Site Investigation Work Plan

Former St. Johnsbury Armory Site
1249 Main Street,
St. Johnsbury, VT 05819

EPA Cooperative Agreement Number:
BF-00A01042
Generic QAPP Number: RFA22002

March 22, 2022

Prepared for:

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Sign-off Sheet

Document Title: Site Investigation Work Plan
Former St. Johnsbury Armory Site
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Date: March 22, 2022

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Sign-off Sheet

This document was prepared under the supervision and direction of the staff identified below. David Allwine meets the requirements of an environmental professional, as specified at §35-303(d)(15) of the *Investigation and Remediation of Contaminated Properties Rule* (IRule), and the following certification statement applies to him:

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

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1.0 INTRODUCTION

On behalf of the Northeastern Vermont Development Association (NVDA), Stantec Consulting Services Inc. (Stantec) is pleased to provide this Site Investigation Work Plan for the Former St. Johnsbury Armory property located at 1249 Main Street in St. Johnsbury, Vermont (the "Property", **Figure 1**). The work described herein will be completed in accordance with the Quality Assurance Project Plan (QAPP; RFA22002) prepared for the NVDA Brownfields Coalition Assessment Program (EPA Cooperative Agreement BF-00A01042) and approved by the U.S. Environmental Protection Agency (EPA) on December 22, 2021 (Stantec, 2021).

1.1 PROJECT ORGANIZATION

The project implementation team will be led by Stantec Project Manager (PM) Mr. David Allwine. The key team member roles and responsibilities are summarized below. If this organizational structure changes at any time during the project, the change will be documented in an amendment to this Work Plan.

EPA Region 1 Brownfields Project Officer: Christine Beling
Phone: (617) 918-1792

The EPA Region 1 Brownfields Project Officer (PO) will review and approve the Work Plan and will monitor activities for this project.

VTDEC Site Manager: Kassandra Kimmey
Phone: (802) 505-8060

The Vermont Department of Environmental Conservation (VTDEC) Site Manager will review the Work Plan for compliance with the IRule and will monitor activities for this project.

NVDA Project Manager: David Snedeker
Phone: (802) 748-8303

The NVDA Project Manager (PM) is the primary point of contact for all communication with the EPA and Stantec. The NVDA PM is responsible for overall project management, contract management, project cost accounting, and all other business-related project tasks. The NVDA PM will coordinate all required reporting with the EPA PO.

Stantec Project Manager: David A. Allwine, PG
Phone: (603) 669-8672

The Stantec PM will coordinate all project activities, provide technical support and oversight, and will ensure that the resources necessary to complete the project are available. The Stantec PM will communicate with team members, coordinate daily operations, and maintain control over the schedule, budget, and technical aspects of the project. The Stantec PM will be responsible for deliverables and manage subcontractor procurement activities. The Stantec PM will review or prepare all deliverables,

including verifying the transcription of laboratory data into report text and summary tables, to ensure that high-quality work products are produced.

Atlas Health and Safety Officer: Erik Gaster
Phone: (802) 871-8358

The Health and Safety Officer (HSO) will prepare appropriate health and safety risk management documentation for the work being performed. The HSO will be responsible for ensuring that personnel have received appropriate levels of training and that field operations are conducted in accordance with appropriate health and safety protocols.

Atlas Technical Consulting (Atlas) Field Manager: Jesse Stratton
Phone: (802) 871-8355

The Field Manager (FM) will be responsible for implementing field activities, including scheduling, collecting samples, documentation, and delivery of samples to the laboratory.

Atlas Quality Assurance and Data Manager: Laura Woodard
Phone: (802) 871-8364

The Atlas Data Manager will maintain a record of all samples collected and the sample identification information on each sample, manage data acquired from field assessments and laboratory analyses, and assemble data into computer format. The Data Manager will also perform data verification and data validation activities for the samples collected during this investigation.

Analytical Laboratory: Pace Analytical National Center for Testing & Innovation
Project Manager: Jared Starkey
Phone: (615) 773-9684

Pace Analytical National Center for Testing & Innovation (Pace) will be responsible for providing analytical testing services for soil and groundwater samples described in this Sampling and Analysis Plan (SAP). The Pace PM assigned to this project will report to the Stantec PM. Pace's standard operating procedures and analytical information are provided as **Appendix A**. The Pace Vermont Accreditation is included as **Appendix B**.

1.2 PROPERTY DESCRIPTION AND HISTORY

The Property is identified by the Town of St. Johnsbury (Town) as Parcel Identification 234074 and comprises 0.44 acres. The Property is developed with a 17,720 square-foot two-story structure with basement previously used as an armory. The building is reportedly vacant. The north and south exterior portions of the Property are paved and utilized for parking with the exception of a small area along the northwest corner of the building which is gravel-covered. The east portion of the Property fronting Main Street contains a grassy landscaped area. The Vermont Agency of Natural Resources Natural Resource Atlas Review is provided as **Figure 2** and the Property Layout and Vicinity Map is depicted on **Figure 3**. The Property owner and contact information are provided below:

Property Owner	Contact	Contact Information	Address
Town of St. Johnsbury	Joe Kasprzak, Assistant Town Manager	802-748-3926 jkasprzak@stjvt.com	51 Depot Square, St Johnsbury, VT 05819

The Property is bounded bound to the north by the Saint Andrews Episcopal Church and to the west by the Grace United Methodist Church. To the south of the Property exists a local dental practice and to the east, Main Street. Across Main Street exists multiple small businesses. The surrounding area in the Town of St. Johnsbury is zoned for commercial use.

Construction of the Amory begin in 1916 with a grand ball marking the formal opening of the Armory on February 20, 1917[1]. The building was reportedly operated under the state Board of Armory Commissioners which is responsible for overseeing Vermont National Guard properties. The building was sold in 1975 to the Town and several local departments reportedly moved in. The Town closed the Armory in 2009 due to the high operational costs of maintaining the building and evolving safety codes[2].

According to a Town Armory Redevelopment Project bid sheet, "the Town is interested in redeveloping the former Armory building for use as a municipal police station and regional emergency dispatch center. Owned by the Town, this building is within the historic district and represents a significant opportunity for the Town to drive economic redevelopment in this important downtown corridor. The building is contaminated and structurally compromised. The vacant building has no utility until properly remediated. The Town has continued to fund basic maintenance of the building, but there will soon be a need for capital investment to prevent more significant deterioration."[3]

1.2.1 2008 Limited Asbestos Inspection

A limited building asbestos survey was performed by Crothers Environmental Group, LLC for the Town in November of 2008 and summarized in a technical memorandum titled, "*St. Johnsbury Community Center – St. Johnsbury, Vermont, Interior Asbestos Inspection, Limited*." The memorandum detailed both presumed and confirmed asbestos-containing materials (ACM) throughout the Armory. ACMs were identified in building materials; no remedial recommendation or further sampling was recommended as a part of this memo.

1.2.2 2012 Phase I Environmental Site Assessment

A Phase I Environmental Site Assessment (ESA) titled "*Phase I Environmental Site Assessment, Former Saint Johnsbury Armory, VTDEC Site #2010-4075, (SMAC September 7, 2010), 1249 Main Street, Saint Johnsbury, Vermont*," was prepared for the Property by The Johnson Company for the VTDEC Site

[1] http://stjhistory.org/wordpress/armory-march-2012-edition-of-history-heritage/
[2] https://vtdigger.org/2021/05/16/st-johnsbury-wins-grant-for-armory-cleanup-bond-vote-planned-this-year/
[3] http://www.vermontbusinessregistry.com/bidAttachments/55879/Armory%20RFP.pdf

Management Section in May of 2012. The following recognized environmental conditions (RECs) and recommendations were identified in the report:

- Two underground storage tanks (USTs) previously containing gasoline (1,000 gallon) and fuel oil (6,000 gallon) were removed from the Property in addition to 22 tons of petroleum hydrocarbon impacted soils. VTDEC issued a Sites Management Activity Complete (SMAC) designation, and the Property was removed from the Site Management Section (SMS) hazardous waste site list. No further actions were recommended as part of this REC.

- Three pits/floor drains were observed during the Property inspection. One of the pits/floor drains reportedly exhibited staining. Previous use of the building as an armory suggests that vehicles were stored in the basement of the Property structure and that they may have leaked petroleum or other contaminants to the pits/floor drains. The Phase I ESA report recommended further investigation of the pits/floor drains including dye testing to evaluate their outlet and collection of sediment samples from the pits/floor drains for analysis of total petroleum hydrocarbons (TPH) and volatile organic compounds (VOCs).

- Multiple partially empty and empty (1) one to (5) five-gallon containers of paint were observed beneath the roof access ramp. No evidence of spills or leaks were noted during the Property inspection, however the Phase I ESA report recommended disposal of this potentially hazardous waste stream at a permitted facility.

- The potential polychlorinated biphenyl (PCB) contents of a transformer located at the northwest corner of the Property could not be confirmed. No evidence of spills or leaks were noted during the Property inspection, but the Phase I ESA report recommended contacting the local utility to either replace the oil within the transformer with Non-PCB oil or replace the transformer all together.

- Older electrical components were noted in multiple areas of the Armory during the Property inspection. The age of these components suggests that they may contain PCBs, such as those found in light ballasts. In addition, due to the age of the Armory, there exists a potential for PCB- containing construction materials such as caulks, paints, and sealants. The report recommended a full survey of potential PCB-containing material at the Property.

- There exists a potential for heavy metal contamination (particularly lead) based on the buildings past use as an armory which also contained an indoor firing range. The report recommended a full survey of potential lead-containing material at the Property including lead-based paint survey.

- Due to the age of the Armory, ACM is likely present in building materials. The Phase I ESA report referenced the 2008 Asbestos Survey Memo by Crothers Environmental Group, LLC; however, it also recommended further investigation to close data gaps and in preparation for solicitation of formal ACM abatement quotes from qualified contractors.

- Based on the responses to the environmental questionnaire provided as part of the Phase I ESA report, a detail mold assessment was recommended to evaluate the full extent of mold damage present in the Armory.

1.2.3 2013 Environmental Survey

Cardno ATC prepared an "Environmental Survey, Former Saint Johnsbury Armory, 1249 Main Street, Saint Johnsbury, Vermont," report dated March 28, 2013 for NVDA. The Environmental Survey report was apparently a follow up investigation presumably utilizing the Phase I ESA and 2008 Asbestos Survey results to guide their investigation. The investigation focused on an additional asbestos survey, PCBs in building materials, lead-based paint, lead-in-dust, indoor air quality investigation (mold), and sediment sampling and dye testing. The report concluded the following:

- Asbestos: Numerous interior and limited exterior trace (<1%) building materials were identified to contain ACMs.
- PCBs in Building Materials: PCBs were encountered in the following building materials at varying concentrations, including Exterior Door Caulking – Gray, Exterior Window Caulking – White, Floor Paint – Gray, Wall Paint – White, and Floor Paint – Blue. PCB concentrations reportedly ranged from 1.5 parts per million (ppm) in the white exterior window caulking to 5,700 ppm in the gray basement floor paint.
- Lead-Based Paint: An X-Ray Fluorescence (XRF) survey was completed as part of this Cardno ATC report. The survey noted multiple locations containing lead in the interior and exterior building paint coatings.
- Lead-In-Dust: The report noted that lead-in-dust results were above target/clearance levels in all levels of the building.
- Indoor Air Quality: The results of the environmental assessment indicate varying levels of mold growth on a microbial level; however, during their investigation, Cardno ATC did not identify any areas of visible mold growth.
- Sediment and Dry Testing: Dye testing of the pit/floor drains was completed and it was concluded that the basement drains are connected to the sanitary sewer system located beneath Main Street. Sediment from the pits/floor drains was collected for laboratory analysis and reportedly contained elevated concentrations of arsenic and bromomethane in excess of Vermont's Soil Screening Values (SSVs) for industrial and commercial properties. The Cardno ATC report recommended the removal of the sediment from the pits/floor drains (a quantity estimated to be less than 55-gallons) with off-site disposal at a permitted facility.

1.2.4 2021 Targeted Brownfields Assessment Report

A "Draft Targeted Brownfields Assessment Report, Former St. Johnsbury Armory, St. Johnsbury, Vermont," dated March 9, 2021 was completed by KGSNE, LLC and prepared for the EPA. The report provided an evaluation of hazardous building materials at the Property.

The Targeted Brownfield Assessment (TBA) scope of work was completed on February 2 and 3, 2021 and included a survey and sampling for asbestos containing materials, mold, an inventory of hazardous

materials and polychlorinated biphenyl sampling. In addition, a pre-demolition lead-based paint survey was completed to support renovation of the building.

The report apparently confirms the findings of the 2008 Cardno ATLAS survey.

