PP metals, PAHs
		B-7 (6-8)	6-8	PP metals, PAHs
B-8	10	No sample – geotechnical boring		
B-9	10	B-9 (0-1.5)	0-1.5	PP metals, PAHs
		B-9 (4-6)	4-6	PP metals, PAHs
		B-9 (10)	10	VOCs
B-10	25	B-10 (0-1.5)	0-1.5	PP metals, PAHs
		B-10 (6-8)	6-8	PP metals, PAHs
		B-10 (21.5)	21.5	VOCs

Notes: 1 – PAHs – polycyclic aromatic hydrocarbons; VOCs – volatile organic compounds; PP Metals – priority pollutant metals

Soil samples were placed in ice-filled coolers and transported under chain of custody procedures to Con-Test/Pace Analytical Laboratory in East Longmeadow Massachusetts (Con-Test) for analyses indicated in Table 1. Analytical methods include:

- VOCs by EPA Method 8260
- Priority Pollutant (PP) Metals by EPA Method 6010 and 7471 (mercury)
- Polycyclic aromatic hydrocarbons (PAHs) by EPA Method 8270 – Selective Ion Monitoring (SIM)

Quality Assurance/Quality control (QA/QC) samples included one field duplicate collected for each analytical parameter and media and one trip blank for VOC analysis. Field duplicates were collected from B-5 (4-6) for PP Metals and PAHs and from B-4 (21.5) for VOCs.

2.4. Groundwater Assessment

Three groundwater monitoring wells (MW-1, -2, -3) were installed during the drilling efforts described in Section 2.3. Soil borings B-1, B-4 and B-10 were targeted for well completion. Well locations are depicted on Figure 3. Monitoring wells were constructed with 1.5-inch diameter poly-vinyl chloride (PVC) well screen (0.010-inch slot) installed to intersect the groundwater table and riser pipe to extend to ground surface. Sand packs and bentonite plugs were constructed to ensure a hydraulic connection to the surrounding aquifer and prevent infiltration of stormwater, respectively. Wells were finished at the ground surface within flush-mount road boxes set in concrete. Following installation, wells were developed by iteratively purging with a peristaltic pump until visibly clear of sediment.

To evaluate whether the release on the adjacent property has impacted groundwater beneath the Site, three groundwater quality samples were collected from the monitoring wells on November 11, 2022. Prior to sample collection, the wells were gauged to determine the direction and magnitude of groundwater flow.

Groundwater samples were collected using low-flow sampling techniques. Wells were purged and sampled using a peristaltic pump and dedicated ¼-inch inside diameter fluorinated ethylene propylene (FEP) tubing. Physical/chemical field parameters (pH, specific conductance, dissolved oxygen [DO], temperature, and oxidation-reduction potential [ORP]) were measured using a YSI multi-parameter meter and flow-through cell system. Turbidity was monitored using a standalone turbidity meter. Monitoring wells were purged until the following parameters were stabilized for three consecutive readings:

- pH ± 0.1 unit,
- Specific Conductance ±3%,
- ORP ± 10 mV,
- DO ± 10%, or 3 consecutive readings below 0.5 mg/L,
- Temperature ± 3%, and
- Turbidity ± 10%, or 3 consecutive readings below 5 NTU

Following stabilization, groundwater samples were collected directly into laboratory-supplied bottles. Samples were placed in an ice-filled cooler and transported under chain of custody procedures to Con-Test for VOCs by EPA Method 8260.

QA/QC samples included one field duplicate collected from MW-3 and a trip blank.

2.5. Vapor Intrusion Assessment

On October 17, 2022, Stone collected six soil gas samples (SV-1 through SV-6; Figure 6). SV-1 was collected as a sub-slab soil gas sample in the basement of the Site building, and SV-2 through SV-6 were collected at exterior locations.

To collect the interior sub-slab soil gas sample, an electric rotary hammer drill equipped with a 5/8-inch drill bit was used to create a hole through the concrete slab. A temporary soil gas port was then constructed using a Cox-Colvin Vapor Pin equipped with fluorinated ethylene propylene FEP tubing. The sub-slab vapor pin was leak tested using a water dam technique prior to sample collection. Once a passing leak test was achieved, a differential pressure measurement between the sub-slab and indoor air was collected using an Omniguard differential pressure recorder. Following collection of the differential pressure measurement, the sampling port was purged and screened with a calibrated PID at a rate of approximately 220 mL/min for 3 minutes. Peak PID readings were recorded on field forms.

To collect exterior soil gas samples, temporary soil gas ports were installed using an AMS soil gas kit. An AMS retractable-tip gas sampling probe equipped with FEP tubing was advanced approximately 2.5- feet bgs using an electric rotary hammer drill and/or manual slide hammer. The rod was then retracted several inches to expose the sampling port, and the annular space surrounding the boring was sealed with hydrated bentonite cement. Prior to sample collection, a helium leak test was conducted by saturating the headspace above each gas probe with helium while simultaneously monitoring the gas probe for helium. Once a passing leak test was achieved, the sampling ports were purged and screened with a calibrated PID at a rate of approximately 220 mL/min for 3 minutes. Peak PID readings were recorded on field forms.

Following the screening for both interior and exterior sample locations, Stone collected a sample of soil gas from each location into a laboratory provided, pre-cleaned and certified 3-liter Summa® canister equipped with a flow control regulator calibrated to a 30-minute sample collection period. One field duplicate sample was collected from SV-4 by inserting a T-fitting in-line with the sample tubing to split the airflow into two Summa canisters simultaneously.

Summa cannisters were submitted to Con-Test for VOC analysis by EPA Method TO-15.

2.6. PCBs in Indoor Air Assessment

On October 17, 2022, Stone conducted a survey of building materials that potentially contain polychlorinated biphenyls (PCBs). The survey was conducted using the Vermont Department of Environmental Conservation (VT DEC) draft PCB survey checklist. Stone identified several small transformers in the basement that potentially contained PCBs. The PCB survey checklist and proposed sampling locations were provided to the VT DEC via email correspondence on October 18, 2022. The suspect PCB-containing transformers were removed from the building by the property owner and the basement was ventilated with a fan one week prior to conducting indoor air sampling.

All air samples were collected in accordance with Stone Standard Operating Procedure (SOP) *5.100: Determination of Polychlorinated Biphenyls in Ambient Air Using Low Volume Polyurethane Foam (PUF) Sampling*. Laboratory provided PUF cartridges were secured to continuous flow sample pumps calibrated to approximately 4.5 liters per minute flow rate and sampled over a 24-hour period. One PUF sample was collected per floor including basement, first floor, and second floor. Stone started the air samples on October 27, 2022 and returned to the Site on October 28, 2022 to retrieve the air samples. All samples were submitted to Con-Test for PCB analysis as Aroclors by EPA Method TO-10A. Quality control samples include one field duplicate, one field blank, and one ambient air sample. The field duplicate was collected from the basement (sample IA-B).

2.7. Investigation Derived Waste

Investigation derived waste included soil cuttings from soil borings, purge water, decontamination liquids, and solid wastes such as tubing and personal protective equipment (PPE). Soil cuttings were used as backfill

in borings. Purge water and decontamination liquids were stored in a DOT-approved 55-gallon drum, and with VT DEC approval will be discharged to the ground surface. Tubing, acetate sleeves, and PPE were disposed of as solid waste.

3. Evaluation of Investigation Results

Analytical results are summarized in Appendix C in the tables listed below. Full analytical laboratory reports are provided as Appendix D.

- Table C-1: Volatile Organic Compound Analytical Results – Soil
- Table C-2: Polycyclic Aromatic Hydrocarbon Analytical Results - Soil
- Table C-3: Priority Pollutant Metals Analytical Results - Soil
- Table C-4: Volatile Organic Compound Analytical Results - Groundwater
- Table C-5: Volatile Organic Compounds Analytical Results- Soil Gas
- Table C-6: Polychlorinated Biphenyl Analytical Results – Indoor Air

3.1. Relevant Regulatory Criteria

Relevant regulatory criteria for samples collected during the Phase II ESA include:

- Soil:
  - Vermont Soil Standards (VSS) for resident and non-resident properties published in the VT DEC's Investigation and Remediation of Contaminated Properties Rule (IRule; effective July 6, 2019) as Appendix A - § 35-APX-A1.
  - November 2022 EPA Regional Screening Levels (RSLs) for residential and industrial soils.
- Groundwater: Vermont Groundwater Enforcement Standards (VGES) published in the Vermont Groundwater Protection Rule and Strategy (July 6, 2019).
- Soil Gas: Vapor Intrusion Standards (VIS) for resident and non-resident properties published as Appendix A - § 35-APX-A2 of the IRule.
- VT DEC Indoor Air Testing for Polychlorinated Biphenyls in Non-School Buildings- Technical Guidance Winter 2022- DRAFT

3.2. Soil Assessment

Soils recovered from B-1, B-4, B-5, B-7, B-9, and B-10 generally consisted of alternating sand and silt layers from ground surface to depths ranging between approximately 2 to 14 feet bgs. Gravel was observed in B-1 from 8 to 10 feet bgs. Soils encountered below the sand and silt in B-1, B-4, B-5, and B-7 consisted of gravel or sand and gravel. Boulders were observed in B-5 from 10 to 15 feet bgs. Below 6 feet in B-9 and 8 feet in B-10, soils consist of alternating gravel, sand, and silt layers.

3.2.1. VOCs

PID field screening results are presented on soil boring logs in Appendix B.

No VOCs were detected in soils at concentrations exceeding their respective resident VSS. Acetone and methylene chloride were detected above the laboratory reporting limit in soil samples collected from B-10 (21.5) and B-9 (10). Acetone and methylene chloride are common laboratory contaminants.

3.2.2. PAHs

Benzo(a) pyrene (B[a]P) toxicity equivalence concentrations (TEQs) were calculated for the seven carcinogenic PAHs for each soil sample. According to US EPA RSL User's Guide:

"Toxicity equivalency factor (TEF) can be used to convert concentrations of carcinogenic PAHs to an equivalent concentration of benzo(a)pyrene when assessing the cancer risks posed by these substances from oral exposures. These TEFs are based on the potency of each compound relative to that of benzo(a)pyrene."

Table 2: Toxicity Equivalency Factors Used for Normalizing Carcinogenic PAHs to Benzo(a)pyrene

Compound	Toxicity Equivalency Factor
Benzo(a)pyrene	1.0
Benz(a)anthracene	0.1
Benzo(b)fluoranthene	0.1
Benzo(k)fluoranthene	0.01
Chrysene	0.001
Dibenz(a,h)anthracene	1.0
Indeno(1,2,3-c,d)pyrene	0.1

B(a)P-TEQs were above resident VSS in soil samples B-1 (0-1.5), B-1 (4-6), B-4 (0-1.5), B-5 (0-1.5), B-5 (4-6), B-7 (0-1.5), B-9 (0-1.5), and B-10 (0-1.5). Sample B-4 (0-1.5) exceeded the non-resident VSS at 1.54 milligrams per kilogram (mg/kg) and Vermont Urban Background for B(a)P-TEQ at 0.58 mg/kg. B(a)P-TEQ results are summarized in Table 3, below.

Table 3: B(a)P-TEQ Analytical Result Summary

Sample Location (Depth [ft bgs])	B(a)P-TEQ (mg/Kg)	Sample Location (Depth [ft bgs])	B(a)P-TEQ (mg/Kg)
B-1 (0-1.5)	**0.076**	B-7 (0-1.5)	**0.13**
B-1 (4-6)	**0.16**	B-7 (6-8)	**0.041**
B-4 (0-1.5)	***1.7***	B-9 (0-1.5)	**0.18**
B-4 (4-6)	**0.0041**	B-9 (4-6)	0.0126 U
B-5 (0-1.5)	**0.18**	B-10 (0-1.5)	**0.22**
B-5 (4-6)	**0.11**	B-10 (6-8)	**0.038**
Resident VSS	0.07	Resident VSS	0.07
Non-Resident VSS	1.54	Non-Resident VSS	1.54
VT Urban Background	0.58	VT Urban Background	0.58

Notes: B(a)P-TEQ - Benzo(a) pyrene toxicity equivalence concentrations; mg/Kg – milligrams per kilogram; VSS – Vermont soil standards; bold indicates detection of analyte; shaded cell indicates exceedance of resident VSS; italics indicate exceedance of non-resident VSS; bold cell border indicates exceedance of the Vermont Urban Background; U – indicates analyte was not detected, B(a)P-TEQ was calculated from one half the reported MDL for each of the seven carcinogenic PAHs

3.2.3. PP Metals

Metals detected above the laboratory reporting limit include arsenic, beryllium, cadmium, chromium, copper, lead, nickel, silver, thallium, zinc, and mercury. Lead was detected above the resident VSS of 400 mg/kg in soil sample B-4 (0-1.5) and above the non-resident VSS of 800 mg/kg in soil samples B-1 (0-1.5) and B-10 (0-1.5). Mercury was detected above the non-resident VSS of 3.1 mg/kg in soil samples B-4 (0-1.5) and B-4 (4-6). Metal results are summarized in Table 4, below.

Table 4: Metal Analytical Result Summary

Sample Location (Depth [ft bgs])	Lead (mg/Kg)	Mercury (mg/Kg)	Sample Location (Depth [ft bgs])	Lead (mg/Kg)	Mercury (mg/Kg)
B-1 (0-1.5)	*6600*	0.067	B-7 (0-1.5)	41	0.11
B-1 (4-6)	52	0.083	B-7 (6-8)	36	0.076
B-4 (0-1.5)	520	*5.1*	B-9 (0-1.5)	130	0.12
B-4 (4-6)	19	*3.5*	B-9 (4-6)	18	0.03
B-5 (0-1.5)	42	0.17	B-10 (0-1.5)	*1500*	0.73
B-5 (4-6)	20	0.027 U	B-10 (6-8)	41	0.12
Resident VSS	400	3.1	Resident VSS	400	3.1
Non-Resident VSS	800	3.1	Non-Resident VSS	800	3.1

Notes: mg/Kg – milligrams per kilogram; VSS – Vermont soil standards; bold indicates detection of analyte; shaded cell indicates exceedance of resident VSS; italics indicate exceedance of non-resident VSS; U – indicates analyte was not detected, laboratory reporting limit provided

3.3. Groundwater Assessment

The elevation of potentiometric surface in groundwater monitoring wells (MW-1 through MW-3) relative to an assigned Site datum, ranged between 980.10 feet (MW-1) to 978.62 feet (MW-2) as measured on November 11, 2022. Direction of groundwater flow is generally to the west at a 1.6% hydraulic gradient; however, it should be noted that only three monitoring wells were installed on the property and monitoring wells MW-2 and MW-3 are installed in a straight line. To better interpret groundwater flow direction, an additional monitoring well would be needed north of the building. Table 5 below represents the calculated groundwater elevation and Figure 3 shows the groundwater potentiometric surface.

Table 5: Groundwater Elevations, November 11, 2022

Location ID	Screen Interval (feet, TOC)	Top of Casing Elevation (feet)	Depth to Water (feet, TOC)	Water Table Elevation (feet)
MW-1	16-21	998.70	18.6	980.10
MW-2	15-25	999.20	20.58	978.62
MW-3	15-25	999.28	20.54	978.74

Stabilized groundwater physical and chemical parameters from the sampling event are summarized in Table 6, below. Negative ORP values indicate reductive groundwater conditions in monitoring well MW-2 and MW-3. Low DO concentrations are evident in groundwater in MW-2 indicative of an anaerobic environment in groundwater. Both monitoring well MW-1 and MW-3 have higher DO concentrations where aerobic conditions likely exist.

Table 6: Physical and Chemical Parameters, November 11, 2022

Location ID	Temperature (°C)	pH (s.u.)	DO (mg/L)	ORP (mV)	Specific Conductivity (µS/ cm)	Turbidity (NTU)
MW-1	13.8	7.36	9.10	61	1,202	34.6
MW-2	12.6	7.22	0.32	-189	969	4.9
MW-3	12.6	7.31	3.62	-20	833	3.5

Abbreviations: ORP = oxygen reduction potential; mV = millivolts; s.u. = standard units; pH = log hydrogen ion concentration; DO = dissolved oxygen; mg/L = milligrams per liter; µS/cm = microSiemens per centimeter; NTU = nephelometric turbidity units; °C = degrees centigrade

3.3.1. VOCs

No VOCs were detected at concentrations exceeding their respective VGES. Methyl tert-butyl ether (MTBE) was detected above the laboratory reporting limit in MW-2.

3.4. Vapor Intrusion Assessment

PID readings in soil gas samples ranged from 0.2 ppm (SV-1) to 2.4 ppm (SV-2). No differential pressure exists between the sub-slab environment and indoor air as measured at the interior sub-slab soil gas sample (SV-1). The building slab was observed to be in poor condition. Under these conditions, vapor intrusion is possible.

VOCs detected in soil gas samples at concentrations exceeding the residential VIS included chloroform (SV-1, -3, -4, -5), and naphthalene (SV-4 and SV-5) as summarized in Table 7, below. No VOCs were detected above the non-residential VIS.

Table 7: Summary of VOCs Above VIS – Soil Gas Samples

Sample ID	PID (ppm/V)	Differential Pressure ("WC)	Chloroform (µg/m³)	Naphthalene (µg/m³)
SV-1	0.2	0.000	**2.1**	1.0 U
SV-2	2.4	NM	0.98 U	1.0 U
SV-3	0.8	NM	**3.6**	1.0 U
SV-4	0.6	NM	**3.5**	1.0 U
SV-5	1.1	NM	**1.7**	**1.1**
SV-6	0.3	NM	0.98 U	1.0 U
Resident VIS			1.3	1.0
Non-Resident VIS			12	8.0

Notes: PID – photoionization detector; ppm/v – parts per million by volume; "WC – inches of water column; µg/m³ – milligrams per cubic meter; VIS – Vermont Vapor Intrusion Standard for sub-slab soil gas; bold indicates detection of analyte; shaded cells indicate exceedance of resident VIS; NM – not measured; U – indicates analyte was not detected, laboratory reporting limit provided

3.5. PCBs in Indoor Air Assessment

No PCBs were detected at concentrations above laboratory reporting limits in the indoor air samples.

4. Quality Assurance and Quality Control

4.1. Field Duplicates

Field duplicate samples were collected for soil, groundwater, soil gas, and indoor air matrices sampled during the Phase II ESA fieldwork. Field duplicate sample results are summarized in Tables C-1 through C-6 in Appendix C.

To assess precision of the analytical results, relative percent difference (RPD) values were calculated for each primary-duplicate sample pair using the following formula:

$$RPD = \frac{|C_1 - C_2|}{\frac{C_1 + C_2}{2}} \times 100$$

Where: C1 = Concentration of a given target analyte in the Primary Sample, and

C2 = Concentration of a given target analyte in the Field Duplicate sample

For soil, RPDs for VOCs and PAHs could not be calculated because VOCs were not detected in the primary or duplicate sample, and PAHs were not detected in the duplicate sample above the laboratory reporting limit. RPD for PP metals ranged from 4% (beryllium) to 38% (chromium). All soil RPDs are within the EPA acceptance criteria of 50% for the solid matrix.

For groundwater, RPDs for VOCs could not be calculated because VOCs were not detected in the primary or duplicate sample.

For soil gas, RPDs ranged from 21% (propene) to 46% (chloroform and dichlorodifluoromethane [Freon 12]). All soil gas RPDs are within the EPA acceptance criteria of 50% for the soil gas matrix.

For PCBs in indoor air, the RPD could not be calculated because PCBs were not detected in the primary or duplicate sample.

4.2. Trip Blanks

Trip blanks were prepared and shipped with soil and groundwater samples analyzed for VOCs. VOCs were not detected in any of the trip blanks.

5. Conceptual Site Model

The following Conceptual Site Model (CSM) provides a set of working hypotheses that describe key aspects of the Site. The CSM includes a discussion of the physical, geologic, and hydraulic attributes of the Site and surrounding area, how chemicals were released at the Site, their transport pathways, fate mechanisms, and potential routes of exposure to ecological and human receptors. The CSM provides the context from which the site investigation is developed and a framework to make sound Site management decisions.

5.1. Geology

5.1.1. Bedrock

According to the Bedrock Geologic Map of Vermont (Ratcliffe, et al., 2011), bedrock below the Site is mapped as phyllite and metalimestone described as dark-gray to silvery-gray, lustrous, carbonaceous-muscovite-biotite-quartz phyllite containing abundant beds of punky-brown-weathering, dark-bluish-gray micaceous quartz-rich limestone in beds ranging from 10 cm to 10 m thick. No bedrock outcrops were observed at the Site during the Phase II ESA. Bedrock was not encountered during drilling for the Phase II ESA.

5.1.2. Surficial Material

According to the Surficial Geologic Map of Vermont (Doll, Ed., 1970), surface soils at the Site are mapped as alluvium, sands and gravel formed by postglacial river deposits. Soils recovered from Phase II ESA soil borings generally consisted of non-native fill material ranging between approximately 2 to 14 feet bgs. Fill material consist of sand and silt. Native soils beneath the fill are interpreted as alluvial sediments, ranging from sand and gravel to boulders. The native soil was deposited fluvially by the Stevens Branch of the Winooski River, located approximately 320 feet from the Site.

5.2. Hydrogeology

The topography at the Site is generally flat. The surrounding area slopes to the northwest towards the Stevens Branch. Surface water at the Site is expected to mimic surface topography and flow northwest. During the Phase II ESA, groundwater flow direction was generally to the west towards the Stevens Branch of the Winooski River at a 1.6% hydraulic gradient. Depth to water ranged between approximately 18.5 feet bgs and 20.5 feet bgs. Groundwater flow direction in the surrounding area was interpreted to the northwest with a relatively flat gradient of 0.5% (LAG, 1999).

5.3. Contaminant Sources, Distribution, Fate and Transport

Based on the historical use of the adjacent automotive service garage at 20 South Main Street, chlorinated solvents and other contaminants may have been used and potentially released to the environment. Additionally, the Site is in an urban downtown area where metals and polycyclic aromatic hydrocarbon (PAH) releases to the environment are common from fossil fuel combustion and historical fill.

5.3.1. VOCs

VOCs are common constituents of petroleum products and hazardous materials. Releases of chlorinated and petroleum VOCs related products from use of the adjoining property as an automotive service garage is unknown. Based on soil and groundwater assessment performed on the Site, it does not appear a significant release has occurred on the adjoining property.

Naphthalene was detected above the resident VIS at one soil gas sampling location (SV-5) along the southern boundary of the Site. VOCs were not detected above the VGES in groundwater or above the VSS in soil at the Site. No exceedances were detected in sub-slab soil gas collected from beneath the Site building; the presence of naphthalene in soil gas appears to be isolated along the southern property boundary. The adjoining property to the south was historically used as a filling station and automotive service garage. The absence of naphthalene in soil and groundwater at the Site indicates that the naphthalene detected in soil gas is likely the result of residual vapor from a release on the adjoining property.

Chloroform was detected exceeding the resident VIS in soil gas collected from the southwestern corner of the Site. Chloroform is a common byproduct from the disinfection of drinking water treated with chlorine. A leak in the municipal water system is a likely source for the elevated chloroform in soil gas on the southwestern portion of the Site.

5.3.2. PAHs

PAHs were detected in surface soils and in subsurface soils at the Site above VSS and urban background levels. PAHs at concentrations above resident VSS are more widespread in shallow soil across the Site. PAHs are a group of semi-volatile organic compounds (SVOC) chemicals and are common byproducts of the combustion of fossil fuels and occur naturally in fuel oil, coal, gasoline, motor oil, and tar. The urban area of Barre formerly used coal as a heating fuel. Fill soils used above the native river deposits at the Site could have resulted in the importation of PAHs.

When released to the environment, PAHs in soil typically exhibit low mobility in the absence of a co-solvent, have low volatility, and are not generally susceptible to biodegradation. PAHs are expected to remain in the subsurface once deposited.

5.3.3. Metals

Lead was detected above the non-residential VSS in surface soils beneath the asphalt parking lot at the Site. Mercury was also identified above the resident/non-resident VSS in surface soils and subsurface soils at location B-4 underneath the asphalt pavement. Heavy metals, including lead and mercury, are common contaminants in historical fill materials that are found in urban areas.

Heavy metals have been identified as carcinogenic and/or mutagenic compounds. Heavy metals typically bind to soil and sediment. However, they can leach into groundwater particularly in lower pH conditions. Groundwater conditions at the Site have a neutral pH, and heavy metals were not detected at depth (greater than 6 feet bgs) at the Site. The risk of metals in soil migrating to groundwater is low.

5.4. Sensitive Receptor Evaluation

Contaminants of concern at the Site has been evaluated for their potential for adversely affecting sensitive receptors. Table 8 presents the potentially affected media, pathways, and receptors.

Table 8: Sensitive Receptors Evaluation

Potentially Affected Media	Potential Pathways	Sensitive Receptors	Potential Level of Risk
Surface Water	Overland flow of stormwater runoff Groundwater discharge	Stevens Branch	Low –Most of the Site is paved. Low - No exceedances were detected in groundwater.
Surface Soil	Direct contact to contaminated materials	Site Users Future Construction Workers	Low – Most of the Site is paved or covered with a building. Medium- The redevelopment plan includes installing an addition on the building and replacing the parking lot. There is a direct contact risk to construction workers.
Sub Surface Soil	Leaching or mixing of contaminants Direct contact to contaminated materials	Groundwater Direct contact for construction workers during building upgrades	Low – PAHs and Metals have low mobility. High- PAHs and metals exceed non-resident VSS
Groundwater	Infiltration of surface water through affected surface soils may leach contaminants into the groundwater table	Groundwater Users	Low - No exceedances were detected in groundwater. Soils impacted with PAH/metals are several feet above saturated conditions and groundwater geochemistry indicates low risk for leaching/mobility.
Soil Gas	Vapor intrusion of contaminants from soil gas beneath building	Site Users	Medium – No exceedances were detected in sub-slab soil gas. Exterior soil gas exceeded resident VIS for naphthalene along southern property boundary. The property zoning regulations currently allow residential use of the property therefore there is a risk to future site users.

5.5. Nearby Receptors

Using the Vermont Agency of Natural Resources (ANR) Natural Resources Atlas, a qualitative receptor analysis was completed to evaluate the occurrence of potential receptors relative to the Site.

5.5.1. Drinking Water Supplies within ¼-mile of the Site

There are no public water supplies and one private water supply wells within ¼-quarter mile of the Site, summarized in Table 9, below.

Table 9: Drinking Water Supplies within ¼-mile of the Site

Well Report #	Owner First Name	Owner Last Name	Overburden (Feet)	Well Depth (Feet)	Distance From Site (miles)	Direction
50116	Kelly	Bushey	20	245	0.25	East

5.5.2. Surface Water and Groundwater Source Protection Areas

There are no surface water or groundwater source protection areas within ¼-mile of the Site.

5.5.3. Wetlands

According to the ANR Natural Resource Atlas, there are no mapped Class I or Class II wetlands within ¼-mile of the Site.

5.5.4. Sensitive Ecological Areas and Rare, Threatened or Endangered Species

Using the ANR Natural Resources Atlas, there are no sensitive ecological areas, including deer wintering yards (0), habitat blocks (0), significant natural communities (0), Rare, Threatened or Endangered Species (0), and Indiana Bat hibernacula (0) within ¼ -mile of the Site.

6. Conclusions and Recommendations

Based on the findings of the Phase II ESA, Stone makes the following conclusions:

1. Fill soils containing PAHs, lead, and mercury exceeding resident and non-resident Vermont Soil Standards (VSS) are present within surface and subsurface soils at the Site.
    i. Under current site conditions, there is low risk to Site users since most of the Site soil is below asphalt pavement.
    ii. Contaminated soils will be encountered during the Site redevelopment based on the proposed depth of excavation.
2. Residual petroleum impacts migrating from the adjacent property to the south have been identified at the Site. Naphthalene is present at a concentration above the resident Vapor Intrusion Standard (VIS) in soil gas along the southern Site boundary. Additionally, MTBE was detected in groundwater along the southern property boundary but at a concentration below the Vermont Groundwater Enforcement Standard (VGES). No other VOCs were detected in groundwater above the laboratory reporting limit. The extent of soil gas exceeding the VIS has been defined and is limited to the boundary shared with 20 South Main Street. The adjoining property was historically used as a filling station and automotive service garage. The absence of naphthalene in soil and groundwater at the Site suggests that naphthalene in soil gas is residual from a historic release on the adjoining property.
    i. The Site building does not appear to be at risk of vapor intrusion based on the absence of naphthalene exceeding the VIS for sub-slab soil gas.
3. PCBs were not detected in indoor air and are not a contaminant of concern within the Site building.
4. Chloroform is present in soil gas at the property above the resident VIS. Chloroform is a common byproduct from the disinfection of drinking water treated with chlorine. A leak in the municipal water system is a likely source for the elevated chloroform in soil gas on the southwestern portion of the Site.

Based on these conclusions, Stone makes the following recommendations:

1. Stone recommends the development of a Corrective Action Plan (CAP) to mitigate direct contact exposure risks to surficial soils, inhalation risks posed by soil gas, and to manage soils during redevelopment activities. Proposed corrective actions could include the installation of engineered barriers and the implementation of institutional controls. Soil management will be required during Site redevelopment. The Site meets the exemption criteria for an Evaluation of Corrective Action Alternatives (ECAA), as outlined in § 35-604 of the IRule.

7. References

Dubois & King, Inc (D&K), 2012. *ASTM E1527-05 Phase I Environmental Site Assessment, 18 South Main Street, Barre, Vermont*, September 30.

Lincoln Applied Geology, Inc. (LAG), 1999. *Subsurface Contaminant Investigation Report, Cumberland Farms Inc., Station #4010, 20 South Main Street, Barre, Vermont, (VDEC Site #98-2415),* April 5.

Ratcliffe, N.M., Stanley, R.S., Gale, M.H., Thompson, P.J., and Walsh, G.J., 2011, *Bedrock Geologic Map of Vermont*, U.S. Geological Survey Scientific Investigations Map 3184, 3 sheets, scale 1:100,000.

Stone Environmental, Inc. (Stone), 2021. *Phase I Environmental Site Assessment, 18 South Main Street, Barre, Vermont,* July 13.

Surficial Geologic Map of Vermont, 1970, Stewart and MacClintock, Doll, ed. Digital Data (VT Open Geodata Portal).

Appendix A: Figures

Figure 1: Vicinity Map
Figure 2: Site Map
Figure 3: Potentiometric Surface Map
Figure 4: B(a)P-TEQ in Soil
Figure 5: Metals in Soil
Figure 6: VOCs in Soil Gas

LEGEND

- Dry Cleaner
- Brownfields
- Hazardous Waste Sites
- Hazardous Waste Generators
- Underground Storage Tank (working)
- Site Boundary
- Parcel Boundaries

N

0 50 100

Feet

Figure 1: Vicinity Map

Turning Point Center

18 South Main Street
Barre, VT

STONE ENVIRONMENTAL

Source: Esri World Imagery, VCGI, ANR Atlas

Path: O:\PROJ-21\EAR\20211145 Turning Point Center, Barre\GIS\TurningPointBarre_Maps\TurningPointBarre_Maps.aprx Figure 2 - Vicinity Map Exported: 1/19/2023 3:03 PM by swalser

LEGEND

- Site Boundary
- Parcel Boundary
- Area of Interest
- Hazardous Waste Sites

Sample Locations

- Monitoring Well
- Soil Boring
- Soil Gas

N

0 10 20

Feet

Figure 2: Site Map

Turning Point Center

18 South Main Street
Barre, VT

STONE ENVIRONMENTAL

Source: Esri World Imagery, VCGI, ANR Atlas

Path: O:\PROJ-21\EAR\20211145 Turning Point Center, Barre\GIS\TurningPointBarre_Maps\TurningPointBarre_Maps.aprx Figure 3 - Site Map Exported: 2/1/2023 4:20 PM by lrajnak

LEGEND

- Site Boundary
- Area of Interest
- Groundwater Contour 0.5'
- Monitoring Well

N

0 10 20

Feet

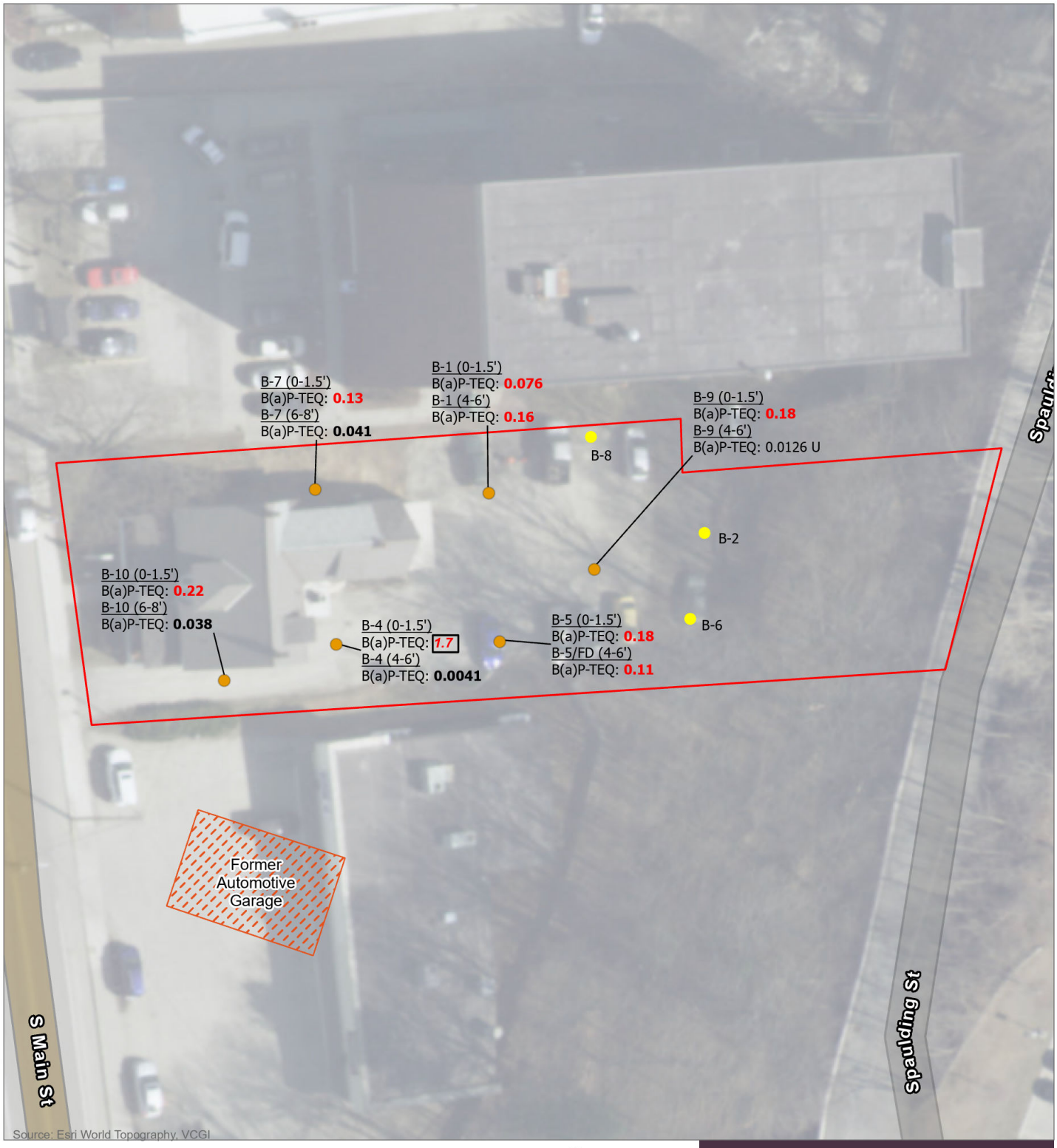
Figure 3: Potentiometric Surface Map

Turning Point Center

18 South Main Street
Barre, VT

STONE ENVIRONMENTAL

Path: O:\PROJ-21\EAR\20211145 Turning Point Center, Barre\GIS\TurningPointBarre_Maps\TurningPointBarre_Maps.aprx Figure 3 - Potentiometric MapExported: 2/1/2023 4:24 PM by lrajnak



LEGEND

- Site Boundary
- Area of Interest

Soil Borings

- Environmental/Geotechnical
- Geotechnical

Notes:
U - Analyte not detected; limit of quantitation listed
Bold results indicate detection of the analyte
Red results indicate an exceedance of the VSS residential enforcement standard
Italicized results indicater an exceedance of the VSS non-residential enforcment standard
Boxed results indicate an exceedance of the Vermont Urban Background standard
All units in mg/Kg

Vermont Soil Standard:
Residential - 0.07 mg/Kg
Urban Background - 0.58 mg/Kg
Non-residential - 1.54 mg/Kg

N

0 10 20

Feet

Figure 4: B(a)P-TEQ Concentrations in Soil

Turning Point Center

18 South Main Street
Barre, VT

STONE ENVIRONMENTAL

Path: O:\PROJ-21\EAR\20211145 Turning Point Center, Barre\GIS\TurningPointBarre_Maps\TurningPointBarre_Maps.aprx Figure 4 - B(A)P-TEQ in SoilExported: 2/1/2023 4:14 PM by lrajnak

LEGEND

- Site Boundary
- Area of Interest

Soil Borings

- Environmental/Geotechnical
- Geotechnical

Notes:
U - Analyte not detected; limit of quantitation listed
Bold results indicate detection of the analyte
Red results indicate an exceedance of the VSS residential enforcement standard
Italicized results indicate an exceedance of the VSS non-residential enforcment standard
All units in mg/Kg

Vermont Soil Standard - Resident / Non-Resident (mg/Kg):
Lead - 400 / 800
Mercury - 3.1 / 3.1

N

0 10 20
Feet

Source: Esri World Topography, VCGI

Path: O:\PROJ-21\EAR\20211145 Turning Point Center, Barre\GIS\TurningPointBarre_Maps\TurningPointBarre_Maps.aprx Figure 5 - Metals in SoilExported: 1/19/2023 2:23 PM by swalser

Figure 5: Metal Concentrations in Soil

Turning Point Center

18 South Main Street
Barre, VT

STONE ENVIRONMENTAL

LEGEND

- Soil Gas
- Site Boundary
- Area of Interest

Notes:
U - Analyte not detected; limit of quantitation listed
Bold results indicate detection of the analyte
Red results indicate an exceedance of the VIS residential enforcement standard
All units in ug/m³

Vapor Intrusion Standard - Resident / Non-Resident (ug/m³):
Chloroform - 1.3 / 12
Naphthalene - 1.0 / 8.0

N

0 10 20
Feet

Source: Esri World Topography, VCGI

Path: O:\PROJ-21\EAR\20211145 Turning Point Center, Barre\GIS\TurningPointBarre_Maps\TurningPointBarre_Maps.aprx Figure 6 - VOCs in Soil GasExported: 1/19/2023 2:38 PM by swalser

Figure 6: VOCs in Soil Gas

Turning Point Center

18 South Main Street
Barre, VT

STONE ENVIRONMENTAL

Appendix B: Field Notes

Observation and Remarks

Site Information

Project Name	**TPCC**
Project Number	**20211145**
Project Manager	**Rebecca Treat**
Location	**St. Albans**
Date	**10/17/2022**

Personnel On Site

Stone Personnel On Site	**Jodie Wright, Lee Rosberg, Sandra Walser**
Time On Site	**08:15 (-4 GMT)**
Time Off Site	**16:00 (-4 GMT)**

Observation Entry

Weather	**50s, cloudy with rain after 2 pm**
Objectives	**Exterior soil gas, sub slab soil gas, PCB inventory**

Notes & Photo(s)	
Time of Entry	**08:15 (-4 GMT)**
Notes	**Met DPW on site. Accessed basement through house. Bulkhead door seems to be sealed shut. DPW Confirmed sewer runs alongside water line. DPW off site at 8:30**
Notes & Photo(s)	
Time of Entry	**09:30 (-4 GMT)**
Notes	**Outdoor soil gas using AMS probe. Field duplicate on SV-4 using T-fitting**
Notes & Photo(s)	
Time of Entry	**15:50 (-4 GMT)**
Notes	**LJR on-site around 13:15 to assist with PCB inventory. LJR off-site at 15:00**
Notes & Photo(s)	
Time of Entry	**15:20 (-4 GMT)**
Notes	**Sub slab soil vapor using vapor pins. The slab was only approximately 0.5 inches thick and was crumbly. Soil below.**
Notes & Photo(s)	
Time of Entry	**16:18 (-4 GMT)**
Notes	**SLW and JGW off site. Left keys in mailbox. Left decontamination water in 5 gallon bucket next to 'employee only' entrance on south wall of building.**

Signature

Observation and Remarks

Signature	

Soil Gas Sample Collection Record

STONE ENVIRONMENTAL

1. PROJECT INFORMATION

Project Name: TPCC Project #: 20211145 Site Location: _____ Project Manager: Rebecca Treat

- **Start of Collection Information** Date: 10-17-2022 Time on Site: 08:15 Time off Site: 16:20 Stone Personnel: Sandra Walser, Jodie Wright
  Rain within last 24 hours? (Y/N): No Amount: _____

2. COLLECTION METHODOLOGY INFORMATION

Contract Laboratory: Con-test

3. SAMPLE INFORMATION:

Stone Sample ID	Installation & Collection Method	Sample Depth (ft)	PID (ppm) /Differential Press.	Pass Leak Test?	Summa Cannister ID	Flow Controller ID	Start		End		Location & Notes:
							Time	Canister Vacuum ("Hg)	Time	Canister Vacuum ("Hg)	
SV-6	AMS Probe Summa	2.5	0.3	Yes	2612	4247	09:53	-28	10:20	-3	
SV-5	AMS Probe Summa	2.5	1.1	Yes	2393	4245	10:24	-29	10:52	-3	
SV-4	AMS Probe Summa	2.5	0.6	Yes	2352	4139	11:09	-26	11:42	-3	
SV-4-FD	AMS Probe Summa		0.6	Yes	2745	4122	11:10	-27	11:40	-3	
SV-3	AMS Probe Summa	2.5	0.8	Yes	2587	4323	12:00	-30	12:33	-3	Background PID: 0.2 ppm Start canister volume seemed to be lower than -30, but values to do not read lower on regulator
SV-2	AMS Probe Summa	2.5	2.4	Yes	2399	4319	12:31	-30	13:00	-2.5	Background PID: 0.2 ppm
SV-1	Vapor Pin Summa	0.5	0.2 0	Yes	2735	4338	15:25	-29	15:52	-3	Background PID: 0.2

Comments: End of day check of PID: 116.9

Signature: _____ Date: 10-17-2022

L:\EAR\Field Forms\Vapor\Soil Gas Sampling Form.doc

Soil Gas Sample Collection Record

STONE ENVIRONMENTAL

1. PROJECT INFORMATION

Project Name: TPCC Project #: 20211145 Site Location: _____ Project Manager: Rebecca Treat

- **Start of Collection Information** Date: 10-17-2022 Time on Site: 08:15 Time off Site: 16:20 Stone Personnel: Sandra Walser, Jodie Wright
  Rain within last 24 hours? (Y/N): No Amount: _____

2. COLLECTION METHODOLOGY INFORMATION

Contract Laboratory: Con-test

3. SAMPLE INFORMATION:

Stone Sample ID	Installation & Collection Method	Sample Depth (ft)	PID (ppm) /Differential Press.	Pass Leak Test?	Summa Cannister ID	Flow Controller ID	Start		End		Location & Notes:
							Time	Canister Vacuum ("Hg)	Time	Canister Vacuum ("Hg)	

Comments: End of day check of PID: 116.9

Signature: _____ Date: 10-17-2022

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Soil Gas Sample Collection Record

STONE ENVIRONMENTAL

1. PROJECT INFORMATION

Project Name: TPCC Project #: 20211145 Site Location: _____ Project Manager: Rebecca Treat

- **Start of Collection Information** Date: 10-17-2022 Time on Site: 08:15 Time off Site: 16:20 Stone Personnel: Sandra Walser, Jodie Wright
  Rain within last 24 hours? (Y/N): No Amount: _____

2. COLLECTION METHODOLOGY INFORMATION

Contract Laboratory: Con-test

3. SAMPLE INFORMATION:

Stone Sample ID	Installation & Collection Method	Sample Depth (ft)	PID (ppm) /Differential Press.	Pass Leak Test?	Summa Cannister ID	Flow Controller ID	Start		End		Location & Notes:
							Time	Canister Vacuum ("Hg)	Time	Canister Vacuum ("Hg)	

Comments: End of day check of PID: 116.9

Signature: _____ Date: 10-17-2022

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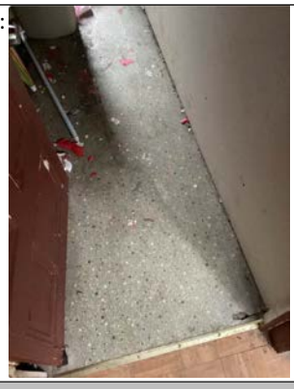
535 Stone Cutters Way / Montpelier / VT / 05602 / USA
802.229.4541 / info@stone-env.com / www.stone-env.com

Room: Second floor	**Room:** Second floor
Material: Carpet Mastic	Material: Covebase
Description:	Description: Wooden trim
Photo Number: 1	Photo Number: 2
Photos:	Photos: see Photo 5
Room: Second floor	**Room:** Stair 2
Material: Other	Material: Other
Description: Linoleum flooring	Description: Linoleum flooring
Photo Number: 3	Photo Number: 4
Photos:	Photos: 
Room: 10	Room: 8
Material: Floor Type, vinyl	Material: Floor Type, vinyl
Description: Faux wood tiling	Description: Green and purple tiles
Photo Number: 5	Photo Number: 6
Photos:	Photos:

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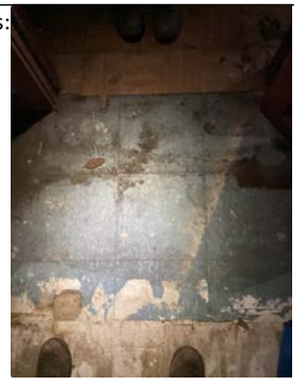
Room: 8	**Room:** 7
Material: Floor Type, vinyl	Material: Floor Type, vinyl
Description: Faux terra cotta	Description: Green and purple tiles
Photo Number: 7	Photo Number: 8
Photos:	Photos:
Room: 7	**Room:** Windows
Material: Sink Undercoating	Material: Caulking, Window
Description:	Description: Glazing along windowpane edges
Photo Number: 9	Photo Number: 10
Photos:	Photos:
Room: 3	Room: 11
Material: Floor Type, vinyl	Material: Floor Type, vinyl
Description: Faux stone tile	Description: Blue tile
Photo Number: 11	Photo Number: 12
Photos:	Photos: 

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Room: 12	**Room:** Basement
Material: Carppet Mastic	Material: Paint
Description: Brown carpet	Description: White paint
Photo Number: 13	Photo Number: 14
Photos:	Photos:
Room: Basement	**Room:** Basement
Material: Paint	Material: Transformer
Description: Remnant paint on floor slab	Description:
Photo Number: 15	Photo Number: 16
Photos:	Photos:
Room: Basement	Room: Basement
Material: Transformer	Material: Voltage Regulator
Description:	Description:
Photo Number: 17	Photo Number: 18
Photos:	Photos:

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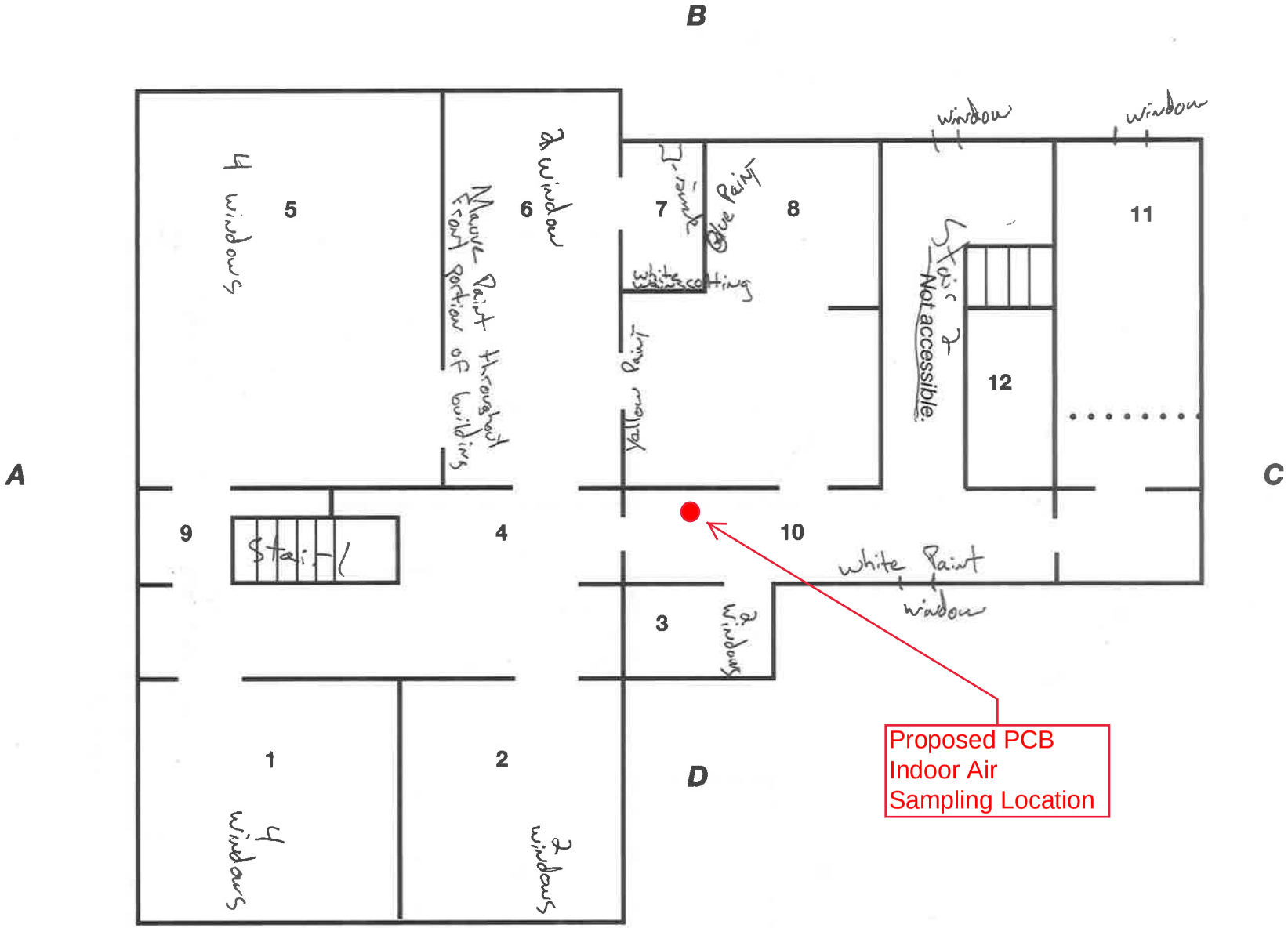
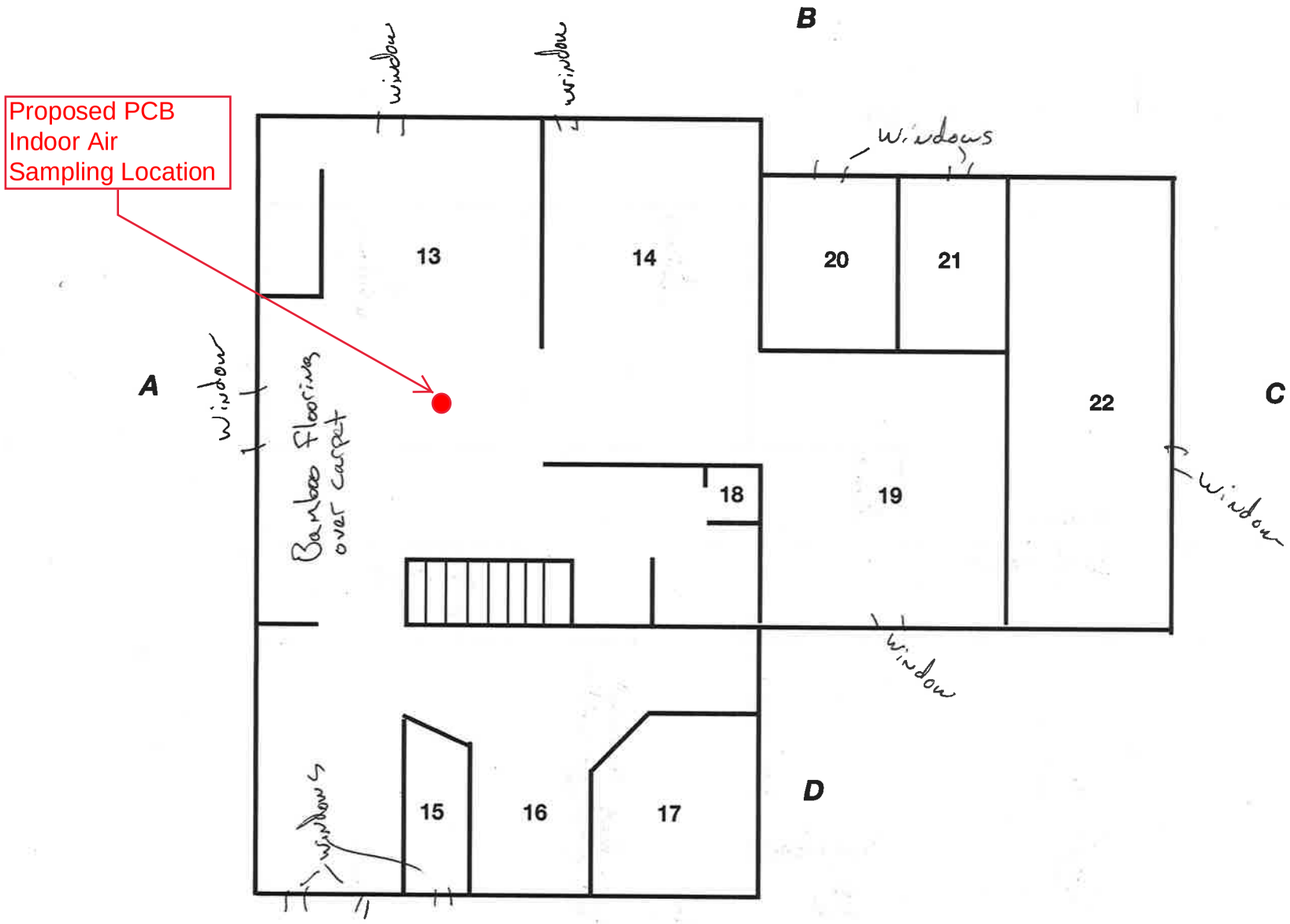
802.229.4541 / info@stone-env.com / www.stone-env.com

Room: Basement	**Room:**
Material: Light Ballast	Material:
Description: Dome shaped	Description:
Photo Number: 19	Photo Number:
Photos:	Photos:
Room:	**Room:**
Material:	Material:
Description:	Description:
Photo Number:	Photo Number:
Photos:	Photos:
Room:	Room:
Material:	Material:
Description:	Description:
Photo Number:	Photo Number:
Photos:	Photos:



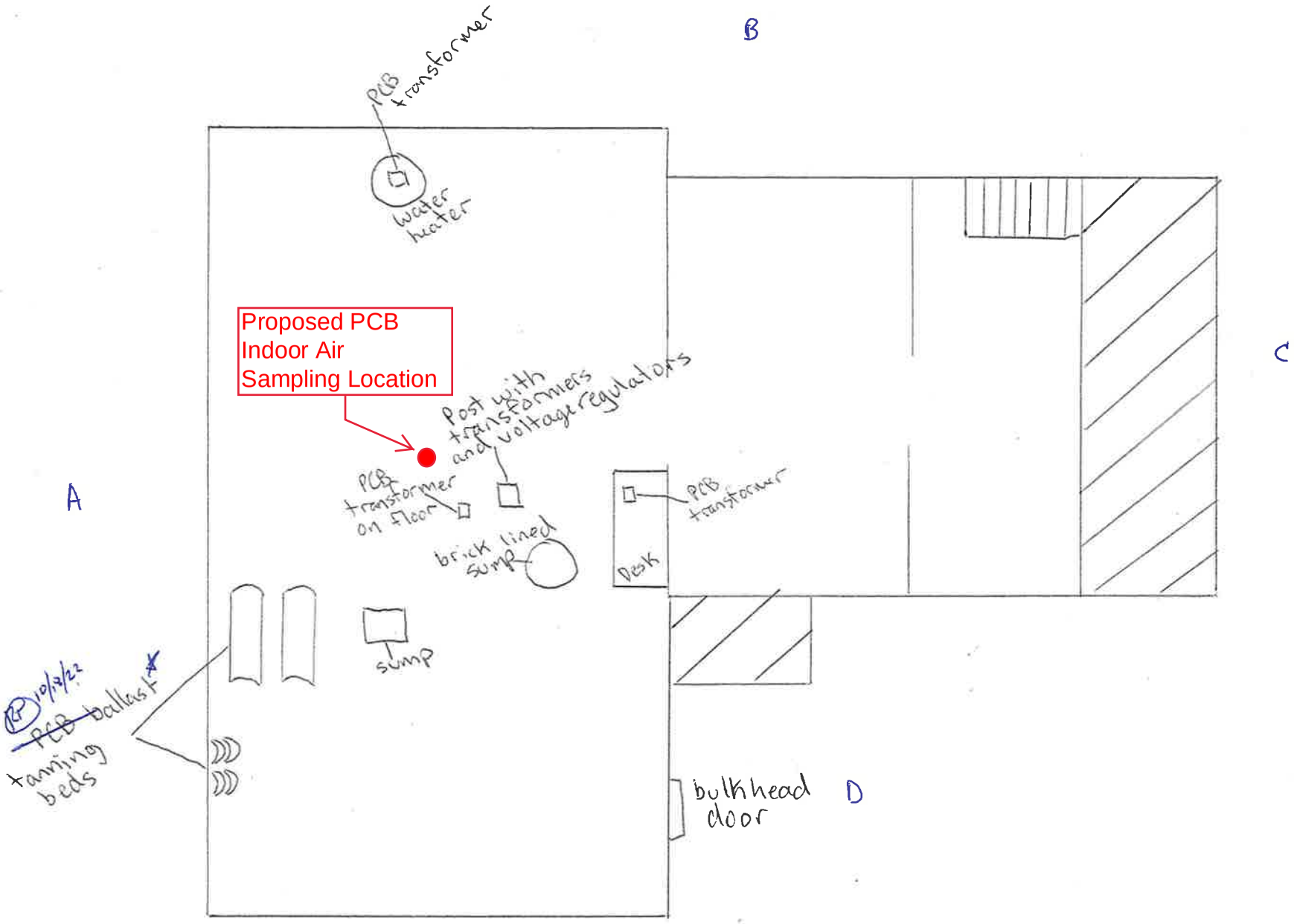
18 South Main Street, Barre, VT 05301

First Floor



18 South Main Street, Barre, VT 05301

Second Floor



* APPEARANCE OF WIRING INDICATES LIGHTS ARE ELECTRONICAL BALLASTS MANUFACTURED AFTER 1998 (P) ~~1988~~ WHEN PCB LABELING WAS NO LONGER REQUIRED.

18 SOUTH MAIN STREET, BARRE, VT 05301

BASEMENT

Year Built	Group	Material Type	Material Description	Color	Floor Number	Room Number/Location	Unique Room ID (from.csv file)	Approximate Quantity	Units	Proposed Number of Samples	Location of Material in Room	Photo Number	Air Sampling Result (ng/m3)	Comments
1889-1900	2	Carpet Mastic		Yellow	2	Second Floor		1000	Sq. ft.	1	Floor	1		located throughout second floor, bamboo flooring over carpet
1889-1900	2	Covebase	Wooden Trim	White	2	Second Floor		2000	LF	0	Floor	2 & 5		located throughout second floor
1889-1900	2	Caulking, Window	Glazing along windowpane edges	White	2	Windows		10	Total Number	0	Windows	10		
1889-1900	2	Other	Linoleum Flooring	Multi	2	Second Floor		150	Sq. ft.	0	Floor	3		
1889-1900	1	Other	Linoleum Flooring	Multi	1	Stair 2		25	Sq. ft.	0	Floor	4		
1889-1900	1	Floor Type, vinyl	Faux wood tiling	Brown	1	10		80	Sq. ft.	1	Floor	5		
1889-1900	1	Floor Type, vinyl	Green and purple tiles	Green and purple	1	8		50	Sq. ft.	0	Floor	6		
1889-1900	1	Floor Type, vinyl	Faux terra cotta	Terra cotta	1	8		100	Sq. ft.	0	Floor	7		
1889-1900	1	Floor Type, vinyl	Green and purple tiles	Green and purple	1	7		20	Sq. ft.	0	Floor	8		
1889-1900	1	Sink Undercoating		Green	1	7		1	Sq. ft.	0	North Wall	9		
1889-1900	1	Caulking, Window	Glazing along windowpane edges	White	1	Windows		17	Total Number	0	Windows	10		See map for window quantities
1889-1900	1	Floor Type, vinyl	Faux stone tile		1	3		80	Sq. ft.	0	Floor	11		
1889-1900	1	Floor Type, vinyl	Blue tile	Blue	1	11		10	Sq. ft.	0	Floor	12		
1889-1900	1	Carppet Mastic	Brown carpet	Brown	1	12		40	Sq. ft.	0	Floor	13		
1889-1900	1	Paint	White paint	White		Basement		3000	Sq. ft.	0	Walls	14		
1889-1900	1	Paint	Remnant paint on floor slab	White		Basement		1000	Sq. ft.	0	Floor	15		
1889-1900	3	Transformer				Basement		3	Total Number	0	Desk, Floor, Water Heater	16		One on desk, one on floor, one on hot water tank
1889-1900	3	Transformer				Basement		3	Total Number	1	Post	17		Post
1889-1900	3	Voltage Regulator				Basement		2	Total Number	0	Post	18		Post
1889-1900	3	Light Ballast	Dome shaped			Basement		8	Total Number	0	Floor	19		Tanning Beds - Eight housings with six ballasts each. Appear to be non-PCB, manufactured after 1998

OBSERVATIONS AND REMARKS

Project Name/Description:	STONE ENVIRONMENTAL
TPCC 18 S. MAIN ST. PHASE II ESA - PCB INDOOR AIR SAMPLING	535 Stone Cutters Way / Montpelier / VT / 05602 / USA 802.229.4541 / info@stone-env.com / www.stone-env.com
SEI Project #: 20211145	Client/Sponsor: CVPRC ~~VTC~~ DW 10/27/22

1325 KIT ONSITE FOR PCB IA SAMPLING. SUNNY 50°F
1340 UNABLE TO GAIN ENTRY TO 2ND FLOOR. CONTACTED DOUG P.
1355 DANE L. ONSITE TO PROVIDE ACCESS
1405 DANE L. OFFSITE. NO PARKING SIGNS DEPLOYED
1540 ALL PCB PUMPS DEPLOYED. KIT OFFSITE

10/27/22

Signed: _____ Date: 10/27/22

5 squares = 1 inch

PUF Sample Collection Record

STONE ENVIRONMENTAL

1. PROJECT INFORMATION

Project Name: TPCC - 18 S. MAIN ST. Project #: 20211145 Site Location: 18 S MAIN ST. BARRE, VT Project Manager: RIT

- **Start of Collection Information** Date: 10/27/22 Time on Site: 1325 Time off Site: 1540 Stone Personnel: RIT Weather: SUNNY, ~50°F
- **End of Collection Information** Date: 10/28/22 Time on Site: 0830 * Time off Site: _____ Stone Personnel: RIT Weather: SUNNY, ~50°F

* OUSITE FOR PHASE II DRILLING IN ADDITION TO IA SAMPLING FOR PCISL

2. COLLECTION METHODOLOGY INFORMATION

Flow Meter Model and Serial No.: CHEK-MATE SKC 17539641 Contract Laboratory: CON-TEST / PACE Analysis: TO-10A Calibrated by: _____

3. SAMPLE INFORMATION:

Stone Sample ID	Cartridge ID	Pump S/N	Flow Rate (mL/min)		Sampling Period		Sampling Duration (hr)	Ambient Temp. (°F)		Sample Height (ft)	Notes:
			Start	Stop	Start	Stop		Start	Stop		
1A-2	101222-04	A117350	4.508	4.407	10/27/22 1420	10/28/22 1420	24	63.6	53.9	2.5	2ND FLOOR
1A-1	101222-05	A117358	4.490	4.435	10/27/22 1440	10/28/22 1440	24	63.6	56.6	2.5	1ST FLOOR
1A-B	101222-01	A117416	4.508	4.531	10/27/22 1500	10/28/22 1500	24	60.8	57.5	2.5	BASEMENT
1A-DUP	101222-02	A118257	4.497	4.491	10/27/22 1508	10/28/22 1508	24	60.8	57.5	2.5	BASEMENT DUPLICATE
~~TB~~ FB	101222-06	N/A	N/A	N/A	10/27/22 1505	10/27/22 1505	N/A	N/A	N/A	N/A	FIELD BLANK
AMBIENT	101222-03	~~A117477~~ A117499	~~4.500~~	NR *	10/27/22 1527	10/28/22 1527	24	54.8	52.9	2.5	AMBIENT - NW CORNER OF FRONT PORCH
				* PUMP NOT OPERATIONAL WHEN TIME ENDED. WAS WORKING GOOD MID-DAY BATTERY DIED							
				@ UNKNOWN TIME							

Comments:

OBSERVATIONS AND REMARKS

Project Name/Description:
TPCC
18 S. MAIN ST.
PHASE II ESA

STONE ENVIRONMENTAL
535 Stone Cutters Way / Montpelier / VT / 05602 / USA
802.229.4541 / info@stone-env.com / www.stone-env.com

SEI Project #:
2021145

Client/Sponsor:
~~CVRPC~~ CVRPC / TPCC

0830 RIT ONSITE; ALAN B. & JACK C. ONSITE FOR GEODESIGN; MIKE K & DALE G. FOR SEABOARD DRILLING INC. OUT OF CHICOPEE, MA
WEATHER: SUNNY, 30°F
OBJ.: ADVANCE BORING & INSTALL WELLS FOR PHASE II ESA (SOIL ASSESSMENT). ALSO TO PICK-UP PCB IN PUFF SAMPLERS.

HES TAILGATE COMPLETE. PID CALIB TO 100 PPM ISOBUT. HSA RIG IN POSITION OVER B-7 (NORTH SIDE OF BUILDING.

1000 REFUSAL @ 9' FOR B-7. MOVING OVER A FEW FEET FOR 2ND ATTEMPT SINCE THIS IS A TARGETED BORING FOR WELL INSTALL. PAH & METAL SAMPLES COLLECTED

1030 REFUSAL @ 8' FOR 2ND ATTEMPT FOR B-7. DRILL RIG MOVING INTO POSITION OVER B-1. NO WELL INSTALL @ B-7 AS SATURATED CONDITIONS WERE NOT ENCOUNTERED. NO VOC SAMPLE @ B-7 DUE TO LIMITED RECOVERY AND DEPTH.

1245 AUGER REFUSAL @ 21' FOR B-1. BONEY CONDITIONS PREVENTING FURTHER ADVANCEMENT. CAN SWITCH TO DRIVE & WASH BUT IT WILL GENERATE A LOT OF H_2O.

1255 SPOKE W/ KIM ABOUT STRATEGY. WILL SET WELL @ B-1 EVEN THOUGH ONLY ~1 FOOT OF SATURATED CONDITIONS. THIS WELL IS MOSTLY FOR GW FLOW ASSESSMENT. SOIL SAMPLE OF VADOSE/WT COLLECTED & SAMPLES FOR PAH & METALS ANALYSIS COLLECTED. WILL DO DRIVE & WASH FOR OTHER WELL INSTALLS.

1405 MW-1 SET @ 20.5' IN B-1. TOUGH INSTALL. 2" PVC, 5' PRE-PACK SCREEN. SAND 13.5-20.5', BENT ~~9-13~~ (11) 11.5-13.5', BACKFILL 2-11.5'; SAND 0-2' FLUSH INSTALL

1408 DRILL RIG IN POSITION OVER B-2/6. THESE ARE GEOTECH BORINGS. GEODESIGN OPTED TO COMBINE B-2 & B-6 INTO ONE BORING (MID POINT BETWEEN B-2 & B-6)

1530 ALL (RD) PUFF SAMPLERS STOPPED. B-2/6 ALMOST DONE - WILL FINISH UP MONDAY. JACK & DRILLERS OFFSITE. AMBIENT PUFF PUMP STOPPED EARLY. WAS RUNNING GOOD MID-DAY. BATTERY DIED.

1545 RIT OFFSITE

Signed: _____ Date: 10/20/22

5 squares = 1 inch

OBSERVATIONS AND REMARKS

Project Name/Description:	STONE ENVIRONMENTAL 535 Stone Cutters Way / Montpelier / VT / 05602 / USA 802.229.4541 / info@stone-env.com / www.stone-env.com
TPCC 185. MAIN ST. PHASE II ESA	
SEI Project #: 20211145	Client/Sponsor: CVRPC / TPCC

0830 RIT ONSITE; JACK C. W/ GEODESIGN & MIKE K. / DALE G. ONSITE W/ SEABOARD DRILLING.
WEATHER: 32°F, SUNNY.
OBJ: ADVANCE BORINGS / INSTALL WELLS FOR PHASE II ESA (SOIL ASSESSMENT) 2ND DAY OF DRILLING

PID CAL'D W/ 100 PPMV ISO BUTYL

0845 RIG IN POSITION OVER B-2 / B-6 LOCATION. FINISHING FROM FRIDAYS EFFORTS. GEOTECH BORING ONLY. CORE DOWN TO 20'; SAME GENERAL LITH. SAT. SOIL @ 18.5'. NO EVIDENCE OF IMPACTS - RELEASE OR URBAN FILL

0845 RIG IN POSITION OVER B-10. MOVED LOCATION EAST DUE TO UTILITY & WORK SPACE LIMITATIONS. NEW LOCATION IS ONE NORTH OF SV-4.

1025 STILL DRILLING B-10. USING DRIVE & WASH. CASING DOWN TO ~11'.

GAUGED MW-1 (INSTALLED @ B-1) DTW: 19.48' DTB: 20.64'
STARTED DEVELOPMENT OF MW-1. V. SILTY. REMOVED <0.25 G.; WELL WENT DRY.

1105 B-10 CASING DOWN TO 12' BUT NO WATER ON THE RETRD. FORMATION IS ACCEPTING H_2O. WILL SWITCH TO HSA. CONTINUING TO DEVELOP MW-1. REMOVED ~0.45 G.; WATER CLEAR.

1140 CASING OUT - AUGERS DOWN TO 12' @ B-10

1225 MW-1 DEVELOPED. REMOVED ~1 GAL - 1.5 GAL. WELL RAN CLEAR. PURGE H_2O CONTAINERIZED

1330 SETTING MW-2 @ 25' IN B-10

1345 RIG MOVING INTO POSITION OVER B-4. LOCATION SHIFTED SLIGHTLY TO ACCOUNT FOR SHIFT @ B-10 AND ANALYTICAL DATA RECEIVED FOR SVs

1445 GAUGED MW-2 DTW - 20.44' DTB - 24.62'. BEGIN DEVELOPMENT - V. SILTY / THICK

1525 WELL DEVELOPMENT @ MW-2 COMPLETE. WELL RAN CLEAR. REMOVED ~4 GAL OF H_2O CONTAINERIZED. SETTING ~~MW-3~~ MW-3 @ 25' IN B-4

1615 RIT, GEODESIGN & SEABOARD OFFSITE

Signed: _____ Date: 10/31/22

Page: 1 of 2 (KEP)

5 squares = 1 inch

OBSERVATIONS AND REMARKS

Project Name/Description:	STONE ENVIRONMENTAL 535 Stone Cutters Way / Montpelier / VT / 05602 / USA 802.229.4541 / info@stone-env.com / www.stone-env.com
TPCC 18 S. MAIN ST PHASE II ESA	
SEI Project #: 2021 1145	Client/Sponsor: CVRPC / TPCC

0700 RIT ONSITE.
WEATHER: CLOUDY, 50°F
OBJECTIVE: ADVANCE BORINGS & INSTALL MWs FOR PHASE II ESA (SOIL ASSESSMENT)
0712 JACK C. ONSITE FOR GEODESIGN
0740 MIKE K. & DALE G. ONSITE FOR SEABOARD
SETTING UP OVER B-5
PID CALIB TO 100 ppmv Isobutyl.
0820 GAUGED ~~MW-3~~ MW-5 & BEGIN DEVELOPMENT. DTW = 20.46' DTB = 23.48
0910 MW-3 DEVELOPMENT COMPLETE. WELL RAN CLEAR. REMOVED 5-GAL. PURGE H_2O CONTAINERIZED. HSA DOWN TO ~15' @ B-5
0940 REFUSAL @ 16.5' @ B-5 - BOULDERS. UNABLE TO COLLECT NL SOIL SAMPLE FOR VOCs AS SATURATED CONDITIONS NOT ENCOUNTERED. PULLING AUGERS TO MOVE TO B-9
1000 RIG IN POSITION OVER B-9. GEODESIGN HAS ELECTED TO FORGO B-8, WHICH IS A GEOTECHNICAL PARKING AREA BORING.

1020 B-9 COMPLETE. ALL BOREHOLES SEALED W/ ASPHALT PATCH W/IN PARKING AREA. PURGE / DECON WATER PLACED IN 55 GAL DRUM STAGED OFF NE CORNER OF BUILDING.

1040 RIG MOVING INTO POSITION OVER B-3 ON SPAULDING ST.

1110 UNABLE TO DO B-3 DUE TO SLOPE OF SPAULDING ST. CAN NOT GET RIG LEVEL - H&S ISSUE. GEODESIGN MOVING BACK DOWN TO SITE TO ADVANCE BORINGS B-6 & B-8.

1120 RIG IN POSITION OVER B-6 (GEOTECH BORING)

1255 B-6 ADVANCED TO HSA REFUSAL @ ' WITH SIMILAR TO B-2. RIG MOVING INTO POSITION OVER B-8 (GEOTECHNICAL BORING).

1300 B-8 DEPTH 10', CONSISTENT WITH ALL LOCATIONS PREVIOUS

1317 SEABOARD OFF SITE

1330 GEODESIGN / RIT OFFSITE

11/1/22

Signed: _____ Date: 11/1/22

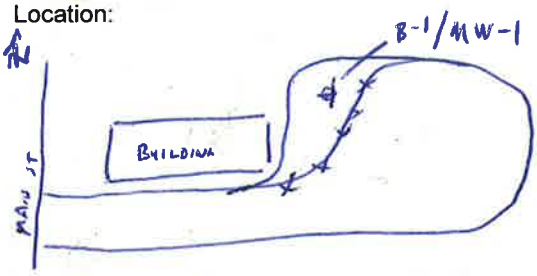
5 squares = 1 inch

SOIL BORING LOG

Project Name: TPCC Site Name: 18 S. MAIN ST.

Stone Project Number: 20211145 Client: CVRPC / TPCC

BORING/WELL ID: B-1 / MW-1	Date Drilled: 10/28/22		Location:
SOP followed: SEE PHASE II WKPLN	Borehole Diam. (in)	6	
Deviations: NONE - BESIDES DEPTH	Well Diameter (in):	~~2~~ 1.5	
Drilling Method: HSA	Screen Length (ft):	5' PREPACK	
Driller's name: MIKE KERN	Screen Slot Size:	~~0.020~~ 0.010	
Sampling method: 2' SPLIT SPOON	Sand Pack (ft):	13.5-~~20.5~~ 21'	
Core Length: ~21'	Well Seal (ft):	BENT 11.5-13.5	



Comments: WELL INSTALLATION PERFORMED BY SEABOARD DRILLING, INC. MW-1 INSTALLED @ ~21'.

Depth Interval (ft bgs)	Recovery (feet)	PID Interval (ft)	PID Reading (ppm v/v)	Soil Description (color, texture, moisture, remarks)	Sample Collected (Depth, ID & Time)	Well Const. Details
0-2	1/2	1	0	V. Dark Brown, f-m SAND, little f gravel, trace silt, dry, subangular 8-5-4-2	B-1 (0-1.5') @ 1045 Metals & PAHs	
2-4	1/2	3	0	Brown to V. Dark Brown, SILT, trace f sand & gravel, subangular, moist 4-2-2-1		
4-6	0.5/2	5	0	SAA 1-1-1-3	B-1 (4-6') @ 1100 Metals & PAHs	
6-8	2/2	7	0	6-6.5 SAA 6.5-8 Brown/reddish-Brown, f SAND, trace silt, moist (m-c gravel @ tip) 4-8-6-6		
8-10	1 ~~0.5~~ 1/2	9	0	8-10 V. Dark Brown, f-m GRAVEL, some silt, subangular; moist, poorly sorted 8-9-3-2		
10-12	0.5/2	11	0	~~SAA CLAY~~ V. Dark Brown, SILT, some f gravel, angular, moist poorly sorted 3-3-4-5		

Geoscientist: REBECCA TRUAX	Signature:	Date: 10/28/22
Geoscientist:	Signature:	Date:

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Stone Project Number: 20211145				BORING/WELL ID: B-1 / MW-1		
Depth Interval (ft bgs)	Recovery (feet)	PID		Soil Description (color, texture, moisture, remarks)	Sample Collected (Depth, ID & Time)	Well Const. Details
		Interval (ft)	Reading (ppm v/v)			
12-14 ~~14-16~~ (EXT 10/28)	1.25/2	13 ~~15~~ (EXT 10/28)	0.1	V. Dark Brown, M-cs SAND, some f gravel subangular, moist, poorly sorted 7-15-16-16		
14-16	1.5/2	15	ø	~~SAA Except~~ (EX) 10/28 V. Dark Brown, SAND & GRAVEL, f-cs, subangular, moist, poorly sorted 28-48-17-25		
16-18	0.75/2	17	ø	SAA 41-19-30-17		
18-20	1/2	19	0.1	SAA wet @ tip 31-16-23-13		
20-22	1/2	21	ø	SAA HSA REFUSAL @ 21' (BONEY CONDITIONS) 15-16-18-17	B-1 (20') @ 1220 FOR VOCs	MW-1 SET @ 21' W/ 5' PREPACK SCREEN. SAND 13.5-21', BENT 11.5-13.5, CUTTINGS 2-11.5', SAND 0.5-2' FLUSH INSTALL WELL IS 1.5" DIAM.

Geoscientist: REBECCA TREAT	Signature:	Date: 10/28/22
Geoscientist:	Signature:	Date:

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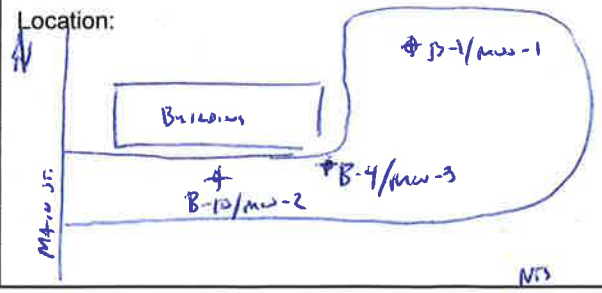
SOIL BORING LOG

Project Name: TPCC Site Name: 18 S. MAIN ST.

Stone Project Number: 20211145 Client: CVRPC / TPCC

BORING/WELL ID: B-4/MW-3	Date Drilled: 10/31/22		
SOP followed: See phase II w/plan	Borehole Diam. (in)	6"	
Deviations: None	Well Diameter (in):	1.5	
Drilling Method: HSA	Screen Length (ft):	10	
Driller's name: Mike Kern	Screen Slot Size:	0.010 Prepack	
Sampling method: 2' split spoon	Sand Pack (ft):	13-25	
Core Length: 25'	Well Seal (ft):	bent 11-13	

Location:



Comments: MW-3 INSTALLED. FLUSH FINISHED

Depth Interval (ft bgs)	Recovery (feet)	PID Interval (ft)	PID Reading (ppm v/v)	Soil Description (color, texture, moisture, remarks)	Sample Collected (Depth, ID & Time)	Well Const. Details
0-2 ~~(0-2)~~	1.5/2	1	0.05 Ø 0.5-1 1-1.5 1.5-2	Brown, f-m SAND, little f gravel, subang, poorly sorted, dry Brown/Black, SILT, trace org., dry SA 0-0.5' 2-3-3-2 Brown, f SAND, dry	B-4 (0-1.5') @1355 metals & PAHs	
2-4	1.5/2	3	0.3	2-2.5 SA 1-1.5' 2.5-3.5 SA 0.5-1' 3.5-4 SA 1.5-2 except f-m SAND 5-4-2-1 ~~2-3~~		
4-6	1.5/2	5	0.9	4.5 DK Brown, f SAND & SILT, trace f gravel 5-6 Light Brown/tan, f SAND 3-2-3-4	B-4 (4-6') @1405 metals & PAHs	
6-8	1/2	7	0.1	Brown-DK Brown, f SAND, some f-m gravel, sub rounded, poorly sorted, dry 5-5-5-5		
8-10	0.5/2	9	Ø	DK Brown, f SAND & SILT, little f-m gravel, sub rounded, poorly sorted dry 6-5-4-7		
10-12	1/2	11	0.2	DK Brown-Black, f-m SAND, some silt, little f-m gravel, subangular, poorly sorted, dry 4-4-3-4		

Geoscientist: REBECCA TREAT	Signature:	Date: 10/31/22
Geoscientist:	Signature:	Date:

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Stone Project Number: 20211145				BORING/WELL ID: B-4 / MW-3		
Depth Interval (ft bgs)	Recovery (feet)	PID		Soil Description (color, texture, moisture, remarks)	Sample Collected (Depth, ID & Time)	Well Const. Details
		Interval (ft)	Reading (ppm v/v)			
12-14	0.5/2	13	0	DK Brn - Blck, f SAND & SILT, some f-m gravel, subangular, poorly sorted, dry 5-7-19-18		Augered to 17' Due to time constraints no sample 14-17'
17-19	1/2	18	0.2	Dry. Brown, m-cs GRAVEL, some f sand, little silt, angular, poorly sorted, dry 25-41-37-16		
20-22'	1/2	21	0.3	Brown, m-cs SAND & GRAVEL, little silt, subrounded, poorly sorted, wet @ 21.5' 10-11-12-12	B-4 (21.5') @ 1520 VOCs + FD-1	MW-3 set @ 25' 10' 0.010 prepack screen Sand 13-25' bent 11-13' backfill 2-11 Sand 0.5-2' 1.5" diam PVC flush finished

Geoscientist: Rebecca Teeat	Signature:	Date: 10/31/22
Geoscientist:	Signature:	Date:

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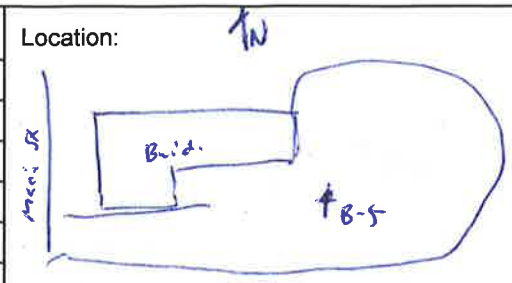
SOIL BORING LOG

Project Name: TPCC Site Name: 18 S. MAIN ST.