1.2.5 2022 Draft Phase I Environmental Site Assessment Report

The Draft Phase I Environmental Site Assessment, titled "Former St. Johnsbury Armory, St. Johnsbury, Vermont," dated January 20, 2022 was completed by Stantec Consulting Services Inc. and prepared for the Town. The following RECs and recommendations were identified in the report:

- A total of five USTs located potentially upgradient of the Property were identified. Two of the tanks are reportedly located 200-250 feet west of the Property in front of the current 84 Central Street building. No records of related to the removal of these USTs were identified. Lacking this information and given the age of the USTs, their upgradient location, and their proximity to the Property, the USTs are considered to be a REC in connection with the Property.

- The remaining three USTs shown on the Sanborn maps were located at the Goss site located at 320 Summer Street. The USTs were reportedly removed in 1996 and evidence of a release was found beneath one of the USTs and an associated fuel pump island. The Property was issued a SMAC (closure) designation. Due to the location of the UST approximately 300 feet upgradient of the Property, this closed UST release is considered to be a historical recognized environmental condition (HREC) in connection with the Property.

- The easterly-adjoining Grace Methodist Church site had a 1,000-gallon heating oil UST which reportedly released approximately 900 to 1,400 gallons of heating oil to the subsurface. The UST was subsequently removed, and petroleum contaminated soil was observed beneath the UST at a depth of 8 feet below ground surface (bgs) to the bottom of the excavation at 13 feet bgs, where the greatest photoionization detector (PID) readings were observed. Groundwater was not encountered in the excavation. Follow the completion of a site investigation, and the installation and operation of a soil vapor extraction (SVE) system, the Property was assigned a SMAC designation in a VTDEC letter dated August 19, 2008. Because the Grace Methodist Church is an adjoining upgradient site, the closed UST release is considered to be an HREC in connection with the Property.

- A documented petroleum hydrocarbon spill at the Property which was remediated to the satisfaction of the VTDEC in addition to the leaking underground storage tank (LUST) listing associated with the Property's former 1000-gallon heating oil UST is considered to be an HREC in connection with the Property.

The following recommendations were provided for the Property:

- Additional investigation was recommended to assess the identified RECs for the Property.

2.0 CONCEPTUAL SITE MODEL

A Conceptual Site Model (CSM) is a representation of the physical, chemical, and biological processes that control the transport, migration, and actual and potential impacts of contamination (in soil, air, groundwater, surface water or sediments) to sensitive receptors. The following CSM is based on a limited desktop research, and review of a previous data generated for the site as discussed in **Section 1.2.**

2.1 CONTAMINANTS OF CONCERN

The following contaminants of concern have been identified for the Property based the data sources listed in **Section 1.2** above:

Soil – Polycyclic aromatic hydrocarbons (PAHs), PCBs, and the metals arsenic and lead.

Groundwater – RCRA 8 metals, semi-volatile organic compounds (SVOCs), and VOCs.

If groundwater is not encountered during the Phase II ESA, then soil vapor samples will be collected and analyzed for VOCs. See additional discussion in **Section 3.3.2**.

2.2 REGIONAL AND LOCAL GEOLOGY

The surficial geology at the Property is primarily categorized as glacial outwash sand and/or gravel Urban Land (60%)-Adams (15%)-Nichollsville (10%)Complex (NRCS 2022). The Adams composition is described as sandy glaciofluvial deposits and Nichollsville is described as silty glaciolacustrine deposits. The bedrock in the area is mapped as Devonian-age Waits River Formation, described as “Gray quartzose and micaceous crystalline limestone weathered to distinctive brown earthy crust; interbedded and intergradational with gray quartz-muscovite phyllite or schist”. Where more metamorphosed, the limestones contain actinolite, hornblende, zoisite, diopside, wollastonite, and garnet, and the phyllite and schist, biotite, garnet, and locally andalusite, kyanite or sillimanite.” (USGS 2006).

Stantec completed a Phase II ESA Stantec across the street from the Property at 1244, 1252, 1262 Main Street in September of 2020 (Stantec 2020). Based on the eight borings installed during the 2020 investigation to depths ranging between 10 and 55 feet bgs. Soils encountered in the soil borings generally included brown to gray, fine to coarse sand with varying amounts of silt and gravel. One of the borings (BH-08) was terminated at 53.5 due to refusal, likely on bedrock. Groundwater was not encountered to the maximum depth explored of 55 feet bgs.

2.3 CONTAMINANT FATE AND TRANSPORT

Petroleum hydrocarbons, including PAHs, once in soil, can be affected by a number of multiphase naturally occurring processes including transport (advection, diffusion, and dispersion) among and within various phases (aqueous and non-aqueous liquid, gas, and soil solids), mass transfer among phases (volatilization, sorption, and solution), and other natural attenuation processes, such as biodegradation

and plant uptake and metabolism. These contaminants can dissolve in groundwater to varying degrees depending on their individual solubility characteristics, with more soluble compounds (such as naphthalene) being more likely than less soluble compounds (such as benzo(a)pyrene) to leach from soil due to precipitation events and enter the groundwater. Once dissolved in groundwater, petroleum dispersion can occur through its migration with the advective flow of groundwater through the sandy subsurface media. Due to the relatively low solubility of the detected PAHs, significant leaching of contaminants to groundwater are not anticipated and impacts to the nearby Passumpsic River (the inferred shallow groundwater discharge zone) are unlikely to occur.

Solubility also affects adsorption and desorption on soils and volatility from aquatic systems, as well as a contaminant's transformation by hydrolysis, photolysis, oxidation, reduction, and biodegradation in water. PAHs generally have relatively low volatility, but shorter carbon-chain PAHs such as naphthalene can volatilize from soil and groundwater, and therefore can increase vapor intrusion risks.

Since metals are elemental contaminants, they cannot be degraded; they can only be dispersed or transformed. Dispersion occurs through migration of dissolved metals with the advective flow of groundwater. Mobile forms of metals, like arsenic, can be affected by a change in redox potential, especially in an environment where petroleum hydrocarbons are biodegrading and using up the available electron acceptors such as oxygen, nitrates, and sulfates. It is not uncommon to see elevated levels of naturally occurring arsenic in soil and groundwater in areas of petroleum releases, as the mobilization of the metal is commonly increased by a change in the geochemistry resulting from the on-going natural attenuation of petroleum hydrocarbons. In addition, since these metals are positively charged, once mobilized they will be more likely to bind to soils with higher cation exchange capacities (such as clays or organic materials) and may preferentially concentrate in some areas. Being non-volatile (with the exception of mercury), they do not represent a vapor intrusion risk.

PCBs are persistent, halogenated, aromatic hydrocarbons that are recalcitrant and not easily degraded in the environment. They do not volatilize readily and have low water solubility. They tend to preferentially partition to organic matter in soils and sediments, bioaccumulate, and biomagnify in aquatic ecosystems and possibly in terrestrial ecosystems and humans. These properties do not suggest a high probability of PCBs dissolving to the aqueous phase. Rather, it is more likely that any PCBs present in fill soils will tend to remain in soils and will not significantly leach to groundwater.

2.4 POTENTIAL RECEPTORS AND EXPOSURE PATHWAYS

The area surrounding the Property is a mix of commercial uses. Area properties are serviced by the municipal water supply, which for the Town is provided by Stiles Pond which is located 3.5 miles to the east in Waterford, Vermont. Given the close proximity of the Passumpsic River, which is presumed to be the discharge zone for local shallow groundwater flow, it is not expected that contamination migrating from the Property, if any, is likely to impact adjacent properties or the municipal water supplies.

Potential vapor intrusion risks resulting from VOCs (and select volatile SVOCs such as naphthalene) in groundwater are a potential vapor intrusion risk for building occupants. This exposure pathway will be evaluated as part of this Phase II ESA.

3.0 SCOPE OF WORK

The scope of work for this Phase II ESA was designed to assess potential impacts to the Property's subsurface and vapor intrusion risks to indoor air based on an evaluation of soil, groundwater quality if encountered, if not encountered soil vapor quality. The following data gaps were identified for the Property which have informed Stantec's overall strategy for this investigation. Stantec's general approach for addressing each data gap is provided below, with additional details provided later in this work plan.

- Data Gap #1 – Soil Quality

  Possible impacts to exterior soils from PCB-containing building materials such as window caulk is possible. Also, being located in an Urban Soils Background Area (USBA), the presence of PAH or metals impacts in exterior soil due to atmospheric deposition of anthropogenic contaminants and/or the presence of urban fill is also possible. As the nature and extent of PCBs, PAHs, and metals contamination in exterior soil at the Property have not been previously characterized, the lack of soil quality data represents a data gap.

  Recommendations *– Advance and sample up to (12) twelve hand auger/direct-push technology (DPT) soil borings from each of two soil intervals: 0-1.5 feet bgs and 2- 3 feet bgs. The sample from the lower (i.e. deeper) soil interval will be held at the laboratory pending the analytical results of the upper (i.e. shallower) soil sample interval.*

- Data Gap #2 – Groundwater Quality / Soil Vapor

  Potential impacts to groundwater from off-site and adjacent historical USTs have not been previously characterized.

  Recommendations *– Install three monitoring wells using DPT to advance the boreholes to the water table. One monitoring well will be located on the northwest corner of the Property in an apparent upgradient location, one downgradient well located at the southwest and south-central portions of the Property. Collect groundwater samples from each of the wells to evaluate groundwater quality beneath the Property including potential contaminants that may be migrating onto the Property from offsite sources. The groundwater samples should be analyzed for RCRA dissolved/total metals, SVOCs and VOCs. Because there have been no documented uses of VOCs at the Property or Property operations that would be indicative of VOC use, no soil samples are proposed for VOC analysis.*

  If groundwater is not encountered at a depth of 20 feet bgs or less, the following recommendations are proposed:

  Recommendations if groundwater is not encountered *– Based on a previous Stantec investigation across Main Street from the Property, groundwater was not encountered at a depth of 55 feet bgs. Should the depth to groundwater at the Property exceed 20 feet bgs, as an alternative to*

collecting and analyzing groundwater samples, install soil vapor sampling points to a depth of 20 feet bgs at the locations slated for monitoring well installation. Collect soil vapor samples from each of the points to evaluate soil vapor quality beneath the Property including potential contaminants that may be migrating onto the Property from offsite sources. The soil vapor samples should be analyzed for VOCs.

The Phase II ESA data will be used to update the CSM for the Property and to identify any remaining data gaps, which will be used as a basis for the development of appropriate future investigations or remedial actions, as warranted. Specific tasks to address these data gaps are described in **Section 3.2** below. Standard operating procedures (SOPs) for the work tasks identified below are presented in the QAPP prepared for the NVDA Brownfields Coalition Assessment Project (Stantec, 2021).

3.1 HEALTH AND SAFETY AND PRE-FIELD ACTIVITIES

Prior to field activities, Stantec will perform the following:

- Update the site-specific health and safety plan in accordance with Title 29 of the U.S. Code of Federal Regulations, part 1910.120, and Stantec protocols;
- Provide notification to Dig Safe to mark underground utilities located on the public right-of-way adjacent to the Property;
- Contract a private utility locate service provider to identify potential underground utilities/structures at the planned sampling locations;
- Contract with Pace for the soil and groundwater or soil vapor analytical testing services; and
- Contract with a Vermont-licensed driller for the advancement of DPT soil borings and installation of permanent groundwater monitoring wells or soil vapor sampling points.

A health and safety briefing will be presented by Atlas personnel to the field staff prior to initiating field activities.

3.2 STANDARD OPERATING PROCEDURES

Atlas SOPs for the subsurface soil and groundwater sampling and soil vapor sampling are listed below and provided in **Appendix C**.

SOP Number	Title
SOP 04	General Sampling Procedures for Aqueous & Solid Matrices
SOP 08	Groundwater Sampling Collection Procedures Using Bailers or Pumps
SOP 09	Water Level Measurement Procedure
SOP 10	Decontamination Procedure
SOP 11	Sample Custody Procedure
SOP 21	Vapor Implant Installation

3.3 SUBSURFACE ASSESSMENT

The subsurface assessment of the Property will include: the advancement of up to (12) twelve DPT/hand auger borings for the collection of soil samples and the completion of three (3) borings as permanent groundwater monitoring wells or soil vapor sample points (if groundwater is not encountered at 20 feet bgs or less) for the collection of soil, groundwater, and/or soil vapor samples. Stantec's rationale for the location and purpose of the borings and wells is as follows:

- Delineate the horizontal and vertical extent of PAHs and metals contamination associated with USBA soils and PCBs in soil.
- Characterize groundwater quality or soil vapor quality to evaluate whether off-Property releases may have impacted the Property.

The sampling analysis program for soil, groundwater, and soil vapor samples is summarized in **Tables 1** and **2** (soil), **Tables 3** and **4** (groundwater)**,** and **Tables 5** and **6** (air). The boring and monitoring well locations are shown on **Figure 4**. Standard operating procedures for the analytical laboratory are presented in the approved QAPP for the Property (Stantec, 2021).