Stone Project Number: 20211145 Client: CVRPC / TPCC

BORING/WELL ID: B-5	Date Drilled: 11/1/22		Location: 
SOP followed: SEE PHASE II WKPN	Borehole Diam. (in)	6	
Deviations: NONE	Well Diameter (in):	N/A	
Drilling Method: HSA	Screen Length (ft):	N/A	
Driller's name: MIKE KERN	Screen Slot Size:	N/A	
Sampling method: 2' SPLIT SPOON	Sand Pack (ft):	N/A	
Core Length: 16.5'	Well Seal (ft):	N/A	

Comments: BOREHOLE BACKFILLED UPON COMPLETION & SEALED W/ASPHALT PATCH

Depth Interval (ft bgs)	Recovery (feet)	PID Interval (ft)	PID Reading (ppm v/v)	Soil Description (color, texture, moisture, remarks)	Sample Collected (Depth, ID & Time)	Well Const. Details
0-2'	0.75/2	1	0	0-1' Brown, f-c SAND ~~& SILT~~, some f gravel, trace silt, no odor/staining, dry 1-2' Brown/Grey, SILT, trace organics, org. odor, dry 9-5-5-6	B-5 (0-1.5') @ 0800 PP Metals & PAHs	
2-4	0.25/2	3	0	Brown, SILT & f-m GRAVEL, poorly sorted, subang., no odor/staining, dry 8-7-8-8		
4-6	1.5/2	5	0	Brown, SAA except trace quartz fragments & weathered slate fragments	B-5 (4-6') @ 0810 + PP metals & PAHs FD-2	
6-8	1/2	7	0	Brown/orange, f-c SAND & GRAVEL, trace weathered slate & quartz fragments, poorly sorted, sub angular, dry		

Geoscientist: REBECCA TROTT	Signature:	Date: 11/1/22
Geoscientist:	Signature:	Date:

Stone Project Number: 2021145				BORING/WELL ID: B-5		
Depth Interval (ft bgs)	Recovery (feet)	PID		Soil Description (color, texture, moisture, remarks)	Sample Collected (Depth, ID & Time)	Well Const. Details
		Interval (ft)	Reading (ppm v/v)			
8-9'3" ~~8 to 10~~ (R14)	0.5/2 ~~1.5/2~~ (R13)	9		SAA 20-17-50/3" ~~05/2~~ (R2)		
10-10'2" ~~10 to 12~~ (R15)	2"/2'	N/A	N/A	Gray, cs' GRAVEL likely boulders 50/2"		
				Augered to 15' due to time constraints. Driller indicates several 1' boulders 10-15'.		
15-16'9"	1/2			Brown/orange, f-cs' SAND & GRAVEL, subangular, poorly sorted, no staining/odor, dry 11-19-23-50/3"		
				HSA Refusal @ 16.5'		

Geoscientist: REBECCA TREAT	Signature:	Date: 11/1/22
Geoscientist:	Signature:	Date:

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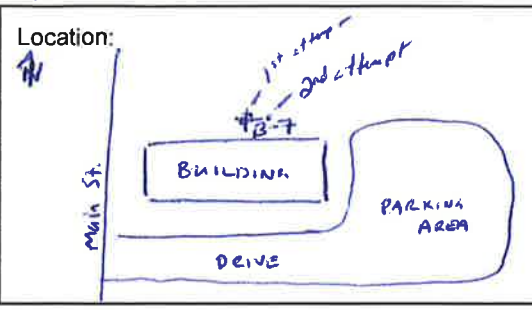
SOIL BORING LOG

Project Name: TPCC Site Name: 18 S. MAIN ST

Stone Project Number: 20211145 Client: CVRPC / TPCC

BORING/WELL ID: B-7	Date Drilled: 10/28/22		Location: 
SOP followed: SEE PHASE II ESA	Borehole Diam. (in)	6	
Deviations: NONE - NO WELL INSTALL	Well Diameter (in):	N/A	
Drilling Method: HSA	Screen Length (ft):	N/A	
Driller's name: MIKE KERN	Screen Slot Size:	N/A	
Sampling method: 2' SPLIT SPOON	Sand Pack (ft):	N/A	
Core Length: 9'	Well Seal (ft):	N/A	

Comments:

Depth Interval (ft bgs)	Recovery (feet) REC/PEN	PID Interval (ft)	PID Reading (ppm v/v)	Soil Description (color, texture, moisture, remarks)	Sample Collected (Depth, ID & Time)	Well Const. Details
0-2	1/2	1	0.1	V. Dark Brown, SILT, trace f' sand, dry BLOWS: 1-3-4-3	B-7 (0-1.5') @ 900 FOR METALS & PAHs	
2-4	1.75/2	3	0	SAA BLOWS: 2-3-2-3		
4-6	1/2	5	0	V. Dark Brown, SILT, trace f' sand & gravel, subangular, moist 1-3-4-12		
6-8	1.5/2	7	0.2	Brown to V. ~~Dark~~ Dark Brown, SILT, some gravel, f-m grained, moist 9-7-12-11	B-7 (6-8') @ 945 FOR METALS & PAHs	
8-9	0.25/2	8.5	0.2	Brown/Gray, f-m' GRAVEL, little silt, subangular, moist 7-50/3"	HSA Refusal @ 9' Moving over 5'E for 2nd attempt	
					2nd attempt HSA refusal @ 8'	

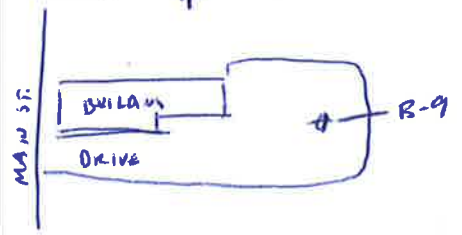
Geoscientist: REBECCA TREAT	Signature:	Date: 10/28/22
Geoscientist:	Signature:	Date:

SOIL BORING LOG

Project Name: TPCC Site Name: 18 S. MAIN ST

Stone Project Number: Client:

BORING/WELL ID: B-9	Date Drilled: 11/1/22		Location:
SOP followed: SEE PHASE II WKPN	Borehole Diam. (in)	6"	
Deviations: NONE	Well Diameter (in):	N/A	
Drilling Method: HSA	Screen Length (ft):		
Driller's name: MIKE KERN	Screen Slot Size:		
Sampling method: 2' SPLIT SPOON	Sand Pack (ft):		
Core Length: 10'	Well Seal (ft):		



Comments: BOREHOLE BACKFILLED UPON COMPLETION & SEALED W/ASPHALT PATCH

Depth Interval (ft bgs)	Recovery (feet)	PID Interval (ft)	PID Reading (ppm v/v)	Soil Description (color, texture, moisture, remarks)	Sample Collected (Depth, ID & Time)	Well Const. Details
				Asphalt 3"		
0-2'	1/2	1	0	0-0.5' Gray-cr Gravel 0.5-2' Brown, SILT, trace organics, no staining/odor, moist 10-8-4-3	B-9 (0-1.5') @ 1005 VOCs, metals & PAHs	
2-4'	0.5/2	3	0.3	Brown/orange, f SAND, little m gravel, rounded, poorly sorted, dry 3-2-3-5		
4-6'	1/2	5	0	Reddish Brown, f SAND, little m-cs gravel, subrounded, poorly sorted, dry 5-6-6-5	B-9 (4-6') @ 1010 metals/PAHs	
6-8'	0.25/2	7	0.3	Gray, f-cs GRAVEL, angular, dry 9-6-8-6		
8-10'	0.5/2	9	0.1	Brown, m-cs SAND, little f gravel, poorly sorted, subangular, dry 10-9-20-22	B-9 (10') @ 1015 VOCs	

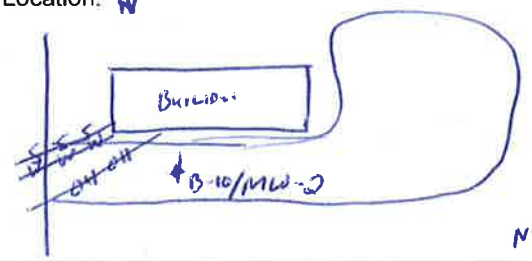
Geoscientist: REBECCA TREAT	Signature:	Date: 11/1/22
Geoscientist:	Signature:	Date:

SOIL BORING LOG

Project Name: TPCC Site Name: 18 S. MAIN ST.

Stone Project Number: 20211145 Client: CVRPC / TPCC

BORING/WELL ID: B-10/MW-2	Date Drilled: 10/31/22		Location: N
SOP followed: SEE PHASE II WKPLN	Borehole Diam. (in)	6"	
Deviations: NONE - EXCEPT COLLATION SAMPLES	Well Diameter (in):	1.5	
Drilling Method: HSA / DRIVE & WASH	Screen Length (ft):	10	
Driller's name: MIKE KLEIN	Screen Slot Size:	0.010 PREPACK	
Sampling method: 2" SPLIT SPOON	Sand Pack (ft):	13-25	
Core Length: 25'	Well Seal (ft):	BENT 11-13	



Comments: MW-2 INSTALLED. 1.5" DIAM FLUSH FINISHED

Depth Interval (ft bgs)	Recovery (feet)	PID Interval (ft)	PID Reading (ppm v/v)	Soil Description (color, texture, moisture, remarks)	Sample Collected (Depth, ID & Time)	Well Const. Details
				Asphalt 3"		
0-2'	1.5/2	1	Ø	0-1.5' V. DK. Brown, f-c SAND, little f-m gravel, tr silt, no odor/staining, SUBANGULAR; dry, poorly sorted 1.5-2' Brown, SILT, some f-m sand, dry 6-8-3-2	B-10 (0-1.5') @ 0910 metals & PAHs	
2-4'	0.5/2	3	Ø	2-4' Brown, f-m SAND, some silt, no staining/odor, dry 5-4-3-2		
4-6'	1/2	5	Ø	Brown/Gray, f SAND & SILT, no staining/odor, dry 3-8-10-15		
6-8'	~~1~~/2	7	0.2	Brown/Black, f-c SAND, little f-m gravel & silt, poorly sorted, subangular, no staining/odor, dry 7-5-12-15	B-10 (6-8') @ 0940 metals & PAHs	
8-10'	0.5/2	9	0.3	Brown, f-m SAND & GRAVEL, little silt subangular, wet (from clay & water) poorly sorted 16-10-13-24		Stuck clay & could not sample is wet
10-12'	0.5/2	11	Ø	SAA 11-7-6-31		

Geoscientist: REBECCA TREAT	Signature:	Date: 10/31/22
Geoscientist:	Signature:	Date:

Stone Project Number: 20211145				BORING/WELL ID: B-10		
Depth Interval (ft bgs)	Recovery (feet)	PID		Soil Description (color, texture, moisture, remarks)	Sample Collected (Depth, ID & Time)	Well Const. Details
		Interval (ft)	Reading (ppm v/v)			
12-14	0.5/2	13	Ø	Brown/Grey, SILT, some f-m' Gravel, Subangular, little m-cs sand, poorly sorted no staining/odor, wet 13-24-18-17		
14-16	1/2	15	Ø	14-15' Brown, SILT, little f-m' Gravel, Subangular, poorly sorted, no staining/odor wet 15-16' Brown, f-cs' SAND, little f-m' gravel, subrounded, poorly sorted, moist 18-8-11-12		
16-18	1/2	17	0.5	16-18' Brown, f-cs' SAND & Gravel, trace quartz fragments, dry, poorly sorted angular 22-21-16-13		
18-20	0.5/2	19	Ø	DK Brown, f' SAND, little silt & f-m' gravel, Subrounded, poorly sorted, no odor/staining, dry 28-15-17-16		
20-22	0.5/2	21	0.2	DK Brown, f-cs' SAND, little f-m' gravel & silt, Subangular, poorly sorted wet @ 21.5', no staining/odor	B-10 (21.5') @1305 VOCs	MW-2 SET @ 25', 10' OF 0.010 PREPACK SCREEN. SAND 13-25'. BENT 11-13', BACKFILL TO 2' FOLLOWED BY SAND TO 0.5. FLUSH FINISH.
						WELL IS 1.5" DIAM.

Geoscientist: REBECCA TREAT	Signature:	Date: 10/31/22
Geoscientist:	Signature:	Date:

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B-8
1st attempt
2nd Attempt
B-7
B-1/MW-1
B-2
B-2
B-3
UNABLE TO ADVANCE DUE TO SLOPE OF ROAD & O.H. LINES
B-9
SV-2
SV-1
B-5
B-6
B-4
B-4/MW-3
B-10
B-10/MW-2
SV-4
SV-5
SV-6
SV-3
S
W
OH

con-test ANALYTICAL LABORATORY

Phone: 413-525-2332
Fax: 413-525-6405
Email: info@contestlabs.com

http://www.contestlabs.com

Doc #378 Rev 1_03242017

CHAIN OF CUSTODY RECORD (AIR)

39 Spruce Street
East Longmeadow, MA 01028

Page 1 of 1

Company Name: STONE ENVIRONMENTAL INC
Address: 535 STONE CUTTERS WAY, MONTPELIER, VT
Phone: 802-229-4541
Project Name: TPCC 18 S. MAIN ST.
Project Location: 18 S. MAIN ST, BARRE, VT
Project Number: 20211145
Project Manager: REBECCA TREAT
Con-Test Quote Name/Number:
Invoice Recipient: REBECCA TREAT / STONE ENV.
Sampled By: RTT

Requested Turnaround Time
7-Day ☐ 10-Day ☒
Due Date:

Rush-Approval Required
1-Day ☐ 3-Day ☐
2-Day ☐ 4-Day ☐

Data Delivery
Format: PDF ☒ EXCEL ☒
Other: EQUIS EZ EDD
CLP Like Data Pkg Required: ☐
Email To: rtreat@stone-env.com
Fax To #:

ANALYSIS REQUESTED

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

Lab Use	Client Use	Collection Data		Duration	Flow Rate	Matrix	Volume	PCBs EPA TO-10A				Initial Pressure " Hg	Final Pressure " Hg	Lab Receipt Pressure " Hg		
Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	Total Minutes Sampled	☐ m³/min ☒ L/min	Code	☐ Liters ☐ m³								Summa Can ID	Flow Controller ID
	1A-2	10/27/22 1420	10/28/22 1420	1440	4.50	IA	PUF CARTRIDGE	X							101222-	04
	1A-1	10/27/22 1440	10/28/22 1440	1440	4.49	IA		X							101222-	05
	1A-B	10/27/22 1500	10/28/22 1500	1440	4.50	IA		X							101222-	01
	1A-DUP	10/27/22 1508	10/28/22 1508	1440	4.49	IA		X							101222-	02
	AMBIENT	10/27/22 1527	10/28/22 1527	1440	4.500	AMB		X							101222-	03
	FB	10/27/22 1535	10/27/22 1535	<1	N/A	O		X							101222-	06

Comments: FINISHING FLOW RATES: 1A-2 (4.40); 1A-1 (4.43); 1A-B (4.53); 1A-DUP (4.49); AMBIENT (N/A)

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 FIELD BLANK

Relinquished by: (signature)	Date/Time:
	11/2/22 1050
Received by: (signature)	Date/Time:
VDS CY	11/2/22 1050
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:

Detection Limit Requirements
MA
CT
Other: VT DEC

Special Requirements
☐ MA MCP Required
MCP Certification Form Required
☐ CT RCP Required
RCP Certification Form Required
☐ Other

con-test ANALYTICAL LABORATORY www.contestlabs.com

NELAC and AIHA-LAP, LLC Accredited

Project Entity
☐ Government ☐ Municipality ☐ MWRA ☐ WRTA
☐ Federal ☐ 21 J ☐ School
☐ City ☐ Brownfield ☐ MBTA

Other
☐ Chromatogram
☐ *AIHA-LAP,LLC*

PCB ONLY
☐ Soxhlet
☐ Non Soxhlet

Pace Analytical

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

http://www.pacelabs.com

CHAIN OF CUSTODY RECORD

39 Spruce Street
East Longmeadow, MA 01028

Doc # 381 Rev 5_07/13/2021

Company Name:	STONE ENVIRONMENTAL INC.
Address:	535 STONE CUTTERS WAY, MONTPELIER, VT
Phone:	802-229-4541
Project Name:	TPCC 18 S. MAIN ST
Project Location:	18 S. MAIN ST, BARRE, VT
Project Number:	20211145
Project Manager:	REBECCA TREAT
Pace Quote Name/Number:	
Invoice Recipient:	REBECCA TREAT / STONE ENV
Sampled By:	RT

Requested Turnaround Time			
7-Day	☐	10-Day	☒
PFAS 10-Day (std)	☐	Due Date:	

Rush-Approval Required			
1-Day	☐	3-Day	☐
2-Day	☐	4-Day	☐

Data Delivery	
Format:	PDF ☒ EXCEL ☒
Other:	EQUIS EDD
CLP Like Data Pkg Required:	☐
Email To:	rtreat@stone-env.com
Fax To #:	

Dissolved Metals Samples	
○	Field Filtered
○	Lab to Filter

Orthophosphate Samples	
○	Field Filtered
○	Lab to Filter

PCB ONLY

SOXHLET ☐

NON SOXHLET ☐

ANALYSIS REQUESTED

Pace Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	[1]Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE	PAHs EPA 8270 SIM	PP Metals 6010/7470/7471	VOCs EPA 8260										
	B-1 (0-1.5')	10/31/22	1045	GRAB	S	U		1				X	X											
	B-1 (4-6')		1100		S	U		1				X	X											
	B-1 (20')		1220		S	U	3	1						X										
	B-7 (0-1.5')		0900		S	U		1				X	X											
	B-7 (6-8')		0945		S	U		1				X	X											
	B-10 (0-1.5')	10/31/22	0910		S	U		1				X	X											
	B-10 (6-8')		0940		S	U		1				X	X											
	B-10 (21.5')		1305		S	U	3	1						X										
	B-4 (0-1.5')		1355		S	U		1				X	X											
	B-4 (4-6')		1405		S	U		1				X	X											

Relinquished by: (signature)	Date/Time: 11/2/22 1357	Client Comments:
Received by: (signature) VOS CY	Date/Time: 11/2/22 1057	
Relinquished by: (signature)	Date/Time:	
Received by: (signature)	Date/Time:	
Relinquished by: (signature)	Date/Time:	
Received by: (signature)	Date/Time:	
Relinquished by: (signature)	Date/Time:	
Received by: (signature)	Date/Time:	

Detection Limit Requirements	
MA	
CT	
Other:	VTDEC

Special Requirements	
☐	MA MCP Required
	MCP Certification Form Required
☐	CT RCP Required
	RCP Certification Form Required
☐	MA State DW Required
	PWSID #

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

NELAC and AIHA-LAP, LLC Accredited

Project Entity

Government	☐	Municipality	☐	MWRA	☐	WRTA	☐
Federal	☐	21 J	☐	School	☐		
City	☐	Brownfield	☐	MBTA	☐		

Other
☐ Chromatogram
☐ *AIHA-LAP,LLC*

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)

[2] Preservation Code

Lab Comments:

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.

Pace Analytical®

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Access COC's and Support Requests

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CHAIN OF CUSTODY RECORD

39 Spruce Street
East Longmeadow, MA 01028

Doc # 381 Rev 5_07/13/2021

Page 2 of 2

Company Name:	STONE ENVIRONMENTAL INC
Address:	535 STONE CUTTERS WAY, MONTPELIER, VT
Phone:	802-229-4541
Project Name:	TPCC 185 S. MAIN ST
Project Location:	185 S. MAIN ST BARRE, VT
Project Number:	20211145
Project Manager:	REBECCA TREAT
Pace Quote Name/Number:	
Invoice Recipient:	REBECCA TREAT / STONE ENV.
Sampled By:	RT

Requested Turnaround Time			
7-Day	☐	10-Day	☒
PFAS 10-Day (std)	☐	Due Date:	

Rush-Approval Required			
1-Day	☐	3-Day	☐
2-Day	☐	4-Day	☐

Data Delivery	
Format:	PDF ☒ EXCEL ☒
Other:	EQUIS EZ EDD
CLP Like Data Pkg Required:	☐
Email To:	rtreat@stone-env.com
Fax To #:	

Dissolved Metals Samples	
○	Field Filtered
○	Lab to Filter

Orthophosphate Samples	
○	Field Filtered
○	Lab to Filter

PCB ONLY

SOXHLET ☐

NON SOXHLET ☐

ANALYSIS REQUESTED

Pace Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	[1]Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE	PAHs EPA 8270 SIM	PP METALS (6020, 7470, 7471)	VOCs EPA 8260										[2] Preservation Code
	B-4 (21.5')	10/31/22	1520	GRAB	S	U	3	1						X										Courier Use Only
	FD-1	↓	1520	↓	S	U	3	1						X										Total Number Of:
	B-5 (0-1.5')	11/1/22	0800		S	U		1				X	X											VIALS
	B-5 (4-6')		0810		S	U		1				X	X											GLASS
	FD-2		0810		S	U		1				X	X											PLASTIC
	B-9 (0-1.5')		1005		S	U		1				X	X											BACTERIA
	B-9 (4-6')		1010		S	U		1				X	X											ENCORE
	B-9 (10')		1015	↓	S	U	3	1						X										
	TB	LAB PREPARED			O	U	3							X										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

Relinquished by: (signature)	Date/Time: 11/2/22 1050	Client Comments:
Received by: (signature)	Date/Time: 11/2/22 1050	
Relinquished by: (signature)	Date/Time:	
Received by: (signature)	Date/Time:	
Relinquished by: (signature)	Date/Time:	
Received by: (signature)	Date/Time:	
Relinquished by: (signature)	Date/Time:	
Received by: (signature)	Date/Time:	

Detection Limit Requirements	
MA	
CT	
Other:	VTDEC

Special Requirements	
☐	MA MCP Required
	MCP Certification Form Required
☐	CT RCP Required
	RCP Certification Form Required
☐	MA State DW Required
PWSID #	

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

NELAC and AIHA-LAP, LLC Accredited

Project Entity

Government	☐	Municipality	☐	MWRA	☐	WRTA	☐
Federal	☐	21 J	☐	School	☐		
City	☐	Brownfield	☐	MBTA	☐		

Other

☐ Chromatogram
☐ *AIHA-LAP,LLC*

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

[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)

Lab Comments:

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.

Date Submitted: 11-11-2022 18:38
Submitted By: lrajnak@stone-env.com

Observation and Remarks

Site Information

Project Name	TPCC
Project Number	20211145
Project Manager	Rebecca Treat
Location	Barre, VT
Date	11-11-2022

Personnel On Site

Stone Personnel On Site	Erin Coats
Time On Site	10:50 (-5 GMT)
Time Off Site	11:07 (-5 GMT)

Observation Entry

Weather	Overcast, 63F
Objectives	Survey and sample MW-1, MW-2, and MW-3.

Add Notes / Photos - # 1

Observation

Time	14:43 (-5 GMT)
Notes	Surveyed all 3 wells with Katria around 1200. Water in MW-3 took a long time to stabilize.

Add Notes / Photos - # 2

Observation

Time	16:53 (-5 GMT)
Notes	There was only 2 inches of water in MW-1, so water was pumped at a very low rate. Backup samples were collected for MW-1 at 1645 while parameters were still unstable in case the well goes dry before sampling can occur. The backup samples didn't end up needing to be used, so they were discarded.

Signature

Signature	

Stone Environmental, Inc. Field Instrument Calibration Record

Project Name: TPCC **Date:** 11-11- **Sampler (Sig/Date):**
SEI Project Number: 20211145 **Task:** GW sampling
Project Location: Barre, VT **Checked By/Date:** EEC 11-11-2022
Weather Conditions (AM): Overcast, 63F **Weather Conditions (PM):** Rainy, 58F

MULTI-PARAMETER WATER QUALITY METER

Meter Type: Professional Plus YSI
Model NO.:
Unit ID NO.: 3666

AM Calibration — **Start Time** 11:10 / **End Time** 11:10

Post Calibration Check — **Start Time** 18:17 / **End Time** 18:17

	Units	Standard Value	Meter Value	*Acceptance Criteria (AM)	Standard Value	Meter Value	*Acceptance Criteria (PM)
pH (4)	SU	4	3.98	±0.1 pH Units			
pH (7)	SU	7	7.05	±0.1 pH Units	7	6.93	±0.3 pH Units
pH (10)	SU	10	10	±0.1 pH Units			
ORP	mV	220	239.7	±10 mV	220	221.3	±10 mV
Specific Conductance	µs/cm	1,413	1,260.0	±0.5% of Standard	1,237	1,531.0	±5% of Standard
Dissolved Oxygen	%	100%	97.3	±2% of Standard	100%	97.3	±0.5 mg/L of sat. val.
Temperature	°C		18.5			17.9	
Baro. Press.	mmHg		745.5			743.0	

TURBIDITY METER

Meter Type: Geotech **Model NO.:** **Unit ID NO.:** 6060

	Units	Standard Value	Meter Value	*Acceptance Criteria (AM)	Standard Value	Meter Value	*Acceptance Criteria (PM)
	NTU	NTU 20	19.9	±0.3 NTU of stan. Of	NTU 20	19.7	±0.3 NTU of stan. Of
	NTU	NTU 100	98	1.0 NTU or less. ±5%	NTU 100	98	1.0 NTU or less. ±5%
	NTU	NTU 800	779	of standards >5 NTU	NTU 800	795	of standards >5 NTU

PHOTIONIZATION DETECTOR

Meter Type: **Model NO.:** **Unit ID NO.:**

	Units	Standard Value	Meter Value	*Acceptance Criteria (AM)	Standard Value	Meter Value	*Acceptance Criteria (PM)
Background	ppmv	0.0		within 5 ppmv of BG	0.0		within 5 ppmv of BG
Span Gas	ppmv	100		±10% of standard	100		±10% of standard

O_2-LEL 4 GAS METER

Meter Type: **Model NO.:** **Unit ID NO.:**

	Units	Standard Value	Meter Value	*Acceptance Criteria (AM)	Standard Value	Meter Value	*Acceptance Criteria (PM)
Methane	%	50		±10% of standard	50		±10% of standard
O_2	%	20.9		±10% of standard	20.9		±10% of standard
H_2S	ppmv	25		±10% of standard	25		±10% of standard
CO	ppmv	50		±10% of standard	50		±10% of standard

☐ Equipment calibrated within the Acceptance Criteria specified for each parameter listed above.
☐ Equipment **not** calibrated within the Acceptance Criteria specified for each parameter listed above**.

MATERIALS RECORD

Deionized/Distilled Water Source:
Trip Blank Source:
Sample Preservative Source:
Disposable Filter Type:
DO Calibration Fluids Source:
Other:

Calibration Standard Lot #		Exp. Date
pH (4)	2GC933	03/24
pH (7)	2GD853	04/24
pH (10)	2GD857	04/24
ORP	2GD638	01/23
Spec. Conductivity	2GC675	03/23
Turb. Stan. NTU 20	53D	09/24
Turb. Stan. NTU 100	53D	09/24
Turb. Stan. NTU 800	53D	09/24
PID Scan Gas		
O_2 LEL		
Other		

NOTES:

STONE ENVIRONMENTAL

* = Unless otherwise noted, calibration procedures and acceptance criteria are in general accordance with USEPA Region 1 SOPs for Field Instrument Calibration (EQASOP-FieldCalibrat) and Low Stress Purging and Sampling (EQASOP-GW001), each dated 1/19/2010. Additional acceptance criteria obtained from instrument specific manufacturer recommendations. **= If meter reading is not within acceptance criteria , clean/replace probe and re-calibrate, or use calibrated back-up meter if available. If project requirements necessitate use of the intstrument, clearly document any deviations from acceptance criteria on all data sheets and log book entries.

MONITORING WELL SAMPLING FORM

STONE ENVIRONMENTAL INC

Project Name:	Turning Point Center	Comments: Rain started at 1600.
SEI Project Number:	20211145	
Client:		
Project Manager:	Rebecca Treat	

WELL ID	MW-1		**Equipment ID / SN**
Sample Date	11-11-2022	Pump:	SEI #101
SOP/SSP #'s Followed	SEI SOP 5.49.1	Water Level Indicator:	SEI
Sampling Method	Peri Pump	Water Quality Sonde:	3666
Sampling Personnel	Erin Coats	Turbidity Meter:	6060
Weather	Rainy, 60F	Other:	FEP

Calculate Purge Volumes

Time of water level measurement (military): 16:02 | Depth of Pump/Intake: 18.80 feet | Measuring Point Description: TOC | Well Screen Length:

Total Well Depth (btoc)		Depth to Water (btoc)	Height of Water Column		One Well Volume
18.80 feet	-	18.60 feet	= 0.20 feet	X 0.155 liters/feet (1-inch well) X 0.347 liters/feet (1.5-inch well) X 0.617 liters/feet (2-inch well)	= 0.07 liters

Time purging began (military):	16:05	3 X One Well Volume	0.21	liters
Time purging ended (military):	17:05	5 X One Well Volume		liters

Water Level (ft btoc)	Cumulative Vol. Purged (mL)	Time (Military)	Flow Rate (mL/min)	Temp (ºC) (± 3%)	ORP (mV) (± 10 mV)	pH (su) (± 0.1 su)	DO (mg/L) (± 10% or 3 consecutive readings < 0.5 mg/L))	Conductivity (µS) (± 3%)	Turbidity (NTU) (± 10% or 3 consecutive readings <5 NTU)
19.65	750	16:30	30	14.1	29	7.44	8.72	1,497	112.0
19.7	900	16:35	30	14.1	36	7.41	8.77	1,432	95.7
19.8	1,050	16:40	30	14.0	38	7.39	8.82	1,379	75.9
19.78	1,350	16:50	30	13.8	53	7.37	9.02	1,257	42.0
19.76	1,500	16:55	30	13.8	57	7.36	9.02	1,220	40.0
19.8	1,650	17:00	30	13.8	61	7.36	9.10	1,202	34.6

Total Vol. Removed: 1.7 Liters (√) ✓ Meters Calibrated (√) ✓ Min. 3 Well Vol. Purged (√) ✓ Parameters Stable for 3 consecutive measurements

Sample Identification	Field Dup.	Time Collected (Military)	Sampled By (Initials)	Container	Preservation	Analysis	Additional Comments
MW-1		17:05	Erin Coats	2 x 40mL VOA	HCl	VOC 8260	

Sampling Personnel Signature _____ Date 11-11-2022

MONITORING WELL SAMPLING FORM

STONE ENVIRONMENTAL INC

Project Name:	Turning Point Center	Comments:
SEI Project Number:	20211145	
Client:		
Project Manager:	Rebecca Treat	

WELL ID	MW-2		Equipment ID / SN
Sample Date	11-11-2022	Pump:	SEI #101
SOP/SSP #'s Followed	SEI SOP 5.49.1	Water Level Indicator:	SEI
Sampling Method	Peri Pump	Water Quality Sonde:	3666
Sampling Personnel	Erin Coats	Turbidity Meter:	6060
Weather	Overcast, 64F	Other:	FEP

Calculate Purge Volumes

Time of water level measurement (military): 14:31 | Depth of Pump/Intake: 24.20 feet | Measuring Point Description: TOC | Well Screen Length:

Total Well Depth (btoc)		Depth to Water (btoc)	Height of Water Column		One Well Volume
24.85 feet	-	20.58 feet	= 4.27 feet	X 0.155 liters/feet (1-inch well) X 0.347 liters/feet (1.5-inch well) X 0.617 liters/feet (2-inch well)	= 1.48 liters

Time purging began (military):	14:43	3 X One Well Volume	4.45	liters
Time purging ended (military):	15:40	5 X One Well Volume		liters

Water Level (ft btoc)	Cumulative Vol. Purged (mL)	Time (Military)	Flow Rate (mL/min)	Temp (ºC) (± 3%)	ORP (mV) (± 10 mV)	pH (su) (± 0.1 su)	DO (mg/L) (± 10% or 3 consecutive readings < 0.5 mg/L))	Conductivity (µS) (± 3%)	Turbidity (NTU) (± 10% or 3 consecutive readings <5 NTU)
20.6	2,000	15:03	100	13.0	-152	7.29	0.47	1,019	29.5
20.64	2,500	15:08	100	12.8	-158	7.27	0.45	1,014	23.5
20.64	3,000	15:13	100	12.6	-167	7.23	0.38	995	17.8
20.63	3,300	15:16	100	12.7	-169	7.21	0.35	995	11.3
20.65	3,600	15:19	100	12.5	-171	7.21	0.34	987	8.2
20.65	3,900	15:22	100	12.8	-174	7.21	0.30	984	7.4
20.62	4,200	15:25	100	12.8	-176	7.20	0.31	985	7.5
20.63	4,500	15:28	100	12.8	-180	7.20	0.28	981	5.6
20.61	4,800	15:31	100	12.7	-184	7.21	0.28	976	5.1
20.62	5,100	15:34	100	12.6	-189	7.22	0.32	969	4.9

Total Vol. Removed: 5.1 Liters (√) ✓ Meters Calibrated (√) ✓ Min. 3 Well Vol. Purged (√) ✓ Parameters Stable for 3 consecutive measurements

Sample Identification	Field Dup.	Time Collected (Military)	Sampled By (Initials)	Container	Preservation	Analysis	Additional Comments
MW-2		15:40	Erin Coats	2 x 40mL VOA	HCl	VOC 8260	

Sampling Personnel Signature _____ Date 11-11-2022

MONITORING WELL SAMPLING FORM

STONE ENVIRONMENTAL INC

Project Name:	Turning Point Center	Comments:
SEI Project Number:	20211145	
Client:		
Project Manager:	Rebecca Treat	

WELL ID	MW-3		Equipment ID / SN
Sample Date	11-11-2022	Pump:	SEI #101
SOP/SSP #'s Followed	SEI SOP 5.49.1	Water Level Indicator:	SEI
Sampling Method	Peri Pump	Water Quality Sonde:	3666
Sampling Personnel	Erin Coats	Turbidity Meter:	6060
Weather	P sunny, 60 deg f	Other:	FEP

Calculate Purge Volumes

Time of water level measurement (military): 11:58 | Depth of Pump/Intake: 23.00 feet | Measuring Point Description: TOC | Well Screen Length: 10

Total Well Depth (btoc)		Depth to Water (btoc)		Height of Water Column		One Well Volume
24.00 feet	-	20.54 feet	=	3.46 feet	X 0.155 liters/feet (1-inch well) X 0.347 liters/feet (1.5-inch well) X 0.617 liters/feet (2-inch well)	= 1.20 liters

Time purging began (military):	12:29	3 X One Well Volume	3.60	liters
Time purging ended (military):	14:13	5 X One Well Volume		liters

Water Level (ft btoc)	Cumulative Vol. Purged (mL)	Time (Military)	Flow Rate (mL/min)	Temp (ºC) (± 3%)	ORP (mV) (± 10 mV)	pH (su) (± 0.1 su)	DO (mg/L) (± 10% or 3 consecutive readings < 0.5 mg/L))	Conductivity (µS) (± 3%)	Turbidity (NTU) (± 10% or 3 consecutive readings <5 NTU)
20.55	3,120	12:55	120	13.7	-48	7.38	2.18	876	42.5
20.55	3,720	13:00	120	14.0	-52	7.33	2.55	880	30.5
20.55	6,120	13:20	120	13.1	-59	7.27	3.09	851	81.1
20.58	6,720	13:25	120	12.9	-45	7.28	3.46	845	34.3
20.57	6,720	13:30	120	12.9	-52	7.28	3.22	847	94.7
20.56	9,120	13:50	120	12.8	-12	7.26	4.53	840	28.0
20.56	9,720	13:55	120	12.7	-15	7.27	3.98	839	6.8
20.56	10,320	14:00	120	12.9	-18	7.29	3.80	839	4.0
20.57	10,680	14:03	120	12.7	-19	7.30	3.95	836	2.7
20.56	11,040	14:06	120	12.6	-20	7.31	3.62	833	3.5

Total Vol. Removed: 11.0 Liters (√) ✓ Meters Calibrated (√) ✓ Min. 3 Well Vol. Purged (√) ✓ Parameters Stable for 3 consecutive measurements

Sample Identification	Field Dup.	Time Collected (Military)	Sampled By (Initials)	Container	Preservation	Analysis	Additional Comments
	✓	14:13	Erin Coats	2 x 40mL VOA	HCl	VOC 8260	

Sampling Personnel Signature _____ Date 11-11-2022

SOIL BORING LOG
B-1/MW-1
18 S. Main St., Barre, VT

DATE DRILLED: 10/28/22
BORING TERMINATION: Refusal
DRILLING METHOD: HSA
DRILLING COMPANY: Seaboard Geotechnical & Enviornmental Drilling Services

LOGGED BY: R. Treat
LOG COMPILED BY: S. Walser
DRILLER: Mike Kern

Well Details: Pre-pack screen 16-21', sand 13.5-21', bentonite 11.5-13.5', backfill 2-11.5', sand 0.5-2'. Finished with flush-mounted road box. 1.5" diameter PVC.

O:\PROJ-21\EAR\20211145 Turning Point Center, Barre\Field Notes

STONE ENVIRONMENTAL

DEPTH (Feet)	RECOVERY	LITHOLOGY / SOIL DESCRIPTION	Analytical Sample	WELL CONSTRUCTION	Water Depth (ft)	PID (ppm v/v)
0						
-1		Very dark brown, SAND, fine to medium grained, little fine gravel, trace silt, dry, subangular				0.0
-2						
-3		Brown to very dark brown, SILT, trace fine sand & gravel, subangular, moist				0.0
-4						
-5						0.0
-6						
-7		Brown/reddish brown, SAND, fine grained, trace silt, moist				0.0
-8		Very dark brown, GRAVEL, fine to medium grained, some silt, subangular, moist, poorly sorted				
-9						0.0
-10		Very dark brown, SILT, some fine gravel, angular, moist, poorly sorted				
-11						0.0
-12		Very dark brown, SAND, medium to coarse grained, some fine gravel, subangular, moist, poorly sorted				
-13						0.1
-14		Very dark brown, SAND & GRAVEL, fine to coarse grained, subangular, moist, poorly sorted				
-15						0.0
-16						
-17						0.0
-18						
-19					▽	0.1
-20						
-21						

SOIL BORING LOG
B-4/MW-3
18 S. Main St., Barre, VT

DATE DRILLED: 10/31/22
BORING TERMINATION: Target depth
DRILLING METHOD: HSA
DRILLING COMPANY: Seaboard Geotechnical & Enviornmental Drilling Services

LOGGED BY: R. Treat
LOG COMPILED BY: S. Walser 11/03/22
DRILLER: Mike Kern

Well Details: Pre-pack screen 15-25', sand 13-25', bentonite 11-13', backfill 2-11', sand 0.5-2'. Finished with flush-mounted road box. 1.5" diameter PVC.

O:\PROJ-21\EAR\20211145 Turning Point Center, Barre\Field Notes

STONE ENVIRONMENTAL

DEPTH (Feet)	RECOVERY	LITHOLOGY / SOIL DESCRIPTION	Analytical Sample	WELL CONSTRUCTION	Water Depth (ft)	PID (ppm v/v)
0						
-1		Brown, SAND, fine to medium grained, little fine gravel, subangular, poorly sorted, dry				0.0
-2		Brown/black, SILT, trace organics, dry				
-3		Brown, SAND, fine to medium grained, little fine gravel, subangular, poorly sorted, dry				0.3
-4		Brown, SAND, fine grained, dry				
-5		Brown, SAND, fine to medium grained, little fine gravel, subangular, poorly sorted, dry				0.9
-6		Brown/black, SILT, trace organics, dry				
-7		Brown, SAND, fine to medium grained, dry				0.1
-8		Dark brown, SAND & SILT, fine grained, trace fine gravel				
-9		Light brown/tan, SAND, fine grained				0.0
-10		Brown to dark brown, SAND, fine grained, some fine to medium gravel, subrounded, poorly sorted, dry				
-11		Dark brown, SAND & SILT, fine grained, little fine to medium gravel, subrounded, poorly sorted, dry				0.2
-12		Dark brown-black, SAND, fine to medium grained, some silt, little fine to medium gravel, subangular, poorly sorted, dry				
-13		Dark brown to black, SAND & SILT, fine grained, some fine to medium gravel, subangular, poorly sorted, dry				0.0
-14		Auger 14' to 17' due to time constraints.				
-15						
-16						
-17		Brown, GRAVEL, medium to coarse grained, some fine sand, little silt, angular, poorly sorted, dry				
-18						0.2
-19		Brown, SAND & GRAVEL, medium to coarse grained, little silt, subrounded, poorly sorted, wet at 21.5'.				
-20						
-21						0.3
-22						

SOIL BORING LOG
B-5
18 S. Main St., Barre, VT

DATE DRILLED: 11/01/22
BORING TERMINATION: Refusal
DRILLING METHOD: HSA
DRILLING COMPANY: Seaboard Geotechnical & Environmental Drilling Services

LOGGED BY: R. Treat
LOG COMPILED BY: S. Walser 11/03/22
DRILLER: Mike Kern

COMMENT: Borehole backfilled and sealed with asphalt patch.
O:\PROJ-21\EAR\20211145 Turning Point Center, Barre\Field Notes

STONE ENVIRONMENTAL

DEPTH (Feet)	RECOVERY	LITHOLOGY / SOIL DESCRIPTION	Analytical Sample	PID (ppm v/v)
0		Brown, SAND, fine grained, some fine gravel, trace silt, no odor/staining, dry		
-1		Brown/gray, SILT, trace organics, organic odor, dry		0.0
-2		Brown, SILT & GRAVEL, fine to medium grained, poorly sorted, subangular, no odor/staining, dry		
-3				0.0
-4		Brown, SILT & GRAVEL, fine to medium grained, trace quartz fragments & weathered slate fragments, poorly sorted, subangular, no odor/staining, dry		
-5				0.0
-6		Brown/orange, SAND & GRAVEL, fine to coarse grained, trace weathered slate & quartz fragments, poorly sorted, subangular, dry		
-7				0.0
-8				
-9		Gray, GRAVEL, coarse. Likely fragmented boulders.		
-10		Auger from 10'2" to 15' due to time constraints. Driller indicated several 1' boulders.		
-11				
-12				
-13				
-14				
-15		Brown/orange, SAND & GRAVEL, fine to coarse grained, subangular, poorly sorted, no odor/staining, dry		
-16				

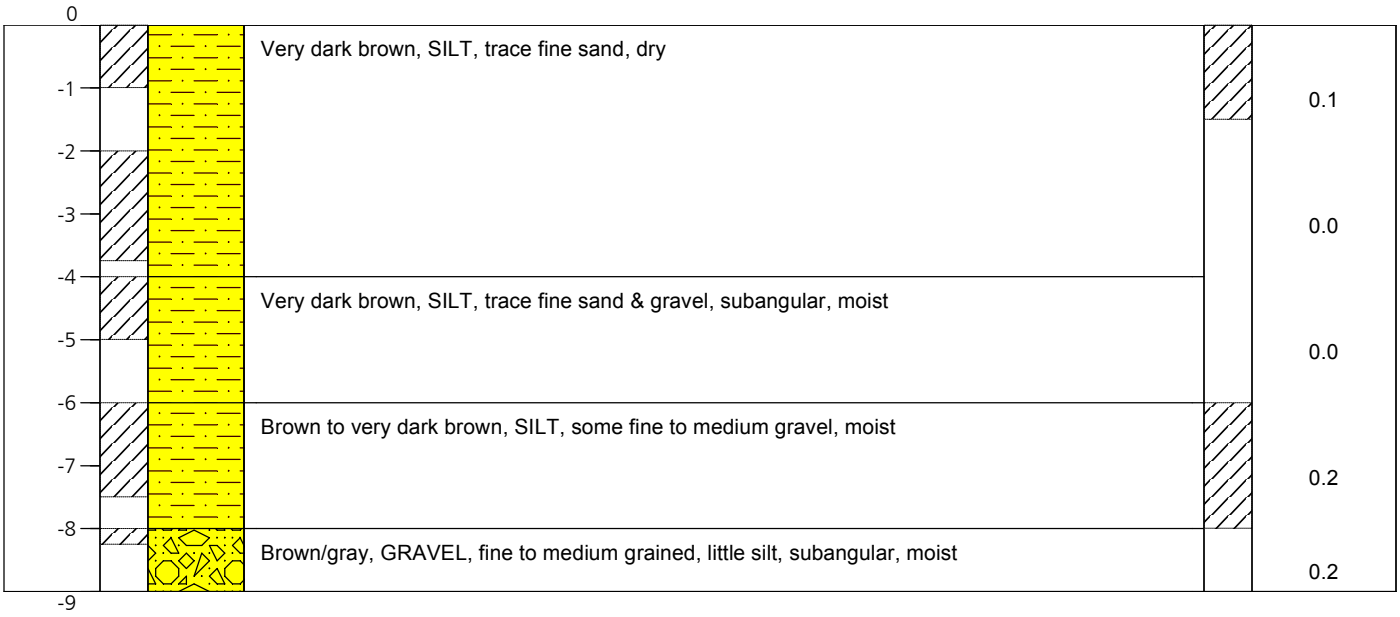
SOIL BORING LOG
B-7
18 S. Main St., Barre, VT

DATE DRILLED: 10/28/22
BORING TERMINATION: Refusal
DRILLING METHOD: HSA
DRILLING COMPANY: Seaboard Geotechnical & Environmental Drilling Services

LOGGED BY: R. Treat
LOG COMPILED BY: S. Walser
DRILLER: Mike Kern

COMMENT: Borehole backfilled and sealed with asphalt patch.
O:\PROJ-21\EAR\20211145 Turning Point Center, Barre\Field Notes

STONE ENVIRONMENTAL



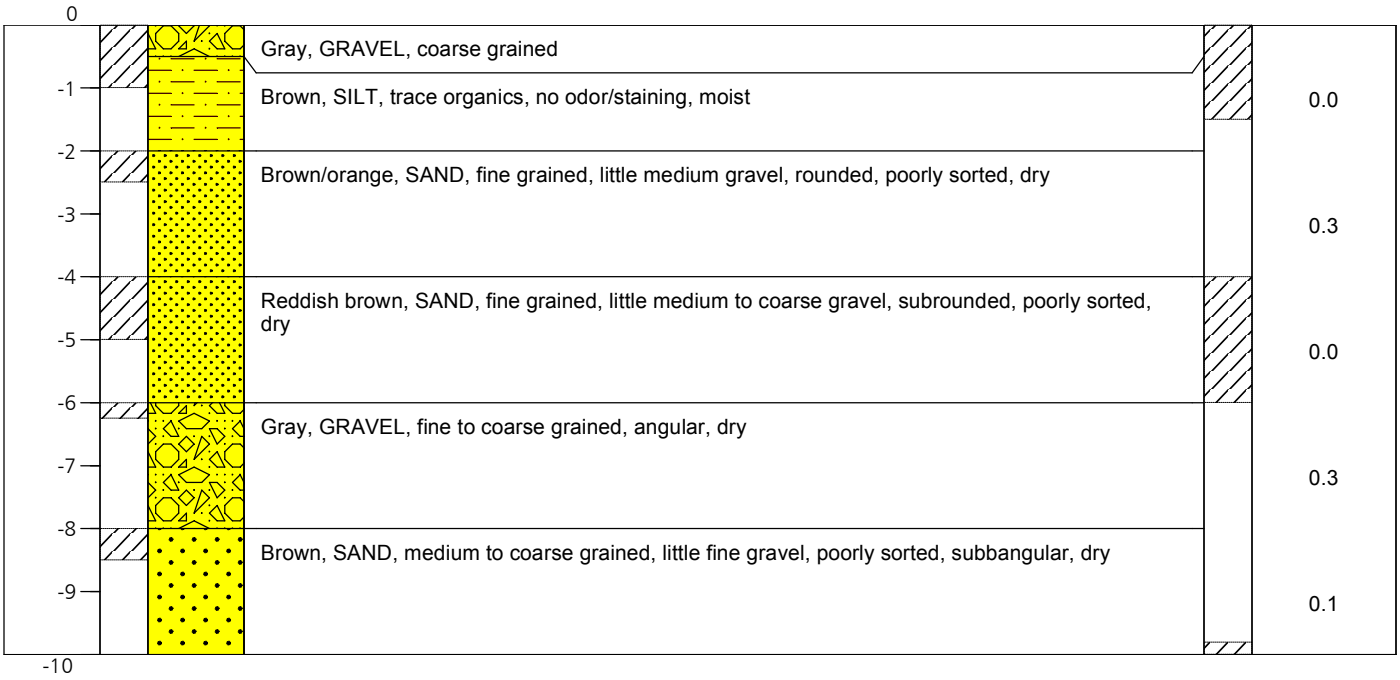
SOIL BORING LOG
B-9
18 S. Main St., Barre, VT

DATE DRILLED: 11/01/22
BORING TERMINATION: Target Depth
DRILLING METHOD: HSA
DRILLING COMPANY: Seaboard Geotechnical & Enviornmental Drilling Services

LOGGED BY: R. Treat
LOG COMPILED BY: S. Walser 11/03/22
DRILLER: Mike Kern

COMMENT: Borehole backfilled and sealed with asphalt patch.
O:\PROJ-21\EAR\20211145 Turning Point Center, Barre\Field Notes

STONE ENVIRONMENTAL



SOIL BORING LOG
B-4/MW-3
18 S. Main St., Barre, VT

DATE DRILLED: 10/31/22
BORING TERMINATION: Target depth
DRILLING METHOD: HSA
DRILLING COMPANY: Seaboard Geotechnical & Enviornmental Drilling Services

LOGGED BY: R. Treat
LOG COMPILED BY: S. Walser 11/03/22
DRILLER: Mike Kern

Well Details: Pre-pack screen 15-25', sand 13-25', bentonite 11-13', backfill 2-11', sand 0.5-2'. Finished with flush-mounted road box. 1.5" diameter PVC.

O:\PROJ-21\EAR\20211145 Turning Point Center, Barre\Field Notes

STONE ENVIRONMENTAL

DEPTH (Feet)	RECOVERY	LITHOLOGY / SOIL DESCRIPTION	Analytical Sample	WELL CONSTRUCTION	Water Depth (ft)	PID (ppm v/v)
0						
-1		Brown, SAND, fine to medium grained, little fine gravel, subangular, poorly sorted, dry				0.0
-2		Brown/black, SILT, trace organics, dry				
-3		Brown, SAND, fine to medium grained, little fine gravel, subangular, poorly sorted, dry				0.3
-4		Brown, SAND, fine grained, dry				
-5		Brown, SAND, fine to medium grained, little fine gravel, subangular, poorly sorted, dry				0.9
-6		Brown/black, SILT, trace organics, dry				
-7		Brown, SAND, fine to medium grained, dry				0.1
-8		Dark brown, SAND & SILT, fine grained, trace fine gravel				
-9		Light brown/tan, SAND, fine grained				0.0
-10		Brown to dark brown, SAND, fine grained, some fine to medium gravel, subrounded, poorly sorted, dry				
-11		Dark brown, SAND & SILT, fine grained, little fine to medium gravel, subrounded, poorly sorted, dry				0.2
-12		Dark brown-black, SAND, fine to medium grained, some silt, little fine to medium gravel, subangular, poorly sorted, dry				
-13		Dark brown to black, SAND & SILT, fine grained, some fine to medium gravel, subangular, poorly sorted, dry				0.0
-14		Auger 14' to 17' due to time constraints.				
-15						
-16						
-17		Brown, GRAVEL, medium to coarse grained, some fine sand, little silt, angular, poorly sorted, dry				
-18						0.2
-19		Brown, SAND & GRAVEL, medium to coarse grained, little silt, subrounded, poorly sorted, wet at 21.5'.				
-20						
-21						0.3
-22						

Appendix C: Tables

Table C-1
Soil VOLATILE ORGANIC COMPOUNDS Sample Analytical Results

Sample ID		Vermont Urban Background	VSS - Resident Soil	VSS - Non-resident Soil	EPA - Residential RSL	EPA - Industrial RSL	B-1 (20)		B-10 (21.5)		B-4 (21.5)		B-9 (10)		FD-1		TB	
Sample Date							10/26/2022		10/31/2022		10/31/2022		11/1/2022		10/31/2022		11/1/2022	
	CAS#	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	Q	(mg/Kg)	Q	(mg/Kg)	Q	(mg/Kg)	Q	(mg/Kg)	Q	(mg/Kg)	Q
1,1,1,2-Tetrachloroethane	630-20-6	NE	1.3	8	2	8.8	0.0022	U	0.0023	U	0.0017	U	0.0017	U	0.0016	U	0.002	U
1,1,1-Trichloroethane	71-55-6	NE	NE	NE	8100	36000	0.0022	U	0.0023	U	0.0017	U	0.0017	U	0.0016	U	0.002	U
1,1,2,2-Tetrachloroethane	79-34-5	NE	NE	NE	0.6	2.7	0.0011	U	0.0012	U	0.00083	U	0.00084	U	0.00082	U	0.001	U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	76-13-1	NE	NE	NE	6700	28000	0.011	U	0.012	U	0.0083	U	0.0084	U	0.0082	U	0.01	U
1,1,2-Trichloroethane	79-00-5	NE	NE	NE	1.1	5	0.0022	U	0.0023	U	0.0017	U	0.0017	U	0.0016	U	0.002	U
1,1-Dichloroethane	75-34-3	NE	2.1	13	3.6	16	0.0022	U	0.0023	U	0.0017	U	0.0017	U	0.0016	U	0.002	U
1,1-Dichloroethylene	75-35-4	NE	NE	NE	230	1000	0.0045	U	0.0047	U	0.0033	U	0.0033	U	0.0033	U	0.004	U
1,1-Dichloropropene	563-58-6	NE	NE	NE	NE	NE	0.0022	U	0.0023	U	0.0017	U	0.0017	U	0.0016	U	0.002	U
1,2,3-Trichlorobenzene	87-61-6	NE	NE	NE	63	930	0.0022	U	0.0023	U	0.0017	U	0.0017	U	0.0016	U	0.002	U
1,2,3-Trichloropropane	96-18-4	NE	0.00311	0.07	0.0051	0.11	0.0022	U	0.0023	U	0.0017	U	0.0017	U	0.0016	U	0.002	U
1,2,4-Trichlorobenzene	120-82-1	NE	NE	NE	24	110	0.0022	U	0.0023	U	0.0017	U	0.0017	U	0.0016	U	0.002	U
1,2,4-Trimethylbenzene	95-63-6	NE	144	177	300	1800	0.0022	U	0.0023	U	0.0017	U	0.0017	U	0.0016	U	0.002	U
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	NE	0.01	0.06	0.0053	0.064	0.0022	U	0.0023	U	0.0017	U	0.0017	U	0.0016	U	0.002	U
1,2-Dibromoethane (EDB)	106-93-4	NE	0.02	0.14	0.036	0.16	0.0011	U	0.0012	U	0.00083	U	0.00084	U	0.00082	U	0.001	U
1,2-Dichlorobenzene	95-50-1	NE	NE	NE	1800	9300	0.0022	U	0.0023	U	0.0017	U	0.0017	U	0.0016	U	0.002	U
1,2-Dichloroethane	107-06-2	NE	0.29	1.7	0.46	2	0.0022	U	0.0023	U	0.0017	U	0.0017	U	0.0016	U	0.002	U
1,2-Dichloropropane	78-87-5	NE	1.5	9.1	2.5	11	0.0022	U	0.0023	U	0.0017	U	0.0017	U	0.0016	U	0.002	U
1,3,5-Trichlorobenzene	108-70-3	NE	NE	NE	NE	NE	0.0022	U	0.0023	U	0.0017	U	0.0017	U	0.0016	U	0.002	U
1,3,5-Trimethylbenzene	108-67-8	NE	144	177	270	1500	0.0022	U	0.0023	U	0.0017	U	0.0017	U	0.0016	U	0.002	U
1,3-Dichlorobenzene	541-73-1	NE	NE	NE	NE	NE	0.0022	U	0.0023	U	0.0017	U	0.0017	U	0.0016	U	0.002	U
1,3-Dichloropropane	142-28-9	NE	NE	NE	1600	23000	0.0011	U	0.0012	U	0.00083	U	0.00084	U	0.00082	U	0.001	U
1,4-Dichlorobenzene	106-46-7	NE	NE	NE	2.6	11	0.0022	U	0.0023	U	0.0017	U	0.0017	U	0.0016	U	0.002	U
1,4-Dioxane	123-91-1	NE	2.8	17	5.3	24	0.11	U	0.12	U	0.083	U	0.084	U	0.082	U	0.1	U
2,2-Dichloropropane	594-20-7	NE	NE	NE	NE	NE	0.0022	U	0.0023	U	0.0017	U	0.0017	U	0.0016	U	0.002	U
2-Butanone (MEK)	78-93-3	NE	16952	26991	27000	190000	0.045	U	0.047	U	0.033	U	0.033	U	0.033	U	0.04	U
2-Chlorotoluene	95-49-8	NE	NE	NE	1600	23000	0.0022	U	0.0023	U	0.0017	U	0.0017	U	0.0016	U	0.002	U
2-Hexanone (MBK)	591-78-6	NE	NE	NE	200	1300	0.022	U	0.023	U	0.017	U	0.017	U	0.016	U	0.02	U
4-Chlorotoluene	106-43-4	NE	NE	NE	1600	23000	0.0022	U	0.0023	U	0.0017	U	0.0017	U	0.0016	U	0.002	U

Key:
VSS - Vermont Soil Standards from Investigation and Remediation of Contaminated Properties Rule, July 2019
Vermont Urban Background obtained from Investigation and Remeidation of Contaminated Properties Rule, July 2019
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mg/kg - milligrams per kilogram (parts per million)
Bold results indicate detections of the analyte
NE - screening level not established
Q - laboratory result qualifier
U - Analyte not detected; limit of quantitation listed
RPD - relative percent difference

Table C-1 (cont)
Soil VOLATILE ORGANIC COMPOUNDS Sample Analytical Results

Sample ID		Vermont Urban Background	VSS - Resident Soil	VSS - Non-resident Soil	EPA - Residential RSL	EPA - Industrial RSL	B-1 (20)		B-10 (21.5)		B-4 (21.5)		B-9 (10)		FD-1		TB	
Sample Date							10/26/2022		10/31/2022		10/31/2022		11/1/2022		10/31/2022		11/1/2022	
	CAS#	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	Q	(mg/Kg)	Q	(mg/Kg)	Q	(mg/Kg)	Q	(mg/Kg)	Q	(mg/Kg)	Q
4-Methyl-2-pentanone (MIBK)	108-10-1	NE	NE	NE	33000	140000	0.022	U	0.023	U	0.017	U	0.017	U	0.016	U	0.02	U
Acetone	67-64-1	NE	40609	100028	61000	670000	0.11	U	**0.024**		0.083	U	**0.0095**		0.082	U	0.1	U
Acrylonitrile	107-13-1	NE	NE	NE	0.25	1.1	0.0067	U	0.007	U	0.005	U	0.005	U	0.0049	U	0.006	U
Benzene	71-43-2	NE	0.7	4.2	1.2	5.1	0.0022	U	0.0023	U	0.0017	U	0.0017	U	0.0016	U	0.002	U
Bromobenzene	108-86-1	NE	NE	NE	290	1800	0.0022	U	0.0023	U	0.0017	U	0.0017	U	0.0016	U	0.002	U
Bromochloromethane	74-97-5	NE	193	597	150	630	0.0022	U	0.0023	U	0.0017	U	0.0017	U	0.0016	U	0.002	U
Bromodichloromethane	75-27-4	NE	NE	NE	0.29	1.3	0.0022	U	0.0023	U	0.0017	U	0.0017	U	0.0016	U	0.002	U
Bromoform	75-25-2	NE	NE	NE	19	86	0.0022	U	0.0023	U	0.0017	U	0.0017	U	0.0016	U	0.002	U
Bromomethane	74-83-9	NE	NE	NE	6.8	30	0.011	U	0.012	U	0.0083	U	0.0084	U	0.0082	U	0.01	U
Carbon Disulfide	75-15-0	NE	608	662	770	3500	0.011	U	0.012	U	0.0083	U	0.0084	U	0.0082	U	0.01	U
Carbon Tetrachloride	56-23-5	NE	0.37	2.2	0.65	2.9	0.0022	U	0.0023	U	0.0017	U	0.0017	U	0.0016	U	0.002	U
Chlorobenzene	108-90-7	NE	414	726	280	1300	0.0022	U	0.0023	U	0.0017	U	0.0017	U	0.0016	U	0.002	U
Chlorodibromomethane	124-48-1	NE	NE	NE	8.3	39	0.0011	U	0.0012	U	0.00083	U	0.00084	U	0.00082	U	0.001	U
Chloroethane	75-00-3	NE	NE	NE	14000	57000	0.022	U	0.023	U	0.017	U	0.017	U	0.016	U	0.02	U
Chloroform	67-66-3	NE	NE	NE	0.32	1.4	0.0045	U	0.0047	U	0.0033	U	0.0033	U	0.0033	U	0.004	U
Chloromethane	74-87-3	NE	NE	NE	110	460	0.011	U	0.012	U	0.0083	U	0.0084	U	0.0082	U	0.01	U
cis-1,2-Dichloroethylene	156-59-2	NE	140	1814	160	2300	0.0022	U	0.0023	U	0.0017	U	0.0017	U	0.0016	U	0.002	U
cis-1,3-Dichloropropene	10061-01-5	NE	NE	NE	NE	NE	0.0011	U	0.0012	U	0.00083	U	0.00084	U	0.00082	U	0.001	U
Dibromomethane	74-95-3	NE	NE	NE	24	99	0.0022	U	0.0023	U	0.0017	U	0.0017	U	0.0016	U	0.002	U
Dichlorodifluoromethane (Freon 12)	75-71-8	NE	NE	NE	87	370	0.022	U	0.023	U	0.017	U	0.017	U	0.016	U	0.02	U
Diethyl Ether	60-29-7	NE	NE	NE	16000	230000	0.022	U	0.023	U	0.017	U	0.017	U	0.016	U	0.02	U
Diisopropyl Ether (DIPE)	108-20-3	NE	NE	NE	2200	9400	0.0011	U	0.0012	U	0.00083	U	0.00084	U	0.00082	U	0.001	U
Ethylbenzene	100-41-4	NE	3.7	22	5.8	25	0.0022	U	0.0023	U	0.0017	U	0.0017	U	0.0016	U	0.002	U
Hexachlorobutadiene	87-68-3	NE	NE	NE	1.2	5.3	0.0022	U	0.0023	U	0.0017	U	0.0017	U	0.0016	U	0.002	U
Isopropylbenzene (Cumene)	98-82-8	NE	256	264	1900	9900	0.0022	U	0.0023	U	0.0017	U	0.0017	U	0.0016	U	0.002	U
m+p Xylene	108383/106423	NE	NE	NE	NE	NE	0.0045	U	0.0047	U	0.0033	U	0.0033	U	0.0033	U	0.004	U
Methyl Acetate	79-20-9	NE	NE	NE	78000	1200000	0.0022	U	0.0023	U	0.0017	U	0.0017	U	0.0016	U	0.002	U
Methyl Cyclohexane	108-87-2	NE	NE	NE	NE	NE	0.0022	U	0.0023	U	0.0017	U	0.0017	U	0.0016	U	0.002	U

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RPD - relative percent difference

Table C-1 (cont)
Soil VOLATILE ORGANIC COMPOUNDS Sample Analytical Results

Sample ID		Vermont Urban Background	VSS - Resident Soil	VSS - Non-resident Soil	EPA - Residential RSL	EPA - Industrial RSL	B-1 (20)		B-10 (21.5)		B-4 (21.5)		B-9 (10)		FD-1		TB	
Sample Date							10/26/2022		10/31/2022		10/31/2022		11/1/2022		10/31/2022		11/1/2022	
	CAS#	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	Q	(mg/Kg)	Q	(mg/Kg)	Q	(mg/Kg)	Q	(mg/Kg)	Q	(mg/Kg)	Q
Methyl tert-Butyl Ether (MTBE)	1634-04-4	NE	649	4464	47	210	0.0045	U	0.0047	U	0.0033	U	0.0033	U	0.0033	U	0.004	U
Methylene Chloride	75-09-2	NE	NE	NE	57	1000	0.022	U	**0.0044**		0.017	U	**0.0022**		0.016	U	0.02	U
Naphthalene	91-20-3	NE	2.7	16	2	8.6	0.0045	U	0.0047	U	0.0033	U	0.0033	U	0.0033	U	0.004	U
n-Butylbenzene	104-51-8	NE	3504	51100	3900	58000	0.0022	U	0.0023	U	0.0017	U	0.0017	U	0.0016	U	0.002	U
n-Propylbenzene	103-65-1	NE	253	261	3800	24000	0.0022	U	0.0023	U	0.0017	U	0.0017	U	0.0016	U	0.002	U
o-Xylene	95-47-6	NE	NE	NE	650	2800	0.0022	U	0.0023	U	0.0017	U	0.0017	U	0.0016	U	0.002	U
p-Isopropyltoluene (p-Cymene)	99-87-6	NE	NE	NE	NE	NE	0.0022	U	0.0023	U	0.0017	U	0.0017	U	0.0016	U	0.002	U
sec-Butylbenzene	135-98-8	NE	7009	102200	7800	120000	0.0022	U	0.0023	U	0.0017	U	0.0017	U	0.0016	U	0.002	U
Styrene	100-42-5	NE	NE	NE	6000	35000	0.0022	U	0.0023	U	0.0017	U	0.0017	U	0.0016	U	0.002	U
tert-Amyl Methyl Ether (TAME)	994-05-8	NE	NE	NE	NE	NE	0.0011	U	0.0012	U	0.00083	U	0.00084	U	0.00082	U	0.001	U
tert-Butyl Alcohol (TBA)	75-65-0	NE	NE	NE	NE	NE	0.11	U	0.12	U	0.083	U	0.084	U	0.082	U	0.1	U
tert-Butyl Ethyl Ether (TBEE)	637-92-3	NE	NE	NE	NE	NE	0.0011	U	0.0012	U	0.00083	U	0.00084	U	0.00082	U	0.001	U
tert-Butylbenzene	98-06-6	NE	7009	102200	7800	120000	0.0022	U	0.0023	U	0.0017	U	0.0017	U	0.0016	U	0.002	U
Tetrachloroethylene	127-18-4	NE	2.4	14	24	100	0.0022	U	0.0023	U	0.0017	U	0.0017	U	0.0016	U	0.002	U
Tetrahydrofuran	109-99-9	NE	NE	NE	18000	94000	0.011	U	0.012	U	0.0083	U	0.0084	U	0.0082	U	0.01	U
Toluene	108-88-3	NE	706	798	4900	47000	0.0022	U	0.0023	U	0.0017	U	0.0017	U	0.0016	U	0.002	U
Total Trimethylbenzene	25551-13-7	NE	NE	NE	NE	NE	0.0022	U	0.0023	U	0.0017	U	0.0017	U	0.0016	U	0.002	U
Total Xylene	1330-20-7	NE	252	257	580	2500	0.0045	U	0.0047	U	0.0033	U	0.0033	U	0.0033	U	0.004	U
trans-1,2-Dichloroethylene	156-60-5	NE	1402	18137	70	300	0.0022	U	0.0023	U	0.0017	U	0.0017	U	0.0016	U	0.002	U
trans-1,3-Dichloropropene	10061-02-6	NE	NE	NE	NE	NE	0.0011	U	0.0012	U	0.00083	U	0.00084	U	0.00082	U	0.001	U
trans-1,4-Dichloro-2-butene	110-57-6	NE	NE	NE	0.0074	0.032	0.0045	U	0.0047	U	0.0033	U	0.0033	U	0.0033	U	0.004	U
Trichloroethylene	79-01-6	NE	0.68	6.5	0.94	6	0.0022	U	0.0023	U	0.0017	U	0.0017	U	0.0016	U	0.002	U
Trichlorofluoromethane (Freon 11)	75-69-4	NE	NE	NE	23000	350000	0.011	U	0.012	U	0.0083	U	0.0084	U	0.0082	U	0.01	U
Vinyl Chloride	75-01-4	NE	0.1	0.59	0.059	1.7	0.011	U	0.012	U	0.0083	U	0.0084	U	0.0082	U	0.01	U

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mg/kg - milligrams per kilogram (parts per million)
Bold results indicate detections of the analyte
NE - screening level not established
Q - laboratory result qualifier
U - Analyte not detected; limit of quantitation listed
RPD - relative percent difference

Table C-2
Soil PAHs Sample Analytical Results

Sample ID		Vermont Urban Background	VSS - Resident Soil	VSS - Non-resident Soil	EPA - Residential RSL	EPA - Industrial RSL	B-1 (0-1.5)		B-1 (4-6)		B-4 (0-1.5)		B-4 (4-6)		B-5 (0-1.5)		B-5 (4-6)	
Sample Date							**10/26/2022**		**10/26/2022**		**10/31/2022**		**10/31/2022**		**11/1/2022**		**11/1/2022**	
	CAS#	**(mg/Kg)**	**(mg/Kg)**	**(mg/Kg)**	**(mg/Kg)**	**(mg/Kg)**	**(mg/Kg)**	**Q**	**(mg/Kg)**	**Q**	**(mg/Kg)**	**Q**	**(mg/Kg)**	**Q**	**(mg/Kg)**	**Q**	**(mg/Kg)**	**Q**
2-Methylnaphthalene (SIM)	91-57-6	NE	NE	NE	240	3000	0.038	U	0.080	U	0.82	U	0.20	U	0.18	U	0.18	U
Acenaphthene (SIM)	83-32-9	NE	NE	NE	3600	45000	**0.0016**		**0.0031**		**0.027**		0.049	U	**0.0031**		0.046	U
Acenaphthylene (SIM)	208-96-8	NE	NE	NE	NE	NE	**0.014**		**0.030**		**0.45**		0.049	U	**0.042**		**0.025**	
Anthracene (SIM)	120-12-7	NE	NE	NE	18000	230000	**0.0087**		**0.019**		**0.22**		0.039	U	**0.019**		**0.013**	
B(a)P-TEQ	50-32-8	0.58	0.07	1.54	0.11	2.1	**0.076**		**0.16**		***1.7***		**0.0041**		**0.18**		**0.11**	
Benzo(a)anthracene (SIM)	56-55-3	NE	NE	NE	1.1	21	**0.043**		**0.091**		**0.79**		0.0099	U	**0.087**		**0.054**	
Benzo(a)pyrene (SIM)	50-32-8	0.58	0.07	1.54	0.11	2.1	**0.051**		**0.11**		**1.1**		0.0099	U	**0.12**		**0.072**	
Benzo(b)fluoranthene (SIM)	205-99-2	NE	NE	NE	1.1	21	**0.071**		**0.14**		**1.6**		**0.0049**		**0.17**		**0.10**	
Benzo(g,h,i)perylene (SIM)	191-24-2	NE	NE	NE	NE	NE	**0.039**		**0.091**		**0.94**		0.099	U	**0.094**		**0.058**	
Benzo(k)fluoranthene (SIM)	207-08-9	NE	NE	NE	11	210	**0.024**		**0.047**		**0.59**		0.039	U	**0.062**		**0.036**	
Chrysene (SIM)	218-01-9	NE	NE	NE	110	2100	**0.053**		**0.11**		**1.1**		0.039	U	**0.12**		**0.068**	
Dibenz(a,h)anthracene (SIM)	53-70-3	NE	NE	NE	0.11	2.1	**0.0087**		**0.019**		**0.200**		0.0099	U	**0.022**		**0.013**	
Fluoranthene (SIM)	206-44-0	NE	2301	26371	2400	30000	**0.094**		**0.19**		**2.1**		0.099	U	**0.18**		**0.12**	
Fluorene (SIM)	86-73-7	NE	2301	26371	2400	30000	**0.0024**		**0.0048**		**0.065**		0.20	U	**0.0058**		**0.0044**	
Indeno(1,2,3-cd)pyrene (SIM)	193-39-5	NE	NE	NE	1.1	21	**0.043**		**0.098**		**1.1**		0.039	U	**0.10**		**0.065**	
Naphthalene (SIM)	91-20-3	NE	2.7	16	2	8.6	0.038	U	0.080	U	0.82	U	0.20	U	0.18	U	0.18	U
Phenanthrene (SIM)	85-01-8	NE	NE	NE	NE	NE	**0.038**		**0.072**		**0.900**		0.049	U	**0.069**		**0.050**	
Pyrene (SIM)	129-00-0	NE	NE	NE	1800	23000	**0.084**		**0.17**		**1.7**		0.20	U	**0.17**		**0.10**	

Key:
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Vermont Urban Background obtained from Investigation and Remeidation of Contaminated Properties Rule, July 2019
RSL - US Environmental Protection Agency, Regional Screening Levels for Residential (Res) and Industrial (Ind) settings, November 2022
B(a)P-TEQ - Total carcenogenic PAH calculated as benzo(a)pyrene Toxicity Equivalency Quotient, using Toxicity Equivalency Factors (source: EPA RSL User Guide)
mg/kg - milligrams per kilogram (parts per million)
Bold results indicate detections of the analyte
Shaded results indicate an exceedance of the VSS residential enforcement standard; defaults to EPA RSL if not established
Italicized results indicate an exceedance of the VSS non-residential enforcement standard; defaults to EPA RSL if not established
Bold Border results indicate an exceedance of the Vermont Urban Background standard
NE - screening level not established
Q - laboratory result qualifier
U - Analyte not detected; limit of quantitation listed

Table C-2 (cont)
Soil PAHs Sample Analytical Results

Sample ID		Vermont Urban Background	VSS - Resident Soil	VSS - Non-resident Soil	EPA - Residential RSL	EPA - Industrial RSL	B-7(0-1.5)		B-7 (6-8)		B-9 (0-1.5)		B-9 (4-6)		B-10 (0-1.5)		B-10 (6-8)	
Sample Date							10/26/2022		10/26/2022		11/1/2022		11/1/2022		10/31/2022		10/31/2022	
	CAS#	**(mg/Kg)**	**(mg/Kg)**	**(mg/Kg)**	**(mg/Kg)**	**(mg/Kg)**	**(mg/Kg)**	**Q**	**(mg/Kg)**	**Q**	**(mg/Kg)**	**Q**	**(mg/Kg)**	**Q**	**(mg/Kg)**	**Q**	**(mg/Kg)**	**Q**
2-Methylnaphthalene (SIM)	91-57-6	NE	NE	NE	240	3000	0.41	U	0.043	U	0.20	U	0.19	U	0.038	U	0.036	U
Acenaphthene (SIM)	83-32-9	NE	NE	NE	3600	45000	0.10	U	**0.00091**		0.051	U	0.047	U	**0.0023**		0.0091	U
Acenaphthylene (SIM)	208-96-8	NE	NE	NE	NE	NE	**0.020**		**0.0074**		**0.022**		0.047	U	**0.045**		**0.0079**	
Anthracene (SIM)	120-12-7	NE	NE	NE	18000	230000	**0.012**		**0.0043**		**0.02**		0.038	U	**0.026**		**0.0046**	
B(a)P-TEQ	50-32-8	0.58	0.07	1.54	0.11	2.1	**0.13**		**0.041**		**0.18**		0.0126	U	**0.22**		**0.038**	
Benzo(a)anthracene (SIM)	56-55-3	NE	NE	NE	1.1	21	**0.063**		**0.020**		**0.098**		0.0095	U	**0.11**		**0.020**	
Benzo(a)pyrene (SIM)	50-32-8	0.58	0.07	1.54	0.11	2.1	**0.084**		**0.027**		**0.12**		0.0095	U	**0.15**		**0.025**	
Benzo(b)fluoranthene (SIM)	205-99-2	NE	NE	NE	1.1	21	**0.12**		**0.04**		**0.16**		0.0095	U	**0.20**		**0.034**	
Benzo(g,h,i)perylene (SIM)	191-24-2	NE	NE	NE	NE	NE	**0.072**		**0.024**		**0.087**		0.095	U	**0.13**		**0.020**	
Benzo(k)fluoranthene (SIM)	207-08-9	NE	NE	NE	11	210	**0.045**		**0.014**		**0.055**		0.038	U	**0.072**		**0.013**	
Chrysene (SIM)	218-01-9	NE	NE	NE	110	2100	**0.082**		**0.026**		**0.11**		0.038	U	**0.13**		**0.022**	
Dibenz(a,h)anthracene (SIM)	53-70-3	NE	NE	NE	0.11	2.1	**0.015**		**0.0052**		**0.020**		0.0095	U	**0.028**		**0.0048**	
Fluoranthene (SIM)	206-44-0	NE	2301	26371	2400	30000	**0.13**		**0.042**		**0.22**		0.095	U	**0.19**		**0.037**	
Fluorene (SIM)	86-73-7	NE	2301	26371	2400	30000	0.41	U	**0.0013**		**0.0047**		0.19	U	**0.0046**		**0.00095**	
Indeno(1,2,3-cd)pyrene (SIM)	193-39-5	NE	NE	NE	1.1	21	**0.078**		**0.026**		**0.10**		0.038	U	**0.14**		**0.023**	
Naphthalene (SIM)	91-20-3	NE	2.7	16	2	8.6	0.41	U	0.043	U	0.20	U	0.19	U	0.038	U	0.036	U
Phenanthrene (SIM)	85-01-8	NE	NE	NE	NE	NE	**0.047**		**0.015**		**0.095**		0.047	U	**0.057**		**0.012**	
Pyrene (SIM)	129-00-0	NE	NE	NE	1800	23000	**0.12**		**0.038**		**0.19**		0.19	U	**0.18**		**0.033**	

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B(a)P-TEQ - Total carcenogenic PAH calculated as benzo(a)pyrene Toxicity Equivalency Quotient, using Toxicity Equivalency Factors (source: EPA RSL User Guide)
mg/kg - milligrams per kilogram (parts per million)
Bold results indicate detections of the analyte
Shaded results indicate an exceedance of the VSS residential enforcement standard; defaults to EPA RSL if not established
Italicized results indicate an exceedance of the VSS non-residential enforcement standard; defaults to EPA RSL if not established
Bold Border results indicate an exceedance of the Vermont Urban Background standard
NE - screening level not established
Q - laboratory result qualifier
U - Analyte not detected; limit of quantitation listed

Table C-2 (cont)
Soil PAHs Sample Analytical Results

Sample ID		Vermont Urban Background	VSS - Resident Soil	VSS - Non-resident Soil	EPA - Residential RSL	EPA - Industrial RSL	FD-2		RPD (FD-2 & B-5 (4-6))	
Sample Date							**11/1/2022**			
	CAS#		**(mg/Kg)**	**(mg/Kg)**	**(mg/Kg)**	**(mg/Kg)**	**(mg/Kg)**	**Q**		
2-Methylnaphthalene (SIM)	91-57-6	NE	NE	NE	240	3000	0.18	U	-	
Acenaphthene (SIM)	83-32-9	NE	NE	NE	3600	45000	0.045	U	-	
Acenaphthylene (SIM)	208-96-8	NE	NE	NE	NE	NE	0.045	U	-	
Anthracene (SIM)	120-12-7	NE	NE	NE	18000	230000	0.036	U	-	
B(a)P-TEQ	50-32-8	0.58	0.07	1.54	0.11	2.1	0.012	U	-	
Benzo(a)anthracene (SIM)	56-55-3	NE	NE	NE	1.1	21	0.0091	U	-	
Benzo(a)pyrene (SIM)	50-32-8	0.58	0.07	1.54	0.11	2.1	0.0091	U	-	
Benzo(b)fluoranthene (SIM)	205-99-2	NE	NE	NE	1.1	21	0.0091	U	-	
Benzo(g,h,i)perylene (SIM)	191-24-2	NE	NE	NE	NE	NE	0.091	U	-	
Benzo(k)fluoranthene (SIM)	207-08-9	NE	NE	NE	11	210	0.036	U	-	
Chrysene (SIM)	218-01-9	NE	NE	NE	110	2100	0.036	U	-	
Dibenz(a,h)anthracene (SIM)	53-70-3	NE	NE	NE	0.11	2.1	0.0091	U	-	
Fluoranthene (SIM)	206-44-0	NE	2301	26371	2400	30000	0.091	U	-	
Fluorene (SIM)	86-73-7	NE	2301	26371	2400	30000	0.18	U	-	
Indeno(1,2,3-cd)pyrene (SIM)	193-39-5	NE	NE	NE	1.1	21	0.036	U	-	
Naphthalene (SIM)	91-20-3	NE	2.7	16	2	8.6	0.18	U	-	
Phenanthrene (SIM)	85-01-8	NE	NE	NE	NE	NE	0.045	U	-	
Pyrene (SIM)	129-00-0	NE	NE	NE	1800	23000	0.18	U	-	

Key:
VSS - Vermont Soil Standards from Investigation and Remediation of Contaminated Properties Rule, July 2019
Vermont Urban Background obtained from Investigation and Remeidation of Contaminated Properties Rule, July 2019
RSL - US Environmental Protection Agency, Regional Screening Levels for Residential (Res) and Industrial (Ind) settings, November 2022
B(a)P-TEQ - Total carcenogenic PAH calculated as benzo(a)pyrene Toxicity Equivalency Quotient, using Toxicity Equivalency Factors (source: EPA RSL User Guide)
mg/kg - milligrams per kilogram (parts per million)
Bold results indicate detections of the analyte
Shaded results indicate an exceedance of the VSS residential enforcement standard; defaults to EPA RSL if not established
Italicized results indicate an exceedance of the VSS non-residential enforcement standard; defaults to EPA RSL if not established
Bold Border results indicate an exceedance of the Vermont Urban Background standard
NE - screening level not established
Q - laboratory result qualifier
U - Analyte not detected; limit of quantitation listed
RPD - relative percent difference

Table C-3

Soil METALS Sample Analytical Results

Sample ID		Vermont Urban Background	VSS - Resident Soil	VSS - Non-resident Soil	EPA - Residential RSL	EPA - Industrial RSL	B-1 (0-1.5)		B-1 (4-6)		B-4 (0-1.5)		B-4 (4-6)		B-5 (0-1.5)		B-5 (4-6)	
Sample Date							10/26/2022		10/26/2022		10/31/2022		10/31/2022		11/1/2022		11/1/2022	
	CAS#	**(mg/Kg)**	**(mg/Kg)**	**(mg/Kg)**	**(mg/Kg)**	**(mg/Kg)**	**(mg/Kg)**	**Q**	**(mg/Kg)**	**Q**	**(mg/Kg)**	**Q**	**(mg/Kg)**	**Q**	**(mg/Kg)**	**Q**	**(mg/Kg)**	**Q**
Antimony	7440-36-0	NE	26	319	31	470	2.1	U	2.1	U	2.2	U	2	U	1.9	U	1.9	U
Arsenic	7440-38-2	NE	16	16	0.68	3	**7.1**		**5.1**		**7**		**7**		**4.5**		**4.4**	
Beryllium	7440-41-7	NE	35	289	160	2300	**0.3**		**0.38**		**0.32**		**0.28**		**0.26**		0.26	U
Cadmium	7440-43-9	NE	6.9	87	NE	NE	0.38	U	0.39	U	**0.74**		0.37	U	0.35	U	0.35	U
Chromium	7440-47-3	NE	NE	NE	NE	NE	**21**		**22**		**22**		**21**		**20**		**15**	
Copper	7440-50-8	NE	10407	139231	3100	47000	**19**		**15**		**25**		**16**		**17**		**12**	
Lead	7439-92-1	NE	400	800	400	800	***6600***		**52**		**520**		**19**		**42**		**20**	
Nickel	7440-02-0	NE	940	9707	1500	22000	**27**		**25**		**31**		**26**		**27**		**19**	
Selenium	7782-49-2	NE	366	4900	390	5800	1.5	U	1.6	U	1.6	U	1.5	U	1.4	U	1.4	U
Silver	7440-22-4	NE	237	2483	390	5800	**0.31**		**0.12**		**1.5**		0.093	U	**0.11**		0.088	U
Thallium	7440-28-0	NE	0.73	196100	0.78	12	0.095	U	**0.17**		**0.2**		**0.17**		**0.17**		**0.19**	
Zinc	7440-66-6	NE	21986	294150	23000	350000	**73**		**70**		**290**		**54**		**57**		**37**	
Mercury	7439-97-6	NE	3.1	3.1	11	46	**0.067**		**0.083**		***5.1***		***3.5***		**0.17**		0.027	U

Sample ID		Vermont Urban Background	VSS - Resident Soil	VSS - Non-resident Soil	EPA - Residential RSL	EPA - Industrial RSL	B-7(0-1.5)		B-7 (6-8)		B-9 (0-1.5)		B-9 (4-6)		B-10 (0-1.5)		B-10 (6-8)	
Sample Date							10/26/2022		10/26/2022		11/1/2022		11/1/2022		10/31/2022		10/31/2022	
	CAS#	**(mg/Kg)**	**(mg/Kg)**	**(mg/Kg)**	**(mg/Kg)**	**(mg/Kg)**	**(mg/Kg)**	**Q**	**(mg/Kg)**	**Q**	**(mg/Kg)**	**Q**	**(mg/Kg)**	**Q**	**(mg/Kg)**	**Q**	**(mg/Kg)**	**Q**
Antimony	7440-36-0	NE	26	319	31	470	2.2	U	2.3	U	2.2	U	2	U	2	U	1.9	U
Arsenic	7440-38-2	NE	16	16	0.68	3	**6.9**		**4.8**		**15**		**3.3**		**6.3**		**5.2**	
Beryllium	7440-41-7	NE	35	289	160	2300	**0.41**		**0.4**		**0.4**		0.28	U	0.27	U	**0.37**	
Cadmium	7440-43-9	NE	6.9	87	NE	NE	0.41	U	0.43	U	0.4	U	0.37	U	0.36	U	0.35	U
Chromium	7440-47-3	NE	NE	NE	NE	NE	**24**		**23**		**24**		**12**		**20**		**23**	
Copper	7440-50-8	NE	10407	139231	3100	47000	**22**		**13**		**25**		**14**		**19**		**15**	
Lead	7439-92-1	NE	400	800	400	800	**41**		**36**		**130**		**18**		***1500***		**41**	
Nickel	7440-02-0	NE	940	9707	1500	22000	**33**		**29**		**27**		**19**		**28**		**29**	
Selenium	7782-49-2	NE	366	4900	390	5800	1.6	U	1.7	U	1.6	U	1.5	U	1.4	U	1.4	U
Silver	7440-22-4	NE	237	2483	390	5800	0.1	U	**0.18**		**0.18**		0.093	U	**0.29**		0.087	U
Thallium	7440-28-0	NE	0.73	196100	0.78	12	**0.16**		**0.12**		**0.2**		**0.11**		**0.14**		**0.26**	
Zinc	7440-66-6	NE	21986	294150	23000	350000	**68**		**74**		**110**		**31**		**170**		**49**	
Mercury	7439-97-6	NE	3.1	3.1	11	46	**0.11**		**0.076**		**0.12**		**0.03**		**0.73**		**0.12**	

Sample ID		Vermont Urban Background	VSS - Resident Soil	VSS - Non-resident Soil	EPA - Residential RSL	EPA - Industrial RSL	FD-2		RPD (FD-2 & B-5 (4-6))
Sample Date							11/1/2022		
	CAS#	**(mg/Kg)**	**(mg/Kg)**	**(mg/Kg)**	**(mg/Kg)**	**(mg/Kg)**	**(mg/Kg)**	**Q**	
Antimony	7440-36-0	NE	26	319	31	470	2	U	-
Arsenic	7440-38-2	NE	16	16	0.68	3	**3.7**		17%
Beryllium	7440-41-7	NE	35	289	160	2300	**0.27**		4%
Cadmium	7440-43-9	NE	6.9	87	NE	NE	0.36	U	-
Chromium	7440-47-3	NE	NE	NE	NE	NE	**22**		38%
Copper	7440-50-8	NE	10407	139231	3100	47000	**14**		15%
Lead	7439-92-1	NE	400	800	400	800	**16**		22%
Nickel	7440-02-0	NE	940	9707	1500	22000	**25**		27%
Selenium	7782-49-2	NE	366	4900	390	5800	1.4	U	-
Silver	7440-22-4	NE	237	2483	390	5800	0.091	U	-
Thallium	7440-28-0	NE	0.73	196100	0.78	12	**0.23**		19%
Zinc	7440-66-6	NE	21986	294150	23000	350000	**45**		20%
Mercury	7439-97-6	NE	3.1	3.1	11	46	0.028	U	-