3.3.1 Soil Sampling

The soil borings will be drilled using DPT drill rig or via hand auger at the locations shown on **Figure 4**. The soil borings will be advanced to a maximum depth of 5 feet bgs. Soil samples will be collected continuously and logged for lithologic description using the Unified Soil Classification System and screened for visual/olfactory observations and for VOCs using a PID equipped with a 10.6 electron-volt (eV) lamp. Soil classification, visual/olfactory observations of soil conditions, and PID results will be documented in the project notebook or on field data sheets.). If no environmental impacts are observed, soil samples will be collected from two soil intervals: 0-1.5 feet bgs and 2-3 feet bgs. Additional deeper samples may be collected (i.e. > greater 3 feet bgs) from each boring for laboratory analysis if environmental impacts are identified in the deeper sample based on field observations (e.g., staining, odor, PID results). Deeper soil samples may also be collected from the monitoring well borings above the water table based on field screening. As summarized in **Table 1**, the soil samples will be analyzed for:

- PAHs using EPA Method 8270-SIM;
- PCBs by EPA Method 8082A;
- RCRA 8 Metals by EPA Method 6020B/7471B; and
- VOCs by EPA Method 8260C depending on the results of field screening described above.

As discussed in Section 3.0, the soil sample from the lower (i.e. deeper) soil interval(s) will be held at the laboratory for PAH analysis pending the analytical results of the upper (i.e. shallower) soil sample interval. The soil samples are being submitted to the laboratory on a standard 10-day turnaround time. Because the laboratory hold time for PAH extraction is 14 days, the deeper soil samples will be submitted to the laboratory with a note on the chain of custody to "extract and hold," the deeper soil samples in order to avoid missing the PAH hold time. For the monitoring well borings, if field screening indicates the potential presence of impacts the soil samples will be submitted to the laboratory for analysis (i.e. the samples will

be requested for analysis instead of being placed on hold). A Pace Chain of Custody form is included in **Appendix D**.

3.3.2 Groundwater Sampling

Three borings (MW-01 – MW-03) will be completed as permanent 2-inch inner diameter (ID) wells to facilitate the characterization of groundwater quality. Based on a prior Stantec investigation across Main Street from the Property, groundwater was not encountered to a depth of 55 feet bgs where refusal was likely encountered on bedrock. However, groundwater has been reported at shallower depths in the Property area. Given the potential for the water table depth to exceed 50 feet beneath the Property, the borings will be advanced to a maximum depth of 20 feet bgs. If groundwater is encountered within 20 feet bgs, the monitoring wells will be installed. See **Section 3.3.3** below for contingency if groundwater is not encountered within 20 feet bgs.

The wells will be constructed using Schedule 40 PVC flush-threaded riser and screen 10 feet in length with 0.010-inch slots. Once the well assembly is lowered to the bottom of the boring, a sand filter pack using 10/20 Colorado Sand or similar will be placed around the screened interval of the well to a depth of 1 to 2 feet above the well screen to prevent natural formation collapse. The wells will also have a 1-2-foot hydrated bentonite seal installed above the filter pack, followed by drill cuttings and sand to the surface, as required. The wells will be protected at the surface with a steel standpipe or road box, as appropriate, to protect and provide security for the wells.

Well development will occur a minimum of 24 hours after the installation of the monitoring well to ensure that the bentonite surface seal above the well screen has adequately hydrated. The wells will be developed by surging and pumping to remove fines potentially introduced during installation. An attempt will be made to evacuate 10 well volumes of groundwater during a maximum well development period of one hour per well. Turbidity levels will be collected during well development and logged on the well development form to demonstrate that an adequate hydraulic connection between the monitoring well annulus and surrounding formation have been achieved.

Groundwater samples will be collected one week after well development. Groundwater will be purged/sampled using low-flow sampling procedures and a peristaltic pump. Sampling will occur once indicator field parameters (turbidity, dissolved oxygen, specific conductance, temperature, pH, and oxidation/reduction potential) have stabilized. One groundwater sample will be collected from each monitoring well, although if free product is present in any well, they will not be sampled.

As summarized in **Table 3**, the groundwater samples will be analyzed for the following parameters:

- Total and dissolved RCRA 8 metals using EPA Method 6020B/7470A;
- SVOCs using EPA Method 8270D;
- PAHs using EPA Method 8270-SIM; and
- VOCs using EPA Method 8260C.

Groundwater samples for dissolved RCRA 8 metals analysis will be filtered using a 0.45 micron filter.

The monitoring wells will be surveyed for elevation control using a laser level to evaluate groundwater flow direction at the Property. A site-specific benchmark with an assumed elevation of 100.00 feet will be established at the Property for use when surveying the wells. The benchmark will be spray-painted on pavement or other surface such that the mark is permanent.

3.3.3 Soil Vapor Sampling

If groundwater is not encountered to a maximum depth of 20 feet bgs, a DPT rig will be utilized to install soil vapor sampling points to a depth of approximately 20 feet bgs. The area around the vapor point will be sealed with non-VOC, non-shrinking material followed by at least 30 minutes for sub-slab conditions to equilibrate before collecting the sample. Three volumes of the sampling apparatus will be purged prior to sample collection.

A soil vapor sample will be collected in a 1-liter Summa canister fitted with a flow controller set to collect a sample at less than 200 milliliters/minute. The initial vacuum on the Summa canister will be recorded on the chain of custody prior to sampling. The soil vapor sampling point will be attached to the Summa canisters with inert, impermeable tubing (e.g., ¼-inch o.d. Teflon) to facilitate soil vapor sample collection. The soil vapor sample will be submitted for analysis of VOCs by EPA Method TO-15.

Helium gas will be used to check for leaks in the sample train during collection of the sub-slab soil vapor sample. The leak check will be performed by placing an enclosure over the sampling probe and maintaining a concentration of helium of at least 10% in the enclosure. As summarized in **Table 6**, in addition to VOC analysis, the soil vapor samples will be submitted for analysis of helium by EPA Method 3C Modified or ASTM D1946 to evaluate for leaks in the sampling system.

3.3.4 Quality Assurance/Quality Control (QA/QC) Samples

Field QA/QC samples, including duplicates, equipment blanks, trip blanks, and matrix spike/matrix spike duplicates, will be collected and analyzed in accordance with the QAPP (Stantec, 2021). One groundwater field duplicate sample will be collected from the same boring as the duplicate soil sample. If soil sampling equipment requires decontamination between sample collection, one equipment rinsate blank will be collected during the field investigation. If dedicated or disposable sampling equipment is used and decontamination is not applicable, then equipment blanks will not be collected. For this Work Plan, it is assumed that rinsate blanks will not be required. Trip blanks will be provided by the laboratory and will accompany the sample containers submitted to the laboratory for VOCs analysis.

Laboratory QA/QC samples will include a method blank (a sample of lab reagent water that is known to be contaminant free) in each QC batch to verify that the analytical procedure is free of contaminants. Lab Control Sample/Lab Control Sample Duplicate (LCS/LCSD) samples, which are aliquots of spiked laboratory reagent water, will also be analyzed to determine precision and accuracy.

3.3.5 Investigation-Derived Waste

Soil cuttings and purge water generated as part of the planned activities will be containerized in labeled 55-gallon DOT-approved drums (open top for soil, closed top for water) and staged in an appropriate location on-site. As summarized in **Table 7,** drum contents will be sampled for waste characterization parameters including the following:

- VOCs using EPA Method 8260;
- SVOCs using EPA Method 8270;
- RCRA Metals using EPA Methods 6010D and 7471B (mercury only);
- PCBs using EPA Method 8082;
- Pesticides using EPA Method 8081;
- Herbicides using EPA Method 8151A;
- Total Petroleum Hydrocarbons using EPA Method 8015;
- Flashpoint using EPA Method 1010;
- Corrosivity (pH) using EPA Method 9045D (soil) and 9040C (water); and
- Reactivity using EPA Method 7.3.

3.4 DOCUMENTATION AND REPORTING

Tables 8 through **10,** present a summary of the laboratory reporting limits (RLs), method detection limits (MDLs), and regulatory standards for the parameters analyzed as part of this investigation. Please note that these tables provide the RLs, MDLs, and standards for those analytes in the specific media (soil, groundwater, soil vapor) that are proposed for sampling as described in this Work Plan. Table 8 through 10 have been reviewed and are current and accurate as of the date of this document.

Field activities will be documented in a field notebook with sequentially numbered pages and on Stantec field forms in accordance with applicable Stantec field sampling SOPs contained in the QAPP. Representative photographs of the site activities, where appropriate, will be provided as an appendix to the report.

Following receipt of finalized laboratory analytical results and internal data validation, Stantec will prepare the Limited Phase II ESA report that will include a description of the sampling activities, interpretation of the results, and associated conclusions and recommendations. Also, a site plan showing the sample locations, boring logs and field sampling forms, laboratory analytical data summary tables for soil and groundwater sample results compared to applicable VTDEC regulatory standards, a discussion of any deviations from the procedures described in this Work Plan, and other information as required by §35-305 of the IRule will be included. Electronic copies of the report will be provided to the following stakeholders:

- EPA Project Officer, Christne Beling
- VT DEC Project Manager, Kassandra Kimmey
- NVDA Project Manager, David Snedeker
- NVDA Assistant Project Manager, Irene Nagel

4.0 SCHEDULE

Stantec will begin the work immediately following receipt of EPA/DEC approval of this Work Plan. Field sampling activities are expected to take between 3 to 4 days to complete. Standard laboratory analytical turnaround time is 10 business days for soil, groundwater and soil vapor samples. Stantec will prepare a Phase II ESA report documenting the results of the sampling activities within three weeks of the receipt of the final laboratory analytical data packages. The anticipated total time to complete the work, not including EPA/DEC Work Plan approval time, is estimated to be approximately 6 to 8 weeks.

5.0 LIMITATIONS

Stantec has prepared this Work Plan in accordance with the normal and reasonable standard of care exercised by similar professionals performing services under similar conditions and geographic locations. Except for our stated standard of care, no other warranties or guarantees are offered as part of Stantec's contracted services.

6.0 REFERENCES

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USGS. 2006. "Preliminary Integrated Geologic Map Databases for the United States: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, Rhode Island, Vermont. United States Geological Survey."

TABLES

Table 1
Sample Design - Soil
1249 Main Street
St. Johnsbury, VT

Boring ID	Location	Sample ID	Drilling Technology	Sample Depth (feet)	Maximum Boring Depth	Rationale	Laboratory Analysis			
							RCRA 8 Metals (6020B/7471B)	Polycyclic Aromatic Hydrocarbons (8270-SIM)	Polychlorinated Biphenyls (8082A)	VOCs (8260C)
SB-01	Northeast corner of building; location of 2010 UST closure activities	SB-01-x	Direct-push or hand auger	0.0-1.5	5 feet bgs	Delineate vertical/horizontal extent of PAHs, PCBs, RCRA 8 Metals and VOCs (collection and analysis dependent on field screening)	1	1	1	Samples collected for VOC analysis based on the results of field screening
		SB-01-x		2.0-3.0*			H	H	H	
SB-02		SB-02-x		0.0-1.5			1	1	1	
		SB-02-x		2.0-3.0*			H	H	H	
SB-03	East portion of the Property in the grassy/landscaped area	SB-03-x		0.0-1.5			1	1	1	
		SB-03-x		2.0-3.0*			H	H	H	
SB-04		SB-04-x		0.0-1.5			1	1	1	
		SB-04-x		2.0-3.0*			H	H	H	
SB-05		SB-05-x		0.0-1.5			1	1	1	
		SB-05-x		2.0-3.0*			H	H	H	
SB-06		SB-06-x		0.0-1.5			1	1	1	
		SB-06-x		2.0-3.0*			H	H	H	
SB-07		SB-07-x		0.0-1.5			1	1	1	
		SB-07-x		2.0-3.0*			H	H	H	
SB-08		SB-08-x		0.0-1.5			1	1	1	
		SB-08-x		2.0-3.0*			H	H	H	
SB-09	South central exterior portion of the building	SB-09-x		0.0-1.5			1	1	1	
		SB-09-x		2.0-3.0*			H	H	H	
SB-10		SB-10-x		0.0-1.5			1	1	1	
		SB-10-x		2.0-3.0*			H	H	H	
SB-11	West exterior portion of the building	SB-11-x		0.0-1.5			1	1	1	
		SB-11-x		2.0-3.0*			H	H	H	
SB-12		SB-12-x		0.0-1.5			1	1	1	
		SB-12-x		2.0-3.0*			H	H	H	
SB-13	West exterior portion of the building	SB-13-x		0.0-1.5			1	1	1	
		SB-13-x		2.0-3.0*			H	H	H	
SB-14		SB-14-x		0.0-1.5			1	1	1	
		SB-14-x		2.0-3.0*			H	H	H	
MW-1	Northwest corner of the Property	MW-1-x	Direct-push	17-20	20 feet bgs	Evaluate off-site impacts to soil quality. Soil samples will be analyzed for VOCs based on the results of field screening.				
MW-2	South central portion of the Property	MW-2-x		17-20						
MW-3	Southwest corner of the Property	MW-3-x		17-20						
Total Number of Investigative Samples for Analysis							12	12	12	Varies
Quality Control Samples										
Trip Blank		TB*xx*		---		1 per cooler with samples for VOCs analysis				1
Equipment Blank		EB*xx*		---		Minimum of 1 per day	1	1	1	1
Field Duplicate		FB*xx*		same as primary		At least 1 per 10 samples	1	1	1	1
MS/MSD		same as primary		same as primary		At least 1 per 20 samples	1	1	1	1
Total Estimated Number of Samples for Analysis							15	15	15	4