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mg/kg - milligrams per kilogram (parts per million)
Bold results indicate detections of the analyte
Shaded results indicate an exceedance of the VSS residential enforcement standard; defaults to EPA RSL if not established
Italicized results indicate an exceedance of the VSS non-residential enforcement standard; defaults to EPA RSL if not established
NE - screening level not established
Q - laboratory result qualifier
U - Analyte not detected; limit of quantitation listed
RPD - relative percent difference

Table C-4
Groundwater VOLATILE ORGANIC COMPOUNDS Sample Analytical Results

Sample ID		VGES	VIS - Groundwater - Resident	VIS - Groundwater - Non-resident	MW-1		MW-2		MW-3		MW-3-FD		TB-111122		RPD (MW-3 & MW-3-FD)
Sample Date					11/11/2022	Q	11/11/2022	Q	11/11/2022	Q	11/11/2022	Q	11/11/2022	Q	
	CAS#	(µg/L)	(µg/L)	(µg/L)	(µg/L)		(µg/L)		(µg/L)		(µg/L)		(µg/L)		
1,1,1,2-Tetrachloroethane	630-20-6	70	NE	NE	1	U	1	U	1	U	1	U	1	U	-
1,1,1-Trichloroethane	71-55-6	200	NE	NE	1	U	1	U	1	U	1	U	1	U	-
1,1,2,2-Tetrachloroethane	79-34-5	NE	NE	NE	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	-
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	76-13-1	NE	NE	NE	1	U	1	U	1	U	1	U	1	U	-
1,1,2-Trichloroethane	79-00-5	5	NE	NE	1	U	1	U	1	U	1	U	1	U	-
1,1-Dichloroethane	75-34-3	70	4.2	34	1	U	1	U	1	U	1	U	1	U	-
1,1-Dichloroethylene	75-35-4	7	270	950	1	U	1	U	1	U	1	U	1	U	-
1,1-Dichloropropene	563-58-6	NE	NE	NE	2	U	2	U	2	U	2	U	2	U	-
1,2,3-Trichlorobenzene	87-61-6	0.9	NE	NE	0.3	U*	0.3	U*	0.3	U*	0.3	U*	0.3	U*	-
1,2,3-Trichloropropane	96-18-4	0.02	NE	NE	0.23	U*	0.23	U	0.23	U	0.23	U	0.23	U	-
1,2,3-Trimethylbenzene	526-73-8	23	790	2800	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	-
1,2,4-Trichlorobenzene	120-82-1	70	NE	NE	1	U	1	U	1	U	1	U	1	U	-
1,2,4-Trimethylbenzene	95-63-6	23	470	1700	1	U	1	U	1	U	1	U	1	U	-
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	0.2	NE	NE	0.8	U*	0.8	U*	0.8	U*	0.8	U*	0.8	U*	-
1,2-Dibromoethane (EDB)	106-93-4	0.05	NE	NE	0.17	U*	0.17	U*	0.17	U*	0.17	U*	0.17	U*	-
1,2-Dichlorobenzene	95-50-1	600	NE	NE	1	U	1	U	1	U	1	U	1	U	-
1,2-Dichloroethane	107-06-2	5	NE	NE	1	U	1	U	1	U	1	U	1	U	-
1,2-Dichloropropane	78-87-5	5	NE	NE	1	U	1	U	1	U	1	U	1	U	-
1,3,5-Trichlorobenzene	108-70-3	NE	NE	NE	1	U	1	U	1	U	1	U	1	U	-
1,3,5-Trimethylbenzene	108-67-8	23	330	1200	1	U	1	U	1	U	1	U	1	U	-
1,3-Dichlorobenzene	541-73-1	600	NE	NE	1	U	1	U	1	U	1	U	1	U	-
1,3-Dichloropropane	142-28-9	NE	NE	NE	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	-
1,4-Dichlorobenzene	106-46-7	75	NE	NE	1	U	1	U	1	U	1	U	1	U	-
1,4-Dioxane	123-91-1	0.3	NE	NE	21	U*	21	U*	21	U*	21	U*	21	U*	-
2,2-Dichloropropane	594-20-7	NE	NE	NE	1	U	1	U	1	U	1	U	1	U	-
2-Butanone (MEK)	78-93-3	511	NE	NE	20	U	20	U	20	U	20	U	20	U	-
2-Chlorotoluene	95-49-8	100	NE	NE	1	U	1	U	1	U	1	U	1	U	-
2-Hexanone (MBK)	591-78-6	NE	NE	NE	10	U	10	U	10	U	10	U	10	U	-
4-Chlorotoluene	106-43-4	100	NE	NE	1	U	1	U	1	U	1	U	1	U	-
4-Methyl-2-pentanone (MIBK)	108-10-1	NE	NE	NE	10	U	10	U	10	U	10	U	10	U	-
Acetone	67-64-1	950	NE	NE	50	U	50	U	50	U	50	U	50	U	-
Acrylonitrile	107-13-1	NE	NE	NE	5	U	5	U	5	U	5	U	5	U	-
Benzene	71-43-2	5	0.92	7.4	1	U	1	U	1	U	1	U	1	U	-
Bromobenzene	108-86-1	NE	NE	NE	1	U	1	U	1	U	1	U	1	U	-
Bromochloromethane	74-97-5	8	NE	NE	1	U	1	U	1	U	1	U	1	U	-
Bromodichloromethane	75-27-4	NE	NE	NE	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	-
Bromoform	75-25-2	NE	NE	NE	1	U	1	U	1	U	1	U	1	U	-
Bromomethane	74-83-9	5	NE	NE	2	U	2	U	2	U	2	U	2	U	-
Carbon Disulfide	75-15-0	NE	NE	NE	5	U	5	U	5	U	5	U	5	U	-
Carbon Tetrachloride	56-23-5	5	0.24	1.9	0.16	U*	0.16	U*	0.16	U*	0.16	U*	0.16	U*	-
Chlorobenzene	108-90-7	100	NE	NE	1	U	1	U	1	U	1	U	1	U	-
Chlorodibromomethane	124-48-1	NE	NE	NE	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	-
Chloroethane	75-00-3	NE	31000	110000	2	U	2	U	2	U	2	U	2	U	-
Chloroform	67-66-3	NE	0.41	3.7	2	U	2	U	2	U	2	U	2	U	-
Chloromethane	74-87-3	NE	NE	NE	2	U	2	U	2	U	2	U	2	U	-

Key:
VGES - Vermont Groundwater Enforcement Standards, dated July 6, 2019
VIS - Vapor Intrusion Standards, dated July 6, 2019
µg/L - micrograms per liter (parts per billion)
Bold results indicate detections of the analyte
Shaded results indicate an exceedence of the VGES
Q - laboratory result qualifier
U - Analyte not detected; limit of quantitation listed
U* - Quantitation limit exceeds the VGES; method detection limit is listed
NE - screening level not established
RPD - relative percent difference

Table C-4 (cont)
Groundwater VOLATILE ORGANIC COMPOUNDS Sample Analytical Results

Sample ID		VGES	VIS - Groundwater - Resident	VIS - Groundwater - Non-resident	MW-1		MW-2		MW-3		MW-3-FD		TB-111122		RPD (MW-3 & MW-3-FD)
Sample Date					11/11/2022	Q	11/11/2022	Q	11/11/2022	Q	11/11/2022	Q	11/11/2022	Q	
	CAS#	(µg/L)	(µg/L)	(µg/L)	(µg/L)		(µg/L)		(µg/L)		(µg/L)		(µg/L)		
cis-1,2-Dichloroethylene	156-59-2	70	NE	NE	1	U	1	U	1	U	1	U	1	U	-
cis-1,3-Dichloropropene	10061-01-5	NE	NE	NE	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	-
Dibromomethane	74-95-3	NE	NE	NE	1	U	1	U	1	U	1	U	1	U	-
Dichlorodifluoromethane (Freon 12)	75-71-8	NE	NE	NE	2	U	2	U	2	U	2	U	2	U	-
Diethyl Ether	60-29-7	NE	NE	NE	2	U	2	U	2	U	2	U	2	U	-
Diisopropyl Ether (DIPE)	108-20-3	NE	NE	NE	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	-
Ethylbenzene	100-41-4	700	2.2	18	1	U	1	U	1	U	1	U	1	U	-
Hexachlorobutadiene	87-68-3	NE	NE	NE	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U	-
Isopropylbenzene (Cumene)	98-82-8	NE	NE	NE	1	U	1	U	1	U	1	U	1	U	-
m+p Xylene	108383/106423	NE	NE	NE	2	U	2	U	2	U	2	U	2	U	-
Methyl Acetate	79-20-9	NE	NE	NE	1	U	1	U	1	U	1	U	1	U	-
Methyl Cyclohexane	108-87-2	NE	NE	NE	1	U	1	U	1	U	1	U	1	U	-
Methyl tert-Butyl Ether (MTBE)	1634-04-4	11	NE	NE	1	U	**3**		1	U	1	U	1	U	-
Methylene Chloride	75-09-2	5	680	9300	0.23	U*	0.23	U*	0.23	U*	0.23	U*	0.23	U*	-
Naphthalene	91-20-3	0.5	4	28	0.24	U*	0.24	U*	0.24	U*	0.24	U*	0.24	U*	-
n-Butylbenzene	104-51-8	NE	NE	NE	1	U	1	U	1	U	1	U	1	U	-
n-Propylbenzene	103-65-1	NE	NE	NE	1	U	1	U	1	U	1	U	1	U	-
o-Xylene	95-47-6	10000	NE	NE	1	U	1	U	1	U	1	U	1	U	-
p-Isopropyltoluene (p-Cymene)	99-87-6	NE	NE	NE	1	U	1	U	1	U	1	U	1	U	-
sec-Butylbenzene	135-98-8	NE	NE	NE	1	U	1	U	1	U	1	U	1	U	-
Styrene	100-42-5	100	NE	NE	1	U	1	U	1	U	1	U	1	U	-
tert-Amyl Methyl Ether (TAME)	994-05-8	NE	NE	NE	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	-
tert-Butyl Alcohol (TBA)	75-65-0	NE	NE	NE	20	U	20	U	20	U	20	U	20	U	-
tert-Butyl Ethyl Ether (TBEE)	637-92-3	NE	NE	NE	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	-
tert-Butylbenzene	98-06-6	NE	NE	NE	1	U	1	U	1	U	1	U	1	U	-
Tetrachloroethylene	127-18-4	5	1.5	12	1	U	1	U	1	U	1	U	1	U	-
Tetrahydrofuran	109-99-9	NE	NE	NE	10	U	10	U	10	U	10	U	10	U	-
Toluene	108-88-3	1000	NE	NE	1	U	1	U	1	U	1	U	1	U	-
Total Trimethylbenzene	25551-13-7	NE	NE	NE	1	U	1	U	1	U	1	U	1	U	-
Total Xylene	1330-20-7	10000	NE	NE	2	U	2	U	2	U	2	U	2	U	-
trans-1,2-Dichloroethylene	156-60-5	100	NE	NE	1	U	1	U	1	U	1	U	1	U	-
trans-1,3-Dichloropropene	10061-02-6	NE	NE	NE	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	-
trans-1,4-Dichloro-2-butene	110-57-6	NE	NE	NE	2	U	2	U	2	U	2	U	2	U	-
Trichloroethylene	79-01-6	5	0.82	2.9	1	U	1	U	1	U	1	U	1	U	-
Trichlorofluoromethane (Freon 11)	75-69-4	NE	NE	NE	2	U	2	U	2	U	2	U	2	U	-
Vinyl Chloride	75-01-4	2	0.13	2.2	0.21	U*	0.21	U*	0.21	U*	0.21	U*	0.21	U*	-

Key:
VGES - Vermont Groundwater Enforcement Standards, dated July 6, 2019
VIS - Vapor Intrusion Standards, dated July 6, 2019
µg/L - micrograms per liter (parts per billion)
Bold results indicate detections of the analyte
Shaded results indicate an exceedence of the VGES
Q - laboratory result qualifier
U - Analyte not detected; limit of quantitation listed
U* - Quantitation limit exceeds the VGES; method detection limit is listed
NE - screening level not established
RPD - relative percent difference

Table C-5
Soil Gas VOLATILE ORGANIC COMPOUNDS Sample Analytical Results

Sample ID		VIS- Sub-slab Soil Gas - Resident	VIS- Sub-slab Soil Gas - Non-resident	SV-1		SV-2		SV-3		SV-4		SV-4-FD		RPD (SV-4 & SV-4-FD)	
Sample Date				**10/17/2022**	**Q**	**10/17/2022**	**Q**	**10/17/2022**	**Q**	**10/17/2022**	**Q**	**10/17/2022**	**Q**		
	CAS#	**(µg/m³)**	**(µg/m³)**	**(µg/m³)**		**(µg/m³)**		**(µg/m³)**		**(µg/m³)**		**(µg/m³)**			
1,1,1-Trichloroethane	71-55-6	NE	NE	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U	-	
1,1,2,2-Tetrachloroethane	79-34-5	NE	NE	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	-	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	76-13-1	NE	NE	6.1	U	6.1	U	6.1	U	6.1	U	6.1	U	-	
1,1,2-Trichloroethane	79-00-5	NE	NE	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U	-	
1,1-Dichloroethane	75-34-3	21	170	0.81	U	0.81	U	0.81	U	0.81	U	0.81	U	-	
1,1-Dichloroethylene	75-35-4	6700	23000	0.79	U	0.79	U	0.79	U	0.79	U	0.79	U	-	
1,2,4-Trichlorobenzene	120-82-1	NE	NE	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U	-	
1,2,4-Trimethylbenzene	95-63-6	2000	7000	**1.9**		0.98	U	0.98	U	0.98	U	0.98	U	-	
1,2-Dibromoethane (EDB)	106-93-4	NE	NE	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U	-	
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	76-14-2	NE	NE	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	-	
1,2-Dichlorobenzene	95-50-1	NE	NE	1.2	U	1.2	U	1.2	U	1.2	U	1.2	U	-	
1,2-Dichloroethane	107-06-2	NE	NE	0.81	U	0.81	U	0.81	U	0.81	U	0.81	U	-	
1,2-Dichloropropane	78-87-5	NE	NE	0.92	U	0.92	U	0.92	U	0.92	U	0.92	U	-	
1,3,5-Trimethylbenzene	108-67-8	2000	7000	0.98	U	0.98	U	0.98	U	0.98	U	0.98	U	-	
1,3-Butadiene	106-99-0	NE	NE	0.44	U	**1.7**		**0.66**		**3**		**1.6**		61%	
1,3-Dichlorobenzene	541-73-1	NE	NE	1.2	U	1.2	U	1.2	U	1.2	U	1.2	U	-	
1,4-Dichlorobenzene	106-46-7	NE	NE	1.2	U	1.2	U	1.2	U	1.2	U	1.2	U	-	
1,4-Dioxane	123-91-1	NE	NE	7.2	U	7.2	U	7.2	U	7.2	U	7.2	U	-	
2-Butanone (MEK)	78-93-3	NE	NE	24	U	24	U	24	U	24	U	24	U	-	
2-Hexanone (MBK)	591-78-6	NE	NE	0.82	U	0.82	U	0.82	U	0.82	U	0.82	U	-	
4-Ethyltoluene	622-96-8	NE	NE	0.98	U	0.98	U	0.98	U	0.98	U	0.98	U	-	
4-Methyl-2-pentanone (MIBK)	108-10-1	NE	NE	0.82	U	0.82	U	0.82	U	0.82	U	0.82	U	-	
Acetone	67-64-1	NE	NE	19	U	19	U	19	U	19	U	19	U	-	
Benzene	71-43-2	4.3	35	0.64	U	0.64	U	0.64	U	**0.98**		**0.93**		5%	
Benzyl chloride	100-44-7	NE	NE	2.1	U	2.1	U	1	U	2.1	U	1	U	-	
Bromodichloromethane	75-27-4	NE	NE	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U	-	
Bromoform	75-25-2	NE	NE	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	-	
Bromomethane	74-83-9	NE	NE	0.78	U	0.78	U	0.78	U	0.78	U	0.78	U	-	
Carbon Disulfide	75-15-0	NE	NE	6.2	U	6.2	U	6.2	U	6.2	U	6.2	U	-	
Carbon Tetrachloride	56-23-5	5.7	45	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U	-	
Chlorobenzene	108-90-7	NE	NE	0.92	U	0.92	U	0.92	U	0.92	U	0.92	U	-	
Chloroethane	75-00-3	330000	1200000	0.53	U	0.53	U	0.53	U	0.53	U	0.53	U	-	

Key:
Vapor Intrusion Standards - Sub-slab Soil Gas from Investigation and Remediation of Contaminated Properties Rule, July 2019
µg/m^3 - micrograms per cubic meter
Bold results indicate detections of the analyte
Shaded results indicate an exceedance of the residential enforcement standard
NE - screening level not established
Q - laboratory result qualifier
U - Analyte not detected; limit of quantitation listed
RPD - relative percent difference

Table C-5 (cont)
Soil Gas VOLATILE ORGANIC COMPOUNDS Sample Analytical Results

Sample ID		VIS- Sub-slab Soil Gas - Resident	VIS- Sub-slab Soil Gas - Non-resident	SV-1		SV-2		SV-3		SV-4		SV-4-FD		RPD (SV-4 & SV-4-FD)
Sample Date				**10/17/2022**	**Q**	**10/17/2022**	**Q**	**10/17/2022**	**Q**	**10/17/2022**	**Q**	**10/17/2022**	**Q**	
	CAS#	**(µg/m³)**	**(µg/m³)**	**(µg/m³)**		**(µg/m³)**		**(µg/m³)**		**(µg/m³)**		**(µg/m³)**		
Chloroform	67-66-3	1.3	12	**2.1**		0.98	U	**3.6**		**3.5**		**2.2**		46%
Chloromethane	74-87-3	NE	NE	0.83	U	0.83	U	0.83	U	0.83	U	0.83	U	-
cis-1,2-Dichloroethylene	156-59-2	NE	NE	0.79	U	0.79	U	0.79	U	0.79	U	0.79	U	-
cis-1,3-Dichloropropene	10061-01-5	NE	NE	0.91	U	0.91	U	0.91	U	0.91	U	0.91	U	-
Cyclohexane	110-82-7	NE	NE	0.69	U	0.69	U	0.69	U	0.69	U	0.69	U	-
Dibromochloromethane	124-48-1	NE	NE	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U	-
Dichlorodifluoromethane (Freon 12)	75-71-8	NE	NE	**15**		**16**		**3.6**		**9.4**		**5.9**		46%
Ethanol	64-17-5	NE	NE	15	U	15	U	15	U	15	U	15	U	-
Ethyl Acetate	141-78-6	NE	NE	7.2	U	7.2	U	7.2	U	7.2	U	7.2	U	-
Ethylbenzene	100-41-4	13	110	0.87	U	0.87	U	0.87	U	0.87	U	0.87	U	-
Heptane	142-82-5	NE	NE	0.82	U	0.82	U	0.82	U	0.82	U	0.82	U	-
Hexachlorobutadiene	87-68-3	NE	NE	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	-
Hexane	110-54-3	NE	NE	28	U	28	U	28	U	28	U	28	U	-
Isopropanol	67-63-0	NE	NE	20	U	20	U	20	U	20	U	20	U	-
m&p-Xylene	1330-20-7P/M	NE	NE	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U	-
Methyl tert-Butyl Ether (MTBE)	1634-04-4	NE	NE	0.72	U	0.72	U	0.72	U	0.72	U	0.72	U	-
Methylene Chloride	75-09-2	2000	27000	6.9	U	6.9	U	6.9	U	6.9	U	6.9	U	-
Naphthalene	91-20-3	1	8	1	U	1	U	1	U	1	U	**1.1**		-
o-Xylene	95-47-6	NE	NE	0.87	U	0.87	U	0.87	U	0.87	U	0.87	U	-
Propene	115-07-1	NE	NE	14	U	14	U	14	U	**21**		**17**		21%
Styrene	100-42-5	NE	NE	0.85	U	0.85	U	0.85	U	0.85	U	0.85	U	-
Tetrachloroethylene	127-18-4	21	170	1.4	U	**6.6**		1.4	U	1.4	U	1.4	U	-
Tetrahydrofuran	109-99-9	NE	NE	**10**		5.9	U	5.9	U	5.9	U	5.9	U	-
Toluene	108-88-3	NE	NE	**2.4**		**0.8**		0.75	U	**1.4**		**0.98**		35%
Total Trimethylbenzene	25551-13-7	NE	NE	**1.9**		0.98	U	0.98	U	0.98	U	0.98	U	-
Total Xylene	1330-20-7	NE	NE	0.87	U	0.87	U	0.87	U	0.87	U	0.87	U	-
trans-1,2-Dichloroethylene	156-60-5	NE	NE	0.79	U	0.79	U	0.79	U	0.79	U	0.79	U	-
trans-1,3-Dichloropropene	10061-02-6	NE	NE	0.91	U	0.91	U	0.91	U	0.91	U	0.91	U	-
Trichloroethylene	79-01-6	6.7	23	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U	-
Trichlorofluoromethane (Freon 11)	75-69-4	NE	NE	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U	-
Vinyl Acetate	108-05-4	NE	NE	14	U	14	U	14	U	14	U	14	U	-
Vinyl Chloride	75-01-4	3.7	62	0.51	U	0.51	U	0.51	U	0.51	U	0.51	U	-

Key:
Vapor Intrusion Standards - Sub-slab Soil Gas from Investigation and Remediation of Contaminated Properties Rule, July 2019
µg/m^3 - micrograms per cubic meter
Bold results indicate detections of the analyte
Shaded results indicate an exceedance of the residential enforcement standard
NE - screening level not established
Q - laboratory result qualifier
U - Analyte not detected; limit of quantitation listed
RPD - relative percent difference

Table C-5 (cont)
Soil Gas VOLATILE ORGANIC COMPOUNDS Sample Analytical Results

Sample ID		VIS- Sub-slab Soil Gas - Resident	VIS- Sub-slab Soil Gas - Non-resident	SV-5		SV-6	
Sample Date	CAS#			10/17/2022	Q	10/17/2022	Q
		(µg/m³)	(µg/m³)	(µg/m³)		(µg/m³)	
1,1,1-Trichloroethane	71-55-6	NE	NE	1.1	U	1.1	U
1,1,2,2-Tetrachloroethane	79-34-5	NE	NE	1.4	U	1.4	U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	76-13-1	NE	NE	6.1	U	6.1	U
1,1,2-Trichloroethane	79-00-5	NE	NE	1.1	U	1.1	U
1,1-Dichloroethane	75-34-3	21	170	0.81	U	0.81	U
1,1-Dichloroethylene	75-35-4	6700	23000	0.79	U	0.79	U
1,2,4-Trichlorobenzene	120-82-1	NE	NE	1.5	U	1.5	U
1,2,4-Trimethylbenzene	95-63-6	2000	7000	0.98	U	0.98	U
1,2-Dibromoethane (EDB)	106-93-4	NE	NE	1.5	U	1.5	U
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	76-14-2	NE	NE	1.4	U	1.4	U
1,2-Dichlorobenzene	95-50-1	NE	NE	1.2	U	1.2	U
1,2-Dichloroethane	107-06-2	NE	NE	0.81	U	0.81	U
1,2-Dichloropropane	78-87-5	NE	NE	0.92	U	0.92	U
1,3,5-Trimethylbenzene	108-67-8	2000	7000	0.98	U	0.98	U
1,3-Butadiene	106-99-0	NE	NE	**3.8**		**3.5**	
1,3-Dichlorobenzene	541-73-1	NE	NE	1.2	U	1.2	U
1,4-Dichlorobenzene	106-46-7	NE	NE	1.2	U	1.2	U
1,4-Dioxane	123-91-1	NE	NE	7.2	U	7.2	U
2-Butanone (MEK)	78-93-3	NE	NE	24	U	24	U
2-Hexanone (MBK)	591-78-6	NE	NE	0.82	U	0.82	U
4-Ethyltoluene	622-96-8	NE	NE	0.98	U	0.98	U
4-Methyl-2-pentanone (MIBK)	108-10-1	NE	NE	**0.92**		0.82	U
Acetone	67-64-1	NE	NE	**48**		19	U
Benzene	71-43-2	4.3	35	**1.6**		0.64	U
Benzyl chloride	100-44-7	NE	NE	1	U	2.1	U
Bromodichloromethane	75-27-4	NE	NE	1.3	U	1.3	U
Bromoform	75-25-2	NE	NE	2.1	U	2.1	U
Bromomethane	74-83-9	NE	NE	0.78	U	0.78	U
Carbon Disulfide	75-15-0	NE	NE	6.2	U	6.2	U
Carbon Tetrachloride	56-23-5	5.7	45	1.3	U	1.3	U
Chlorobenzene	108-90-7	NE	NE	0.92	U	0.92	U
Chloroethane	75-00-3	330000	1200000	0.53	U	0.53	U

Key:
Vapor Intrusion Standards - Sub-slab Soil Gas from Investigation and Remediation of Contaminated Properties Rule, July 2019
µg/m^{-3} - micrograms per cubic meter
Bold results indicate detections of the analyte
Shaded results indicate an exceedance of the residential enforcement standard
NE - screening level not established
Q - laboratory result qualifier
U - Analyte not detected; limit of quantitation listed
RPD - relative percent difference

Table C-5 (cont)
Soil Gas VOLATILE ORGANIC COMPOUNDS Sample Analytical Results

Sample ID		VIS- Sub-slab Soil Gas - Resident	VIS- Sub-slab Soil Gas - Non-resident	SV-5		SV-6	
Sample Date	CAS#			10/17/2022	Q	10/17/2022	Q
		(µg/m³)	(µg/m³)	(µg/m³)		(µg/m³)	
Chloroform	67-66-3	1.3	12	**1.7**		0.98	U
Chloromethane	74-87-3	NE	NE	0.83	U	0.83	U
cis-1,2-Dichloroethylene	156-59-2	NE	NE	0.79	U	0.79	U
cis-1,3-Dichloropropene	10061-01-5	NE	NE	0.91	U	0.91	U
Cyclohexane	110-82-7	NE	NE	**0.69**		0.69	U
Dibromochloromethane	124-48-1	NE	NE	1.7	U	1.7	U
Dichlorodifluoromethane (Freon 12)	75-71-8	NE	NE	**22**		**21**	
Ethanol	64-17-5	NE	NE	**19**		15	U
Ethyl Acetate	141-78-6	NE	NE	7.2	U	7.2	U
Ethylbenzene	100-41-4	13	110	0.87	U	0.87	U
Heptane	142-82-5	NE	NE	**2**		0.82	U
Hexachlorobutadiene	87-68-3	NE	NE	2.1	U	2.1	U
Hexane	110-54-3	NE	NE	28	U	28	U
Isopropanol	67-63-0	NE	NE	20	U	20	U
m&p-Xylene	1330-20-7P/M	NE	NE	**2.2**		1.7	U
Methyl tert-Butyl Ether (MTBE)	1634-04-4	NE	NE	0.72	U	0.72	U
Methylene Chloride	75-09-2	2000	27000	6.9	U	6.9	U
Naphthalene	91-20-3	1	8	**1.1**		1	U
o-Xylene	95-47-6	NE	NE	0.87	U	0.87	U
Propene	115-07-1	NE	NE	**42**		**31**	
Styrene	100-42-5	NE	NE	0.85	U	0.85	U
Tetrachloroethylene	127-18-4	21	170	1.4	U	1.4	U
Tetrahydrofuran	109-99-9	NE	NE	**6**		5.9	U
Toluene	108-88-3	NE	NE	**9.9**		0.75	U
Total Trimethylbenzene	25551-13-7	NE	NE	0.98	U	0.98	U
Total Xylene	1330-20-7	NE	NE	0.87	U	0.87	U
trans-1,2-Dichloroethylene	156-60-5	NE	NE	0.79	U	0.79	U
trans-1,3-Dichloropropene	10061-02-6	NE	NE	0.91	U	0.91	U
Trichloroethylene	79-01-6	6.7	23	1.1	U	1.1	U
Trichlorofluoromethane (Freon 11)	75-69-4	NE	NE	4.5	U	4.5	U
Vinyl Acetate	108-05-4	NE	NE	14	U	14	U
Vinyl Chloride	75-01-4	3.7	62	0.51	U	0.51	U

Key:
Vapor Intrusion Standards - Sub-slab Soil Gas from Investigation and Remediation of Contaminated Properties Rule, July 2019
µg/m^{-3} - micrograms per cubic meter
Bold results indicate detections of the analyte
Shaded results indicate an exceedance of the residential enforcement standard
NE - screening level not established
Q - laboratory result qualifier
U - Analyte not detected; limit of quantitation listed
RPD - relative percent difference

Table C-6
Indoor Air POLYCHLORINATED BIPHENYLS Sample Analytical Results

Sample ID		VT RAL - PCBs in Indoor Air	Ambient		FB		IA-1		IA-2		IA-B		IA-DUP		RPD (IA-B & IA-DUP)
Sample Date			10/28/2022	Q	10/27/2022	Q	10/28/2022	Q	10/28/2022	Q	10/28/2022	Q	10/28/2022	Q	
	CAS#	(ng/m3)													
Aroclor-1016	12674-11-2	22.5	6.2	U	6.2	U	6.2	U	6.2	U	6.2	U	6.2	U	-
Aroclor-1221	11104-28-2	22.5	6.2	U	6.2	U	6.2	U	6.2	U	6.2	U	6.2	U	-
Aroclor-1232	11141-16-5	22.5	6.2	U	6.2	U	6.2	U	6.2	U	6.2	U	6.2	U	-
Aroclor-1242	53469-21-9	22.5	6.2	U	6.2	U	6.2	U	6.2	U	6.2	U	6.2	U	-
Aroclor-1248	12672-29-6	22.5	6.2	U	6.2	U	6.2	U	6.2	U	6.2	U	6.2	U	-
Aroclor-1254	11097-69-1	22.5	6.2	U	6.2	U	6.2	U	6.2	U	6.2	U	6.2	U	-
Aroclor-1260	11096-82-5	22.5	6.2	U	6.2	U	6.2	U	6.2	U	6.2	U	6.2	U	-
Aroclor-1262	37324-23-5	22.5	6.2	U	6.2	U	6.2	U	6.2	U	6.2	U	6.2	U	-
Aroclor-1268	11100-14-4	22.5	6.2	U	6.2	U	6.2	U	6.2	U	6.2	U	6.2	U	-
Total PCBs	1336-36-3	22.5	6.2	U	6.2	U	6.2	U	6.2	U	6.2	U	6.2	U	-

Key:
VT RAL - Vermont Regulatory Action Level
ng/m3 - nanogram per cubic meter
Q - laboratory result qualifier
U - Analyte not detected; limit of quantitation listed
RPD - relative percent difference
Ambient sample results are an estimate based on sample collection over a 24-hour period

Appendix D: Laboratory Reports

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

December 9, 2022

Rebecca Treat
Stone Environmental
535 Stone Cutters Ways
Montpelier, VT 05602

Project Location: 18 S. Main St, Barre, VT
Client Job Number:
Project Number: 20211145
Laboratory Work Order Number: 22K0860

Enclosed are results of analyses for samples as received by the laboratory on November 4, 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

Stone Environmental
535 Stone Cutters Ways
Montpelier, VT 05602
ATTN: Rebecca Treat

REPORT DATE: 12/9/2022

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 20211145

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 22K0860

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

PROJECT LOCATION: 18 S. Main St, Barre, VT

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
B-1 (0-1.5)	22K0860-01	Soil		-	
				SM 2540G	
				SW-846 6020B	
				SW-846 7471B	
				SW-846 8270E	
B-1 (4-6)	22K0860-02	Soil		SM 2540G	
				SW-846 6020B	
				SW-846 7471B	
				SW-846 8270E	
B-1 (20)	22K0860-03	Soil		SM 2540G	
				SW-846 8260D	
B-7(0-1.5)	22K0860-04	Soil		SM 2540G	
				SW-846 6020B	
				SW-846 7471B	
				SW-846 8270E	
B-7 (6-8)	22K0860-05	Soil		SM 2540G	
				SW-846 6020B	
				SW-846 7471B	
				SW-846 8270E	
B-10 (0-1.5)	22K0860-06	Soil		SM 2540G	
				SW-846 6020B	
				SW-846 7471B	
				SW-846 8270E	
B-10 (6-8)	22K0860-07	Soil		SM 2540G	
				SW-846 6020B	
				SW-846 7471B	
				SW-846 8270E	
B-10 (21.5)	22K0860-08	Soil		SM 2540G	
				SW-846 8260D	
B-4 (0-1.5)	22K0860-09	Soil		SM 2540G	
				SW-846 6020B	
				SW-846 7471B	
				SW-846 8270E	
B-4 (4-6)	22K0860-10	Soil		SM 2540G	
				SW-846 6020B	
				SW-846 7471B	
				SW-846 8270E	
B-4 (21.5)	22K0860-11	Soil		SM 2540G	
				SW-846 8260D	
FD-1	22K0860-12	Soil		SM 2540G	
				SW-846 8260D	

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Stone Environmental
535 Stone Cutters Ways
Montpelier, VT 05602
ATTN: Rebecca Treat

REPORT DATE: 12/9/2022

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 20211145

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 22K0860

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

PROJECT LOCATION: 18 S. Main St, Barre, VT

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
B-5 (0-1.5)	22K0860-13	Soil		SM 2540G	
				SW-846 6020B	
				SW-846 7471B	
				SW-846 8270E	
B-5 (4-6)	22K0860-14	Soil		SM 2540G	
				SW-846 6020B	
				SW-846 7471B	
				SW-846 8270E	
FD-2	22K0860-15	Soil		SM 2540G	
				SW-846 6020B	
				SW-846 7471B	
				SW-846 8270E	
B-9 (0-1.5)	22K0860-16	Soil		SM 2540G	
				SW-846 6020B	
				SW-846 7471B	
				SW-846 8270E	
B-9 (4-6)	22K0860-17	Soil		SM 2540G	
				SW-846 6020B	
				SW-846 7471B	
				SW-846 8270E	
B-9 (10)	22K0860-18	Soil		SM 2540G	
				SW-846 8260D	
TB	22K0860-19	Soil		SW-846 8260D	

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CASE NARRATIVE SUMMARY

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

Revision: 12/5/22 - For Method 8270E - PAHSIM - report has been updated to report in mg/kg.

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

REVISED REPORT 12/9/22 - Sample -11 ID revised

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

SM 2540G

Qualifications:

H-03

Sample received after recommended holding time was exceeded.

Analyte & Samples(s) Qualified:

% Solids
22K0860-01[B-1 (0-1.5)], 22K0860-02[B-1 (4-6)], 22K0860-03[B-1 (20)], 22K0860-04[B-7(0-1.5)], 22K0860-05[B-7 (6-8)]

SW-846 7471B

Qualifications:

DL-06

Elevated result due to high dilution factor, please refer to 10x dilution for more representative concentration for this compound.

Analyte & Samples(s) Qualified:

Mercury
22K0860-09[B-4 (0-1.5)]

DL-07

Elevated result due to high dilution factor, please refer to 5x dilution for more representative concentration for this compound.

Analyte & Samples(s) Qualified:

Mercury
22K0860-10[B-4 (4-6)]

SW-846 8260D

Qualifications:

V-05

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

Analyte & Samples(s) Qualified:

1,2-Dibromo-3-chloropropane (DB
22K0860-03[B-1 (20)], 22K0860-08[B-10 (21.5)], 22K0860-11[B-4 (21.5)], 22K0860-12[FD-1], 22K0860-18[B-9 (10)], 22K0860-19[TB], B322335-BLK1, B322335-BS1, B322335-BSD1, S078996-CCV1
1,4-Dioxane
22K0860-03[B-1 (20)], 22K0860-08[B-10 (21.5)], 22K0860-11[B-4 (21.5)], 22K0860-12[FD-1], 22K0860-18[B-9 (10)], 22K0860-19[TB], B322335-BLK1, B322335-BS1, B322335-BSD1, S078996-CCV1
Bromomethane
22K0860-03[B-1 (20)], 22K0860-08[B-10 (21.5)], 22K0860-11[B-4 (21.5)], 22K0860-12[FD-1], 22K0860-18[B-9 (10)], 22K0860-19[TB], B322335-BLK1, B322335-BS1, B322335-BSD1, S078996-CCV1
tert-Butyl Alcohol (TBA)
22K0860-03[B-1 (20)], 22K0860-08[B-10 (21.5)], 22K0860-11[B-4 (21.5)], 22K0860-12[FD-1], 22K0860-18[B-9 (10)], 22K0860-19[TB], B322335-BLK1, B322335-BS1, B322335-BSD1, S078996-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:

Bromochloromethane
B322335-BS1, B322335-BSD1, S078996-CCV1

Chloromethane
B322335-BS1, B322335-BSD1, S078996-CCV1

V-34

Initial calibration verification (ICV) did not meet method specifications and was biased on the low side for this compound. Reported result is estimated.

Analyte & Samples(s) Qualified:

Bromomethane
22K0860-03[B-1 (20)], 22K0860-08[B-10 (21.5)], 22K0860-11[B-4 (21.5)], 22K0860-12[FD-1], 22K0860-18[B-9 (10)], 22K0860-19[TB], B322335-BLK1, B322335-BS1, B322335-BSD1, S078996-CCV1

V-35

Initial calibration verification (ICV) did not meet method specifications and was biased on the high side for this compound. Reported result is estimated.

Analyte & Samples(s) Qualified:

Bromobenzene
B322335-BS1, B322335-BSD1, S078996-CCV1

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SW-846 8270E

Qualifications:

H-06

Sample was extracted past the recommended holding time.

Analyte & Samples(s) Qualified:

22K0860-01RE1[B-1 (0-1.5)], 22K0860-02RE1[B-1 (4-6)], 22K0860-05RE1[B-7 (6-8)]

RL-12

Elevated reporting limit due to matrix interference.

Analyte & Samples(s) Qualified:

22K0860-02RE1[B-1 (4-6)], 22K0860-04[B-7(0-1.5)], 22K0860-09[B-4 (0-1.5)], 22K0860-10[B-4 (4-6)], 22K0860-13[B-5 (0-1.5)], 22K0860-14[B-5 (4-6)], 22K0860-15[FD-2], 22K0860-16[B-9 (0-1.5)], 22K0860-17[B-9 (4-6)]

S-07

One associated surrogate standard recovery is outside of control limits but the other(s) is/are within limits. All recoveries are > 10%.

Analyte & Samples(s) Qualified:

2-Fluorobiphenyl
22K0860-04[B-7(0-1.5)]

S-10

Sample was re-extracted outside of holding time since surrogate standard recovery was outside of control limits. Data from analysis performed outside of holding time is also reported since surrogate recovery is acceptable.

Analyte & Samples(s) Qualified:

2-Fluorobiphenyl
22K0860-05[B-7 (6-8)]

Nitrobenzene-d5
22K0860-05[B-7 (6-8)]

p-Terphenyl-d14
22K0860-05[B-7 (6-8)]

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.

Kaitlyn A. Feliciano
Project Manager

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

Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-1 (0-1.5) | Sampled: 10/26/2022 10:45

Sample ID: 22K0860-01

Sample Matrix: Soil

Sample Flags: H-06

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene (SIM)	0.0016	0.0096	0.00065	mg/Kg dry	1		SW-846 8270E	11/18/22	11/22/22 8:54	SPF
Acenaphthylene (SIM)	0.014	0.0096	0.00061	mg/Kg dry	1		SW-846 8270E	11/18/22	11/22/22 8:54	SPF
Anthracene (SIM)	0.0087	0.0076	0.00053	mg/Kg dry	1		SW-846 8270E	11/18/22	11/22/22 8:54	SPF
Benzo(a)anthracene (SIM)	0.043	0.0019	0.0010	mg/Kg dry	1		SW-846 8270E	11/18/22	11/22/22 8:54	SPF
Benzo(a)pyrene (SIM)	0.051	0.0019	0.00061	mg/Kg dry	1		SW-846 8270E	11/18/22	11/22/22 8:54	SPF
Benzo(b)fluoranthene (SIM)	0.071	0.0019	0.00095	mg/Kg dry	1		SW-846 8270E	11/18/22	11/22/22 8:54	SPF
Benzo(g,h,i)perylene (SIM)	0.039	0.019	0.00072	mg/Kg dry	1		SW-846 8270E	11/18/22	11/22/22 8:54	SPF
Benzo(k)fluoranthene (SIM)	0.024	0.0076	0.00050	mg/Kg dry	1		SW-846 8270E	11/18/22	11/22/22 8:54	SPF
Chrysene (SIM)	0.053	0.0076	0.0013	mg/Kg dry	1		SW-846 8270E	11/18/22	11/22/22 8:54	SPF
Dibenz(a,h)anthracene (SIM)	0.0087	0.0019	0.00063	mg/Kg dry	1		SW-846 8270E	11/18/22	11/22/22 8:54	SPF
Fluoranthene (SIM)	0.094	0.019	0.0026	mg/Kg dry	1		SW-846 8270E	11/18/22	11/22/22 8:54	SPF
Fluorene (SIM)	0.0024	0.038	0.00065	mg/Kg dry	1		SW-846 8270E	11/18/22	11/22/22 8:54	SPF
Indeno(1,2,3-cd)pyrene (SIM)	0.043	0.0076	0.00065	mg/Kg dry	1		SW-846 8270E	11/18/22	11/22/22 8:54	SPF
2-Methylnaphthalene (SIM)	ND	0.038	0.0042	mg/Kg dry	1		SW-846 8270E	11/18/22	11/22/22 8:54	SPF
Naphthalene (SIM)	ND	0.038	0.014	mg/Kg dry	1		SW-846 8270E	11/18/22	11/22/22 8:54	SPF
Phenanthrene (SIM)	0.038	0.0096	0.0015	mg/Kg dry	1		SW-846 8270E	11/18/22	11/22/22 8:54	SPF
Pyrene (SIM)	0.084	0.038	0.0021	mg/Kg dry	1		SW-846 8270E	11/18/22	11/22/22 8:54	SPF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Nitrobenzene-d5	54.2	30-130		11/22/22 8:54
2-Fluorobiphenyl	50.0	30-130		11/22/22 8:54
p-Terphenyl-d14	57.0	30-130		11/22/22 8:54

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

Project Location: 18 S. Main St, Barre, VT Sample Description: Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-1 (0-1.5) Sampled: 10/26/2022 10:45

Sample ID: 22K0860-01

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	2.1	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:07	QNW
Arsenic	7.1	0.19	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:07	QNW
Beryllium	0.30	0.29	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:07	QNW
Chromium	21	4.8	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:07	QNW
Copper	19	4.8	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:07	QNW
Lead	6600	380	mg/Kg dry	1000		SW-846 6020B	11/8/22	11/17/22 18:18	QNW
Mercury	0.067	0.028	mg/Kg dry	1		SW-846 7471B	11/18/22	11/21/22 14:52	AAJ
Nickel	27	4.8	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:07	QNW
Selenium	ND	1.5	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:07	QNW
Silver	0.31	0.095	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:07	QNW
Thallium	ND	0.095	mg/Kg dry	5		SW-846 6020B	11/8/22	11/17/22 16:25	QNW
Zinc	73	9.5	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:07	QNW
Cadmium	ND	0.38	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:07	QNW

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-1 (0-1.5) | Sampled: 10/26/2022 10:45

Sample ID: 22K0860-01

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	87.1		% Wt	1	H-03	SM 2540G	11/5/22	11/5/22 14:54	WDC

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-1 (4-6) | Sampled: 10/26/2022 11:00

Sample ID: 22K0860-02

Sample Matrix: Soil

Sample Flags: H-06, RL-12

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene (SIM)	0.0031	0.020	0.0014	mg/Kg dry	2		SW-846 8270E	11/18/22	11/22/22 9:17	SPF
Acenaphthylene (SIM)	0.030	0.020	0.0013	mg/Kg dry	2		SW-846 8270E	11/18/22	11/22/22 9:17	SPF
Anthracene (SIM)	0.019	0.016	0.0011	mg/Kg dry	2		SW-846 8270E	11/18/22	11/22/22 9:17	SPF
Benzo(a)anthracene (SIM)	0.091	0.0040	0.0022	mg/Kg dry	2		SW-846 8270E	11/18/22	11/22/22 9:17	SPF
Benzo(a)pyrene (SIM)	0.11	0.0040	0.0013	mg/Kg dry	2		SW-846 8270E	11/18/22	11/22/22 9:17	SPF
Benzo(b)fluoranthene (SIM)	0.14	0.0040	0.0020	mg/Kg dry	2		SW-846 8270E	11/18/22	11/22/22 9:17	SPF
Benzo(g,h,i)perylene (SIM)	0.091	0.040	0.0015	mg/Kg dry	2		SW-846 8270E	11/18/22	11/22/22 9:17	SPF
Benzo(k)fluoranthene (SIM)	0.047	0.016	0.0010	mg/Kg dry	2		SW-846 8270E	11/18/22	11/22/22 9:17	SPF
Chrysene (SIM)	0.11	0.016	0.0027	mg/Kg dry	2		SW-846 8270E	11/18/22	11/22/22 9:17	SPF
Dibenz(a,h)anthracene (SIM)	0.019	0.0040	0.0013	mg/Kg dry	2		SW-846 8270E	11/18/22	11/22/22 9:17	SPF
Fluoranthene (SIM)	0.19	0.040	0.0056	mg/Kg dry	2		SW-846 8270E	11/18/22	11/22/22 9:17	SPF
Fluorene (SIM)	0.0048	0.080	0.0014	mg/Kg dry	2		SW-846 8270E	11/18/22	11/22/22 9:17	SPF
Indeno(1,2,3-cd)pyrene (SIM)	0.098	0.016	0.0014	mg/Kg dry	2		SW-846 8270E	11/18/22	11/22/22 9:17	SPF
2-Methylnaphthalene (SIM)	ND	0.080	0.0089	mg/Kg dry	2		SW-846 8270E	11/18/22	11/22/22 9:17	SPF
Naphthalene (SIM)	ND	0.080	0.029	mg/Kg dry	2		SW-846 8270E	11/18/22	11/22/22 9:17	SPF
Phenanthrene (SIM)	0.072	0.020	0.0031	mg/Kg dry	2		SW-846 8270E	11/18/22	11/22/22 9:17	SPF
Pyrene (SIM)	0.17	0.080	0.0043	mg/Kg dry	2		SW-846 8270E	11/18/22	11/22/22 9:17	SPF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Nitrobenzene-d5	62.3	30-130		11/22/22 9:17
2-Fluorobiphenyl	59.6	30-130		11/22/22 9:17
p-Terphenyl-d14	68.2	30-130		11/22/22 9:17

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Project Location: 18 S. Main St, Barre, VT Sample Description: Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-1 (4-6) Sampled: 10/26/2022 11:00

Sample ID: 22K0860-02

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	2.1	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:09	QNW
Arsenic	5.1	0.19	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:09	QNW
Beryllium	0.38	0.29	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:09	QNW
Chromium	22	4.9	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:09	QNW
Copper	15	4.9	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:09	QNW
Lead	52	1.9	mg/Kg dry	5		SW-846 6020B	11/8/22	11/17/22 16:32	QNW
Mercury	0.083	0.030	mg/Kg dry	1		SW-846 7471B	11/18/22	11/21/22 14:54	AAJ
Nickel	25	4.9	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:09	QNW
Selenium	ND	1.6	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:09	QNW
Silver	0.12	0.097	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:09	QNW
Thallium	0.17	0.097	mg/Kg dry	5		SW-846 6020B	11/8/22	11/17/22 16:32	QNW
Zinc	70	9.7	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:09	QNW
Cadmium	ND	0.39	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:09	QNW

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Project Location: 18 S. Main St, Barre, VT
Sample Description:
Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-1 (4-6)
Sampled: 10/26/2022 11:00

Sample ID: 22K0860-02

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	82.7		% Wt	1	H-03	SM 2540G	11/5/22	11/5/22 14:54	WDC

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-1 (20) | Sampled: 10/26/2022 12:20

Sample ID: 22K0860-03

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	0.11	0.010	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
Acrylonitrile	ND	0.0067	0.0011	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.0011	0.00041	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
Benzene	ND	0.0022	0.00061	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
Bromobenzene	ND	0.0022	0.00040	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
Bromochloromethane	ND	0.0022	0.00097	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
Bromodichloromethane	ND	0.0022	0.00055	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
Bromoform	ND	0.0022	0.00069	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
Bromomethane	ND	0.011	0.0018	mg/Kg dry	1	V-05, V-34	SW-846 8260D	11/7/22	11/7/22 9:55	MFF
2-Butanone (MEK)	ND	0.045	0.0064	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
tert-Butyl Alcohol (TBA)	ND	0.11	0.051	mg/Kg dry	1	V-05	SW-846 8260D	11/7/22	11/7/22 9:55	MFF
n-Butylbenzene	ND	0.0022	0.00065	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
sec-Butylbenzene	ND	0.0022	0.0011	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
tert-Butylbenzene	ND	0.0022	0.00086	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.0011	0.00055	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
Carbon Disulfide	ND	0.011	0.0078	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
Carbon Tetrachloride	ND	0.0022	0.00097	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
Chlorobenzene	ND	0.0022	0.00066	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
Chlorodibromomethane	ND	0.0011	0.00064	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
Chloroethane	ND	0.022	0.0014	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
Chloroform	ND	0.0045	0.00065	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
Chloromethane	ND	0.011	0.0011	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
2-Chlorotoluene	ND	0.0022	0.00055	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
4-Chlorotoluene	ND	0.0022	0.00046	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0022	0.00097	mg/Kg dry	1	V-05	SW-846 8260D	11/7/22	11/7/22 9:55	MFF
1,2-Dibromoethane (EDB)	ND	0.0011	0.00075	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
Dibromomethane	ND	0.0022	0.00081	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
1,2-Dichlorobenzene	ND	0.0022	0.00049	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
1,3-Dichlorobenzene	ND	0.0022	0.00055	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
1,4-Dichlorobenzene	ND	0.0022	0.00059	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
trans-1,4-Dichloro-2-butene	ND	0.0045	0.00081	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.022	0.0012	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
1,1-Dichloroethane	ND	0.0022	0.00077	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
1,2-Dichloroethane	ND	0.0022	0.00073	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
1,1-Dichloroethylene	ND	0.0045	0.00079	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
cis-1,2-Dichloroethylene	ND	0.0022	0.00063	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
trans-1,2-Dichloroethylene	ND	0.0022	0.00075	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
1,2-Dichloropropane	ND	0.0022	0.00063	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
1,3-Dichloropropane	ND	0.0011	0.00058	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
2,2-Dichloropropane	ND	0.0022	0.00092	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
1,1-Dichloropropene	ND	0.0022	0.0011	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
cis-1,3-Dichloropropene	ND	0.0011	0.00056	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
trans-1,3-Dichloropropene	ND	0.0011	0.00055	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
Diethyl Ether	ND	0.022	0.00080	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-1 (20) | Sampled: 10/26/2022 12:20

Sample ID: 22K0860-03

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.0011	0.00063	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
1,4-Dioxane	ND	0.11	0.040	mg/Kg dry	1	V-05	SW-846 8260D	11/7/22	11/7/22 9:55	MFF
Ethylbenzene	ND	0.0022	0.00060	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
Hexachlorobutadiene	ND	0.0022	0.00082	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
2-Hexanone (MBK)	ND	0.022	0.0064	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
Isopropylbenzene (Cumene)	ND	0.0022	0.00079	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.0022	0.00063	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
Methyl Acetate	ND	0.0022	0.0016	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.0045	0.00040	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
Methyl Cyclohexane	ND	0.0022	0.00084	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
Methylene Chloride	ND	0.022	0.0016	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
4-Methyl-2-pentanone (MIBK)	ND	0.022	0.0047	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
Naphthalene	ND	0.0045	0.00060	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
n-Propylbenzene	ND	0.0022	0.00053	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
Styrene	ND	0.0022	0.00046	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
1,1,1,2-Tetrachloroethane	ND	0.0022	0.00062	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
1,1,2,2-Tetrachloroethane	ND	0.0011	0.00058	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
Tetrachloroethylene	ND	0.0022	0.00074	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
Tetrahydrofuran	ND	0.011	0.0038	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
Toluene	ND	0.0022	0.00058	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
1,2,3-Trichlorobenzene	ND	0.0022	0.00060	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
1,2,4-Trichlorobenzene	ND	0.0022	0.00054	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
1,3,5-Trichlorobenzene	ND	0.0022	0.00056	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
1,1,1-Trichloroethane	ND	0.0022	0.00089	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
1,1,2-Trichloroethane	ND	0.0022	0.00051	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
Trichloroethylene	ND	0.0022	0.00073	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
Trichlorofluoromethane (Freon 11)	ND	0.011	0.00053	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
1,2,3-Trichloropropane	ND	0.0022	0.0012	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.011	0.00073	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
1,2,4-Trimethylbenzene	ND	0.0022	0.00074	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
1,3,5-Trimethylbenzene	ND	0.0022	0.00059	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
Vinyl Chloride	ND	0.011	0.00071	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
m+p Xylene	ND	0.0045	0.0014	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF
o-Xylene	ND	0.0022	0.00048	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 9:55	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	104	70-130		11/7/22 9:55
Toluene-d8	100	70-130		11/7/22 9:55
4-Bromofluorobenzene	96.4	70-130		11/7/22 9:55

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-1 (20) | Sampled: 10/26/2022 12:20

Sample ID: 22K0860-03

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	89.8		% Wt	1	H-03	SM 2540G	11/5/22	11/5/22 14:54	WDC

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-7(0-1.5) | Sampled: 10/26/2022 09:00

Sample ID: 22K0860-04

Sample Matrix: Soil

Sample Flags: RL-12

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene (SIM)	ND	0.10	0.0070	mg/Kg dry	10		SW-846 8270E	11/8/22	11/15/22 22:57	SPF
Acenaphthylene (SIM)	0.020	0.10	0.0066	mg/Kg dry	10		SW-846 8270E	11/8/22	11/15/22 22:57	SPF
Anthracene (SIM)	0.012	0.083	0.0057	mg/Kg dry	10		SW-846 8270E	11/8/22	11/15/22 22:57	SPF
Benzo(a)anthracene (SIM)	0.063	0.021	0.011	mg/Kg dry	10		SW-846 8270E	11/8/22	11/15/22 22:57	SPF
Benzo(a)pyrene (SIM)	0.084	0.021	0.0066	mg/Kg dry	10		SW-846 8270E	11/8/22	11/15/22 22:57	SPF
Benzo(b)fluoranthene (SIM)	0.12	0.021	0.010	mg/Kg dry	10		SW-846 8270E	11/8/22	11/15/22 22:57	SPF
Benzo(g,h,i)perylene (SIM)	0.072	0.21	0.0079	mg/Kg dry	10		SW-846 8270E	11/8/22	11/15/22 22:57	SPF
Benzo(k)fluoranthene (SIM)	0.045	0.083	0.0054	mg/Kg dry	10		SW-846 8270E	11/8/22	11/15/22 22:57	SPF
Chrysene (SIM)	0.082	0.083	0.014	mg/Kg dry	10		SW-846 8270E	11/8/22	11/15/22 22:57	SPF
Dibenz(a,h)anthracene (SIM)	0.015	0.021	0.0068	mg/Kg dry	10		SW-846 8270E	11/8/22	11/15/22 22:57	SPF
Fluoranthene (SIM)	0.13	0.21	0.029	mg/Kg dry	10		SW-846 8270E	11/8/22	11/15/22 22:57	SPF
Fluorene (SIM)	ND	0.41	0.0071	mg/Kg dry	10		SW-846 8270E	11/8/22	11/15/22 22:57	SPF
Indeno(1,2,3-cd)pyrene (SIM)	0.078	0.083	0.0071	mg/Kg dry	10		SW-846 8270E	11/8/22	11/15/22 22:57	SPF
2-Methylnaphthalene (SIM)	ND	0.41	0.046	mg/Kg dry	10		SW-846 8270E	11/8/22	11/15/22 22:57	SPF
Naphthalene (SIM)	ND	0.41	0.15	mg/Kg dry	10		SW-846 8270E	11/8/22	11/15/22 22:57	SPF
Phenanthrene (SIM)	0.047	0.10	0.016	mg/Kg dry	10		SW-846 8270E	11/8/22	11/15/22 22:57	SPF
Pyrene (SIM)	0.12	0.41	0.022	mg/Kg dry	10		SW-846 8270E	11/8/22	11/15/22 22:57	SPF

Surrogates	% Recovery		Recovery Limits	Flag/Qual	
Nitrobenzene-d5	30.4		30-130		11/15/22 22:57
2-Fluorobiphenyl	**29.9**	*	30-130	S-07	11/15/22 22:57
p-Terphenyl-d14	30.6		30-130		11/15/22 22:57

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-7(0-1.5) | Sampled: 10/26/2022 09:00

Sample ID: 22K0860-04

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	2.2	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:12	QNW
Arsenic	6.9	0.21	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:12	QNW
Beryllium	0.41	0.31	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:12	QNW
Chromium	24	5.1	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:12	QNW
Copper	22	5.1	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:12	QNW
Lead	41	2.1	mg/Kg dry	5		SW-846 6020B	11/8/22	11/17/22 16:35	QNW
Mercury	0.11	0.031	mg/Kg dry	1		SW-846 7471B	11/18/22	11/21/22 14:56	AAJ
Nickel	33	5.1	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:12	QNW
Selenium	ND	1.6	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:12	QNW
Silver	ND	0.10	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:12	QNW
Thallium	0.16	0.10	mg/Kg dry	5		SW-846 6020B	11/8/22	11/17/22 16:35	QNW
Zinc	68	10	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:12	QNW
Cadmium	ND	0.41	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:12	QNW

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-7(0-1.5) | Sampled: 10/26/2022 09:00

Sample ID: 22K0860-04

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	80.3		% Wt	1	H-03	SM 2540G	11/5/22	11/5/22 14:55	WDC

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-7 (6-8) | Sampled: 10/26/2022 09:45

Sample ID: 22K0860-05

Sample Matrix: Soil

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene (SIM)	ND	0.011	0.00073	mg/Kg dry	1		SW-846 8270E	11/8/22	11/15/22 23:25	SPF
Acenaphthene (SIM)	0.00091	0.011	0.00073	mg/Kg dry	1		SW-846 8270E	11/16/22	11/18/22 0:58	CLA
Acenaphthylene (SIM)	0.0074	0.011	0.00069	mg/Kg dry	1		SW-846 8270E	11/16/22	11/18/22 0:58	CLA
Acenaphthylene (SIM)	0.0011	0.011	0.00069	mg/Kg dry	1		SW-846 8270E	11/8/22	11/15/22 23:25	SPF
Anthracene (SIM)	0.0043	0.0087	0.00060	mg/Kg dry	1		SW-846 8270E	11/16/22	11/18/22 0:58	CLA
Anthracene (SIM)	0.00078	0.0087	0.00060	mg/Kg dry	1		SW-846 8270E	11/8/22	11/15/22 23:25	SPF
Benzo(a)anthracene (SIM)	0.020	0.0022	0.0012	mg/Kg dry	1		SW-846 8270E	11/16/22	11/18/22 0:58	CLA
Benzo(a)anthracene (SIM)	0.0043	0.0022	0.0012	mg/Kg dry	1		SW-846 8270E	11/8/22	11/15/22 23:25	SPF
Benzo(a)pyrene (SIM)	0.027	0.0022	0.00069	mg/Kg dry	1		SW-846 8270E	11/16/22	11/18/22 0:58	CLA
Benzo(a)pyrene (SIM)	0.0051	0.0022	0.00069	mg/Kg dry	1		SW-846 8270E	11/8/22	11/15/22 23:25	SPF
Benzo(b)fluoranthene (SIM)	0.040	0.0022	0.0011	mg/Kg dry	1		SW-846 8270E	11/16/22	11/18/22 0:58	CLA
Benzo(b)fluoranthene (SIM)	0.0076	0.0022	0.0011	mg/Kg dry	1		SW-846 8270E	11/8/22	11/15/22 23:25	SPF
Benzo(g,h,i)perylene (SIM)	0.024	0.022	0.00082	mg/Kg dry	1		SW-846 8270E	11/16/22	11/18/22 0:58	CLA
Benzo(g,h,i)perylene (SIM)	0.0045	0.022	0.00082	mg/Kg dry	1		SW-846 8270E	11/8/22	11/15/22 23:25	SPF
Benzo(k)fluoranthene (SIM)	0.014	0.0087	0.00056	mg/Kg dry	1		SW-846 8270E	11/16/22	11/18/22 0:58	CLA
Benzo(k)fluoranthene (SIM)	0.0025	0.0087	0.00056	mg/Kg dry	1		SW-846 8270E	11/8/22	11/15/22 23:25	SPF
Chrysene (SIM)	0.026	0.0087	0.0014	mg/Kg dry	1		SW-846 8270E	11/16/22	11/18/22 0:58	CLA
Chrysene (SIM)	0.0051	0.0087	0.0014	mg/Kg dry	1		SW-846 8270E	11/8/22	11/15/22 23:25	SPF
Dibenz(a,h)anthracene (SIM)	0.0052	0.0022	0.00071	mg/Kg dry	1		SW-846 8270E	11/16/22	11/18/22 0:58	CLA
Dibenz(a,h)anthracene (SIM)	0.0010	0.0022	0.00071	mg/Kg dry	1		SW-846 8270E	11/8/22	11/15/22 23:25	SPF
Fluoranthene (SIM)	0.042	0.022	0.0030	mg/Kg dry	1		SW-846 8270E	11/16/22	11/18/22 0:58	CLA
Fluoranthene (SIM)	0.0088	0.022	0.0030	mg/Kg dry	1		SW-846 8270E	11/8/22	11/15/22 23:25	SPF
Fluorene (SIM)	0.0013	0.043	0.00074	mg/Kg dry	1		SW-846 8270E	11/16/22	11/18/22 0:58	CLA
Fluorene (SIM)	ND	0.043	0.00074	mg/Kg dry	1		SW-846 8270E	11/8/22	11/15/22 23:25	SPF
Indeno(1,2,3-cd)pyrene (SIM)	0.026	0.0087	0.00074	mg/Kg dry	1		SW-846 8270E	11/16/22	11/18/22 0:58	CLA
Indeno(1,2,3-cd)pyrene (SIM)	0.0050	0.0087	0.00074	mg/Kg dry	1		SW-846 8270E	11/8/22	11/15/22 23:25	SPF
2-Methylnaphthalene (SIM)	ND	0.043	0.0048	mg/Kg dry	1		SW-846 8270E	11/16/22	11/18/22 0:58	CLA
2-Methylnaphthalene (SIM)	ND	0.043	0.0048	mg/Kg dry	1		SW-846 8270E	11/8/22	11/15/22 23:25	SPF
Naphthalene (SIM)	ND	0.043	0.016	mg/Kg dry	1		SW-846 8270E	11/16/22	11/18/22 0:58	CLA
Naphthalene (SIM)	ND	0.043	0.016	mg/Kg dry	1		SW-846 8270E	11/8/22	11/15/22 23:25	SPF
Phenanthrene (SIM)	0.015	0.011	0.0017	mg/Kg dry	1		SW-846 8270E	11/16/22	11/18/22 0:58	CLA
Phenanthrene (SIM)	0.0038	0.011	0.0017	mg/Kg dry	1		SW-846 8270E	11/8/22	11/15/22 23:25	SPF
Pyrene (SIM)	0.0078	0.043	0.0023	mg/Kg dry	1		SW-846 8270E	11/8/22	11/15/22 23:25	SPF
Pyrene (SIM)	0.038	0.043	0.0023	mg/Kg dry	1		SW-846 8270E	11/16/22	11/18/22 0:58	CLA

Surrogates	% Recovery		Recovery Limits	Flag/Qual	
Nitrobenzene-d5	59.1		30-130		11/18/22 0:58
Nitrobenzene-d5	**6.01**	*	30-130	S-10	11/15/22 23:25
2-Fluorobiphenyl	**5.82**	*	30-130	S-10	11/15/22 23:25
2-Fluorobiphenyl	54.9		30-130		11/18/22 0:58
p-Terphenyl-d14	56.5		30-130		11/18/22 0:58
p-Terphenyl-d14	**5.65**	*	30-130	S-10	11/15/22 23:25

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-7 (6-8) | Sampled: 10/26/2022 09:45

Sample ID: 22K0860-05

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	2.3	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:15	QNW
Arsenic	4.8	0.21	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:15	QNW
Beryllium	0.40	0.32	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:15	QNW
Chromium	23	5.4	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:15	QNW
Copper	13	5.4	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:15	QNW
Lead	36	2.1	mg/Kg dry	5		SW-846 6020B	11/8/22	11/17/22 16:38	QNW
Mercury	0.076	0.034	mg/Kg dry	1		SW-846 7471B	11/18/22	11/21/22 14:58	AAJ
Nickel	29	5.4	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:15	QNW
Selenium	ND	1.7	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:15	QNW
Silver	0.18	0.11	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:15	QNW
Thallium	0.12	0.11	mg/Kg dry	5		SW-846 6020B	11/8/22	11/17/22 16:38	QNW
Zinc	74	11	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:15	QNW
Cadmium	ND	0.43	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:15	QNW

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-7 (6-8) | Sampled: 10/26/2022 09:45

Sample ID: 22K0860-05

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	76.7		% Wt	1	H-03	SM 2540G	11/5/22	11/5/22 14:55	WDC

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-10 (0-1.5) | Sampled: 10/31/2022 09:10

Sample ID: 22K0860-06

Sample Matrix: Soil

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene (SIM)	0.0023	0.0095	0.00064	mg/Kg dry	1		SW-846 8270E	11/14/22	11/16/22 14:54	SPF
Acenaphthylene (SIM)	0.045	0.0095	0.00060	mg/Kg dry	1		SW-846 8270E	11/14/22	11/16/22 14:54	SPF
Anthracene (SIM)	0.026	0.0076	0.00052	mg/Kg dry	1		SW-846 8270E	11/14/22	11/16/22 14:54	SPF
Benzo(a)anthracene (SIM)	0.11	0.0019	0.0010	mg/Kg dry	1		SW-846 8270E	11/14/22	11/16/22 14:54	SPF
Benzo(a)pyrene (SIM)	0.15	0.0019	0.00060	mg/Kg dry	1		SW-846 8270E	11/14/22	11/16/22 14:54	SPF
Benzo(b)fluoranthene (SIM)	0.20	0.0019	0.00094	mg/Kg dry	1		SW-846 8270E	11/14/22	11/16/22 14:54	SPF
Benzo(g,h,i)perylene (SIM)	0.13	0.019	0.00071	mg/Kg dry	1		SW-846 8270E	11/14/22	11/16/22 14:54	SPF
Benzo(k)fluoranthene (SIM)	0.072	0.0076	0.00049	mg/Kg dry	1		SW-846 8270E	11/14/22	11/16/22 14:54	SPF
Chrysene (SIM)	0.13	0.0076	0.0012	mg/Kg dry	1		SW-846 8270E	11/14/22	11/16/22 14:54	SPF
Dibenz(a,h)anthracene (SIM)	0.028	0.0019	0.00062	mg/Kg dry	1		SW-846 8270E	11/14/22	11/16/22 14:54	SPF
Fluoranthene (SIM)	0.19	0.019	0.0026	mg/Kg dry	1		SW-846 8270E	11/14/22	11/16/22 14:54	SPF
Fluorene (SIM)	0.0046	0.038	0.00065	mg/Kg dry	1		SW-846 8270E	11/14/22	11/16/22 14:54	SPF
Indeno(1,2,3-cd)pyrene (SIM)	0.14	0.0076	0.00064	mg/Kg dry	1		SW-846 8270E	11/14/22	11/16/22 14:54	SPF
2-Methylnaphthalene (SIM)	ND	0.038	0.0042	mg/Kg dry	1		SW-846 8270E	11/14/22	11/16/22 14:54	SPF
Naphthalene (SIM)	ND	0.038	0.014	mg/Kg dry	1		SW-846 8270E	11/14/22	11/16/22 14:54	SPF
Phenanthrene (SIM)	0.057	0.0095	0.0015	mg/Kg dry	1		SW-846 8270E	11/14/22	11/16/22 14:54	SPF
Pyrene (SIM)	0.18	0.038	0.0020	mg/Kg dry	1		SW-846 8270E	11/14/22	11/16/22 14:54	SPF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Nitrobenzene-d5	61.6	30-130		11/16/22 14:54
2-Fluorobiphenyl	63.4	30-130		11/16/22 14:54
p-Terphenyl-d14	65.9	30-130		11/16/22 14:54

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-10 (0-1.5) | Sampled: 10/31/2022 09:10

Sample ID: 22K0860-06

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	2.0	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:18	QNW
Arsenic	6.3	0.18	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:18	QNW
Beryllium	ND	0.27	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:18	QNW
Chromium	20	4.5	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:18	QNW
Copper	19	4.5	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:18	QNW
Lead	1500	36	mg/Kg dry	100		SW-846 6020B	11/8/22	11/17/22 16:51	QNW
Mercury	0.73	0.029	mg/Kg dry	1		SW-846 7471B	11/18/22	11/21/22 15:00	AAJ
Nickel	28	4.5	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:18	QNW
Selenium	ND	1.4	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:18	QNW
Silver	0.29	0.091	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:18	QNW
Thallium	0.14	0.091	mg/Kg dry	5		SW-846 6020B	11/8/22	11/17/22 16:41	QNW
Zinc	170	9.1	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:18	QNW
Cadmium	ND	0.36	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:18	QNW

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Project Location: 18 S. Main St, Barre, VT
Sample Description:
Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-10 (0-1.5)
Sampled: 10/31/2022 09:10

Sample ID: 22K0860-06

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	88.1		% Wt	1		SM 2540G	11/5/22	11/5/22 14:55	WDC

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-10 (6-8) | Sampled: 10/31/2022 09:40

Sample ID: 22K0860-07

Sample Matrix: Soil

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene (SIM)	ND	0.0091	0.00062	mg/Kg dry	1		SW-846 8270E	11/14/22	11/16/22 11:16	SPF
Acenaphthylene (SIM)	0.0079	0.0091	0.00058	mg/Kg dry	1		SW-846 8270E	11/14/22	11/16/22 11:16	SPF
Anthracene (SIM)	0.0046	0.0073	0.00050	mg/Kg dry	1		SW-846 8270E	11/14/22	11/16/22 11:16	SPF
Benzo(a)anthracene (SIM)	0.020	0.0018	0.00098	mg/Kg dry	1		SW-846 8270E	11/14/22	11/16/22 11:16	SPF
Benzo(a)pyrene (SIM)	0.025	0.0018	0.00058	mg/Kg dry	1		SW-846 8270E	11/14/22	11/16/22 11:16	SPF
Benzo(b)fluoranthene (SIM)	0.034	0.0018	0.00091	mg/Kg dry	1		SW-846 8270E	11/14/22	11/16/22 11:16	SPF
Benzo(g,h,i)perylene (SIM)	0.020	0.018	0.00069	mg/Kg dry	1		SW-846 8270E	11/14/22	11/16/22 11:16	SPF
Benzo(k)fluoranthene (SIM)	0.013	0.0073	0.00047	mg/Kg dry	1		SW-846 8270E	11/14/22	11/16/22 11:16	SPF
Chrysene (SIM)	0.022	0.0073	0.0012	mg/Kg dry	1		SW-846 8270E	11/14/22	11/16/22 11:16	SPF
Dibenz(a,h)anthracene (SIM)	0.0048	0.0018	0.00060	mg/Kg dry	1		SW-846 8270E	11/14/22	11/16/22 11:16	SPF
Fluoranthene (SIM)	0.037	0.018	0.0025	mg/Kg dry	1		SW-846 8270E	11/14/22	11/16/22 11:16	SPF
Fluorene (SIM)	0.00095	0.036	0.00062	mg/Kg dry	1		SW-846 8270E	11/14/22	11/16/22 11:16	SPF
Indeno(1,2,3-cd)pyrene (SIM)	0.023	0.0073	0.00062	mg/Kg dry	1		SW-846 8270E	11/14/22	11/16/22 11:16	SPF
2-Methylnaphthalene (SIM)	ND	0.036	0.0040	mg/Kg dry	1		SW-846 8270E	11/14/22	11/16/22 11:16	SPF
Naphthalene (SIM)	ND	0.036	0.013	mg/Kg dry	1		SW-846 8270E	11/14/22	11/16/22 11:16	SPF
Phenanthrene (SIM)	0.012	0.0091	0.0014	mg/Kg dry	1		SW-846 8270E	11/14/22	11/16/22 11:16	SPF
Pyrene (SIM)	0.033	0.036	0.0020	mg/Kg dry	1		SW-846 8270E	11/14/22	11/16/22 11:16	SPF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Nitrobenzene-d5	65.1	30-130		11/16/22 11:16
2-Fluorobiphenyl	65.5	30-130		11/16/22 11:16
p-Terphenyl-d14	70.2	30-130		11/16/22 11:16

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-10 (6-8) | Sampled: 10/31/2022 09:40

Sample ID: 22K0860-07

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	1.9	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:21	QNW
Arsenic	5.2	0.17	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:21	QNW
Beryllium	0.37	0.26	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:21	QNW
Chromium	23	4.3	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:21	QNW
Copper	15	4.3	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:21	QNW
Lead	41	1.7	mg/Kg dry	5		SW-846 6020B	11/8/22	11/17/22 16:54	QNW
Mercury	0.12	0.027	mg/Kg dry	1		SW-846 7471B	11/18/22	11/21/22 15:01	AAJ
Nickel	29	4.3	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:21	QNW
Selenium	ND	1.4	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:21	QNW
Silver	ND	0.087	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:21	QNW
Thallium	0.26	0.087	mg/Kg dry	5		SW-846 6020B	11/8/22	11/17/22 16:54	QNW
Zinc	49	8.7	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:21	QNW
Cadmium	ND	0.35	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:21	QNW

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-10 (6-8) | Sampled: 10/31/2022 09:40

Sample ID: 22K0860-07

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	91.4		% Wt	1		SM 2540G	11/5/22	11/5/22 14:55	WDC

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-10 (21.5) | Sampled: 10/31/2022 13:05

Sample ID: 22K0860-08

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	0.024	0.12	0.011	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
Acrylonitrile	ND	0.0070	0.0012	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.0012	0.00043	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
Benzene	ND	0.0023	0.00064	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
Bromobenzene	ND	0.0023	0.00043	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
Bromochloromethane	ND	0.0023	0.0010	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
Bromodichloromethane	ND	0.0023	0.00057	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
Bromoform	ND	0.0023	0.00072	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
Bromomethane	ND	0.012	0.0019	mg/Kg dry	1	V-05, V-34	SW-846 8260D	11/7/22	11/7/22 10:20	MFF
2-Butanone (MEK)	ND	0.047	0.0067	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
tert-Butyl Alcohol (TBA)	ND	0.12	0.054	mg/Kg dry	1	V-05	SW-846 8260D	11/7/22	11/7/22 10:20	MFF
n-Butylbenzene	ND	0.0023	0.00069	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
sec-Butylbenzene	ND	0.0023	0.0011	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
tert-Butylbenzene	ND	0.0023	0.00091	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.0012	0.00058	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
Carbon Disulfide	ND	0.012	0.0082	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
Carbon Tetrachloride	ND	0.0023	0.0010	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
Chlorobenzene	ND	0.0023	0.00069	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
Chlorodibromomethane	ND	0.0012	0.00067	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
Chloroethane	ND	0.023	0.0015	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
Chloroform	ND	0.0047	0.00069	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
Chloromethane	ND	0.012	0.0012	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
2-Chlorotoluene	ND	0.0023	0.00058	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
4-Chlorotoluene	ND	0.0023	0.00048	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0023	0.0010	mg/Kg dry	1	V-05	SW-846 8260D	11/7/22	11/7/22 10:20	MFF
1,2-Dibromoethane (EDB)	ND	0.0012	0.00079	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
Dibromomethane	ND	0.0023	0.00086	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
1,2-Dichlorobenzene	ND	0.0023	0.00051	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
1,3-Dichlorobenzene	ND	0.0023	0.00058	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
1,4-Dichlorobenzene	ND	0.0023	0.00062	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
trans-1,4-Dichloro-2-butene	ND	0.0047	0.00085	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.023	0.0012	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
1,1-Dichloroethane	ND	0.0023	0.00081	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
1,2-Dichloroethane	ND	0.0023	0.00077	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
1,1-Dichloroethylene	ND	0.0047	0.00083	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
cis-1,2-Dichloroethylene	ND	0.0023	0.00066	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
trans-1,2-Dichloroethylene	ND	0.0023	0.00078	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
1,2-Dichloropropane	ND	0.0023	0.00066	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
1,3-Dichloropropane	ND	0.0012	0.00061	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
2,2-Dichloropropane	ND	0.0023	0.00097	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
1,1-Dichloropropene	ND	0.0023	0.0011	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
cis-1,3-Dichloropropene	ND	0.0012	0.00059	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
trans-1,3-Dichloropropene	ND	0.0012	0.00058	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
Diethyl Ether	ND	0.023	0.00084	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-10 (21.5) | Sampled: 10/31/2022 13:05

Sample ID: 22K0860-08

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.0012	0.00066	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
1,4-Dioxane	ND	0.12	0.042	mg/Kg dry	1	V-05	SW-846 8260D	11/7/22	11/7/22 10:20	MFF
Ethylbenzene	ND	0.0023	0.00063	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
Hexachlorobutadiene	ND	0.0023	0.00087	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
2-Hexanone (MBK)	ND	0.023	0.0067	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
Isopropylbenzene (Cumene)	ND	0.0023	0.00083	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.0023	0.00066	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
Methyl Acetate	ND	0.0023	0.0017	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.0047	0.00042	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
Methyl Cyclohexane	ND	0.0023	0.00088	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
Methylene Chloride	0.0044	0.023	0.0017	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
4-Methyl-2-pentanone (MIBK)	ND	0.023	0.0049	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
Naphthalene	ND	0.0047	0.00063	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
n-Propylbenzene	ND	0.0023	0.00056	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
Styrene	ND	0.0023	0.00048	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
1,1,1,2-Tetrachloroethane	ND	0.0023	0.00066	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
1,1,2,2-Tetrachloroethane	ND	0.0012	0.00061	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
Tetrachloroethylene	ND	0.0023	0.00078	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
Tetrahydrofuran	ND	0.012	0.0040	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
Toluene	ND	0.0023	0.00061	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
1,2,3-Trichlorobenzene	ND	0.0023	0.00063	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
1,2,4-Trichlorobenzene	ND	0.0023	0.00056	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
1,3,5-Trichlorobenzene	ND	0.0023	0.00059	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
1,1,1-Trichloroethane	ND	0.0023	0.00093	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
1,1,2-Trichloroethane	ND	0.0023	0.00054	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
Trichloroethylene	ND	0.0023	0.00077	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
Trichlorofluoromethane (Freon 11)	ND	0.012	0.00056	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
1,2,3-Trichloropropane	ND	0.0023	0.0012	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.012	0.00077	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
1,2,4-Trimethylbenzene	ND	0.0023	0.00078	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
1,3,5-Trimethylbenzene	ND	0.0023	0.00062	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
Vinyl Chloride	ND	0.012	0.00075	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
m+p Xylene	ND	0.0047	0.0015	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF
o-Xylene	ND	0.0023	0.00051	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:20	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	106	70-130		11/7/22 10:20
Toluene-d8	99.5	70-130		11/7/22 10:20
4-Bromofluorobenzene	97.6	70-130		11/7/22 10:20

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Project Location: 18 S. Main St, Barre, VT
Sample Description:
Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-10 (21.5)
Sampled: 10/31/2022 13:05

Sample ID: 22K0860-08

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	85.3		% Wt	1		SM 2540G	11/5/22	11/5/22 14:55	WDC

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-4 (0-1.5) | Sampled: 10/31/2022 13:55

Sample ID: 22K0860-09

Sample Matrix: Soil

Sample Flags: RL-12

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene (SIM)	0.027	0.20	0.014	mg/Kg dry	20		SW-846 8270E	11/14/22	11/16/22 11:44	SPF
Acenaphthylene (SIM)	0.45	0.20	0.013	mg/Kg dry	20		SW-846 8270E	11/14/22	11/16/22 11:44	SPF
Anthracene (SIM)	0.22	0.16	0.011	mg/Kg dry	20		SW-846 8270E	11/14/22	11/16/22 11:44	SPF
Benzo(a)anthracene (SIM)	0.79	0.041	0.022	mg/Kg dry	20		SW-846 8270E	11/14/22	11/16/22 11:44	SPF
Benzo(a)pyrene (SIM)	1.1	0.041	0.013	mg/Kg dry	20		SW-846 8270E	11/14/22	11/16/22 11:44	SPF
Benzo(b)fluoranthene (SIM)	1.6	0.041	0.020	mg/Kg dry	20		SW-846 8270E	11/14/22	11/16/22 11:44	SPF
Benzo(g,h,i)perylene (SIM)	0.94	0.41	0.015	mg/Kg dry	20		SW-846 8270E	11/14/22	11/16/22 11:44	SPF
Benzo(k)fluoranthene (SIM)	0.59	0.16	0.011	mg/Kg dry	20		SW-846 8270E	11/14/22	11/16/22 11:44	SPF
Chrysene (SIM)	1.1	0.16	0.027	mg/Kg dry	20		SW-846 8270E	11/14/22	11/16/22 11:44	SPF
Dibenz(a,h)anthracene (SIM)	0.20	0.041	0.013	mg/Kg dry	20		SW-846 8270E	11/14/22	11/16/22 11:44	SPF
Fluoranthene (SIM)	2.1	0.41	0.057	mg/Kg dry	20		SW-846 8270E	11/14/22	11/16/22 11:44	SPF
Fluorene (SIM)	0.065	0.82	0.014	mg/Kg dry	20		SW-846 8270E	11/14/22	11/16/22 11:44	SPF
Indeno(1,2,3-cd)pyrene (SIM)	1.1	0.16	0.014	mg/Kg dry	20		SW-846 8270E	11/14/22	11/16/22 11:44	SPF
2-Methylnaphthalene (SIM)	ND	0.82	0.091	mg/Kg dry	20		SW-846 8270E	11/14/22	11/16/22 11:44	SPF
Naphthalene (SIM)	ND	0.82	0.30	mg/Kg dry	20		SW-846 8270E	11/14/22	11/16/22 11:44	SPF
Phenanthrene (SIM)	0.90	0.20	0.032	mg/Kg dry	20		SW-846 8270E	11/14/22	11/16/22 11:44	SPF
Pyrene (SIM)	1.7	0.82	0.044	mg/Kg dry	20		SW-846 8270E	11/14/22	11/16/22 11:44	SPF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Nitrobenzene-d5	55.6	30-130		11/16/22 11:44
2-Fluorobiphenyl	49.1	30-130		11/16/22 11:44
p-Terphenyl-d14	45.6	30-130		11/16/22 11:44

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-4 (0-1.5) | Sampled: 10/31/2022 13:55

Sample ID: 22K0860-09

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	2.2	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:23	QNW
Arsenic	7.0	0.20	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:23	QNW
Beryllium	0.32	0.30	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:23	QNW
Chromium	22	5.1	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:23	QNW
Copper	25	5.1	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:23	QNW
Lead	520	41	mg/Kg dry	100		SW-846 6020B	11/8/22	11/17/22 17:01	QNW
Mercury	5.1	0.30	mg/Kg dry	10	DL-06	SW-846 7471B	11/18/22	11/21/22 15:39	AAJ
Nickel	31	5.1	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:23	QNW
Selenium	ND	1.6	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:23	QNW
Silver	1.5	0.10	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:23	QNW
Thallium	0.20	0.10	mg/Kg dry	5		SW-846 6020B	11/8/22	11/17/22 16:58	QNW
Zinc	290	10	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:23	QNW
Cadmium	0.74	0.41	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:23	QNW

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-4 (0-1.5) | Sampled: 10/31/2022 13:55

Sample ID: 22K0860-09

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	81.3		% Wt	1		SM 2540G	11/5/22	11/5/22 14:55	WDC

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-4 (4-6) | Sampled: 10/31/2022 14:05

Sample ID: 22K0860-10

Sample Matrix: Soil

Sample Flags: RL-12

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene (SIM)	ND	0.049	0.0033	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 16:56	CLA
Acenaphthylene (SIM)	ND	0.049	0.0032	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 16:56	CLA
Anthracene (SIM)	ND	0.039	0.0027	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 16:56	CLA
Benzo(a)anthracene (SIM)	ND	0.0099	0.0053	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 16:56	CLA
Benzo(a)pyrene (SIM)	ND	0.0099	0.0031	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 16:56	CLA
Benzo(b)fluoranthene (SIM)	0.0049	0.0099	0.0049	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 16:56	CLA
Benzo(g,h,i)perylene (SIM)	ND	0.099	0.0037	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 16:56	CLA
Benzo(k)fluoranthene (SIM)	ND	0.039	0.0026	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 16:56	CLA
Chrysene (SIM)	ND	0.039	0.0065	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 16:56	CLA
Dibenz(a,h)anthracene (SIM)	ND	0.0099	0.0032	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 16:56	CLA
Fluoranthene (SIM)	ND	0.099	0.014	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 16:56	CLA
Fluorene (SIM)	ND	0.20	0.0034	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 16:56	CLA
Indeno(1,2,3-cd)pyrene (SIM)	ND	0.039	0.0034	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 16:56	CLA
2-Methylnaphthalene (SIM)	ND	0.20	0.022	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 16:56	CLA
Naphthalene (SIM)	ND	0.20	0.071	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 16:56	CLA
Phenanthrene (SIM)	ND	0.049	0.0077	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 16:56	CLA
Pyrene (SIM)	ND	0.20	0.011	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 16:56	CLA

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Nitrobenzene-d5	55.8	30-130		11/17/22 16:56
2-Fluorobiphenyl	52.8	30-130		11/17/22 16:56
p-Terphenyl-d14	52.1	30-130		11/17/22 16:56

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-4 (4-6) | Sampled: 10/31/2022 14:05

Sample ID: 22K0860-10

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	2.0	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:26	QNW
Arsenic	7.0	0.19	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:26	QNW
Beryllium	0.28	0.28	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:26	QNW
Chromium	21	4.7	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:26	QNW
Copper	16	4.7	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:26	QNW
Lead	19	1.9	mg/Kg dry	5		SW-846 6020B	11/8/22	11/17/22 17:04	QNW
Mercury	3.5	0.14	mg/Kg dry	5	DL-07	SW-846 7471B	11/18/22	11/21/22 15:41	AAJ
Nickel	26	4.7	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:26	QNW
Selenium	ND	1.5	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:26	QNW
Silver	ND	0.093	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:26	QNW
Thallium	0.17	0.093	mg/Kg dry	5		SW-846 6020B	11/8/22	11/17/22 17:04	QNW
Zinc	54	9.3	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:26	QNW
Cadmium	ND	0.37	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:26	QNW

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-4 (4-6) | Sampled: 10/31/2022 14:05

Sample ID: 22K0860-10

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	84.6		% Wt	1		SM 2540G	11/5/22	11/5/22 14:55	WDC

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-4 (21.5) | Sampled: 10/31/2022 15:20

Sample ID: 22K0860-11

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	0.083	0.0076	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
Acrylonitrile	ND	0.0050	0.00082	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.00083	0.00030	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
Benzene	ND	0.0017	0.00045	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
Bromobenzene	ND	0.0017	0.00030	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
Bromochloromethane	ND	0.0017	0.00072	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
Bromodichloromethane	ND	0.0017	0.00041	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
Bromoform	ND	0.0017	0.00051	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
Bromomethane	ND	0.0083	0.0014	mg/Kg dry	1	V-05, V-34	SW-846 8260D	11/7/22	11/7/22 10:45	MFF
2-Butanone (MEK)	ND	0.033	0.0047	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
tert-Butyl Alcohol (TBA)	ND	0.083	0.038	mg/Kg dry	1	V-05	SW-846 8260D	11/7/22	11/7/22 10:45	MFF
n-Butylbenzene	ND	0.0017	0.00049	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
sec-Butylbenzene	ND	0.0017	0.00079	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
tert-Butylbenzene	ND	0.0017	0.00064	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.00083	0.00041	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
Carbon Disulfide	ND	0.0083	0.0058	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
Carbon Tetrachloride	ND	0.0017	0.00072	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
Chlorobenzene	ND	0.0017	0.00049	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
Chlorodibromomethane	ND	0.00083	0.00047	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
Chloroethane	ND	0.017	0.0010	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
Chloroform	ND	0.0033	0.00049	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
Chloromethane	ND	0.0083	0.00084	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
2-Chlorotoluene	ND	0.0017	0.00041	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
4-Chlorotoluene	ND	0.0017	0.00034	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0017	0.00072	mg/Kg dry	1	V-05	SW-846 8260D	11/7/22	11/7/22 10:45	MFF
1,2-Dibromoethane (EDB)	ND	0.00083	0.00056	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
Dibromomethane	ND	0.0017	0.00060	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
1,2-Dichlorobenzene	ND	0.0017	0.00036	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
1,3-Dichlorobenzene	ND	0.0017	0.00041	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
1,4-Dichlorobenzene	ND	0.0017	0.00044	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
trans-1,4-Dichloro-2-butene	ND	0.0033	0.00060	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.017	0.00087	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
1,1-Dichloroethane	ND	0.0017	0.00057	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
1,2-Dichloroethane	ND	0.0017	0.00054	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
1,1-Dichloroethylene	ND	0.0033	0.00059	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
cis-1,2-Dichloroethylene	ND	0.0017	0.00046	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
trans-1,2-Dichloroethylene	ND	0.0017	0.00055	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
1,2-Dichloropropane	ND	0.0017	0.00047	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
1,3-Dichloropropane	ND	0.00083	0.00043	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
2,2-Dichloropropane	ND	0.0017	0.00068	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
1,1-Dichloropropene	ND	0.0017	0.00081	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
cis-1,3-Dichloropropene	ND	0.00083	0.00042	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
trans-1,3-Dichloropropene	ND	0.00083	0.00041	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
Diethyl Ether	ND	0.017	0.00059	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-4 (21.5) | Sampled: 10/31/2022 15:20

Sample ID: 22K0860-11

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.00083	0.00047	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
1,4-Dioxane	ND	0.083	0.029	mg/Kg dry	1	V-05	SW-846 8260D	11/7/22	11/7/22 10:45	MFF
Ethylbenzene	ND	0.0017	0.00045	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
Hexachlorobutadiene	ND	0.0017	0.00061	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
2-Hexanone (MBK)	ND	0.017	0.0047	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
Isopropylbenzene (Cumene)	ND	0.0017	0.00059	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.0017	0.00047	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
Methyl Acetate	ND	0.0017	0.0012	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.0033	0.00030	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
Methyl Cyclohexane	ND	0.0017	0.00062	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
Methylene Chloride	ND	0.017	0.0012	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
4-Methyl-2-pentanone (MIBK)	ND	0.017	0.0035	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
Naphthalene	ND	0.0033	0.00045	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
n-Propylbenzene	ND	0.0017	0.00040	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
Styrene	ND	0.0017	0.00034	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
1,1,1,2-Tetrachloroethane	ND	0.0017	0.00046	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
1,1,2,2-Tetrachloroethane	ND	0.00083	0.00043	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
Tetrachloroethylene	ND	0.0017	0.00055	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
Tetrahydrofuran	ND	0.0083	0.0028	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
Toluene	ND	0.0017	0.00043	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
1,2,3-Trichlorobenzene	ND	0.0017	0.00045	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
1,2,4-Trichlorobenzene	ND	0.0017	0.00040	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
1,3,5-Trichlorobenzene	ND	0.0017	0.00041	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
1,1,1-Trichloroethane	ND	0.0017	0.00066	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
1,1,2-Trichloroethane	ND	0.0017	0.00038	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
Trichloroethylene	ND	0.0017	0.00054	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
Trichlorofluoromethane (Freon 11)	ND	0.0083	0.00040	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
1,2,3-Trichloropropane	ND	0.0017	0.00087	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.0083	0.00054	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
1,2,4-Trimethylbenzene	ND	0.0017	0.00055	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
1,3,5-Trimethylbenzene	ND	0.0017	0.00044	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
Vinyl Chloride	ND	0.0083	0.00053	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
m+p Xylene	ND	0.0033	0.0011	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF
o-Xylene	ND	0.0017	0.00036	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 10:45	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	104	70-130		11/7/22 10:45
Toluene-d8	99.7	70-130		11/7/22 10:45
4-Bromofluorobenzene	97.6	70-130		11/7/22 10:45

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-4 (21.5) | Sampled: 10/31/2022 15:20

Sample ID: 22K0860-11

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	90.3		% Wt	1		SM 2540G	11/5/22	11/5/22 14:56	WDC

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: FD-1 | Sampled: 10/31/2022 15:20

Sample ID: 22K0860-12

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	0.082	0.0075	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
Acrylonitrile	ND	0.0049	0.00081	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.00082	0.00030	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
Benzene	ND	0.0016	0.00045	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
Bromobenzene	ND	0.0016	0.00030	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
Bromochloromethane	ND	0.0016	0.00072	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
Bromodichloromethane	ND	0.0016	0.00040	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
Bromoform	ND	0.0016	0.00051	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
Bromomethane	ND	0.0082	0.0014	mg/Kg dry	1	V-05, V-34	SW-846 8260D	11/7/22	11/7/22 11:11	MFF
2-Butanone (MEK)	ND	0.033	0.0047	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
tert-Butyl Alcohol (TBA)	ND	0.082	0.038	mg/Kg dry	1	V-05	SW-846 8260D	11/7/22	11/7/22 11:11	MFF
n-Butylbenzene	ND	0.0016	0.00048	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
sec-Butylbenzene	ND	0.0016	0.00079	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
tert-Butylbenzene	ND	0.0016	0.00064	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.00082	0.00041	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
Carbon Disulfide	ND	0.0082	0.0058	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
Carbon Tetrachloride	ND	0.0016	0.00072	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
Chlorobenzene	ND	0.0016	0.00049	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
Chlorodibromomethane	ND	0.00082	0.00047	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
Chloroethane	ND	0.016	0.0010	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
Chloroform	ND	0.0033	0.00048	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
Chloromethane	ND	0.0082	0.00083	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
2-Chlorotoluene	ND	0.0016	0.00041	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
4-Chlorotoluene	ND	0.0016	0.00034	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0016	0.00072	mg/Kg dry	1	V-05	SW-846 8260D	11/7/22	11/7/22 11:11	MFF
1,2-Dibromoethane (EDB)	ND	0.00082	0.00055	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
Dibromomethane	ND	0.0016	0.00060	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
1,2-Dichlorobenzene	ND	0.0016	0.00036	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
1,3-Dichlorobenzene	ND	0.0016	0.00041	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
1,4-Dichlorobenzene	ND	0.0016	0.00044	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
trans-1,4-Dichloro-2-butene	ND	0.0033	0.00060	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.016	0.00087	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
1,1-Dichloroethane	ND	0.0016	0.00057	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
1,2-Dichloroethane	ND	0.0016	0.00054	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
1,1-Dichloroethylene	ND	0.0033	0.00058	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
cis-1,2-Dichloroethylene	ND	0.0016	0.00046	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
trans-1,2-Dichloroethylene	ND	0.0016	0.00055	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
1,2-Dichloropropane	ND	0.0016	0.00047	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
1,3-Dichloropropane	ND	0.00082	0.00043	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
2,2-Dichloropropane	ND	0.0016	0.00068	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
1,1-Dichloropropene	ND	0.0016	0.00081	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
cis-1,3-Dichloropropene	ND	0.00082	0.00042	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
trans-1,3-Dichloropropene	ND	0.00082	0.00041	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
Diethyl Ether	ND	0.016	0.00059	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: FD-1 | Sampled: 10/31/2022 15:20

Sample ID: 22K0860-12

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.00082	0.00047	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
1,4-Dioxane	ND	0.082	0.029	mg/Kg dry	1	V-05	SW-846 8260D	11/7/22	11/7/22 11:11	MFF
Ethylbenzene	ND	0.0016	0.00044	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
Hexachlorobutadiene	ND	0.0016	0.00061	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
2-Hexanone (MBK)	ND	0.016	0.0047	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
Isopropylbenzene (Cumene)	ND	0.0016	0.00058	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.0016	0.00046	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
Methyl Acetate	ND	0.0016	0.0012	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.0033	0.00030	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
Methyl Cyclohexane	ND	0.0016	0.00062	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
Methylene Chloride	ND	0.016	0.0012	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
4-Methyl-2-pentanone (MIBK)	ND	0.016	0.0034	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
Naphthalene	ND	0.0033	0.00044	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
n-Propylbenzene	ND	0.0016	0.00039	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
Styrene	ND	0.0016	0.00034	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
1,1,1,2-Tetrachloroethane	ND	0.0016	0.00046	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
1,1,2,2-Tetrachloroethane	ND	0.00082	0.00043	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
Tetrachloroethylene	ND	0.0016	0.00055	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
Tetrahydrofuran	ND	0.0082	0.0028	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
Toluene	ND	0.0016	0.00043	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
1,2,3-Trichlorobenzene	ND	0.0016	0.00044	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
1,2,4-Trichlorobenzene	ND	0.0016	0.00040	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
1,3,5-Trichlorobenzene	ND	0.0016	0.00041	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
1,1,1-Trichloroethane	ND	0.0016	0.00066	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
1,1,2-Trichloroethane	ND	0.0016	0.00038	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
Trichloroethylene	ND	0.0016	0.00054	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
Trichlorofluoromethane (Freon 11)	ND	0.0082	0.00040	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
1,2,3-Trichloropropane	ND	0.0016	0.00086	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.0082	0.00054	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
1,2,4-Trimethylbenzene	ND	0.0016	0.00055	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
1,3,5-Trimethylbenzene	ND	0.0016	0.00043	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
Vinyl Chloride	ND	0.0082	0.00053	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
m+p Xylene	ND	0.0033	0.0011	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF
o-Xylene	ND	0.0016	0.00036	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:11	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	104	70-130		11/7/22 11:11
Toluene-d8	100	70-130		11/7/22 11:11
4-Bromofluorobenzene	96.4	70-130		11/7/22 11:11

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: FD-1 | Sampled: 10/31/2022 15:20

Sample ID: 22K0860-12

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	91.9		% Wt	1		SM 2540G	11/5/22	11/5/22 14:56	WDC

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-5 (0-1.5) | Sampled: 11/1/2022 08:00

Sample ID: 22K0860-13

Sample Matrix: Soil

Sample Flags: RL-12

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene (SIM)	0.0031	0.045	0.0031	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 17:24	CLA
Acenaphthylene (SIM)	0.042	0.045	0.0029	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 17:24	CLA
Anthracene (SIM)	0.019	0.036	0.0025	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 17:24	CLA
Benzo(a)anthracene (SIM)	0.087	0.0091	0.0049	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 17:24	CLA
Benzo(a)pyrene (SIM)	0.12	0.0091	0.0029	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 17:24	CLA
Benzo(b)fluoranthene (SIM)	0.17	0.0091	0.0045	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 17:24	CLA
Benzo(g,h,i)perylene (SIM)	0.094	0.091	0.0034	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 17:24	CLA
Benzo(k)fluoranthene (SIM)	0.062	0.036	0.0023	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 17:24	CLA
Chrysene (SIM)	0.12	0.036	0.0060	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 17:24	CLA
Dibenz(a,h)anthracene (SIM)	0.022	0.0091	0.0030	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 17:24	CLA
Fluoranthene (SIM)	0.18	0.091	0.012	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 17:24	CLA
Fluorene (SIM)	0.0058	0.18	0.0031	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 17:24	CLA
Indeno(1,2,3-cd)pyrene (SIM)	0.10	0.036	0.0031	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 17:24	CLA
2-Methylnaphthalene (SIM)	ND	0.18	0.020	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 17:24	CLA
Naphthalene (SIM)	ND	0.18	0.065	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 17:24	CLA
Phenanthrene (SIM)	0.069	0.045	0.0070	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 17:24	CLA
Pyrene (SIM)	0.17	0.18	0.0098	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 17:24	CLA

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Nitrobenzene-d5	57.3	30-130		11/17/22 17:24
2-Fluorobiphenyl	60.5	30-130		11/17/22 17:24
p-Terphenyl-d14	58.7	30-130		11/17/22 17:24

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-5 (0-1.5) | Sampled: 11/1/2022 08:00

Sample ID: 22K0860-13

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	1.9	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:35	QNW
Arsenic	4.5	0.17	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:35	QNW
Beryllium	0.26	0.26	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:35	QNW
Chromium	20	4.3	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:35	QNW
Copper	17	4.3	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:35	QNW
Lead	42	1.7	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:35	QNW
Mercury	0.17	0.027	mg/Kg dry	1		SW-846 7471B	11/15/22	11/18/22 14:04	AAJ
Nickel	27	4.3	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:35	QNW
Selenium	ND	1.4	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:35	QNW
Silver	0.11	0.086	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:35	QNW
Thallium	0.17	0.086	mg/Kg dry	5		SW-846 6020B	11/8/22	11/17/22 17:07	QNW
Zinc	57	8.6	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:35	QNW
Cadmium	ND	0.35	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:35	QNW

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-5 (0-1.5) | Sampled: 11/1/2022 08:00

Sample ID: 22K0860-13

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	92.2		% Wt	1		SM 2540G	11/5/22	11/5/22 14:56	WDC

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-5 (4-6) | Sampled: 11/1/2022 08:10

Sample ID: 22K0860-14

Sample Matrix: Soil

Sample Flags: RL-12

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene (SIM)	ND	0.046	0.0031	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 17:53	CLA
Acenaphthylene (SIM)	0.025	0.046	0.0029	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 17:53	CLA
Anthracene (SIM)	0.013	0.036	0.0025	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 17:53	CLA
Benzo(a)anthracene (SIM)	0.054	0.0091	0.0049	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 17:53	CLA
Benzo(a)pyrene (SIM)	0.072	0.0091	0.0029	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 17:53	CLA
Benzo(b)fluoranthene (SIM)	0.10	0.0091	0.0045	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 17:53	CLA
Benzo(g,h,i)perylene (SIM)	0.058	0.091	0.0034	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 17:53	CLA
Benzo(k)fluoranthene (SIM)	0.036	0.036	0.0024	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 17:53	CLA
Chrysene (SIM)	0.068	0.036	0.0060	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 17:53	CLA
Dibenz(a,h)anthracene (SIM)	0.013	0.0091	0.0030	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 17:53	CLA
Fluoranthene (SIM)	0.12	0.091	0.013	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 17:53	CLA
Fluorene (SIM)	0.0044	0.18	0.0031	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 17:53	CLA
Indeno(1,2,3-cd)pyrene (SIM)	0.065	0.036	0.0031	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 17:53	CLA
2-Methylnaphthalene (SIM)	ND	0.18	0.020	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 17:53	CLA
Naphthalene (SIM)	ND	0.18	0.066	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 17:53	CLA
Phenanthrene (SIM)	0.050	0.046	0.0071	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 17:53	CLA
Pyrene (SIM)	0.10	0.18	0.0099	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 17:53	CLA

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Nitrobenzene-d5	68.4	30-130		11/17/22 17:53
2-Fluorobiphenyl	65.7	30-130		11/17/22 17:53
p-Terphenyl-d14	60.2	30-130		11/17/22 17:53

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Project Location: 18 S. Main St, Barre, VT Sample Description: Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-5 (4-6) Sampled: 11/1/2022 08:10

Sample ID: 22K0860-14

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	1.9	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:37	QNW
Arsenic	4.4	0.18	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:37	QNW
Beryllium	ND	0.26	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:37	QNW
Chromium	15	4.4	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:37	QNW
Copper	12	4.4	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:37	QNW
Lead	20	1.8	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:37	QNW
Mercury	ND	0.027	mg/Kg dry	1		SW-846 7471B	11/15/22	11/18/22 14:06	AAJ
Nickel	19	4.4	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:37	QNW
Selenium	ND	1.4	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:37	QNW
Silver	ND	0.088	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:37	QNW
Thallium	0.19	0.088	mg/Kg dry	5		SW-846 6020B	11/8/22	11/17/22 17:10	QNW
Zinc	37	8.8	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:37	QNW
Cadmium	ND	0.35	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:37	QNW

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-5 (4-6) | Sampled: 11/1/2022 08:10

Sample ID: 22K0860-14

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	91.3		% Wt	1		SM 2540G	11/5/22	11/5/22 14:56	WDC

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: FD-2 | Sampled: 11/1/2022 08:10

Sample ID: 22K0860-15

Sample Matrix: Soil

Sample Flags: RL-12

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene (SIM)	ND	0.045	0.0031	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 22:36	CLA
Acenaphthylene (SIM)	ND	0.045	0.0029	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 22:36	CLA
Anthracene (SIM)	ND	0.036	0.0025	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 22:36	CLA
Benzo(a)anthracene (SIM)	ND	0.0091	0.0049	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 22:36	CLA
Benzo(a)pyrene (SIM)	ND	0.0091	0.0029	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 22:36	CLA
Benzo(b)fluoranthene (SIM)	ND	0.0091	0.0045	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 22:36	CLA
Benzo(g,h,i)perylene (SIM)	ND	0.091	0.0034	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 22:36	CLA
Benzo(k)fluoranthene (SIM)	ND	0.036	0.0024	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 22:36	CLA
Chrysene (SIM)	ND	0.036	0.0060	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 22:36	CLA
Dibenz(a,h)anthracene (SIM)	ND	0.0091	0.0030	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 22:36	CLA
Fluoranthene (SIM)	ND	0.091	0.013	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 22:36	CLA
Fluorene (SIM)	ND	0.18	0.0031	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 22:36	CLA
Indeno(1,2,3-cd)pyrene (SIM)	ND	0.036	0.0031	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 22:36	CLA
2-Methylnaphthalene (SIM)	ND	0.18	0.020	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 22:36	CLA
Naphthalene (SIM)	ND	0.18	0.065	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 22:36	CLA
Phenanthrene (SIM)	ND	0.045	0.0071	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 22:36	CLA
Pyrene (SIM)	ND	0.18	0.0098	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 22:36	CLA

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Nitrobenzene-d5	62.5	30-130		11/17/22 22:36
2-Fluorobiphenyl	60.6	30-130		11/17/22 22:36
p-Terphenyl-d14	60.0	30-130		11/17/22 22:36

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: FD-2 | Sampled: 11/1/2022 08:10

Sample ID: 22K0860-15

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	2.0	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:40	QNW
Arsenic	3.7	0.18	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:40	QNW
Beryllium	0.27	0.27	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:40	QNW
Chromium	22	4.5	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:40	QNW
Copper	14	4.5	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:40	QNW
Lead	16	1.8	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:40	QNW
Mercury	ND	0.028	mg/Kg dry	1		SW-846 7471B	11/15/22	11/18/22 14:07	AAJ
Nickel	25	4.5	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:40	QNW
Selenium	ND	1.4	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:40	QNW
Silver	ND	0.091	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:40	QNW
Thallium	0.23	0.091	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:40	QNW
Zinc	45	9.1	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:40	QNW
Cadmium	ND	0.36	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:40	QNW

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: FD-2 | Sampled: 11/1/2022 08:10

Sample ID: 22K0860-15

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	11/5/22	11/5/22 14:56	WDC

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-9 (0-1.5) | Sampled: 11/1/2022 10:05

Sample ID: 22K0860-16

Sample Matrix: Soil

Sample Flags: RL-12

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene (SIM)	ND	0.051	0.0034	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 18:21	CLA
Acenaphthylene (SIM)	0.022	0.051	0.0033	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 18:21	CLA
Anthracene (SIM)	0.020	0.041	0.0028	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 18:21	CLA
Benzo(a)anthracene (SIM)	0.098	0.010	0.0055	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 18:21	CLA
Benzo(a)pyrene (SIM)	0.12	0.010	0.0032	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 18:21	CLA
Benzo(b)fluoranthene (SIM)	0.16	0.010	0.0051	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 18:21	CLA
Benzo(g,h,i)perylene (SIM)	0.087	0.10	0.0039	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 18:21	CLA
Benzo(k)fluoranthene (SIM)	0.055	0.041	0.0026	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 18:21	CLA
Chrysene (SIM)	0.11	0.041	0.0067	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 18:21	CLA
Dibenz(a,h)anthracene (SIM)	0.020	0.010	0.0033	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 18:21	CLA
Fluoranthene (SIM)	0.22	0.10	0.014	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 18:21	CLA
Fluorene (SIM)	0.0047	0.20	0.0035	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 18:21	CLA
Indeno(1,2,3-cd)pyrene (SIM)	0.10	0.041	0.0035	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 18:21	CLA
2-Methylnaphthalene (SIM)	ND	0.20	0.023	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 18:21	CLA
Naphthalene (SIM)	ND	0.20	0.073	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 18:21	CLA
Phenanthrene (SIM)	0.095	0.051	0.0079	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 18:21	CLA
Pyrene (SIM)	0.19	0.20	0.011	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 18:21	CLA

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Nitrobenzene-d5	68.2	30-130		11/17/22 18:21
2-Fluorobiphenyl	63.1	30-130		11/17/22 18:21
p-Terphenyl-d14	58.3	30-130		11/17/22 18:21

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-9 (0-1.5) | Sampled: 11/1/2022 10:05

Sample ID: 22K0860-16

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	2.2	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:43	QNW
Arsenic	15	0.20	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:43	QNW
Beryllium	0.40	0.30	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:43	QNW
Chromium	24	5.0	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:43	QNW
Copper	25	5.0	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:43	QNW
Lead	130	20	mg/Kg dry	50		SW-846 6020B	11/8/22	11/17/22 17:17	QNW
Mercury	0.12	0.030	mg/Kg dry	1		SW-846 7471B	11/15/22	11/18/22 14:09	AAJ
Nickel	27	5.0	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:43	QNW
Selenium	ND	1.6	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:43	QNW
Silver	0.18	0.10	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:43	QNW
Thallium	0.20	0.10	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:43	QNW
Zinc	110	10	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:43	QNW
Cadmium	ND	0.40	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:43	QNW

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-9 (0-1.5) | Sampled: 11/1/2022 10:05

Sample ID: 22K0860-16

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	81.8		% Wt	1		SM 2540G	11/5/22	11/5/22 14:56	WDC

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-9 (4-6) | Sampled: 11/1/2022 10:10

Sample ID: 22K0860-17

Sample Matrix: Soil

Sample Flags: RL-12

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene (SIM)	ND	0.047	0.0032	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 23:04	CLA
Acenaphthylene (SIM)	ND	0.047	0.0030	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 23:04	CLA
Anthracene (SIM)	ND	0.038	0.0026	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 23:04	CLA
Benzo(a)anthracene (SIM)	ND	0.0095	0.0051	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 23:04	CLA
Benzo(a)pyrene (SIM)	ND	0.0095	0.0030	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 23:04	CLA
Benzo(b)fluoranthene (SIM)	ND	0.0095	0.0047	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 23:04	CLA
Benzo(g,h,i)perylene (SIM)	ND	0.095	0.0036	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 23:04	CLA
Benzo(k)fluoranthene (SIM)	ND	0.038	0.0025	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 23:04	CLA
Chrysene (SIM)	ND	0.038	0.0062	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 23:04	CLA
Dibenz(a,h)anthracene (SIM)	ND	0.0095	0.0031	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 23:04	CLA
Fluoranthene (SIM)	ND	0.095	0.013	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 23:04	CLA
Fluorene (SIM)	ND	0.19	0.0032	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 23:04	CLA
Indeno(1,2,3-cd)pyrene (SIM)	ND	0.038	0.0032	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 23:04	CLA
2-Methylnaphthalene (SIM)	ND	0.19	0.021	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 23:04	CLA
Naphthalene (SIM)	ND	0.19	0.068	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 23:04	CLA
Phenanthrene (SIM)	ND	0.047	0.0074	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 23:04	CLA
Pyrene (SIM)	ND	0.19	0.010	mg/Kg dry	5		SW-846 8270E	11/14/22	11/17/22 23:04	CLA

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Nitrobenzene-d5	59.1	30-130		11/17/22 23:04
2-Fluorobiphenyl	58.0	30-130		11/17/22 23:04
p-Terphenyl-d14	58.8	30-130		11/17/22 23:04

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-9 (4-6) | Sampled: 11/1/2022 10:10

Sample ID: 22K0860-17

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	2.0	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:46	QNW
Arsenic	3.3	0.19	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:46	QNW
Beryllium	ND	0.28	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:46	QNW
Chromium	12	4.6	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:46	QNW
Copper	14	4.6	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:46	QNW
Lead	18	1.9	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:46	QNW
Mercury	0.030	0.029	mg/Kg dry	1		SW-846 7471B	11/15/22	11/18/22 14:11	AAJ
Nickel	19	4.6	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:46	QNW
Selenium	ND	1.5	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:46	QNW
Silver	ND	0.093	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:46	QNW
Thallium	0.11	0.093	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:46	QNW
Zinc	31	9.3	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:46	QNW
Cadmium	ND	0.37	mg/Kg dry	5		SW-846 6020B	11/8/22	11/11/22 15:46	QNW

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Project Location: 18 S. Main St, Barre, VT
Sample Description:
Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-9 (4-6)
Sampled: 11/1/2022 10:10

Sample ID: 22K0860-17

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	88.3		% Wt	1		SM 2540G	11/5/22	11/5/22 14:57	WDC

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-9 (10) | Sampled: 11/1/2022 10:15

Sample ID: 22K0860-18

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	0.0095	0.084	0.0077	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
Acrylonitrile	ND	0.0050	0.00083	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.00084	0.00031	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
Benzene	ND	0.0017	0.00046	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
Bromobenzene	ND	0.0017	0.00030	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
Bromochloromethane	ND	0.0017	0.00073	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
Bromodichloromethane	ND	0.0017	0.00041	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
Bromoform	ND	0.0017	0.00052	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
Bromomethane	ND	0.0084	0.0014	mg/Kg dry	1	V-05, V-34	SW-846 8260D	11/7/22	11/7/22 11:36	MFF
2-Butanone (MEK)	ND	0.033	0.0048	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
tert-Butyl Alcohol (TBA)	ND	0.084	0.039	mg/Kg dry	1	V-05	SW-846 8260D	11/7/22	11/7/22 11:36	MFF
n-Butylbenzene	ND	0.0017	0.00049	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
sec-Butylbenzene	ND	0.0017	0.00080	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
tert-Butylbenzene	ND	0.0017	0.00065	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.00084	0.00041	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
Carbon Disulfide	ND	0.0084	0.0059	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
Carbon Tetrachloride	ND	0.0017	0.00073	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
Chlorobenzene	ND	0.0017	0.00049	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
Chlorodibromomethane	ND	0.00084	0.00048	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
Chloroethane	ND	0.017	0.0010	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
Chloroform	ND	0.0033	0.00049	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
Chloromethane	ND	0.0084	0.00085	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
2-Chlorotoluene	ND	0.0017	0.00042	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
4-Chlorotoluene	ND	0.0017	0.00035	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0017	0.00073	mg/Kg dry	1	V-05	SW-846 8260D	11/7/22	11/7/22 11:36	MFF
1,2-Dibromoethane (EDB)	ND	0.00084	0.00056	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
Dibromomethane	ND	0.0017	0.00061	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
1,2-Dichlorobenzene	ND	0.0017	0.00036	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
1,3-Dichlorobenzene	ND	0.0017	0.00042	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
1,4-Dichlorobenzene	ND	0.0017	0.00044	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
trans-1,4-Dichloro-2-butene	ND	0.0033	0.00061	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.017	0.00088	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
1,1-Dichloroethane	ND	0.0017	0.00058	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
1,2-Dichloroethane	ND	0.0017	0.00055	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
1,1-Dichloroethylene	ND	0.0033	0.00059	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
cis-1,2-Dichloroethylene	ND	0.0017	0.00047	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
trans-1,2-Dichloroethylene	ND	0.0017	0.00056	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
1,2-Dichloropropane	ND	0.0017	0.00047	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
1,3-Dichloropropane	ND	0.00084	0.00043	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
2,2-Dichloropropane	ND	0.0017	0.00069	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
1,1-Dichloropropene	ND	0.0017	0.00082	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
cis-1,3-Dichloropropene	ND	0.00084	0.00042	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
trans-1,3-Dichloropropene	ND	0.00084	0.00041	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
Diethyl Ether	ND	0.017	0.00060	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-9 (10) | Sampled: 11/1/2022 10:15

Sample ID: 22K0860-18

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.00084	0.00047	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
1,4-Dioxane	ND	0.084	0.030	mg/Kg dry	1	V-05	SW-846 8260D	11/7/22	11/7/22 11:36	MFF
Ethylbenzene	ND	0.0017	0.00045	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
Hexachlorobutadiene	ND	0.0017	0.00062	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
2-Hexanone (MBK)	ND	0.017	0.0048	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
Isopropylbenzene (Cumene)	ND	0.0017	0.00059	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.0017	0.00047	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
Methyl Acetate	ND	0.0017	0.0012	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.0033	0.00030	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
Methyl Cyclohexane	ND	0.0017	0.00063	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
Methylene Chloride	0.0022	0.017	0.0012	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
4-Methyl-2-pentanone (MIBK)	ND	0.017	0.0035	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
Naphthalene	ND	0.0033	0.00045	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
n-Propylbenzene	ND	0.0017	0.00040	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
Styrene	ND	0.0017	0.00035	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
1,1,1,2-Tetrachloroethane	ND	0.0017	0.00047	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
1,1,2,2-Tetrachloroethane	ND	0.00084	0.00043	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
Tetrachloroethylene	ND	0.0017	0.00056	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
Tetrahydrofuran	ND	0.0084	0.0028	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
Toluene	ND	0.0017	0.00043	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
1,2,3-Trichlorobenzene	ND	0.0017	0.00045	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
1,2,4-Trichlorobenzene	ND	0.0017	0.00040	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
1,3,5-Trichlorobenzene	ND	0.0017	0.00042	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
1,1,1-Trichloroethane	ND	0.0017	0.00066	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
1,1,2-Trichloroethane	ND	0.0017	0.00038	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
Trichloroethylene	ND	0.0017	0.00055	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
Trichlorofluoromethane (Freon 11)	ND	0.0084	0.00040	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
1,2,3-Trichloropropane	ND	0.0017	0.00087	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.0084	0.00055	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
1,2,4-Trimethylbenzene	ND	0.0017	0.00055	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
1,3,5-Trimethylbenzene	ND	0.0017	0.00044	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
Vinyl Chloride	ND	0.0084	0.00053	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
m+p Xylene	ND	0.0033	0.0011	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF
o-Xylene	ND	0.0017	0.00036	mg/Kg dry	1		SW-846 8260D	11/7/22	11/7/22 11:36	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	107	70-130		11/7/22 11:36
Toluene-d8	98.7	70-130		11/7/22 11:36
4-Bromofluorobenzene	96.3	70-130		11/7/22 11:36

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: B-9 (10) | Sampled: 11/1/2022 10:15

Sample ID: 22K0860-18

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	93.4		% Wt	1		SM 2540G	11/5/22	11/5/22 14:57	WDC

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: TB | Sampled: 11/1/2022 00:00

Sample ID: 22K0860-19

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	0.10	0.0092	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
Acrylonitrile	ND	0.0060	0.00099	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.0010	0.00037	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
Benzene	ND	0.0020	0.00055	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
Bromobenzene	ND	0.0020	0.00036	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
Bromochloromethane	ND	0.0020	0.00087	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
Bromodichloromethane	ND	0.0020	0.00049	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
Bromoform	ND	0.0020	0.00062	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
Bromomethane	ND	0.010	0.0016	mg/Kg wet	1	V-05, V-34	SW-846 8260D	11/7/22	11/7/22 12:01	MFF
2-Butanone (MEK)	ND	0.040	0.0057	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
tert-Butyl Alcohol (TBA)	ND	0.10	0.046	mg/Kg wet	1	V-05	SW-846 8260D	11/7/22	11/7/22 12:01	MFF
n-Butylbenzene	ND	0.0020	0.00059	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
sec-Butylbenzene	ND	0.0020	0.00096	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
tert-Butylbenzene	ND	0.0020	0.00077	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.0010	0.00049	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
Carbon Disulfide	ND	0.010	0.0070	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
Carbon Tetrachloride	ND	0.0020	0.00087	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
Chlorobenzene	ND	0.0020	0.00059	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
Chlorodibromomethane	ND	0.0010	0.00057	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
Chloroethane	ND	0.020	0.0012	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
Chloroform	ND	0.0040	0.00059	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
Chloromethane	ND	0.010	0.0010	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
2-Chlorotoluene	ND	0.0020	0.00050	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
4-Chlorotoluene	ND	0.0020	0.00041	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0020	0.00087	mg/Kg wet	1	V-05	SW-846 8260D	11/7/22	11/7/22 12:01	MFF
1,2-Dibromoethane (EDB)	ND	0.0010	0.00067	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
Dibromomethane	ND	0.0020	0.00073	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
1,2-Dichlorobenzene	ND	0.0020	0.00044	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
1,3-Dichlorobenzene	ND	0.0020	0.00050	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
1,4-Dichlorobenzene	ND	0.0020	0.00053	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
trans-1,4-Dichloro-2-butene	ND	0.0040	0.00073	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.020	0.0011	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
1,1-Dichloroethane	ND	0.0020	0.00069	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
1,2-Dichloroethane	ND	0.0020	0.00066	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
1,1-Dichloroethylene	ND	0.0040	0.00071	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
cis-1,2-Dichloroethylene	ND	0.0020	0.00056	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
trans-1,2-Dichloroethylene	ND	0.0020	0.00067	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
1,2-Dichloropropane	ND	0.0020	0.00056	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
1,3-Dichloropropane	ND	0.0010	0.00052	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
2,2-Dichloropropane	ND	0.0020	0.00082	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
1,1-Dichloropropene	ND	0.0020	0.00098	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
cis-1,3-Dichloropropene	ND	0.0010	0.00051	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
trans-1,3-Dichloropropene	ND	0.0010	0.00050	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
Diethyl Ether	ND	0.020	0.00071	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF

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Project Location: 18 S. Main St, Barre, VT | Sample Description: | Work Order: 22K0860

Date Received: 11/4/2022

Field Sample #: TB | Sampled: 11/1/2022 00:00

Sample ID: 22K0860-19

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.0010	0.00057	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
1,4-Dioxane	ND	0.10	0.035	mg/Kg wet	1	V-05	SW-846 8260D	11/7/22	11/7/22 12:01	MFF
Ethylbenzene	ND	0.0020	0.00054	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
Hexachlorobutadiene	ND	0.0020	0.00074	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
2-Hexanone (MBK)	ND	0.020	0.0057	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
Isopropylbenzene (Cumene)	ND	0.0020	0.00071	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.0020	0.00056	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
Methyl Acetate	ND	0.0020	0.0015	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.0040	0.00036	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
Methyl Cyclohexane	ND	0.0020	0.00075	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
Methylene Chloride	ND	0.020	0.0015	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
4-Methyl-2-pentanone (MIBK)	ND	0.020	0.0042	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
Naphthalene	ND	0.0040	0.00054	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
n-Propylbenzene	ND	0.0020	0.00048	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
Styrene	ND	0.0020	0.00041	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
1,1,1,2-Tetrachloroethane	ND	0.0020	0.00056	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
1,1,2,2-Tetrachloroethane	ND	0.0010	0.00052	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
Tetrachloroethylene	ND	0.0020	0.00066	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
Tetrahydrofuran	ND	0.010	0.0034	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
Toluene	ND	0.0020	0.00052	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
1,2,3-Trichlorobenzene	ND	0.0020	0.00054	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
1,2,4-Trichlorobenzene	ND	0.0020	0.00048	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
1,3,5-Trichlorobenzene	ND	0.0020	0.00050	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
1,1,1-Trichloroethane	ND	0.0020	0.00080	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
1,1,2-Trichloroethane	ND	0.0020	0.00046	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
Trichloroethylene	ND	0.0020	0.00066	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
Trichlorofluoromethane (Freon 11)	ND	0.010	0.00048	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
1,2,3-Trichloropropane	ND	0.0020	0.0010	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.010	0.00066	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
1,2,4-Trimethylbenzene	ND	0.0020	0.00066	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
1,3,5-Trimethylbenzene	ND	0.0020	0.00053	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
Vinyl Chloride	ND	0.010	0.00064	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
m+p Xylene	ND	0.0040	0.0013	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF
o-Xylene	ND	0.0020	0.00043	mg/Kg wet	1		SW-846 8260D	11/7/22	11/7/22 12:01	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	105	70-130		11/7/22 12:01
Toluene-d8	101	70-130		11/7/22 12:01
4-Bromofluorobenzene	95.8	70-130		11/7/22 12:01

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Sample Extraction Data

Prep Method: % Solids **Analytical Method: SM 2540G**

Lab Number [Field ID]	Batch	Date
22K0860-01 [B-1 (0-1.5)]	B322236	11/05/22
22K0860-02 [B-1 (4-6)]	B322236	11/05/22
22K0860-03 [B-1 (20)]	B322236	11/05/22
22K0860-04 [B-7(0-1.5)]	B322236	11/05/22
22K0860-05 [B-7 (6-8)]	B322236	11/05/22
22K0860-06 [B-10 (0-1.5)]	B322236	11/05/22
22K0860-07 [B-10 (6-8)]	B322236	11/05/22
22K0860-08 [B-10 (21.5)]	B322236	11/05/22
22K0860-09 [B-4 (0-1.5)]	B322236	11/05/22
22K0860-10 [B-4 (4-6)]	B322236	11/05/22
22K0860-11 [B-4 (21.5)]	B322236	11/05/22
22K0860-12 [FD-1]	B322236	11/05/22
22K0860-13 [B-5 (0-1.5)]	B322236	11/05/22
22K0860-14 [B-5 (4-6)]	B322236	11/05/22
22K0860-15 [FD-2]	B322236	11/05/22
22K0860-16 [B-9 (0-1.5)]	B322236	11/05/22
22K0860-17 [B-9 (4-6)]	B322236	11/05/22
22K0860-18 [B-9 (10)]	B322236	11/05/22

Prep Method: SW-846 3050B **Analytical Method: SW-846 6020B**

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
22K0860-01 [B-1 (0-1.5)]	B322494	1.50	50.0	11/08/22
22K0860-02 [B-1 (4-6)]	B322494	1.55	50.0	11/08/22
22K0860-04 [B-7(0-1.5)]	B322494	1.52	50.0	11/08/22
22K0860-05 [B-7 (6-8)]	B322494	1.52	50.0	11/08/22
22K0860-06 [B-10 (0-1.5)]	B322494	1.56	50.0	11/08/22
22K0860-07 [B-10 (6-8)]	B322494	1.58	50.0	11/08/22
22K0860-09 [B-4 (0-1.5)]	B322494	1.52	50.0	11/08/22
22K0860-10 [B-4 (4-6)]	B322494	1.58	50.0	11/08/22
22K0860-13 [B-5 (0-1.5)]	B322494	1.57	50.0	11/08/22
22K0860-14 [B-5 (4-6)]	B322494	1.56	50.0	11/08/22
22K0860-15 [FD-2]	B322494	1.50	50.0	11/08/22
22K0860-16 [B-9 (0-1.5)]	B322494	1.51	50.0	11/08/22
22K0860-17 [B-9 (4-6)]	B322494	1.52	50.0	11/08/22

Prep Method: SW-846 7470A/7471A **Analytical Method: SW-846 7471B**

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
22K0860-13 [B-5 (0-1.5)]	B323066	0.604	50.0	11/15/22
22K0860-14 [B-5 (4-6)]	B323066	0.612	50.0	11/15/22
22K0860-15 [FD-2]	B323066	0.584	50.0	11/15/22
22K0860-16 [B-9 (0-1.5)]	B323066	0.618	50.0	11/15/22
22K0860-17 [B-9 (4-6)]	B323066	0.590	50.0	11/15/22

Prep Method: SW-846 7470A/7471A **Analytical Method: SW-846 7471B**

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
22K0860-01 [B-1 (0-1.5)]	B323454	0.620	50.0	11/18/22
22K0860-02 [B-1 (4-6)]	B323454	0.603	50.0	11/18/22
22K0860-04 [B-7(0-1.5)]	B323454	0.600	50.0	11/18/22

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Sample Extraction Data

Prep Method: SW-846 7470A/7471A **Analytical Method: SW-846 7471B**

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
22K0860-05 [B-7 (6-8)]	B323454	0.582	50.0	11/18/22
22K0860-06 [B-10 (0-1.5)]	B323454	0.593	50.0	11/18/22
22K0860-07 [B-10 (6-8)]	B323454	0.597	50.0	11/18/22
22K0860-09 [B-4 (0-1.5)]	B323454	0.615	50.0	11/18/22
22K0860-10 [B-4 (4-6)]	B323454	0.614	50.0	11/18/22

Prep Method: SW-846 5035 **Analytical Method: SW-846 8260D**

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
22K0860-03 [B-1 (20)]	B322335	5.00	10.0	11/07/22
22K0860-08 [B-10 (21.5)]	B322335	5.00	10.0	11/07/22
22K0860-11 [B-4 (21.5)]	B322335	6.68	10.0	11/07/22
22K0860-12 [FD-1]	B322335	6.60	10.0	11/07/22
22K0860-18 [B-9 (10)]	B322335	6.40	10.0	11/07/22
22K0860-19 [TB]	B322335	5.00	10.0	11/07/22

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

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
22K0860-04 [B-7(0-1.5)]	B322724	30.0	1.00	11/08/22
22K0860-05 [B-7 (6-8)]	B322724	30.0	1.00	11/08/22

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

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
22K0860-06 [B-10 (0-1.5)]	B323064	30.0	1.00	11/14/22
22K0860-07 [B-10 (6-8)]	B323064	30.0	1.00	11/14/22
22K0860-09 [B-4 (0-1.5)]	B323064	30.0	1.00	11/14/22
22K0860-10 [B-4 (4-6)]	B323064	30.0	1.00	11/14/22

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

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
22K0860-13 [B-5 (0-1.5)]	B323232	30.0	1.00	11/14/22
22K0860-14 [B-5 (4-6)]	B323232	30.0	1.00	11/14/22
22K0860-15 [FD-2]	B323232	30.0	1.00	11/14/22
22K0860-16 [B-9 (0-1.5)]	B323232	30.0	1.00	11/14/22
22K0860-17 [B-9 (4-6)]	B323232	30.0	1.00	11/14/22

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

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
22K0860-05RE1 [B-7 (6-8)]	B323401	30.0	1.00	11/16/22

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

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date

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Sample Extraction Data

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

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
22K0860-01RE1 [B-1 (0-1.5)]	B323649	30.0	1.00	11/18/22
22K0860-02RE1 [B-1 (4-6)]	B323649	30.0	1.00	11/18/22

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B322335 - SW-846 5035										
Blank (B322335-BLK1)				Prepared & Analyzed: 11/07/22						
Acetone	ND	0.10	mg/Kg wet							
Acrylonitrile	ND	0.0060	mg/Kg wet							
tert-Amyl Methyl Ether (TAME)	ND	0.0010	mg/Kg wet							
Benzene	ND	0.0020	mg/Kg wet							
Bromobenzene	ND	0.0020	mg/Kg wet							
Bromochloromethane	ND	0.0020	mg/Kg wet							
Bromodichloromethane	ND	0.0020	mg/Kg wet							
Bromoform	ND	0.0020	mg/Kg wet							
Bromomethane	ND	0.010	mg/Kg wet							V-05, V-34
2-Butanone (MEK)	ND	0.040	mg/Kg wet							
tert-Butyl Alcohol (TBA)	ND	0.10	mg/Kg wet							V-05
n-Butylbenzene	ND	0.0020	mg/Kg wet							
sec-Butylbenzene	ND	0.0020	mg/Kg wet							
tert-Butylbenzene	ND	0.0020	mg/Kg wet							
tert-Butyl Ethyl Ether (TBEE)	ND	0.0010	mg/Kg wet							
Carbon Disulfide	ND	0.010	mg/Kg wet							
Carbon Tetrachloride	ND	0.0020	mg/Kg wet							
Chlorobenzene	ND	0.0020	mg/Kg wet							
Chlorodibromomethane	ND	0.0010	mg/Kg wet							
Chloroethane	ND	0.020	mg/Kg wet							
Chloroform	ND	0.0040	mg/Kg wet							
Chloromethane	ND	0.010	mg/Kg wet							
2-Chlorotoluene	ND	0.0020	mg/Kg wet							
4-Chlorotoluene	ND	0.0020	mg/Kg wet							
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0020	mg/Kg wet							V-05
1,2-Dibromoethane (EDB)	ND	0.0010	mg/Kg wet							
Dibromomethane	ND	0.0020	mg/Kg wet							
1,2-Dichlorobenzene	ND	0.0020	mg/Kg wet							
1,3-Dichlorobenzene	ND	0.0020	mg/Kg wet							
1,4-Dichlorobenzene	ND	0.0020	mg/Kg wet							
trans-1,4-Dichloro-2-butene	ND	0.0040	mg/Kg wet							
Dichlorodifluoromethane (Freon 12)	ND	0.020	mg/Kg wet							
1,1-Dichloroethane	ND	0.0020	mg/Kg wet							
1,2-Dichloroethane	ND	0.0020	mg/Kg wet							
1,1-Dichloroethylene	ND	0.0040	mg/Kg wet							
cis-1,2-Dichloroethylene	ND	0.0020	mg/Kg wet							
trans-1,2-Dichloroethylene	ND	0.0020	mg/Kg wet							
1,2-Dichloropropane	ND	0.0020	mg/Kg wet							
1,3-Dichloropropane	ND	0.0010	mg/Kg wet							
2,2-Dichloropropane	ND	0.0020	mg/Kg wet							
1,1-Dichloropropene	ND	0.0020	mg/Kg wet							
cis-1,3-Dichloropropene	ND	0.0010	mg/Kg wet							
trans-1,3-Dichloropropene	ND	0.0010	mg/Kg wet							
Diethyl Ether	ND	0.020	mg/Kg wet							
Diisopropyl Ether (DIPE)	ND	0.0010	mg/Kg wet							
1,4-Dioxane	ND	0.10	mg/Kg wet							V-05
Ethylbenzene	ND	0.0020	mg/Kg wet							
Hexachlorobutadiene	ND	0.0020	mg/Kg wet							
2-Hexanone (MBK)	ND	0.020	mg/Kg wet							
Isopropylbenzene (Cumene)	ND	0.0020	mg/Kg wet							
p-Isopropyltoluene (p-Cymene)	ND	0.0020	mg/Kg wet							
Methyl Acetate	ND	0.0020	mg/Kg wet							

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	
Batch B322335 - SW-846 5035											
Blank (B322335-BLK1)				Prepared & Analyzed: 11/07/22							
Methyl tert-Butyl Ether (MTBE)	ND	0.0040	mg/Kg wet								
Methyl Cyclohexane	ND	0.0020	mg/Kg wet								
Methylene Chloride	ND	0.020	mg/Kg wet								
4-Methyl-2-pentanone (MIBK)	ND	0.020	mg/Kg wet								
Naphthalene	ND	0.0040	mg/Kg wet								
n-Propylbenzene	ND	0.0020	mg/Kg wet								
Styrene	ND	0.0020	mg/Kg wet								
1,1,1,2-Tetrachloroethane	ND	0.0020	mg/Kg wet								
1,1,2,2-Tetrachloroethane	ND	0.0010	mg/Kg wet								
Tetrachloroethylene	ND	0.0020	mg/Kg wet								
Tetrahydrofuran	ND	0.010	mg/Kg wet								
Toluene	ND	0.0020	mg/Kg wet								
1,2,3-Trichlorobenzene	ND	0.0020	mg/Kg wet								
1,2,4-Trichlorobenzene	ND	0.0020	mg/Kg wet								
1,3,5-Trichlorobenzene	ND	0.0020	mg/Kg wet								
1,1,1-Trichloroethane	ND	0.0020	mg/Kg wet								
1,1,2-Trichloroethane	ND	0.0020	mg/Kg wet								
Trichloroethylene	ND	0.0020	mg/Kg wet								
Trichlorofluoromethane (Freon 11)	ND	0.010	mg/Kg wet								
1,2,3-Trichloropropane	ND	0.0020	mg/Kg wet								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.010	mg/Kg wet								
1,2,3-Trimethylbenzene	ND	0.020	mg/Kg wet								
1,2,4-Trimethylbenzene	ND	0.0020	mg/Kg wet								
1,3,5-Trimethylbenzene	ND	0.0020	mg/Kg wet								
Vinyl Chloride	ND	0.010	mg/Kg wet								
m+p Xylene	ND	0.0040	mg/Kg wet								
o-Xylene	ND	0.0020	mg/Kg wet								
Surrogate: 1,2-Dichloroethane-d4	*0.0533*		mg/Kg wet	0.0500		107	70-130				
Surrogate: Toluene-d8	*0.0504*		mg/Kg wet	0.0500		101	70-130				
Surrogate: 4-Bromofluorobenzene	*0.0490*		mg/Kg wet	0.0500		98.0	70-130				
LCS (B322335-BS1)				Prepared & Analyzed: 11/07/22							
Acetone	0.191	0.10	mg/Kg wet	0.200		95.6	70-160				†
Acrylonitrile	0.0200	0.0060	mg/Kg wet	0.0200		100	70-130				
tert-Amyl Methyl Ether (TAME)	0.0171	0.0010	mg/Kg wet	0.0200		85.5	70-130				
Benzene	0.0205	0.0020	mg/Kg wet	0.0200		103	70-130				
Bromobenzene	0.0220	0.0020	mg/Kg wet	0.0200		110	70-130			V-35	
Bromochloromethane	0.0243	0.0020	mg/Kg wet	0.0200		122	70-130			V-20	
Bromodichloromethane	0.0190	0.0020	mg/Kg wet	0.0200		94.9	70-130				
Bromoform	0.0176	0.0020	mg/Kg wet	0.0200		87.8	70-130				
Bromomethane	0.0154	0.010	mg/Kg wet	0.0200		77.1	40-130			V-05, V-34	†
2-Butanone (MEK)	0.215	0.040	mg/Kg wet	0.200		108	70-160				†
tert-Butyl Alcohol (TBA)	0.126	0.10	mg/Kg wet	0.200		63.0	40-130			V-05	†
n-Butylbenzene	0.0194	0.0020	mg/Kg wet	0.0200		97.2	70-130				
sec-Butylbenzene	0.0191	0.0020	mg/Kg wet	0.0200		95.7	70-130				
tert-Butylbenzene	0.0187	0.0020	mg/Kg wet	0.0200		93.6	70-160				†
tert-Butyl Ethyl Ether (TBEE)	0.0185	0.0010	mg/Kg wet	0.0200		92.6	70-130				
Carbon Disulfide	0.229	0.010	mg/Kg wet	0.200		114	70-130				
Carbon Tetrachloride	0.0182	0.0020	mg/Kg wet	0.0200		90.8	70-130				
Chlorobenzene	0.0194	0.0020	mg/Kg wet	0.0200		97.1	70-130				
Chlorodibromomethane	0.0179	0.0010	mg/Kg wet	0.0200		89.7	70-130				
Chloroethane	0.0202	0.020	mg/Kg wet	0.0200		101	70-130				

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	
Batch B322335 - SW-846 5035											
LCS (B322335-BS1)				Prepared & Analyzed: 11/07/22							
Chloroform	0.0193	0.0040	mg/Kg wet	0.0200		96.5	70-130				
Chloromethane	0.0237	0.010	mg/Kg wet	0.0200		118	70-130			V-20	
2-Chlorotoluene	0.0195	0.0020	mg/Kg wet	0.0200		97.7	70-130				
4-Chlorotoluene	0.0197	0.0020	mg/Kg wet	0.0200		98.4	70-130				
1,2-Dibromo-3-chloropropane (DBCP)	0.0160	0.0020	mg/Kg wet	0.0200		80.1	70-130			V-05	
1,2-Dibromoethane (EDB)	0.0184	0.0010	mg/Kg wet	0.0200		92.0	70-130				
Dibromomethane	0.0193	0.0020	mg/Kg wet	0.0200		96.7	70-130				
1,2-Dichlorobenzene	0.0192	0.0020	mg/Kg wet	0.0200		96.0	70-130				
1,3-Dichlorobenzene	0.0191	0.0020	mg/Kg wet	0.0200		95.3	70-130				
1,4-Dichlorobenzene	0.0188	0.0020	mg/Kg wet	0.0200		93.8	70-130				
trans-1,4-Dichloro-2-butene	0.0165	0.0040	mg/Kg wet	0.0200		82.5	70-130				
Dichlorodifluoromethane (Freon 12)	0.0166	0.020	mg/Kg wet	0.0200		82.8	40-160				†
1,1-Dichloroethane	0.0214	0.0020	mg/Kg wet	0.0200		107	70-130				
1,2-Dichloroethane	0.0195	0.0020	mg/Kg wet	0.0200		97.6	70-130				
1,1-Dichloroethylene	0.0226	0.0040	mg/Kg wet	0.0200		113	70-130				
cis-1,2-Dichloroethylene	0.0213	0.0020	mg/Kg wet	0.0200		106	70-130				
trans-1,2-Dichloroethylene	0.0216	0.0020	mg/Kg wet	0.0200		108	70-130				
1,2-Dichloropropane	0.0211	0.0020	mg/Kg wet	0.0200		106	70-130				
1,3-Dichloropropane	0.0194	0.0010	mg/Kg wet	0.0200		97.1	70-130				
2,2-Dichloropropane	0.0166	0.0020	mg/Kg wet	0.0200		82.9	70-130				
1,1-Dichloropropene	0.0198	0.0020	mg/Kg wet	0.0200		99.2	70-130				
cis-1,3-Dichloropropene	0.0182	0.0010	mg/Kg wet	0.0200		90.8	70-130				
trans-1,3-Dichloropropene	0.0168	0.0010	mg/Kg wet	0.0200		84.1	70-130				
Diethyl Ether	0.0229	0.020	mg/Kg wet	0.0200		114	70-130				
Diisopropyl Ether (DIPE)	0.0224	0.0010	mg/Kg wet	0.0200		112	70-130				
1,4-Dioxane	0.160	0.10	mg/Kg wet	0.200		79.8	40-160			V-05	†
Ethylbenzene	0.0201	0.0020	mg/Kg wet	0.0200		100	70-130				
Hexachlorobutadiene	0.0178	0.0020	mg/Kg wet	0.0200		89.1	70-160				
2-Hexanone (MBK)	0.208	0.020	mg/Kg wet	0.200		104	70-160				†
Isopropylbenzene (Cumene)	0.0190	0.0020	mg/Kg wet	0.0200		95.2	70-130				
p-Isopropyltoluene (p-Cymene)	0.0188	0.0020	mg/Kg wet	0.0200		94.0	70-130				
Methyl Acetate	0.0198	0.0020	mg/Kg wet	0.0200		99.1	70-130				
Methyl tert-Butyl Ether (MTBE)	0.0172	0.0040	mg/Kg wet	0.0200		86.0	70-130				
Methyl Cyclohexane	0.0202	0.0020	mg/Kg wet	0.0200		101	70-130				
Methylene Chloride	0.0224	0.020	mg/Kg wet	0.0200		112	40-160				†
4-Methyl-2-pentanone (MIBK)	0.217	0.020	mg/Kg wet	0.200		109	70-160				†
Naphthalene	0.0165	0.0040	mg/Kg wet	0.0200		82.7	40-130				†
n-Propylbenzene	0.0203	0.0020	mg/Kg wet	0.0200		102	70-130				
Styrene	0.0198	0.0020	mg/Kg wet	0.0200		98.9	70-130				
1,1,1,2-Tetrachloroethane	0.0184	0.0020	mg/Kg wet	0.0200		92.0	70-130				
1,1,2,2-Tetrachloroethane	0.0193	0.0010	mg/Kg wet	0.0200		96.5	70-130				
Tetrachloroethylene	0.0202	0.0020	mg/Kg wet	0.0200		101	70-130				
Tetrahydrofuran	0.0191	0.010	mg/Kg wet	0.0200		95.7	70-130				
Toluene	0.0178	0.0020	mg/Kg wet	0.0200		89.2	70-130				
1,2,3-Trichlorobenzene	0.0177	0.0020	mg/Kg wet	0.0200		88.3	70-130				
1,2,4-Trichlorobenzene	0.0173	0.0020	mg/Kg wet	0.0200		86.5	70-130				
1,3,5-Trichlorobenzene	0.0180	0.0020	mg/Kg wet	0.0200		90.0	70-130				
1,1,1-Trichloroethane	0.0186	0.0020	mg/Kg wet	0.0200		93.2	70-130				
1,1,2-Trichloroethane	0.0183	0.0020	mg/Kg wet	0.0200		91.4	70-130				
Trichloroethylene	0.0184	0.0020	mg/Kg wet	0.0200		92.0	70-130				
Trichlorofluoromethane (Freon 11)	0.0192	0.010	mg/Kg wet	0.0200		96.0	70-130				
1,2,3-Trichloropropane	0.0182	0.0020	mg/Kg wet	0.0200		91.0	70-130				

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	
Batch B322335 - SW-846 5035											
LCS (B322335-BS1)				Prepared & Analyzed: 11/07/22							
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.0225	0.010	mg/Kg wet	0.0200		113	70-130				
1,2,3-Trimethylbenzene	0.0181	0.020	mg/Kg wet	0.0200		90.5	70-130				
1,2,4-Trimethylbenzene	0.0181	0.0020	mg/Kg wet	0.0200		90.3	70-130				
1,3,5-Trimethylbenzene	0.0192	0.0020	mg/Kg wet	0.0200		96.0	70-130				
Vinyl Chloride	0.0193	0.010	mg/Kg wet	0.0200		96.4	40-130				†
m+p Xylene	0.0406	0.0040	mg/Kg wet	0.0400		101	70-130				
o-Xylene	0.0194	0.0020	mg/Kg wet	0.0200		97.0	70-130				
Surrogate: 1,2-Dichloroethane-d4	*0.0499*		mg/Kg wet	0.0500		99.8	70-130				
Surrogate: Toluene-d8	*0.0498*		mg/Kg wet	0.0500		99.6	70-130				
Surrogate: 4-Bromofluorobenzene	*0.0488*		mg/Kg wet	0.0500		97.6	70-130				
LCS Dup (B322335-BSD1)				Prepared & Analyzed: 11/07/22							
Acetone	0.186	0.10	mg/Kg wet	0.200		93.0	70-160	2.73	25		†
Acrylonitrile	0.0201	0.0060	mg/Kg wet	0.0200		101	70-130	0.598	25		
tert-Amyl Methyl Ether (TAME)	0.0172	0.0010	mg/Kg wet	0.0200		85.9	70-130	0.467	25		
Benzene	0.0205	0.0020	mg/Kg wet	0.0200		103	70-130	0.0974	25		
Bromobenzene	0.0217	0.0020	mg/Kg wet	0.0200		109	70-130	1.28	25	V-35	
Bromochloromethane	0.0243	0.0020	mg/Kg wet	0.0200		121	70-130	0.165	25	V-20	
Bromodichloromethane	0.0192	0.0020	mg/Kg wet	0.0200		95.8	70-130	0.944	25		
Bromoform	0.0169	0.0020	mg/Kg wet	0.0200		84.5	70-130	3.83	25		
Bromomethane	0.0161	0.010	mg/Kg wet	0.0200		80.3	40-130	4.07	25	V-05, V-34	†
2-Butanone (MEK)	0.210	0.040	mg/Kg wet	0.200		105	70-160	2.30	25		†
tert-Butyl Alcohol (TBA)	0.124	0.10	mg/Kg wet	0.200		61.8	40-130	1.91	25	V-05	†
n-Butylbenzene	0.0188	0.0020	mg/Kg wet	0.0200		94.1	70-130	3.24	25		
sec-Butylbenzene	0.0183	0.0020	mg/Kg wet	0.0200		91.7	70-130	4.27	25		
tert-Butylbenzene	0.0177	0.0020	mg/Kg wet	0.0200		88.6	70-160	5.49	25		†
tert-Butyl Ethyl Ether (TBEE)	0.0185	0.0010	mg/Kg wet	0.0200		92.5	70-130	0.108	25		
Carbon Disulfide	0.224	0.010	mg/Kg wet	0.200		112	70-130	1.81	25		
Carbon Tetrachloride	0.0182	0.0020	mg/Kg wet	0.0200		91.0	70-130	0.220	25		
Chlorobenzene	0.0188	0.0020	mg/Kg wet	0.0200		93.9	70-130	3.35	25		
Chlorodibromomethane	0.0178	0.0010	mg/Kg wet	0.0200		88.9	70-130	0.896	25		
Chloroethane	0.0193	0.020	mg/Kg wet	0.0200		96.6	70-130	4.45	25		
Chloroform	0.0191	0.0040	mg/Kg wet	0.0200		95.4	70-130	1.15	25		
Chloromethane	0.0230	0.010	mg/Kg wet	0.0200		115	70-130	2.66	25	V-20	
2-Chlorotoluene	0.0194	0.0020	mg/Kg wet	0.0200		96.8	70-130	0.925	25		
4-Chlorotoluene	0.0194	0.0020	mg/Kg wet	0.0200		96.8	70-130	1.64	25		
1,2-Dibromo-3-chloropropane (DBCP)	0.0151	0.0020	mg/Kg wet	0.0200		75.3	70-130	6.18	25	V-05	
1,2-Dibromoethane (EDB)	0.0183	0.0010	mg/Kg wet	0.0200		91.7	70-130	0.327	25		
Dibromomethane	0.0194	0.0020	mg/Kg wet	0.0200		96.8	70-130	0.103	25		
1,2-Dichlorobenzene	0.0188	0.0020	mg/Kg wet	0.0200		93.9	70-130	2.21	25		
1,3-Dichlorobenzene	0.0182	0.0020	mg/Kg wet	0.0200		90.9	70-130	4.73	25		
1,4-Dichlorobenzene	0.0181	0.0020	mg/Kg wet	0.0200		90.6	70-130	3.47	25		
trans-1,4-Dichloro-2-butene	0.0161	0.0040	mg/Kg wet	0.0200		80.4	70-130	2.58	25		
Dichlorodifluoromethane (Freon 12)	0.0161	0.020	mg/Kg wet	0.0200		80.4	40-160	2.94	25		†
1,1-Dichloroethane	0.0215	0.0020	mg/Kg wet	0.0200		108	70-130	0.560	25		
1,2-Dichloroethane	0.0194	0.0020	mg/Kg wet	0.0200		97.0	70-130	0.617	25		
1,1-Dichloroethylene	0.0223	0.0040	mg/Kg wet	0.0200		111	70-130	1.60	25		
cis-1,2-Dichloroethylene	0.0211	0.0020	mg/Kg wet	0.0200		106	70-130	0.566	25		
trans-1,2-Dichloroethylene	0.0214	0.0020	mg/Kg wet	0.0200		107	70-130	0.745	25		
1,2-Dichloropropane	0.0213	0.0020	mg/Kg wet	0.0200		107	70-130	0.942	25		
1,3-Dichloropropane	0.0195	0.0010	mg/Kg wet	0.0200		97.3	70-130	0.206	25		
2,2-Dichloropropane	0.0165	0.0020	mg/Kg wet	0.0200		82.5	70-130	0.484	25		

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	
Batch B322335 - SW-846 5035											
LCS Dup (B322335-BSD1)				Prepared & Analyzed: 11/07/22							
1,1-Dichloropropene	0.0197	0.0020	mg/Kg wet	0.0200		98.7	70-130	0.505	25		
cis-1,3-Dichloropropene	0.0181	0.0010	mg/Kg wet	0.0200		90.4	70-130	0.442	25		
trans-1,3-Dichloropropene	0.0165	0.0010	mg/Kg wet	0.0200		82.3	70-130	2.16	25		
Diethyl Ether	0.0224	0.020	mg/Kg wet	0.0200		112	70-130	2.12	25		
Diisopropyl Ether (DIPE)	0.0236	0.0010	mg/Kg wet	0.0200		118	70-130	5.22	25		
1,4-Dioxane	0.156	0.10	mg/Kg wet	0.200		77.9	40-160	2.46	50	V-05	† ‡
Ethylbenzene	0.0196	0.0020	mg/Kg wet	0.0200		97.8	70-130	2.72	25		
Hexachlorobutadiene	0.0168	0.0020	mg/Kg wet	0.0200		84.2	70-160	5.65	25		
2-Hexanone (MBK)	0.206	0.020	mg/Kg wet	0.200		103	70-160	1.08	25		†
Isopropylbenzene (Cumene)	0.0185	0.0020	mg/Kg wet	0.0200		92.5	70-130	2.88	25		
p-Isopropyltoluene (p-Cymene)	0.0183	0.0020	mg/Kg wet	0.0200		91.3	70-130	2.91	25		
Methyl Acetate	0.0207	0.0020	mg/Kg wet	0.0200		104	70-130	4.34	25		
Methyl tert-Butyl Ether (MTBE)	0.0170	0.0040	mg/Kg wet	0.0200		85.2	70-130	0.935	25		
Methyl Cyclohexane	0.0198	0.0020	mg/Kg wet	0.0200		99.0	70-130	1.90	25		
Methylene Chloride	0.0223	0.020	mg/Kg wet	0.0200		112	40-160	0.358	25		†
4-Methyl-2-pentanone (MIBK)	0.213	0.020	mg/Kg wet	0.200		107	70-160	1.80	25		†
Naphthalene	0.0159	0.0040	mg/Kg wet	0.0200		79.6	40-130	3.82	25		†
n-Propylbenzene	0.0200	0.0020	mg/Kg wet	0.0200		100	70-130	1.69	25		
Styrene	0.0194	0.0020	mg/Kg wet	0.0200		97.0	70-130	1.94	25		
1,1,1,2-Tetrachloroethane	0.0179	0.0020	mg/Kg wet	0.0200		89.5	70-130	2.75	25		
1,1,2,2-Tetrachloroethane	0.0187	0.0010	mg/Kg wet	0.0200		93.6	70-130	3.05	25		
Tetrachloroethylene	0.0195	0.0020	mg/Kg wet	0.0200		97.4	70-130	3.73	25		
Tetrahydrofuran	0.0187	0.010	mg/Kg wet	0.0200		93.7	70-130	2.11	25		
Toluene	0.0180	0.0020	mg/Kg wet	0.0200		90.2	70-130	1.11	25		
1,2,3-Trichlorobenzene	0.0172	0.0020	mg/Kg wet	0.0200		85.9	70-130	2.76	25		
1,2,4-Trichlorobenzene	0.0165	0.0020	mg/Kg wet	0.0200		82.4	70-130	4.85	25		
1,3,5-Trichlorobenzene	0.0174	0.0020	mg/Kg wet	0.0200		86.8	70-130	3.62	25		
1,1,1-Trichloroethane	0.0184	0.0020	mg/Kg wet	0.0200		92.1	70-130	1.19	25		
1,1,2-Trichloroethane	0.0182	0.0020	mg/Kg wet	0.0200		90.9	70-130	0.549	25		
Trichloroethylene	0.0181	0.0020	mg/Kg wet	0.0200		90.4	70-130	1.75	25		
Trichlorofluoromethane (Freon 11)	0.0187	0.010	mg/Kg wet	0.0200		93.6	70-130	2.53	25		
1,2,3-Trichloropropane	0.0182	0.0020	mg/Kg wet	0.0200		91.2	70-130	0.220	25		
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.0224	0.010	mg/Kg wet	0.0200		112	70-130	0.713	25		
1,2,3-Trimethylbenzene	0.0178	0.020	mg/Kg wet	0.0200		89.2	70-130	1.45	25		
1,2,4-Trimethylbenzene	0.0175	0.0020	mg/Kg wet	0.0200		87.5	70-130	3.15	25		
1,3,5-Trimethylbenzene	0.0190	0.0020	mg/Kg wet	0.0200		94.8	70-130	1.26	25		
Vinyl Chloride	0.0189	0.010	mg/Kg wet	0.0200		94.4	40-130	2.10	25		†
m+p Xylene	0.0393	0.0040	mg/Kg wet	0.0400		98.4	70-130	3.10	25		
o-Xylene	0.0192	0.0020	mg/Kg wet	0.0200		96.2	70-130	0.828	25		
Surrogate: 1,2-Dichloroethane-d4	*0.0521*		mg/Kg wet	0.0500		104	70-130				
Surrogate: Toluene-d8	*0.0504*		mg/Kg wet	0.0500		101	70-130				
Surrogate: 4-Bromofluorobenzene	*0.0495*		mg/Kg wet	0.0500		99.0	70-130				