Notes and Abbreviations:
* / H = sample collected in the field and submitted to the laboratory "on hold" status pending analytical results from upper sample interval
MS/MSD - Matrix Spike/Matrix Spike Duplicate

TABLE 2
Sample Preservation - Soil
1249 Main Street
St. Johnsbury, VT

Parameter	Matrix	Field Quality Control	Laboratory Quality Control	Extraction/ Analytical Methods	Container	Preservation	Hold Time	Minimum Volume
Polychlorinated biphenyls	Soil	1 duplicate per 10 field samples	1 Blank and 1 LCS/LCSD per 20 samples	3546/8280	8 oz glass jar	Cool to ≤ 6° C	14 days for extraction; 40 days once extracted	60 grams
Polycyclic Aromatic Hydrocarbons	Soil	1 duplicate per 10 field samples	1 Blank and 1 LCS/LCSD per 20 samples	3546/8270SIM	4 oz glass jar	Cool to 4°C	14 days for extraction; 40 days once extracted	60 grams
RCRA 8 Metals	Soil	1 duplicate per 10 field samples	1 Blank and 1 LCS/LCSD per 20 samples	3015A/6020B, 7471B	4 oz glass jar	Cool to ≤ 6° C	6 months	28 grams for each metal (224 grams total)
EDB	Soil	1 duplicate per 10 field samples	1 Blank and 1 LCS/LCSD per 20 samples	8011	250mL plastic jar	Cool to 4°C	14 days	60 grams
RCRA 8 Metals	Soil	1 duplicate per 10 field samples	1 Blank and 1 LCS/LCSD per 20 samples	3050B/ 6010D and 7471B (mercury only)	4 oz glass/plastic jar	Nitric acid, Cool to 4°C	Mercury 28 days, rest 6 months	15 grams
PCBs	Soil	1 duplicate per 10 field samples	1 Blank and 1 LCS/LCSD per 20 samples	8082	8 oz amber glass jar	Cool to 4°C	40 days	100 grams
VOCs	Soil	1 duplicate per 10 field samples	1 Blank and 1 LCS/LCSD per 20 samples	5030/8260C	(4) 40mL amber glass vial	DI Water x 2 CH3OH, x 1 Cool to ≤ 6° C	14 days for extraction; 40 days for analysis;	(4) 40mL amber glass vial

Notes:

* Number of primary samples. Does not include QC samples.

LCS/LCSD = Lab Control Sample/Lab Control Sample Duplicate

RCRA 8 = Resource Conservation Recovery Act metals: Arsenic (As), Barium (Ba), Cadmium (Cd), Chromium (Cr), Lead (Pb), Mercury (Hg), Selenium (Se), Silver (Ag)

Table 3
Sample Design - Groundwater
1249 Main Street
St. Johnsbury, VT

Boring ID	Sample ID	Rationale	Laboratory Analysis			
			Volatile Organic Compounds (8260C/8011)	**PAHs** (8270-SIM)	**Total and Dissolved RCRA 8 Metals** (6020B/7470A)	**SVOCs** (8270D)
MW-1	MW01	Upgradient well - evaluate GW for off-site impacts	1	1	1	1
MW-2	MW02	Downgradient well - characterize Property GW quality	1	1	1	1
MW-3	MW03	Downgradient well - characterize Property GW quality	1	1	1	1
Total Number of Investigative Samples for Analysis			3	3	3	3
Quality Control Samples						
Trip Blank	TB*xx*	1 per cooler with samples for VOCs analysis	1			
Equipment Blank	EB*xx*	Minimum of 1 per day	‡	‡	‡	‡
Field Duplicate	FB*xx*	At least 1 per 20 samples	1	1	1	1
MS/MSD	same as primary	At least 1 per 20 samples	1	1	1	1
Total Estimated Number of Samples for Analysis			6	5	5	5

Notes and Abbreviations:

‡ Sample will be collected and analyzed only if non-disposable sampling equipment is used.

MS/MSD - Matrix Spike/Matrix Spike Duplicate

RCRA 8 = Resource Conservation Recovery Act metals: Arsenic (As), Barium (Ba), Cadmium (Cd), Chromium (Cr), Lead (Pb), Mercury (Hg), Selenium (Se), Silver (Ag)

SVOCs = semi-volatile organic compounds

TABLE 4
Sample Preservation - Groundwater
1249 Main Street
St. Johnsbury, VT

Parameter	Matrix	Field Quality Control	Laboratory Quality Control	Analytical Method	Container	Preservation	Hold Time	Minimum Volume
Semi-volatile organic compounds	Groundwater	1 duplicate per 10 field samples	1 Blank and 1 LCS/LCSD per 20 samples	8270D	(2) 250 mL amber glass jar	Cool to 4°C	7 days for extraction; 40 days once extracted	500 mL
Total and Dissolved RCRA 8 Metals	Groundwater	1 duplicate per 10 field samples	1 Blank and 1 LCS/LCSD per 20 samples	6020B/7470A	(1) 250mL polyethylene bottle each for dissolved and total metals	pH<2 HNO_3	180 days; 28 days for mercury	250 mL
Volatile Organic Compounds	Groundwater	1 duplicate per 10 field samples	1 Blank and 1 LCS/LCSD per 20 samples	5030/8260C	(3) 40 mL amber glass vials	Hydrochloric acid, Cool to 4°C	14 days	120 mL
Low-Level Volatile Organic Compounds	Groundwater	1 duplicate per 10 field samples	1 Blank and 1 LCS/LCSD per 20 samples	8011	(2) 40 mL amber glass vials	$Na_2S_2O_3$ Solution Cool to 4°C	14 days	40 mL

Notes:

* Number of primary samples. Does not include QC samples.

RCRA 8 = Resource Conservation Recovery Act metals: Arsenic (As), Barium (Ba), Cadmium (Cd), Chromium (Cr), Lead (Pb), Mercury (Hg), Selenium (Se), Silver (Ag)

LCS/LCSD = Lab Control Sample/Lab Control Sample Duplicate

Table 5
Sample Design - Air
1249 Main Street
St. Johnsbury, VT

Sample Location ID	Sample ID	Rationale	Laboratory Analysis	
			VOCs (TO-15)	**Helium** (ASTM D1946 / EPA Method 3C)
AIR-1	AIR1	Evaluate the Property for potential off-site impacts to soil vapor quality	1	1
AIR-2	AIR2		1	1
AIR-3	AIR3		1	1
Total Number of Investigative Samples for Analysis			3	3
Quality Control Samples				
Duplicate Sample	AIRDUP	Duplicate sample	1	1
Total Estimated Number of Samples for Analysis			4	4

TABLE 6
Sample Preservation - Air
1249 Main Street
St. Johnsbury, VT

Parameter	Matrix	Field Quality Control	Extraction/ Analytical Methods	Container	Preservation	Hold Time
VOCs	Air	Duplicate Sample	TO-15	Summa Canister	None	30 days

Notes:

VOCs = volatile organic compounds

TABLE 7
Sample Design - Investigation Derived Waste
1249 Main Street
St. Johnsbury, VT

Parameter	Estimated Number of Samples*	Matrix	Field Quality Control	Laboratory Quality Control	Extraction/ Analytical Methods	Container	Preservation	Hold Time	Minimum Volume
Volatile Organic Compounds	1	Soil	1 duplicate per 10 field samples, 1 trip blank	1 Method Blank and 1 LCS/LCSD per 20 samples	5035/8260	(3) 40 mL amber glass vials	Methanol (2 vials), deionized water (1 vial), Cool to 4°C	Freeze DI water vials within 48 hours, 14 days for extraction	15 grams for methanol vials, 5 grams for DI water vials
	1	Groundwater	1 duplicate per 10 field samples, 1 trip blank	1 Method Blank and 1 LCS/LCSD per 20 samples	5030/8260	(3) 40 mL amber glass vials	Hydrochloric acid, Cool to 4°C	14 days	120 mL
Polycyclic Aromatic Hydrocarbons	1	Soil	1 duplicate per 10 field samples, 1 trip blank	1 Method Blank and 1 LCS/LCSD per 20 samples	3546/8270	4 oz glass jar	Cool to 4°C	14 days for extraction; 40 days once extracted	60 grams
	1	Groundwater	1 duplicate per 10 field samples, 1 trip blank	1 Method Blank and 1 LCS/LCSD per 20 samples	3510/8270	(2) 250 mL amber glass jar	Cool to 4°C	7 days for extraction; 40 days once extracted	500 mL
RCRA 8 Metals	1	Soil	1 duplicate per 10 field samples, 1 trip blank	1 Method Blank and 1 LCS/LCSD per 20 samples	3015A/6020B and 7471B (mercury only)	4 oz glass/plastic jar	Cool to 4°C	Mercury 28 days, rest 6 months	15 grams
	1	Groundwater	1 duplicate per 10 field samples, 1 trip blank	1 Method Blank and 1 LCS/LCSD per 20 samples	3005/6020B and 7470B (mercury only)	250 mL plastic jar	Nitric acid, Cool to 4°C	Mercury 28 days, rest 6 months	100 mL
Polychlorinated Biphenyls	1	Soil	1 duplicate per 10 field samples, 1 trip blank	1 Method Blank and 1 LCS/LCSD per 20 samples	8082	8 oz amber glass jar	Cool to 4°C	14 days for extraction; 40 days once extracted	100 grams
	1	Groundwater	1 duplicate per 10 field samples, 1 trip blank	1 Method Blank and 1 LCS/LCSD per 20 samples	8082	1 L amber glass bottle	Cool to 4°C	7 days for extraction; 40 days once extracted	2 L
Total Petroleum Hydrocarbons	1	Soil	1 duplicate per 10 field samples, 1 trip blank	1 Method Blank and 1 LCS/LCSD per 20 samples	8015	4 oz amber glass jar	Cool to 4°C	14 days for extraction; 40 days once extracted	4 oz
	1	Groundwater	1 duplicate per 10 field samples, 1 trip blank	1 Method Blank and 1 LCS/LCSD per 20 samples	8015	(2) 1 L amber glass bottle	Cool to 4°C	7 days for extraction; 40 days once extracted	2 L
Flashpoint (Ignitability)	1	Soil	1 duplicate per 10 field samples, 1 trip blank	1 Method Blank and 1 LCS/LCSD per 20 samples	1010	4 oz amber glass jar	Cool to 4°C	14 days	4 oz
	1	Groundwater	1 duplicate per 10 field samples, 1 trip blank	1 Method Blank and 1 LCS/LCSD per 20 samples	1010	250 mL glass jar	Cool to 4°C	1 day	250 mL
Corrosivity	1	Soil	1 duplicate per 10 field samples, 1 trip blank	1 Method Blank and 1 LCS/LCSD per 20 samples	9045D	250 mL glass jar	Cool to 4°C	1 day	40 grams
	1	Groundwater	1 duplicate per 10 field samples, 1 trip blank	1 Method Blank and 1 LCS/LCSD per 20 samples	9040C	250 mL plastic bottle	Cool to 4°C	Immediate	250 mL
Reactivity	1	Soil	1 duplicate per 10 field samples, 1 trip blank	1 Method Blank and 1 LCS/LCSD per 20 samples	7.3	250 mL glass jar	Cool to 4°C	14 day	3 grams
	1	Groundwater	1 duplicate per 10 field samples, 1 trip blank	1 Method Blank and 1 LCS/LCSD per 20 samples	7.3	500 mL amber glass bottle	Cool to 4°C	7 day	40 mL

Notes:

* Number of primary samples. Does not include QC samples.