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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
Batch B323064 - SW-846 3546										
Blank (B323064-BLK1)				Prepared: 11/14/22 Analyzed: 11/16/22						
Acenaphthene (SIM)	ND	0.0083	mg/Kg wet							
Acenaphthylene (SIM)	ND	0.0083	mg/Kg wet							
Anthracene (SIM)	ND	0.0067	mg/Kg wet							
Benzo(a)anthracene (SIM)	ND	0.0017	mg/Kg wet							
Benzo(a)pyrene (SIM)	ND	0.0017	mg/Kg wet							
Benzo(b)fluoranthene (SIM)	ND	0.0017	mg/Kg wet							
Benzo(g,h,i)perylene (SIM)	ND	0.017	mg/Kg wet							
Benzo(k)fluoranthene (SIM)	ND	0.0067	mg/Kg wet							
Chrysene (SIM)	ND	0.0067	mg/Kg wet							
Dibenz(a,h)anthracene (SIM)	ND	0.0017	mg/Kg wet							
Fluoranthene (SIM)	ND	0.017	mg/Kg wet							
Fluorene (SIM)	ND	0.033	mg/Kg wet							
Indeno(1,2,3-cd)pyrene (SIM)	ND	0.0067	mg/Kg wet							
2-Methylnaphthalene (SIM)	ND	0.033	mg/Kg wet							
Naphthalene (SIM)	ND	0.033	mg/Kg wet							
Phenanthrene (SIM)	ND	0.0083	mg/Kg wet							
Pyrene (SIM)	ND	0.033	mg/Kg wet							
Surrogate: Nitrobenzene-d5	*2.45*		mg/Kg wet	3.33		73.5	30-130			
Surrogate: 2-Fluorobiphenyl	*2.55*		mg/Kg wet	3.33		76.6	30-130			
Surrogate: p-Terphenyl-d14	*3.17*		mg/Kg wet	3.33		95.1	30-130			
LCS (B323064-BS1)				Prepared: 11/14/22 Analyzed: 11/15/22						
Acenaphthene (SIM)	1.03	0.17	mg/Kg wet	1.67		61.7	40-140			
Acenaphthylene (SIM)	1.12	0.17	mg/Kg wet	1.67		67.1	40-140			
Anthracene (SIM)	1.17	0.13	mg/Kg wet	1.67		70.4	40-140			
Benzo(a)anthracene (SIM)	1.15	0.033	mg/Kg wet	1.67		69.2	40-140			
Benzo(a)pyrene (SIM)	1.20	0.033	mg/Kg wet	1.67		72.1	40-140			
Benzo(b)fluoranthene (SIM)	1.41	0.033	mg/Kg wet	1.67		84.5	40-140			
Benzo(g,h,i)perylene (SIM)	1.38	0.33	mg/Kg wet	1.67		83.0	40-140			
Benzo(k)fluoranthene (SIM)	1.29	0.13	mg/Kg wet	1.67		77.7	40-140			
Chrysene (SIM)	1.12	0.13	mg/Kg wet	1.67		67.2	40-140			
Dibenz(a,h)anthracene (SIM)	1.41	0.033	mg/Kg wet	1.67		84.5	40-140			
Fluoranthene (SIM)	1.10	0.33	mg/Kg wet	1.67		66.1	40-140			
Fluorene (SIM)	1.14	0.67	mg/Kg wet	1.67		68.6	40-140			
Indeno(1,2,3-cd)pyrene (SIM)	1.49	0.13	mg/Kg wet	1.67		89.6	40-140			
2-Methylnaphthalene (SIM)	1.21	0.67	mg/Kg wet	1.67		72.6	40-140			
Naphthalene (SIM)	1.04	0.67	mg/Kg wet	1.67		62.4	40-140			
Phenanthrene (SIM)	1.06	0.17	mg/Kg wet	1.67		63.9	40-140			
Pyrene (SIM)	1.04	0.67	mg/Kg wet	1.67		62.7	40-140			
Surrogate: Nitrobenzene-d5	*2.10*		mg/Kg wet	3.33		63.0	30-130			
Surrogate: 2-Fluorobiphenyl	*1.98*		mg/Kg wet	3.33		59.3	30-130			
Surrogate: p-Terphenyl-d14	*1.87*		mg/Kg wet	3.33		56.2	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
Batch B323064 - SW-846 3546										
LCS Dup (B323064-BSD1)				Prepared: 11/14/22 Analyzed: 11/16/22						
Acenaphthene (SIM)	0.974	0.17	mg/Kg wet	1.67		58.4	40-140	5.46	20	
Acenaphthylene (SIM)	1.06	0.17	mg/Kg wet	1.67		63.3	40-140	5.83	20	
Anthracene (SIM)	1.12	0.13	mg/Kg wet	1.67		67.4	40-140	4.29	20	
Benzo(a)anthracene (SIM)	1.11	0.033	mg/Kg wet	1.67		66.5	40-140	3.95	20	
Benzo(a)pyrene (SIM)	1.15	0.033	mg/Kg wet	1.67		69.0	40-140	4.31	20	
Benzo(b)fluoranthene (SIM)	1.37	0.033	mg/Kg wet	1.67		82.0	40-140	2.98	20	
Benzo(g,h,i)perylene (SIM)	1.33	0.33	mg/Kg wet	1.67		79.6	40-140	4.23	20	
Benzo(k)fluoranthene (SIM)	1.26	0.13	mg/Kg wet	1.67		75.7	40-140	2.56	20	
Chrysene (SIM)	1.08	0.13	mg/Kg wet	1.67		64.6	40-140	4.00	20	
Dibenz(a,h)anthracene (SIM)	1.35	0.033	mg/Kg wet	1.67		81.0	40-140	4.20	20	
Fluoranthene (SIM)	1.03	0.33	mg/Kg wet	1.67		61.8	40-140	6.76	20	
Fluorene (SIM)	1.11	0.67	mg/Kg wet	1.67		66.7	40-140	2.90	20	
Indeno(1,2,3-cd)pyrene (SIM)	1.43	0.13	mg/Kg wet	1.67		85.7	40-140	4.47	20	
2-Methylnaphthalene (SIM)	1.13	0.67	mg/Kg wet	1.67		67.6	40-140	7.07	20	
Naphthalene (SIM)	0.973	0.67	mg/Kg wet	1.67		58.4	40-140	6.76	20	
Phenanthrene (SIM)	1.02	0.17	mg/Kg wet	1.67		61.4	40-140	4.02	20	
Pyrene (SIM)	1.03	0.67	mg/Kg wet	1.67		61.6	40-140	1.74	20	
Surrogate: Nitrobenzene-d5	*1.95*		mg/Kg wet	3.33		58.6	30-130			
Surrogate: 2-Fluorobiphenyl	*1.83*		mg/Kg wet	3.33		54.8	30-130			
Surrogate: p-Terphenyl-d14	*1.81*		mg/Kg wet	3.33		54.3	30-130			
Batch B323232 - SW-846 3546										
Blank (B323232-BLK1)				Prepared: 11/14/22 Analyzed: 11/16/22						
Acenaphthene (SIM)	ND	0.0083	mg/Kg wet							
Acenaphthylene (SIM)	ND	0.0083	mg/Kg wet							
Anthracene (SIM)	ND	0.0067	mg/Kg wet							
Benzo(a)anthracene (SIM)	ND	0.0017	mg/Kg wet							
Benzo(a)pyrene (SIM)	ND	0.0017	mg/Kg wet							
Benzo(b)fluoranthene (SIM)	ND	0.0017	mg/Kg wet							
Benzo(g,h,i)perylene (SIM)	ND	0.017	mg/Kg wet							
Benzo(k)fluoranthene (SIM)	ND	0.0067	mg/Kg wet							
Chrysene (SIM)	ND	0.0067	mg/Kg wet							
Dibenz(a,h)anthracene (SIM)	ND	0.0017	mg/Kg wet							
Fluoranthene (SIM)	ND	0.017	mg/Kg wet							
Fluorene (SIM)	ND	0.033	mg/Kg wet							
Indeno(1,2,3-cd)pyrene (SIM)	ND	0.0067	mg/Kg wet							
2-Methylnaphthalene (SIM)	ND	0.033	mg/Kg wet							
Naphthalene (SIM)	ND	0.033	mg/Kg wet							
Phenanthrene (SIM)	ND	0.0083	mg/Kg wet							
Pyrene (SIM)	ND	0.033	mg/Kg wet							
Surrogate: Nitrobenzene-d5	*2.55*		mg/Kg wet	3.33		76.6	30-130			
Surrogate: 2-Fluorobiphenyl	*2.40*		mg/Kg wet	3.33		71.9	30-130			
Surrogate: p-Terphenyl-d14	*2.91*		mg/Kg wet	3.33		87.2	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
Batch B323232 - SW-846 3546										
LCS (B323232-BS1)				Prepared: 11/14/22 Analyzed: 11/16/22						
Acenaphthene (SIM)	0.978	0.17	mg/Kg wet	1.67		58.7	40-140			
Acenaphthylene (SIM)	1.08	0.17	mg/Kg wet	1.67		64.8	40-140			
Anthracene (SIM)	1.14	0.13	mg/Kg wet	1.67		68.2	40-140			
Benzo(a)anthracene (SIM)	1.18	0.033	mg/Kg wet	1.67		70.8	40-140			
Benzo(a)pyrene (SIM)	1.18	0.033	mg/Kg wet	1.67		71.0	40-140			
Benzo(b)fluoranthene (SIM)	1.34	0.033	mg/Kg wet	1.67		80.1	40-140			
Benzo(g,h,i)perylene (SIM)	1.32	0.33	mg/Kg wet	1.67		79.1	40-140			
Benzo(k)fluoranthene (SIM)	1.23	0.13	mg/Kg wet	1.67		73.8	40-140			
Chrysene (SIM)	1.10	0.13	mg/Kg wet	1.67		66.0	40-140			
Dibenz(a,h)anthracene (SIM)	1.26	0.033	mg/Kg wet	1.67		75.6	40-140			
Fluoranthene (SIM)	1.10	0.33	mg/Kg wet	1.67		65.7	40-140			
Fluorene (SIM)	1.10	0.67	mg/Kg wet	1.67		66.2	40-140			
Indeno(1,2,3-cd)pyrene (SIM)	1.43	0.13	mg/Kg wet	1.67		85.8	40-140			
2-Methylnaphthalene (SIM)	1.16	0.67	mg/Kg wet	1.67		69.9	40-140			
Naphthalene (SIM)	1.02	0.67	mg/Kg wet	1.67		61.2	40-140			
Phenanthrene (SIM)	1.03	0.17	mg/Kg wet	1.67		62.0	40-140			
Pyrene (SIM)	1.06	0.67	mg/Kg wet	1.67		63.7	40-140			
Surrogate: Nitrobenzene-d5	*2.01*		mg/Kg wet	3.33		60.2	30-130			
Surrogate: 2-Fluorobiphenyl	*1.79*		mg/Kg wet	3.33		53.7	30-130			
Surrogate: p-Terphenyl-d14	*1.75*		mg/Kg wet	3.33		52.6	30-130			
LCS Dup (B323232-BSD1)				Prepared: 11/14/22 Analyzed: 11/16/22						
Acenaphthene (SIM)	0.980	0.17	mg/Kg wet	1.67		58.8	40-140	0.204	20	
Acenaphthylene (SIM)	1.08	0.17	mg/Kg wet	1.67		64.8	40-140	0.0618	20	
Anthracene (SIM)	1.11	0.13	mg/Kg wet	1.67		66.6	40-140	2.37	20	
Benzo(a)anthracene (SIM)	1.15	0.033	mg/Kg wet	1.67		68.7	40-140	2.93	20	
Benzo(a)pyrene (SIM)	1.13	0.033	mg/Kg wet	1.67		67.7	40-140	4.73	20	
Benzo(b)fluoranthene (SIM)	1.30	0.033	mg/Kg wet	1.67		78.2	40-140	2.48	20	
Benzo(g,h,i)perylene (SIM)	1.24	0.33	mg/Kg wet	1.67		74.5	40-140	5.99	20	
Benzo(k)fluoranthene (SIM)	1.20	0.13	mg/Kg wet	1.67		72.2	40-140	2.14	20	
Chrysene (SIM)	1.08	0.13	mg/Kg wet	1.67		65.1	40-140	1.34	20	
Dibenz(a,h)anthracene (SIM)	1.19	0.033	mg/Kg wet	1.67		71.5	40-140	5.55	20	
Fluoranthene (SIM)	1.04	0.33	mg/Kg wet	1.67		62.4	40-140	5.18	20	
Fluorene (SIM)	1.09	0.67	mg/Kg wet	1.67		65.6	40-140	0.911	20	
Indeno(1,2,3-cd)pyrene (SIM)	1.33	0.13	mg/Kg wet	1.67		79.6	40-140	7.45	20	
2-Methylnaphthalene (SIM)	1.22	0.67	mg/Kg wet	1.67		73.0	40-140	4.31	20	
Naphthalene (SIM)	1.08	0.67	mg/Kg wet	1.67		64.6	40-140	5.34	20	
Phenanthrene (SIM)	1.02	0.17	mg/Kg wet	1.67		61.0	40-140	1.56	20	
Pyrene (SIM)	1.09	0.67	mg/Kg wet	1.67		65.3	40-140	2.42	20	
Surrogate: Nitrobenzene-d5	*2.12*		mg/Kg wet	3.33		63.6	30-130			
Surrogate: 2-Fluorobiphenyl	*1.77*		mg/Kg wet	3.33		53.0	30-130			
Surrogate: p-Terphenyl-d14	*1.77*		mg/Kg wet	3.33		53.1	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
Batch B323232 - SW-846 3546										
Matrix Spike (B323232-MS1)		**Source: 22K0860-15**		Prepared: 11/14/22 Analyzed: 11/17/22						
Acenaphthene (SIM)	1.05	0.18	mg/Kg dry	1.81	ND	58.1	40-140			
Acenaphthylene (SIM)	1.16	0.18	mg/Kg dry	1.81	ND	63.8	40-140			
Anthracene (SIM)	1.16	0.14	mg/Kg dry	1.81	ND	63.8	40-140			
Benzo(a)anthracene (SIM)	1.23	0.036	mg/Kg dry	1.81	ND	68.0	40-140			
Benzo(a)pyrene (SIM)	1.20	0.036	mg/Kg dry	1.81	ND	66.3	40-140			
Benzo(b)fluoranthene (SIM)	1.35	0.036	mg/Kg dry	1.81	ND	74.3	40-140			
Benzo(g,h,i)perylene (SIM)	1.32	0.36	mg/Kg dry	1.81	ND	73.0	40-140			
Benzo(k)fluoranthene (SIM)	1.25	0.14	mg/Kg dry	1.81	ND	69.2	40-140			
Chrysene (SIM)	1.16	0.14	mg/Kg dry	1.81	ND	64.0	40-140			
Dibenz(a,h)anthracene (SIM)	1.28	0.036	mg/Kg dry	1.81	ND	70.8	40-140			
Fluoranthene (SIM)	1.14	0.36	mg/Kg dry	1.81	ND	63.1	40-140			
Fluorene (SIM)	1.16	0.72	mg/Kg dry	1.81	ND	63.9	40-140			
Indeno(1,2,3-cd)pyrene (SIM)	1.43	0.14	mg/Kg dry	1.81	ND	79.0	40-140			
2-Methylnaphthalene (SIM)	1.30	0.72	mg/Kg dry	1.81	ND	71.6	40-140			
Naphthalene (SIM)	1.14	0.72	mg/Kg dry	1.81	ND	62.8	40-140			
Phenanthrene (SIM)	1.08	0.18	mg/Kg dry	1.81	ND	59.6	40-140			
Pyrene (SIM)	1.13	0.72	mg/Kg dry	1.81	ND	62.6	40-140			
Surrogate: Nitrobenzene-d5	*2.18*		mg/Kg dry	3.62		60.2	30-130			
Surrogate: 2-Fluorobiphenyl	*2.01*		mg/Kg dry	3.62		55.5	30-130			
Surrogate: p-Terphenyl-d14	*1.81*		mg/Kg dry	3.62		50.1	30-130			
Matrix Spike Dup (B323232-MSD1)		**Source: 22K0860-15**		Prepared: 11/14/22 Analyzed: 11/17/22						
Acenaphthene (SIM)	1.04	0.18	mg/Kg dry	1.81	ND	57.2	40-140	1.53	30	
Acenaphthylene (SIM)	1.14	0.18	mg/Kg dry	1.81	ND	62.8	40-140	1.52	30	
Anthracene (SIM)	1.13	0.14	mg/Kg dry	1.81	ND	62.4	40-140	2.22	30	
Benzo(a)anthracene (SIM)	1.22	0.036	mg/Kg dry	1.81	ND	67.3	40-140	1.12	30	
Benzo(a)pyrene (SIM)	1.18	0.036	mg/Kg dry	1.81	ND	65.0	40-140	2.01	30	
Benzo(b)fluoranthene (SIM)	1.31	0.036	mg/Kg dry	1.81	ND	72.0	40-140	3.12	30	
Benzo(g,h,i)perylene (SIM)	1.29	0.36	mg/Kg dry	1.81	ND	71.2	40-140	2.39	30	
Benzo(k)fluoranthene (SIM)	1.22	0.14	mg/Kg dry	1.81	ND	67.6	40-140	2.28	30	
Chrysene (SIM)	1.13	0.14	mg/Kg dry	1.81	ND	62.6	40-140	2.21	30	
Dibenz(a,h)anthracene (SIM)	1.24	0.036	mg/Kg dry	1.81	ND	68.7	40-140	2.93	30	
Fluoranthene (SIM)	1.14	0.36	mg/Kg dry	1.81	ND	62.7	40-140	0.636	30	
Fluorene (SIM)	1.13	0.72	mg/Kg dry	1.81	ND	62.6	40-140	2.09	30	
Indeno(1,2,3-cd)pyrene (SIM)	1.40	0.14	mg/Kg dry	1.81	ND	77.5	40-140	1.94	30	
2-Methylnaphthalene (SIM)	1.28	0.72	mg/Kg dry	1.81	ND	70.9	40-140	0.898	30	
Naphthalene (SIM)	1.13	0.72	mg/Kg dry	1.81	ND	62.3	40-140	0.767	30	
Phenanthrene (SIM)	1.06	0.18	mg/Kg dry	1.81	ND	58.6	40-140	1.69	30	
Pyrene (SIM)	1.11	0.72	mg/Kg dry	1.81	ND	61.1	40-140	2.46	30	
Surrogate: Nitrobenzene-d5	*2.15*		mg/Kg dry	3.62		59.4	30-130			
Surrogate: 2-Fluorobiphenyl	*1.98*		mg/Kg dry	3.62		54.6	30-130			
Surrogate: p-Terphenyl-d14	*1.80*		mg/Kg dry	3.62		49.6	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
Batch B323401 - SW-846 3546										
Blank (B323401-BLK1)				Prepared: 11/17/22 Analyzed: 11/18/22						
Acenaphthene (SIM)	ND	0.0083	mg/Kg wet							
Acenaphthylene (SIM)	ND	0.0083	mg/Kg wet							
Anthracene (SIM)	ND	0.0067	mg/Kg wet							
Benzo(a)anthracene (SIM)	ND	0.0017	mg/Kg wet							
Benzo(a)pyrene (SIM)	ND	0.0017	mg/Kg wet							
Benzo(b)fluoranthene (SIM)	ND	0.0017	mg/Kg wet							
Benzo(g,h,i)perylene (SIM)	ND	0.017	mg/Kg wet							
Benzo(k)fluoranthene (SIM)	ND	0.0067	mg/Kg wet							
Chrysene (SIM)	ND	0.0067	mg/Kg wet							
Dibenz(a,h)anthracene (SIM)	ND	0.0017	mg/Kg wet							
Fluoranthene (SIM)	ND	0.017	mg/Kg wet							
Fluorene (SIM)	ND	0.033	mg/Kg wet							
Indeno(1,2,3-cd)pyrene (SIM)	ND	0.0067	mg/Kg wet							
2-Methylnaphthalene (SIM)	ND	0.033	mg/Kg wet							
Naphthalene (SIM)	ND	0.033	mg/Kg wet							
Phenanthrene (SIM)	ND	0.0083	mg/Kg wet							
Pyrene (SIM)	ND	0.033	mg/Kg wet							
Surrogate: Nitrobenzene-d5	*2.45*		mg/Kg wet	3.33		73.5	30-130			
Surrogate: 2-Fluorobiphenyl	*2.26*		mg/Kg wet	3.33		67.8	30-130			
Surrogate: p-Terphenyl-d14	*2.56*		mg/Kg wet	3.33		76.7	30-130			
LCS (B323401-BS1)				Prepared & Analyzed: 11/17/22						
Acenaphthene (SIM)	0.815	0.17	mg/Kg wet	1.67		48.9	40-140			
Acenaphthylene (SIM)	0.907	0.17	mg/Kg wet	1.67		54.4	40-140			
Anthracene (SIM)	0.897	0.13	mg/Kg wet	1.67		53.8	40-140			
Benzo(a)anthracene (SIM)	0.942	0.033	mg/Kg wet	1.67		56.5	40-140			
Benzo(a)pyrene (SIM)	0.944	0.033	mg/Kg wet	1.67		56.6	40-140			
Benzo(b)fluoranthene (SIM)	1.10	0.033	mg/Kg wet	1.67		66.0	40-140			
Benzo(g,h,i)perylene (SIM)	1.05	0.33	mg/Kg wet	1.67		62.8	40-140			
Benzo(k)fluoranthene (SIM)	0.993	0.13	mg/Kg wet	1.67		59.6	40-140			
Chrysene (SIM)	0.897	0.13	mg/Kg wet	1.67		53.8	40-140			
Dibenz(a,h)anthracene (SIM)	1.01	0.033	mg/Kg wet	1.67		60.4	40-140			
Fluoranthene (SIM)	0.869	0.33	mg/Kg wet	1.67		52.2	40-140			
Fluorene (SIM)	0.895	0.67	mg/Kg wet	1.67		53.7	40-140			
Indeno(1,2,3-cd)pyrene (SIM)	1.13	0.13	mg/Kg wet	1.67		67.8	40-140			
2-Methylnaphthalene (SIM)	1.05	0.67	mg/Kg wet	1.67		62.8	40-140			
Naphthalene (SIM)	0.919	0.67	mg/Kg wet	1.67		55.1	40-140			
Phenanthrene (SIM)	0.830	0.17	mg/Kg wet	1.67		49.8	40-140			
Pyrene (SIM)	0.891	0.67	mg/Kg wet	1.67		53.5	40-140			
Surrogate: Nitrobenzene-d5	*1.76*		mg/Kg wet	3.33		52.9	30-130			
Surrogate: 2-Fluorobiphenyl	*1.50*		mg/Kg wet	3.33		44.9	30-130			
Surrogate: p-Terphenyl-d14	*1.42*		mg/Kg wet	3.33		42.5	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
Batch B323401 - SW-846 3546										
LCS Dup (B323401-BSD1)				Prepared: 11/17/22 Analyzed: 11/18/22						
Acenaphthene (SIM)	0.822	0.17	mg/Kg wet	1.67		49.3	40-140	0.896	20	
Acenaphthylene (SIM)	0.906	0.17	mg/Kg wet	1.67		54.4	40-140	0.0736	20	
Anthracene (SIM)	0.909	0.13	mg/Kg wet	1.67		54.6	40-140	1.40	20	
Benzo(a)anthracene (SIM)	0.945	0.033	mg/Kg wet	1.67		56.7	40-140	0.353	20	
Benzo(a)pyrene (SIM)	0.960	0.033	mg/Kg wet	1.67		57.6	40-140	1.68	20	
Benzo(b)fluoranthene (SIM)	1.11	0.033	mg/Kg wet	1.67		66.8	40-140	1.26	20	
Benzo(g,h,i)perylene (SIM)	1.07	0.33	mg/Kg wet	1.67		64.1	40-140	1.95	20	
Benzo(k)fluoranthene (SIM)	1.01	0.13	mg/Kg wet	1.67		60.7	40-140	1.86	20	
Chrysene (SIM)	0.907	0.13	mg/Kg wet	1.67		54.4	40-140	1.11	20	
Dibenz(a,h)anthracene (SIM)	1.04	0.033	mg/Kg wet	1.67		62.4	40-140	3.19	20	
Fluoranthene (SIM)	0.877	0.33	mg/Kg wet	1.67		52.6	40-140	0.840	20	
Fluorene (SIM)	0.895	0.67	mg/Kg wet	1.67		53.7	40-140	0.00	20	
Indeno(1,2,3-cd)pyrene (SIM)	1.16	0.13	mg/Kg wet	1.67		69.8	40-140	2.91	20	
2-Methylnaphthalene (SIM)	1.06	0.67	mg/Kg wet	1.67		63.6	40-140	1.20	20	
Naphthalene (SIM)	0.929	0.67	mg/Kg wet	1.67		55.7	40-140	1.08	20	
Phenanthrene (SIM)	0.842	0.17	mg/Kg wet	1.67		50.5	40-140	1.44	20	
Pyrene (SIM)	0.895	0.67	mg/Kg wet	1.67		53.7	40-140	0.448	20	
Surrogate: Nitrobenzene-d5	*1.80*		mg/Kg wet	3.33		54.0	30-130			
Surrogate: 2-Fluorobiphenyl	*1.50*		mg/Kg wet	3.33		45.1	30-130			
Surrogate: p-Terphenyl-d14	*1.45*		mg/Kg wet	3.33		43.6	30-130			
Batch B323649 - SW-846 3546										
Blank (B323649-BLK1)				Prepared & Analyzed: 11/21/22						
Acenaphthene (SIM)	ND	0.0083	mg/Kg wet							
Acenaphthylene (SIM)	ND	0.0083	mg/Kg wet							
Anthracene (SIM)	ND	0.0067	mg/Kg wet							
Benzo(a)anthracene (SIM)	ND	0.0017	mg/Kg wet							
Benzo(a)pyrene (SIM)	ND	0.0017	mg/Kg wet							
Benzo(b)fluoranthene (SIM)	ND	0.0017	mg/Kg wet							
Benzo(g,h,i)perylene (SIM)	ND	0.017	mg/Kg wet							
Benzo(k)fluoranthene (SIM)	ND	0.0067	mg/Kg wet							
Chrysene (SIM)	ND	0.0067	mg/Kg wet							
Dibenz(a,h)anthracene (SIM)	ND	0.0017	mg/Kg wet							
Fluoranthene (SIM)	ND	0.017	mg/Kg wet							
Fluorene (SIM)	ND	0.033	mg/Kg wet							
Indeno(1,2,3-cd)pyrene (SIM)	ND	0.0067	mg/Kg wet							
2-Methylnaphthalene (SIM)	ND	0.033	mg/Kg wet							
Naphthalene (SIM)	ND	0.033	mg/Kg wet							
Phenanthrene (SIM)	ND	0.0083	mg/Kg wet							
Pyrene (SIM)	ND	0.033	mg/Kg wet							
Surrogate: Nitrobenzene-d5	*2.47*		mg/Kg wet	3.33		74.0	30-130			
Surrogate: 2-Fluorobiphenyl	*2.33*		mg/Kg wet	3.33		69.9	30-130			
Surrogate: p-Terphenyl-d14	*2.88*		mg/Kg wet	3.33		86.5	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
Batch B323649 - SW-846 3546										
LCS (B323649-BS1)				Prepared & Analyzed: 11/21/22						
Acenaphthene (SIM)	1.11	0.17	mg/Kg wet	1.67		66.8	40-140			
Acenaphthylene (SIM)	1.17	0.17	mg/Kg wet	1.67		70.0	40-140			
Anthracene (SIM)	1.26	0.13	mg/Kg wet	1.67		75.8	40-140			
Benzo(a)anthracene (SIM)	1.19	0.033	mg/Kg wet	1.67		71.5	40-140			
Benzo(a)pyrene (SIM)	1.14	0.033	mg/Kg wet	1.67		68.2	40-140			
Benzo(b)fluoranthene (SIM)	1.29	0.033	mg/Kg wet	1.67		77.6	40-140			
Benzo(g,h,i)perylene (SIM)	1.28	0.33	mg/Kg wet	1.67		77.0	40-140			
Benzo(k)fluoranthene (SIM)	1.33	0.13	mg/Kg wet	1.67		79.8	40-140			
Chrysene (SIM)	1.15	0.13	mg/Kg wet	1.67		69.2	40-140			
Dibenz(a,h)anthracene (SIM)	1.29	0.033	mg/Kg wet	1.67		77.4	40-140			
Fluoranthene (SIM)	1.19	0.33	mg/Kg wet	1.67		71.2	40-140			
Fluorene (SIM)	1.19	0.67	mg/Kg wet	1.67		71.6	40-140			
Indeno(1,2,3-cd)pyrene (SIM)	1.31	0.13	mg/Kg wet	1.67		78.7	40-140			
2-Methylnaphthalene (SIM)	1.18	0.67	mg/Kg wet	1.67		70.7	40-140			
Naphthalene (SIM)	1.02	0.67	mg/Kg wet	1.67		61.3	40-140			
Phenanthrene (SIM)	1.21	0.17	mg/Kg wet	1.67		72.6	40-140			
Pyrene (SIM)	1.15	0.67	mg/Kg wet	1.67		68.8	40-140			
Surrogate: Nitrobenzene-d5	*2.20*		mg/Kg wet	3.33		66.1	30-130			
Surrogate: 2-Fluorobiphenyl	*2.42*		mg/Kg wet	3.33		72.5	30-130			
Surrogate: p-Terphenyl-d14	*2.46*		mg/Kg wet	3.33		73.8	30-130			
LCS Dup (B323649-BSD1)				Prepared & Analyzed: 11/21/22						
Acenaphthene (SIM)	1.03	0.17	mg/Kg wet	1.67		61.7	40-140	7.97	20	
Acenaphthylene (SIM)	1.07	0.17	mg/Kg wet	1.67		64.4	40-140	8.33	20	
Anthracene (SIM)	1.17	0.13	mg/Kg wet	1.67		69.9	40-140	8.07	20	
Benzo(a)anthracene (SIM)	1.12	0.033	mg/Kg wet	1.67		66.9	40-140	6.65	20	
Benzo(a)pyrene (SIM)	1.06	0.033	mg/Kg wet	1.67		63.7	40-140	6.85	20	
Benzo(b)fluoranthene (SIM)	1.21	0.033	mg/Kg wet	1.67		72.7	40-140	6.49	20	
Benzo(g,h,i)perylene (SIM)	1.17	0.33	mg/Kg wet	1.67		70.4	40-140	8.96	20	
Benzo(k)fluoranthene (SIM)	1.25	0.13	mg/Kg wet	1.67		74.8	40-140	6.41	20	
Chrysene (SIM)	1.08	0.13	mg/Kg wet	1.67		64.8	40-140	6.62	20	
Dibenz(a,h)anthracene (SIM)	1.19	0.033	mg/Kg wet	1.67		71.1	40-140	8.46	20	
Fluoranthene (SIM)	1.08	0.33	mg/Kg wet	1.67		64.9	40-140	9.17	20	
Fluorene (SIM)	1.09	0.67	mg/Kg wet	1.67		65.3	40-140	9.12	20	
Indeno(1,2,3-cd)pyrene (SIM)	1.21	0.13	mg/Kg wet	1.67		72.3	40-140	8.42	20	
2-Methylnaphthalene (SIM)	1.07	0.67	mg/Kg wet	1.67		64.1	40-140	9.85	20	
Naphthalene (SIM)	0.933	0.67	mg/Kg wet	1.67		56.0	40-140	9.08	20	
Phenanthrene (SIM)	1.12	0.17	mg/Kg wet	1.67		67.5	40-140	7.31	20	
Pyrene (SIM)	1.08	0.67	mg/Kg wet	1.67		65.1	40-140	5.62	20	
Surrogate: Nitrobenzene-d5	*2.21*		mg/Kg wet	3.33		66.4	30-130			
Surrogate: 2-Fluorobiphenyl	*2.13*		mg/Kg wet	3.33		64.0	30-130			
Surrogate: p-Terphenyl-d14	*2.51*		mg/Kg wet	3.33		75.4	30-130			

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B322494 - SW-846 3050B										
Blank (B322494-BLK1)				Prepared: 11/08/22 Analyzed: 11/11/22						
Antimony	ND	1.7	mg/Kg wet							
Arsenic	ND	0.16	mg/Kg wet							
Beryllium	ND	0.24	mg/Kg wet							
Chromium	ND	4.0	mg/Kg wet							
Copper	ND	4.0	mg/Kg wet							
Nickel	ND	4.0	mg/Kg wet							
Zinc	ND	8.0	mg/Kg wet							
Cadmium	ND	0.32	mg/Kg wet							
Blank (B322494-BLK2)				Prepared: 11/08/22 Analyzed: 11/16/22						
Lead	ND	1.6	mg/Kg wet							
Selenium	ND	1.3	mg/Kg wet							
Silver	ND	0.080	mg/Kg wet							
Thallium	ND	0.080	mg/Kg wet							
LCS (B322494-BS1)				Prepared: 11/08/22 Analyzed: 11/11/22						
Antimony	93.3	21	mg/Kg wet	111		84.1	0-205.4			
Arsenic	121	2.0	mg/Kg wet	112		108	82-118.8			
Beryllium	130	3.0	mg/Kg wet	121		108	82.2-118.2			
Chromium	106	49	mg/Kg wet	103		103	80.8-118.4			
Copper	75.3	49	mg/Kg wet	70.4		107	83.4-116.6			
Nickel	253	49	mg/Kg wet	249		102	81.9-118.1			
Zinc	376	99	mg/Kg wet	360		104	79.7-120.3			
Cadmium	200	4.0	mg/Kg wet	196		102	82.1-118.4			
LCS (B322494-BS2)				Prepared: 11/08/22 Analyzed: 11/16/22						
Lead	69.9	20	mg/Kg wet	73.2		95.6	82.8-117.3			
Selenium	207	16	mg/Kg wet	215		96.3	78.1-121.9			
Silver	74.5	0.99	mg/Kg wet	78.5		94.9	78.9-121.1			
Thallium	66.5	0.99	mg/Kg wet	67.7		98.2	80.1-120.1			
LCS Dup (B322494-BSD1)				Prepared: 11/08/22 Analyzed: 11/11/22						
Antimony	98.1	21	mg/Kg wet	111		88.4	0-205.4	5.00	30	
Arsenic	123	2.0	mg/Kg wet	112		110	82-118.8	2.13	30	
Beryllium	132	2.9	mg/Kg wet	121		109	82.2-118.2	1.69	30	
Chromium	107	49	mg/Kg wet	103		103	80.8-118.4	0.567	30	
Copper	76.8	49	mg/Kg wet	70.4		109	83.4-116.6	1.95	30	
Nickel	252	49	mg/Kg wet	249		101	81.9-118.1	0.412	30	
Zinc	385	98	mg/Kg wet	360		107	79.7-120.3	2.30	30	
Cadmium	207	3.9	mg/Kg wet	196		106	82.1-118.4	3.61	20	
LCS Dup (B322494-BSD2)				Prepared: 11/08/22 Analyzed: 11/16/22						
Lead	73.5	20	mg/Kg wet	73.2		100	82.8-117.3	4.99	30	
Selenium	210	16	mg/Kg wet	215		97.7	78.1-121.9	1.43	30	
Silver	74.5	0.98	mg/Kg wet	78.5		94.9	78.9-121.1	0.00165	30	
Thallium	66.7	0.98	mg/Kg wet	67.7		98.5	80.1-120.1	0.330	30	

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B323066 - SW-846 7470A/7471A										
Blank (B323066-BLK1)				Prepared: 11/15/22 Analyzed: 11/18/22						
Mercury	ND	0.024	mg/Kg wet							
LCS (B323066-BS1)				Prepared: 11/15/22 Analyzed: 11/18/22						
Mercury	29.5	3.7	mg/Kg wet	25.6		115	67.2-132.8			
LCS Dup (B323066-BSD1)				Prepared: 11/15/22 Analyzed: 11/18/22						
Mercury	25.2	3.7	mg/Kg wet	25.6		98.3	67.2-132.8	15.7	20	
Duplicate (B323066-DUP1)	**Source: 22K0860-13**			Prepared: 11/15/22 Analyzed: 11/18/22						
Mercury	0.184	0.028	mg/Kg dry		0.171			7.44	20	
Matrix Spike (B323066-MS1)	**Source: 22K0860-13**			Prepared: 11/15/22 Analyzed: 11/18/22						
Mercury	0.556	0.028	mg/Kg dry	0.372	0.171	104	80-120			
Batch B323454 - SW-846 7470A/7471A										
Blank (B323454-BLK1)				Prepared: 11/18/22 Analyzed: 11/21/22						
Mercury	ND	0.026	mg/Kg wet							
LCS (B323454-BS1)				Prepared: 11/18/22 Analyzed: 11/21/22						
Mercury	31.1	3.7	mg/Kg wet	25.6		121	67.2-132.8			
LCS Dup (B323454-BSD1)				Prepared: 11/18/22 Analyzed: 11/21/22						
Mercury	31.4	3.7	mg/Kg wet	25.6		123	67.2-132.8	1.14	20	

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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.

DL-06	Elevated result due to high dilution factor, please refer to 10x dilution for more representative concentration for this compound.
DL-07	Elevated result due to high dilution factor, please refer to 5x dilution for more representative concentration for this compound.
H-03	Sample received after recommended holding time was exceeded.
H-06	Sample was extracted past the recommended holding time.
RL-12	Elevated reporting limit due to matrix interference.
S-07	One associated surrogate standard recovery is outside of control limits but the other(s) is/are within limits. All recoveries are > 10%.
S-10	Sample was re-extracted outside of holding time since surrogate standard recovery was outside of control limits. Data from analysis performed outside of holding time is also reported since surrogate recovery is acceptable.
V-05	Continuing calibration verification (CCV) did not meet method specifications and was biased on the low 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.
V-34	Initial calibration verification (ICV) did not meet method specifications and was biased on the low side for this compound. Reported result is estimated.
V-35	Initial calibration verification (ICV) did not meet method specifications and was biased on the high side for this compound. Reported result is estimated.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 6020B in Soil	
Antimony	NY,NC,ME
Arsenic	NY,VA,NH,NC,ME
Beryllium	VA,NY,NH,NC,ME
Chromium	NY,NC,ME
Copper	NY,NC,ME
Lead	NY,NC,ME
Nickel	NY,NC,ME
Selenium	NY,VA,NH,NC,ME
Silver	NY,NC,ME
Thallium	VA,NY,NH,NC,ME
Zinc	NY,NC,ME
Cadmium	NY,NC,ME
SW-846 6020B in Water	
Antimony	CT,NH,NY,ME,VA,NC
Arsenic	CT,NH,NY,ME,VA,NC
Beryllium	CT,NH,NY,ME,VA,NC
Cadmium	CT,NH,NY,RI,ME,VA,NC
Chromium	CT,NH,NY,ME,VA,NC
Copper	CT,NH,NY,ME,VA,NC
Lead	CT,NH,NY,ME,VA,NC
Nickel	CT,NH,NY,ME,VA,NC
Selenium	CT,NH,NY,ME,VA,NC
Silver	CT,NH,NY,ME,VA,NC
Thallium	CT,NH,NY,ME,VA,NC
Zinc	CT,NH,NY,ME,VA,NC
SW-846 7471B in Soil	
Mercury	CT,NH,NY,NC,ME,VA
SW-846 8260D in Soil	
Acetone	CT,NH,NY,ME,VA
Acrylonitrile	CT,NH,NY,ME,VA
Benzene	CT,NH,NY,ME,VA
Bromobenzene	NH,NY,ME,VA
Bromochloromethane	NH,NY,ME,VA
Bromodichloromethane	CT,NH,NY,ME,VA
Bromoform	CT,NH,NY,ME,VA
Bromomethane	CT,NH,NY,ME,VA
2-Butanone (MEK)	CT,NH,NY,ME,VA
tert-Butyl Alcohol (TBA)	NY,ME
n-Butylbenzene	CT,NH,NY,ME,VA
sec-Butylbenzene	CT,NH,NY,ME,VA
tert-Butylbenzene	CT,NH,NY,ME,VA
Carbon Disulfide	CT,NH,NY,ME,VA
Carbon Tetrachloride	CT,NH,NY,ME,VA
Chlorobenzene	CT,NH,NY,ME,VA
Chlorodibromomethane	CT,NH,NY,ME,VA
Chloroethane	CT,NH,NY,ME,VA

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8260D in Soil	
Chloroform	CT,NH,NY,ME,VA
Chloromethane	CT,NH,NY,ME,VA
2-Chlorotoluene	CT,NH,NY,ME,VA
4-Chlorotoluene	CT,NH,NY,ME,VA
1,2-Dibromo-3-chloropropane (DBCP)	NY,ME
1,2-Dibromoethane (EDB)	NH,NY
Dibromomethane	NH,NY,ME,VA
1,2-Dichlorobenzene	CT,NH,NY,ME,VA
1,3-Dichlorobenzene	CT,NH,NY,ME,VA
1,4-Dichlorobenzene	CT,NH,NY,ME,VA
trans-1,4-Dichloro-2-butene	NY,ME
Dichlorodifluoromethane (Freon 12)	NH,NY,ME,VA
1,1-Dichloroethane	CT,NH,NY,ME,VA
1,2-Dichloroethane	CT,NH,NY,ME,VA
1,1-Dichloroethylene	CT,NH,NY,ME,VA
cis-1,2-Dichloroethylene	CT,NH,NY,ME,VA
trans-1,2-Dichloroethylene	CT,NH,NY,ME,VA
1,2-Dichloropropane	CT,NH,NY,ME,VA
1,3-Dichloropropane	NH,NY,ME,VA
2,2-Dichloropropane	NH,NY,ME,VA
1,1-Dichloropropene	NH,NY,ME,VA
cis-1,3-Dichloropropene	CT,NH,NY,ME,VA
trans-1,3-Dichloropropene	CT,NH,NY,ME,VA
Diethyl Ether	ME
1,4-Dioxane	NY,ME
Ethylbenzene	CT,NH,NY,ME,VA
Hexachlorobutadiene	NH,NY,ME,VA
2-Hexanone (MBK)	CT,NH,NY,ME,VA
Isopropylbenzene (Cumene)	CT,NH,NY,ME,VA
p-Isopropyltoluene (p-Cymene)	NH,NY
Methyl Acetate	NY,ME
Methyl tert-Butyl Ether (MTBE)	NY,ME,VA
Methyl Cyclohexane	NY
Methylene Chloride	CT,NH,NY,ME,VA
4-Methyl-2-pentanone (MIBK)	CT,NH,NY,ME,VA
Naphthalene	NH,NY,ME,VA
n-Propylbenzene	NH,NY,ME
Styrene	CT,NH,NY,ME,VA
1,1,1,2-Tetrachloroethane	CT,NH,NY,ME,VA
1,1,2,2-Tetrachloroethane	CT,NH,NY,ME,VA
Tetrachloroethylene	CT,NH,NY,ME,VA
Toluene	CT,NH,NY,ME,VA
1,2,3-Trichlorobenzene	NY,ME
1,2,4-Trichlorobenzene	NH,NY,ME,VA
1,3,5-Trichlorobenzene	ME
1,1,1-Trichloroethane	CT,NH,NY,ME,VA
1,1,2-Trichloroethane	CT,NH,NY,ME,VA

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8260D in Soil	
Trichloroethylene	CT,NH,NY,ME,VA
Trichlorofluoromethane (Freon 11)	CT,NH,NY,ME,VA
1,2,3-Trichloropropane	NH,NY,ME,VA
1,2,4-Trimethylbenzene	CT,NH,NY,ME,VA
1,3,5-Trimethylbenzene	CT,NH,NY,ME,VA
Vinyl Chloride	CT,NH,NY,ME,VA
m+p Xylene	CT,NH,NY,ME,VA
o-Xylene	CT,NH,NY,ME,VA

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

Code	Description	Number	Expires
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2023
NH	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
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2023

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22K0860

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CHAIN OF CUSTODY RECORD

39 Spruce Street
East Longmeadow, MA 01028

Doc # 381 Rev 5_07/13/2021

Page 1 of 2

Company Name:	STONE ENVIRONMENTAL INC.
Address:	535 STONE CUTTERS WAY, MONTPELIER, VT
Phone:	802-229-4541
Project Name:	TPCC 18 S. MAIN ST
Project Location:	18 S. MAIN ST, BARRE, VT
Project Number:	20211145
Project Manager:	REBECCA TREAT
Pace Quote Name/Number:	
Invoice Recipient:	REBECCA TREAT / STONE ENV
Sampled By:	RJT

Requested Turnaround Time
7-Day ☐ 10-Day ☒
PFAS 10-Day (std) ☐ Due Date:

Rush-Approval Required
1-Day ☐ 3-Day ☐
2-Day ☐ 4-Day ☐

Data Delivery
Format: PDF ☒ EXCEL ☒
Other: EQUIS EDD
CLP Like Data Pkg Required: ☐
Email To: rtreat@stone-env.com
Fax To #:

Dissolved Metals Samples
○ Field Filtered
○ Lab to Filter

Orthophosphate Samples
○ Field Filtered
○ Lab to Filter

PCB ONLY
SOXHLET ☐
NON SOXHLET ☐

ANALYSIS REQUESTED

Pace Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE	PAH, EPA 8270 SIM	PP METALS (6020, 7470, 7471)	VOCs EPA 8260
1	B-1 (0-1.5')	10/28/22	1045	GRAB	S	U		1				X	X	
2	B-1 (4-6')		1100		S	U		1				X	X	
3	B-1 (20')		1220		S	U	3	1						X
4	B-7 (0-1.5')		0900		S	U		1				X	X	
5	B-7 (6-8')		0945		S	U		1				X	X	
6	B-10 (0-1.5')	10/31/22	0910		S	U		1				X	X	
7	B-10 (6-8')		0940		S	U		1				X	X	
8	B-10 (21.5')		1305		S	U	3	1						X
9	B-4 (0-1.5')		1355		S	U		1				X	X	
10	B-4 (4-6')		1405		S	U		1				X	X	

Relinquished by: (signature)	Date/Time: 11/2/22 1050	Client Comments:
Received by: (signature) VDS CX	Date/Time: 11/2/22 1050	
Relinquished by: (signature) VDS	Date/Time: 11-3-22	
Received by: (signature)	Date/Time: 11/4/22 945	
Relinquished by: (signature)	Date/Time: 11/4/22 1220	
Received by: (signature)	Date/Time: 11/4 1220	
Relinquished by: (signature)	Date/Time:	
Received by: (signature)	Date/Time:	

Detection Limit Requirements
MA
CT
Other: VIDEC

Special Requirements
☐ MA MCP Required
MCP Certification Form Required
☐ CT RCP Required
RCP Certification Form Required
☐ MA State DW Required
PWSID #

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

NELAC and AIHA-LAP, LLC Accredited

Project Entity
Government ☐ Municipality ☐ MWRA ☐ WRTA ☐
Federal ☐ 21 J ☐ School ☐
City ☐ Brownfield ☐ MBTA ☐

Other
☐ Chromatogram
☐ *AIHA-LAP,LLC*

Lab Comments:

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.

[2] 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)

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CHAIN OF CUSTODY RECORD

39 Spruce Street
East Longmeadow, MA 01028

Doc # 381 Rev 5_07/13/2021

22K0800

Company Name:	STONE ENVIRONMENTAL INC
Address:	535 STONE CUTTERS WAY, MONTPELIER, VT
Phone:	802-229-4541
Project Name:	TPCC 18 S. MAIN ST
Project Location:	18 S. MAIN ST BARRE, VT
Project Number:	20211145
Project Manager:	REBECCA TREAT
Pace Quote Name/Number:	
Invoice Recipient:	REBECCA TREAT / STONE ENV.
Sampled By:	RJT

Requested Turnaround Time
7-Day ☐ 10-Day ☒
PFAS 10-Day (std) ☐ Due Date:

Rush-Approval Required
1-Day ☐ 3-Day ☐
2-Day ☐ 4-Day ☐

Data Delivery
Format: PDF ☒ EXCEL ☒
Other: EQUIS EZ EDD
CLP Like Data Pkg Required: ☐
Email To: rtreat@stone-env.com
Fax To #:

Dissolved Metals Samples
○ Field Filtered
○ Lab to Filter

Orthophosphate Samples
○ Field Filtered
○ Lab to Filter

PCB ONLY
SOXHLET ☐
NON SOXHLET ☐

ANALYSIS REQUESTED

Pace Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE	PAHs EPA 8270 SIM (I)	PP METALS (cold) 7470, 7471 (I)	VOC EPA 8260 (P,B,I)
11	B-4 (21.5')	10/31/22	1520	GRAB	S	M	3	1						X
12	FD-1		1520		S	M	3	1						X
13	B-5 (0-1.5')	11/1/22	0800		S	M		1				X	X	
14	B-5 (4-6')		0810		S	M		1				X	X	
15	FD-2		0810		S	M		1				X	X	
16	B-9 (0-1.5')		1005		S	M		1				X	X	
17	B-9 (4-6')		1010		S	M		1				X	X	
18	B-9 (10')		1015		S	M	3	1						X
19	TB	LAB PREPARED			O	M	3							X

Relinquished by: (signature)	Date/Time:
	11/2/22 1030
Received by: (signature)	Date/Time:
VDS CY	11/2/22 1030
Relinquished by: (signature)	Date/Time:
RVB VDS	11/3/22
Received by: (signature)	Date/Time:
Price	11/4/22 945
Relinquished by: (signature)	Date/Time:
Price	11/4/22 1020
Received by: (signature)	Date/Time:
2.0	11/4 1220
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:

Client Comments:

Detection Limit Requirements
MA
CT
Other: VTDEC

Special Requirements
☐ MA MCP Required
MCP Certification Form Required
☐ CT RCP Required
RCP Certification Form Required
☐ MA State DW Required
PWSID #

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

NELAC and AIHA-LAP, LLC accredited

Project Entity
Government ☐ Municipality ☐ MWRA ☐ WRTA ☐
Federal ☐ 21 J ☐ School ☐
City ☐ Brownfield ☐ MBTA ☐

Other
☐ Chromatogram
☐ AIHA-LAP, LLC

Lab Comments:

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.

[2] 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)
Trip blank

[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)

39 Spruce St.
East Longmeadow, MA. 01028
P: 413-525-2332
F: 413-525-6405
www.pacelabs.com

Pace PEOPLE ADVANCING SCIENCE

Doc# 277 Rev 6 July 2022

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 Stone

Received By SR Date 11/4 Time 1220

How were the samples received? In Cooler T No Cooler ____ On Ice T No Ice ____ Direct From Sample ____ Ambient ____ Melted Ice ____

Were samples within Tempurature? Within 2-6°C T By Gun # 3 Actual Temp - 2.0 By Blank # ____ Actual Temp -

Was Custody Seal In tact? NA Were Samples Tampered with? NA

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? ____

Samples are received within holding time? T Is there enough Volume? T

Is there Headspace where applicable? NA MS/MSD? F

Proper Media/Containers Used? T splitting samples required F

Were trip blanks received? NA T R On COC? T

Do All Samples Have the proper pH? NA Acid ____ Base ____

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.	
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear	13
Meoh-		250 mL Amb.		250 mL Plastic		4oz Amb/Clear	
Bisulfate-	8 6 10 12	Col./Bacteria		Flashpoint		2oz Amb/Clear	5
DI-		Other Plastic		Other Glass		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:

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January 19, 2023

Rebecca Treat
Stone Environmental
535 Stone Cutters Ways
Montpelier, VT 05602

Project Location: Barre, VT
Client Job Number:
Project Number: 20211145
Laboratory Work Order Number: 22K2167

Enclosed are results of analyses for samples as received by the laboratory on November 15, 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

Stone Environmental
535 Stone Cutters Ways
Montpelier, VT 05602
ATTN: Rebecca Treat

REPORT DATE: 1/19/2023

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 20211145

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 22K2167

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

PROJECT LOCATION: Barre, VT

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
MW-3	22K2167-01	Ground Water		-	
				SW-846 8260D	
MW-2	22K2167-02	Ground Water		SW-846 8260D	
MW-1	22K2167-03	Ground Water		SW-846 8260D	
MW-3-FD	22K2167-04	Ground Water		SW-846 8260D	
TB-111122	22K2167-05	Ground Water		SW-846 8260D	

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CASE NARRATIVE SUMMARY

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

REVISED REPORT 01/19/2023 - VOC results reported down to Method Detection Limit (MDL).

SW-846 8260D

Qualifications:

V-05

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

Analyte & Samples(s) Qualified:

Bromomethane
22K2167-01[MW-3], 22K2167-02[MW-2], 22K2167-03[MW-1], 22K2167-04[MW-3-FD], 22K2167-05[TB-111122], B323174-BLK1, B323174-BS1, B323174-BSD1, S079558-CCV1

trans-1,4-Dichloro-2-butene
22K2167-01[MW-3], 22K2167-02[MW-2], 22K2167-03[MW-1], 22K2167-04[MW-3-FD], 22K2167-05[TB-111122], B323174-BLK1, B323174-BS1, B323174-BSD1, S079558-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

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

Project Location: Barre, VT | Sample Description: | Work Order: 22K2167

Date Received: 11/15/2022

Field Sample #: MW-3 | Sampled: 11/11/2022 14:13

Sample ID: 22K2167-01

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	2.0	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
Acrylonitrile	ND	5.0	0.55	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.50	0.14	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
Benzene	ND	1.0	0.20	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
Bromobenzene	ND	1.0	0.15	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
Bromochloromethane	ND	1.0	0.31	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
Bromodichloromethane	ND	0.50	0.18	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
Bromoform	ND	1.0	0.38	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
Bromomethane	ND	2.0	1.5	µg/L	1	V-05	SW-846 8260D	11/16/22	11/17/22 12:11	MFF
2-Butanone (MEK)	ND	20	1.6	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
tert-Butyl Alcohol (TBA)	ND	20	4.7	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
n-Butylbenzene	ND	1.0	0.15	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
sec-Butylbenzene	ND	1.0	0.11	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
tert-Butylbenzene	ND	1.0	0.13	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	0.15	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
Carbon Disulfide	ND	5.0	1.4	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
Carbon Tetrachloride	ND	5.0	0.16	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
Chlorobenzene	ND	1.0	0.11	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
Chlorodibromomethane	ND	0.50	0.22	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
Chloroethane	ND	2.0	0.32	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
Chloroform	ND	2.0	0.17	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
Chloromethane	ND	2.0	0.52	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
2-Chlorotoluene	ND	1.0	0.11	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
4-Chlorotoluene	ND	1.0	0.12	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	0.80	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
1,2-Dibromoethane (EDB)	ND	0.50	0.17	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
Dibromomethane	ND	1.0	0.35	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
1,2-Dichlorobenzene	ND	1.0	0.12	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
1,3-Dichlorobenzene	0.22	1.0	0.12	µg/L	1	J	SW-846 8260D	11/16/22	11/17/22 12:11	MFF
1,4-Dichlorobenzene	ND	1.0	0.13	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
trans-1,4-Dichloro-2-butene	ND	2.0	1.6	µg/L	1	V-05	SW-846 8260D	11/16/22	11/17/22 12:11	MFF
Dichlorodifluoromethane (Freon 12)	ND	2.0	0.19	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
1,1-Dichloroethane	ND	1.0	0.14	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
1,2-Dichloroethane	0.64	1.0	0.31	µg/L	1	J	SW-846 8260D	11/16/22	11/17/22 12:11	MFF
1,1-Dichloroethylene	ND	1.0	0.14	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
cis-1,2-Dichloroethylene	ND	1.0	0.15	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
trans-1,2-Dichloroethylene	ND	1.0	0.17	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
1,2-Dichloropropane	ND	1.0	0.18	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
1,3-Dichloropropane	ND	0.50	0.13	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
2,2-Dichloropropane	ND	1.0	0.33	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
1,1-Dichloropropene	ND	2.0	0.15	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
cis-1,3-Dichloropropene	ND	0.50	0.16	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
trans-1,3-Dichloropropene	ND	0.50	0.17	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
Diethyl Ether	ND	2.0	0.18	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF

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Project Location: Barre, VT | Sample Description: | Work Order: 22K2167

Date Received: 11/15/2022

Field Sample #: MW-3 | Sampled: 11/11/2022 14:13

Sample ID: 22K2167-01

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.50	0.13	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
1,4-Dioxane	ND	50	21	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
Ethylbenzene	ND	1.0	0.21	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
Hexachlorobutadiene	ND	0.60	0.46	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
2-Hexanone (MBK)	ND	10	1.1	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
Isopropylbenzene (Cumene)	ND	1.0	0.11	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
p-Isopropyltoluene (p-Cymene)	ND	1.0	0.097	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
Methyl Acetate	ND	1.0	0.45	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
Methyl tert-Butyl Ether (MTBE)	ND	1.0	0.17	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
Methyl Cyclohexane	ND	1.0	0.24	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
Methylene Chloride	ND	5.0	0.23	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
4-Methyl-2-pentanone (MIBK)	ND	10	1.3	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
Naphthalene	ND	2.0	0.24	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
n-Propylbenzene	ND	1.0	0.086	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
Styrene	ND	1.0	0.11	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
1,1,1,2-Tetrachloroethane	ND	1.0	0.18	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
1,1,2,2-Tetrachloroethane	ND	0.50	0.13	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
Tetrachloroethylene	ND	1.0	0.19	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
Tetrahydrofuran	ND	10	0.49	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
Toluene	ND	1.0	0.22	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
1,2,3-Trichlorobenzene	ND	5.0	0.30	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
1,2,4-Trichlorobenzene	ND	1.0	0.25	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
1,3,5-Trichlorobenzene	ND	1.0	0.21	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
1,1,1-Trichloroethane	ND	1.0	0.17	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
1,1,2-Trichloroethane	ND	1.0	0.18	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
Trichloroethylene	ND	1.0	0.19	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
Trichlorofluoromethane (Freon 11)	ND	2.0	0.18	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
1,2,3-Trichloropropane	ND	2.0	0.28	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	1.0	0.23	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
1,2,3-Trimethylbenzene	ND	0.50	0.35	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
1,2,4-Trimethylbenzene	ND	1.0	0.20	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
1,3,5-Trimethylbenzene	ND	1.0	0.11	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
Vinyl Chloride	ND	2.0	0.21	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
m+p Xylene	ND	2.0	0.46	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF
o-Xylene	ND	1.0	0.23	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:11	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	96.2	70-130		11/17/22 12:11
Toluene-d8	97.0	70-130		11/17/22 12:11
4-Bromofluorobenzene	98.9	70-130		11/17/22 12:11

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Project Location: Barre, VT | Sample Description: | Work Order: 22K2167

Date Received: 11/15/2022

Field Sample #: MW-2 | Sampled: 11/11/2022 15:40

Sample ID: 22K2167-02

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	2.0	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
Acrylonitrile	ND	5.0	0.55	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.50	0.14	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
Benzene	ND	1.0	0.20	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
Bromobenzene	ND	1.0	0.15	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
Bromochloromethane	ND	1.0	0.31	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
Bromodichloromethane	ND	0.50	0.18	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
Bromoform	ND	1.0	0.38	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
Bromomethane	ND	2.0	1.5	µg/L	1	V-05	SW-846 8260D	11/16/22	11/17/22 12:38	MFF
2-Butanone (MEK)	ND	20	1.6	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
tert-Butyl Alcohol (TBA)	ND	20	4.7	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
n-Butylbenzene	ND	1.0	0.15	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
sec-Butylbenzene	ND	1.0	0.11	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
tert-Butylbenzene	ND	1.0	0.13	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	0.15	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
Carbon Disulfide	ND	5.0	1.4	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
Carbon Tetrachloride	ND	5.0	0.16	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
Chlorobenzene	ND	1.0	0.11	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
Chlorodibromomethane	ND	0.50	0.22	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
Chloroethane	ND	2.0	0.32	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
Chloroform	ND	2.0	0.17	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
Chloromethane	ND	2.0	0.52	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
2-Chlorotoluene	ND	1.0	0.11	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
4-Chlorotoluene	ND	1.0	0.12	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	0.80	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
1,2-Dibromoethane (EDB)	ND	0.50	0.17	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
Dibromomethane	ND	1.0	0.35	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
1,2-Dichlorobenzene	ND	1.0	0.12	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
1,3-Dichlorobenzene	ND	1.0	0.12	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
1,4-Dichlorobenzene	ND	1.0	0.13	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
trans-1,4-Dichloro-2-butene	ND	2.0	1.6	µg/L	1	V-05	SW-846 8260D	11/16/22	11/17/22 12:38	MFF
Dichlorodifluoromethane (Freon 12)	ND	2.0	0.19	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
1,1-Dichloroethane	ND	1.0	0.14	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
1,2-Dichloroethane	0.64	1.0	0.31	µg/L	1	J	SW-846 8260D	11/16/22	11/17/22 12:38	MFF
1,1-Dichloroethylene	ND	1.0	0.14	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
cis-1,2-Dichloroethylene	ND	1.0	0.15	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
trans-1,2-Dichloroethylene	ND	1.0	0.17	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
1,2-Dichloropropane	ND	1.0	0.18	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
1,3-Dichloropropane	ND	0.50	0.13	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
2,2-Dichloropropane	ND	1.0	0.33	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
1,1-Dichloropropene	ND	2.0	0.15	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
cis-1,3-Dichloropropene	ND	0.50	0.16	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
trans-1,3-Dichloropropene	ND	0.50	0.17	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
Diethyl Ether	ND	2.0	0.18	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF

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Project Location: Barre, VT | Sample Description: | Work Order: 22K2167

Date Received: 11/15/2022

Field Sample #: MW-2 | Sampled: 11/11/2022 15:40

Sample ID: 22K2167-02

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.50	0.13	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
1,4-Dioxane	ND	50	21	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
Ethylbenzene	ND	1.0	0.21	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
Hexachlorobutadiene	ND	0.60	0.46	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
2-Hexanone (MBK)	ND	10	1.1	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
Isopropylbenzene (Cumene)	ND	1.0	0.11	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
p-Isopropyltoluene (p-Cymene)	ND	1.0	0.097	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
Methyl Acetate	ND	1.0	0.45	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
Methyl tert-Butyl Ether (MTBE)	3.0	1.0	0.17	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
Methyl Cyclohexane	ND	1.0	0.24	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
Methylene Chloride	ND	5.0	0.23	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
4-Methyl-2-pentanone (MIBK)	ND	10	1.3	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
Naphthalene	ND	2.0	0.24	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
n-Propylbenzene	ND	1.0	0.086	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
Styrene	ND	1.0	0.11	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
1,1,1,2-Tetrachloroethane	ND	1.0	0.18	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
1,1,2,2-Tetrachloroethane	ND	0.50	0.13	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
Tetrachloroethylene	ND	1.0	0.19	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
Tetrahydrofuran	ND	10	0.49	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
Toluene	ND	1.0	0.22	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
1,2,3-Trichlorobenzene	ND	5.0	0.30	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
1,2,4-Trichlorobenzene	ND	1.0	0.25	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
1,3,5-Trichlorobenzene	ND	1.0	0.21	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
1,1,1-Trichloroethane	ND	1.0	0.17	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
1,1,2-Trichloroethane	ND	1.0	0.18	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
Trichloroethylene	ND	1.0	0.19	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
Trichlorofluoromethane (Freon 11)	ND	2.0	0.18	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
1,2,3-Trichloropropane	ND	2.0	0.28	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	1.0	0.23	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
1,2,3-Trimethylbenzene	ND	0.50	0.35	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
1,2,4-Trimethylbenzene	ND	1.0	0.20	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
1,3,5-Trimethylbenzene	ND	1.0	0.11	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
Vinyl Chloride	ND	2.0	0.21	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
m+p Xylene	ND	2.0	0.46	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF
o-Xylene	ND	1.0	0.23	µg/L	1		SW-846 8260D	11/16/22	11/17/22 12:38	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	97.0	70-130		11/17/22 12:38
Toluene-d8	98.0	70-130		11/17/22 12:38
4-Bromofluorobenzene	98.7	70-130		11/17/22 12:38

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Project Location: Barre, VT | Sample Description: | Work Order: 22K2167

Date Received: 11/15/2022

Field Sample #: MW-1 | Sampled: 11/11/2022 17:05

Sample ID: 22K2167-03

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	2.2	50	2.0	µg/L	1	J	SW-846 8260D	11/16/22	11/17/22 13:04	MFF
Acrylonitrile	ND	5.0	0.55	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.50	0.14	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
Benzene	ND	1.0	0.20	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
Bromobenzene	ND	1.0	0.15	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
Bromochloromethane	ND	1.0	0.31	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
Bromodichloromethane	ND	0.50	0.18	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
Bromoform	ND	1.0	0.38	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
Bromomethane	ND	2.0	1.5	µg/L	1	V-05	SW-846 8260D	11/16/22	11/17/22 13:04	MFF
2-Butanone (MEK)	ND	20	1.6	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
tert-Butyl Alcohol (TBA)	ND	20	4.7	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
n-Butylbenzene	ND	1.0	0.15	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
sec-Butylbenzene	ND	1.0	0.11	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
tert-Butylbenzene	ND	1.0	0.13	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	0.15	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
Carbon Disulfide	ND	5.0	1.4	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
Carbon Tetrachloride	ND	5.0	0.16	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
Chlorobenzene	ND	1.0	0.11	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
Chlorodibromomethane	ND	0.50	0.22	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
Chloroethane	ND	2.0	0.32	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
Chloroform	0.17	2.0	0.17	µg/L	1	J	SW-846 8260D	11/16/22	11/17/22 13:04	MFF
Chloromethane	ND	2.0	0.52	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
2-Chlorotoluene	ND	1.0	0.11	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
4-Chlorotoluene	ND	1.0	0.12	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	0.80	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
1,2-Dibromoethane (EDB)	ND	0.50	0.17	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
Dibromomethane	ND	1.0	0.35	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
1,2-Dichlorobenzene	ND	1.0	0.12	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
1,3-Dichlorobenzene	0.35	1.0	0.12	µg/L	1	J	SW-846 8260D	11/16/22	11/17/22 13:04	MFF
1,4-Dichlorobenzene	ND	1.0	0.13	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
trans-1,4-Dichloro-2-butene	ND	2.0	1.6	µg/L	1	V-05	SW-846 8260D	11/16/22	11/17/22 13:04	MFF
Dichlorodifluoromethane (Freon 12)	ND	2.0	0.19	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
1,1-Dichloroethane	ND	1.0	0.14	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
1,2-Dichloroethane	ND	1.0	0.31	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
1,1-Dichloroethylene	ND	1.0	0.14	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
cis-1,2-Dichloroethylene	ND	1.0	0.15	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
trans-1,2-Dichloroethylene	ND	1.0	0.17	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
1,2-Dichloropropane	ND	1.0	0.18	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
1,3-Dichloropropane	ND	0.50	0.13	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
2,2-Dichloropropane	ND	1.0	0.33	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
1,1-Dichloropropene	ND	2.0	0.15	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
cis-1,3-Dichloropropene	ND	0.50	0.16	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
trans-1,3-Dichloropropene	ND	0.50	0.17	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
Diethyl Ether	ND	2.0	0.18	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF

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Project Location: Barre, VT | Sample Description: | Work Order: 22K2167

Date Received: 11/15/2022

Field Sample #: MW-1 | Sampled: 11/11/2022 17:05

Sample ID: 22K2167-03

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.50	0.13	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
1,4-Dioxane	ND	50	21	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
Ethylbenzene	ND	1.0	0.21	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
Hexachlorobutadiene	ND	0.60	0.46	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
2-Hexanone (MBK)	ND	10	1.1	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
Isopropylbenzene (Cumene)	ND	1.0	0.11	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
p-Isopropyltoluene (p-Cymene)	ND	1.0	0.097	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
Methyl Acetate	ND	1.0	0.45	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
Methyl tert-Butyl Ether (MTBE)	ND	1.0	0.17	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
Methyl Cyclohexane	ND	1.0	0.24	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
Methylene Chloride	ND	5.0	0.23	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
4-Methyl-2-pentanone (MIBK)	ND	10	1.3	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
Naphthalene	ND	2.0	0.24	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
n-Propylbenzene	ND	1.0	0.086	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
Styrene	ND	1.0	0.11	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
1,1,1,2-Tetrachloroethane	ND	1.0	0.18	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
1,1,2,2-Tetrachloroethane	ND	0.50	0.13	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
Tetrachloroethylene	ND	1.0	0.19	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
Tetrahydrofuran	ND	10	0.49	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
Toluene	ND	1.0	0.22	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
1,2,3-Trichlorobenzene	ND	5.0	0.30	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
1,2,4-Trichlorobenzene	ND	1.0	0.25	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
1,3,5-Trichlorobenzene	ND	1.0	0.21	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
1,1,1-Trichloroethane	ND	1.0	0.17	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
1,1,2-Trichloroethane	ND	1.0	0.18	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
Trichloroethylene	ND	1.0	0.19	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
Trichlorofluoromethane (Freon 11)	ND	2.0	0.18	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
1,2,3-Trichloropropane	ND	2.0	0.28	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	1.0	0.23	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
1,2,3-Trimethylbenzene	ND	0.50	0.35	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
1,2,4-Trimethylbenzene	ND	1.0	0.20	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
1,3,5-Trimethylbenzene	ND	1.0	0.11	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
Vinyl Chloride	ND	2.0	0.21	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
m+p Xylene	ND	2.0	0.46	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF
o-Xylene	ND	1.0	0.23	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:04	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	97.2	70-130		11/17/22 13:04
Toluene-d8	97.4	70-130		11/17/22 13:04
4-Bromofluorobenzene	97.4	70-130		11/17/22 13:04

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Project Location: Barre, VT | Sample Description: | Work Order: 22K2167

Date Received: 11/15/2022

Field Sample #: MW-3-FD | Sampled: 11/11/2022 14:15

Sample ID: 22K2167-04

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	2.0	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
Acrylonitrile	ND	5.0	0.55	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.50	0.14	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
Benzene	ND	1.0	0.20	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
Bromobenzene	ND	1.0	0.15	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
Bromochloromethane	ND	1.0	0.31	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
Bromodichloromethane	ND	0.50	0.18	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
Bromoform	ND	1.0	0.38	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
Bromomethane	ND	2.0	1.5	µg/L	1	V-05	SW-846 8260D	11/16/22	11/17/22 13:30	MFF
2-Butanone (MEK)	ND	20	1.6	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
tert-Butyl Alcohol (TBA)	ND	20	4.7	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
n-Butylbenzene	ND	1.0	0.15	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
sec-Butylbenzene	ND	1.0	0.11	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
tert-Butylbenzene	ND	1.0	0.13	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	0.15	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
Carbon Disulfide	ND	5.0	1.4	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
Carbon Tetrachloride	ND	5.0	0.16	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
Chlorobenzene	ND	1.0	0.11	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
Chlorodibromomethane	ND	0.50	0.22	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
Chloroethane	ND	2.0	0.32	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
Chloroform	ND	2.0	0.17	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
Chloromethane	ND	2.0	0.52	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
2-Chlorotoluene	ND	1.0	0.11	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
4-Chlorotoluene	ND	1.0	0.12	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	0.80	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
1,2-Dibromoethane (EDB)	ND	0.50	0.17	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
Dibromomethane	ND	1.0	0.35	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
1,2-Dichlorobenzene	ND	1.0	0.12	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
1,3-Dichlorobenzene	0.16	1.0	0.12	µg/L	1	J	SW-846 8260D	11/16/22	11/17/22 13:30	MFF
1,4-Dichlorobenzene	ND	1.0	0.13	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
trans-1,4-Dichloro-2-butene	ND	2.0	1.6	µg/L	1	V-05	SW-846 8260D	11/16/22	11/17/22 13:30	MFF
Dichlorodifluoromethane (Freon 12)	ND	2.0	0.19	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
1,1-Dichloroethane	ND	1.0	0.14	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
1,2-Dichloroethane	0.65	1.0	0.31	µg/L	1	J	SW-846 8260D	11/16/22	11/17/22 13:30	MFF
1,1-Dichloroethylene	ND	1.0	0.14	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
cis-1,2-Dichloroethylene	ND	1.0	0.15	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
trans-1,2-Dichloroethylene	ND	1.0	0.17	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
1,2-Dichloropropane	ND	1.0	0.18	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
1,3-Dichloropropane	ND	0.50	0.13	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
2,2-Dichloropropane	ND	1.0	0.33	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
1,1-Dichloropropene	ND	2.0	0.15	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
cis-1,3-Dichloropropene	ND	0.50	0.16	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
trans-1,3-Dichloropropene	ND	0.50	0.17	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
Diethyl Ether	ND	2.0	0.18	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF

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Project Location: Barre, VT | Sample Description: | Work Order: 22K2167

Date Received: 11/15/2022

Field Sample #: MW-3-FD | Sampled: 11/11/2022 14:15

Sample ID: 22K2167-04

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.50	0.13	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
1,4-Dioxane	ND	50	21	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
Ethylbenzene	ND	1.0	0.21	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
Hexachlorobutadiene	ND	0.60	0.46	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
2-Hexanone (MBK)	ND	10	1.1	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
Isopropylbenzene (Cumene)	ND	1.0	0.11	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
p-Isopropyltoluene (p-Cymene)	ND	1.0	0.097	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
Methyl Acetate	ND	1.0	0.45	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
Methyl tert-Butyl Ether (MTBE)	ND	1.0	0.17	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
Methyl Cyclohexane	ND	1.0	0.24	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
Methylene Chloride	ND	5.0	0.23	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
4-Methyl-2-pentanone (MIBK)	ND	10	1.3	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
Naphthalene	ND	2.0	0.24	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
n-Propylbenzene	ND	1.0	0.086	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
Styrene	ND	1.0	0.11	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
1,1,1,2-Tetrachloroethane	ND	1.0	0.18	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
1,1,2,2-Tetrachloroethane	ND	0.50	0.13	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
Tetrachloroethylene	ND	1.0	0.19	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
Tetrahydrofuran	ND	10	0.49	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
Toluene	ND	1.0	0.22	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
1,2,3-Trichlorobenzene	ND	5.0	0.30	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
1,2,4-Trichlorobenzene	ND	1.0	0.25	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
1,3,5-Trichlorobenzene	ND	1.0	0.21	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
1,1,1-Trichloroethane	ND	1.0	0.17	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
1,1,2-Trichloroethane	ND	1.0	0.18	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
Trichloroethylene	ND	1.0	0.19	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
Trichlorofluoromethane (Freon 11)	ND	2.0	0.18	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
1,2,3-Trichloropropane	ND	2.0	0.28	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	1.0	0.23	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
1,2,3-Trimethylbenzene	ND	0.50	0.35	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
1,2,4-Trimethylbenzene	ND	1.0	0.20	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
1,3,5-Trimethylbenzene	ND	1.0	0.11	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
Vinyl Chloride	ND	2.0	0.21	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
m+p Xylene	ND	2.0	0.46	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF
o-Xylene	ND	1.0	0.23	µg/L	1		SW-846 8260D	11/16/22	11/17/22 13:30	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	95.8	70-130		11/17/22 13:30
Toluene-d8	96.8	70-130		11/17/22 13:30
4-Bromofluorobenzene	96.6	70-130		11/17/22 13:30

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Project Location: Barre, VT | Sample Description: | Work Order: 22K2167

Date Received: 11/15/2022

Field Sample #: TB-111122 | Sampled: 11/11/2022 00:00

Sample ID: 22K2167-05

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	2.0	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
Acrylonitrile	ND	5.0	0.55	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.50	0.14	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
Benzene	ND	1.0	0.20	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
Bromobenzene	ND	1.0	0.15	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
Bromochloromethane	ND	1.0	0.31	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
Bromodichloromethane	ND	0.50	0.18	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
Bromoform	ND	1.0	0.38	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
Bromomethane	ND	2.0	1.5	µg/L	1	V-05	SW-846 8260D	11/16/22	11/17/22 11:45	MFF
2-Butanone (MEK)	ND	20	1.6	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
tert-Butyl Alcohol (TBA)	ND	20	4.7	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
n-Butylbenzene	ND	1.0	0.15	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
sec-Butylbenzene	ND	1.0	0.11	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
tert-Butylbenzene	ND	1.0	0.13	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	0.15	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
Carbon Disulfide	ND	5.0	1.4	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
Carbon Tetrachloride	ND	5.0	0.16	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
Chlorobenzene	ND	1.0	0.11	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
Chlorodibromomethane	ND	0.50	0.22	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
Chloroethane	ND	2.0	0.32	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
Chloroform	0.71	2.0	0.17	µg/L	1	J	SW-846 8260D	11/16/22	11/17/22 11:45	MFF
Chloromethane	ND	2.0	0.52	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
2-Chlorotoluene	ND	1.0	0.11	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
4-Chlorotoluene	ND	1.0	0.12	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	0.80	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
1,2-Dibromoethane (EDB)	ND	0.50	0.17	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
Dibromomethane	ND	1.0	0.35	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
1,2-Dichlorobenzene	ND	1.0	0.12	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
1,3-Dichlorobenzene	ND	1.0	0.12	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
1,4-Dichlorobenzene	ND	1.0	0.13	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
trans-1,4-Dichloro-2-butene	ND	2.0	1.6	µg/L	1	V-05	SW-846 8260D	11/16/22	11/17/22 11:45	MFF
Dichlorodifluoromethane (Freon 12)	ND	2.0	0.19	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
1,1-Dichloroethane	ND	1.0	0.14	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
1,2-Dichloroethane	ND	1.0	0.31	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
1,1-Dichloroethylene	ND	1.0	0.14	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
cis-1,2-Dichloroethylene	ND	1.0	0.15	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
trans-1,2-Dichloroethylene	ND	1.0	0.17	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
1,2-Dichloropropane	ND	1.0	0.18	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
1,3-Dichloropropane	ND	0.50	0.13	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
2,2-Dichloropropane	ND	1.0	0.33	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
1,1-Dichloropropene	ND	2.0	0.15	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
cis-1,3-Dichloropropene	ND	0.50	0.16	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
trans-1,3-Dichloropropene	ND	0.50	0.17	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
Diethyl Ether	ND	2.0	0.18	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF

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Project Location: Barre, VT | Sample Description: | Work Order: 22K2167

Date Received: 11/15/2022

Field Sample #: TB-111122 | Sampled: 11/11/2022 00:00

Sample ID: 22K2167-05

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.50	0.13	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
1,4-Dioxane	ND	50	21	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
Ethylbenzene	ND	1.0	0.21	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
Hexachlorobutadiene	ND	0.60	0.46	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
2-Hexanone (MBK)	ND	10	1.1	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
Isopropylbenzene (Cumene)	ND	1.0	0.11	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
p-Isopropyltoluene (p-Cymene)	ND	1.0	0.097	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
Methyl Acetate	ND	1.0	0.45	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
Methyl tert-Butyl Ether (MTBE)	ND	1.0	0.17	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
Methyl Cyclohexane	ND	1.0	0.24	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
Methylene Chloride	ND	5.0	0.23	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
4-Methyl-2-pentanone (MIBK)	ND	10	1.3	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
Naphthalene	ND	2.0	0.24	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
n-Propylbenzene	ND	1.0	0.086	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
Styrene	ND	1.0	0.11	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
1,1,1,2-Tetrachloroethane	ND	1.0	0.18	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
1,1,2,2-Tetrachloroethane	ND	0.50	0.13	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
Tetrachloroethylene	ND	1.0	0.19	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
Tetrahydrofuran	ND	10	0.49	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
Toluene	ND	1.0	0.22	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
1,2,3-Trichlorobenzene	ND	5.0	0.30	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
1,2,4-Trichlorobenzene	ND	1.0	0.25	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
1,3,5-Trichlorobenzene	ND	1.0	0.21	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
1,1,1-Trichloroethane	ND	1.0	0.17	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
1,1,2-Trichloroethane	ND	1.0	0.18	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
Trichloroethylene	ND	1.0	0.19	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
Trichlorofluoromethane (Freon 11)	ND	2.0	0.18	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
1,2,3-Trichloropropane	ND	2.0	0.28	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	1.0	0.23	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
1,2,3-Trimethylbenzene	ND	0.50	0.35	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
1,2,4-Trimethylbenzene	ND	1.0	0.20	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
1,3,5-Trimethylbenzene	ND	1.0	0.11	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
Vinyl Chloride	ND	2.0	0.21	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
m+p Xylene	ND	2.0	0.46	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF
o-Xylene	ND	1.0	0.23	µg/L	1		SW-846 8260D	11/16/22	11/17/22 11:45	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	97.2	70-130		11/17/22 11:45
Toluene-d8	97.8	70-130		11/17/22 11:45
4-Bromofluorobenzene	98.9	70-130		11/17/22 11:45

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Sample Extraction Data

Prep Method: SW-846 5030B **Analytical Method: SW-846 8260D**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
22K2167-01 [MW-3]	B323174	5	5.00	11/16/22
22K2167-02 [MW-2]	B323174	5	5.00	11/16/22
22K2167-03 [MW-1]	B323174	5	5.00	11/16/22
22K2167-04 [MW-3-FD]	B323174	5	5.00	11/16/22
22K2167-05 [TB-111122]	B323174	5	5.00	11/16/22

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B323174 - SW-846 5030B										
Blank (B323174-BLK1)				Prepared: 11/16/22 Analyzed: 11/17/22						
Acetone	ND	50	µg/L							
Acrylonitrile	ND	5.0	µg/L							
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L							
Benzene	ND	1.0	µg/L							
Bromobenzene	ND	1.0	µg/L							
Bromochloromethane	ND	1.0	µg/L							
Bromodichloromethane	ND	0.50	µg/L							
Bromoform	ND	1.0	µg/L							
Bromomethane	ND	2.0	µg/L							V-05
2-Butanone (MEK)	ND	20	µg/L							
tert-Butyl Alcohol (TBA)	ND	20	µg/L							
n-Butylbenzene	ND	1.0	µg/L							
sec-Butylbenzene	ND	1.0	µg/L							
tert-Butylbenzene	ND	1.0	µg/L							
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L							
Carbon Disulfide	ND	5.0	µg/L							
Carbon Tetrachloride	ND	5.0	µg/L							
Chlorobenzene	ND	1.0	µg/L							
Chlorodibromomethane	ND	0.50	µg/L							
Chloroethane	ND	2.0	µg/L							
Chloroform	ND	2.0	µg/L							
Chloromethane	ND	2.0	µg/L							
2-Chlorotoluene	ND	1.0	µg/L							
4-Chlorotoluene	ND	1.0	µg/L							
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L							
1,2-Dibromoethane (EDB)	ND	0.50	µg/L							
Dibromomethane	ND	1.0	µg/L							
1,2-Dichlorobenzene	ND	1.0	µg/L							
1,3-Dichlorobenzene	ND	1.0	µg/L							
1,4-Dichlorobenzene	ND	1.0	µg/L							
trans-1,4-Dichloro-2-butene	ND	2.0	µg/L							V-05
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L							
1,1-Dichloroethane	ND	1.0	µg/L							
1,2-Dichloroethane	ND	1.0	µg/L							
1,1-Dichloroethylene	ND	1.0	µg/L							
cis-1,2-Dichloroethylene	ND	1.0	µg/L							
trans-1,2-Dichloroethylene	ND	1.0	µg/L							
1,2-Dichloropropane	ND	1.0	µg/L							
1,3-Dichloropropane	ND	0.50	µg/L							
2,2-Dichloropropane	ND	1.0	µg/L							
1,1-Dichloropropene	ND	2.0	µg/L							
cis-1,3-Dichloropropene	ND	0.50	µg/L							
trans-1,3-Dichloropropene	ND	0.50	µg/L							
Diethyl Ether	ND	2.0	µg/L							
Diisopropyl Ether (DIPE)	ND	0.50	µg/L							
1,4-Dioxane	ND	50	µg/L							
Ethylbenzene	ND	1.0	µg/L							
Hexachlorobutadiene	ND	0.60	µg/L							
2-Hexanone (MBK)	ND	10	µg/L							
Isopropylbenzene (Cumene)	ND	1.0	µg/L							
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L							
Methyl Acetate	ND	1.0	µg/L							

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	
Batch B323174 - SW-846 5030B											
Blank (B323174-BLK1)				Prepared: 11/16/22 Analyzed: 11/17/22							
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L								
Methyl Cyclohexane	ND	1.0	µg/L								
Methylene Chloride	ND	5.0	µg/L								
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L								
Naphthalene	ND	2.0	µg/L								
n-Propylbenzene	ND	1.0	µg/L								
Styrene	ND	1.0	µg/L								
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L								
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L								
Tetrachloroethylene	ND	1.0	µg/L								
Tetrahydrofuran	ND	10	µg/L								
Toluene	ND	1.0	µg/L								
1,2,3-Trichlorobenzene	ND	5.0	µg/L								
1,2,4-Trichlorobenzene	ND	1.0	µg/L								
1,3,5-Trichlorobenzene	ND	1.0	µg/L								
1,1,1-Trichloroethane	ND	1.0	µg/L								
1,1,2-Trichloroethane	ND	1.0	µg/L								
Trichloroethylene	ND	1.0	µg/L								
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L								
1,2,3-Trichloropropane	ND	2.0	µg/L								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	1.0	µg/L								
1,2,3-Trimethylbenzene	ND	25	µg/L								
1,2,4-Trimethylbenzene	ND	1.0	µg/L								
1,3,5-Trimethylbenzene	ND	1.0	µg/L								
Vinyl Chloride	ND	2.0	µg/L								
m+p Xylene	ND	2.0	µg/L								
o-Xylene	ND	1.0	µg/L								
Surrogate: 1,2-Dichloroethane-d4	*24.8*		µg/L	25.0		99.2	70-130				
Surrogate: Toluene-d8	*24.1*		µg/L	25.0		96.6	70-130				
Surrogate: 4-Bromofluorobenzene	*24.7*		µg/L	25.0		98.8	70-130				
LCS (B323174-BS1)				Prepared: 11/16/22 Analyzed: 11/17/22							
Acetone	109	50	µg/L	100		109	70-160				†
Acrylonitrile	9.89	5.0	µg/L	10.0		98.9	70-130				
tert-Amyl Methyl Ether (TAME)	8.68	0.50	µg/L	10.0		86.8	70-130				
Benzene	9.33	1.0	µg/L	10.0		93.3	70-130				
Bromobenzene	9.97	1.0	µg/L	10.0		99.7	70-130				
Bromochloromethane	10.4	1.0	µg/L	10.0		104	70-130				
Bromodichloromethane	9.48	0.50	µg/L	10.0		94.8	70-130				
Bromoform	9.52	1.0	µg/L	10.0		95.2	70-130				
Bromomethane	7.29	2.0	µg/L	10.0		72.9	40-160			V-05	†
2-Butanone (MEK)	111	20	µg/L	100		111	40-160				†
tert-Butyl Alcohol (TBA)	93.3	20	µg/L	100		93.3	40-160				†
n-Butylbenzene	10.1	1.0	µg/L	10.0		101	70-130				
sec-Butylbenzene	9.80	1.0	µg/L	10.0		98.0	70-130				
tert-Butylbenzene	9.92	1.0	µg/L	10.0		99.2	70-130				
tert-Butyl Ethyl Ether (TBEE)	9.51	0.50	µg/L	10.0		95.1	70-130				
Carbon Disulfide	95.5	5.0	µg/L	100		95.5	70-130				
Carbon Tetrachloride	9.34	5.0	µg/L	10.0		93.4	70-130				
Chlorobenzene	11.0	1.0	µg/L	10.0		110	70-130				
Chlorodibromomethane	9.32	0.50	µg/L	10.0		93.2	70-130				
Chloroethane	9.89	2.0	µg/L	10.0		98.9	70-130				

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	
Batch B323174 - SW-846 5030B											
LCS (B323174-BS1)				Prepared: 11/16/22 Analyzed: 11/17/22							
Chloroform	9.24	2.0	µg/L	10.0		92.4	70-130				
Chloromethane	9.54	2.0	µg/L	10.0		95.4	40-160				†
2-Chlorotoluene	10.5	1.0	µg/L	10.0		105	70-130				
4-Chlorotoluene	10.8	1.0	µg/L	10.0		108	70-130				
1,2-Dibromo-3-chloropropane (DBCP)	8.07	5.0	µg/L	10.0		80.7	70-130				
1,2-Dibromoethane (EDB)	10.5	0.50	µg/L	10.0		105	70-130				
Dibromomethane	10.7	1.0	µg/L	10.0		107	70-130				
1,2-Dichlorobenzene	10.1	1.0	µg/L	10.0		101	70-130				
1,3-Dichlorobenzene	9.99	1.0	µg/L	10.0		99.9	70-130				
1,4-Dichlorobenzene	10.2	1.0	µg/L	10.0		102	70-130				
trans-1,4-Dichloro-2-butene	7.77	2.0	µg/L	10.0		77.7	70-130			V-05	
Dichlorodifluoromethane (Freon 12)	10.4	2.0	µg/L	10.0		104	40-160				†
1,1-Dichloroethane	10.0	1.0	µg/L	10.0		100	70-130				
1,2-Dichloroethane	10.7	1.0	µg/L	10.0		107	70-130				
1,1-Dichloroethylene	10.3	1.0	µg/L	10.0		103	70-130				
cis-1,2-Dichloroethylene	10.1	1.0	µg/L	10.0		101	70-130				
trans-1,2-Dichloroethylene	10.4	1.0	µg/L	10.0		104	70-130				
1,2-Dichloropropane	10.8	1.0	µg/L	10.0		108	70-130				
1,3-Dichloropropane	10.5	0.50	µg/L	10.0		105	70-130				
2,2-Dichloropropane	8.58	1.0	µg/L	10.0		85.8	40-130				†
1,1-Dichloropropene	9.74	2.0	µg/L	10.0		97.4	70-130				
cis-1,3-Dichloropropene	9.57	0.50	µg/L	10.0		95.7	70-130				
trans-1,3-Dichloropropene	9.12	0.50	µg/L	10.0		91.2	70-130				
Diethyl Ether	9.86	2.0	µg/L	10.0		98.6	70-130				
Diisopropyl Ether (DIPE)	10.1	0.50	µg/L	10.0		101	70-130				
1,4-Dioxane	93.3	50	µg/L	100		93.3	40-130				†
Ethylbenzene	10.8	1.0	µg/L	10.0		108	70-130				
Hexachlorobutadiene	10.6	0.60	µg/L	10.0		106	70-130				
2-Hexanone (MBK)	113	10	µg/L	100		113	70-160				†
Isopropylbenzene (Cumene)	10.4	1.0	µg/L	10.0		104	70-130				
p-Isopropyltoluene (p-Cymene)	10.0	1.0	µg/L	10.0		100	70-130				
Methyl Acetate	11.1	1.0	µg/L	10.0		111	70-130				
Methyl tert-Butyl Ether (MTBE)	9.01	1.0	µg/L	10.0		90.1	70-130				
Methyl Cyclohexane	10.3	1.0	µg/L	10.0		103	70-130				
Methylene Chloride	10.4	5.0	µg/L	10.0		104	70-130				
4-Methyl-2-pentanone (MIBK)	114	10	µg/L	100		114	70-160				†
Naphthalene	8.68	2.0	µg/L	10.0		86.8	40-130				†
n-Propylbenzene	10.5	1.0	µg/L	10.0		105	70-130				
Styrene	10.3	1.0	µg/L	10.0		103	70-130				
1,1,1,2-Tetrachloroethane	10.2	1.0	µg/L	10.0		102	70-130				
1,1,2,2-Tetrachloroethane	10.0	0.50	µg/L	10.0		100	70-130				
Tetrachloroethylene	11.1	1.0	µg/L	10.0		111	70-130				
Tetrahydrofuran	9.78	10	µg/L	10.0		97.8	70-130			J	
Toluene	10.6	1.0	µg/L	10.0		106	70-130				
1,2,3-Trichlorobenzene	9.51	5.0	µg/L	10.0		95.1	70-130				
1,2,4-Trichlorobenzene	10.2	1.0	µg/L	10.0		102	70-130				
1,3,5-Trichlorobenzene	10.2	1.0	µg/L	10.0		102	70-130				
1,1,1-Trichloroethane	9.34	1.0	µg/L	10.0		93.4	70-130				
1,1,2-Trichloroethane	10.4	1.0	µg/L	10.0		104	70-130				
Trichloroethylene	11.2	1.0	µg/L	10.0		112	70-130				
Trichlorofluoromethane (Freon 11)	10.3	2.0	µg/L	10.0		103	70-130				
1,2,3-Trichloropropane	10.5	2.0	µg/L	10.0		105	70-130				

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes	
Batch B323174 - SW-846 5030B												
LCS (B323174-BS1)				Prepared: 11/16/22 Analyzed: 11/17/22								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	10.6	1.0	µg/L	10.0		106		70-130				
1,2,3-Trimethylbenzene	470	25	µg/L	10.0		**4700**	*	70-130				
1,2,4-Trimethylbenzene	9.93	1.0	µg/L	10.0		99.3		70-130				
1,3,5-Trimethylbenzene	10.4	1.0	µg/L	10.0		104		70-130				
Vinyl Chloride	10.6	2.0	µg/L	10.0		106		40-160				†
m+p Xylene	21.6	2.0	µg/L	20.0		108		70-130				
o-Xylene	10.5	1.0	µg/L	10.0		105		70-130				
Surrogate: 1,2-Dichloroethane-d4	*23.5*		µg/L	25.0		94.0		70-130				
Surrogate: Toluene-d8	*24.6*		µg/L	25.0		98.6		70-130				
Surrogate: 4-Bromofluorobenzene	*24.7*		µg/L	25.0		98.8		70-130				
LCS Dup (B323174-BSD1)				Prepared: 11/16/22 Analyzed: 11/17/22								
Acetone	106	50	µg/L	100		106		70-160	2.66	25		†
Acrylonitrile	9.58	5.0	µg/L	10.0		95.8		70-130	3.18	25		
tert-Amyl Methyl Ether (TAME)	8.47	0.50	µg/L	10.0		84.7		70-130	2.45	25		
Benzene	9.19	1.0	µg/L	10.0		91.9		70-130	1.51	25		
Bromobenzene	9.87	1.0	µg/L	10.0		98.7		70-130	1.01	25		
Bromochloromethane	9.95	1.0	µg/L	10.0		99.5		70-130	4.33	25		
Bromodichloromethane	9.15	0.50	µg/L	10.0		91.5		70-130	3.54	25		
Bromoform	9.31	1.0	µg/L	10.0		93.1		70-130	2.23	25		
Bromomethane	6.29	2.0	µg/L	10.0		62.9		40-160	14.7	25	V-05	†
2-Butanone (MEK)	105	20	µg/L	100		105		40-160	5.24	25		†
tert-Butyl Alcohol (TBA)	88.7	20	µg/L	100		88.7		40-160	5.04	25		†
n-Butylbenzene	9.58	1.0	µg/L	10.0		95.8		70-130	5.09	25		
sec-Butylbenzene	9.49	1.0	µg/L	10.0		94.9		70-130	3.21	25		
tert-Butylbenzene	9.77	1.0	µg/L	10.0		97.7		70-130	1.52	25		
tert-Butyl Ethyl Ether (TBEE)	9.31	0.50	µg/L	10.0		93.1		70-130	2.13	25		
Carbon Disulfide	91.9	5.0	µg/L	100		91.9		70-130	3.85	25		
Carbon Tetrachloride	9.02	5.0	µg/L	10.0		90.2		70-130	3.49	25		
Chlorobenzene	10.6	1.0	µg/L	10.0		106		70-130	3.33	25		
Chlorodibromomethane	9.04	0.50	µg/L	10.0		90.4		70-130	3.05	25		
Chloroethane	9.39	2.0	µg/L	10.0		93.9		70-130	5.19	25		
Chloroform	9.00	2.0	µg/L	10.0		90.0		70-130	2.63	25		
Chloromethane	9.00	2.0	µg/L	10.0		90.0		40-160	5.83	25		†
2-Chlorotoluene	10.3	1.0	µg/L	10.0		103		70-130	2.03	25		
4-Chlorotoluene	10.5	1.0	µg/L	10.0		105		70-130	2.81	25		
1,2-Dibromo-3-chloropropane (DBCP)	7.85	5.0	µg/L	10.0		78.5		70-130	2.76	25		
1,2-Dibromoethane (EDB)	10.4	0.50	µg/L	10.0		104		70-130	0.961	25		
Dibromomethane	10.0	1.0	µg/L	10.0		100		70-130	6.09	25		
1,2-Dichlorobenzene	9.76	1.0	µg/L	10.0		97.6		70-130	3.23	25		
1,3-Dichlorobenzene	9.65	1.0	µg/L	10.0		96.5		70-130	3.46	25		
1,4-Dichlorobenzene	9.80	1.0	µg/L	10.0		98.0		70-130	3.61	25		
trans-1,4-Dichloro-2-butene	7.55	2.0	µg/L	10.0		75.5		70-130	2.87	25	V-05	
Dichlorodifluoromethane (Freon 12)	9.75	2.0	µg/L	10.0		97.5		40-160	6.26	25		†
1,1-Dichloroethane	9.88	1.0	µg/L	10.0		98.8		70-130	1.51	25		
1,2-Dichloroethane	10.2	1.0	µg/L	10.0		102		70-130	4.41	25		
1,1-Dichloroethylene	9.67	1.0	µg/L	10.0		96.7		70-130	6.70	25		
cis-1,2-Dichloroethylene	10.0	1.0	µg/L	10.0		100		70-130	1.09	25		
trans-1,2-Dichloroethylene	10.2	1.0	µg/L	10.0		102		70-130	1.75	25		
1,2-Dichloropropane	10.4	1.0	µg/L	10.0		104		70-130	4.24	25		
1,3-Dichloropropane	9.86	0.50	µg/L	10.0		98.6		70-130	6.67	25		
2,2-Dichloropropane	8.26	1.0	µg/L	10.0		82.6		40-130	3.80	25		†

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes	
Batch B323174 - SW-846 5030B												
LCS Dup (B323174-BSD1)				Prepared: 11/16/22 Analyzed: 11/17/22								
1,1-Dichloropropene	9.36	2.0	µg/L	10.0		93.6		70-130	3.98	25		
cis-1,3-Dichloropropene	8.97	0.50	µg/L	10.0		89.7		70-130	6.47	25		
trans-1,3-Dichloropropene	8.79	0.50	µg/L	10.0		87.9		70-130	3.69	25		
Diethyl Ether	9.62	2.0	µg/L	10.0		96.2		70-130	2.46	25		
Diisopropyl Ether (DIPE)	9.92	0.50	µg/L	10.0		99.2		70-130	2.09	25		
1,4-Dioxane	91.8	50	µg/L	100		91.8		40-130	1.69	50		† ‡
Ethylbenzene	10.5	1.0	µg/L	10.0		105		70-130	2.91	25		
Hexachlorobutadiene	9.98	0.60	µg/L	10.0		99.8		70-130	6.03	25		
2-Hexanone (MBK)	106	10	µg/L	100		106		70-160	6.66	25		†
Isopropylbenzene (Cumene)	10.0	1.0	µg/L	10.0		100		70-130	3.33	25		
p-Isopropyltoluene (p-Cymene)	9.56	1.0	µg/L	10.0		95.6		70-130	4.50	25		
Methyl Acetate	10.8	1.0	µg/L	10.0		108		70-130	3.10	25		
Methyl tert-Butyl Ether (MTBE)	8.55	1.0	µg/L	10.0		85.5		70-130	5.24	25		
Methyl Cyclohexane	9.83	1.0	µg/L	10.0		98.3		70-130	4.28	25		
Methylene Chloride	9.96	5.0	µg/L	10.0		99.6		70-130	3.84	25		
4-Methyl-2-pentanone (MIBK)	107	10	µg/L	100		107		70-160	6.03	25		†
Naphthalene	8.27	2.0	µg/L	10.0		82.7		40-130	4.84	25		†
n-Propylbenzene	10.3	1.0	µg/L	10.0		103		70-130	2.02	25		
Styrene	10.0	1.0	µg/L	10.0		100		70-130	2.55	25		
1,1,1,2-Tetrachloroethane	9.81	1.0	µg/L	10.0		98.1		70-130	4.39	25		
1,1,2,2-Tetrachloroethane	9.49	0.50	µg/L	10.0		94.9		70-130	5.43	25		
Tetrachloroethylene	11.0	1.0	µg/L	10.0		110		70-130	0.725	25		
Tetrahydrofuran	9.43	10	µg/L	10.0		94.3		70-130	3.64	25	J	
Toluene	10.1	1.0	µg/L	10.0		101		70-130	4.26	25		
1,2,3-Trichlorobenzene	9.34	5.0	µg/L	10.0		93.4		70-130	1.80	25		
1,2,4-Trichlorobenzene	9.61	1.0	µg/L	10.0		96.1		70-130	5.96	25		
1,3,5-Trichlorobenzene	9.60	1.0	µg/L	10.0		96.0		70-130	5.77	25		
1,1,1-Trichloroethane	9.36	1.0	µg/L	10.0		93.6		70-130	0.214	25		
1,1,2-Trichloroethane	9.97	1.0	µg/L	10.0		99.7		70-130	4.13	25		
Trichloroethylene	10.7	1.0	µg/L	10.0		107		70-130	4.48	25		
Trichlorofluoromethane (Freon 11)	9.74	2.0	µg/L	10.0		97.4		70-130	5.49	25		
1,2,3-Trichloropropane	10.3	2.0	µg/L	10.0		103		70-130	2.11	25		
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	10.0	1.0	µg/L	10.0		100		70-130	5.73	25		
1,2,3-Trimethylbenzene	456	25	µg/L	10.0		**4560**	*	70-130	2.92	25		
1,2,4-Trimethylbenzene	9.57	1.0	µg/L	10.0		95.7		70-130	3.69	25		
1,3,5-Trimethylbenzene	10.3	1.0	µg/L	10.0		103		70-130	1.16	25		
Vinyl Chloride	9.94	2.0	µg/L	10.0		99.4		40-160	6.33	25		†
m+p Xylene	21.1	2.0	µg/L	20.0		106		70-130	2.39	25		
o-Xylene	10.2	1.0	µg/L	10.0		102		70-130	2.32	25		
Surrogate: 1,2-Dichloroethane-d4	*23.7*		µg/L	25.0		94.7		70-130				
Surrogate: Toluene-d8	*24.5*		µg/L	25.0		97.9		70-130				
Surrogate: 4-Bromofluorobenzene	*24.9*		µg/L	25.0		99.7		70-130				

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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.
J	Detected but below the Reporting Limit (lowest calibration standard); therefore, result is an estimated concentration (CLP J-Flag).
V-05	Continuing calibration verification (CCV) did not meet method specifications and was biased on the low side for this compound.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8260D in Water	
Acetone	CT,ME,NH,VA,NY
Acrylonitrile	CT,ME,NH,VA,NY
tert-Amyl Methyl Ether (TAME)	ME,NH,VA,NY
Benzene	CT,ME,NH,VA,NY
Bromobenzene	ME,NY
Bromochloromethane	ME,NH,VA,NY
Bromodichloromethane	CT,ME,NH,VA,NY
Bromoform	CT,ME,NH,VA,NY
Bromomethane	CT,ME,NH,VA,NY
2-Butanone (MEK)	CT,ME,NH,VA,NY
tert-Butyl Alcohol (TBA)	ME,NH,VA,NY
n-Butylbenzene	ME,VA,NY
sec-Butylbenzene	ME,VA,NY
tert-Butylbenzene	ME,VA,NY
tert-Butyl Ethyl Ether (TBEE)	ME,NH,VA,NY
Carbon Disulfide	CT,ME,NH,VA,NY
Carbon Tetrachloride	CT,ME,NH,VA,NY
Chlorobenzene	CT,ME,NH,VA,NY
Chlorodibromomethane	CT,ME,NH,VA,NY
Chloroethane	CT,ME,NH,VA,NY
Chloroform	CT,ME,NH,VA,NY
Chloromethane	CT,ME,NH,VA,NY
2-Chlorotoluene	ME,NH,VA,NY
4-Chlorotoluene	ME,NH,VA,NY
1,2-Dibromo-3-chloropropane (DBCP)	ME,NY
1,2-Dibromoethane (EDB)	ME,NY
Dibromomethane	ME,NH,VA,NY
1,2-Dichlorobenzene	CT,ME,NH,VA,NY
1,3-Dichlorobenzene	CT,ME,NH,VA,NY
1,4-Dichlorobenzene	CT,ME,NH,VA,NY
trans-1,4-Dichloro-2-butene	ME,NH,VA,NY
Dichlorodifluoromethane (Freon 12)	ME,NH,VA,NY
1,1-Dichloroethane	CT,ME,NH,VA,NY
1,2-Dichloroethane	CT,ME,NH,VA,NY
1,1-Dichloroethylene	CT,ME,NH,VA,NY
cis-1,2-Dichloroethylene	ME,NY
trans-1,2-Dichloroethylene	CT,ME,NH,VA,NY
1,2-Dichloropropane	CT,ME,NH,VA,NY
1,3-Dichloropropane	ME,VA,NY
2,2-Dichloropropane	ME,NH,VA,NY
1,1-Dichloropropene	ME,NH,VA,NY
cis-1,3-Dichloropropene	CT,ME,NH,VA,NY
trans-1,3-Dichloropropene	CT,ME,NH,VA,NY
Diethyl Ether	ME,NY
Diisopropyl Ether (DIPE)	ME,NH,VA,NY
1,4-Dioxane	ME,NY
Ethylbenzene	CT,ME,NH,VA,NY

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8260D in Water	
Hexachlorobutadiene	CT,ME,NH,VA,NY
2-Hexanone (MBK)	CT,ME,NH,VA,NY
Isopropylbenzene (Cumene)	ME,VA,NY
p-Isopropyltoluene (p-Cymene)	CT,ME,NH,VA,NY
Methyl Acetate	ME,NY
Methyl tert-Butyl Ether (MTBE)	CT,ME,NH,VA,NY
Methyl Cyclohexane	NY
Methylene Chloride	CT,ME,NH,VA,NY
4-Methyl-2-pentanone (MIBK)	CT,ME,NH,VA,NY
Naphthalene	ME,NH,VA,NY
n-Propylbenzene	CT,ME,NH,VA,NY
Styrene	CT,ME,NH,VA,NY
1,1,1,2-Tetrachloroethane	CT,ME,NH,VA,NY
1,1,2,2-Tetrachloroethane	CT,ME,NH,VA,NY
Tetrachloroethylene	CT,ME,NH,VA,NY
Toluene	CT,ME,NH,VA,NY
1,2,3-Trichlorobenzene	ME,NH,VA,NY
1,2,4-Trichlorobenzene	CT,ME,NH,VA,NY
1,3,5-Trichlorobenzene	ME
1,1,1-Trichloroethane	CT,ME,NH,VA,NY
1,1,2-Trichloroethane	CT,ME,NH,VA,NY
Trichloroethylene	CT,ME,NH,VA,NY
Trichlorofluoromethane (Freon 11)	CT,ME,NH,VA,NY
1,2,3-Trichloropropane	ME,NH,VA,NY
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	VA,NY
1,2,4-Trimethylbenzene	ME,VA,NY
1,3,5-Trimethylbenzene	ME,VA,NY
Vinyl Chloride	CT,ME,NH,VA,NY
m+p Xylene	CT,ME,NH,VA,NY
o-Xylene	CT,ME,NH,VA,NY

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

Code	Description	Number	Expires
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2023
NH	New Hampshire Environmental Lab	2516 NELAP	02/5/2023
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2023

22K2167

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CHAIN OF CUSTODY RECORD

39 Spruce Street
East Longmeadow, MA 01028

Doc # 381 Rev 5_07/13/2021

Page _____ of _____

Company Name:	Stone Environmental
Address:	535 Stone Cutters Way, Montpelier, VT
Phone:	
Project Name:	TPCC
Project Location:	Barre, VT
Project Number:	20211145
Project Manager:	Rebecca Treat
Pace Quote Name/Number:	
Invoice Recipient:	Stone Accounting
Sampled By:	EGC

Requested Turnaround Time
7-Day [X] 10-Day [ ]
PFAS 10-Day (std) [ ] Due Date:

Rush-Approval Required
1-Day [ ] 3-Day [ ]
2-Day [ ] 4-Day [ ]

Data Delivery
Format: PDF [X] EXCEL [ ]
Other: EQuIS EZ EDD
CLP Like Data Pkg Required: [ ]
Email To: rtreat@stone-env.com
Fax To #:

Dissolved/Metals Samples
○ Field Filtered
○ Lab to Filter

Orthophosphate Samples
○ Field Filtered
○ Lab to Filter

PCB ONLY
SOXHLET [ ]
NON SOXHLET [ ]

ANALYSIS REQUESTED

Pace Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	[1]Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE	VOC 8260
	MW-3	11/11/22 1413	11/11/22 1413	G	GW		2					X
	MW-2	11/11/22 1540	11/11/22 1540				2					X
	MW-1	11/11/22 1705	11/11/22 1705				2					X
	MW-3-FD	11/11/22 1415	11/11/22 1415				2					X
	TB-111122	11/11/22			O		2					X

[2] Preservation Code

Courier Use Only
Total Number Of:
VIALS 8
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)
Trip Blank

[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)

Relinquished by: (signature)	Date/Time: 11/14/22 11:40	Client Comments:
Received by: (signature) VDS	Date/Time: 11/14/22 11:40	
Relinquished by: (signature) VDS	Date/Time: 11-15-22	
Received by: (signature)	Date/Time: 11-15-22 9:30	
Relinquished by: (signature)	Date/Time: 11-15-22 13:00	
Received by: (signature)	Date/Time: 11-15-22 13:00	
Relinquished by: (signature)	Date/Time:	
Received by: (signature)	Date/Time:	

Detection Limit Requirements
MA 0930
CT
Other: VT DEC

Special Requirements
[ ] MA MCP Required
[ ] MCP Certification Form Required
[ ] CT RCP Required
[ ] RCP Certification Form Required
[ ] MA State DW Required
PWSID #

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

NELAC and AIHA-LAP, LLC Accredited

Project Entity
Government [ ] Municipality [ ] MWRA [ ] WRTA [ ]
Federal [ ] 21 J [ ] School [ ]
City [ ] Brownfield [ ] MBTA [ ]

Other
[ ] Chromatogram
[ ] AIHA-LAP,LLC

Lab Comments:

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.

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Pace PEOPLE ADVANCING SCIENCE

Doc# 277 Rev 6 July 2022

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 Stone Environmental

Received By RT Date 11-15-22 Time 13:00

How were the samples received? In Cooler T No Cooler ____ On Ice T No Ice ____

Direct From Sample ____ Ambient ____ Melted Ice ____

Were samples within Tempurature? Within 2-6°C T By Gun # 6 Actual Temp - 5.1

By Blank # ____ Actual Temp - ____

Was Custody Seal In tact? NA Were Samples Tampered with? NA

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? ____

Samples are received within holding time? T Is there enough Volume? T

Is there Headspace where applicable? T MS/MSD? F

Proper Media/Containers Used? T splitting samples required F

Were trip blanks received? F On COC? NA

Do All Samples Have the proper pH? Acid NA Base NA

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.	
HCL-	10	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			

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:

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November 17, 2022

Rebecca Treat
Stone Environmental
535 Stone Cutters Ways
Montpelier, VT 05602

Project Location: 18 S. Main ST, Barre, VT
Client Job Number:
Project Number: 20211145
Laboratory Work Order Number: 22K0892

Enclosed are results of analyses for samples as received by the laboratory on November 4, 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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Stone Environmental
535 Stone Cutters Ways
Montpelier, VT 05602
ATTN: Rebecca Treat

REPORT DATE: 11/17/2022

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 20211145

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 22K0892

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

PROJECT LOCATION: 18 S. Main ST, Barre, VT

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
IA-2	22K0892-01	Indoor air		EPA TO-10A	
IA-1	22K0892-02	Indoor air		EPA TO-10A	
IA-B	22K0892-03	Indoor air		EPA TO-10A	
IA-DUP	22K0892-04	Indoor air		EPA TO-10A	
Ambient	22K0892-05	Ambient Air		EPA TO-10A	
FB	22K0892-06	Air		EPA TO-10A	

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CASE NARRATIVE SUMMARY

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

EPA TO-10A

Qualifications:

S-20

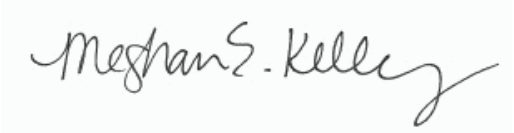
Surrogate recovery is outside of control limits. Sample media does not allow for re-extraction.

Analyte & Samples(s) Qualified:

Tetrachloro-m-xylene
22K0892-01[IA-2], 22K0892-02[IA-1], 22K0892-05[Ambient], 22K0892-06[FB], B322207-BLK1, B322207-BS1, B322207-BSD1

Tetrachloro-m-xylene [2C]
22K0892-01[IA-2], 22K0892-02[IA-1], 22K0892-05[Ambient], 22K0892-06[FB], B322207-BS1, B322207-BSD1

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.



Meghan E. Kelley
Reporting Specialist

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ANALYTICAL RESULTS

Project Location: 18 S. Main ST, Barre, VT
Date Received: 11/4/2022
Field Sample #: IA-2
Sample ID: 22K0892-01
Sample Matrix: Indoor air
Sampled: 10/28/2022 14:20

Sample Description/Location:
Sub Description/Location:
Flow Controller ID:
Sample Type:
Air Volume L: 6480

Work Order: 22K0892

EPA TO-10A

Analyte	Total µg Results	RL	Flag/Qual	ug/m3 Results	RL	Dilution	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.040		ND	0.0062	1	11/15/22 21:39	AYH
Aroclor-1221 [1]	ND	0.040		ND	0.0062	1	11/15/22 21:39	AYH
Aroclor-1232 [1]	ND	0.040		ND	0.0062	1	11/15/22 21:39	AYH
Aroclor-1242 [1]	ND	0.040		ND	0.0062	1	11/15/22 21:39	AYH
Aroclor-1248 [1]	ND	0.040		ND	0.0062	1	11/15/22 21:39	AYH
Aroclor-1254 [1]	ND	0.040		ND	0.0062	1	11/15/22 21:39	AYH
Aroclor-1260 [1]	ND	0.040		ND	0.0062	1	11/15/22 21:39	AYH
Aroclor-1262 [1]	ND	0.040		ND	0.0062	1	11/15/22 21:39	AYH
Aroclor-1268 [1]	ND	0.040		ND	0.0062	1	11/15/22 21:39	AYH

Surrogates	% Recovery		% REC Limits	
Decachlorobiphenyl [1]	87.2		60-120	11/15/22 21:39
Decachlorobiphenyl [2]	85.2		60-120	11/15/22 21:39
Tetrachloro-m-xylene [1]	57.3*	S-20	60-120	11/15/22 21:39
Tetrachloro-m-xylene [2]	58.2*	S-20	60-120	11/15/22 21:39

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ANALYTICAL RESULTS

Project Location: 18 S. Main ST, Barre, VT
Date Received: 11/4/2022
Field Sample #: IA-1
Sample ID: 22K0892-02
Sample Matrix: Indoor air
Sampled: 10/28/2022 14:40

Sample Description/Location:
Sub Description/Location:

Flow Controller ID:
Sample Type:
Air Volume L: 6465.6

Work Order: 22K0892

EPA TO-10A

Analyte	Total µg Results	RL	Flag/Qual	ug/m3 Results	RL	Dilution	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.040		ND	0.0062	1	11/15/22 21:57	AYH
Aroclor-1221 [1]	ND	0.040		ND	0.0062	1	11/15/22 21:57	AYH
Aroclor-1232 [1]	ND	0.040		ND	0.0062	1	11/15/22 21:57	AYH
Aroclor-1242 [1]	ND	0.040		ND	0.0062	1	11/15/22 21:57	AYH
Aroclor-1248 [1]	ND	0.040		ND	0.0062	1	11/15/22 21:57	AYH
Aroclor-1254 [1]	ND	0.040		ND	0.0062	1	11/15/22 21:57	AYH
Aroclor-1260 [1]	ND	0.040		ND	0.0062	1	11/15/22 21:57	AYH
Aroclor-1262 [1]	ND	0.040		ND	0.0062	1	11/15/22 21:57	AYH
Aroclor-1268 [1]	ND	0.040		ND	0.0062	1	11/15/22 21:57	AYH

Surrogates	% Recovery		% REC Limits	
Decachlorobiphenyl [1]	83.7		60-120	11/15/22 21:57
Decachlorobiphenyl [2]	82.1		60-120	11/15/22 21:57
Tetrachloro-m-xylene [1]	50.1*	S-20	60-120	11/15/22 21:57
Tetrachloro-m-xylene [2]	50.6*	S-20	60-120	11/15/22 21:57

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ANALYTICAL RESULTS

Project Location: 18 S. Main ST, Barre, VT
Date Received: 11/4/2022
Field Sample #: IA-B
Sample ID: 22K0892-03
Sample Matrix: Indoor air
Sampled: 10/28/2022 15:00

Sample Description/Location:
Sub Description/Location:

Flow Controller ID:
Sample Type:
Air Volume L: 6480

Work Order: 22K0892

EPA TO-10A

Analyte	Total µg Results	RL	Flag/Qual	ug/m3 Results	RL	Dilution	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.040		ND	0.0062	1	11/15/22 22:14	AYH
Aroclor-1221 [1]	ND	0.040		ND	0.0062	1	11/15/22 22:14	AYH
Aroclor-1232 [1]	ND	0.040		ND	0.0062	1	11/15/22 22:14	AYH
Aroclor-1242 [1]	ND	0.040		ND	0.0062	1	11/15/22 22:14	AYH
Aroclor-1248 [1]	ND	0.040		ND	0.0062	1	11/15/22 22:14	AYH
Aroclor-1254 [1]	ND	0.040		ND	0.0062	1	11/15/22 22:14	AYH
Aroclor-1260 [1]	ND	0.040		ND	0.0062	1	11/15/22 22:14	AYH
Aroclor-1262 [1]	ND	0.040		ND	0.0062	1	11/15/22 22:14	AYH
Aroclor-1268 [1]	ND	0.040		ND	0.0062	1	11/15/22 22:14	AYH

Surrogates	% Recovery	% REC Limits	
Decachlorobiphenyl [1]	91.6	60-120	11/15/22 22:14
Decachlorobiphenyl [2]	91.0	60-120	11/15/22 22:14
Tetrachloro-m-xylene [1]	63.6	60-120	11/15/22 22:14
Tetrachloro-m-xylene [2]	64.0	60-120	11/15/22 22:14

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ANALYTICAL RESULTS

Project Location: 18 S. Main ST, Barre, VT
Date Received: 11/4/2022
Field Sample #: IA-DUP
Sample ID: 22K0892-04
Sample Matrix: Indoor air
Sampled: 10/28/2022 15:08

Sample Description/Location:
Sub Description/Location:

Flow Controller ID:
Sample Type:
Air Volume L: 6465.6

Work Order: 22K0892

EPA TO-10A

Analyte	Total µg Results	Total µg RL	Flag/Qual	ug/m3 Results	ug/m3 RL	Dilution	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.040		ND	0.0062	1	11/15/22 22:32	AYH
Aroclor-1221 [1]	ND	0.040		ND	0.0062	1	11/15/22 22:32	AYH
Aroclor-1232 [1]	ND	0.040		ND	0.0062	1	11/15/22 22:32	AYH
Aroclor-1242 [1]	ND	0.040		ND	0.0062	1	11/15/22 22:32	AYH
Aroclor-1248 [1]	ND	0.040		ND	0.0062	1	11/15/22 22:32	AYH
Aroclor-1254 [1]	ND	0.040		ND	0.0062	1	11/15/22 22:32	AYH
Aroclor-1260 [1]	ND	0.040		ND	0.0062	1	11/15/22 22:32	AYH
Aroclor-1262 [1]	ND	0.040		ND	0.0062	1	11/15/22 22:32	AYH
Aroclor-1268 [1]	ND	0.040		ND	0.0062	1	11/15/22 22:32	AYH

Surrogates	% Recovery	% REC Limits	
Decachlorobiphenyl [1]	95.4	60-120	11/15/22 22:32
Decachlorobiphenyl [2]	93.8	60-120	11/15/22 22:32
Tetrachloro-m-xylene [1]	65.4	60-120	11/15/22 22:32
Tetrachloro-m-xylene [2]	65.8	60-120	11/15/22 22:32

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ANALYTICAL RESULTS

Project Location: 18 S. Main ST, Barre, VT
Date Received: 11/4/2022
Field Sample #: Ambient
Sample ID: 22K0892-05
Sample Matrix: Ambient Air
Sampled: 10/28/2022 15:27

Sample Description/Location:
Sub Description/Location:

Flow Controller ID:
Sample Type:
Air Volume L: 6480

Work Order: 22K0892

EPA TO-10A

Analyte	Total µg Results	RL	Flag/Qual	ug/m3 Results	RL	Dilution	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.040		ND	0.0062	1	11/15/22 22:49	AYH
Aroclor-1221 [1]	ND	0.040		ND	0.0062	1	11/15/22 22:49	AYH
Aroclor-1232 [1]	ND	0.040		ND	0.0062	1	11/15/22 22:49	AYH
Aroclor-1242 [1]	ND	0.040		ND	0.0062	1	11/15/22 22:49	AYH
Aroclor-1248 [1]	ND	0.040		ND	0.0062	1	11/15/22 22:49	AYH
Aroclor-1254 [1]	ND	0.040		ND	0.0062	1	11/15/22 22:49	AYH
Aroclor-1260 [1]	ND	0.040		ND	0.0062	1	11/15/22 22:49	AYH
Aroclor-1262 [1]	ND	0.040		ND	0.0062	1	11/15/22 22:49	AYH
Aroclor-1268 [1]	ND	0.040		ND	0.0062	1	11/15/22 22:49	AYH

Surrogates	% Recovery		% REC Limits	
Decachlorobiphenyl [1]	81.9		60-120	11/15/22 22:49
Decachlorobiphenyl [2]	80.5		60-120	11/15/22 22:49
Tetrachloro-m-xylene [1]	51.9*	S-20	60-120	11/15/22 22:49
Tetrachloro-m-xylene [2]	53.2*	S-20	60-120	11/15/22 22:49

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ANALYTICAL RESULTS

Project Location: 18 S. Main ST, Barre, VT
Date Received: 11/4/2022
Field Sample #: FB
Sample ID: 22K0892-06
Sample Matrix: Air
Sampled: 10/27/2022 15:05

Sample Description/Location:
Sub Description/Location:
Flow Controller ID:
Sample Type:

Work Order: 22K0892

EPA TO-10A

Analyte	Total µg Results	RL	Flag/Qual	Dilution	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.040		1	11/15/22 23:07	AYH
Aroclor-1221 [1]	ND	0.040		1	11/15/22 23:07	AYH
Aroclor-1232 [1]	ND	0.040		1	11/15/22 23:07	AYH
Aroclor-1242 [1]	ND	0.040		1	11/15/22 23:07	AYH
Aroclor-1248 [1]	ND	0.040		1	11/15/22 23:07	AYH
Aroclor-1254 [1]	ND	0.040		1	11/15/22 23:07	AYH
Aroclor-1260 [1]	ND	0.040		1	11/15/22 23:07	AYH
Aroclor-1262 [1]	ND	0.040		1	11/15/22 23:07	AYH
Aroclor-1268 [1]	ND	0.040		1	11/15/22 23:07	AYH

Surrogates	% Recovery		% REC Limits	
Decachlorobiphenyl [1]	80.2		60-120	11/15/22 23:07
Decachlorobiphenyl [2]	79.2		60-120	11/15/22 23:07
Tetrachloro-m-xylene [1]	39.2*	S-20	60-120	11/15/22 23:07
Tetrachloro-m-xylene [2]	40.3*	S-20	60-120	11/15/22 23:07

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Sample Extraction Data

Prep Method: SW-846 3540C **Analytical Method: EPA TO-10A**

Lab Number [Field ID]	Batch	Initial [Cartridge	Final [mL]	Date
22K0892-01 [IA-2]	B322207	1.00	2.00	11/04/22
22K0892-02 [IA-1]	B322207	1.00	2.00	11/04/22
22K0892-03 [IA-B]	B322207	1.00	2.00	11/04/22
22K0892-04 [IA-DUP]	B322207	1.00	2.00	11/04/22
22K0892-05 [Ambient]	B322207	1.00	2.00	11/04/22
22K0892-06 [FB]	B322207	1.00	2.00	11/04/22

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QUALITY CONTROL

Air Toxics by EPA Compendium Methods - Quality Control

Analyte	Total µg Results	Total µg RL	ug/m3 Results	ug/m3 RL	Spike Level Total µg	Source Result	%REC		%REC Limits	RPD	RPD Limit	Flag/Qual
Batch B322207 - SW-846 3540C												
Blank (B322207-BLK1)					Prepared: 11/04/22 Analyzed: 11/15/22							
Aroclor-1016	ND	0.040										
Aroclor-1016 [2C]	ND	0.040										
Aroclor-1221	ND	0.040										
Aroclor-1221 [2C]	ND	0.040										
Aroclor-1232	ND	0.040										
Aroclor-1232 [2C]	ND	0.040										
Aroclor-1242	ND	0.040										
Aroclor-1242 [2C]	ND	0.040										
Aroclor-1248	ND	0.040										
Aroclor-1248 [2C]	ND	0.040										
Aroclor-1254	ND	0.040										
Aroclor-1254 [2C]	ND	0.040										
Aroclor-1260	ND	0.040										
Aroclor-1260 [2C]	ND	0.040										
Aroclor-1262	ND	0.040										
Aroclor-1262 [2C]	ND	0.040										
Aroclor-1268	ND	0.040										
Aroclor-1268 [2C]	ND	0.040										
Surrogate: Decachlorobiphenyl	*0.348*				*0.400*		*87.0*		*60-120*			
Surrogate: Decachlorobiphenyl [2C]	*0.336*				*0.400*		*84.0*		*60-120*			
Surrogate: Tetrachloro-m-xylene	*0.236*				*0.400*		**59.0**	*	*60-120*			*S-20*
Surrogate: Tetrachloro-m-xylene [2C]	*0.243*				*0.400*		*60.7*		*60-120*			
LCS (B322207-BS1)					Prepared: 11/04/22 Analyzed: 11/15/22							
Aroclor-1016	0.0729	0.040			0.100		72.9		65-125			
Aroclor-1016 [2C]	0.0820	0.040			0.100		82.0		65-125			
Aroclor-1260	0.0805	0.040			0.100		80.5		65-125			
Aroclor-1260 [2C]	0.0776	0.040			0.100		77.6		65-125			
Surrogate: Decachlorobiphenyl	*0.363*				*0.400*		*90.9*		*60-120*			
Surrogate: Decachlorobiphenyl [2C]	*0.355*				*0.400*		*88.8*		*60-120*			
Surrogate: Tetrachloro-m-xylene	*0.207*				*0.400*		**51.7**	*	*60-120*			*S-20*
Surrogate: Tetrachloro-m-xylene [2C]	*0.212*				*0.400*		**52.9**	*	*60-120*			*S-20*

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QUALITY CONTROL

Air Toxics by EPA Compendium Methods - Quality Control

Analyte	Total µg Results	Total µg RL	ug/m3 Results	ug/m3 RL	Spike Level Total µg	Source Result	%REC		%REC Limits	RPD	RPD Limit	Flag/Qual
Batch B322207 - SW-846 3540C												
LCS Dup (B322207-BSD1)					Prepared: 11/04/22 Analyzed: 11/15/22							
Aroclor-1016	0.0735	0.040			0.100		73.5		65-125	0.814	40	
Aroclor-1016 [2C]	0.0783	0.040			0.100		78.3		65-125	4.57	40	
Aroclor-1260	0.0690	0.040			0.100		69.0		65-125	15.5	40	
Aroclor-1260 [2C]	0.0684	0.040			0.100		68.4		65-125	12.6	40	
Surrogate: Decachlorobiphenyl	*0.266*				*0.400*		*66.5*		*60-120*			
Surrogate: Decachlorobiphenyl [2C]	*0.261*				*0.400*		*65.3*		*60-120*			
Surrogate: Tetrachloro-m-xylene	*0.213*				*0.400*		**53.3**	*	*60-120*			*S-20*
Surrogate: Tetrachloro-m-xylene [2C]	*0.219*				*0.400*		**54.7**	*	*60-120*			*S-20*

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

EPA TO-10A

LCS

Lab Sample ID: B322207-BS1

Date(s) Analyzed: 11/15/2022 11/15/2022

Instrument ID (1): ECD10

Instrument ID (2): ECD10

GC Column (1): ID: (mm)

GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1016	1	0.000	0.000	0.000	0.0729	
	2	0.000	0.000	0.000	0.0820	11.6
Aroclor-1260	1	0.000	0.000	0.000	0.0805	
	2	0.000	0.000	0.000	0.0776	4.3

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

EPA TO-10A

LCS Dup

Lab Sample ID: B322207-BSD1 Date(s) Analyzed: 11/15/2022 11/15/2022

Instrument ID (1): ECD10 Instrument ID (2): ECD10

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1016	1	0.000	0.000	0.000	0.0735	
	2	0.000	0.000	0.000	0.0783	5.7
Aroclor-1260	1	0.000	0.000	0.000	0.0690	
	2	0.000	0.000	0.000	0.0684	0.9

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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.
S-20	Surrogate recovery is outside of control limits. Sample media does not allow for re-extraction.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
EPA TO-10A in Air	
Aroclor-1016	AIHA,NJ,NY
Aroclor-1016 [2C]	AIHA,NJ,NY
Aroclor-1221	AIHA,NJ,NY
Aroclor-1221 [2C]	AIHA,NJ,NY
Aroclor-1232	AIHA,NJ,NY
Aroclor-1232 [2C]	AIHA,NJ,NY
Aroclor-1242	AIHA,NJ,NY
Aroclor-1242 [2C]	AIHA,NJ,NY
Aroclor-1248	AIHA,NJ,NY
Aroclor-1248 [2C]	AIHA,NJ,NY
Aroclor-1254	AIHA,NJ,NY
Aroclor-1254 [2C]	AIHA,NJ,NY
Aroclor-1260	AIHA,NJ,NY
Aroclor-1260 [2C]	AIHA,NJ,NY
Aroclor-1262	AIHA,NJ,NY
Aroclor-1262 [2C]	AIHA,NJ,NY
Aroclor-1268	AIHA,NJ,NY
Aroclor-1268 [2C]	AIHA,NJ,NY

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

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO 17025:2017	100033	03/1/2024
NY	New York State Department of Health	10899 NELAP	04/1/2023
NJ	New Jersey DEP	MA007 NELAP	06/30/2023

con-test ANALYTICAL LABORATORY
Phone: 413-525-2332
Fax: 413-525-6405
Email: info@contestlabs.com
39 Spruce Street
East Longmeadow, MA 01028

CHAIN OF CUSTODY RECORD (AIR)

22L0792

Company Name:	STONE ENVIRONMENTAL INC
Address:	535 STONE CUTTERS WAY, MONTPELIER, VT
Phone:	802-229-4541
Project Name:	TPCC 18 S. MAIN ST,
Project Location:	18 S. MAIN ST, BARRE, VT
Project Number:	20211145
Project Manager:	REBECCA TREAT
Con-Test Quote Name/Number:	
Invoice Recipient:	REBECCA TREAT / STONE ENV.
Sampled By:	RT

Requested Turnaround Time
7-Day ☐ 10-Day ☒
Due Date:

Rush Approval Required
1-Day ☐ 3-Day ☐
2-Day ☐ 4-Day ☐

Data Delivery
Format: PDF ☒ EXCEL ☒
Other: EQUIS EZ EDD
CLP Like Data Pkg Required: ☐
Email To: rtreat@stone-env.com
Fax To #:

ANALYSIS REQUESTED

Lab Use	Client Use	Collection Data		Duration	Flow Rate	Matrix	Volume	PCBs EPA TO-10A				" Hg			Please fill out completely, sign, date and retain the yellow copy for your records
Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	Total Minutes Sampled	☐ m³/min ☒ L/min	Code	☐ Liters ☐ m³					Initial Pressure	Final Pressure	Lab Receipt Pressure	Summa Can ID / PUF ID	Flow Controller ID
1	1A-2	10/27/22 1420	10/28/22 1420	1440	4.50	1A	PUF CARTRIDGE	X							101222-	04
2	1A-1	10/27/22 1440	10/28/22 1440	1440	4.49	1A		X							101222-	05
3	1A-B	10/27/22 1500	10/28/22 1500	1440	4.50	1A		X							101222-	01
4	1A-DUP	10/27/22 1508	10/28/22 1508	1440	4.49	1A		X							101222-	02
5	AMBIENT	10/27/22 1527	10/28/22 1527	1440	4.500	AMB		X							101222-	03
6	FB	10/27/22 1585	10/27/22 1585	21	N/A	O		X							101222-	06

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

Comments: FINISHING FLOW RATES: 1A-2 (4.40); 1A-1 (4.43); 1A-B (4.53); 1A-DUP (4.49); AMBIENT (N/R)

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 Field Blank

Relinquished by: (signature)	Date/Time: 11/2/22 1050
Received by: (signature) VDS CY	Date/Time: 11/2/22 1050
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time: 11/4 1220
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:

Detection Limit Requirements
MA
CT
Other: VTDEC

Special Requirements
☐ MA MCP Required
☐ MCP Certification Form Required
☐ CT RCP Required
☐ RCP Certification Form Required
☐ Other

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NELAC and AIHA-LAP, LLC Accredited

Project Entity
☐ Government ☐ Municipality ☐ MWRA ☐ WRTA
☐ Federal ☐ 21 J ☐ School
☐ City ☐ Brownfield ☐ MBTA

Other
☐ Chromatogram
☐ AIHA-LAP,LLC

PCB ONLY
☐ Soxhlet
☐ Non Soxhlet

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39 Spruce St.
East Longmeadow, MA. 01028
P: 413-525-2332
F: 413-525-6405
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Pace PEOPLE ADVANCING SCIENCE

Doc# 278 Rev 7 July 2022

Air Media 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	Stone						
Received By	LR		Date	11/4/22		Time	1220
How Were the samples received?	In Cooler	T	On Ice	T		No Ice	
	In Box		Ambient			Melted Ice	
Were samples within Tempurature Compliance?	Within 2-6°C	T	By Gun #	3		Actual Temp -	2.1
			By Blank #			Actual Temp -	
Was Custody Seal In tact?	NA		Were Samples Tampered with?				NA
Was COC Relinquished ?	T		Does Chain Agree With Samples?				T
Are there any loose caps/valves 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?							
Are there Rushes?	F		Who was notified?				
Samples are received within holding time?	T						
Proper Media Used?	T		Individually Certified Cans?				F
Are there Trip Blanks?	F		Is there enough Volume?				T

Containers:	#	Size	Regulator	Duration	Accessories:			
Summa Cans					Nut/Ferrule		IC Train	
Tedlar Bags					Tubing			
TO-17 Tubes					T-Connector		Shipping Charges	
Radiello					Syringe			
Pufs/TO-11s	6	W			Tedlar			

Can #'s					Reg #'s				
Unused Media					**Pufs/TO-17's**				
					101722-04	-06			
					-05				
					-01				
					-02				
					-03				

Comments:

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October 28, 2022

Rebecca Treat
Stone Environmental
535 Stone Cutters Ways
Montpelier, VT 05602

Project Location: Barre, VT
Client Job Number:
Project Number: 20211145
Laboratory Work Order Number: 22J2680

Enclosed are results of analyses for samples as received by the laboratory on October 19, 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

Stone Environmental
535 Stone Cutters Ways
Montpelier, VT 05602
ATTN: Rebecca Treat

REPORT DATE: 10/28/2022

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 20211145

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 22J2680

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

PROJECT LOCATION: Barre, VT

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
SV-1	22J2680-01	Sub Slab		EPA TO-15	
SV-2	22J2680-02	Sub Slab		EPA TO-15	
SV-3	22J2680-03	Sub Slab		EPA TO-15	
SV-4	22J2680-04	Sub Slab		EPA TO-15	
SV-4-FD	22J2680-05	Sub Slab		EPA TO-15	
SV-5	22J2680-06	Sub Slab		EPA TO-15	
SV-6	22J2680-07	Sub Slab		EPA TO-15	

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CASE NARRATIVE SUMMARY

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

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

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:

1,1,2-Trichloro-1,2,2-trifluoroethan
B321335-BS1

Benzyl chloride
B321335-BS1

Bromomethane
B321335-BS1

Methyl tert-Butyl Ether (MTBE)
B321335-BS1

L-03

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

Analyte & Samples(s) Qualified:

1,1,2-Trichloro-1,2,2-trifluoroethan
22J2680-03[SV-3], 22J2680-05[SV-4-FD], 22J2680-06[SV-5], B321473-BLK1, B321473-BS1

1,2,4-Trichlorobenzene
22J2680-01[SV-1], 22J2680-02[SV-2], 22J2680-04[SV-4], 22J2680-07[SV-6], B321335-BLK1, B321335-BS1

1,2-Dichloro-1,1,2,2-tetrafluoroeth
22J2680-03[SV-3], 22J2680-05[SV-4-FD], 22J2680-06[SV-5], B321473-BLK1, B321473-BS1

Hexachlorobutadiene
22J2680-01[SV-1], 22J2680-02[SV-2], 22J2680-03[SV-3], 22J2680-04[SV-4], 22J2680-05[SV-4-FD], 22J2680-06[SV-5], 22J2680-07[SV-6], B321335-BLK1, B321335-BS1, B321473-BLK1, B321473-BS1

Isopropanol
22J2680-03[SV-3], 22J2680-05[SV-4-FD], 22J2680-06[SV-5], B321473-BLK1, B321473-BS1

Naphthalene
22J2680-01[SV-1], 22J2680-02[SV-2], 22J2680-04[SV-4], 22J2680-07[SV-6], B321335-BLK1, B321335-BS1

Vinyl Acetate
22J2680-01[SV-1], 22J2680-02[SV-2], 22J2680-04[SV-4], 22J2680-07[SV-6], B321335-BLK1, B321335-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:

Naphthalene
22J2680-05[SV-4-FD], 22J2680-06[SV-5], B321473-BS1

Trichlorofluoromethane (Freon 11)
22J2680-01[SV-1], 22J2680-04[SV-4], 22J2680-07[SV-6], B321335-BS1

V-05

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

Analyte & Samples(s) Qualified:

Vinyl Acetate
22J2680-01[SV-1], 22J2680-02[SV-2], 22J2680-04[SV-4], 22J2680-07[SV-6], B321335-BLK1, B321335-BS1, S078511-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:

1,1,2-Trichloro-1,2,2-trifluoroethan
B321335-BS1, S078511-CCV1

Benzyl chloride
B321335-BS1, S078511-CCV1

Bromomethane
B321335-BS1, S078511-CCV1

Methyl tert-Butyl Ether (MTBE)
B321335-BS1, S078511-CCV1

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V-36

Initial calibration verification (ICV) 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:

1,2,4-Trichlorobenzene

B321335-BS1, S078511-CCV1

Benzyl chloride

B321335-BS1, S078511-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.

Tod E. Kopyscinski
Laboratory Director

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ANALYTICAL RESULTS

Project Location: Barre, VT
Date Received: 10/19/2022
Field Sample #: SV-1
Sample ID: 22J2680-01
Sample Matrix: Sub Slab
Sampled: 10/17/2022 15:52

Sample Description/Location:
Sub Description/Location:
Canister ID: 2735
Canister Size: 3 liter
Flow Controller ID: 4338
Sample Type: 30 min

Work Order: 22J2680
Initial Vacuum(in Hg): -29
Final Vacuum(in Hg): -3
Receipt Vacuum(in Hg): -3.5
Flow Controller Type: Fixed-Orifice
Flow Controller Calibration
RPD Pre and Post-Sampling:

EPA TO-15

	ppbv			ug/m3			Date/Time	
Analyte	**Results**	**RL**	**Flag/Qual**	**Results**	**RL**	**Dilution**	**Analyzed**	**Analyst**
Acetone	ND	8.0		ND	19	4	10/24/22 17:16	CMR
Benzene	ND	0.20		ND	0.64	4	10/24/22 17:16	CMR
Benzyl chloride	ND	0.40		ND	2.1	4	10/24/22 17:16	CMR
Bromodichloromethane	ND	0.20		ND	1.3	4	10/24/22 17:16	CMR
Bromoform	ND	0.20		ND	2.1	4	10/24/22 17:16	CMR
Bromomethane	ND	0.20		ND	0.78	4	10/24/22 17:16	CMR
1,3-Butadiene	ND	0.20		ND	0.44	4	10/24/22 17:16	CMR
2-Butanone (MEK)	ND	8.0		ND	24	4	10/24/22 17:16	CMR
Carbon Disulfide	ND	2.0		ND	6.2	4	10/24/22 17:16	CMR
Carbon Tetrachloride	ND	0.20		ND	1.3	4	10/24/22 17:16	CMR
Chlorobenzene	ND	0.20		ND	0.92	4	10/24/22 17:16	CMR
Chloroethane	ND	0.20		ND	0.53	4	10/24/22 17:16	CMR
Chloroform	0.43	0.20		2.1	0.98	4	10/24/22 17:16	CMR
Chloromethane	ND	0.40		ND	0.83	4	10/24/22 17:16	CMR
Cyclohexane	ND	0.20		ND	0.69	4	10/24/22 17:16	CMR
Dibromochloromethane	ND	0.20		ND	1.7	4	10/24/22 17:16	CMR
1,2-Dibromoethane (EDB)	ND	0.20		ND	1.5	4	10/24/22 17:16	CMR
1,2-Dichlorobenzene	ND	0.20		ND	1.2	4	10/24/22 17:16	CMR
1,3-Dichlorobenzene	ND	0.20		ND	1.2	4	10/24/22 17:16	CMR
1,4-Dichlorobenzene	ND	0.20		ND	1.2	4	10/24/22 17:16	CMR
Dichlorodifluoromethane (Freon 12)	3.1	0.20		15	0.99	4	10/24/22 17:16	CMR
1,1-Dichloroethane	ND	0.20		ND	0.81	4	10/24/22 17:16	CMR
1,2-Dichloroethane	ND	0.20		ND	0.81	4	10/24/22 17:16	CMR
1,1-Dichloroethylene	ND	0.20		ND	0.79	4	10/24/22 17:16	CMR
cis-1,2-Dichloroethylene	ND	0.20		ND	0.79	4	10/24/22 17:16	CMR
trans-1,2-Dichloroethylene	ND	0.20		ND	0.79	4	10/24/22 17:16	CMR
1,2-Dichloropropane	ND	0.20		ND	0.92	4	10/24/22 17:16	CMR
cis-1,3-Dichloropropene	ND	0.20		ND	0.91	4	10/24/22 17:16	CMR
trans-1,3-Dichloropropene	ND	0.20		ND	0.91	4	10/24/22 17:16	CMR
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	ND	0.20		ND	1.4	4	10/24/22 17:16	CMR
1,4-Dioxane	ND	2.0		ND	7.2	4	10/24/22 17:16	CMR
Ethanol	ND	8.0		ND	15	4	10/24/22 17:16	CMR
Ethyl Acetate	ND	2.0		ND	7.2	4	10/24/22 17:16	CMR
Ethylbenzene	ND	0.20		ND	0.87	4	10/24/22 17:16	CMR
4-Ethyltoluene	ND	0.20		ND	0.98	4	10/24/22 17:16	CMR
Heptane	ND	0.20		ND	0.82	4	10/24/22 17:16	CMR
Hexachlorobutadiene	ND	0.20	L-03	ND	2.1	4	10/24/22 17:16	CMR

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ANALYTICAL RESULTS

Project Location: Barre, VT
Date Received: 10/19/2022
Field Sample #: SV-1
Sample ID: 22J2680-01
Sample Matrix: Sub Slab
Sampled: 10/17/2022 15:52

Sample Description/Location:
Sub Description/Location:
Canister ID: 2735
Canister Size: 3 liter
Flow Controller ID: 4338
Sample Type: 30 min

Work Order: 22J2680
Initial Vacuum(in Hg): -29
Final Vacuum(in Hg): -3
Receipt Vacuum(in Hg): -3.5
Flow Controller Type: Fixed-Orifice
Flow Controller Calibration
RPD Pre and Post-Sampling:

EPA TO-15

Analyte	ppbv Results	ppbv RL	Flag/Qual	ug/m3 Results	ug/m3 RL	Dilution	Date/Time Analyzed	Analyst
Hexane	ND	8.0		ND	28	4	10/24/22 17:16	CMR
2-Hexanone (MBK)	ND	0.20		ND	0.82	4	10/24/22 17:16	CMR
Isopropanol	ND	8.0		ND	20	4	10/24/22 17:16	CMR
Methyl tert-Butyl Ether (MTBE)	ND	0.20		ND	0.72	4	10/24/22 17:16	CMR
Methylene Chloride	ND	2.0		ND	6.9	4	10/24/22 17:16	CMR
4-Methyl-2-pentanone (MIBK)	ND	0.20		ND	0.82	4	10/24/22 17:16	CMR
Naphthalene	ND	0.20	L-03	ND	1.0	4	10/24/22 17:16	CMR
Propene	ND	8.0		ND	14	4	10/24/22 17:16	CMR
Styrene	ND	0.20		ND	0.85	4	10/24/22 17:16	CMR
1,1,2,2-Tetrachloroethane	ND	0.20		ND	1.4	4	10/24/22 17:16	CMR
Tetrachloroethylene	ND	0.20		ND	1.4	4	10/24/22 17:16	CMR
Tetrahydrofuran	3.6	2.0		10	5.9	4	10/24/22 17:16	CMR
Toluene	0.65	0.20		2.4	0.75	4	10/24/22 17:16	CMR
1,2,4-Trichlorobenzene	ND	0.20	L-03	ND	1.5	4	10/24/22 17:16	CMR
1,1,1-Trichloroethane	ND	0.20		ND	1.1	4	10/24/22 17:16	CMR
1,1,2-Trichloroethane	ND	0.20		ND	1.1	4	10/24/22 17:16	CMR
Trichloroethylene	ND	0.20		ND	1.1	4	10/24/22 17:16	CMR
Trichlorofluoromethane (Freon 11)	ND	0.80	L-05	ND	4.5	4	10/24/22 17:16	CMR
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.80		ND	6.1	4	10/24/22 17:16	CMR
1,2,4-Trimethylbenzene	0.38	0.20		1.9	0.98	4	10/24/22 17:16	CMR
1,3,5-Trimethylbenzene	ND	0.20		ND	0.98	4	10/24/22 17:16	CMR
Vinyl Acetate	ND	4.0	V-05, L-03	ND	14	4	10/24/22 17:16	CMR
Vinyl Chloride	ND	0.20		ND	0.51	4	10/24/22 17:16	CMR
m&p-Xylene	ND	0.40		ND	1.7	4	10/24/22 17:16	CMR
o-Xylene	ND	0.20		ND	0.87	4	10/24/22 17:16	CMR

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	89.9	70-130	10/24/22 17:16

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ANALYTICAL RESULTS

Project Location: Barre, VT
Date Received: 10/19/2022
Field Sample #: SV-2
Sample ID: 22J2680-02
Sample Matrix: Sub Slab
Sampled: 10/17/2022 13:00

Sample Description/Location:
Sub Description/Location:
Canister ID: 2399
Canister Size: 3 liter
Flow Controller ID: 4139
Sample Type: 30 min

Work Order: 22J2680
Initial Vacuum(in Hg): -30
Final Vacuum(in Hg): -2.5
Receipt Vacuum(in Hg): -2.7
Flow Controller Type: Fixed-Orifice
Flow Controller Calibration
RPD Pre and Post-Sampling:

EPA TO-15

	ppbv			ug/m3			Date/Time	
Analyte	**Results**	**RL**	**Flag/Qual**	**Results**	**RL**	**Dilution**	**Analyzed**	**Analyst**
Acetone	ND	8.0		ND	19	4	10/24/22 17:44	CMR
Benzene	ND	0.20		ND	0.64	4	10/24/22 17:44	CMR
Benzyl chloride	ND	0.40		ND	2.1	4	10/24/22 17:44	CMR
Bromodichloromethane	ND	0.20		ND	1.3	4	10/24/22 17:44	CMR
Bromoform	ND	0.20		ND	2.1	4	10/24/22 17:44	CMR
Bromomethane	ND	0.20		ND	0.78	4	10/24/22 17:44	CMR
1,3-Butadiene	0.77	0.20		1.7	0.44	4	10/24/22 17:44	CMR
2-Butanone (MEK)	ND	8.0		ND	24	4	10/24/22 17:44	CMR
Carbon Disulfide	ND	2.0		ND	6.2	4	10/24/22 17:44	CMR
Carbon Tetrachloride	ND	0.20		ND	1.3	4	10/24/22 17:44	CMR
Chlorobenzene	ND	0.20		ND	0.92	4	10/24/22 17:44	CMR
Chloroethane	ND	0.20		ND	0.53	4	10/24/22 17:44	CMR
Chloroform	ND	0.20		ND	0.98	4	10/24/22 17:44	CMR
Chloromethane	ND	0.40		ND	0.83	4	10/24/22 17:44	CMR
Cyclohexane	ND	0.20		ND	0.69	4	10/24/22 17:44	CMR
Dibromochloromethane	ND	0.20		ND	1.7	4	10/24/22 17:44	CMR
1,2-Dibromoethane (EDB)	ND	0.20		ND	1.5	4	10/24/22 17:44	CMR
1,2-Dichlorobenzene	ND	0.20		ND	1.2	4	10/24/22 17:44	CMR
1,3-Dichlorobenzene	ND	0.20		ND	1.2	4	10/24/22 17:44	CMR
1,4-Dichlorobenzene	ND	0.20		ND	1.2	4	10/24/22 17:44	CMR
Dichlorodifluoromethane (Freon 12)	3.3	0.20		16	0.99	4	10/24/22 17:44	CMR
1,1-Dichloroethane	ND	0.20		ND	0.81	4	10/24/22 17:44	CMR
1,2-Dichloroethane	ND	0.20		ND	0.81	4	10/24/22 17:44	CMR
1,1-Dichloroethylene	ND	0.20		ND	0.79	4	10/24/22 17:44	CMR
cis-1,2-Dichloroethylene	ND	0.20		ND	0.79	4	10/24/22 17:44	CMR
trans-1,2-Dichloroethylene	ND	0.20		ND	0.79	4	10/24/22 17:44	CMR
1,2-Dichloropropane	ND	0.20		ND	0.92	4	10/24/22 17:44	CMR
cis-1,3-Dichloropropene	ND	0.20		ND	0.91	4	10/24/22 17:44	CMR
trans-1,3-Dichloropropene	ND	0.20		ND	0.91	4	10/24/22 17:44	CMR
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	ND	0.20		ND	1.4	4	10/24/22 17:44	CMR
1,4-Dioxane	ND	2.0		ND	7.2	4	10/24/22 17:44	CMR
Ethanol	ND	8.0		ND	15	4	10/24/22 17:44	CMR
Ethyl Acetate	ND	2.0		ND	7.2	4	10/24/22 17:44	CMR
Ethylbenzene	ND	0.20		ND	0.87	4	10/24/22 17:44	CMR
4-Ethyltoluene	ND	0.20		ND	0.98	4	10/24/22 17:44	CMR
Heptane	ND	0.20		ND	0.82	4	10/24/22 17:44	CMR
Hexachlorobutadiene	ND	0.20	L-03	ND	2.1	4	10/24/22 17:44	CMR

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ANALYTICAL RESULTS

Project Location: Barre, VT
Date Received: 10/19/2022
Field Sample #: SV-2
Sample ID: 22J2680-02
Sample Matrix: Sub Slab
Sampled: 10/17/2022 13:00

Sample Description/Location:
Sub Description/Location:
Canister ID: 2399
Canister Size: 3 liter
Flow Controller ID: 4139
Sample Type: 30 min

Work Order: 22J2680
Initial Vacuum(in Hg): -30
Final Vacuum(in Hg): -2.5
Receipt Vacuum(in Hg): -2.7
Flow Controller Type: Fixed-Orifice
Flow Controller Calibration
RPD Pre and Post-Sampling:

EPA TO-15

	ppbv			ug/m3			Date/Time	
Analyte	**Results**	**RL**	**Flag/Qual**	**Results**	**RL**	**Dilution**	**Analyzed**	**Analyst**
Hexane	ND	8.0		ND	28	4	10/24/22 17:44	CMR
2-Hexanone (MBK)	ND	0.20		ND	0.82	4	10/24/22 17:44	CMR
Isopropanol	ND	8.0		ND	20	4	10/24/22 17:44	CMR
Methyl tert-Butyl Ether (MTBE)	ND	0.20		ND	0.72	4	10/24/22 17:44	CMR
Methylene Chloride	ND	2.0		ND	6.9	4	10/24/22 17:44	CMR
4-Methyl-2-pentanone (MIBK)	ND	0.20		ND	0.82	4	10/24/22 17:44	CMR
Naphthalene	ND	0.20	L-03	ND	1.0	4	10/24/22 17:44	CMR
Propene	ND	8.0		ND	14	4	10/24/22 17:44	CMR
Styrene	ND	0.20		ND	0.85	4	10/24/22 17:44	CMR
1,1,2,2-Tetrachloroethane	ND	0.20		ND	1.4	4	10/24/22 17:44	CMR
Tetrachloroethylene	0.98	0.20		6.6	1.4	4	10/24/22 17:44	CMR
Tetrahydrofuran	ND	2.0		ND	5.9	4	10/24/22 17:44	CMR
Toluene	0.21	0.20		0.80	0.75	4	10/24/22 17:44	CMR
1,2,4-Trichlorobenzene	ND	0.20	L-03	ND	1.5	4	10/24/22 17:44	CMR
1,1,1-Trichloroethane	ND	0.20		ND	1.1	4	10/24/22 17:44	CMR
1,1,2-Trichloroethane	ND	0.20		ND	1.1	4	10/24/22 17:44	CMR
Trichloroethylene	ND	0.20		ND	1.1	4	10/24/22 17:44	CMR
Trichlorofluoromethane (Freon 11)	ND	0.80		ND	4.5	4	10/24/22 17:44	CMR
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.80		ND	6.1	4	10/24/22 17:44	CMR
1,2,4-Trimethylbenzene	ND	0.20		ND	0.98	4	10/24/22 17:44	CMR
1,3,5-Trimethylbenzene	ND	0.20		ND	0.98	4	10/24/22 17:44	CMR
Vinyl Acetate	ND	4.0	L-03, V-05	ND	14	4	10/24/22 17:44	CMR
Vinyl Chloride	ND	0.20		ND	0.51	4	10/24/22 17:44	CMR
m&p-Xylene	ND	0.40		ND	1.7	4	10/24/22 17:44	CMR
o-Xylene	ND	0.20		ND	0.87	4	10/24/22 17:44	CMR

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	89.6	70-130	10/24/22 17:44

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ANALYTICAL RESULTS

Project Location: Barre, VT
Date Received: 10/19/2022
Field Sample #: SV-3
Sample ID: 22J2680-03
Sample Matrix: Sub Slab
Sampled: 10/17/2022 12:33

Sample Description/Location:
Sub Description/Location:
Canister ID: 2587
Canister Size: 3 liter
Flow Controller ID: 4319
Sample Type: 30 min

Work Order: 22J2680
Initial Vacuum(in Hg): -30
Final Vacuum(in Hg): -3
Receipt Vacuum(in Hg): -1.6
Flow Controller Type: Fixed-Orifice
Flow Controller Calibration
RPD Pre and Post-Sampling:

EPA TO-15

	ppbv			ug/m3			Date/Time	
Analyte	**Results**	**RL**	**Flag/Qual**	**Results**	**RL**	**Dilution**	**Analyzed**	**Analyst**
Acetone	ND	8.0		ND	19	4	10/27/22 20:37	CMR
Benzene	ND	0.20		ND	0.64	4	10/27/22 20:37	CMR
Benzyl chloride	ND	0.20		ND	1.0	4	10/27/22 20:37	CMR
Bromodichloromethane	ND	0.20		ND	1.3	4	10/27/22 20:37	CMR
Bromoform	ND	0.20		ND	2.1	4	10/27/22 20:37	CMR
Bromomethane	ND	0.20		ND	0.78	4	10/27/22 20:37	CMR
1,3-Butadiene	0.30	0.20		0.66	0.44	4	10/27/22 20:37	CMR
2-Butanone (MEK)	ND	8.0		ND	24	4	10/27/22 20:37	CMR
Carbon Disulfide	ND	2.0		ND	6.2	4	10/27/22 20:37	CMR
Carbon Tetrachloride	ND	0.20		ND	1.3	4	10/27/22 20:37	CMR
Chlorobenzene	ND	0.20		ND	0.92	4	10/27/22 20:37	CMR
Chloroethane	ND	0.20		ND	0.53	4	10/27/22 20:37	CMR
Chloroform	0.74	0.20		3.6	0.98	4	10/27/22 20:37	CMR
Chloromethane	ND	0.40		ND	0.83	4	10/27/22 20:37	CMR
Cyclohexane	ND	0.20		ND	0.69	4	10/27/22 20:37	CMR
Dibromochloromethane	ND	0.20		ND	1.7	4	10/27/22 20:37	CMR
1,2-Dibromoethane (EDB)	ND	0.20		ND	1.5	4	10/27/22 20:37	CMR
1,2-Dichlorobenzene	ND	0.20		ND	1.2	4	10/27/22 20:37	CMR
1,3-Dichlorobenzene	ND	0.20		ND	1.2	4	10/27/22 20:37	CMR
1,4-Dichlorobenzene	ND	0.20		ND	1.2	4	10/27/22 20:37	CMR
Dichlorodifluoromethane (Freon 12)	0.72	0.20		3.6	0.99	4	10/27/22 20:37	CMR
1,1-Dichloroethane	ND	0.20		ND	0.81	4	10/27/22 20:37	CMR
1,2-Dichloroethane	ND	0.20		ND	0.81	4	10/27/22 20:37	CMR
1,1-Dichloroethylene	ND	0.20		ND	0.79	4	10/27/22 20:37	CMR
cis-1,2-Dichloroethylene	ND	0.20		ND	0.79	4	10/27/22 20:37	CMR
trans-1,2-Dichloroethylene	ND	0.20		ND	0.79	4	10/27/22 20:37	CMR
1,2-Dichloropropane	ND	0.20		ND	0.92	4	10/27/22 20:37	CMR
cis-1,3-Dichloropropene	ND	0.20		ND	0.91	4	10/27/22 20:37	CMR
trans-1,3-Dichloropropene	ND	0.20		ND	0.91	4	10/27/22 20:37	CMR
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	ND	0.20	L-03	ND	1.4	4	10/27/22 20:37	CMR
1,4-Dioxane	ND	2.0		ND	7.2	4	10/27/22 20:37	CMR
Ethanol	ND	8.0		ND	15	4	10/27/22 20:37	CMR
Ethyl Acetate	ND	2.0		ND	7.2	4	10/27/22 20:37	CMR
Ethylbenzene	ND	0.20		ND	0.87	4	10/27/22 20:37	CMR
4-Ethyltoluene	ND	0.20		ND	0.98	4	10/27/22 20:37	CMR
Heptane	ND	0.20		ND	0.82	4	10/27/22 20:37	CMR
Hexachlorobutadiene	ND	0.20	L-03	ND	2.1	4	10/27/22 20:37	CMR

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ANALYTICAL RESULTS

Project Location: Barre, VT
Date Received: 10/19/2022
Field Sample #: SV-3
Sample ID: 22J2680-03
Sample Matrix: Sub Slab
Sampled: 10/17/2022 12:33

Sample Description/Location:
Sub Description/Location:
Canister ID: 2587
Canister Size: 3 liter
Flow Controller ID: 4319
Sample Type: 30 min

Work Order: 22J2680
Initial Vacuum(in Hg): -30
Final Vacuum(in Hg): -3
Receipt Vacuum(in Hg): -1.6
Flow Controller Type: Fixed-Orifice
Flow Controller Calibration
RPD Pre and Post-Sampling:

EPA TO-15

Analyte	ppbv Results	ppbv RL	Flag/Qual	ug/m3 Results	ug/m3 RL	Dilution	Date/Time Analyzed	Analyst
Hexane	ND	8.0		ND	28	4	10/27/22 20:37	CMR
2-Hexanone (MBK)	ND	0.20		ND	0.82	4	10/27/22 20:37	CMR
Isopropanol	ND	8.0	L-03	ND	20	4	10/27/22 20:37	CMR
Methyl tert-Butyl Ether (MTBE)	ND	0.20		ND	0.72	4	10/27/22 20:37	CMR
Methylene Chloride	ND	2.0		ND	6.9	4	10/27/22 20:37	CMR
4-Methyl-2-pentanone (MIBK)	ND	0.20		ND	0.82	4	10/27/22 20:37	CMR
Naphthalene	ND	0.20		ND	1.0	4	10/27/22 20:37	CMR
Propene	ND	8.0		ND	14	4	10/27/22 20:37	CMR
Styrene	ND	0.20		ND	0.85	4	10/27/22 20:37	CMR
1,1,2,2-Tetrachloroethane	ND	0.20		ND	1.4	4	10/27/22 20:37	CMR
Tetrachloroethylene	ND	0.20		ND	1.4	4	10/27/22 20:37	CMR
Tetrahydrofuran	ND	2.0		ND	5.9	4	10/27/22 20:37	CMR
Toluene	ND	0.20		ND	0.75	4	10/27/22 20:37	CMR
1,2,4-Trichlorobenzene	ND	0.20		ND	1.5	4	10/27/22 20:37	CMR
1,1,1-Trichloroethane	ND	0.20		ND	1.1	4	10/27/22 20:37	CMR
1,1,2-Trichloroethane	ND	0.20		ND	1.1	4	10/27/22 20:37	CMR
Trichloroethylene	ND	0.20		ND	1.1	4	10/27/22 20:37	CMR
Trichlorofluoromethane (Freon 11)	ND	0.80		ND	4.5	4	10/27/22 20:37	CMR
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.80	L-03	ND	6.1	4	10/27/22 20:37	CMR
1,2,4-Trimethylbenzene	ND	0.20		ND	0.98	4	10/27/22 20:37	CMR
1,3,5-Trimethylbenzene	ND	0.20		ND	0.98	4	10/27/22 20:37	CMR
Vinyl Acetate	ND	4.0		ND	14	4	10/27/22 20:37	CMR
Vinyl Chloride	ND	0.20		ND	0.51	4	10/27/22 20:37	CMR
m&p-Xylene	ND	0.40		ND	1.7	4	10/27/22 20:37	CMR
o-Xylene	ND	0.20		ND	0.87	4	10/27/22 20:37	CMR

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	96.8	70-130	10/27/22 20:37

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ANALYTICAL RESULTS

Project Location: Barre, VT
Date Received: 10/19/2022
Field Sample #: SV-4
Sample ID: 22J2680-04
Sample Matrix: Sub Slab
Sampled: 10/17/2022 11:42

Sample Description/Location:
Sub Description/Location:
Canister ID: 2352
Canister Size: 3 liter
Flow Controller ID: 4245
Sample Type: 30 min

Work Order: 22J2680
Initial Vacuum(in Hg): -26
Final Vacuum(in Hg): -3
Receipt Vacuum(in Hg): -2.2
Flow Controller Type: Fixed-Orifice
Flow Controller Calibration
RPD Pre and Post-Sampling:

EPA TO-15

	ppbv			ug/m3			Date/Time	
Analyte	**Results**	**RL**	**Flag/Qual**	**Results**	**RL**	**Dilution**	**Analyzed**	**Analyst**
Acetone	ND	8.0		ND	19	4	10/24/22 18:42	CMR
Benzene	0.31	0.20		0.98	0.64	4	10/24/22 18:42	CMR
Benzyl chloride	ND	0.40		ND	2.1	4	10/24/22 18:42	CMR
Bromodichloromethane	ND	0.20		ND	1.3	4	10/24/22 18:42	CMR
Bromoform	ND	0.20		ND	2.1	4	10/24/22 18:42	CMR
Bromomethane	ND	0.20		ND	0.78	4	10/24/22 18:42	CMR
1,3-Butadiene	1.4	0.20		3.0	0.44	4	10/24/22 18:42	CMR
2-Butanone (MEK)	ND	8.0		ND	24	4	10/24/22 18:42	CMR
Carbon Disulfide	ND	2.0		ND	6.2	4	10/24/22 18:42	CMR
Carbon Tetrachloride	ND	0.20		ND	1.3	4	10/24/22 18:42	CMR
Chlorobenzene	ND	0.20		ND	0.92	4	10/24/22 18:42	CMR
Chloroethane	ND	0.20		ND	0.53	4	10/24/22 18:42	CMR
Chloroform	0.72	0.20		3.5	0.98	4	10/24/22 18:42	CMR
Chloromethane	ND	0.40		ND	0.83	4	10/24/22 18:42	CMR
Cyclohexane	ND	0.20		ND	0.69	4	10/24/22 18:42	CMR
Dibromochloromethane	ND	0.20		ND	1.7	4	10/24/22 18:42	CMR
1,2-Dibromoethane (EDB)	ND	0.20		ND	1.5	4	10/24/22 18:42	CMR
1,2-Dichlorobenzene	ND	0.20		ND	1.2	4	10/24/22 18:42	CMR
1,3-Dichlorobenzene	ND	0.20		ND	1.2	4	10/24/22 18:42	CMR
1,4-Dichlorobenzene	ND	0.20		ND	1.2	4	10/24/22 18:42	CMR
Dichlorodifluoromethane (Freon 12)	1.9	0.20		9.4	0.99	4	10/24/22 18:42	CMR
1,1-Dichloroethane	ND	0.20		ND	0.81	4	10/24/22 18:42	CMR
1,2-Dichloroethane	ND	0.20		ND	0.81	4	10/24/22 18:42	CMR
1,1-Dichloroethylene	ND	0.20		ND	0.79	4	10/24/22 18:42	CMR
cis-1,2-Dichloroethylene	ND	0.20		ND	0.79	4	10/24/22 18:42	CMR
trans-1,2-Dichloroethylene	ND	0.20		ND	0.79	4	10/24/22 18:42	CMR
1,2-Dichloropropane	ND	0.20		ND	0.92	4	10/24/22 18:42	CMR
cis-1,3-Dichloropropene	ND	0.20		ND	0.91	4	10/24/22 18:42	CMR
trans-1,3-Dichloropropene	ND	0.20		ND	0.91	4	10/24/22 18:42	CMR
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	ND	0.20		ND	1.4	4	10/24/22 18:42	CMR
1,4-Dioxane	ND	2.0		ND	7.2	4	10/24/22 18:42	CMR
Ethanol	ND	8.0		ND	15	4	10/24/22 18:42	CMR
Ethyl Acetate	ND	2.0		ND	7.2	4	10/24/22 18:42	CMR
Ethylbenzene	ND	0.20		ND	0.87	4	10/24/22 18:42	CMR
4-Ethyltoluene	ND	0.20		ND	0.98	4	10/24/22 18:42	CMR
Heptane	ND	0.20		ND	0.82	4	10/24/22 18:42	CMR
Hexachlorobutadiene	ND	0.20	L-03	ND	2.1	4	10/24/22 18:42	CMR

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ANALYTICAL RESULTS

Project Location: Barre, VT
Date Received: 10/19/2022
Field Sample #: SV-4
Sample ID: 22J2680-04
Sample Matrix: Sub Slab
Sampled: 10/17/2022 11:42

Sample Description/Location:
Sub Description/Location:
Canister ID: 2352
Canister Size: 3 liter
Flow Controller ID: 4245
Sample Type: 30 min

Work Order: 22J2680
Initial Vacuum(in Hg): -26
Final Vacuum(in Hg): -3
Receipt Vacuum(in Hg): -2.2
Flow Controller Type: Fixed-Orifice
Flow Controller Calibration
RPD Pre and Post-Sampling:

EPA TO-15

	ppbv			ug/m3			Date/Time	
Analyte	**Results**	**RL**	**Flag/Qual**	**Results**	**RL**	**Dilution**	**Analyzed**	**Analyst**
Hexane	ND	8.0		ND	28	4	10/24/22 18:42	CMR
2-Hexanone (MBK)	ND	0.20		ND	0.82	4	10/24/22 18:42	CMR
Isopropanol	ND	8.0		ND	20	4	10/24/22 18:42	CMR
Methyl tert-Butyl Ether (MTBE)	ND	0.20		ND	0.72	4	10/24/22 18:42	CMR
Methylene Chloride	ND	2.0		ND	6.9	4	10/24/22 18:42	CMR
4-Methyl-2-pentanone (MIBK)	ND	0.20		ND	0.82	4	10/24/22 18:42	CMR
Naphthalene	ND	0.20	L-03	ND	1.0	4	10/24/22 18:42	CMR
Propene	12	8.0		21	14	4	10/24/22 18:42	CMR
Styrene	ND	0.20		ND	0.85	4	10/24/22 18:42	CMR
1,1,2,2-Tetrachloroethane	ND	0.20		ND	1.4	4	10/24/22 18:42	CMR
Tetrachloroethylene	ND	0.20		ND	1.4	4	10/24/22 18:42	CMR
Tetrahydrofuran	ND	2.0		ND	5.9	4	10/24/22 18:42	CMR
Toluene	0.37	0.20		1.4	0.75	4	10/24/22 18:42	CMR
1,2,4-Trichlorobenzene	ND	0.20	L-03	ND	1.5	4	10/24/22 18:42	CMR
1,1,1-Trichloroethane	ND	0.20		ND	1.1	4	10/24/22 18:42	CMR
1,1,2-Trichloroethane	ND	0.20		ND	1.1	4	10/24/22 18:42	CMR
Trichloroethylene	ND	0.20		ND	1.1	4	10/24/22 18:42	CMR
Trichlorofluoromethane (Freon 11)	ND	0.80	L-05	ND	4.5	4	10/24/22 18:42	CMR
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.80		ND	6.1	4	10/24/22 18:42	CMR
1,2,4-Trimethylbenzene	ND	0.20		ND	0.98	4	10/24/22 18:42	CMR
1,3,5-Trimethylbenzene	ND	0.20		ND	0.98	4	10/24/22 18:42	CMR
Vinyl Acetate	ND	4.0	L-03, V-05	ND	14	4	10/24/22 18:42	CMR
Vinyl Chloride	ND	0.20		ND	0.51	4	10/24/22 18:42	CMR
m&p-Xylene	ND	0.40		ND	1.7	4	10/24/22 18:42	CMR
o-Xylene	ND	0.20		ND	0.87	4	10/24/22 18:42	CMR

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	89.0	70-130	10/24/22 18:42

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ANALYTICAL RESULTS

Project Location: Barre, VT
Date Received: 10/19/2022
Field Sample #: SV-4-FD
Sample ID: 22J2680-05
Sample Matrix: Sub Slab
Sampled: 10/17/2022 11:40

Sample Description/Location:
Sub Description/Location:
Canister ID: 2745
Canister Size: 3 liter
Flow Controller ID: 4247
Sample Type: 30 min

Work Order: 22J2680
Initial Vacuum(in Hg): -27
Final Vacuum(in Hg): -3
Receipt Vacuum(in Hg): -2.1
Flow Controller Type: Fixed-Orifice
Flow Controller Calibration
RPD Pre and Post-Sampling:

EPA TO-15

	ppbv			ug/m3			Date/Time	
Analyte	**Results**	**RL**	**Flag/Qual**	**Results**	**RL**	**Dilution**	**Analyzed**	**Analyst**
Acetone	ND	8.0		ND	19	4	10/27/22 21:18	CMR
Benzene	0.29	0.20		0.93	0.64	4	10/27/22 21:18	CMR
Benzyl chloride	ND	0.20		ND	1.0	4	10/27/22 21:18	CMR
Bromodichloromethane	ND	0.20		ND	1.3	4	10/27/22 21:18	CMR
Bromoform	ND	0.20		ND	2.1	4	10/27/22 21:18	CMR
Bromomethane	ND	0.20		ND	0.78	4	10/27/22 21:18	CMR
1,3-Butadiene	0.71	0.20		1.6	0.44	4	10/27/22 21:18	CMR
2-Butanone (MEK)	ND	8.0		ND	24	4	10/27/22 21:18	CMR
Carbon Disulfide	ND	2.0		ND	6.2	4	10/27/22 21:18	CMR
Carbon Tetrachloride	ND	0.20		ND	1.3	4	10/27/22 21:18	CMR
Chlorobenzene	ND	0.20		ND	0.92	4	10/27/22 21:18	CMR
Chloroethane	ND	0.20		ND	0.53	4	10/27/22 21:18	CMR
Chloroform	0.44	0.20		2.2	0.98	4	10/27/22 21:18	CMR
Chloromethane	ND	0.40		ND	0.83	4	10/27/22 21:18	CMR
Cyclohexane	ND	0.20		ND	0.69	4	10/27/22 21:18	CMR
Dibromochloromethane	ND	0.20		ND	1.7	4	10/27/22 21:18	CMR
1,2-Dibromoethane (EDB)	ND	0.20		ND	1.5	4	10/27/22 21:18	CMR
1,2-Dichlorobenzene	ND	0.20		ND	1.2	4	10/27/22 21:18	CMR
1,3-Dichlorobenzene	ND	0.20		ND	1.2	4	10/27/22 21:18	CMR
1,4-Dichlorobenzene	ND	0.20		ND	1.2	4	10/27/22 21:18	CMR
Dichlorodifluoromethane (Freon 12)	1.2	0.20		5.9	0.99	4	10/27/22 21:18	CMR
1,1-Dichloroethane	ND	0.20		ND	0.81	4	10/27/22 21:18	CMR
1,2-Dichloroethane	ND	0.20		ND	0.81	4	10/27/22 21:18	CMR
1,1-Dichloroethylene	ND	0.20		ND	0.79	4	10/27/22 21:18	CMR
cis-1,2-Dichloroethylene	ND	0.20		ND	0.79	4	10/27/22 21:18	CMR
trans-1,2-Dichloroethylene	ND	0.20		ND	0.79	4	10/27/22 21:18	CMR
1,2-Dichloropropane	ND	0.20		ND	0.92	4	10/27/22 21:18	CMR
cis-1,3-Dichloropropene	ND	0.20		ND	0.91	4	10/27/22 21:18	CMR
trans-1,3-Dichloropropene	ND	0.20		ND	0.91	4	10/27/22 21:18	CMR
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	ND	0.20	L-03	ND	1.4	4	10/27/22 21:18	CMR
1,4-Dioxane	ND	2.0		ND	7.2	4	10/27/22 21:18	CMR
Ethanol	ND	8.0		ND	15	4	10/27/22 21:18	CMR
Ethyl Acetate	ND	2.0		ND	7.2	4	10/27/22 21:18	CMR
Ethylbenzene	ND	0.20		ND	0.87	4	10/27/22 21:18	CMR
4-Ethyltoluene	ND	0.20		ND	0.98	4	10/27/22 21:18	CMR
Heptane	ND	0.20		ND	0.82	4	10/27/22 21:18	CMR
Hexachlorobutadiene	ND	0.20	L-03	ND	2.1	4	10/27/22 21:18	CMR

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ANALYTICAL RESULTS

Project Location: Barre, VT
Date Received: 10/19/2022
Field Sample #: SV-4-FD
Sample ID: 22J2680-05
Sample Matrix: Sub Slab
Sampled: 10/17/2022 11:40

Sample Description/Location:
Sub Description/Location:
Canister ID: 2745
Canister Size: 3 liter
Flow Controller ID: 4247
Sample Type: 30 min

Work Order: 22J2680
Initial Vacuum(in Hg): -27
Final Vacuum(in Hg): -3
Receipt Vacuum(in Hg): -2.1
Flow Controller Type: Fixed-Orifice
Flow Controller Calibration
RPD Pre and Post-Sampling:

EPA TO-15

	ppbv			ug/m3			Date/Time	
Analyte	**Results**	**RL**	**Flag/Qual**	**Results**	**RL**	**Dilution**	**Analyzed**	**Analyst**
Hexane	ND	8.0		ND	28	4	10/27/22 21:18	CMR
2-Hexanone (MBK)	ND	0.20		ND	0.82	4	10/27/22 21:18	CMR
Isopropanol	ND	8.0	L-03	ND	20	4	10/27/22 21:18	CMR
Methyl tert-Butyl Ether (MTBE)	ND	0.20		ND	0.72	4	10/27/22 21:18	CMR
Methylene Chloride	ND	2.0		ND	6.9	4	10/27/22 21:18	CMR
4-Methyl-2-pentanone (MIBK)	ND	0.20		ND	0.82	4	10/27/22 21:18	CMR
Naphthalene	0.22	0.20	L-05	1.1	1.0	4	10/27/22 21:18	CMR
Propene	10	8.0		17	14	4	10/27/22 21:18	CMR
Styrene	ND	0.20		ND	0.85	4	10/27/22 21:18	CMR
1,1,2,2-Tetrachloroethane	ND	0.20		ND	1.4	4	10/27/22 21:18	CMR
Tetrachloroethylene	ND	0.20		ND	1.4	4	10/27/22 21:18	CMR
Tetrahydrofuran	ND	2.0		ND	5.9	4	10/27/22 21:18	CMR
Toluene	0.26	0.20		0.98	0.75	4	10/27/22 21:18	CMR
1,2,4-Trichlorobenzene	ND	0.20		ND	1.5	4	10/27/22 21:18	CMR
1,1,1-Trichloroethane	ND	0.20		ND	1.1	4	10/27/22 21:18	CMR
1,1,2-Trichloroethane	ND	0.20		ND	1.1	4	10/27/22 21:18	CMR
Trichloroethylene	ND	0.20		ND	1.1	4	10/27/22 21:18	CMR
Trichlorofluoromethane (Freon 11)	ND	0.80		ND	4.5	4	10/27/22 21:18	CMR
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.80	L-03	ND	6.1	4	10/27/22 21:18	CMR
1,2,4-Trimethylbenzene	ND	0.20		ND	0.98	4	10/27/22 21:18	CMR
1,3,5-Trimethylbenzene	ND	0.20		ND	0.98	4	10/27/22 21:18	CMR
Vinyl Acetate	ND	4.0		ND	14	4	10/27/22 21:18	CMR
Vinyl Chloride	ND	0.20		ND	0.51	4	10/27/22 21:18	CMR
m&p-Xylene	ND	0.40		ND	1.7	4	10/27/22 21:18	CMR
o-Xylene	ND	0.20		ND	0.87	4	10/27/22 21:18	CMR

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	95.4	70-130	10/27/22 21:18

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ANALYTICAL RESULTS

Project Location: Barre, VT
Date Received: 10/19/2022
Field Sample #: SV-5
Sample ID: 22J2680-06
Sample Matrix: Sub Slab
Sampled: 10/17/2022 10:52

Sample Description/Location:
Sub Description/Location:
Canister ID: 2393
Canister Size: 3 liter
Flow Controller ID: 4122
Sample Type: 30 min

Work Order: 22J2680
Initial Vacuum(in Hg): -29
Final Vacuum(in Hg): -3
Receipt Vacuum(in Hg): -0.4
Flow Controller Type: Fixed-Orifice
Flow Controller Calibration
RPD Pre and Post-Sampling:

EPA TO-15

	ppbv			ug/m3			Date/Time	
Analyte	**Results**	**RL**	**Flag/Qual**	**Results**	**RL**	**Dilution**	**Analyzed**	**Analyst**
Acetone	20	8.0		48	19	4	10/27/22 21:58	CMR
Benzene	0.49	0.20		1.6	0.64	4	10/27/22 21:58	CMR
Benzyl chloride	ND	0.20		ND	1.0	4	10/27/22 21:58	CMR
Bromodichloromethane	ND	0.20		ND	1.3	4	10/27/22 21:58	CMR
Bromoform	ND	0.20		ND	2.1	4	10/27/22 21:58	CMR
Bromomethane	ND	0.20		ND	0.78	4	10/27/22 21:58	CMR
1,3-Butadiene	1.7	0.20		3.8	0.44	4	10/27/22 21:58	CMR
2-Butanone (MEK)	ND	8.0		ND	24	4	10/27/22 21:58	CMR
Carbon Disulfide	ND	2.0		ND	6.2	4	10/27/22 21:58	CMR
Carbon Tetrachloride	ND	0.20		ND	1.3	4	10/27/22 21:58	CMR
Chlorobenzene	ND	0.20		ND	0.92	4	10/27/22 21:58	CMR
Chloroethane	ND	0.20		ND	0.53	4	10/27/22 21:58	CMR
Chloroform	0.35	0.20		1.7	0.98	4	10/27/22 21:58	CMR
Chloromethane	ND	0.40		ND	0.83	4	10/27/22 21:58	CMR
Cyclohexane	0.20	0.20		0.69	0.69	4	10/27/22 21:58	CMR
Dibromochloromethane	ND	0.20		ND	1.7	4	10/27/22 21:58	CMR
1,2-Dibromoethane (EDB)	ND	0.20		ND	1.5	4	10/27/22 21:58	CMR
1,2-Dichlorobenzene	ND	0.20		ND	1.2	4	10/27/22 21:58	CMR
1,3-Dichlorobenzene	ND	0.20		ND	1.2	4	10/27/22 21:58	CMR
1,4-Dichlorobenzene	ND	0.20		ND	1.2	4	10/27/22 21:58	CMR
Dichlorodifluoromethane (Freon 12)	4.4	0.20		22	0.99	4	10/27/22 21:58	CMR
1,1-Dichloroethane	ND	0.20		ND	0.81	4	10/27/22 21:58	CMR
1,2-Dichloroethane	ND	0.20		ND	0.81	4	10/27/22 21:58	CMR
1,1-Dichloroethylene	ND	0.20		ND	0.79	4	10/27/22 21:58	CMR
cis-1,2-Dichloroethylene	ND	0.20		ND	0.79	4	10/27/22 21:58	CMR
trans-1,2-Dichloroethylene	ND	0.20		ND	0.79	4	10/27/22 21:58	CMR
1,2-Dichloropropane	ND	0.20		ND	0.92	4	10/27/22 21:58	CMR
cis-1,3-Dichloropropene	ND	0.20		ND	0.91	4	10/27/22 21:58	CMR
trans-1,3-Dichloropropene	ND	0.20		ND	0.91	4	10/27/22 21:58	CMR
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	ND	0.20	L-03	ND	1.4	4	10/27/22 21:58	CMR
1,4-Dioxane	ND	2.0		ND	7.2	4	10/27/22 21:58	CMR
Ethanol	10	8.0		19	15	4	10/27/22 21:58	CMR
Ethyl Acetate	ND	2.0		ND	7.2	4	10/27/22 21:58	CMR
Ethylbenzene	ND	0.20		ND	0.87	4	10/27/22 21:58	CMR
4-Ethyltoluene	ND	0.20		ND	0.98	4	10/27/22 21:58	CMR
Heptane	0.49	0.20		2.0	0.82	4	10/27/22 21:58	CMR
Hexachlorobutadiene	ND	0.20	L-03	ND	2.1	4	10/27/22 21:58	CMR

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ANALYTICAL RESULTS

Project Location: Barre, VT
Date Received: 10/19/2022
Field Sample #: SV-5
Sample ID: 22J2680-06
Sample Matrix: Sub Slab
Sampled: 10/17/2022 10:52

Sample Description/Location:
Sub Description/Location:
Canister ID: 2393
Canister Size: 3 liter
Flow Controller ID: 4122
Sample Type: 30 min

Work Order: 22J2680
Initial Vacuum(in Hg): -29
Final Vacuum(in Hg): -3
Receipt Vacuum(in Hg): -0.4
Flow Controller Type: Fixed-Orifice
Flow Controller Calibration
RPD Pre and Post-Sampling:

EPA TO-15

Analyte	ppbv Results	ppbv RL	Flag/Qual	ug/m3 Results	ug/m3 RL	Dilution	Date/Time Analyzed	Analyst
Hexane	ND	8.0		ND	28	4	10/27/22 21:58	CMR
2-Hexanone (MBK)	ND	0.20		ND	0.82	4	10/27/22 21:58	CMR
Isopropanol	ND	8.0	L-03	ND	20	4	10/27/22 21:58	CMR
Methyl tert-Butyl Ether (MTBE)	ND	0.20		ND	0.72	4	10/27/22 21:58	CMR
Methylene Chloride	ND	2.0		ND	6.9	4	10/27/22 21:58	CMR
4-Methyl-2-pentanone (MIBK)	0.22	0.20		0.92	0.82	4	10/27/22 21:58	CMR
Naphthalene	0.21	0.20	L-05	1.1	1.0	4	10/27/22 21:58	CMR
Propene	25	8.0		42	14	4	10/27/22 21:58	CMR
Styrene	ND	0.20		ND	0.85	4	10/27/22 21:58	CMR
1,1,2,2-Tetrachloroethane	ND	0.20		ND	1.4	4	10/27/22 21:58	CMR
Tetrachloroethylene	ND	0.20		ND	1.4	4	10/27/22 21:58	CMR
Tetrahydrofuran	2.0	2.0		6.0	5.9	4	10/27/22 21:58	CMR
Toluene	2.6	0.20		9.9	0.75	4	10/27/22 21:58	CMR
1,2,4-Trichlorobenzene	ND	0.20		ND	1.5	4	10/27/22 21:58	CMR
1,1,1-Trichloroethane	ND	0.20		ND	1.1	4	10/27/22 21:58	CMR
1,1,2-Trichloroethane	ND	0.20		ND	1.1	4	10/27/22 21:58	CMR
Trichloroethylene	ND	0.20		ND	1.1	4	10/27/22 21:58	CMR
Trichlorofluoromethane (Freon 11)	ND	0.80		ND	4.5	4	10/27/22 21:58	CMR
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.80	L-03	ND	6.1	4	10/27/22 21:58	CMR
1,2,4-Trimethylbenzene	ND	0.20		ND	0.98	4	10/27/22 21:58	CMR
1,3,5-Trimethylbenzene	ND	0.20		ND	0.98	4	10/27/22 21:58	CMR
Vinyl Acetate	ND	4.0		ND	14	4	10/27/22 21:58	CMR
Vinyl Chloride	ND	0.20		ND	0.51	4	10/27/22 21:58	CMR
m&p-Xylene	0.52	0.40		2.2	1.7	4	10/27/22 21:58	CMR
o-Xylene	ND	0.20		ND	0.87	4	10/27/22 21:58	CMR

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	96.8	70-130	10/27/22 21:58

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ANALYTICAL RESULTS

Project Location: Barre, VT
Date Received: 10/19/2022
Field Sample #: SV-6
Sample ID: 22J2680-07
Sample Matrix: Sub Slab
Sampled: 10/17/2022 10:20

Sample Description/Location:
Sub Description/Location:
Canister ID: 2612
Canister Size: 3 liter
Flow Controller ID: 4323
Sample Type: 30 min

Work Order: 22J2680
Initial Vacuum(in Hg): -28
Final Vacuum(in Hg): -3
Receipt Vacuum(in Hg): -2.6
Flow Controller Type: Fixed-Orifice
Flow Controller Calibration
RPD Pre and Post-Sampling:

EPA TO-15

	ppbv			ug/m3			Date/Time	
Analyte	**Results**	**RL**	**Flag/Qual**	**Results**	**RL**	**Dilution**	**Analyzed**	**Analyst**
Acetone	ND	8.0		ND	19	4	10/24/22 20:36	CMR
Benzene	ND	0.20		ND	0.64	4	10/24/22 20:36	CMR
Benzyl chloride	ND	0.40		ND	2.1	4	10/24/22 20:36	CMR
Bromodichloromethane	ND	0.20		ND	1.3	4	10/24/22 20:36	CMR
Bromoform	ND	0.20		ND	2.1	4	10/24/22 20:36	CMR
Bromomethane	ND	0.20		ND	0.78	4	10/24/22 20:36	CMR
1,3-Butadiene	1.6	0.20		3.5	0.44	4	10/24/22 20:36	CMR
2-Butanone (MEK)	ND	8.0		ND	24	4	10/24/22 20:36	CMR
Carbon Disulfide	ND	2.0		ND	6.2	4	10/24/22 20:36	CMR
Carbon Tetrachloride	ND	0.20		ND	1.3	4	10/24/22 20:36	CMR
Chlorobenzene	ND	0.20		ND	0.92	4	10/24/22 20:36	CMR
Chloroethane	ND	0.20		ND	0.53	4	10/24/22 20:36	CMR
Chloroform	ND	0.20		ND	0.98	4	10/24/22 20:36	CMR
Chloromethane	ND	0.40		ND	0.83	4	10/24/22 20:36	CMR
Cyclohexane	ND	0.20		ND	0.69	4	10/24/22 20:36	CMR
Dibromochloromethane	ND	0.20		ND	1.7	4	10/24/22 20:36	CMR
1,2-Dibromoethane (EDB)	ND	0.20		ND	1.5	4	10/24/22 20:36	CMR
1,2-Dichlorobenzene	ND	0.20		ND	1.2	4	10/24/22 20:36	CMR
1,3-Dichlorobenzene	ND	0.20		ND	1.2	4	10/24/22 20:36	CMR
1,4-Dichlorobenzene	ND	0.20		ND	1.2	4	10/24/22 20:36	CMR
Dichlorodifluoromethane (Freon 12)	4.2	0.20		21	0.99	4	10/24/22 20:36	CMR
1,1-Dichloroethane	ND	0.20		ND	0.81	4	10/24/22 20:36	CMR
1,2-Dichloroethane	ND	0.20		ND	0.81	4	10/24/22 20:36	CMR
1,1-Dichloroethylene	ND	0.20		ND	0.79	4	10/24/22 20:36	CMR
cis-1,2-Dichloroethylene	ND	0.20		ND	0.79	4	10/24/22 20:36	CMR
trans-1,2-Dichloroethylene	ND	0.20		ND	0.79	4	10/24/22 20:36	CMR
1,2-Dichloropropane	ND	0.20		ND	0.92	4	10/24/22 20:36	CMR
cis-1,3-Dichloropropene	ND	0.20		ND	0.91	4	10/24/22 20:36	CMR
trans-1,3-Dichloropropene	ND	0.20		ND	0.91	4	10/24/22 20:36	CMR
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	ND	0.20		ND	1.4	4	10/24/22 20:36	CMR
1,4-Dioxane	ND	2.0		ND	7.2	4	10/24/22 20:36	CMR
Ethanol	ND	8.0		ND	15	4	10/24/22 20:36	CMR
Ethyl Acetate	ND	2.0		ND	7.2	4	10/24/22 20:36	CMR
Ethylbenzene	ND	0.20		ND	0.87	4	10/24/22 20:36	CMR
4-Ethyltoluene	ND	0.20		ND	0.98	4	10/24/22 20:36	CMR
Heptane	ND	0.20		ND	0.82	4	10/24/22 20:36	CMR
Hexachlorobutadiene	ND	0.20	L-03	ND	2.1	4	10/24/22 20:36	CMR

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ANALYTICAL RESULTS

Project Location: Barre, VT
Date Received: 10/19/2022
Field Sample #: SV-6
Sample ID: 22J2680-07
Sample Matrix: Sub Slab
Sampled: 10/17/2022 10:20

Sample Description/Location:
Sub Description/Location:
Canister ID: 2612
Canister Size: 3 liter
Flow Controller ID: 4323
Sample Type: 30 min

Work Order: 22J2680
Initial Vacuum(in Hg): -28
Final Vacuum(in Hg): -3
Receipt Vacuum(in Hg): -2.6
Flow Controller Type: Fixed-Orifice
Flow Controller Calibration
RPD Pre and Post-Sampling:

EPA TO-15

	ppbv			ug/m3			Date/Time	
Analyte	**Results**	**RL**	**Flag/Qual**	**Results**	**RL**	**Dilution**	**Analyzed**	**Analyst**
Hexane	ND	8.0		ND	28	4	10/24/22 20:36	CMR
2-Hexanone (MBK)	ND	0.20		ND	0.82	4	10/24/22 20:36	CMR
Isopropanol	ND	8.0		ND	20	4	10/24/22 20:36	CMR
Methyl tert-Butyl Ether (MTBE)	ND	0.20		ND	0.72	4	10/24/22 20:36	CMR
Methylene Chloride	ND	2.0		ND	6.9	4	10/24/22 20:36	CMR
4-Methyl-2-pentanone (MIBK)	ND	0.20		ND	0.82	4	10/24/22 20:36	CMR
Naphthalene	ND	0.20	L-03	ND	1.0	4	10/24/22 20:36	CMR
Propene	18	8.0		31	14	4	10/24/22 20:36	CMR
Styrene	ND	0.20		ND	0.85	4	10/24/22 20:36	CMR
1,1,2,2-Tetrachloroethane	ND	0.20		ND	1.4	4	10/24/22 20:36	CMR
Tetrachloroethylene	ND	0.20		ND	1.4	4	10/24/22 20:36	CMR
Tetrahydrofuran	ND	2.0		ND	5.9	4	10/24/22 20:36	CMR
Toluene	ND	0.20		ND	0.75	4	10/24/22 20:36	CMR
1,2,4-Trichlorobenzene	ND	0.20	L-03	ND	1.5	4	10/24/22 20:36	CMR
1,1,1-Trichloroethane	ND	0.20		ND	1.1	4	10/24/22 20:36	CMR
1,1,2-Trichloroethane	ND	0.20		ND	1.1	4	10/24/22 20:36	CMR
Trichloroethylene	ND	0.20		ND	1.1	4	10/24/22 20:36	CMR
Trichlorofluoromethane (Freon 11)	ND	0.80	L-05	ND	4.5	4	10/24/22 20:36	CMR
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.80		ND	6.1	4	10/24/22 20:36	CMR
1,2,4-Trimethylbenzene	ND	0.20		ND	0.98	4	10/24/22 20:36	CMR
1,3,5-Trimethylbenzene	ND	0.20		ND	0.98	4	10/24/22 20:36	CMR
Vinyl Acetate	ND	4.0	L-03, V-05	ND	14	4	10/24/22 20:36	CMR
Vinyl Chloride	ND	0.20		ND	0.51	4	10/24/22 20:36	CMR
m&p-Xylene	ND	0.40		ND	1.7	4	10/24/22 20:36	CMR
o-Xylene	ND	0.20		ND	0.87	4	10/24/22 20:36	CMR

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	90.0	70-130	10/24/22 20:36

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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
22J2680-01 [SV-1]	B321335	1.5	1	N/A	1000	200	75	10/24/22
22J2680-02 [SV-2]	B321335	1.5	1	N/A	1000	200	75	10/24/22
22J2680-04 [SV-4]	B321335	1.5	1	N/A	1000	200	75	10/24/22
22J2680-07 [SV-6]	B321335	1.5	1	N/A	1000	200	75	10/24/22

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
22J2680-03 [SV-3]	B321473	1.5	1	N/A	1000	400	150	10/27/22
22J2680-05 [SV-4-FD]	B321473	1.5	1	N/A	1000	400	150	10/27/22
22J2680-06 [SV-5]	B321473	1.5	1	N/A	1000	400	150	10/27/22

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QUALITY CONTROL

Air Toxics by EPA Compendium Methods - Quality Control

Analyte	ppbv Results	ppbv RL	ug/m3 Results	ug/m3 RL	Spike Level ppbv	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag/Qual
Batch B321335 - TO-15 Prep											
Blank (B321335-BLK1)					Prepared & Analyzed: 10/24/22						
Acetone	ND	0.80									
Benzene	ND	0.020									
Benzyl chloride	ND	0.040									
Bromodichloromethane	ND	0.020									
Bromoform	ND	0.020									
Bromomethane	ND	0.020									
1,3-Butadiene	ND	0.020									
2-Butanone (MEK)	ND	0.80									
Carbon Disulfide	ND	0.20									
Carbon Tetrachloride	ND	0.020									
Chlorobenzene	ND	0.020									
Chloroethane	ND	0.020									
Chloroform	ND	0.020									
Chloromethane	ND	0.040									
Cyclohexane	ND	0.020									
Dibromochloromethane	ND	0.020									
1,2-Dibromoethane (EDB)	ND	0.020									
1,2-Dichlorobenzene	ND	0.020									
1,3-Dichlorobenzene	ND	0.020									
1,4-Dichlorobenzene	ND	0.020									
Dichlorodifluoromethane (Freon 12)	ND	0.020									
1,1-Dichloroethane	ND	0.020									
1,2-Dichloroethane	ND	0.020									
1,1-Dichloroethylene	ND	0.020									
cis-1,2-Dichloroethylene	ND	0.020									
trans-1,2-Dichloroethylene	ND	0.020									
1,2-Dichloropropane	ND	0.020									
cis-1,3-Dichloropropene	ND	0.020									
trans-1,3-Dichloropropene	ND	0.020									
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	ND	0.020									
1,4-Dioxane	ND	0.20									
Ethanol	ND	0.80									
Ethyl Acetate	ND	0.20									
Ethylbenzene	ND	0.020									
4-Ethyltoluene	ND	0.020									
Heptane	ND	0.020									
Hexachlorobutadiene	ND	0.020									L-03
Hexane	ND	0.80									
2-Hexanone (MBK)	ND	0.020									
Isopropanol	ND	0.80									
Methyl tert-Butyl Ether (MTBE)	ND	0.020									
Methylene Chloride	ND	0.20									
4-Methyl-2-pentanone (MIBK)	ND	0.020									
Naphthalene	ND	0.020									L-03
Propene	ND	0.80									
Styrene	ND	0.020									

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QUALITY CONTROL

Air Toxics by EPA Compendium Methods - Quality Control

Analyte	ppbv Results	ppbv RL	ug/m3 Results	ug/m3 RL	Spike Level ppbv	Source Result	%REC		%REC Limits	RPD	RPD Limit	Flag/Qual
Batch B321335 - TO-15 Prep												
Blank (B321335-BLK1)					Prepared & Analyzed: 10/24/22							
1,1,2,2-Tetrachloroethane	ND	0.020										
Tetrachloroethylene	ND	0.020										
Tetrahydrofuran	ND	0.20										
Toluene	ND	0.020										
1,2,4-Trichlorobenzene	ND	0.020										L-03
1,1,1-Trichloroethane	ND	0.020										
1,1,2-Trichloroethane	ND	0.020										
Trichloroethylene	ND	0.020										
Trichlorofluoromethane (Freon 11)	ND	0.080										
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.080										
1,2,4-Trimethylbenzene	ND	0.020										
1,3,5-Trimethylbenzene	ND	0.020										
Vinyl Acetate	ND	0.40										L-03, V-05
Vinyl Chloride	ND	0.020										
m&p-Xylene	ND	0.040										
o-Xylene	ND	0.020										
Surrogate: 4-Bromofluorobenzene (1)	*7.64*				*8.00*		*95.5*		*70-130*			
LCS (B321335-BS1)					Prepared & Analyzed: 10/24/22							
Acetone	5.30				5.00		106		70-130			
Benzene	4.99				5.00		99.8		70-130			
Benzyl chloride	6.51				5.00		130		70-130			L-01, V-20,
Bromodichloromethane	4.96				5.00		99.2		70-130			
Bromoform	5.38				5.00		108		70-130			
Bromomethane	6.62				5.00		**132**	*	70-130			L-01, V-20
1,3-Butadiene	5.90				5.00		118		70-130			
2-Butanone (MEK)	5.24				5.00		105		70-130			
Carbon Disulfide	6.05				5.00		121		70-130			
Carbon Tetrachloride	5.48				5.00		110		70-130			
Chlorobenzene	5.09				5.00		102		70-130			
Chloroethane	6.25				5.00		125		70-130			
Chloroform	5.94				5.00		119		70-130			
Chloromethane	5.50				5.00		110		70-130			
Cyclohexane	5.16				5.00		103		70-130			
Dibromochloromethane	5.43				5.00		109		70-130			
1,2-Dibromoethane (EDB)	5.27				5.00		105		70-130			
1,2-Dichlorobenzene	5.19				5.00		104		70-130			
1,3-Dichlorobenzene	5.38				5.00		108		70-130			
1,4-Dichlorobenzene	5.70				5.00		114		70-130			
Dichlorodifluoromethane (Freon 12)	6.32				5.00		126		70-130			
1,1-Dichloroethane	6.29				5.00		126		70-130			
1,2-Dichloroethane	5.67				5.00		113		70-130			
1,1-Dichloroethylene	6.02				5.00		120		70-130			
cis-1,2-Dichloroethylene	5.48				5.00		110		70-130			
trans-1,2-Dichloroethylene	5.96				5.00		119		70-130			

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QUALITY CONTROL

Air Toxics by EPA Compendium Methods - Quality Control

Analyte	ppbv Results	ppbv RL	ug/m3 Results	ug/m3 RL	Spike Level ppbv	Source Result	%REC		%REC Limits	RPD	RPD Limit	Flag/Qual
Batch B321335 - TO-15 Prep												
LCS (B321335-BS1)					Prepared & Analyzed: 10/24/22							
1,2-Dichloropropane	4.72				5.00		94.3		70-130			
cis-1,3-Dichloropropene	4.88				5.00		97.6		70-130			
trans-1,3-Dichloropropene	4.98				5.00		99.5		70-130			
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	6.10				5.00		122		70-130			
1,4-Dioxane	4.94				5.00		98.9		70-130			
Ethanol	3.68				5.00		73.5		70-130			
Ethyl Acetate	5.53				5.00		111		70-130			
Ethylbenzene	4.97				5.00		99.4		70-130			
4-Ethyltoluene	5.14				5.00		103		70-130			
Heptane	4.95				5.00		99.0		70-130			
Hexachlorobutadiene	3.24				5.00		**64.9**	*	70-130			L-03
Hexane	5.44				5.00		109		70-130			
2-Hexanone (MBK)	4.21				5.00		84.2		70-130			
Isopropanol	4.57				5.00		91.3		70-130			
Methyl tert-Butyl Ether (MTBE)	7.47				5.00		**149**	*	70-130			L-01, V-20
Methylene Chloride	5.23				5.00		105		70-130			
4-Methyl-2-pentanone (MIBK)	5.32				5.00		106		70-130			
Naphthalene	2.55				5.00		**51.0**	*	70-130			L-03
Propene	5.51				5.00		110		70-130			
Styrene	5.34				5.00		107		70-130			
1,1,2,2-Tetrachloroethane	4.88				5.00		97.7		70-130			
Tetrachloroethylene	5.27				5.00		105		70-130			
Tetrahydrofuran	5.23				5.00		105		70-130			
Toluene	4.90				5.00		98.1		70-130			
1,2,4-Trichlorobenzene	3.41				5.00		**68.2**	*	70-130			L-03, V-36
1,1,1-Trichloroethane	5.40				5.00		108		70-130			
1,1,2-Trichloroethane	5.22				5.00		104		70-130			
Trichloroethylene	4.98				5.00		99.6		70-130			
Trichlorofluoromethane (Freon 11)	6.58				5.00		**132**	*	70-130			L-05
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	6.76				5.00		**135**	*	70-130			L-01, V-20
1,2,4-Trimethylbenzene	5.14				5.00		103		70-130			
1,3,5-Trimethylbenzene	5.53				5.00		111		70-130			
Vinyl Acetate	2.46				5.00		**49.3**	*	70-130			L-03, V-05
Vinyl Chloride	6.17				5.00		123		70-130			
m&p-Xylene	9.71				10.0		97.1		70-130			
o-Xylene	5.28				5.00		106		70-130			
Surrogate: 4-Bromofluorobenzene (1)	*8.36*				*8.00*		*105*		*70-130*			

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QUALITY CONTROL

Air Toxics by EPA Compendium Methods - Quality Control

Analyte	ppbv Results	ppbv RL	ug/m3 Results	ug/m3 RL	Spike Level ppbv	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag/Qual
Batch B321473 - TO-15 Prep											
Blank (B321473-BLK1)					Prepared & Analyzed: 10/27/22						
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									L-03
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									L-03
Hexane	ND	1.4									
2-Hexanone (MBK)	ND	0.035									
Isopropanol	ND	1.4									L-03
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									

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QUALITY CONTROL

Air Toxics by EPA Compendium Methods - Quality Control

Analyte	ppbv Results	ppbv RL	ug/m3 Results	ug/m3 RL	Spike Level ppbv	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag/Qual
Batch B321473 - TO-15 Prep											
Blank (B321473-BLK1)					Prepared & Analyzed: 10/27/22						
1,1,2,2-Tetrachloroethane	ND	0.035									
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									L-03
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)	*7.78*				*8.00*		*97.3*	*70-130*			
LCS (B321473-BS1)					Prepared & Analyzed: 10/27/22						
Acetone	4.86				5.00		97.2	70-130			
Benzene	4.74				5.00		94.9	70-130			
Benzyl chloride	4.74				5.00		94.8	70-130			
Bromodichloromethane	4.55				5.00		91.0	70-130			
Bromoform	4.03				5.00		80.6	70-130			
Bromomethane	3.53				5.00		70.7	70-130			
1,3-Butadiene	3.75				5.00		74.9	70-130			
2-Butanone (MEK)	4.48				5.00		89.5	70-130			
Carbon Disulfide	4.04				5.00		80.8	70-130			
Carbon Tetrachloride	4.32				5.00		86.5	70-130			
Chlorobenzene	4.06				5.00		81.1	70-130			
Chloroethane	3.80				5.00		76.0	70-130			
Chloroform	3.82				5.00		76.4	70-130			
Chloromethane	3.90				5.00		77.9	70-130			
Cyclohexane	4.58				5.00		91.6	70-130			
Dibromochloromethane	4.30				5.00		86.1	70-130			
1,2-Dibromoethane (EDB)	4.18				5.00		83.6	70-130			
1,2-Dichlorobenzene	4.30				5.00		86.1	70-130			
1,3-Dichlorobenzene	4.30				5.00		86.1	70-130			
1,4-Dichlorobenzene	4.30				5.00		86.0	70-130			
Dichlorodifluoromethane (Freon 12)	3.81				5.00		76.2	70-130			
1,1-Dichloroethane	4.21				5.00		84.2	70-130			
1,2-Dichloroethane	4.04				5.00		80.8	70-130			
1,1-Dichloroethylene	4.08				5.00		81.6	70-130			
cis-1,2-Dichloroethylene	4.08				5.00		81.7	70-130			
trans-1,2-Dichloroethylene	4.12				5.00		82.3	70-130			
1,2-Dichloropropane	5.13				5.00		103	70-130			

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QUALITY CONTROL

Air Toxics by EPA Compendium Methods - Quality Control

Analyte	ppbv Results	ppbv RL	ug/m3 Results	ug/m3 RL	Spike Level ppbv	Source Result	%REC		%REC Limits	RPD	RPD Limit	Flag/Qual
Batch B321473 - TO-15 Prep												
LCS (B321473-BS1)					Prepared & Analyzed: 10/27/22							
cis-1,3-Dichloropropene	4.62				5.00		92.3		70-130			
trans-1,3-Dichloropropene	4.57				5.00		91.5		70-130			
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	3.40				5.00		**68.0**	*	70-130			L-03
1,4-Dioxane	4.85				5.00		97.0		70-130			
Ethanol	5.20				5.00		104		70-130			
Ethyl Acetate	4.10				5.00		82.0		70-130			
Ethylbenzene	4.37				5.00		87.3		70-130			
4-Ethyltoluene	4.44				5.00		88.8		70-130			
Heptane	5.22				5.00		104		70-130			
Hexachlorobutadiene	3.46				5.00		**69.3**	*	70-130			L-03
Hexane	4.58				5.00		91.6		70-130			
2-Hexanone (MBK)	5.46				5.00		109		70-130			
Isopropanol	3.45				5.00		**69.1**	*	70-130			L-03
Methyl tert-Butyl Ether (MTBE)	3.59				5.00		71.9		70-130			
Methylene Chloride	3.85				5.00		76.9		70-130			
4-Methyl-2-pentanone (MIBK)	5.22				5.00		104		70-130			
Naphthalene	7.06				5.00		**141**	*	70-130			L-05
Propene	4.07				5.00		81.3		70-130			
Styrene	4.32				5.00		86.5		70-130			
1,1,2,2-Tetrachloroethane	4.39				5.00		87.9		70-130			
Tetrachloroethylene	3.80				5.00		76.0		70-130			
Tetrahydrofuran	3.92				5.00		78.3		70-130			
Toluene	4.33				5.00		86.6		70-130			
1,2,4-Trichlorobenzene	4.33				5.00		86.6		70-130			
1,1,1-Trichloroethane	4.20				5.00		83.9		70-130			
1,1,2-Trichloroethane	4.29				5.00		85.8		70-130			
Trichloroethylene	4.62				5.00		92.5		70-130			
Trichlorofluoromethane (Freon 11)	3.68				5.00		73.7		70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	3.47				5.00		**69.4**	*	70-130			L-03
1,2,4-Trimethylbenzene	4.35				5.00		86.9		70-130			
1,3,5-Trimethylbenzene	4.36				5.00		87.3		70-130			
Vinyl Acetate	3.74				5.00		74.9		70-130			
Vinyl Chloride	3.95				5.00		79.1		70-130			
m&p-Xylene	8.84				10.0		88.4		70-130			
o-Xylene	4.52				5.00		90.4		70-130			
Surrogate: 4-Bromofluorobenzene (1)	*8.14*				*8.00*		*102*		*70-130*			

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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.

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-03	Laboratory fortified blank/laboratory control sample recovery is outside of control limits. Reported value for this compound is likely to be biased on the low 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-05	Continuing calibration verification (CCV) did not meet method specifications and was biased on the low 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.
V-36	Initial calibration verification (ICV) 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.

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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
Initial Cal Check (S069304-ICV1)			Lab File ID: K22A075019.D			Analyzed: 03/16/22 23:55			
Bromochloromethane (1)	104138	2.987	104138	2.987	100	60 - 140	0.0000	+/-0.50	
1,4-Difluorobenzene (1)	315817	3.584	315817	3.584	100	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5 (1)	233658	5.159	233658	5.159	100	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
Initial Cal Check (S076501-ICV1)			Lab File ID: G22A256016.D			Analyzed: 09/13/22 22:00			
Bromochloromethane (1)	1141026	8.307	1141026	8.307	100	60 - 140	0.0000	+/-0.50	
1,4-Difluorobenzene (1)	2751702	10.081	2751702	10.081	100	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5 (1)	2471195	14.446	2471195	14.446	100	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
Calibration Check (S078511-CCV1)			Lab File ID: K22A297004.D			Analyzed: 10/24/22 14:06			
Bromochloromethane (1)	94154	2.996	94154	2.996	100	60 - 140	0.0000	+/-0.50	
1,4-Difluorobenzene (1)	317229	3.588	317229	3.588	100	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5 (1)	228654	5.163	228654	5.163	100	60 - 140	0.0000	+/-0.50	
LCS (B321335-BS1)			Lab File ID: K22A297005.D			Analyzed: 10/24/22 14:35			
Bromochloromethane (1)	91025	2.996	94154	2.996	97	60 - 140	0.0000	+/-0.50	
1,4-Difluorobenzene (1)	308586	3.588	317229	3.588	97	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5 (1)	231813	5.163	228654	5.163	101	60 - 140	0.0000	+/-0.50	
Blank (B321335-BLK1)			Lab File ID: K22A297008.D			Analyzed: 10/24/22 16:15			
Bromochloromethane (1)	93101	2.996	94154	2.996	99	60 - 140	0.0000	+/-0.50	
1,4-Difluorobenzene (1)	287234	3.588	317229	3.588	91	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5 (1)	224611	5.163	228654	5.163	98	60 - 140	0.0000	+/-0.50	
SV-1 (22J2680-01)			Lab File ID: K22A297010.D			Analyzed: 10/24/22 17:16			
Bromochloromethane (1)	90878	2.996	94154	2.996	97	60 - 140	0.0000	+/-0.50	
1,4-Difluorobenzene (1)	284306	3.588	317229	3.588	90	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5 (1)	216020	5.163	228654	5.163	94	60 - 140	0.0000	+/-0.50	
SV-2 (22J2680-02)			Lab File ID: K22A297011.D			Analyzed: 10/24/22 17:44			
Bromochloromethane (1)	91842	3.001	94154	2.996	98	60 - 140	0.0050	+/-0.50	
1,4-Difluorobenzene (1)	289645	3.593	317229	3.588	91	60 - 140	0.0050	+/-0.50	
Chlorobenzene-d5 (1)	222192	5.163	228654	5.163	97	60 - 140	0.0000	+/-0.50	

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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
SV-4 (22J2680-04)			Lab File ID: K22A297013.D			Analyzed: 10/24/22 18:42			
Bromochloromethane (1)	90294	3.001	94154	2.996	96	60 - 140	0.0050	+/-0.50	
1,4-Difluorobenzene (1)	284550	3.593	317229	3.588	90	60 - 140	0.0050	+/-0.50	
Chlorobenzene-d5 (1)	221879	5.163	228654	5.163	97	60 - 140	0.0000	+/-0.50	
SV-6 (22J2680-07)			Lab File ID: K22A297017.D			Analyzed: 10/24/22 20:36			
Bromochloromethane (1)	90463	3.001	94154	2.996	96	60 - 140	0.0050	+/-0.50	
1,4-Difluorobenzene (1)	277898	3.592	317229	3.588	88	60 - 140	0.0040	+/-0.50	
Chlorobenzene-d5 (1)	214697	5.163	228654	5.163	94	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
Calibration Check (S078591-CCV1)			Lab File ID: G22A300017.D			Analyzed: 10/27/22 04:20			
Bromochloromethane (1)	1158938	8.307	1158938	8.307	100	60 - 140	0.0000	+/-0.50	
1,4-Difluorobenzene (1)	2565134	10.081	2565134	10.081	100	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5 (1)	2383818	14.446	2383818	14.446	100	60 - 140	0.0000	+/-0.50	
LCS (B321473-BS1)			Lab File ID: G22A300025.D			Analyzed: 10/27/22 09:51			
Bromochloromethane (1)	988313	8.307	1158938	8.307	85	60 - 140	0.0000	+/-0.50	
1,4-Difluorobenzene (1)	1955276	10.081	2565134	10.081	76	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5 (1)	1812920	14.446	2383818	14.446	76	60 - 140	0.0000	+/-0.50	
Blank (B321473-BLK1)			Lab File ID: G22A300028.D			Analyzed: 10/27/22 11:59			
Bromochloromethane (1)	932696	8.307	1158938	8.307	80	60 - 140	0.0000	+/-0.50	
1,4-Difluorobenzene (1)	1810825	10.081	2565134	10.081	71	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5 (1)	1682354	14.446	2383818	14.446	71	60 - 140	0.0000	+/-0.50	
SV-3 (22J2680-03)			Lab File ID: G22A300040.D			Analyzed: 10/27/22 20:37			
Bromochloromethane (1)	989493	8.313	1158938	8.307	85	60 - 140	0.0060	+/-0.50	
1,4-Difluorobenzene (1)	1933538	10.081	2565134	10.081	75	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5 (1)	1784941	14.446	2383818	14.446	75	60 - 140	0.0000	+/-0.50	
SV-4-FD (22J2680-05)			Lab File ID: G22A300041.D			Analyzed: 10/27/22 21:18			
Bromochloromethane (1)	928689	8.307	1158938	8.307	80	60 - 140	0.0000	+/-0.50	
1,4-Difluorobenzene (1)	1760837	10.081	2565134	10.081	69	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5 (1)	1639270	14.446	2383818	14.446	69	60 - 140	0.0000	+/-0.50	
SV-5 (22J2680-06)			Lab File ID: G22A300042.D			Analyzed: 10/27/22 21:58			
Bromochloromethane (1)	970421	8.307	1158938	8.307	84	60 - 140	0.0000	+/-0.50	
1,4-Difluorobenzene (1)	1887315	10.081	2565134	10.081	74	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5 (1)	1767896	14.446	2383818	14.446	74	60 - 140	0.0000	+/-0.50	

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EPA TO-15

S078511-CCV1

COMPOUND	TYPE	CONC. (ppbv)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Acetone	A	5.00	5.40	1.001504	1.081836		8.0	30
Benzene	A	5.00	4.84	0.633704	0.613674		-3.2	30
Benzyl chloride	A	5.00	7.08	0.4421081	0.6257629		41.5	30 *
Bromodichloromethane	A	5.00	4.99	0.4484742	0.4475858		-0.2	30
Bromoform	A	5.00	5.92	0.5313608	0.6285689		18.3	30
Bromomethane	A	5.00	6.61	0.56846	0.7512968		32.2	30 *
1,3-Butadiene	A	5.00	5.95	0.4941294	0.5880069		19.0	30
2-Butanone (MEK)	A	5.00	5.22	1.143339	1.19384		4.4	30
Carbon Disulfide	A	5.00	5.72	2.101097	2.405421		14.5	30
Carbon Tetrachloride	A	5.00	5.48	0.3583793	0.3924383		9.5	30
Chlorobenzene	A	5.00	5.36	0.7307357	0.7830521		7.2	30
Chloroethane	A	5.00	6.11	0.3728969	0.455696		22.2	30
Chloroform	A	5.00	5.93	1.205973	1.430253		18.6	30
Chloromethane	A	5.00	5.62	0.5843503	0.6570512		12.4	30
Cyclohexane	A	5.00	5.06	0.2474396	0.2504538		1.2	30
Dibromochloromethane	A	5.00	5.73	0.5365627	0.6149169		14.6	30
1,2-Dibromoethane (EDB)	A	5.00	5.64	0.4696428	0.5296667		12.8	30
1,2-Dichlorobenzene	A	5.00	5.87	0.5425411	0.6364971		17.3	30
1,3-Dichlorobenzene	A	5.00	5.99	0.5577685	0.6679437		19.8	30
1,4-Dichlorobenzene	A	5.00	6.26	0.4841678	0.606317		25.2	30
Dichlorodifluoromethane (Freon 12)	A	5.00	6.23	1.437368	1.790547		24.6	30
1,1-Dichloroethane	A	5.00	6.10	0.9933117	1.211326		21.9	30
1,2-Dichloroethane	A	5.00	5.69	0.7604954	0.8654417		13.8	30
1,1-Dichloroethylene	A	5.00	5.75	1.025417	1.179956		15.1	30
cis-1,2-Dichloroethylene	A	5.00	5.40	0.8174361	0.8831149		8.0	30
trans-1,2-Dichloroethylene	A	5.00	5.88	0.8265571	0.9717017		17.6	30
1,2-Dichloropropane	A	5.00	4.69	0.2525551	0.2366997		-6.3	30
cis-1,3-Dichloropropene	A	5.00	5.03	0.4042268	0.4065959		0.6	30
trans-1,3-Dichloropropene	A	5.00	5.27	0.2821754	0.2976273		5.5	30
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 1	A	5.00	6.27	1.571176	1.96925		25.3	30
1,4-Dioxane	A	5.00	5.00	0.1252326	0.1251084		-0.1	30
Ethanol	A	5.00	5.54	0.2348114	0.2603055		10.9	30
Ethyl Acetate	A	5.00	5.82	0.1797762	0.2091552		16.3	30
Ethylbenzene	A	5.00	5.23	1.166103	1.220653		4.7	30
4-Ethyltoluene	A	5.00	5.43	1.091537	1.185967		8.7	30
Heptane	A	5.00	4.89	0.2370975	0.2318124		-2.2	30
Hexachlorobutadiene	A	5.00	4.46	0.3846991	0.34324		-10.8	30
Hexane	L	5.00	5.38	0.6117314	0.6794995		7.6	30

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EPA TO-15

S078511-CCV1

COMPOUND	TYPE	CONC. (ppbv)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
2-Hexanone (MBK)	A	5.00	4.50	0.5293432	0.4762899		-10.0	30
Isopropanol	A	5.00	5.76	1.233151	1.420413		15.2	30
Methyl tert-Butyl Ether (MTBE)	A	5.00	7.49	1.403919	2.10185		49.7	30 *
Methylene Chloride	A	5.00	5.09	0.7749664	0.7887673		1.8	30
4-Methyl-2-pentanone (MIBK)	A	5.00	4.02	0.1036732	8.332656E-02		-19.6	30
Naphthalene	A	5.00	4.02	0.9067208	0.7294305		-19.6	30
Propene	A	5.00	5.56	0.4757755	0.5295495		11.3	30
Styrene	A	5.00	5.74	0.6195572	0.7107193		14.7	30
1,1,2,2-Tetrachloroethane	A	5.00	5.20	0.7649521	0.7957455		4.0	30
Tetrachloroethylene	A	5.00	5.49	0.4025457	0.4418904		9.8	30
Tetrahydrofuran	A	5.00	5.30	0.6192362	0.6570512		6.1	30
Toluene	A	5.00	5.11	0.9588753	0.9797161		2.2	30
1,2,4-Trichlorobenzene	A	5.00	5.02	0.2888558	0.2899123		0.4	30
1,1,1-Trichloroethane	A	5.00	5.60	0.4005075	0.4488568		12.1	30
1,1,2-Trichloroethane	A	5.00	5.29	0.333956	0.3531344		5.7	30
Trichloroethylene	A	5.00	5.11	0.2669212	0.2727519		2.2	30
Trichlorofluoromethane (Freon 11)	A	5.00	6.50	1.362748	1.770359		29.9	30
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113	A	5.00	6.58	1.311243	1.724885		31.5	30 *
1,2,4-Trimethylbenzene	A	5.00	5.65	0.9101206	1.029055		13.1	30
1,3,5-Trimethylbenzene	A	5.00	5.92	0.9305716	1.101311		18.3	30
Vinyl Acetate	A	5.00	1.93	1.456769	0.5628056		-61.4	30 *
Vinyl Chloride	A	5.00	5.96	0.6700674	0.7986065		19.2	30
m&p-Xylene	A	10.0	11.9	0.9901728	1.179725		19.1	30
o-Xylene	A	5.00	5.51	0.9006378	0.9923745		10.2	30

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

* Values outside of QC limits

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CONTINUING CALIBRATION CHECK

EPA TO-15

S078591-CCV1

COMPOUND	TYPE	CONC. (ppbv)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Acetone	A	5.00	4.06	1.084004	0.880337		-18.8	30
Benzene	A	5.00	4.69	0.9129288	0.8563227		-6.2	30
Benzyl chloride	A	5.00	4.90	1.030942	1.011364		-1.9	30
Bromodichloromethane	A	5.00	4.55	0.6953811	0.6328228		-9.0	30
Bromoform	A	5.00	4.58	0.5656468	0.5176704		-8.5	30
Bromomethane	A	5.00	3.96	0.6009459	0.4759488		-20.8	30
1,3-Butadiene	A	5.00	4.18	0.5443004	0.4555301		-16.3	30
2-Butanone (MEK)	A	5.00	4.26	1.507683	1.285602		-14.7	30
Carbon Disulfide	A	5.00	4.26	2.02748	1.725371		-14.9	30
Carbon Tetrachloride	A	5.00	4.62	0.5479998	0.5063495		-7.6	30
Chlorobenzene	A	5.00	4.32	0.8809329	0.7605091		-13.7	30
Chloroethane	A	5.00	4.04	0.3452967	0.2793123		-19.1	30
Chloroform	A	5.00	4.22	1.561184	1.316866		-15.6	30
Chloromethane	A	5.00	4.14	0.6821899	0.5651905		-17.2	30
Cyclohexane	A	5.00	4.57	0.3600845	0.3288854		-8.7	30
Dibromochloromethane	A	5.00	4.58	0.6396581	0.5855319		-8.5	30
1,2-Dibromoethane (EDB)	A	5.00	4.29	0.6171207	0.5299982		-14.1	30
1,2-Dichlorobenzene	A	5.00	4.68	0.6937094	0.6488569		-6.5	30
1,3-Dichlorobenzene	A	5.00	4.74	0.7409581	0.701626		-5.3	30
1,4-Dichlorobenzene	A	5.00	4.70	0.7218155	0.6785478		-6.0	30
Dichlorodifluoromethane (Freon 12)	A	5.00	4.41	1.62808	1.43639		-11.8	30
1,1-Dichloroethane	A	5.00	4.43	1.342742	1.188828		-11.5	30
1,2-Dichloroethane	A	5.00	4.31	0.9627523	0.8301586		-13.8	30
1,1-Dichloroethylene	A	5.00	4.45	1.140142	1.014224		-11.0	30
cis-1,2-Dichloroethylene	A	5.00	4.40	0.9670963	0.8502557		-12.1	30
trans-1,2-Dichloroethylene	A	5.00	4.42	1.001825	0.8845505		-11.7	30
1,2-Dichloropropane	A	5.00	4.87	0.3567989	0.347591		-2.6	30
cis-1,3-Dichloropropene	A	5.00	4.73	0.5092852	0.4821113		-5.3	30
trans-1,3-Dichloropropene	A	5.00	4.64	0.4570981	0.4238593		-7.3	30
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 1	A	5.00	4.07	1.73998	1.415765		-18.6	30
1,4-Dioxane	A	5.00	4.16	0.1857641	0.1543748		-16.9	30
Ethanol	A	5.00	3.90	0.2343264	0.1825616		-22.1	30
Ethyl Acetate	A	5.00	4.36	0.2308163	0.2014562		-12.7	30
Ethylbenzene	A	5.00	4.52	1.455024	1.315226		-9.6	30
4-Ethyltoluene	A	5.00	4.77	1.413771	1.348891		-4.6	30
Heptane	A	5.00	5.04	0.2850308	0.2871335		0.7	30
Hexachlorobutadiene	A	5.00	4.72	0.4677459	0.4416592		-5.6	30
Hexane	A	5.00	4.64	0.8985394	0.7826061		-7.3	30

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CONTINUING CALIBRATION CHECK

EPA TO-15

S078591-CCV1

COMPOUND	TYPE	CONC. (ppbv)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
2-Hexanone (MBK)	A	5.00	4.61	0.7712864	0.7115335		-7.7	30
Isopropanol	A	5.00	3.99	1.338902	1.068762		-20.2	30
Methyl tert-Butyl Ether (MTBE)	A	5.00	4.07	1.834723	1.493012		-18.6	30
Methylene Chloride	A	5.00	4.01	0.9597215	0.7691607		-19.9	30
4-Methyl-2-pentanone (MIBK)	A	5.00	4.85	0.7726854	0.7492243		-3.0	30
Naphthalene	A	5.00	4.84	1.092246	1.056354		-3.3	30
Propene	A	5.00	4.46	0.5941328	0.5305878		-10.7	30
Styrene	A	5.00	4.63	0.7890752	0.7303833		-7.4	30
1,1,2,2-Tetrachloroethane	A	5.00	4.50	0.9851261	0.8858636		-10.1	30
Tetrachloroethylene	A	5.00	4.23	0.457194	0.3868376		-15.4	30
Tetrahydrofuran	A	5.00	4.39	0.2957092	0.2595963		-12.2	30
Toluene	A	5.00	4.42	1.15399	1.019585		-11.6	30
1,2,4-Trichlorobenzene	A	5.00	4.54	0.4973623	0.4518546		-9.1	30
1,1,1-Trichloroethane	A	5.00	4.43	0.5975698	0.5290852		-11.5	30
1,1,2-Trichloroethane	A	5.00	4.33	0.4162703	0.3608141		-13.3	30
Trichloroethylene	A	5.00	4.58	0.3947958	0.3613971		-8.5	30
Trichlorofluoromethane (Freon 11)	A	5.00	4.20	1.463327	1.230169		-15.9	30
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113	A	5.00	3.99	1.432547	1.143357		-20.2	30
1,2,4-Trimethylbenzene	A	5.00	4.76	1.156019	1.099285		-4.9	30
1,3,5-Trimethylbenzene	A	5.00	4.72	1.190388	1.123091		-5.7	30
Vinyl Acetate	A	5.00	4.15	1.986739	1.649271		-17.0	30
Vinyl Chloride	A	5.00	4.25	0.7142115	0.6076377		-14.9	30
m&p-Xylene	A	10.0	9.30	1.129066	1.050646		-6.9	30
o-Xylene	A	5.00	4.69	1.138955	1.067686		-6.3	30

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

* Values outside of QC limits

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
EPA TO-15 in Air	
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

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

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
EPA TO-15 in Air	
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

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FL	Florida Department of Health	E871027 NELAP	06/30/2023
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CHAIN OF CUSTODY RECORD (AIR)

39 Spruce Street
East Longmeadow, MA 01028

Page 1 of 1

225 2680

Company Name: Stone Environmental
Address: 535 Stone Cutters Way Montpelier VT
Phone:
Project Name: Turning Point Center
Project Location: Barre, VT
Project Number: 2021145
Project Manager: Rebecca Treat
Con-Test Quote Name/Number: 617-780-4383
Invoice Recipient: accounting@stone-env.com
Sampled By: SLW JGW

Requested Turnaround Time
7-Day ☐ 10-Day ☒
Due Date:

Rush Approval Required
1-Day ☐ 3-Day ☐
2-Day ☐ 4-Day ☐

Data Delivery
Format: PDF ☒ EXCEL ☐
Other: Equis EDD
CLP Like Data Pkg Required: ☐
Email To: rtreat@stone-env.com
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Lab Use	Client Use	Collection Data		Duration	Flow Rate	Matrix	Volume	TO-15				" Hg			Please fill out completely, sign, date and retain the yellow copy for your records	
Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	Total Minutes Sampled	☐ m³/min ☑ L/min	Code	☑ Liters ☐ m³					Initial Pressure	Final Pressure	Lab Receipt Pressure	Summa Can ID	Flow Controller ID
1	SV-1	10/17/22	1552	27	0.1 L/min	SS	3	X				-29	-3	3.5	2735	4338
2	SV-2	10/17/22	1300	29		SG		X				-30	-2.5	2.2	2394	4139
3	SV-3	10/17/22	1233	33		SG		X				-30	-3	1.6	2587	4319
4	SV-4	10/17/22	1142	33		SG		X				-26	-3	2.2	2352	4245
5	SV-4-FD	10/17/22	1140	30		SG		X				-27	-3	2.1	2745	4247
6	SV-5	10/17/22	1052	28		SG		X				-29	-3	0.4	2393	4122
7	SV-6	10/17/22	1020	27		SG		X				-28	-3	2.6	2612	4323

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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

Comments:

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

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	10/18/22 14:19
Received by: (signature) via FedEx	Date/Time:
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time: 10/19 954
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:

Detection Limit Requirements
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Other:

Special Requirements
☐ MA MCP Required
MCP Certification Form Required
☐ CT RCP Required
RCP Certification Form Required
☐ Other

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☐ City ☐ Brownfield ☐ MBTA

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Air Media 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 Stone

Received By	LR		Date	10/19		Time	959
How Were the samples received?	In Cooler		On Ice			No Ice	
	In Box	T	Ambient			Melted Ice	
Were samples within Tempurature Compliance?	Within 2-6°C		By Gun #			Actual Temp -	
			By Blank #			Actual Temp -	
Was Custody Seal In tact?	NA		Were Samples Tampered with?		NA		
Was COC Relinquished ?	T		Does Chain Agree With Samples?		T		
Are there any loose caps/valves 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?							
Are there Rushes?	F		Who was notified?				
Samples are received within holding time?	T						
Proper Media Used?	T		Individually Certified Cans?		F		
Are there Trip Blanks?	F		Is there enough Volume?		T		

Containers:	#	Size	Regulator	Duration	Accessories:			
Summa Cans	7	3L	7	30 mins	Nut/Ferrule		IC Train	
Tedlar Bags					Tubing			
TO-17 Tubes					T-Connector		Shipping Charges	
Radiello					Syringe			
Pufs/TO-11s					Tedlar			

Can #'s	2612				Reg #'s	4122			
2735					~~4138~~	4323			
2399					4338				
2587					4139				
2352					4319				
2745					4245				
2393					4242				
Unused Media					Pufs/TO-17's				

Comments:

Appendix E: Geotechnical Report

GEO DESIGN

GEODesign, Inc.
85 Granite Shed Lane
Unit #1
Montpelier, VT 05602
(802) 674-2033

GEOTECHNICAL REPORT
TURNING POINT CENTER OF CENTRAL VERMONT
BARRE, VERMONT

Prepared for:

Katrina Mattice, P.E.
Stone Environmental Services
535 Stone Cutters Way
Montpelier, VT 05602

Prepared By:
GEODesign, Inc.
85 Granite Shed Lane
Unit #1
Montpelier, VT 05602

File No. 1440-001
December 9, 2022

GEO DESIGN

GEODesign, Inc.
85 Granite Shed Lane
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December 9, 2022
File No. 1440-001

Katrina Mattice, P.E.
Stone Environmental
535 Stone Cutters Way
Montpelier, VT 05602
Email: kmattice@stone-env.com

Cc: Rebecca Treat, P.G. – Stone Environmental (rtreat@stone-env.com)
Tim Dall, P.E. – Dubois & King (tdall@dubois-king.com)

Re: Turning Point Center of Central Vermont – Geotechnical Engineering Report
Barre, VT

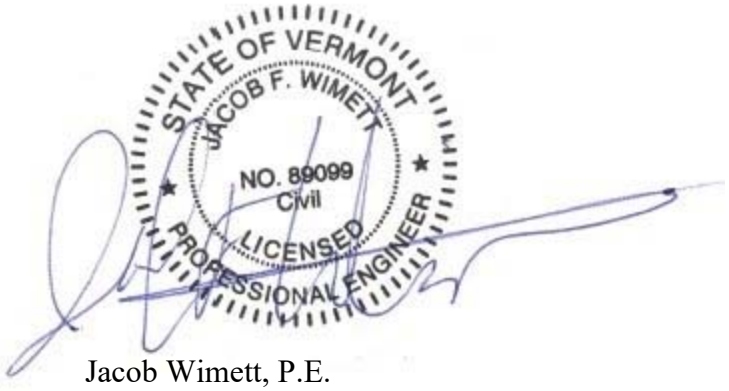
Dear Ms. Mattice,

Enclosed is our Geotechnical Engineering Report for the Turning Point Center project in Barre, Vermont. This report is focused on building foundation and pavement design recommendations. We anticipate our work will continue with an additional soil boring to evaluate slope conditions and provide conceptual retaining wall options.

We look forward to continuing our work with you and the design team on this project as we progress into final design and construction. Please call if you have any questions.

Sincerely,

GEODesign, Inc.



Jacob Wimett, P.E.
Associate

Mangtao (Monty) Du, P.E. (CT)
Principal

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1.0 SUMMARY

This geotechnical report is for building foundation and pavement design recommendations for the Turning Point Center of Central Vermont project in Barre, Vermont.

Recommendations provided in this report pertain to the building addition and parking improvements. A slope stability evaluation and conceptual retaining wall options for the proposed project are part of our scope. However, those will be provided separately once a soil boring can be successfully completed on the slope (Spaulding Street).

A program of subsurface explorations (soil borings and geotechnical lab testing) found a soil profile generally consisting of non-engineered fill over medium dense, natural silty gravelly sand containing some cobbles and boulders (and possible bedrock).

We recommend supporting the proposed two-story building and new elevator structure on spread footings bearing on natural, undisturbed soils provided the settlement estimates provided herein are considered acceptable.

We recommend new pavement for the parking area consist of an 18-inch-thick subbase of dense graded crushed stone or crushed gravel below a 3.5-inch-thick wearing/base course. Additional sand borrow below the recommended pavement section should be considered for additional frost protection.

Groundwater levels are anticipated to be within the natural silty gravelly sand soils but below new foundation levels. However, temporary groundwater control measures may be required at localized areas during construction.

2.0 BACKGROUND

2.1 Project Description and Location

A locus plan and site plan are shown on Figures 1 and 2, respectively, in Appendix A. The site is located at 18 South Main Street in Barre, Vermont. The project includes a building renovation for the back end of the structure that will replace an existing east ‘wing’ and encompass a portion of the existing parking area. The addition is anticipated to be two-stories above ground and a basement level structure with the floor elevations matching those of the existing building (approximately Elevation 616). A new elevator is included in the addition.

Fifteen new parking spaces (5 single and 10 double parked) are proposed to the east of the existing parking lot, which will require the construction of a new retaining wall up to approximately 20 feet tall. The wall will be cut into the slope, which begins at roughly Elevation 616 in the existing parking area, slopes up to a bench (Spaulding Street) which runs from about Elevation 655 to 665, and then to a plateau at roughly Elevation 685 (Elevations per VT ANR Atlas 1-ft LiDAR contours). A new access drive is proposed on the south side of the building.

2.2 Available Information & Assumptions

The following information and assumptions were used based on information provided by Stone Environmental, Inc. and Dubois & King:

- Site plans entitled "2021 09 14 Turning Point Presentation.pdf"
- CAD plan entitled "727462_SV01.dwg" provided via email on September 20, 2022.
- Revised Proposed Building Plan entitled "2022-08-16 Architectural Set In Progress Turning Point – Renovation.pdf" provided via email on September 20, 2022.
- VT ANR web atlas and surficial soils information.
- We have assumed that 1 inch of total settlement and ½ inch of differential settlement across new foundation walls is acceptable.

2.3 Geology

The surficial geology mapping for the vicinity available on the Vermont Agency of Natural Resources (VTANR) On-line Atlas indicates surficial soils are mapped as recent alluvium, with kame terrace material on the plateau nearby to the east (sands and gravels). The VTANR web atlas also indicates an adjoining parcel to the south was a former gas service station.

Bedrock is mapped as Waits River Formation phyllite interbedded with limestone.

Soil types encountered in the completed borings at the site are generally consistent with the mapping. Bedrock was not cored, however two borings refused with augers on possible cobbles, boulders, or bedrock.

2.4 Subsurface Explorations

2.4.1 Soil Borings (Building & Parking)

Nine soil borings (B-1 through B-10, excluding B-3) were made at the locations shown on Figure 2 in Appendix A. Soil boring logs are included in Appendix B. The soil borings were performed by Seaboard Drilling between October 29 and November 1, 2022, and observed in the field by GEODesign personnel. Bedrock coring was not performed.

Borings were advanced with a truck-mounted Mobil B-53 drilling rig typically using 4-inch I.D. hollow stem augers. One boring (B-10) was initially advanced with 4-inch flush joint casing using the wash and drive method, prior to switching to augers.

The Standard Penetration Test (SPT) sampling consisted of dropping a 140-pound automatic hammer in free fall for 30 inches on to an anvil that is threaded on top of a drill string and then attached to the split-spoon soil sampler. The number of hammer blows to drive the sampler each

6-inch increment was recorded and the cumulative number of hammer blows recorded between 6 and 18 inches is the SPT N-value.

As indicated on the logs, several samples were obtained by driving the split-spoon sampler consecutively (i.e. back-to-back) prior to advancing the borehole with the augers. This approach is a deviation from the standard which requires boreholes to be cleared between samples. One boring (B-8) was advanced solely using this method. Our evaluation took this deviation from standard sampling into account.

Three observation wells were installed at locations identified by Stone Environmental (Borings B-1, B-4, and B-10). Observation wells were installed for the purpose of groundwater monitoring and environmental testing.

2.4.2 Soil Boring (Slope Conditions)

As noted above and shown on Figure 2 in Appendix A, one soil boring was not performed (B-3). This boring was not attempted due to the steepness of the access road but will be completed at a later date. We anticipate the boring will be drilled at or near the proposed location shown on Figure 2 using accessible equipment.

Boring B-3 is proposed on the slope (Spaulding Street) above the new parking area retaining wall. The purpose of this boring is to evaluate the subsurface profile for slope conditions and retaining wall options. Results from this boring will be used in conjunction with Borings B-2 and B-6 (performed at the base of the slope) for our evaluation.

We anticipate an observation well will be installed in Boring B-3 for groundwater monitoring.

3.0 SUBSURFACE CONDITIONS

A generalized subsurface profile is described herein. For specific information at each location refer to boring logs in Appendix B.

3.1 Generalized Profile

Refer to Figure 3 in Appendix A for a visual depiction of the generalized subsurface profile described below for the site.

Topsoil/Asphalt – Depending on if borings were performed in landscaped or paved areas, either topsoil or asphalt was encountered. Topsoil was typically 6” thick and asphalt was typically 3” thick (2” thick at Boring B-1).

Non-Engineered Fill – Non-engineered fill soils encountered below the topsoil/asphalt consisted of a fairly well graded silty sand and gravel. Trace organics were observed in some samples but

were typically absent from fill soils. The non-engineered fill extended to depths between 6 and 13 feet below existing grade. Fill soils were very loose to medium dense.

Silty Gravelly Sand – Below the non-engineered fill, a natural deposit of primarily sand mixed with silt and gravel was encountered at all borings. Layers of silt and sand were occasionally encountered within this stratum at some locations (Borings B-1, B-2 and B-10). These natural soils were medium dense to very dense, typically increasing in density (SPT N-values) nearing the bottom of the borings.

Cobbles/Boulders/Possible Bedrock – Cobbles and/or boulders were inferred within the natural Silty Gravelly Sand stratum typically below 10 feet deep. These obstructions were inferred based on auger grinding and resistance as observed by GEODesign personnel and noted by the drillers. Cobbles/boulders were estimated to be 12 inches or less in nominal diameter and could usually be advanced through with the augers.

Auger refusal was encountered at two locations that terminated the borehole (Boring B-5 and B-7). Boring B-5 terminated at 16.5’ deep, and Boring B-7 terminated at 9’ deep, then again at 8’ deep after offsetting the borehole and attempting to advance again. These refusals likely indicate larger cobbles or boulders that the drilling equipment could not penetrate. Bedrock is possible but unlikely as these obstructions were common in other boreholes that were advanced deeper.

3.2 Groundwater

Groundwater was measured at the time of drilling in boreholes and inferred based on wet samples. Stone Environmental provided follow up groundwater measurements recorded in three monitoring wells (Borings B-1, B-4, and B-10). In general, groundwater was observed to be between about 18’ and 21’ below the ground surface within the silty gravelly sand stratum.

Groundwater was not observed in Borings B-5, B-6, B-7, B-8, and B-9 that were terminated between 9.5’ and 18’ deep.

The depths to groundwater observed in the borings are likely to vary due to factors such as seasonal variations, temperature, rainfall, and other factors which differ from conditions at the time the data was obtained.

4.0 LABORATORY TESTING

Laboratory testing for this phase of the project consisted of five Washed Sieve Gradation tests (ASTM D 422) that included moisture contents. Samples were selected at the proposed parking and roadway areas for reuse potential. Gradation test results are presented in Appendix C, and moisture contents of tested samples are shown on the boring logs in Appendix B.

We anticipate additional lab testing will be performed at a later date to evaluate slope conditions and develop site retaining wall recommendations.

5.0 GEOTECHNICAL ANALYSES & RECOMMENDATIONS

5.1 Foundation Recommendations

Natural site soils are suitable for supporting the proposed building foundations on conventional shallow spread or strip footings, provided non-engineered fill soils below footings are removed and replaced with compacted Granular Fill (see Appendix D for criteria). We anticipate most non-engineered fill will be excavated to reach the new building basement levels.

Perimeter foundations and site retaining walls should be placed at least 5 feet below exterior grade for frost protection, unless foundations have been suitably designed against frost penetration at foundation level.

We recommend existing utilities abandoned below the proposed building slab and pavement areas be removed entirely. Non-engineered fill soils that are currently present below proposed slab-on-grade levels are inconsistent in their matrix, and could be susceptible to erratic settlement which could result in slab settlement and cracking.

5.1.1 Building / Wall Foundations

We recommend a maximum net-allowable bearing pressure of 3,000 pounds per square foot (psf) for new building, elevator shaft, and basement wall foundations bearing on undisturbed natural soils, or compacted Granular Fill above natural soils. We recommend GEODesign inspect the prepared subgrades to provide further recommendations on subgrade preparation during construction. Based on the subgrade conditions observed, we anticipate recommending proof compacting natural subgrade soils and/or protecting the natural soil subgrades with compacted fill working mats prior to placing backfill or pouring foundations.

We estimate total settlements will be limited to approximately 1 inch or less with differential settlements about ½ inch or less along the length of the walls.

5.1.2 Building Slabs

We expect the majority of non-engineered fill soils will be removed during subgrade preparation for the building basement foundations. However, the Owner and design team may need to select one of the following slab subgrade preparation options for any remaining non-engineered fill soils below slabs based on estimated costs and the level of acceptable risk:

- The lower risk option is to completely remove all existing fill below slab areas and replace it with compacted Granular Fill or Crushed Stone. Given the limited area of remaining fill following excavation to bottom of foundation levels, this is our recommended approach.
- The higher risk option is to leave the fill in place below the slab base section. Vibratory densification of the surface and removal/replacement of loose or other deleterious soils

identified during densification are recommended with this option. Densification should be performed using a heavy vibratory roller with at least four passes in each of two perpendicular directions. During construction, GEODesign personnel must be present to observe the surface densification to identify soft, loose, or other deleterious soils and provide recommendations for removal.

5.2 Seismic Design Criteria

We recommend a Seismic Site Class D for seismic design, and are providing the following seismic parameters for your use in design:

- $S_S = 0.255$
- $S_1 = 0.089$
- $S_{DS} = 0.272$
- $S_{D1} = 0.143$

Assuming a Risk Category I, II or II the Seismic Design Category is C.

Seismic site class and design parameters were computed in accordance with IBC, 2015.

We performed a preliminary liquefaction evaluation using LiquefyPro by Civiltech Software and determined site soils to be non-liquefiable.

5.3 Non-Engineered Fill Mitigation

Non-engineered fill soils are present and expected to be above the new basement foundation levels (i.e., most will be removed during excavation). However, where encountered below foundation levels, these non-engineered fill soils need to be removed and replaced within a 1 Horizontal: 1 Vertical (1H:1V) zone of influence from the bottom edge of proposed foundations. Backfilling should be accomplished using compacted Granular Fill or Crushed Stone enveloped in non-woven filter fabric (see Appendix D for criteria).

5.4 Foundation Drainage

We recommend drains be placed at the base of all basement walls to prevent the buildup of hydrostatic pressures.

We recommend 4” diameter perforated PVC pipe for the drains surrounded with a minimum of six inches of ¾”-minus Crushed Stone enveloped in non-woven geotextile filter fabric on all sides. Drains should discharge by gravity to the site storm drainage system through non-perforated piping or discharged at another location approved by the Site Civil Engineer. We recommend installing clean-outs at each corner, tee and/or elbow, connected to the drains using 45-degree connectors instead of 90-degree connections.

We do not anticipate groundwater within excavation depths at the elevator shaft. However, we recommend a permanent sump pump be planned in the event that groundwater is present.

5.5 Lateral Earth Pressure on Walls

We recommend using free-draining Granular Fill meeting the attached criteria (Appendix D) behind retaining and foundation walls to control hydrostatic pressures and limit lateral loads acting on the walls.

A two-foot-thick layer of less permeable fill (e.g., compacted native site soils) should be placed at the surface and be graded away from the building/retaining wall to limit surface water infiltration if basement/retaining walls are adjacent to landscaped areas (i.e., not paved areas).

Recommended earth pressure design criteria are presented below:

Static Condition During Wall Construction	**Recommended Equivalent Fluid Weight of Soil Backfill (pounds per cubic foot)**
At-Rest Pressure Behind Rigid Foundation Walls (Constrained for lateral movement at top or by multiple levels of bracing, such as basement walls)[a]	60[b] (level backfill only)
Active Pressure Behind Walls Free to displace laterally, such as cantilever retaining walls[a]	40[b] (level backfill only)
Passive Resistance in Front of Walls[d]	230[c] (level backfill only)

[a] The pressures assume foundation drainage to bottom of wall (i.e., no hydrostatic pressure on wall)
[b] These unit weights assume use of free draining compacted Granular Fill backfill against the walls, as described above. Also, where the equivalent wall pressure is less than 240 pounds per square foot (i.e., near the top of wall), use a uniform pressure of 240 pounds per square foot until wall pressure reaches this value, to account for locked in compaction stresses.
[c] Assumes compacted granular backfill against the footings, below frost depth.
[d] Passive pressure should be neglected where the ground slopes away from the walls.

GEODesign recommends using a friction coefficient of 0.45 (ultimate) for cast concrete placed over natural silty gravelly sand subgrades.

The concrete foundation and wall designer must consider the effects of planned stored materials or surcharge loading (such as parked cars or traffic loads adjacent to the foundation wall) which causes increased lateral pressure on the wall backfill. The additional lateral earth pressure acting on the wall due to surcharge loading can be computed by multiplying the applied uniform surcharge load by an active earth pressure coefficient, k_a, of 0.32 (assuming the walls are free to rotate at the top) or an at-rest earth pressure coefficient, k_o, of 0.5 (assuming walls are fixed at the top and restrained from rotation). Overturning and sliding of the exterior walls should be evaluated by the designer.

5.6 Pavement Recommendations

Laboratory test results indicate site soils below the proposed paved areas are silty and do not meet soil gradation requirements for pavement subbase materials. Existing soils will therefore need to be excavated and replaced with engineered materials, as discussed below.

We recommend an 18" thick subbase of compacted Crushed Gravel (VTrans Item 704.05) or Dense Graded Crushed Stone (VTrans Item 704.06). For additional frost protection given silty site soils, we recommend the Owner and design add an additional 6" thick of frost-free sand layer (VTrans Item 703.03) below the subbase.

The subbase should be overlain by a minimum 2" thick base course (Type II) and minimum 1.5" thick wearing surface (Type III or IV).

The above recommendations have been generated in accordance with the VTrans Simplified Pavement Design for Small Projects.

6.0 CONSTRUCTION CONSIDERATIONS

6.1 Footing Subgrade Preparation

6.1.1 Soil Foundation Subgrade Preparation

We recommend proof-compacting natural subgrade soils at foundation levels where site conditions allow. Site soils silty and susceptible to disturbance from water or excessive foot/equipment traffic during construction and measures may be required to protect the subgrades from becoming disturbed. We recommend GEODesign review foundation subgrade conditions prior to backfilling or pouring foundations so that we may recommend appropriate preparation measures as needed. These measures are expected to include proof-compaction of the subgrade and/or installation of protective working mats. Working mats (if recommended) would consist of a 6" thick layer of Granular Fill or Crushed Stone enveloped in non-woven filter fabric (see Appendix D for criteria) to protect the natural soils during footing preparation.

In localized areas, footing preparation may require over-excavation below the bottom of footing to remove fill soils and reach the natural silty gravelly sand. We recommend proof-compacting the natural subgrade once exposed, prior to the placement and compaction of Granular Fill up to new footing levels.

Boulders may be present at subgrade levels within the natural soils. Boulders should be removed and replaced with compacted Granular Fill unless they remain undisturbed and do not protrude beyond a subsequent lift thickness of Granular Fill (i.e., less than 12 inches).

6.1.2 Bedrock Foundation Subgrade Preparation

Although unlikely, we can't rule out the possibility that bedrock may be encountered at the northwest portion of the new building, based on auger refusals while advancing Boring B-7. Depths of these refusals were close to anticipated proposed bottom of footings levels (refusals were at 8' and 9' deep). If bedrock is encountered at subgrade levels, rock subgrade surfaces having an average slope greater than 10 percent across the width of the footing in any direction will need to be leveled. Leveling shall be accomplished by mechanical means of rock removal (i.e. hammering). We do not recommend blasting for rock removal at this site.

Alternatively, it is acceptable to install dowels into the rock in lieu of leveling the subgrade by mechanical means. In our experience, 30-inch-long Grade 60 No. 8 size reinforcing dowel bars drilled into the subgrade at least 12 inches into the rock are typically sufficient. However, we recommend the Structural Engineer review this option and specify the number of bars required based on the measured slope of the rock subgrade if this alternative is pursued.

6.2 Construction Dewatering

Foundation subgrades should be excavated so surface water is directed away from the excavations. Water collected on footing subgrades should drain to a localized sump used as necessary to maintain a dry working surface.

Excavations for basement areas are not anticipated to extend below natural groundwater elevations based on boring observations and monitoring well data. If encountered locally, we expect groundwater infiltration can likely be controlled through the use of perimeter trenches, sumps and pumps placed as needed throughout and around the excavation.

6.3 Support of Excavation and Protection of Adjacent Facilities

Excavations adjacent to and within the zone of influence of adjacent foundations, slabs, basements, utilities and streets will require lateral support, or where possible controlled open cuts in accordance with OSHA standards. We recommend open cuts less than 20' in height do not exceed a 1.5 Horizontal: 1 Vertical slope.

If excavations will exceed 20-feet in height or the above criteria cannot be met, an excavation support system must be prepared by a registered Professional Engineer. Design submittals for temporary excavation support systems must be stamped by a Professional Engineer licensed in the State of Vermont for review by the full design team.

6.4 Soil Reuse Potential

Non-engineered fill soils to be excavated for the building foundations and below pavement areas are expected to contain between approximately 20% and 40% silt (by total weight). These soils

are frost susceptible and can be disturbed when wet. These soils will not meet the requirements for Granular Fill and will be unsuitable for base materials below paved/finished areas.

While there may be select zones of fill soils with the potential for reuse (such as in the vicinity of Boring B-2), in general reuse potential for excavated onsite soils will be limited. The excavated onsite soils are recommended for general grading outside of critical areas as non-structural bulk fill, provided they are free from construction debris and other deleterious materials, and are not placed within frost-sensitive locations, settlement sensitive locations, or locations requiring free-draining backfill. If these soils are to be reused, they must be stored in a manner and placed/compacted in conditions that allow the soil to remain dry enough to achieve the compaction requirements outlined in Appendix D.

7.0 RECOMMENDED FOLLOW-THROUGH

7.1 Design Development and Final Design

GEODesign is scheduled to perform an additional soil boring (Boring B-3) in January, 2023. Following completion of that boring we will evaluate slope conditions, and provide retaining wall design recommendations specific to the proposed parking area at the east end of the site. Reporting and recommendations will be provided under separate cover.

GEODesign should maintain involvement through design development for continuity between our recommendations provided herein and final design documents issued for construction. At a minimum we recommend that GEODesign:

- participate in design team meetings regarding geotechnical aspects of the project;
- review structural plans for coordination with our design recommendations; and,
- participate in preparation or review of geotechnical related project specifications.

7.2 Construction Monitoring

We recommend that GEODesign provide construction monitoring services to document compliance with our design concepts, specifications, recommendations, and facilitate changes as actual conditions are uncovered in the field. At a minimum our construction services scope should include:

- review of geotechnical related Contractor submittals;
- observation, documentation and acceptance of natural soil (and bedrock, if encountered) subgrades for foundations;
- observation and compaction testing for structural fill placed below foundations and within their 1H:1V zone of influence (where required); and,
- observation and compaction testing of pavement subgrades and subbase materials.

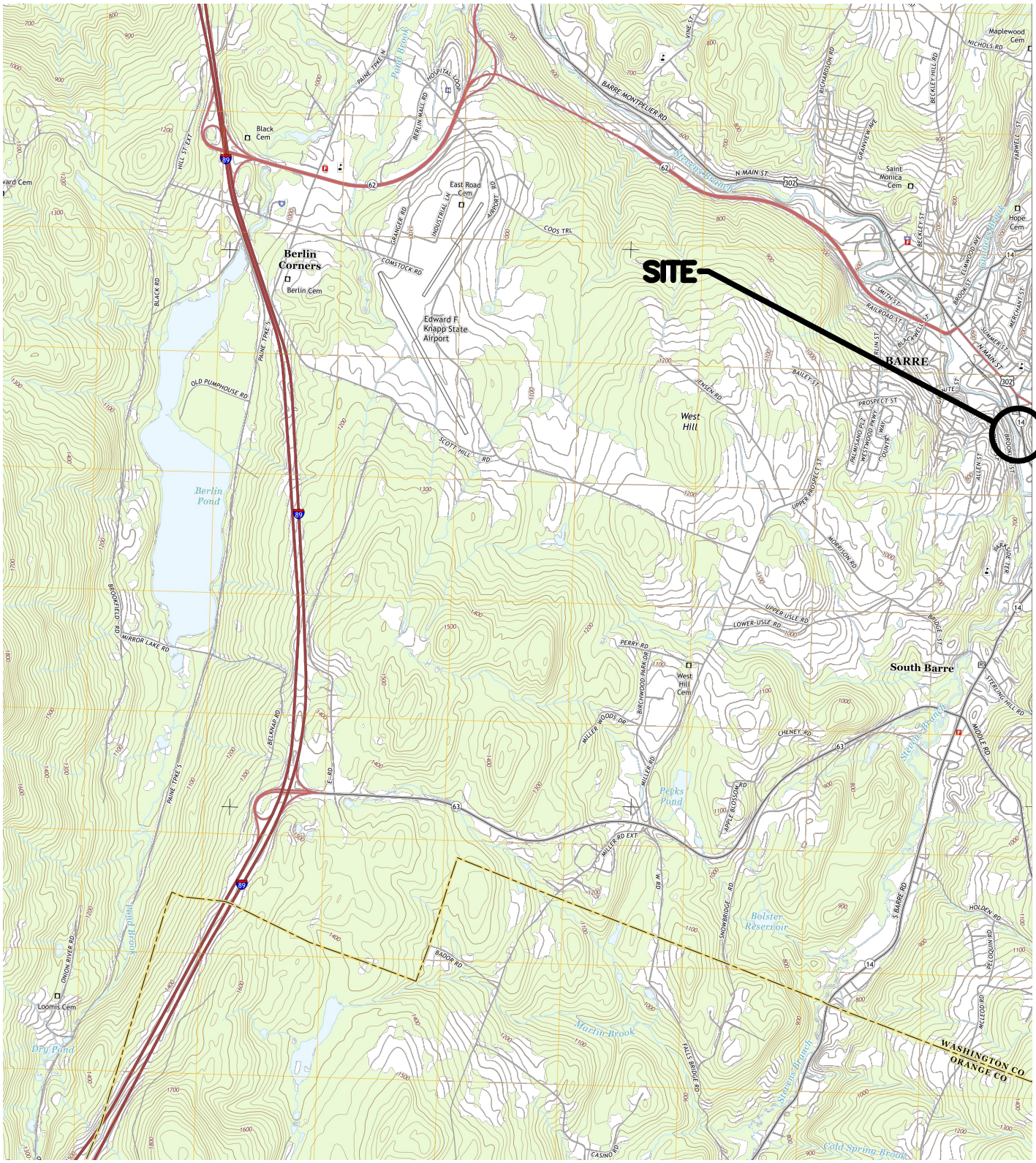
8.0 LIMITATIONS

Limitations of this report are included in Appendix E.

GEODesign, Inc.
85 Granite Shed Lane
Unit #1
Montpelier, VT 05602
(802) 674-2033

APPENDIX A – FIGURES

- FIGURE 1 – SITE LOCATION
- FIGURE 2 – EXPLORATION LOCATION PLAN



GEO DESIGN
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UNIT 1
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geocompanies.com

VERMONT

VERMONT QUADRANGLE LOCATION

SITE LOCUS PLAN
TURNING POINT CENTER
BARRE, VERMONT

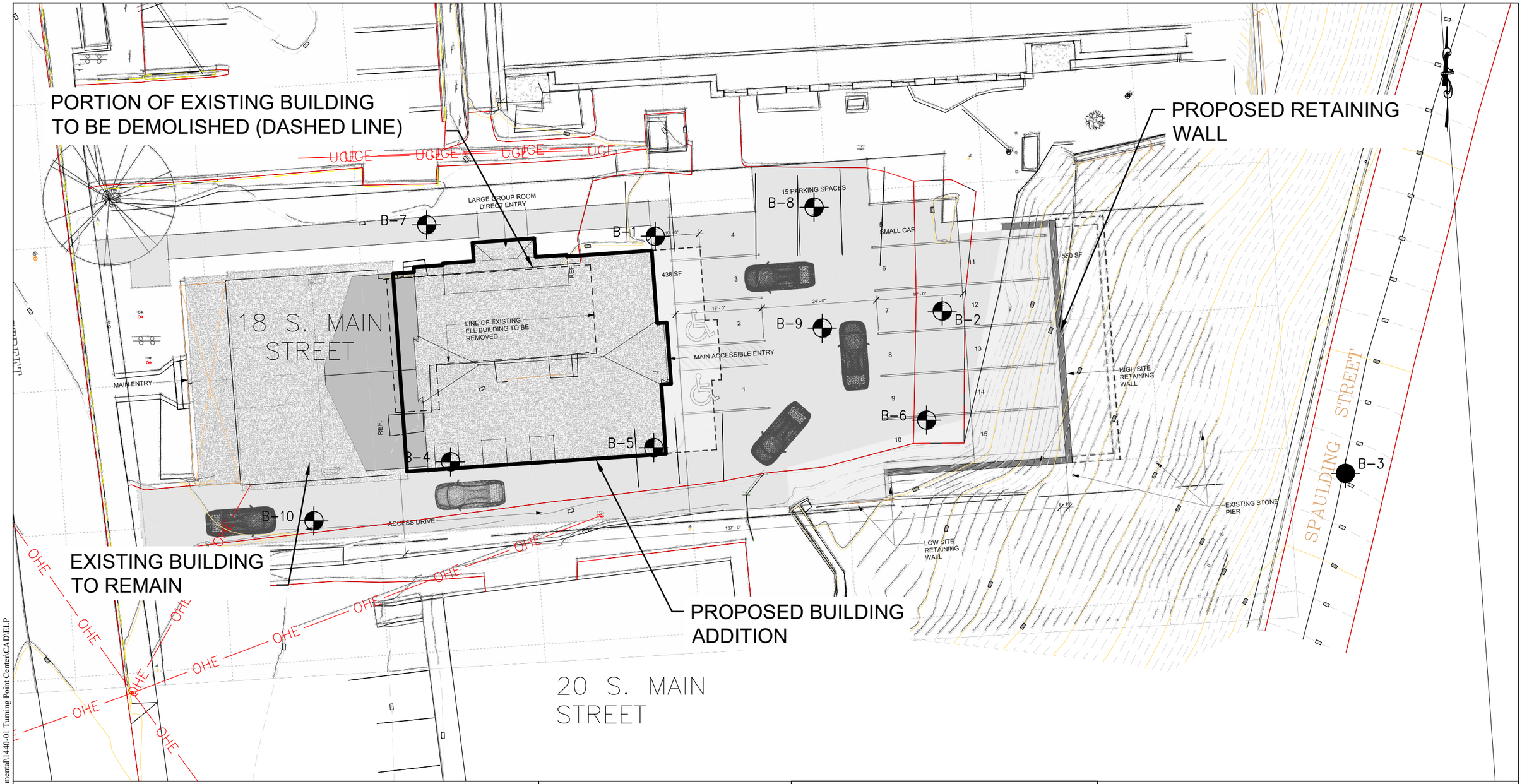
REFERENCE:
U.S.G.S. 7.5 MINUTE QUADRANGLE: BURLINGTON, VERMONT.
FIGURE WAS CREATED USING U.S.G.S. TOPOGRAPHICAL MAP.

NOT TO SCALE

PROJECT NO.	1440-01
DATE	12/09/2022
FIGURE NO.	1

DRAWN BY:	JAC	REVIEWED BY:	JFW

M:\CL\1440 Stone Environmental\1440-01 Turning Point Center\CAD\1440-01 LOCUS.dwg



NOTES:

1. BASE MAP DEVELOPED FROM ELECTRONIC FILES PROVIDED BY STONE ENVIRONMENTAL, INC. VIA EMAIL ON SEPTEMBER 20, 2022, ENTITLED "727462_SV01.dwg" AND REVISED PROPOSED BUILDING PLAN ENTITLED "2022-08-16 Architectural Set In progress Turning Point – Renovation.pdf" OVERLAYED IN CAD BY GEODESIGN.
2. SOIL BORINGS WERE PERFORMED BY SEABOARD DRILLING ON OCTOBER 29, OCTOBER 31 AND NOVEMBER 1, 2022 AND OBSERVED AND LOGGED BY GEODESIGN PERSONNEL.
3. THE SOIL BORING LOCATIONS WERE DETERMINED BY TAPED MEASUREMENTS FROM EXISTING SITE FEATURES. THESE LOCATIONS SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.

LEGEND

B-1 — TEST BORING NO. AND LOCATION BY GEODESIGN, INC.

B-3 — PLANNED JAN. 2023 BORING LOCATION BY GEODESIGN, INC.

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DRAWN BY: JAC | REVIEWED BY: JFW

EXPLORATION LOCATION PLAN
TURNING POINT CENTER
BARRE, VT

PROJECT NO: 1440-01

SCALE IN FEET
1" = 40'
0 20 40 80

DATE: NOVEMBER 2, 2022

FIGURE NO. 2

CAD FILE No. M:\CL\1440 Stone Environmental\1440-01 Turning Point Center\CAD\ELP

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APPENDIX B –BORING LOGS

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4 Laurel Hill Drive Ste 8
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Phone: 802-652-5140

BORING LOG

Project Name

Turning Point Center
18 South Main St
Barre, VT

Boring No.: **B-01**
Page No.: 1 of 1
File No.: 1440-01
Checked By: JAG/JFW

Boring Company:	Seaboard Drilling				Casing:	Sampler:	
Foreman:	Mike and Dale			Type:	H.S.A.	SS	
GeoDesign Rep.:	Jack Cassara			I.D.:	4.25 in.	1.38 in.	
Date Started:	October 29, 2022	Date Finished:	October 29, 2022	Hammer Wt.:	NA	140 lbs	
N. Coordinate:	Not Available	E. Coordinate:	Not Available	Hammer Fall:	NA	30 in.	
Ground Surface Elevation (feet):	605			Rig Type:	Mobil B53 Truck		
Station:		Offset:	ft	Hammer Type:	Auto		

Groundwater Observations			
Date	Depth (ft)	Elev. (ft)	Notes
▼ 10/29/22, 0:00	19.0	586.0	Wet sample
▼ 11/11/22, 0:00	18.6	586.4	Monitoring Well
▼			
▼			

Depth (ft)	Casing Blows/ft	Sample Number	Sample Type	Penetration (inches)	Recovery (inches)	Sample Depth (ft)	Blows / 6 inch Interval 0 - 6	6 - 12	12 - 18	18 - 24	Coring Time (min./ft)	Moisture Content (%)	Strata Description (Depth & Elevation(feet))	Symbol	Sample Description (Classification System:)
		S1	SS	24	11	0	8	5	4	2			2" Asphalt 604.8 Fill		S1) Loose, brown, fine to coarse SAND, little Silt, trace fine Gravel, moist.
		S2	SS	24	13	2	4	2	2	1					S2) Loose, brown, fine to coarse SAND and SILT, trace fine Gravel, moist.
5		S3	SS	24	9	4	1	1	1	3					S3) Very loose, brown, SILT and fine SAND, moist.
		S4	SS	24	22	6	4	8	6	6			6.5 Silty Sand 598.5 (POSSIBLE FILL) 8		S4) Medium dense. S4A) Top 6": brown, SILT and fine to coarse SAND, moist.
		S5	SS	24	9	8	9	8	3	2			Silty 597.0 Gravelly Sand (POSSIBLE FILL)		S4B) Bottom 18": light brown, fine to medium SAND, some SILT, moist.
10		S6	SS	24	8	10	3	3	4	5					S5) Medium dense, orange-brown, fine to coarse Sand, some Silt, some fine Gravel, moist.
		S7	SS	24	16	12	7	15	16	16			13 Silty 592.0 Gravelly Sand		S6) Loose, orange-brown, fine to coarse SAND, some Silt, some fine Gravel, moist.
15		S8	SS	24	18	14	28	48	17	25			16		S7) Dense, orange-brown, fine to coarse SAND, some Silt, some fine Gravel, moist.
		S9	SS	24	10	16	41	19	30	17			Cobble 589.0 17		S8) Very dense, orange-brown, fine to coarse SAND, some Silt, some fine to coarse Gravel, moist.
		S10	SS	24	11	18	31	16	23	13			Silty 588.0 Gravelly Sand ▼		S9) Dense, orange-brown, fine to coarse SAND, some Silt, some fine Gravel, moist.
20		S11	SS	24	13.5	20	13	15	17	17					S10) Dense, orange-brown, fine to coarse SAND, some Silt, some fine Gravel, moist.
													22 Bottom 583.0 of Exploration at 22.0 ft		S11) Dense, orange-brown, fine to coarse SAND and fine to coarse GRAVEL, wet.
25															
30															

Remarks

1) Ground surface elevation estimated from topographic site plan provided electronically by Stone Environmental.
2) Continuous sampling to water table per Stone Environmental.
3) Split spoon samples S2, S4, S6, S8, S10 not per ASTM standard.
4) Driller noted increased resistance at approximately 14'.
5) May have overlapped split spoon samples at S9, S10, S11 due to auger refusal.
6) Monitoring well installed by Stone Environmental upon borehole completion.