LCS/LCSD = Lab Control Sample/Lab Control Sample Duplicate

TABLE 8
Soil - Pace Laboratory Reporting Limits, Method Detection Limits, and Regulatory Standards
1249 Main Street
St. Johnsbury, VT

Analyte Group	Analyte	Analytical Method	MDL	MRL	VTDEC Soil Screening Level - Resident (1)	EPA Regional Screening Levels - Resident (2)	VTDEC Background Soil Concentrations (3)	Units	LCS Criteria (% R)	LCS RPDL (%)	MS Criteria (% R)	MS RPDL (%)	Lab Duplicate RPDL (%)
VOCs	1,1,1,2-Tetrachloroethane	SW8260C	0.000948	0.0025	nv	2.0	nv	mg/kg	74-129	20	10-149	39	--
VOCs	1,1,1-Trichloroethane	SW8260C	0.000923	0.0025	nv	8100	nv	mg/kg	69-126	20	10-144	35	--
VOCs	1,1,2,2-Tetrachloroethane	SW8260C	0.000695	0.0025	nv	0.60	nv	mg/kg	68-128	20	10-160	35	--
VOCs	1,1,2-Trichloroethane	SW8260C	0.000597	0.0025	nv	1.1	nv	mg/kg	78-123	20	10-160	35	--
VOCs	1,1,2-Trichlorotrifluoroethane	SW8260C	0.000754	0.0025	nv	6700	nv	mg/kg	61-139	20	10-160	36	--
VOCs	1,1-Dichloroethane	SW8260C	0.000491	0.0025	2.1	3.6	nv	mg/kg	70-127	20	10-147	37	--
VOCs	1,1-Dichloroethene	SW8260C	0.00061	0.0025	nv	230	nv	mg/kg	65-131	20	10-155	37	--
VOCs	1,1-Dichloropropene	SW8260C	0.00081	0.0025	nv	nv	nv	mg/kg	73-125	20	10-153	35	--
VOCs	1,2,3-Trichlorobenzene	SW8260C	0.00733	0.0125	nv	63	nv	mg/kg	59-139	20	10-160	40	--
VOCs	1,2,3-Trichloropropane	SW8260C	0.00162	0.0125	nv	0.0051	nv	mg/kg	67-129	20	10-156	35	--
VOCs	1,2,3-Trimethylbenzene	SW8260C	0.00158	0.005	nv	340	nv	mg/kg	74-124	20	10-160	36	--
VOCs	1,2,4-Trichlorobenzene	SW8260C	0.0044	0.0125	nv	24	nv	mg/kg	62-137	20	10-160	40	--
VOCs	1,2,4-Trimethylbenzene	SW8260C	0.00158	0.005	nv	300	nv	mg/kg	70-126	20	10-160	36	--
VOCs	1,2-Dibromo-3-Chloropropane	SW8260C	0.0039	0.025	nv	0.0053	nv	mg/kg	59-130	20	10-151	39	--
VOCs	1,2-Dibromoethane	SW8260C	0.000648	0.0025	0.020	0.036	nv	mg/kg	74-128	20	10-148	34	--
VOCs	1,2-Dichlorobenzene	SW8260C	0.000425	0.005	nv	1800	nv	mg/kg	76-124	20	10-155	37	--
VOCs	1,2-Dichloroethane	SW8260C	0.000649	0.0025	0.29	0.46	nv	mg/kg	65-131	20	10-148	35	--
VOCs	1,2-Dichloropropane	SW8260C	0.00142	0.005	1.5	2.5	nv	mg/kg	74-125	20	10-148	37	--
VOCs	1,3,5-Trimethylbenzene	SW8260C	0.002	0.005	nv	270	nv	mg/kg	73-127	20	10-160	38	--
VOCs	1,3-Butadiene	SW8260C	0.00513	0.025	nv	0.076	nv	mg/kg	32-150	20	10-137	36	--
VOCs	1,3-Dichlorobenzene	SW8260C	0.0006	0.005	nv	nv	nv	mg/kg	76-125	20	10-153	38	--
VOCs	1,3-Dichloropropane	SW8260C	0.000501	0.005	nv	1600	nv	mg/kg	80-125	20	10-154	35	--
VOCs	1,4-Dichlorobenzene	SW8260C	0.0007	0.005	nv	2.6	nv	mg/kg	77-121	20	10-151	38	--
VOCs	1,4-Dioxane	SW8260C	0.039	0.1	2.8	5.3	nv	mg/kg	18-160	20	50-150	20	--
VOCs	2,2,4-Trimethylpentane	SW8260C	0.000368	0.0025	nv	nv	nv	mg/kg	60-132	20	70-130	30	--
VOCs	2,2-Dichloropropane	SW8260C	0.00138	0.0025	nv	nv	nv	mg/kg	59-135	20	10-138	36	--
VOCs	2-Butanone (MEK)	SW8260C	0.0635	0.025	16952	27000	nv	mg/kg	30-160	24	10-160	40	--
VOCs	2-Chloro-1,3-butadiene	SW8260C	0.00065	0.05	nv	0.010	nv	mg/kg	70-130	30	50-150	20	--
VOCs	2-Chlorotoluene	SW8260C	0.000865	0.0025	nv	1600	nv	mg/kg	75-124	20	10-159	38	--
VOCs	2-Hexanone	SW8260C	0.003	0.025	nv	200	nv	mg/kg	54-147	20	10-160	36	--
VOCs	2-Nitropropane	SW8260C	0.0018	0.005	nv	0.064	nv	mg/kg	70-130	30	50-150	20	--
VOCs	2-Propanol	SW8260C	0.00106	0.025	nv	5600	nv	mg/kg	70-130	30	50-150	20	--
VOCs	3,3-Dimethyl-1-butanol	SW8260C	0.0066	0.1	nv	nv	nv	mg/kg	50-150	20	50-150	20	--
VOCs	4-Chlorotoluene	SW8260C	0.00045	0.005	nv	1600	nv	mg/kg	75-124	20	10-155	39	--
VOCs	4-Ethyltoluene	SW8260C	0.00232	0.005	nv	nv	nv	mg/kg	71-129	20	10-156	32	--
VOCs	4-Methyl-2-Pentanone	SW8260C	0.002	0.025	nv	33000	nv	mg/kg	56-143	20	10-160	35	--

TABLE 8
Soil - Pace Laboratory Reporting Limits, Method Detection Limits, and Regulatory Standards
1249 Main Street
St. Johnsbury, VT

Analyte Group	Analyte	Analytical Method	MDL	MRL	VTDEC Soil Screening Level - Resident (1)	EPA Regional Screening Levels - Resident (2)	VTDEC Background Soil Concentrations (3)	Units	LCS Criteria (% R)	LCS RPDL (%)	MS Criteria (% R)	MS RPDL (%)	Lab Duplicate RPDL (%)
VOCs	Acetone	SW8260C	0.0365	0.025	40609	61000	nv	mg/kg	10-160	31	10-160	40	--
VOCs	Acrylonitrile	SW8260C	0.00361	0.0125	nv	0.25	nv	mg/kg	45-153	22	10-160	40	--
VOCs	Allyl Chloride	SW8260C	0.004	0.025	nv	0.72	nv	mg/kg	70-131	20	10-160	30	--
VOCs	Benzene	SW8260C	0.00047	0.0010	0.7	1.2	nv	mg/kg	70-123	20	10-149	37	--
VOCs	Bromobenzene	SW8260C	0.0009	0.0125	nv	290	nv	mg/kg	73-121	20	10-156	38	--
VOCs	Bromodichloromethane	SW8260C	0.000725	0.0025	nv	0.29	nv	mg/kg	73-121	20	10-143	37	--
VOCs	Bromoform	SW8260C	0.00117	0.025	nv	19	nv	mg/kg	64-132	20	10-146	36	--
VOCs	Bromomethane	SW8260C	0.00197	0.0125	nv	6.8	nv	mg/kg	56-147	20	10-149	38	--
VOCs	Carbon Disulfide	SW8260C	0.0007	0.0125	608	770	nv	mg/kg	56-133	20	10-145	39	--
VOCs	Carbon Tetrachloride	SW8260C	0.000898	0.005	0.37	0.65	nv	mg/kg	66-128	20	10-145	37	--
VOCs	Chlorobenzene	SW8260C	0.00021	0.0025	414	280	nv	mg/kg	76-128	20	10-152	39	--
VOCs	Chloroform	SW8260C	0.00103	0.0025	nv	0.32	nv	mg/kg	72-123	20	10-146	37	--
VOCs	Chloromethane	SW8260C	0.00103	0.0125	nv	110	nv	mg/kg	51-138	20	10-159	37	--
VOCs	cis-1,2-Dichloroethene	SW8260C	0.000734	0.0025	140	160	nv	mg/kg	73-125	20	10-149	37	--
VOCs	cis-1,3-Dichloropropene	SW8260C	0.000757	0.0025	nv	nv	nv	mg/kg	76-127	20	10-151	37	--
VOCs	Cyclohexane	SW8260C	0.00111	0.0025	nv	6500	nv	mg/kg	70-130	20	10-157	32	--
VOCs	Cyclohexanone	SW8260C	0.0037	0.01	nv	28000	nv	mg/kg	10-160	30	10-160	20	--
VOCs	Dibromomethane	SW8260C	0.0008	0.0050	nv	24	nv	mg/kg	75-122	20	10-147	35	--
VOCs	Dichlorodifluoromethane	SW8260C	0.00161	0.0025	nv	87	nv	mg/kg	43-156	20	10-160	35	--
VOCs	Dichlorofluoromethane	SW8260C	0.00125	0.0025	nv	nv	nv	mg/kg	65-137	20	10-160	34	--
VOCs	Dicyclopentadiene	SW8260C	0.00165	0.0125	nv	1.3	nv	mg/kg	71-132	20	12-152	34	--
VOCs	Di-Isopropyl Ether	SW8260C	0.00041	0.001	nv	2200	nv	mg/kg	60-136	20	10-147	36	--
VOCs	Ethanol	SW8260C	0.363	2.5	nv	nv	nv	mg/kg	10-160	33	50-150	20	--
VOCs	Ethyl acetate	SW8260C	0.0032	0.01	nv	620	nv	mg/kg	70-130	30	50-150	20	--
VOCs	Ethyl Ether	SW8260C	0.000891	0.0025	nv	16000	nv	mg/kg	64-137	20	10-160	31	--
VOCs	Ethyl Methacrylate	SW8260C	0.0019	0.005	nv	1800	nv	mg/kg	70-130	30	50-150	20	--
VOCs	Ethyl tert-Butyl Ether	SW8260C	0.00032	0.001	nv	nv	nv	mg/kg	68-140	20	24-149	37	--
VOCs	Ethylbenzene	SW8260C	0.000737	0.0025	3.7	5.8	nv	mg/kg	74-126	20	10-160	38	--
VOCs	Ethylene dibromide	SW8260C	0.000648	0.010	0.020	0.036	nv	mg/kg	50-150	20	50-150	20	--
VOCs	Hexachloro-1,3-Butadiene	SW8260C	0.006	0.025	nv	1.2	nv	mg/kg	57-150	20	10-160	40	--
VOCs	Hexachloroethane	SW8260C	0.00032	0.001	nv	1.8	nv	mg/kg	70-130	30	50-150	20	--
VOCs	Iodomethane	SW8260C	--	0.0125	nv	nv	nv	mg/kg	74-134	20	10-160	38	--
VOCs	Isobutanol	SW8260C	0.043	0.1	nv	23000	nv	mg/kg	20-160	30	50-150	20	--
VOCs	Isopropylbenzene	SW8260C	0.000425	0.0025	256	1900	nv	mg/kg	72-127	20	10-155	38	--
VOCs	m&p-Xylene	SW8260C	0.0019	0.004	nv	580	nv	mg/kg	76-126	20	10-156	40	--
VOCs	Methyl acetate	SW8260C	0.003	0.005	nv	78000	nv	mg/kg	43-158	20	10-160	40	--

TABLE 8
Soil - Pace Laboratory Reporting Limits, Method Detection Limits, and Regulatory Standards
1249 Main Street
St. Johnsbury, VT

Analyte Group	Analyte	Analytical Method	MDL	MRL	VTDEC Soil Screening Level - Resident (1)	EPA Regional Screening Levels - Resident (2)	VTDEC Background Soil Concentrations (3)	Units	LCS Criteria (% R)	LCS RPDL (%)	MS Criteria (% R)	MS RPDL (%)	Lab Duplicate RPDL (%)
VOCs	Methyl Methacrylate	SW8260C	0.0017	0.005	nv	4400	nv	mg/kg	70-130	30	50-150	20	--
VOCs	Methyl Tert-Butyl Ether	SW8260C	0.00035	0.001	649	47	nv	mg/kg	66-132	20	11-147	35	--
VOCs	Methylacrylonitrile	SW8260C	0.015	0.05	nv	7.5	nv	mg/kg	70-130	30	50-150	20	--
VOCs	Methylcyclohexane	SW8260C	0.00206	0.005	nv	nv	nv	mg/kg	67-129	20	10-160	33	--
VOCs	Methylene Chloride	SW8260C	0.00664	0.025	nv	57	nv	mg/kg	68-123	20	10-141	37	--
VOCs	Naphthalene	SW8260C	0.00488	0.0125	2.7	2.0	nv	mg/kg	59-130	20	10-160	36	--
VOCs	n-Butyl Alcohol	SW8260C	0.077	0.2	nv	7800	nv	mg/kg	70-130	30	50-150	20	--
VOCs	n-Butylbenzene	SW8260C	0.00525	0.0125	3504	3900	nv	mg/kg	68-135	20	10-160	40	--
VOCs	n-Heptane	SW8260C	0.00171	0.005	nv	22	nv	mg/kg	70-130	20	70-130	20	--
VOCs	n-Hexane	SW8260C	0.00226	0.005	nv	610	nv	mg/kg	55-137	20	10-157	37	--
VOCs	n-Octane	SW8260C	0.000280	0.010	nv	nv	nv	mg/kg	50-150	20	50-150	20	--
VOCs	n-Propylbenzene	SW8260C	0.00095	0.005	nv	3800	nv	mg/kg	74-126	20	10-158	38	--
VOCs	o-Xylene	SW8260C	0.0009	0.0025	nv	650	nv	mg/kg	79-124	20	10-156	40	--
VOCs	Pentachloroethane	SW8260C	0.0025	0.01	nv	7.7	nv	mg/kg	70-130	30	10-160	20	--
VOCs	p-Isopropyltoluene	SW8260C	0.00255	0.005	nv	nv	nv	mg/kg	72-133	20	10-160	40	--
VOCs	Propene	SW8260C	0.00612	0.05	nv	2200	nv	mg/kg	10-160	20	10-160	35	--
VOCs	Propionitrile	SW8260C	0.018	0.05	nv	nv	nv	mg/kg	50-150	20	50-150	20	--
VOCs	sec-Butylbenzene	SW8260C	0.00288	0.0125	7009	7800	nv	mg/kg	74-130	20	10-159	39	--
VOCs	Styrene	SW8260C	0.000229	0.0125	nv	6000	nv	mg/kg	72-127	20	10-160	40	--
VOCs	tert-Amyl Methyl Ether	SW8260C	0.000721	0.05	nv	nv	nv	mg/kg	66-135	20	11-152	40	--
VOCs	tert-Butyl Alcohol	SW8260C	0.050	0.125	nv	nv	nv	mg/kg	15-160	33	50-150	20	--
VOCs	tert-Butylbenzene	SW8260C	0.00195	0.005	nv	7800	nv	mg/kg	75-127	20	10-156	39	--
VOCs	Tetrachloroethene	SW8260C	0.00090	0.0025	nv	24	nv	mg/kg	70-136	20	10-156	39	--
VOCs	Tetrahydrofuran	SW8260C	0.00352	0.0125	nv	18000	nv	mg/kg	37-146	24	10-158	33	--
VOCs	Toluene	SW8260C	0.0013	0.005	nv	4900	nv	mg/kg	75-121	20	10-156	38	--
VOCs	trans-1,2-Dichloroethene	SW8260C	0.00104	0.005	1402	70	nv	mg/kg	71-125	20	10-150	37	--
VOCs	trans-1,3-Dichloropropene	SW8260C	0.00114	0.005	nv	nv	nv	mg/kg	73-127	20	10-148	37	--
VOCs	trans-1,4-Dichloro-2-butene	SW8260C	0.00186	0.005	nv	0.0074	nv	mg/kg	45-143	20	10-152	36	--
VOCs	Trichloroethene	SW8260C	0.00058	0.0010	nv	0.94	nv	mg/kg	76-126	20	10-156	38	--
VOCs	Trichlorofluoromethane	SW8260C	0.00083	0.0025	nv	23000	nv	mg/kg	61-142	20	10-160	40	--
VOCs	Vinyl Acetate	SW8260C	0.00254	0.0125	nv	910	nv	mg/kg	43-159	20	10-128	40	--
VOCs	Vinyl Chloride	SW8260C	0.00116	0.0025	nv	0.059	nv	mg/kg	63-134	20	10-160	37	--
VOCs	Xylenes, Total	SW8260C	0.00088	0.0065	nv	580	nv	mg/kg	72-127	20	10-160	38	--
SVOCs	1,2,4,5-Tetrachlorobenzene	SW8270D	0.0159	0.333	nv	23	nv	mg/kg	30-120	23	14-120	36	--
SVOCs	1,2,4-Trichlorobenzene	SW8270D	0.0104	0.333	nv	24	nv	mg/kg	17-120	26	12-120	37	--
SVOCs	1,2-Dichlorobenzene	SW8270D	0.00987	0.333	nv	1800	nv	mg/kg	32-120	30	10-120	38	--

TABLE 8
Soil - Pace Laboratory Reporting Limits, Method Detection Limits, and Regulatory Standards
1249 Main Street
St. Johnsbury, VT

Analyte Group	Analyte	Analytical Method	MDL	MRL	VTDEC Soil Screening Level - Resident (1)	EPA Regional Screening Levels - Resident (2)	VTDEC Background Soil Concentrations (3)	Units	LCS Criteria (% R)	LCS RPDL (%)	MS Criteria (% R)	MS RPDL (%)	Lab Duplicate RPDL (%)
SVOCs	1,3,5-Trinitrobenzene	SW8270D	0.057	0.333	nv	2200	nv	mg/kg	17-157	30	17-157	30	--
SVOCs	1,3-Dichlorobenzene	SW8270D	0.0101	0.333	nv	nv	nv	mg/kg	30-120	31	10-120	40	--
SVOCs	1,3-Dinitrobenzene	SW8270D	0.0617	0.333	nv	6.3	nv	mg/kg	29-120	30	29-120	30	--
SVOCs	1,4-Dichlorobenzene	SW8270D	0.00991	0.333	nv	2.6	nv	mg/kg	31-120	31	10-120	39	--
SVOCs	1,4-Naphthoquinone	SW8270D	--	0.333	nv	nv	nv	mg/kg	50-150	30	21-129	30	--
SVOCs	1-Methylnaphthalene	SW8270D	0.00426	0.0333	nv	18	nv	mg/kg	34-120	23	10-120	36	--
SVOCs	1-Naphthylamine	SW8270D	0.0802	0.333	nv	nv	nv	mg/kg	10-120	30	10-120	30	--
SVOCs	2,3,4,6-Tetrachlorophenol	SW8270D	0.0126	0.333	nv	1900	nv	mg/kg	39-120	24	20-120	31	--
SVOCs	2,4,5-Trichlorophenol	SW8270D	0.0113	0.333	nv	6300	nv	mg/kg	38-120	24	20-120	30	--
SVOCs	2,4,6-Trichlorophenol	SW8270D	0.0107	0.333	nv	49	nv	mg/kg	37-120	24	19-120	32	--
SVOCs	2,4-Dichlorophenol	SW8270D	0.0097	0.333	nv	190	nv	mg/kg	25-120	21	20-120	31	--
SVOCs	2,4-Dimethylphenol	SW8270D	0.0087	0.333	nv	1300	nv	mg/kg	15-120	26	10-120	33	--
SVOCs	2,4-Dinitrophenol	SW8270D	0.0779	0.333	nv	130	nv	mg/kg	10-120	40	10-121	40	--
SVOCs	2,4-Dinitrotoluene	SW8270D	0.00955	0.333	nv	1.7	nv	mg/kg	45-120	21	30-120	31	--
SVOCs	2,6-Dichlorophenol	SW8270D	0.0462	0.333	nv	nv	nv	mg/kg	10-123	30	10-123	30	--
SVOCs	2,6-Dinitrotoluene	SW8270D	0.0109	0.333	nv	0.36	nv	mg/kg	42-120	21	25-120	31	--
SVOCs	2-Acetylaminofluorene	SW8270D	0.0546	0.333	nv	0.14	nv	mg/kg	26-120	30	26-120	30	--
SVOCs	2-Chloronaphthalene	SW8270D	0.00585	0.0333	nv	4800	nv	mg/kg	35-120	24	20-120	32	--
SVOCs	2-Chlorophenol	SW8270D	0.011	0.333	nv	390	nv	mg/kg	28-120	28	15-120	37	--
SVOCs	2-Methylnaphthalene	SW8270D	0.00432	0.0333	nv	240	nv	mg/kg	34-120	22	10-120	37	--
SVOCs	2-Naphthylamine	SW8270D	--	0.333	nv	0.30	nv	mg/kg	10-120	30	10-120	30	--
SVOCs	2-Nitroaniline	SW8270D	0.0107	0.333	nv	630	nv	mg/kg	46-120	22	24-120	30	--
SVOCs	2-Nitrodiphenylamine	SW8270D	0.0767	0.333	nv	nv	nv	mg/kg	39-122	21	32-120	31	--
SVOCs	2-Nitrophenol	SW8270D	0.0119	0.333	nv	nv	nv	mg/kg	20-120	25	12-120	39	--
SVOCs	3&4-Methylphenol	SW8270D	0.0104	0.333	nv	6300	nv	mg/kg	42-120	25	12-123	38	--
SVOCs	3,3-Dichlorobenzidine	SW8270D	0.0123	0.333	nv	1.2	nv	mg/kg	28-120	23	10-120	34	--
SVOCs	3,3'-Dimethylbenzidine	SW8270D	--	0.333	nv	0.049	nv	mg/kg	10-120	30	10-120	30	--
SVOCs	3-Methylcholanthrene	SW8270D	0.0596	0.333	nv	0.0055	nv	mg/kg	32-155	30	32-155	30	--
SVOCs	3-Nitroaniline	SW8270D	0.0106	0.333	nv	nv	nv	mg/kg	36-120	22	11-120	32	--
SVOCs	4-(Dimethylamino)azobenzene	SW8270D	0.0105	0.333	nv	0.12	nv	mg/kg	18-120	30	18-120	30	--
SVOCs	4,6-Dinitro-2-Methylphenol	SW8270D	0.0755	0.333	nv	5.1	nv	mg/kg	16-120	33	10-120	39	--
SVOCs	4-Aminobiphenyl	SW8270D	0.0486	0.333	nv	0.026	nv	mg/kg	10-120	30	10-120	30	--
SVOCs	4-Bromophenyl-Phenylether	SW8270D	0.0117	0.333	nv	nv	nv	mg/kg	40-120	21	27-120	30	--
SVOCs	4-Chloro-3-Methylphenol	SW8270D	0.0108	0.333	nv	6300	nv	mg/kg	28-120	20	15-120	30	--
SVOCs	4-Chloroaniline	SW8270D	0.012	0.333	nv	2.7	nv	mg/kg	18-120	25	10-120	36	--
SVOCs	4-Chlorophenyl-Phenylether	SW8270D	0.0116	0.333	nv	nv	nv	mg/kg	40-120	22	24-120	29	--

TABLE 8
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1249 Main Street
St. Johnsbury, VT