Notes:

1) Stratification Lines Represent Approximate Boundary Between Material Types, Transitions May Be Gradual.
2) Water Level Readings Have Been Made At Times And Under Conditions Stated, Fluctuations Of Groundwater May Occur Due To Other Factors Than Those Present At The Time Measurements Were Made. A.C. = After coring; N.R. = Not Recorded.
3) Sample Type Coding: A=Auger; C=Core; D=Driven; G=Grab; PS=Piston Sampler; SS=Split Barrel (Split Spoon); ST=Shelby Tube; Geo=GeoProbe V=Vane; WOR/H=Weight of Rod/Hammer
4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

STANDARD LOG - NO COORDINATES GINT 1440.GPJ GEODESIGN STANDARD .GDT 12/8/22

GEO DESIGN
Geotechnical / Construction / Environmental Engineers and Scientists
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S. Burlington, VT 05403
Phone: 802-652-5140

BORING LOG

Project Name

Turning Point Center
18 South Main St
Barre, VT

Boring No.: **B-02**
Page No.: 1 of 1
File No.: 1440-01
Checked By: JAG/JFW

Boring Company:	Seaboard Drilling		
Foreman:	Mike and Dale		
GeoDesign Rep.:	Jack Cassara		
Date Started:	October 29, 2022	Date Finished:	October 31, 2022
N. Coordinate:	Not Available	E. Coordinate:	Not Available
Ground Surface Elevation (feet):	605		
Station:		Offset: ft	

	Casing:	Sampler:
Type:	H.S.A.	SS
I.D.:	4.25 in.	1.38 in.
Hammer Wt.:	NA	140 lbs
Hammer Fall:	NA	30 in.
Rig Type:	Mobil B53 Truck	
Hammer Type:	Auto	

Groundwater Observations

Date	Depth (ft)	Elev. (ft)	Notes
▼ 10/29/22, 0:00	18.5	586.5	Wet sample
▼ 10/31/22, 0:00	20.0	585.0	Wet sample
▼			
▼			

Depth (ft)	Casing Blows/ft	Sample Info: Number	Type	Penetration (inches)	Recovery (inches)	Depth (ft)	Blows / 6 inch Interval: 0 - 6	6 - 12	12 - 18	18 - 24	Coring Time (min./ft)	Moisture Content (%)	Strata Description (Depth & Elevation(feet))	Symbol	Sample Description (Classification System:)
		S1	SS	24	12	0	4	6	6	6			6" Topsoil Fill 604.5		S1) Medium dense, brown, fine to coarse SAND, some fine Gravel, little (+) Silt, moist.
		S2	SS	24	20	2	3	4	7	7					S2) Medium dense. S2A) Top 10": brown to light brown, fine to medium SAND, moist. S2B) Bottom 10": brown to light brown, fine to coarse SAND, little Silt, trace fine Gravel, moist.
5		S3	SS	24	19	5	7	6	7	7					
		S4	SS	24	14	7	10	10	9	8			7.5 Silty Gravelly Sand 597.5		S3) Medium dense, gray / brown, fine to coarse SAND and SILT, trace fine Gravel, moist. S4) Medium dense. S4A) Top 4": gray / brown, fine to coarse SAND and SILT, trace fine Gravel, moist. S4B) Bottom 10": orange-brown, fine to coarse Sand, fine to coarse Gravel, some Silt, moist.
10		S5	SS	24	15	10	19	9	12	11					S5) Medium dense, fine to coarse SAND, little fine to coarse Gravel, some Silt, moist.
15		S6	SS	24	15	15	31	11	8	8			15 Silty Sand 590.0		S6) Medium dense, brown, fine to medium Sand, some Silt, moist.
		S7	SS	24	20	17	10	11	12	16			18 Silty Gravelly Sand 587.0 ▼		S7) Medium dense. S7A) Top 14": brown, fine to medium Sand, some Silt, moist. S7B) Bottom 6": brown, fine to coarse SAND, some Silt, little fine Gravel, moist.
20		S8	SS	24	11	20	23	18	17	12			22 Bottom of Exploration at 22.0 ft 583.0		S8) Dense, orange-brown, fine to coarse SAND, some Silt, little fine Gravel, wet.
25															
30															

Remarks

1) Ground surface elevation estimated from topographic site plan provided electronically by Stone Environmental.
2) Continuous sampling to water table per Stone Environmental.
3) Split spoon samples S2, S4, S7 not per ASTM standard.
4) Driller noted auger resistance at approximately 9'.
5) Attempted second split spoon sample after S8 and borehole collapsed.

Notes:

1) Stratification Lines Represent Approximate Boundary Between Material Types, Transitions May Be Gradual.
2) Water Level Readings Have Been Made At Times And Under Conditions Stated, Fluctuations Of Groundwater May Occur Due To Other Factors Than Those Present At The Time Measurements Were Made. A.C. = After coring; N.R. = Not Recorded.
3) Sample Type Coding: A=Auger; C=Core; D=Driven; G=Grab; PS=Piston Sampler; SS=Split Barrel (Split Spoon); ST=Shelby Tube; Geo=GeoProbe V=Vane; WOR/H=Weight of Rod/Hammer
4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

STANDARD LOG - NO COORDINATES GINT 1440.GPJ GEODESIGN STANDARD .GDT 12/8/22

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Phone: 802-652-5140

BORING LOG

Project Name

Turning Point Center
18 South Main St
Barre, VT

Boring No.: **B-04**
Page No.: 1 of 1
File No.: 1440-01
Checked By: JAG/JFW

Boring Company: Seaboard Drilling
Foreman: Mike and Dale
GeoDesign Rep.: Jack Cassara
Date Started: October 31, 2022 Date Finished: October 31, 2022
N. Coordinate: Not Available E. Coordinate: Not Available
Ground Surface Elevation (feet): 605
Station: Offset: ft

	Casing:	Sampler:
Type:	H.S.A.	SS
I.D.:	4.25 in.	1.38 in.
Hammer Wt.:	NA	140 lbs
Hammer Fall:	NA	30 in.
Rig Type:	Mobil B53 Truck	
Hammer Type:	Auto	

Groundwater Observations

Date	Depth (ft)	Elev. (ft)	Notes
▼ 11/11/22, 0:00	20.5	584.5	Monitoring Well
▼			
▼			
▼			

Depth (ft)	Casing Blows/ft	Sample Number	Sample Type	Penetration (inches)	Recovery (inches)	Sample Depth (ft)	Blows / 6 inch Interval 0 - 6	6 - 12	12 - 18	18 - 24	Coring Time (min./ft)	Moisture Content (%)	Strata Description (Depth & Elevation(feet))	Symbol	Sample Description (Classification System:)
		S1	SS	24	18	0	2	3	3	2			3" Asphalt 604.8 Fill		S1) Loose, brown gray, fine to coarse SAND and SILT, moist.
		S2	SS	24	18	2	5	4	2	1					S2) Loose, brown, fine to coarse SAND and SILT, trace fine Gravel, moist.
5		S3	SS	24	10	4	3	2	3	4					S3) Loose, brown gray, fine to coarse SAND and SILT, moist.
		S4	SS	24	13	6	5	5	5	5			6.5		S4) Medium dense.
													Silty Gravelly Sand (POSSIBLE FILL) 598.5		S4A) Top 4": brown gray, fine to coarse SAND and SILT, moist.
		S5	SS	24	6	8	6	5	4	7					S4B) Bottom 9": brown-gray, fine to coarse SAND and SILT, little Gravel, moist.
10		S6	SS	24	14	10	4	4	3	4					S5) Loose, brown, fine to coarse SAND and SILT, trace fine Gravel, moist.
		S7	SS	24	7	12	5	7	19	18			13		S6) Loose, orange-brown, fine to coarse SAND and SILT, little fine Gravel, moist.
15													Silty Gravelly Sand 592.0		S7) Medium dense, brown, fine to coarse SAND and SILT, little fine to coarse Gravel, moist.
		S8	SS	24	13	17	25	41	37	16			18		S8) Very dense, brown gray, fine to coarse Gravel, some fine to coarse Sand, some silt.
													19 Cobble 587.0		
20													Silty Gravelly Sand 586.0		
		S9	SS	24	9	20	10	12	11	12			▼		S9) Medium dense, orange-brown, fine to coarse GRAVEL and Sand, some SILT, moist.
													22		
													Bottom of Exploration at 22.0 ft 583.0		
25															
30															

Remarks

1) Ground surface elevation estimated from topographic site plan provided electronically by Stone Environmental.
2) Continuous sampling to water table per Stone Environmental.
3) Split spoon samples S2, S3, S4, S6, S7 not per ASTM standard.
4) Cobbles inferred at approximately 18'.
5) Monitoring well installed by Stone Environmental upon borehole completion.

Notes:
1) Stratification Lines Represent Approximate Boundary Between Material Types, Transitions May Be Gradual.
2) Water Level Readings Have Been Made At Times And Under Conditions Stated, Fluctuations Of Groundwater May Occur Due To Other Factors Than Those Present At The Time Measurements Were Made. A.C. = After coring; N.R. = Not Recorded.
3) Sample Type Coding: A=Auger; C=Core; D=Driven; G=Grab; PS=Piston Sampler; SS=Split Barrel (Split Spoon); ST=Shelby Tube; Geo=GeoProbe V=Vane; WOR/H=Weight of Rod/Hammer
4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

STANDARD LOG - NO COORDINATES GINT 1440.GPJ GEODESIGN STANDARD .GDT 12/8/22

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Phone: 802-652-5140

BORING LOG

Project Name

Turning Point Center
18 South Main St
Barre, VT

Boring No.: **B-05**
Page No.: 1 of 1
File No.: 1440-01
Checked By: JAG/JFW

Boring Company:	Seaboard Drilling		
Foreman:	Mike and Dale		
GeoDesign Rep.:	Jack Cassara		
Date Started:	November 1, 2022	Date Finished:	November 1, 2022
N. Coordinate:	Not Available	E. Coordinate:	Not Available
Ground Surface Elevation (feet):	605		
Station:		Offset: ft	

	Casing:	Sampler:
Type:	H.S.A.	SS
I.D.:	4.25 in.	1.38 in.
Hammer Wt.:	NA	140 lbs
Hammer Fall:	NA	30 in.
Rig Type:	Mobil B53 Truck	
Hammer Type:	Auto	

Groundwater Observations

Date	Depth (ft)	Elev. (ft)	Notes
▼			
▼			
▼			
▼			

Depth (ft)	Casing Blows/ft	Sample Information: Number	Type	Penetration (inches)	Recovery (inches)	Depth (ft)	Blows / 6 inch Interval: 0 - 6	6 - 12	12 - 18	18 - 24	Coring Time (min./ft)	Moisture Content (%)	Strata Description: Depth & Elevation(feet)	Symbol	Sample Description: Classification System:
		S1	SS	24	9	0	9	5	5	6			3" Asphalt 604.8		
													Fill		S1) Medium dense, brown fine to coarse SAND and SILT, trace fine Gravel, moist.
		S2	SS	24	6	2	8	7	8	8					S2) Medium dense, brown fine to coarse SAND and SILT, little fine to coarse Gravel, moist.
5		S3	SS	24	11	4	7	7	8	10					S3) Medium dense, brown fine to coarse SAND and SILT, trace fine to coarse Gravel, moist.
		S4	SS	24	10	6	10	8	7	10					S4) Medium dense, brown fine to coarse SAND and SILT, trace fine Gravel, moist.
													8		
		S5	SS	15	15	8	20	17	50/3"				Silty Gravelly Sand 597.0		S5) Very dense, gray/orange/brown fine to coarse SAND and SILT, little fine to coarse Gravel, moist.
10															
		S6	SS	2	2	10	50/2"								S6) Very dense, gray stone chips.
													13		
													Cobble 592.0		
													14		
15													Silty Gravelly Sand 591.0		
		S7	SS	21	12	15	12	18	23	50/3"					S7) Dense, gray/orange/brown fine to coarse SAND and SILT, trace fine to coarse Gravel, moist.
													16.8		
													Bottom of Exploration at 16.8 ft 588.2		
20															
25															
30															

Remarks

1) Ground surface elevation estimated from topographic site plan provided electronically by Stone Environmental.
2) Continuous sampling to water table per Stone Environmental.
3) Split spoon samples S2, S3, S4 not per ASTM standard.
4) Cobbles inferred at approximately 13'.

Notes:

1) Stratification Lines Represent Approximate Boundary Between Material Types, Transitions May Be Gradual.
2) Water Level Readings Have Been Made At Times And Under Conditions Stated, Fluctuations Of Groundwater May Occur Due To Other Factors Than Those Present At The Time Measurements Were Made. A.C. = After coring; N.R. = Not Recorded.
3) Sample Type Coding: A=Auger; C=Core; D=Driven; G=Grab; PS=Piston Sampler; SS=Split Barrel (Split Spoon); ST=Shelby Tube; Geo=GeoProbe V=Vane; WOR/H=Weight of Rod/Hammer
4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

STANDARD LOG - NO COORDINATES GINT 1440.GPJ GEODESIGN STANDARD .GDT 12/8/22

BORING LOG

GEO DESIGN

Geotechnical / Construction / Environmental Engineers and Scientists

85 Granite Shed Lane, Unit #1
Montpelier, VT 05602
Phone: 802-674-2033

4 Laurel Hill Drive Ste 8
S. Burlington, VT 05403
Phone: 802-652-5140

Project Name

Turning Point Center
18 South Main St
Barre, VT

Boring No.: **B-06**
Page No.: 1 of 1
File No.: 1440-01
Checked By: JAG/JFW

Boring Company: Seaboard Drilling
Foreman: Mike and Dale
GeoDesign Rep.: Jack Cassara
Date Started: November 1, 2022 Date Finished: November 1, 2022
N. Coordinate: Not Available E. Coordinate: Not Available
Ground Surface Elevation (feet): 605
Station: Offset: ft

	Casing:	Sampler:
Type:	H.S.A.	SS
I.D.:	4.25 in.	1.38 in.
Hammer Wt.:	NA	140 lbs
Hammer Fall:	NA	30 in.
Rig Type:	Mobil B53 Truck	
Hammer Type:	Auto	

Groundwater Observations

Date	Depth (ft)	Elev. (ft)	Notes
▼			
▼			
▼			
▼			

Depth (ft)	Casing Blows/ft	Sample Info: Number	Type	Penetration (inches)	Recovery (inches)	Depth (ft)	Blows / 6 inch Interval: 0 - 6	6 - 12	12 - 18	18 - 24	Coring Time (min./ft)	Moisture Content (%)	Strata Description (Depth & Elevation(feet))	Symbol	Sample Description (Classification System:)
		S1	SS	24	16	0	7	4	5	4			3" Asphalt 604.8 Fill		S1) Loose, brown fine to coarse SAND, some (-) Silt, little fine Gravel, moist.
													2		
		S2	SS	24	15	2	3	5	12	10			2.75 Silty Sand 603.0 (POSSIBLE FILL)		S2) Medium dense.
													602.3		S2A) Top 9": light brown fine to medium SAND and SILT, dry.
5		S3	SS	24	8	4	7	9	3	2			Silty Gravelly Sand (POSSIBLE FILL)		S2B) Bottom 6": dark brown fine to coarse SAND and SILT, little fine Gravel, dry.
		S4	SS	24	9.5	6	3	2	3	2					S3) Medium dense, dark brown fine to coarse SAND and SILT, little fine Gravel, moist.
															S4) Loose, orange/brown fine to coarse SAND and SILT, little fine Gravel, moist.
10													10		
		S5	SS	24	9	10	6	8	12	13			Silty Gravelly Sand 595.0		S5) Medium dense, orange/brown/gray fine to coarse SAND and SILT, trace fine Gravel, moist.
													14		
15		S6	SS	24	2	14	39	31	21	19			15 Cobble 591.0		S6) Very dense, gray COBBLE/BOULDER.
													Silty Gravelly Sand 590.0		
		S7	SS	24	15	16	25	13	19	21					S7) Dense, orange/brown/gray fine to coarse SAND and SILT, trace fine Gravel, moist.
													18		
													Bottom 587.0 of Exploration at 18.0 ft		
20															
25															
30															

Remarks

1) Ground surface elevation estimated from topographic site plan provided electronically by Stone Environmental.
2) Continuous sampling to water table per Stone Environmental.
3) Split spoon samples S2, S3, S4, S7 not per ASTM standard.
4) Auger resistance at approximately 14' on possible cobble or boulder.

Notes:

1) Stratification Lines Represent Approximate Boundary Between Material Types, Transitions May Be Gradual.
2) Water Level Readings Have Been Made At Times And Under Conditions Stated, Fluctuations Of Groundwater May Occur Due To Other Factors Than Those Present At The Time Measurements Were Made. A.C. = After coring; N.R. = Not Recorded.
3) Sample Type Coding: A=Auger; C=Core; D=Driven; G=Grab; PS=Piston Sampler; SS=Split Barrel (Split Spoon); ST=Shelby Tube; Geo=GeoProbe V=Vane; WOR/H=Weight of Rod/Hammer
4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

Boring No.: **B-06**

STANDARD LOG - NO COORDINATES GINT 1440.GPJ GEODESIGN STANDARD .GDT 12/9/22

GEO DESIGN
Geotechnical / Construction / Environmental Engineers and Scientists
85 Granite Shed Lane, Unit #1
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4 Laurel Hill Drive Ste 8
S. Burlington, VT 05403
Phone: 802-652-5140

BORING LOG

Project Name

Turning Point Center
18 South Main St
Barre, VT

Boring No.: **B-07**
Page No.: 1 of 1
File No.: 1440-01
Checked By: JAG/JFW

Boring Company:	Seaboard Drilling		
Foreman:	Mike and Dale		
GeoDesign Rep.:	Jack Cassara		
Date Started:	October 29, 2022	Date Finished:	October 29, 2022
N. Coordinate:	Not Available	E. Coordinate:	Not Available
Ground Surface Elevation (feet):	605		
Station:		Offset: ft	

	Casing:	Sampler:
Type:	H.S.A.	SS
I.D.:	4.25 in.	1.38 in.
Hammer Wt.:	NA	140 lbs
Hammer Fall:	NA	30 in.
Rig Type:	Mobil B53 Truck	
Hammer Type:	Auto	

Groundwater Observations

Date	Depth (ft)	Elev. (ft)	Notes
▼			
▼			
▼			
▼			

Depth (ft)	Casing Blows/ft	Sample Number	Sample Type	Penetration (inches)	Recovery (inches)	Sample Depth (ft)	Blows / 6 inch Interval 0 - 6	6 - 12	12 - 18	18 - 24	Coring Time (min./ft)	Moisture Content (%)
		S1	SS	24	13	0	1	3	4	3		
		S2	SS	24	20	2	2	3	2	3		
5		S3	SS	24	10	4	1	3	4	12		
		S4	SS	24	16	6	9	7	12	11		
		S5	SS	9	3	8	7	50/3				
10		S6	SS	1	0.5	9	50/1					
15												
20												
25												
30												

Depth & Elevation(feet)	Strata Description	Symbol	Sample Description (Classification System:)
0 / 604.8	3" Topsoil / Fill		S1) Loose, brown, fine SAND and SILT, trace roots, moist.
			S2) Loose, brown, fine SAND and SILT, trace fine Gravel, moist.
			S3) Loose, brown, fine to coarse SAND and SILT, trace fine to coarse Gravel, moist.
5.5 / 599.5	Silty Gravelly Sand		S4) Medium dense, brown to light brown, coarse SAND, Some Silt, Some fine to coarse Gravel, moist.
8.5			S5) Refusal, gray stone chips in spoon.
9.1 / 596.5	Boulder/ Bedrock		S6) Refusal, gray stone chip in spoon.
595.9	Bottom of Exploration at 9.1 ft		

Remarks

1) Ground surface elevation estimated from topographic site plan provided electronically by Stone Environmental.
2) Continuous sampling to water table per Stone Environmental.
3) Auger refusal at approximately 9'. Offset borehole 5' and auger refusal again at approximately 8'. Refusal on possible cobble, boulder, or bedrock.

Notes:

1) Stratification Lines Represent Approximate Boundary Between Material Types, Transitions May Be Gradual.
2) Water Level Readings Have Been Made At Times And Under Conditions Stated, Fluctuations Of Groundwater May Occur Due To Other Factors Than Those Present At The Time Measurements Were Made. A.C. = After coring; N.R. = Not Recorded.
3) Sample Type Coding: A=Auger; C=Core; D=Driven; G=Grab; PS=Piston Sampler; SS=Split Barrel (Split Spoon); ST=Shelby Tube; Geo=GeoProbe V=Vane; WOR/H=Weight of Rod/Hammer
4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

STANDARD LOG - NO COORDINATES GINT 1440.GPJ GEODESIGN STANDARD .GDT 12/8/22

BORING LOG

GEO DESIGN

Geotechnical / Construction / Environmental Engineers and Scientists

85 Granite Shed Lane, Unit #1
Montpelier, VT 05602
Phone: 802-674-2033

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S. Burlington, VT 05403
Phone: 802-652-5140

Project Name

Turning Point Center
18 South Main St
Barre, VT

Boring No.: **B-08**
Page No.: 1 of 1
File No.: 1440-01
Checked By: JAG/JFW

Boring Company: Seaboard Drilling
Foreman: Mike and Dale
GeoDesign Rep.: Jack Cassara
Date Started: November 1, 2022 Date Finished: November 1, 2022
N. Coordinate: Not Available E. Coordinate: Not Available
Ground Surface Elevation (feet): 605
Station: Offset: ft

	Casing:	Sampler:
Type:	None	SS
I.D.:	N/A in.	1.38 in.
Hammer Wt.:	N/A	140 lbs
Hammer Fall:	N/A	30 in.
Rig Type:	Mobil B53 Truck	
Hammer Type:	Auto	

Groundwater Observations

Date	Depth (ft)	Elev. (ft)	Notes
▼			
▼			
▼			
▼			

Depth (ft)	Casing Blows/ft	Sample Number	Sample Type	Penetration (inches)	Recovery (inches)	Sample Depth (ft)	Blows / 6 inch Interval 0 - 6	6 - 12	12 - 18	18 - 24	Coring Time (min./ft)	Moisture Content (%)	Strata Description (Depth & Elevation(feet))	Symbol	Sample Description (Classification System:)
		S1	SS	24	13	0	6	7	5	3			3" Asphalt 604.8 Fill		S1) Medium dense, fine to coarse SAND, some (+) Silt, trace (+) fine Gravel, moist.
		S2	SS	24	5	2	6	7	6	7					S2) Medium dense, brown/gray fine to coarse SAND and SILT, trace fine Gravel, moist.
5		S3	SS	24	12	4	5	8	17	8					S3) Medium dense, brown/gray fine to coarse SAND and SILT, trace fine Gravel, moist.
		S4	SS	24	3	6	4	8	11	11			8		S4) Medium dense, brown fine to coarse SAND and SILT, trace fine Gravel, moist.
		S5	SS	24	17	8	13	14	33	40			Silty Gravelly Sand 597.0		S5) Dense, brown/black fine to coarse SAND and SILT, dry. Possible asphalt from top of borehole.
10													10 Bottom of Exploration at 10.0 ft 595.0		
15															
20															
25															
30															

Remarks

1) Ground surface elevation estimated from topographic site plan provided electronically by Stone Environmental.
2) Continuous sampling to water table per Stone Environmental.
3) Split spoon samples S2, S3, S4, S5 not per ASTM standard.
4) Split spoon sample S5 may include asphalt from top of borehole.

Notes:

1) Stratification Lines Represent Approximate Boundary Between Material Types, Transitions May Be Gradual.
2) Water Level Readings Have Been Made At Times And Under Conditions Stated, Fluctuations Of Groundwater May Occur Due To Other Factors Than Those Present At The Time Measurements Were Made. A.C. = After coring; N.R. = Not Recorded.
3) Sample Type Coding: A=Auger; C=Core; D=Driven; G=Grab; PS=Piston Sampler; SS=Split Barrel (Split Spoon); ST=Shelby Tube; Geo=GeoProbe V=Vane; WOR/H=Weight of Rod/Hammer
4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

Boring No.: **B-08**

STANDARD LOG - NO COORDINATES GINT 1440.GPJ GEODESIGN STANDARD .GDT 12/8/22

BORING LOG

GEO DESIGN

Geotechnical / Construction / Environmental Engineers and Scientists

85 Granite Shed Lane, Unit #1
Montpelier, VT 05602
Phone: 802-674-2033

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Phone: 802-652-5140

Project Name

Turning Point Center
18 South Main St
Barre, VT

Boring No.: **B-09**
Page No.: 1 of 1
File No.: 1440-01
Checked By: JAG/JFW

Boring Company: Seaboard Drilling
Foreman: Mike and Dale
GeoDesign Rep.: Jack Cassara
Date Started: November 1, 2022 Date Finished: November 1, 2022
N. Coordinate: Not Available E. Coordinate: Not Available
Ground Surface Elevation (feet): 605
Station: Offset: ft

	Casing:	Sampler:
Type:	H.S.A.	SS
I.D.:	4.25 in.	1.38 in.
Hammer Wt.:	NA	140 lbs
Hammer Fall:	NA	30 in.
Rig Type:	Mobil B53 Truck	
Hammer Type:	Auto	

Groundwater Observations

Date	Depth (ft)	Elev. (ft)	Notes
▼			
▼			
▼			
▼			

Depth (ft)	Casing Blows/ft	Sample Information: Number	Type	Penetration (inches)	Recovery (inches)	Depth (ft)	Blows / 6 inch Interval: 0 - 6	6 - 12	12 - 18	18 - 24	Coring Time (min./ft)	Moisture Content (%)	Strata Description (Depth & Elevation(feet))	Symbol	Sample Description (Classification System:)
		S1	SS	24	13	0	10	8	4	3			3" Asphalt 604.8 Fill		S1) Medium dense, brown/gray fine to coarse SAND and SILT, trace fine Gravel, trace organics, moist.
		S2	SS	24	10	2	3	2	3	5					S2) Loose, brown fine to coarse SAND and SILT, trace fine Gravel, moist.
5		S3	SS	24	6	4	5	6	6	5					S3) Medium dense, brown/gray fine to coarse SAND and SILT, trace fine Gravel, moist.
		S4	SS	24	3	6	9	6	8	6			8		S4) Medium dense, brown/gray fine to coarse SAND and SILT, some fine Gravel, moist.
		S5	SS	24	2	8	10	9	20	22			Silty Gravelly Sand 597.0		S5) Medium dense, brown fine to coarse SAND and SILT, trace fine Gravel, moist.
10													10 Bottom of Exploration at 10.0 ft 595.0		
15															
20															
25															
30															

Remarks

1) Ground surface elevation estimated from topographic site plan provided electronically by Stone Environmental.
2) Continuous sampling to water table per Stone Environmental.
3) Split spoon sample S2, S3, S4 not per ASTM standard.

Notes:

1) Stratification Lines Represent Approximate Boundary Between Material Types, Transitions May Be Gradual.
2) Water Level Readings Have Been Made At Times And Under Conditions Stated, Fluctuations Of Groundwater May Occur Due To Other Factors Than Those Present At The Time Measurements Were Made. A.C. = After coring; N.R. = Not Recorded.
3) Sample Type Coding: A=Auger; C=Core; D=Driven; G=Grab; PS=Piston Sampler; SS=Split Barrel (Split Spoon); ST=Shelby Tube; Geo=GeoProbe V=Vane; WOR/H=Weight of Rod/Hammer
4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

STANDARD LOG - NO COORDINATES GINT 1440.GPJ GEODESIGN STANDARD .GDT 12/8/22

BORING LOG

GEO DESIGN

Geotechnical / Construction / Environmental Engineers and Scientists

85 Granite Shed Lane, Unit #1
Montpelier, VT 05602
Phone: 802-674-2033

4 Laurel Hill Drive Ste 8
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Phone: 802-652-5140

Project Name

Turning Point Center
18 South Main St
Barre, VT

Boring No.: **B-10**
Page No.: 1 of 1
File No.: 1440-01
Checked By: JAG/JFW

Boring Company: Seaboard Drilling
Foreman: Mike and Dale
GeoDesign Rep.: Jack Cassara
Date Started: October 31, 2022 Date Finished: October 31, 2022
N. Coordinate: Not Available E. Coordinate: Not Available
Ground Surface Elevation (feet): 605
Station: Offset: ft

	Casing:	Sampler:
Type:	H.S.A.	SS
I.D.:	4.25 in.	1.38 in.
Hammer Wt.:	NA	140 lbs
Hammer Fall:	NA	30 in.
Rig Type:	Mobil B53 Truck	
Hammer Type:	Auto	

Groundwater Observations

Date	Depth (ft)	Elev. (ft)	Notes
▼ 10/31/22, 0:00	21.0	584.0	Wet sample
▼ 11/11/22, 0:00	20.9	584.2	Monitoring Well
▼			
▼			

Depth (ft)	Casing Blows/ft	Number	Type	Penetration (inches)	Recovery (inches)	Depth (ft)	Blows / 6 inch Interval 0 - 6	6 - 12	12 - 18	18 - 24	Coring Time (min./ft)	Moisture Content (%)	Strata Description (Depth & Elevation(feet))	Symbol	Sample Description (Classification System:)
		S1	SS	24	19	0	6	8	3	2			3" Asphalt 604.8 Fill		S1) Medium dense, brown, fine to coarse SAND, some (+) SILT, trace fine Gravel, moist.
		S2	SS	24	10.5	2	5	4	3	2					S2) Loose, brown, fine to coarse SAND and SILT, trace fine Gravel, moist.
5		S3	SS	24	15.5	4	1	2	3	5					S3) Loose, brown, fine to medium SAND and SILT.
													6		
		S4	SS	24	12	6	7	5	12	15			Silty Gravelly Sand 599.0		S4) Medium dense, brown, fine to coarse SAND and SILT, trace fine Gravel.
		S5	SS	24	8	8	17	10	14	20					S5) Medium dense, brown, fine to coarse SAND and SILT.
10															
		S6	SS	24	9	10	11	7	36	31			11		S6) Dense, orange-brown, fine to coarse SAND, with Silt, trace fine to coarse Gravel.
													Cobble 594.0 12		
		S7	SS	24	10	12	13	24	18	17			Silty Gravelly Sand 593.0		S7) Dense, gray brown, fine to coarse SAND and SILT, trace fine Gravel, moist.
15		S8	SS	24	13	14	18	8	11	12					S8) Medium dense. S8A) Top 6": gray brown, SILT and fine to medium SAND.
		S9	SS	24	14	16	22	21	16	13					S8B) Bottom 7": brown gray, fine to coarse SAND and SILT, trace fine to coarse Gravel, moist.
		S10	SS	24	9	18	28	15	17	16					S9) Dense, brown gray, fine to coarse SAND and SILT, little fine to coarse Gravel, moist.
20															
		S11	SS	24	9.5	20	19	12	10	10			▼		S11) Dense, brown, fine to coarse SAND and SILT, trace fine to coarse Gravel, moist.
													22		
													Bottom 583.0 of Exploration at 22.0 ft		S11) Medium dense, brown, fine to coarse SAND and SILT, little fine to coarse Gravel.
25															
30															

Remarks

1) Ground surface elevation estimated from topographic site plan provided electronically by Stone Environmental.
2) Continuous sampling to water table per Stone Environmental.
3) Split spoon sampling S2, S3, S4, S5, S8, S10 not per ASTM standard.
4) Rotary wash and drive not progressing, switched to augering at approximately 12'.
5) Cobbles inferred at approximately 11'.
6) Monitoring well installed by Stone Environmental upon borehole completion.

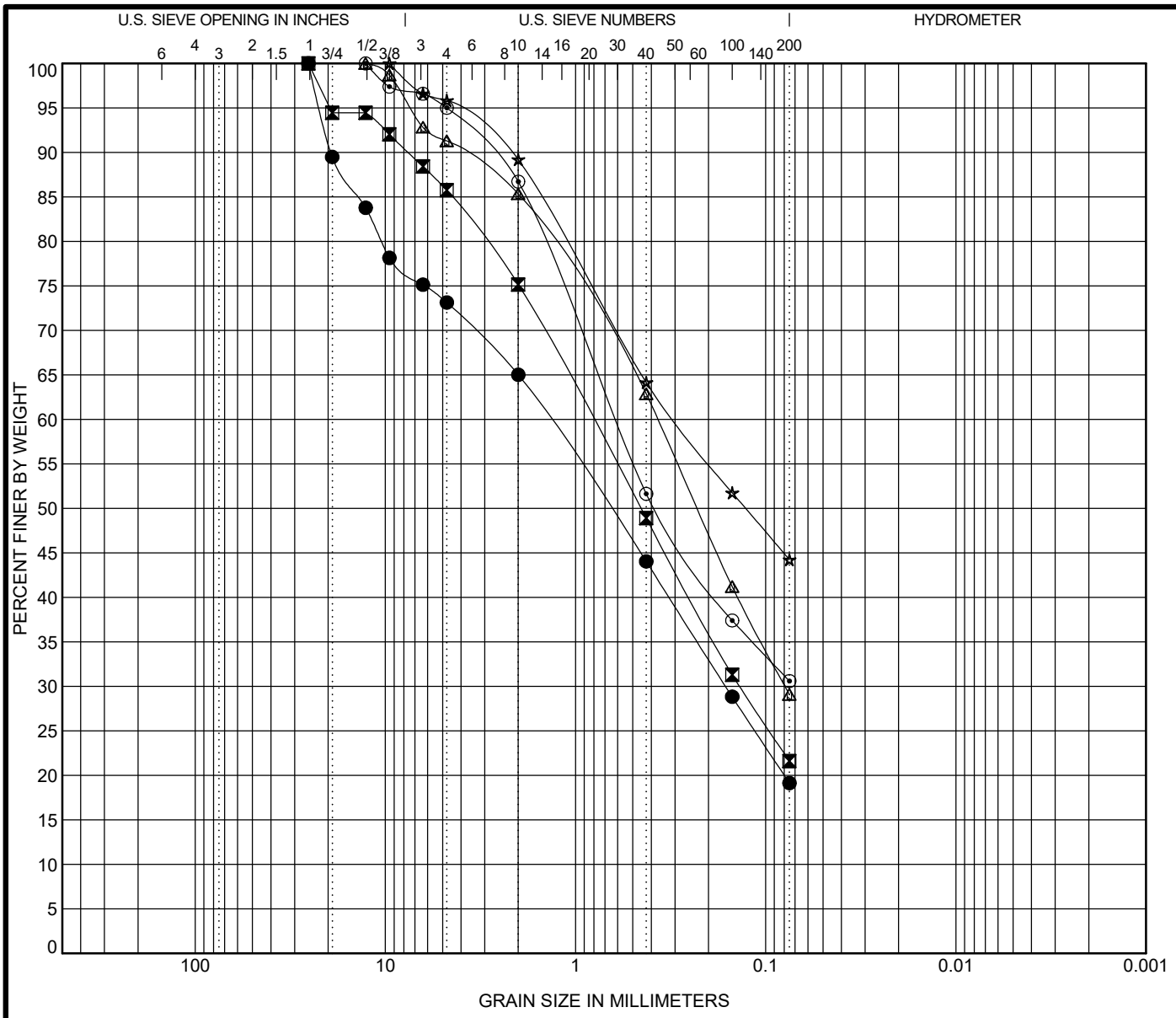
Notes:

1) Stratification Lines Represent Approximate Boundary Between Material Types, Transitions May Be Gradual.
2) Water Level Readings Have Been Made At Times And Under Conditions Stated, Fluctuations Of Groundwater May Occur Due To Other Factors Than Those Present At The Time Measurements Were Made. A.C. = After coring; N.R. = Not Recorded.
3) Sample Type Coding: A=Auger; C=Core; D=Driven; G=Grab; PS=Piston Sampler; SS=Split Barrel (Split Spoon); ST=Shelby Tube; Geo=GeoProbe V=Vane; WOR/H=Weight of Rod/Hammer
4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

STANDARD LOG - NO COORDINATES GINT 1440.GPJ GEODESIGN STANDARD .GDT 12/8/22

GEODesign, Inc.
85 Granite Shed Lane
Unit #1
Montpelier, VT 05602
(802) 674-2033

APPENDIX C – LABORATORY TESTING RESULTS



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Borehole No.	Sample No.	Depth (ft)	Moisture Content	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay	Fines based on % passing No. 4 sieve.
● B-02	S1	0.0	7.8	25.4	1.381	0.162		27	54	19		26
⊠ B-06	S1	0.0	8.5	25.4	0.818	0.137		14	64	22		25
◬ B-08	S1	0.0	18.7	12.7	0.37	0.079		9	62	29		32
☆ B-09	S1	0.0	18.7	9.525	0.3			4	52	44		46
⊙ B-10	S1	0.0	8.9	12.7	0.615			5	64	31		32

Notes:
1) Testing was performed in general accordance with ASTM D 6913 Method A.

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Unit #1
Montpelier, VT 05602
Telephone: (802) 674-2033
Fax: (802) 674-5943

GRAIN SIZE DISTRIBUTION

Project: Turning Point Center
Location: Barre, VT
Number: 1440-01
Tested By: JAG Reviewed By:JFW
Date:11/17/22 to 11/20/22

SIEVE FORM GINT 1440.GPJ US LAB.GDT 12/7/22

GEODesign, Inc.
85 Granite Shed Lane
Unit #1
Montpelier, VT 05602
(802) 674-2033

APPENDIX D – BACKFILL & COMPACTION CRITERIA

GEO DESIGN

GEODesign, Inc.
85 Granite Shed Lane.
Unit #1
Montpelier, VT 05602
(802) 674-2033

BACKFILL AND COMPACTION CRITERIA

All soil backfill material gradations should be determined in accordance with ASTM D 6913. All backfill materials shall be uniformly graded material from approved sources and free from ice and snow, roots, sod, loam, rubbish, and other deleterious or organic matter meeting the following gradation requirements:

Crushed Gravel for Subbase (VTrans Item 704.05B) - ***Recommended for use as subbase in parking and access road areas.***
Crushed Gravel for Subbase shall be produced from natural gravels or crushed quarried rock.

Sieve Size	Percent finer by Weight
2 inch	100
1-1/2 inch	90-100
No. 4	30-60
No.100	0-12
No. 200	0-6

Dense Graded Crushed Stone for Subbase (VTrans Item 704.06) - ***Recommended for use as subbase in parking and access road areas.***
Dense graded Crushed Stone for Subbase shall consist of clean, hard, uniformly graded, crushed stone

Sieve Size	Percent finer by Weight
3-1/2 inch	100
3 inch	90-100
2 inch	75-100
1 inch	50-80
1/2 inch	30-60
No. 4	15-40
No. 200	0-6

Sand Borrow (VTrans Item 703.03) – ***Recommended for use as frost-free fill below subbase in parking and access road areas.***

Sieve Size	Percent finer by Weight
2 inch	100
1-1/2 inch	90-100
1/2 inch	70-100
No. 4	60-100
No. 100	0-20
No. 200	0-8

Granular Fill - ***Recommended for use as backfill within the building footprint and behind walls.***

Sieve Size	Percent finer by Weight
3 inch	100
No. 4	45-75
No. 100	0-12
No. 200	0-6

Crushed Stone - ***May be used as backfill within the building footprint and behind walls in lieu of Granular Fill. Crushed stone should be enveloped in non-woven geotextile fabric when placed against the silty onsite soils. Crushed stone should be used in lieu of Structural Fill when working below the water table.***

Sieve Size	Percent finer by Weight
1 inch	100
3/4 inch	90-100
3/8 inch	20-55
No. 4	0-10
No. 8	0-5

Non-Woven Geotextile Fabric

The non-woven geotextile fabric placed around crushed stone should meet the following criteria:

Property	**Criteria**	**Test Method**
Grab Tensile Strength (lbs.)	min. 120	ASTM D4632
Grab Tensile Elongation (%)	min. 50	ASTM D4632
CBR Puncture Strength (lbs.)	min. 310	ASTM D6241
Trapezoid Tear (lbs.)	min. 50	ASTM D4533
Apparent Opening Size	No. 70 U.S. Sieve Size	ASTM D4751

Fabric should be needle-punched non-woven material. Seams should be overlapped a minimum of 12 inches. During stone placement, the stone drop height should not exceed three feet and equipment traffic should be kept off the fabric until at least 6 to 12 inches of material is placed.

Placement and Compaction of Backfill Material

The required degree of compaction shall be based on a maximum dry density as determined by ASTM Test D1557. The degree of compaction for fill placed in various areas shall be as follows:

Placement Areas	Minimum Degree of Compaction
1. Below foundations	95%
2. Below Asphalt	95%
3. Building slab subbase and base courses	95%
4. Above bottom of foundations	95%
5. Landscaped areas	90%

Recommended loose lift thickness for fill and the minimum number of passes of compaction equipment are summarized on the following table.

Compaction Method	Maximum Stone Size	Maximum Loose Lift Thickness		Minimum Number of Passes	
		Below Structures and Pavement	Less Critical Areas	Below Structures and Pavement	Less Critical Areas
Hand-operated vibratory plate or light roller in confined areas	4”	6”	8”	6	4
Hand-operated vibratory drum rollers weighing at least 1,000#	6”	8”	10”	6	4
Light vibratory drum roller, minimum dynamic force 3,000# per ft. of drum width	6”	10”	14”	6	4
Medium vibratory drum roller, minimum dynamic force 5,000# per ft. of drum width	8”	12”	18”	6	4
Large vibratory drum roller, minimum dynamic force 8,000# per ft. of drum width	10”	16”	24”	6	4

We recommend that equipment used for the compaction of structural backfill within five feet behind retaining walls be limited to hand-operated vibratory plates.

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APPENDIX E – LIMITATIONS

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Geotechnical Limitations

Explorations

1. The analyses and recommendations submitted in this report are based in part upon the data obtained from widely spaced subsurface explorations. The nature and extent of variations between these explorations may not become evident until construction. If variations then appear evident, it will be necessary to reevaluate the recommendations of this report.

2. The generalized soil profile described in the text is intended to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized and have been developed by interpretations of widely spaced explorations and samples; actual soil transitions are probably more erratic. For specific information, refer to the exploration logs.

3. Water level readings and moisture conditions have been made in the explorations, and from the samples at times and under conditions stated on the logs. These data have been reviewed and interpretations have been made in the text of this report. However, it must be noted that fluctuations in the level of the groundwater and moisture condition may occur due to variations in rainfall, temperature, and other factors occurring since the time measurements were made.

Review

4. In the event that any changes in the nature, design or location of the proposed structures is planned, the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed and conclusions of this report modified or verified in writing by GEODesign, Inc. We recommend that we be provided the opportunity to review and comment on the finalized project design and relevant construction specifications in order that earthwork and foundation recommendations may be properly interpreted and implemented in the design and specifications.

Use of Report

5. This report has been prepared for the exclusive use of **Stone Environmental**, for specific application to the **Turning Point Center of Central Vermont** project in **Barre, Vermont**, as described in GEODesign's scope of services/ contract and related documents, in accordance with generally accepted soil and foundation engineering practices. No other warranty, express or implied, is made.

6. This report has been prepared for this specific project by GEODesign, Inc. This report is for design purposes only and is not sufficient to prepare an accurate bid. Contractors wishing a copy of the report may secure it with the understanding that its scope is limited to design considerations only, unless otherwise specified in the report.

7. Unless otherwise noted, the scope of our services did not include environmental assessment or investigation for the presence of hazardous or toxic materials in the soil, surface water, groundwater or air, on, below, or around this site.

GEO DESIGN

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MEMORANDUM

TO: **Stone Environmental Services**
(Rebecca Treat, P.G., Katrina Mattice, P.E)

Cc: **Dubois & King, Inc.**
(Tim Dall, P.E.)

FROM: **GEODesign, Inc.**
(Jacob Wimett, P.E. Ted von Rosenvinge, P.E.)

DATE: February 10, 2023

RE: **Conceptual Retaining Wall Options**
Turning Point Center of Central Vermont
Barre, VT

FILE NO.: **1440-01**

As follow up to our December 9, 2022 Geotechnical Report, we are providing this memo regarding conceptual options for an approximately 20- to 25-foot-tall proposed retaining wall on the east side of the site. Conceptual Retaining Wall Options were excluded from our Report until a soil boring could be completed upslope from the proposed retaining wall alignment. This boring was recently completed.

Background

During field work in October and November, 2022, our drilling subcontractor was unable to advance a soil boring at the location B-03(OW) as shown on Figure 2 due to limitations in the drill rigs ability to level itself on the steep slope. On January 16, 2023, we returned with a different contractor and drill rig which was able to complete the soil boring. A monitoring well was installed in the borehole, and we returned to the site on February 8, 2023 to obtain a stabilized water level reading.

Supplemental Data and Observations

Refer to the attached soil boring log and groundwater level observations for additional information gathered since our December 9, 2022 Report. While on site, we also observed the general slope condition, trees/vegetation, and the existing granite block retaining wall in place along Spaulding Street. While active movement is difficult to observe, we noted apparent movement in the granite

blocks, and an outward tilt (batter) on the exposed face of the wall, indicating that movement has likely occurred (we assume the wall was installed plumb or with a slight batter towards the uphill).

The ground surface of the slope consists of small to mature hardwoods which generally grow upright and their trunks don't a exhibit sweeping trend. The ground surface is visually stable and covered by a root mat. Some animal burrows exist on the slope, particularly near Spaulding Street.

Supplemental Boring

B-3(OW) was performed within Spaulding Street at the location shown on Figure 1 in Appendix A. The log of the soil boring is included in Appendix B. The soil boring was performed by Cascade Environmental Remediation on January 16, 2023 using a Geoprobe® drill rig and 2 ¼- inch I.D. hollow stem augers. It was observed and logged in the field by GEODesign personnel.

Due to tightly spaced utilities, the boring location was moved slightly offset from the originally planned location to allow more space between existing utilities. During drilling the boring relocated once due to shallow refusal at the first attempted location.

Soil samples were collected using Standard Penetration Test (SPT) sampling. SPT sampling consisted of dropping a 140-pound automatic hammer in free fall for 30 inches on to an anvil that is threaded on top of a drill string and then attached to the split-spoon soil sampler. The number of hammer blows to drive the sampler each 6-inch increment was recorded and the cumulative number of hammer blows recorded between 6 and 18 inches is the SPT N-value.

The boring was terminated without refusal at 36-feet deep due to groundwater conditions causing heaving sand in the augers.

Generalized Soil Profile

The soil boring encountered the following strata:

Asphalt & Road Base – A 3-inch layer of asphalt at the surface with angular gravel road base below to about 2 feet below grade.

Non-Engineered Fill – Below the asphalt and road base, non-engineered fill was encountered below the road base to about 7 feet deep. This depth was inferred from drilling resistance and the adjacent utilities (a storm drain to the east and water main to the west)

Sand & Gravel – Below the non-engineered fill, a natural deposit of sand and gravel with trace silt was encountered. Occasional isolated layers of silt and sand were encountered within this stratum. These natural soils were generally dense, with SPT N-values ranging from 27 to 50. The Vermont Agency of Natural Resources Atlas identifies the sand and gravel as a recent post-glacial alluvial deposit or a kame terrace.

A groundwater observation well was installed in the boring. Stabilized water levels over a one-month period were measured in the range of 27 to 31 feet deep.

Global Stability

Refer to Figures 2 through 5 in Attachment 1 for a visual depiction of our stability results and Attachment 3 for a narrative regarding the interpretation of these results and our modeling approach.

We analyzed the existing conditions, a tied back pile wall, and a soil nail wall:

Table 1: Global Stability Modeling Results

Scenario	Figure	Factor of Safety "Intermediate" Slope (Between Retaining Wall & Spaulding Street)	Global Stability Factor of Safety Proposed Retaining Wall
Existing Condition	3	1.12	1.26*
Options 1 & 2 – Tied-Back Pile Wall	4	1.12	1.53
Option 3 – Soil Nail Wall	5	1.14	1.37

*Depicts factor of safety of the existing slope at the proposed location of the wall.

Retaining Wall Options for Consideration

Due to the steep slope and uphill excavation limits constrained by Spaulding Street, we recommend retaining wall options be limited to those that can be installed in a "top down" manner. Walls that would require excavation of the slope to the wall base before being installed such as reinforced concrete, gravity block wall, or MSE wall types are not appropriate for the site conditions.

The following are our recommended options for consideration, in order of suitability based on the soil conditions at the site.

Option 1 – Tied-Back Soldier Pile and Lagging Wall

The soldier pile wall option consists of driving steel H-piles at the existing grades to a design toe elevation. Excavation would then commence from the top of the wall along the face of the piles and permanent lagging would be installed between the piles as the excavation proceeds downward. Given the proposed height of the wall, we expect at least one or two rows of tiebacks would need to be installed as the excavation is carried downward. Given the presence of occasional boulders

observed in the borings across the site, pre-drilling past obstructions at some locations may be required.

Option 2 –Tied Back Sheet Pile Wall

Similar to the soldier pile option, permanent sheet piles would be installed from existing grades to a design toe depth at some level below proposed parking elevation. A benefit to the sheet pile wall compared to a soldier pile wall is that lagging installation is unnecessary; as the sheet piles interlock together. This makes sheet pile walls typically faster to construct than a soldier pile wall.

Similar to the soldier pile wall option, excavation would proceed from the top of the wall downward with one or two rows of tiebacks expected to be required. Drainage through the sheeting should be provided to prevent the buildup of hydrostatic pressure behind the wall.

Our reasoning for preferring the soldier pile wall to a sheet pile wall is the increased risk of sheet piles refusing on boulders. While boulders were not encountered in our upslope boring, they were fairly common across the site in other borings performed from the level of the wall base. If significant numbers of sheets were unable to be installed to intended depths due to refusal on boulders, a wall redesign with increased tiebacks may be required leading to potential unexpected cost increases during construction.

Option 3 – Soil Nail Wall

The "soil nail" consists of a steel bar that is grouted into a drilled hole to reinforce the unstable soil mass. To provide stability to surficial soils between the nails, a permanent facing system (typically shotcrete) is applied with a drainage layer to prevent the build-up of hydrostatic forces behind the wall. A soil nail wall is installed in stages, typically about 5 feet in height at a time, with each stage being reinforced and supported before the next stage is complete. Our modeling indicates a favorable site geometry for a 4 Vertical:1Horizontal soil nail wall.

Our greatest concern with the soil nail option is the necessity of the site soils being able to support themselves in +/- 5-foot cuts for several days while the wall sections are constructed. It is our opinion that the dense, clean gravelly sands observed in the upslope boring would likely support a limited height 4:1 slope, but with risk of rapidly deteriorating conditions should heavy rain events occur during installation. Boreholes drilled for soil nail installation would also be at risk of collapse, and we would recommend soil nails be installed using either the continuously grouted hollow bar method or with cased drill holes.

If a soil nail wall option is pursued further, we recommend test pit explorations be conducted to observe the ability of these soils to maintain a shallow open cut and specialty contractor review of feasibility.

Intermediate Slope Stability

In addition to the wall options presented herein, our modeling indicates that the "intermediate" slope between the proposed top of retaining wall and Spaulding Street (as shown on Figure 2) is marginally stable at best, with failure surfaces within the upper 6-feet having factors of safety between 1.1 and 1.3.

While this is not directly impacting the proposed retaining wall, we recommend consideration be given to stabilizing this intermediate portion of the slope to protect parked vehicles below the wall from future potential erosive slides.

GEODesign has had successful previous experience using anchored erosion netting (e.g. Armormax®) to address shallow instability at sites with soils and slope conditions similar to those present at the Turning Point site. With this technique, erosion netting is placed on the slope and anchors are installed into the slope with hand tools. The arrangement of the anchors intercepts the shallow slope failure circles, and is typically installed by a general earthwork contractor with assistance from the vendor.

If the project team were to proceed with the Armormax® (or equivalent) technique for the intermediate slope, the detailed design would be completed as a vendor's design.

Final Design Phase Recommendations

We recommend GEODesign be retained to assist with the next phase of final design and construction. Actual level of involvement will vary depending on if the retaining wall will be owner designed or contractor designed, but we anticipate our involvement would include:

- Assist in development of the wall design (if owner designed);
- Assist in review of Contractor Design Submittal (if Contractor designed)
- Development of performance based or procedural construction specifications;
- Contractor submittal and RFI reviews; and,
- Construction inspection of wall installation, (with a focus on tieback or soil nail testing).

Furthermore, evaluation and comparison of Option 3 and the potential intermediate slope stabilization, we recommend that a specialty contractor be engaged to provide feedback regarding constructability for each of the approaches presented herein. GEODesign can assist with facilitating these discussions.

Limitations

This memo is subject to the limitations included in Attachment 4.

Attachments:

1. Figures
    a. Figure 1 – Exploration Location Plan
    b. Figure 2 - Slope Section A-A'
    c. Figure 3 - Existing Slope Stability
    d. Figure 4 – Option 1 or 2 Global Stability
    e. Figure 5 – Option 3 Global Stability

2. Boring Log – B-03(OW)

3. Stability Analysis Narrative.

4. Geotechnical Limitations

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ATTACHMENT 1 – FIGURES

- FIGURE 1 – Exploration Location Plan
- FIGURE 2 – Stability Section A-A'
- FIGURE 3 – Existing Conditions Global Stability
- FIGURE 4 – Options 1 & 2 Global Stability
- FIGURE 5 – Option 3 Global Stability

EDGE OF EXISTING PAVEMENT

EXISTING BUILDING TO REMAIN

PROPOSED RETAINING WALL

Area of potential "intermediate" slope stabilization

PROPOSED BUILDING ADDITION

PORTION OF EXISTING BUILDING TO BE DEMOLISHED (DASHED LINE)

18 S. MAIN STREET

20 S. MAIN STREET

SPAULDING STREET

B-1(OW)
B-2
B-3A
B-3B(OW)
B-4(OW)
B-5
B-6
B-7
B-8
B-9
B-10(OW)

LARGE GROUP ROOM DIRECT ENTRY
MAIN ENTRY
MAIN ACCESSIBLE ENTRY
LINE OF EXISTING ELL BUILDING TO BE REMOVED
15 PARKING SPACES
SMALL CAR
ACCESS DRIVE
HIGH SITE RETAINING WALL
LOW SITE RETAINING WALL
EXISTING STONE PIER
438 SF
550 SF
240 SF

NOTES:
1. BASE MAP DEVELOPED FROM ELECTRONIC FILES PROVIDED BY STONE ENVIRONMENTAL, INC. VIA EMAIL ON SEPTEMBER 20, 2022, ENTITLED "727462_SV01.dwg" AND REVISED PROPOSED BUILDING PLAN ENTITLED "2022-08-16 Architectural Set In progress Turning Point - Renovation.pdf" OVERLAYED IN CAD BY GEODESIGN.
2. SOIL BORINGS EXCEPT B-3 WERE PERFORMED BY SEABOARD DRILLING ON OCTOBER 29, OCTOBER 31 AND NOVEMBER 1, 2022. SOIL BORING B-3 WAS PERFORMED BY CASCADE REMEDIATION SERVICES ON JANUARY 16, 2022. ALL BORINGS WERE OBSERVED AND LOGGED BY GEODESIGN PERSONNEL.
3. THE SOIL BORING LOCATIONS WERE DETERMINED BY TAPED MEASUREMENTS FROM EXISTING SITE FEATURES. THESE LOCATIONS SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.

LEGEND

B-1 — OCTOBER - NOVEMBER 2022 BORING LOCATION BY GEODESIGN, INC.

B-3 — JANUARY 2023 BORING LOCATION BY GEODESIGN, INC.

A A' — SLOPE STABILITY CROSS SECTION AND LOCATION

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geocompanies.com

DRAWN BY: JAC/AJB | REVIEWED BY: JFW

EXPLORATION LOCATION PLAN
TURNING POINT CENTER
BARRE, VT

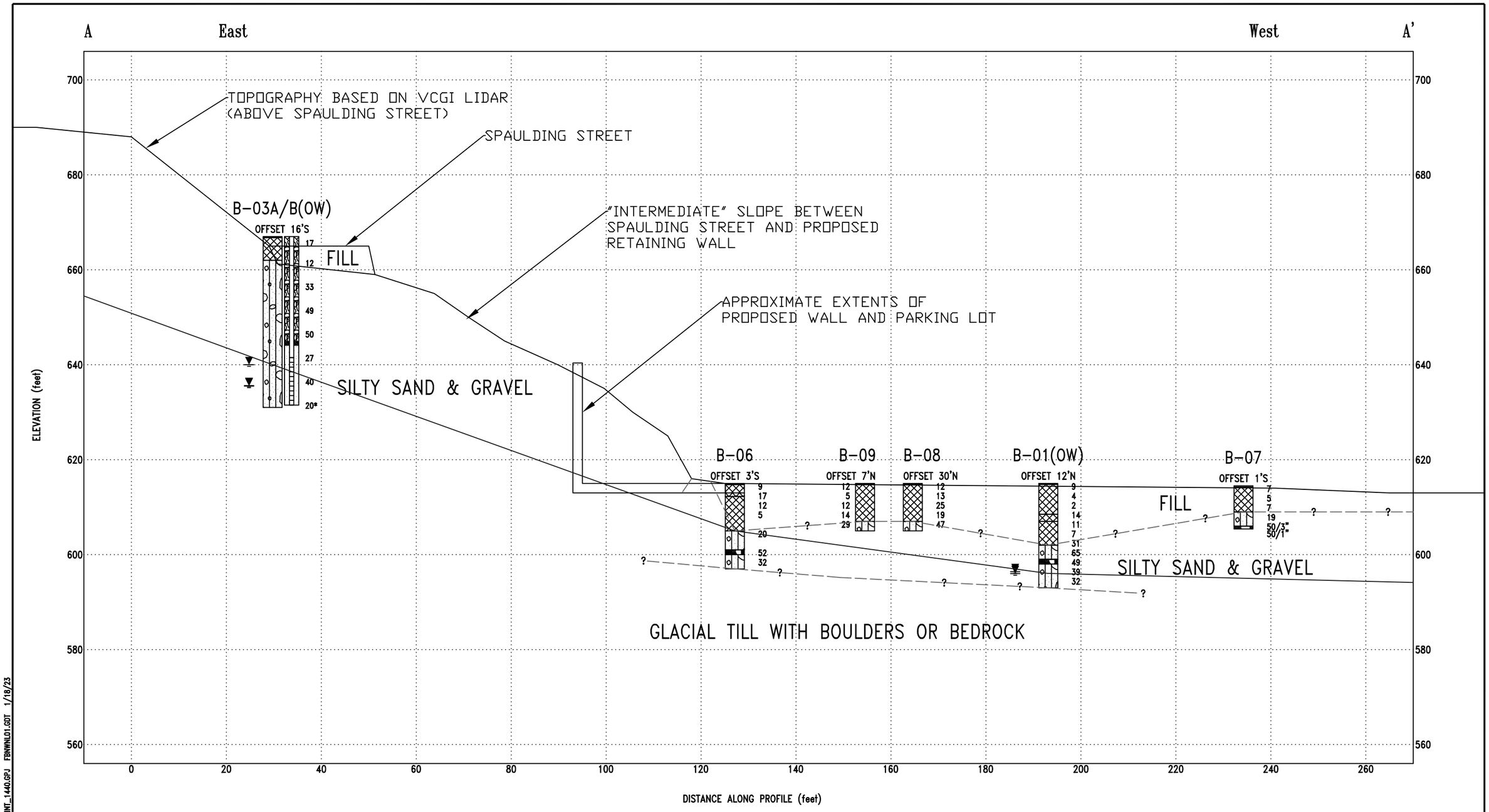
PROJECT NO: 1440-01

SCALE IN FEET
1" = 30'
0 15 30 60

DATE: JANUARY 19, 2023

FIGURE NO. 2

CAD FILE No. M:\CL\1440 Stone Environmental\1440-01 Turning Point Center\CAD\ELP



11X17 E-W PROFILE BOREHOLE OFFSET GNT_1440.GPJ FBNWNL01.GDT 1/18/23

GEO DESIGN

GeoDesign, Inc.

P.O. Box 699
Windsor, VT 05089
Phone: 802-674-2033/Fax: 802-674-5943

4 Laurel Hill Dr
S. Burlington, VT 05403
Phone: 802-652-5140

0 20

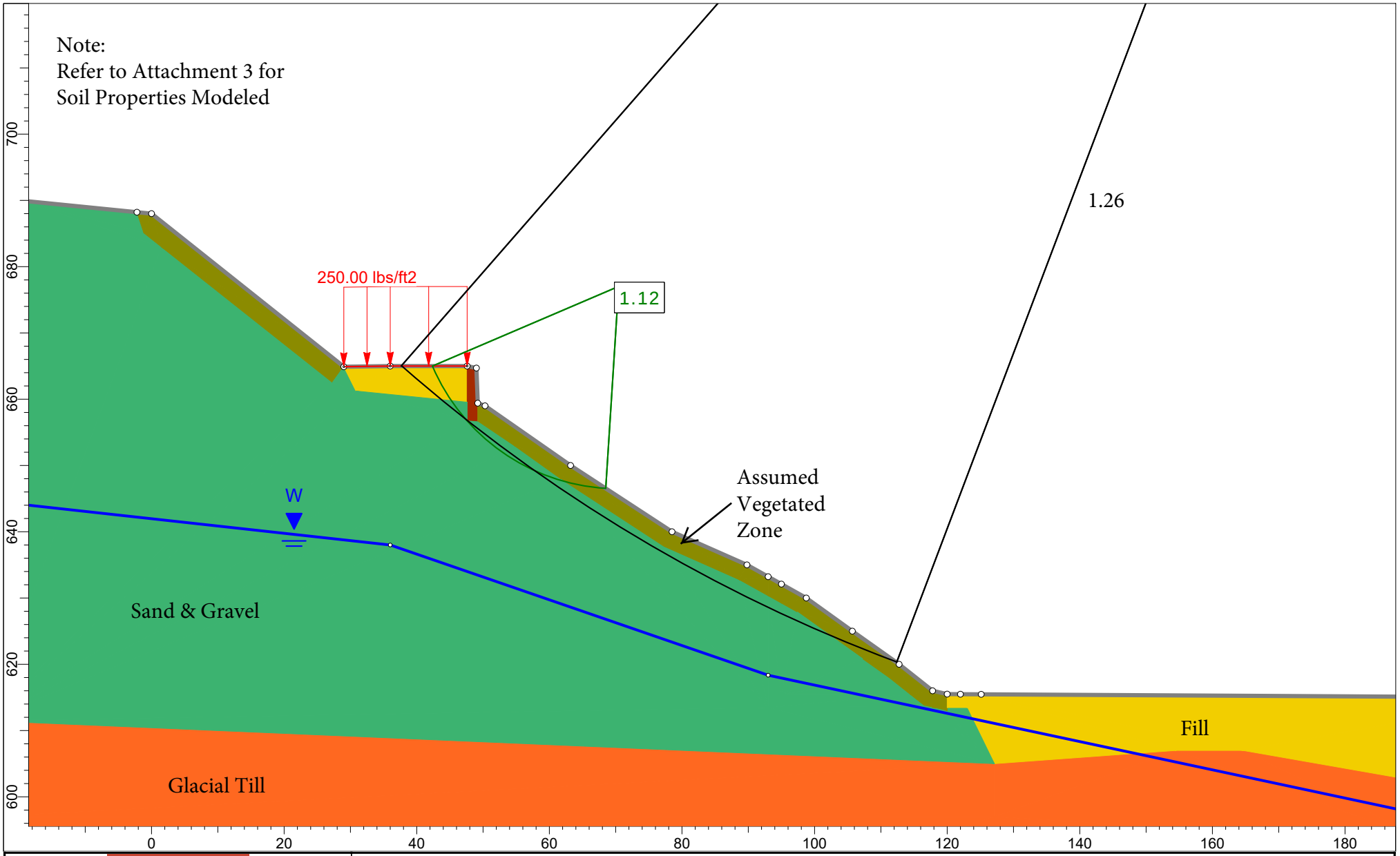
Scale (feet)

Notes:
1. Data concerning the various strata have been interpreted at boring locations only. The stratigraphy between borings may vary from that shown.
2. Refer to plan view for subsurface profile location. For strata details and symbol legend, see Subsurface Profile Legend and boring logs appended to this report.
3. Numbers displayed beside boring(s) represent SPT "N" values corresponding to their respective sampling interval. Where coring was performed, numbers represent Recovery and RQD values.

SUBSURFACE PROFILE Section A

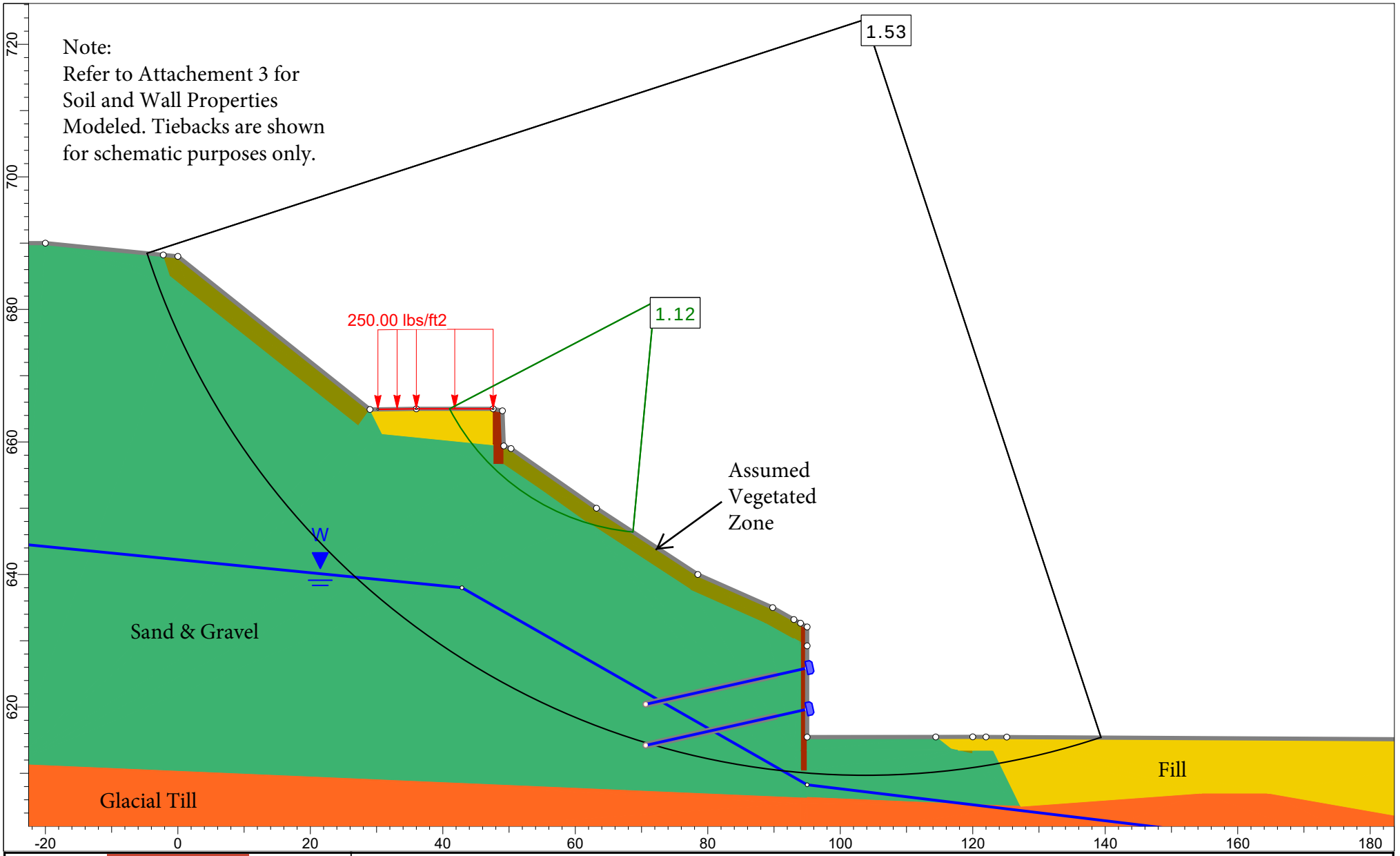
Turning Point Center
18 South Main St
Barre, VT

Date:	Drawn By:	Reviewed By:	File No.:	Figure No.:
February 9, 2023	AJB	JFW	1440-01	2



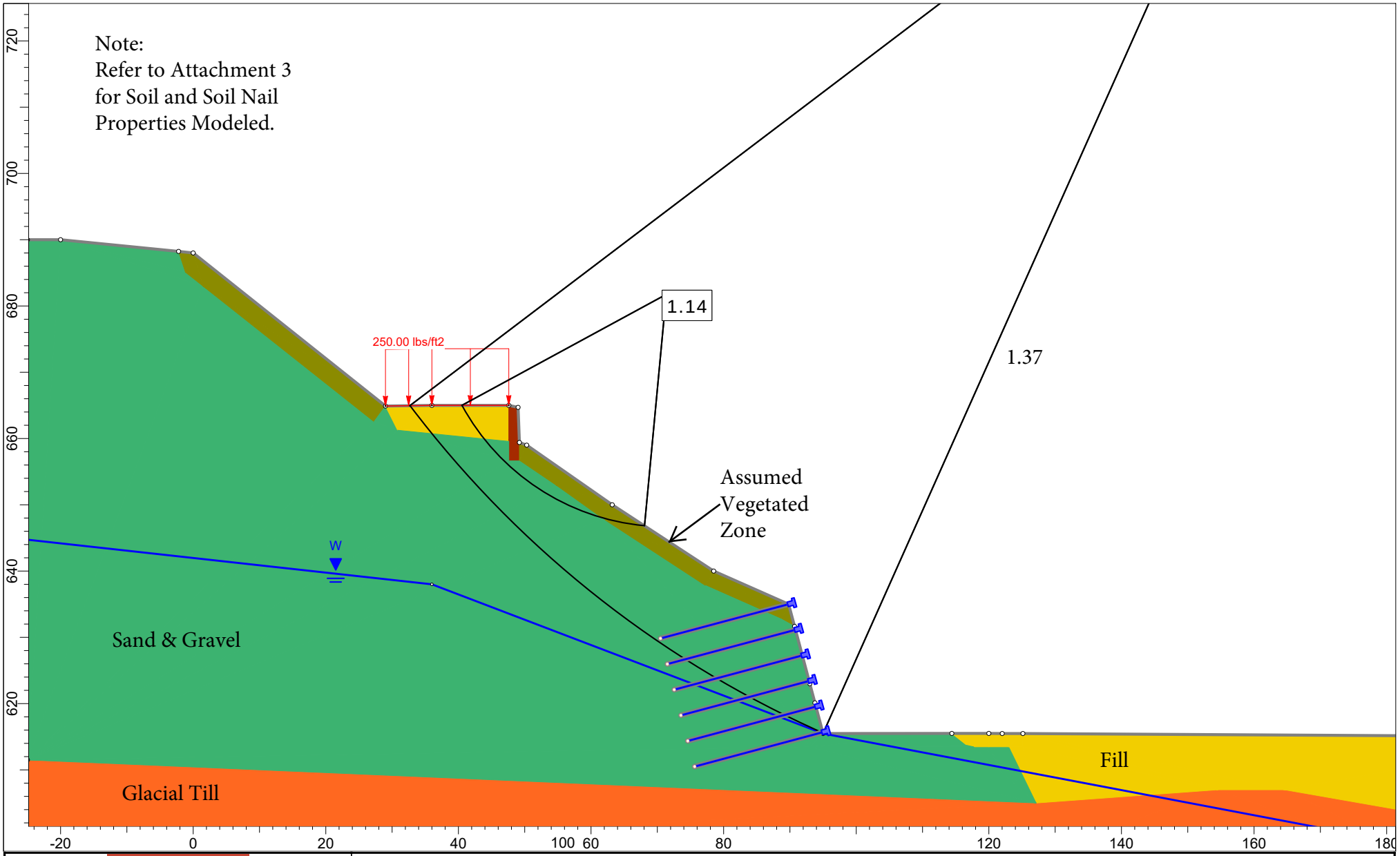
Project	FIGURE 3 - Section A - Existing Conditions Factors of Safety - Turning Point Center of Central Vermont
Analysis Description	Global Stability at a typical wall section using Spencer's method.
Drawn By: AJB	Company: GEODesign
Date: 2/10/2023	File #: 1445-001

SLIDEINTERPRET 7.038



GEO	Project: FIGURE 4 - Section A - Option 1 or 2 Factors of Safety - Turning Point Center of Central Vermont		
	Analysis Description: Global stability of a tied back soldier pile or sheet pile wall typical section using Spencer's method.		
	Drawn By: AJB	Company: GEODesign	
	Date: 2/10/2023	File #: 1445-001	

SLIDEINTERPRET 7.038



GEO	Project	FIGURE 5 - Section A - Soil Nail Wall Option Factors of Safety - Turning Point Center of Central Vermont	
	Analysis Description	Global stability of a soil nail wall typical wall section using Spencer's method.	
	Drawn By	AJB	Company GEODesign
	Date	2/10/2023	File # 1445-001

SLIDEINTERPRET 7.038

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ATTACHMENT 2 –BORING LOG B-03(OW)

BORING LOG

GEO DESIGN

Geotechnical / Construction / Environmental Engineers and Scientists

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Montpelier, VT 05602
Phone: 802-674-2033

4 Laurel Hill Drive Ste 8
S. Burlington, VT 05403
Phone: 802-652-5140

Project Name

Turning Point Center
18 South Main St
Barre, VT

Boring No.: **B-03(OW)**
Page No.: 1 of 2
File No.: 1440-01
Checked By:

Boring Company:	Cascade		
Foreman:	Chris Aldrich		
GeoDesign Rep.:	Alan Baribault		
Date Started:	January 16, 2023	Date Finished:	January 16, 2023
N. Coordinate:	Not Available	E. Coordinate:	Not Available
Ground Surface Elevation (feet):	667		
Station:		Offset: ft	

	Casing:	Sampler:
Type:	H.S.A.	SS
I.D.:	2.25 in.	1.38 in.
Hammer Wt.:	NA	140 lbs
Hammer Fall:	NA	30 in.
Rig Type:	Geoprobe 7822DT	
Hammer Type:	Auto	

Groundwater Observations

Date	Depth (ft)	Elev. (ft)	Notes
▼ 1/16/23, 12:00	31.5	635.5	Wet Sample
▼ 1/16/23, 13:30	31.4	635.6	In Well
▼ 2/8/23, 14:00	27.0	640.0	In Well
▼			

Depth (ft)	Casing Blows/ft	Sample Info: Number	Type	Penetration (inches)	Recovery (inches)	Depth (ft)	Blows / 6 inch Interval: 0 - 6	6 - 12	12 - 18	18 - 24	Coring Time (min./ft)	Moisture Content (%)	Strata Description (Depth & Elevation(feet))	Symbol	Sample Description (Classification System:)	Well Log
													3" Asphalt 666.8			
		S1	SS	24	15	0.8	10	9	8	10			Fill		S1) Medium dense, grown with gray fine to coarse SAND, little fine to coarse Gravel (angular), trace (+) Silt, moist.	
5		S2	SS	24	10	5	5	6	6	9			7		S2) Medium dense, gray and gray-brown fine to medium SAND, trace coarse Gravel (1 piece in spoon shoe), trace Silt, moist.	
													660.0 Sand & Gravel			
10		S3	SS	24	12	10	6	12	21	26					S3) Dense, gray and brown with orange area fine to coarse SAND, trace fine to coarse Gravel, trace Silt, moist.	
15		S4	SS	24	10	15	20	23	26	22					S4) Dense, gray fine to coarse SAND, some fine to coarse Gravel, trace Silt, slightly moist.	
20		S5	SS	24	12	20	20	34	16	20					S5) Very dense, gray and gray-brown fine to coarse SAND and fine to coarse GRAVEL, trace Silt, slightly moist.	
25		S6	SS	24	16	25	10	14	13	17					S6) Medium dense; S6A (upper 8"): gray-brown fine to coarse SAND and SILT, little fine Gravel, moist. S6B (lower 8"): gray fine to coarse SAND, little fine to coarse Gravel, slightly moist.	
30																

Remarks

1) Ground surface elevation estimated from topographic site plan provided electronically by Stone Environmental.
2) Advanced augers through asphalt and frozen ground, sample S1 obtained at 0.8' in unfrozen material.
3) Auger grinding and chatter from 2' to 5' deep; round coarse gravek in auger cuttings. Chatter.grinding decreasing below 7' and smooth to 10' deep; chatter from 11' to 13' deep, and HSAR at 13' deep on inferred boulder.
4) Offset boring approximately 12' South and drill to 15' before sampling S4.

Notes:

1) Stratification Lines Represent Approximate Boundary Between Material Types, Transitions May Be Gradual.
2) Water Level Readings Have Been Made At Times And Under Conditions Stated, Fluctuations Of Groundwater May Occur Due To Other Factors Than Those Present At The Time Measurements Were Made. A.C. = After coring; N.R. = Not Recorded.
3) Sample Type Coding: A=Auger; C=Core; D=Driven; G=Grab; PS=Piston Sampler; SS=Split Barrel (Split Spoon); ST=Shelby Tube; Geo=GeoProbe V=Vane; WOR/H=Weight of Rod/Hammer
4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

STANDARD LOG - NO COORDINATES GINT 1440.GPJ GEODESIGN STANDARD .GDT 2/8/23

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BORING LOG

Project Name

Turning Point Center
18 South Main St
Barre, VT

Boring No.: **B-03(OW)**
Page No.: 2 of 2
File No.: 1440-01
Checked By:

Boring Company:	Cascade		
Foreman:	Chris Aldrich		
GeoDesign Rep.:	Alan Baribault		
Date Started:	January 16, 2023	Date Finished:	January 16, 2023
N. Coordinate:	Not Available	E. Coordinate:	Not Available
Ground Surface Elevation (feet):	667		
Station:		Offset: ft	

	Casing:	Sampler:
Type:	H.S.A.	SS
I.D.:	2.25 in.	1.38 in.
Hammer Wt.:	NA	140 lbs
Hammer Fall:	NA	30 in.
Rig Type:	Geoprobe 7822DT	
Hammer Type:	Auto	

Groundwater Observations

Date	Depth (ft)	Elev. (ft)	Notes
▼ 1/16/23, 12:00	31.5	635.5	Wet Sample
▼ 1/16/23, 13:30	31.4	635.6	In Well
▼ 2/8/23, 14:00	27.0	640.0	In Well
▼			

Depth (ft)	Casing Blows/ft	Sample Info: Number	Type	Penetration (inches)	Recovery (inches)	Depth (ft)	Blows / 6 inch Interval: 0 - 6	6 - 12	12 - 18	18 - 24	Coring Time (min./ft)	Moisture Content (%)	Strata Description (Depth & Elevation(feet))	Symbol	Sample Description (Classification System:)	Well Log
		S7	SS	24	14	30	8	20	20	12			Sand & Gravel *(Continued)* ▼		S7) Dense, gray with brown, tan, and orange areas fine to coarse SAND, trace fine to coarse Gravel, trace Silt, moist to wet (lower 4").	
35		S8	SS	12	18	35	12*	20*					36		S8) Brown and gray fine to coarse SAND, trace Silt, wet. See Remark 6.	
													Bottom of Exploration at 631.0 ft			
40																
45																
50																
55																
60																

Remarks

5) Occasional chatter / grinding throughout advance on inferred coarse gravel. Rounded gravel in auger cuttings, with very few cuttings return below about 25' deep (primarily coarse gravel).
6) Encountered flowing sands with augers at 35' deep (12" heave in auger). Sample S8 partially attempted, but stopped to reduce risk of binding up in augers (N-values not obtained).
7) Installed 1" ID PVC monitoring well in offset borehole, with flush mount cover. First borehole backfilled with cuttings and capped with asphalt cold patch.

Notes:
1) Stratification Lines Represent Approximate Boundary Between Material Types, Transitions May Be Gradual.
2) Water Level Readings Have Been Made At Times And Under Conditions Stated, Fluctuations Of Groundwater May Occur Due To Other Factors Than Those Present At The Time Measurements Were Made. A.C. = After coring; N.R. = Not Recorded.
3) Sample Type Coding: A=Auger; C=Core; D=Driven; G=Grab; PS=Piston Sampler; SS=Split Barrel (Split Spoon); ST=Shelby Tube; Geo=GeoProbe V=Vane; WOR/H=Weight of Rod/Hammer
4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

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ATTACHMENT 3 – STABILITY ANALYSIS NARRATIVE

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Attachment 3 – Stability Analysis Narrative

Slope Stability Model Interpretation

Our analysis of slope stability is predicated on computed values of factor of safety (FS). The FS is a ratio consisting of forces resisting a failure (the shear strength of the soil) divided by the forces that would cause a failure (shear stress of a potential sliding mass of soil). Our models evaluate thousands of potential failure surfaces at a selected two-dimensional cross section of the slope and computes a FS for each of these surfaces. In our interpretation of the results, we give particular emphasis based on our engineering judgement and experience to three specific ranges of computed FS against global stability failure with respect to their associated implications:

- *Unstable or Failing Surfaces (FS < 1)*

  Portions of the slope with slip surfaces displaying computed FS of less than 1 indicate that the slope is expected to be in the process of an ongoing failure. These are areas where we consider failure to be imminent for design purposes.

- *Unstable to Marginally Stable Slopes (1 < FS < 1.3)*

  Portions of the embankment with computed FS values that are greater than 1, but less than 1.3 indicate portions of the slope that are unstable to marginally stable. This means that while the exact set of soil and groundwater conditions modeled do not indicate an ongoing failure, potential changes in environmental conditions (i.e. saturated soils from heavy rains, loss of vegetation due to a tree toppling over, loss of support from adjacent sliding zones, change in geometry due to erosion, perched water conditions, etc.) may trigger failures within this zone to occur.

- *Stable Slopes (1.3 < FS if no occupied structure or 1.5 < FS with an occupied structure)*

  Potential slip surfaces with FS values above 1.3 are generally considered to be stable and unlikely to fail. It is considered common practice for engineered slope stabilization solutions to require FS values above 1.3. If an occupied structure is present, common practice for design of engineered repair solutions is to require failure planes extending through occupied structures to have a FS of 1.5 or greater.

Analysis Methods

We estimated factors of safety for the slope stability using limit equilibrium analysis, and in particular Spencer's method. Two-dimensional slope stability models were analyzed using limit-equilibrium methods and software published by Rocscience (SLIDE, Version 7.038).

The soil stratigraphy and groundwater conditions modeled were based solely on borings performed at the crest of the slope and plateau and could vary significantly from actual conditions downslope.

For slopes of arbitrary shape, limit equilibrium methods that satisfy all conditions of equilibrium are more accurate than less rigorous methods. Therefore, our slope stability analyses were performed using the Spencer limit equilibrium method, which satisfies complete force and moment equilibrium. However, all limit equilibrium analyses are inherently limited due to several weaknesses, which include:

- Failure is assumed at an overall Factor of Safety equal to one;
- Factor of Safety is assumed constant along the entire slip surface, thus ignoring progressive deformation and the influence of differing soil conditions along the failure surface;
- Soil stress-strain constitutive behavior, which is highly non-linear, is not modeled;
- Limitations incurred by modeling a three-dimensional field situation using a two-dimensional model; and,
- Limitation incurred by attempting to represent the exact field geologic conditions, which are typically anisotropic and non-homogeneous.

Soil & Groundwater Parameters

The following soil parameters were estimated for our analysis:

Modeled Strata	Effective Friction Angle (ϕ')	Total Unit Weight (γ)	Cohesion (c)
Fill	30º	120 pcf	0 psf
Sand & Gravel	38º	130 pcf	0 psf
Glacial Till	40º	135 pcf	0 psf
Vegetated Surficial Zone*	32°	120 pcf	50 psf

*Models assume an approximately 2.5-foot-thick vegetated surficial zone. We have applied an apparent root cohesion of 50 psf within this vegetated zone to account for the mechanical effect of the root masses within this zone.

The soil properties are estimated based on our review of the boring log, existing site conditions, and published correlations between SPT $N1_{60}$ values, friction angle, and unit weight.

Soil Nail Parameters

The following soil nail parameters were estimated for use in our analysis

Soil Support	Force Application	Out-of-Plane Spacing	Nail Length	Tensile Capacity (kips)	Plate Capacity (kips)	Bond Strength (lbs/ft)*
Soil Nail	Passive	4-ft	20-ft	26	26	2700

* Bond strength estimated based on a 18-psi grout-ground bond strength in the dense sand and gravel and a 4-inch borehole.

Tied Back Pile Wall Parameters

The wall is modeled as a simple 1-foot-thick material of infinite strength driven approximately 5-feet below the toe for global stability computations only. Actual tieback and pile section design would need to be determined in final design.

Tiebacks in the model are shown for schematic purposes only.

Seismic Parameters

S1 = 0.089
PGA = 0.127
F_{PGA} = 1.545
F_V = 2.4
K_s = 0.084 (Seismic Coefficient for Slide Model)

All options were checked for seismic stability using the above parameters. All options had factors of safety above 1.1 for this condition as recommended by the VTrans Soil Slope Stability Investigation and Evaluation Manual.

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ATTACHMENT 4 – LIMITATIONS

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Geotechnical Limitations

Explorations

1. The analyses and recommendations submitted in this report are based in part upon the data obtained from widely spaced subsurface explorations. The nature and extent of variations between these explorations may not become evident until construction. If variations then appear evident, it will be necessary to reevaluate the recommendations of this report.

2. The generalized soil profile described in the text is intended to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized and have been developed by interpretations of widely spaced explorations and samples; actual soil transitions are probably more erratic. For specific information, refer to the exploration logs.

3. Water level readings and moisture conditions have been made in the explorations, and from the samples at times and under conditions stated on the logs. These data have been reviewed and interpretations have been made in the text of this report. However, it must be noted that fluctuations in the level of the groundwater and moisture condition may occur due to variations in rainfall, temperature, and other factors occurring since the time measurements were made.

Review

4. In the event that any changes in the nature, design or location of the proposed structures is planned, the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed and conclusions of this report modified or verified in writing by GEODesign, Inc. We recommend that we be provided the opportunity to review and comment on the finalized project design and relevant construction specifications in order that earthwork and foundation recommendations may be properly interpreted and implemented in the design and specifications.

Use of Report

5. This report has been prepared for the exclusive use of **Stone Environmental**, for specific application to the **Turning Point Center of Central Vermont** project in **Barre, Vermont**, as described in GEODesign's scope of services/ contract and related documents, in accordance with generally accepted soil and foundation engineering practices. No other warranty, express or implied, is made.

6. This report has been prepared for this specific project by GEODesign, Inc. This report is for design purposes only and is not sufficient to prepare an accurate bid. Contractors wishing a copy of the report may secure it with the understanding that its scope is limited to design considerations only, unless otherwise specified in the report.

7. Unless otherwise noted, the scope of our services did not include environmental assessment or investigation for the presence of hazardous or toxic materials in the soil, surface water, groundwater or air, on, below, or around this site.