Analyte Group	Analyte	Analytical Method	MDL	MRL	VTDEC Soil Screening Level - Resident (1)	EPA Regional Screening Levels - Resident (2)	VTDEC Background Soil Concentrations (3)	Units	LCS Criteria (% R)	LCS RPDL (%)	MS Criteria (% R)	MS RPDL (%)	Lab Duplicate RPDL (%)
SVOCs	4-Nitroaniline	SW8270D	0.00971	0.333	nv	27	nv	mg/kg	36-120	23	15-120	31	--
SVOCs	4-Nitrophenol	SW8270D	0.0104	0.333	nv	nv	nv	mg/kg	27-120	24	10-137	32	--
SVOCs	5-Nitro-o-toluidine	SW8270D	0.0672	0.333	nv	60	nv	mg/kg	24-120	30	24-120	30	--
SVOCs	7,12-Dimethylbenz[a]anthracene	SW8270D	0.0529	0.333	nv	0.00046	nv	mg/kg	27-124	30	27-124	30	--
SVOCs	a,a-Dimethylphenethylamine	SW8270D	0.473	1.66	nv	nv	nv	mg/kg	50-150	30	60-140	0	--
SVOCs	Acenaphthene	SW8270D	--	0.0333	nv	3600	nv	mg/kg	38-120	22	18-120	32	--
SVOCs	Acenaphthylene	SW8270D	0.00539	0.0333	nv	nv	nv	mg/kg	40-120	22	25-120	32	--
SVOCs	Acetophenone	SW8270D	0.00469	0.333	nv	7800	nv	mg/kg	29-120	27	10-120	37	--
SVOCs	Aniline	SW8270D	0.0104	0.333	nv	95	nv	mg/kg	15-120	31	10-120	40	--
SVOCs	Anthracene	SW8270D	0.00593	0.0333	nv	18000	nv	mg/kg	42-120	20	22-120	29	--
SVOCs	Benzaldehyde	SW8270D	0.0177	0.333	nv	170	nv	mg/kg	10-160	40	10-160	40	--
SVOCs	Benzidine	SW8270D	--	0.333	nv	0.00053	nv	mg/kg	10-120	40	10-120	40	--
SVOCs	Benzo(a)Anthracene	SW8270D	0.00587	0.0333	nv	1.1	nv	mg/kg	44-120	20	25-120	29	--
SVOCs	Benzo(a)Pyrene	SW8270D	0.00619	0.0333	0.07	0.11	1	mg/kg	45-120	20	24-120	30	--
SVOCs	Benzo(b)Fluoranthene	SW8270D	0.00621	0.0333	nv	1.1	nv	mg/kg	43-120	22	19-122	31	--
SVOCs	Benzo(g,h,i)Perylene	SW8270D	0.00609	0.0333	nv	nv	nv	mg/kg	43-120	22	10-120	33	--
SVOCs	Benzo(k)Fluoranthene	SW8270D	0.00592	0.0333	nv	11	nv	mg/kg	44-120	21	23-120	30	--
SVOCs	Benzoic acid	SW8270D	0.00001	0.333	nv	250000	nv	mg/kg	10-120	40	10-152	40	--
SVOCs	Benzyl alcohol	SW8270D	0.0123	0.333	nv	6300	nv	mg/kg	10-120	33	10-136	40	--
SVOCs	Benzylbutyl Phthalate	SW8270D	0.0104	0.333	nv	290	nv	mg/kg	40-120	21	23-120	30	--
SVOCs	Bis(2-Chlorethoxy)Methane	SW8270D	0.01	0.333	nv	190	nv	mg/kg	20-120	23	10-120	34	--
SVOCs	Bis(2-Chloroethyl)Ether	SW8270D	0.011	0.333	nv	0.23	nv	mg/kg	16-120	31	10-120	40	--
SVOCs	Bis(2-Chloroisopropyl)Ether	SW8270D	0.0165	0.333	nv	nv	nv	mg/kg	23-120	30	10-120	40	--
SVOCs	Bis(2-Ethylhexyl)Phthalate	SW8270D	0.0103	0.333	20	39	nv	mg/kg	41-120	21	17-126	30	--
SVOCs	Caprolactam	SW8270D	0.057	0.333	nv	31000	nv	mg/kg	38-120	20	11-141	31	--
SVOCs	Carbazole	SW8270D	0.0103	0.333	nv	nv	nv	mg/kg	48-120	20	31-120	24	--
SVOCs	Chlorobenzilate	SW8270D	0.057	0.333	nv	4.9	nv	mg/kg	37-120	30	37-120	30	--
SVOCs	Diallate	SW8270D	0.05933	0.333	nv	8.9	nv	mg/kg	32-120	30	32-120	30	--
SVOCs	Dibenz(a,h)Anthracene	SW8270D	0.00923	0.0333	nv	0.110	nv	mg/kg	44-120	22	10-120	32	--
SVOCs	Diethyl Phthalate	SW8270D	0.011	0.333	nv	51000	nv	mg/kg	43-120	21	26-120	28	--
SVOCs	Dimethoate	SW8270D	0.0905	0.333	nv	140	nv	mg/kg	19-139	30	10-150	27	--
SVOCs	Dimethyl Phthalate	SW8270D	0.0706	0.333	nv	nv	nv	mg/kg	43-120	22	25-120	29	--
SVOCs	Di-n-Butyl Phthalate	SW8270D	0.0529	0.333	nv	6300	nv	mg/kg	43-120	20	30-120	29	--
SVOCs	Di-n-Octyl Phthalate	SW8270D	0.0114	0.333	nv	630	nv	mg/kg	40-120	21	21-123	29	--
SVOCs	Diphenylamine	SW8270D	0.0225	0.333	nv	6300	nv	mg/kg	32-120	20	32-120	30	--
SVOCs	Ethyl methanesulfonate	SW8270D	0.0757	0.333	nv	nv	nv	mg/kg	10-120	30	10-120	30	--

TABLE 8
Soil - Pace Laboratory Reporting Limits, Method Detection Limits, and Regulatory Standards
1249 Main Street
St. Johnsbury, VT

Analyte Group	Analyte	Analytical Method	MDL	MRL	VTDEC Soil Screening Level - Resident (1)	EPA Regional Screening Levels - Resident (2)	VTDEC Background Soil Concentrations (3)	Units	LCS Criteria (% R)	LCS RPDL (%)	MS Criteria (% R)	MS RPDL (%)	Lab Duplicate RPDL (%)
SVOCs	Famphur	SW8270D	0.0471	0.333	nv	nv	nv	mg/kg	18-120	30	18-120	30	--
SVOCs	Fluoranthene	SW8270D	0.00601	0.0333	2301	2400	nv	mg/kg	44-120	21	18-126	32	--
SVOCs	Fluorene	SW8270D	0.00542	0.0333	2301	2400	nv	mg/kg	41-120	22	25-120	30	--
SVOCs	Hexachloro-1,3-Butadiene	SW8270D	0.011	0.333	nv	1.2	nv	mg/kg	15-120	28	10-160	40	--
SVOCs	Hexachlorobenzene	SW8270D	0.0118	0.333	0.13	0.21	nv	mg/kg	39-120	21	27-120	28	--
SVOCs	Hexachlorocyclopentadiene	SW8270D	0.0175	0.333	nv	1.8	nv	mg/kg	15-120	31	10-120	40	--
SVOCs	Hexachloroethane	SW8270D	0.0131	0.333	nv	1.8	nv	mg/kg	17-120	31	50-150	20	--
SVOCs	Hexachlorophene	SW8270D	0.11	0.333	nv	19	nv	mg/kg	10-120	30	60-140	0	--
SVOCs	Hexachloropropene	SW8270D	0.11	0.333	nv	nv	nv	mg/kg	11-120	30	11-120	30	--
SVOCs	Indeno(1,2,3-cd)Pyrene	SW8270D	0.00941	0.0333	nv	1.1	nv	mg/kg	45-120	21	10-120	32	--
SVOCs	Isophorone	SW8270D	0.0102	0.333	nv	570	nv	mg/kg	23-120	23	13-120	34	--
SVOCs	Methapyrilene	SW8270D	0.00001	1.66	nv	nv	nv	mg/kg	50-150	30	60-140	0	--
SVOCs	Methyl methanesulfonate	SW8270D	0.0664	0.333	nv	5.5	nv	mg/kg	10-120	30	10-120	30	--
SVOCs	Methyl parathion	SW8270D	0.0645	0.333	nv	16	nv	mg/kg	28-121	30	10-150	21	--
SVOCs	Naphthalene	SW8270D	0.00836	0.0333	2.7	2.0	nv	mg/kg	18-120	24	10-160	36	--
SVOCs	Nitrobenzene	SW8270D	0.0116	0.333	nv	5.1	nv	mg/kg	17-120	26	10-120	36	--
SVOCs	n-Nitrosodibutylamine	SW8270D	0.11	0.333	nv	0.099	nv	mg/kg	23-120	30	23-120	30	--
SVOCs	n-Nitrosodiethylamine	SW8270D	0.189	0.333	nv	0.00081	nv	mg/kg	10-120	30	10-120	30	--
SVOCs	n-Nitrosodimethylamine	SW8270D	0.0494	0.333	nv	0.0020	nv	mg/kg	10-125	33	10-127	40	--
SVOCs	n-Nitrosodimethylethylamine	SW8270D	0.111	0.333	nv	0.020	nv	mg/kg	10-120	30	10-120	30	--
SVOCs	n-Nitrosodi-n-Propylamine	SW8270D	0.0111	0.333	nv	0.078	nv	mg/kg	26-120	27	10-120	37	--
SVOCs	n-Nitrosodiphenylamine	SW8270D	0.0252	0.333	nv	110	nv	mg/kg	40-120	21	17-120	29	--
SVOCs	Parathion-ethyl	SW8270D	0.0791	0.333	nv	380	nv	mg/kg	30-135	30	10-147	20	--
SVOCs	Pentachlorobenzene	SW8270D	0.0483	0.333	nv	63	nv	mg/kg	32-120	30	32-120	30	--
SVOCs	Pentachloronitrobenzene	SW8270D	0.0739	0.333	nv	2.7	nv	mg/kg	34-131	30	34-131	30	--
SVOCs	Pentachlorophenol	SW8270D	0.00896	0.333	0.48	1.00	nv	mg/kg	29-120	25	10-160	31	--
SVOCs	Phenanthrene	SW8270D	0.00661	0.0333	nv	nv	nv	mg/kg	42-120	20	17-120	31	--
SVOCs	Phenol	SW8270D	0.0134	0.333	nv	19000	nv	mg/kg	28-120	27	12-120	38	--
SVOCs	Pyrene	SW8270D	0.00648	0.0333	nv	1800	nv	mg/kg	41-120	21	16-121	32	--
SVOCs	Pyridine	SW8270D	0.022	0.333	nv	78	nv	mg/kg	10-120	35	10-120	40	--
PAHs	1-Methylnaphthalene	SW8270D-SIM	0.002	0.02	nv	18	nv	mg/kg	51-121	20	10-142	28	--
PAHs	2-Chloronaphthalene	SW8270D-SIM	0.002	0.02	nv	4800	nv	mg/kg	50-120	20	29-120	24	--
PAHs	Acenaphthene	SW8270D-SIM	0.00209	0.006	nv	3600	nv	mg/kg	50-120	20	14-127	32	--
PAHs	Acenaphthylene	SW8270D-SIM	0.00216	0.006	nv	nv	nv	mg/kg	50-120	20	21-124	25	--
PAHs	Anthracene	SW8270D-SIM	0.0023	0.006	nv	18000	nv	mg/kg	50-126	20	10-145	30	--
PAHs	Benzo(a)Anthracene	SW8270D-SIM	0.00173	0.006	nv	1.1	nv	mg/kg	45-120	20	10-139	30	--

TABLE 8
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1249 Main Street
St. Johnsbury, VT

Analyte Group	Analyte	Analytical Method	MDL	MRL	VTDEC Soil Screening Level - Resident (1)	EPA Regional Screening Levels - Resident (2)	VTDEC Background Soil Concentrations (3)	Units	LCS Criteria (% R)	LCS RPDL (%)	MS Criteria (% R)	MS RPDL (%)	Lab Duplicate RPDL (%)
PAHs	Benzo(a)Pyrene	SW8270D-SIM	0.00179	0.006	0.07	0.11	1	mg/kg	42-120	20	10-141	31	--
PAHs	Benzo(b)Fluoranthene	SW8270D-SIM	0.00153	0.006	nv	1.1	nv	mg/kg	42-121	20	10-140	36	--
PAHs	Benzo(g,h,i)Perylene	SW8270D-SIM	0.00177	0.006	nv	nv	nv	mg/kg	45-125	20	10-140	33	--
PAHs	Benzo(k)Fluoranthene	SW8270D-SIM	0.00215	0.006	nv	11	nv	mg/kg	49-125	20	10-137	31	--
PAHs	Dibenz(a,h)Anthracene	SW8270D-SIM	0.00172	0.006	nv	0.11	nv	mg/kg	47-125	20	10-120	32	--
PAHs	Fluoranthene	SW8270D-SIM	0.00227	0.006	2301	2400	nv	mg/kg	49-129	20	18-126	32	--
PAHs	Fluorene	SW8270D-SIM	0.00205	0.006	2301	2400	nv	mg/kg	49-120	20	25-120	30	--
PAHs	Indeno(1,2,3-cd)Pyrene	SW8270D-SIM	0.00181	0.006	nv	1.1	nv	mg/kg	46-125	20	10-120	32	--
PAHs	Naphthalene	SW8270D-SIM	0.00200	0.02	2.7	2.0	nv	mg/kg	50-120	20	10-160	36	--
PAHs	Phenanthrene	SW8270D-SIM	0.00231	0.006	nv	nv	nv	mg/kg	47-120	20	10-144	31	--
PAHs	Pyrene	SW8270D-SIM	0.002	0.006	nv	1800	nv	mg/kg	43-123	20	10-148	35	--
OCPs	4,4-DDD	SW8081	0.00370	0.02	nv	1.9	nv	mg/kg	33-141	39	56-139	20	--
OCPs	4,4-DDE	SW8081	0.00366	0.02	nv	2.0	nv	mg/kg	34-134	38	56-134	20	--
OCPs	4,4-DDT	SW8081	0.00627	0.02	nv	1.9	nv	mg/kg	30-143	40	50-141	20	--
OCPs	Aldrin	SW8081	0.00376	0.02	0.020	0.039	nv	mg/kg	34-136	38	45-136	20	--
OCPs	Alpha BHC	SW8081	0.00368	0.02	nv	0.086	nv	mg/kg	34-139	38	45-137	20	--
OCPs	Beta BHC	SW8081	0.00379	0.02	nv	0.30	nv	mg/kg	34-133	37	50-136	20	--
OCPs	Chlordane	SW8081	0.03900	0.2	nv	nv	nv	mg/kg	43-149	20	43-149	20	--
OCPs	Delta BHC	SW8081	0.00346	0.02	nv	nv	nv	mg/kg	34-135	38	47-139	20	--
OCPs	Dieldrin	SW8081	0.00344	0.02	nv	0.034	nv	mg/kg	35-137	37	56-136	20	--
OCPs	Endosulfan I	SW8081	0.00363	0.02	nv	nv	nv	mg/kg	34-134	37	53-132	20	--
OCPs	Endosulfan II	SW8081	0.00335	0.02	nv	nv	nv	mg/kg	35-132	38	53-134	20	--
OCPs	Endosulfan Sulfate	SW8081	0.00364	0.02	nv	380	nv	mg/kg	35-132	37	55-136	20	--
OCPs	Endrin	SW8081	0.00350	0.02	nv	19	nv	mg/kg	34-137	37	57-140	20	--
OCPs	Endrin Aldehyde	SW8081	0.00339	0.02	nv	nv	nv	mg/kg	23-121	39	35-137	20	--
OCPs	Endrin Ketone	SW8081	0.00711	0.02	nv	nv	nv	mg/kg	35-144	37	55-136	20	--
OCPs	Gamma BHC (Lindane)	SW8081	0.00344	0.02	nv	0.57	nv	mg/kg	34-136	38	49-135	20	--
OCPs	Heptachlor	SW8081	0.00428	0.02	nv	0.13	nv	mg/kg	36-141	37	47-136	20	--
OCPs	Heptachlor Epoxide	SW8081	0.00339	0.02	nv	0.070	nv	mg/kg	36-134	37	52-136	20	--
OCPs	Hexachlorobenzene	SW8081	0.00346	0.02	0.13	0.21	nv	mg/kg	33-129	37	57-126	20	--
OCPs	Methoxychlor	SW8081	0.00484	0.02	nv	320	nv	mg/kg	28-150	38	52-143	20	--
OCPs	Toxaphene	SW8081	0.12380	0.4	nv	0.49	nv	mg/kg	50-150	20	50-150	20	--
Herbicides	2,4,5-T	SW8151A	0.0085	0.07	nv	630	nv	mg/kg	41-120	20	10-157	20	--
Herbicides	2,4,5-TP (Silvex)	SW8151A	0.0107	0.07	nv	510	nv	mg/kg	42-120	20	10-156	20	--
Herbicides	2,4-D	SW8151A	0.0070	0.07	nv	700	nv	mg/kg	40-120	20	10-160	24	--
Herbicides	2,4-DB	SW8151A	0.0297	0.07	nv	1900	nv	mg/kg	25-143	20	10-160	22	--

TABLE 8
Soil - Pace Laboratory Reporting Limits, Method Detection Limits, and Regulatory Standards
1249 Main Street
St. Johnsbury, VT

Analyte Group	Analyte	Analytical Method	MDL	MRL	VTDEC Soil Screening Level - Resident (1)	EPA Regional Screening Levels - Resident (2)	VTDEC Background Soil Concentrations (3)	Units	LCS Criteria (% R)	LCS RPDL (%)	MS Criteria (% R)	MS RPDL (%)	Lab Duplicate RPDL (%)
Herbicides	Dalapon	SW8151A	0.0113	0.07	nv	1900	nv	mg/kg	15-120	27	10-121	27	--
Herbicides	Dicamba	SW8151A	0.0157	0.07	nv	1900	nv	mg/kg	43-120	20	10-154	21	--
Herbicides	Dichloroprop	SW8151A	0.0245	0.07	nv	nv	nv	mg/kg	32-129	20	10-158	20	--
Herbicides	Dinoseb	SW8151A	0.0070	0.07	nv	63	nv	mg/kg	10-120	40	10-120	40	--
Herbicides	MCPA	SW8151A	0.4430	6.5	nv	32	nv	mg/kg	31-121	33	10-160	40	--
Herbicides	MCPP	SW8151A	0.3670	6.5	nv	63	nv	mg/kg	28-133	33	10-160	40	--
Herbicides	Pentachlorophenol	SW8151A	0.0112	0.0333	0.48	1.00	nv	mg/kg	50-150	20	50-150	20	--
PCBs	PCB 1016	SW8082A	0.0118	0.034	nv	4.1	nv	mg/kg	36-141	35	10-160	37	--
PCBs	PCB 1221	SW8082A	0.0118	0.034	nv	0.20	nv	mg/kg	--	--	--	--	--
PCBs	PCB 1232	SW8082A	0.0118	0.034	nv	0.17	nv	mg/kg	--	--	--	--	--
PCBs	PCB 1242	SW8082A	0.0118	0.034	nv	0.23	nv	mg/kg	--	--	--	--	--
PCBs	PCB 1248	SW8082A	0.0074	0.017	nv	0.23	nv	mg/kg	--	--	--	--	--
PCBs	PCB 1254	SW8082A	0.0074	0.017	nv	0.24	nv	mg/kg	--	--	--	--	--
PCBs	PCB 1260	SW8082A	0.0074	0.017	nv	0.24	nv	mg/kg	37-145	37	10-160	37	--
TPH	Gasoline Range Organics	SW8015B	0.0339	0.1	82	nv	nv	mg/kg	50-150	20	50-150	20	--
TPH	Diesel Range Organics	SW8015B	1.33	4.0	96	nv	nv	mg/kg	50-150	20	50-150	20	--
TPH	Oil Range Organics	SW8015B	3.33	10	nv	nv	nv	mg/kg	50-150	20	75-125	20	--
Metals	Arsenic	SW6010D	0.518	2.0	16	0.68	nv	mg/kg	80-120	20	75-125	20	20
Metals	Barium	SW6010D	0.0852	0.50	11247	15000	nv	mg/kg	80-120	20	75-125	20	20
Metals	Cadmium	SW6010D	0.0471	0.5	7	71	nv	mg/kg	80-120	20	75-125	20	20
Metals	Chromium	SW6010D	0.133	1.0	nv	12000	nv	mg/kg	80-120	20	75-125	20	20
Metals	Lead	SW6010D	0.208	0.5	400	400	nv	mg/kg	80-120	20	75-125	20	20
Metals	Selenium	SW6010D	0.764	2.0	nv	390	nv	mg/kg	80-120	20	75-125	20	20
Metals	Silver	SW6010D	0.127	1.0	nv	390	nv	mg/kg	80-120	20	75-125	20	20
Metals	Arsenic	SW6020B	0.02	0.20	16	0.68	nv	mg/kg	80-120	20	75-125	20	20
Metals	Barium	SW6020B	0.0304	0.50	11247	15000	nv	mg/kg	80-120	20	75-125	20	20
Metals	Cadmium	SW6020B	0.0171	0.20	7	71	nv	mg/kg	80-120	20	75-125	20	20
Metals	Chromium	SW6020B	0.059	0.10	nv	12000	nv	mg/kg	80-120	20	75-125	20	20
Metals	Lead	SW6020B	0.0198	0.40	400	400	nv	mg/kg	80-120	20	75-125	20	20
Metals	Selenium	SW6020B	0.0359	0.50	nv	390	nv	mg/kg	80-120	20	75-125	20	20
Metals	Silver	SW6020B	0.0173	0.10	nv	390	nv	mg/kg	80-120	20	75-125	20	20
Metals	Mercury	SW7471A	0.018	0.04	3.1	11	nv	mg/kg	80-120	20	75-125	20	--

This table has been reviewed and is current and accurate as of the date of this document.

TABLE 8
Soil - Pace Laboratory Reporting Limits, Method Detection Limits, and Regulatory Standards
1249 Main Street
St. Johnsbury, VT

Analyte Group	Analyte	Analytical Method	MDL	MRL	VTDEC Soil Screening Level - Resident (1)	EPA Regional Screening Levels - Resident (2)	VTDEC Background Soil Concentrations (3)	Units	LCS Criteria (% R)	LCS RPDL (%)	MS Criteria (% R)	MS RPDL (%)	Lab Duplicate RPDL (%)

Notes:

(1) Vermont Screening Levels, *Investigation and Remediation of Contaminated Properties Rule* , July 2019 (Appendix A - Soil Screening Levels).

(2) EPA Regional Screening Levels - Resident Soil, May 2021

(3) VTDEC Background Soil Concentrations - Rural, *Investigation and Remediation of Contaminated Properties Rule* , July 2019 (Appendix A - Soil Screening Levels).

MDLs, RLs, and control limits are subject to change as new studies are performed.

-- = not applicable or not available

% = percent

% R = percent recovery

CAS = Chemical Abstracts Service

EPA = United States Environmental Protection Agency

LCS = laboratory control sample

MDL = method detection limit

mg/kg = milligrams per kilogram

MRL = method reporting limit

MS = matrix spike

nv = no established screening level value

OCPs = organochlorine pesticides

PAHs = polynuclear aromatic hydrocarbons

PCBs = polychlorinated biphenyls

QA = quality assurance

RPDL = relative percent difference limit

SIM = selected ion monitoring

SVOC = semi-volatile organic compound

TPH = total petroleum hydrocarbons

VOC = volatile organic compound

VTDEC = Vermont Department of Environmental Conservation

(G) Groundwater Enforcement Standard of 23 ug/L for any combination of 1,2,3-TMB, 1,2,4- TMB, and 1,3,5-TMB isomers.

(H) Preventive Action Level of 2 ug/L for any combination of 1,2,3-TMB, 1,2,4-TMB, and 1,3,5-TMB isomers.

(I) Trimethyl benzenes -Sum of the three isomers not to exceed applicable resident or non-resident values, based on the most conservative value derived for an individual isomer.

(A322:A323J) Benzo(a)pyrene cancer-based resident value applicable to benzo(a)pyrene itself and to total benzo(a)pyrene toxic equivalents [B(a)P-TE]. Benzo(a)pyrene noncancer-based value applicable only to benzo(a)pyrene itself.

(K) PCBs- sum of all PCBs not to exceed 1.14E-01 mg/kg for the resident scenario and not to exceed 6.8E-01 for the non-resident scenario (IRIS high risk and persistence cancer toxicity values used in cancerassessment; oral reference dose for Aroclor 1254 used in noncancer assessment).

(L) PFAS - Sum of PFHpA, PFHxS, PFNA, PFOS and PFOA not to exceed applicable resident or non-resident values.

(M) Screening levels for Groundwater are for Mercury (inorganic)

(N) Screening levels for soil are for Chromium (III)

* Values represent most conservative promulgated values for TPH (aromatic low).

** Laboratory reporting limit exceeds noted standard.

TABLE 9
Water - Pace Laboratory Reporting Limits, Method Detection Limits, and Regulatory Standards
1249 Main Street
St. Johnsbury, VT

Analyte Group	Analyte	Matrix	Analytical Method	MDL	MRL	Vermont Groundwater Quality Standard [1]	EPA RSLs -MCL for Drinking Water [2]	Units	LCS Criteria (% R)	LCS RPDL (%)
VOCs	1,1,1,2-Tetrachloroethane	Water	SW8260C	0.147	1.0	70	nv	µg/L	75-125	20
VOCs	1,1,1-Trichloroethane	Water	SW8260C	0.149	1.0	200	200	µg/L	73-124	20
VOCs	1,1,2,2-Tetrachloroethane	Water	SW8260C	0.133	1.0	nv	nv	µg/L	65-130	20
VOCs	1,1,2-Trichloroethane	Water	SW8260C	0.158	1.0	5.0	5.0	µg/L	80-120	20
VOCs	1,1,2-Trichlorotrifluoroethane	Water	SW8260C	0.18	1.0	nv	nv	µg/L	69-132	20
VOCs	1,1-Dichloroethane	Water	SW8260C	0.1	1.0	70	nv	µg/L	70-126	20
VOCs	1,1-Dichloroethene	Water	SW8260C	0.188	1.0	7.0	7.0	µg/L	71-124	20
VOCs	1,1-Dichloropropene	Water	SW8260C	0.142	1.0	nv	nv	µg/L	74-126	20
VOCs	1,2,3-Trichlorobenzene	Water	SW8260C	0.230	1.0	0.90	nv	µg/L	50-138	20
VOCs	1,2,3-Trichloropropane [3]	Water	SW8260C	0.237	1.0	0.02	nv	µg/L	73-130	20
VOCs	1,2,3-Trimethylbenzene	Water	SW8260C	0.104	1.0	23.00	nv	µg/L	77-120	20
VOCs	1,2,4-Trichlorobenzene	Water	SW8260C	0.481	1.0	70	70	µg/L	57-137	20
VOCs	1,2,4-Trimethylbenzene	Water	SW8260C	0.322	1.0	23	nv	µg/L	76-121	20
VOCs	1,2-Dibromo-3-Chloropropane	Water	SW8260C	0.276	5.0	nv	0.20	µg/L	58-134	20
VOCs	1,2-Dibromoethane	Water	SW8260C	0.126	1.0	0.05	0.05	µg/L	80-122	20
VOCs	1,2-Dichlorobenzene	Water	SW8260C	0.107	1.0	600	600	µg/L	79-121	20
VOCs	1,2-Dichloroethane	Water	SW8260C	0.0819	1.0	5.0	5.0	µg/L	70-128	20
VOCs	1,2-Dichloropropane	Water	SW8260C	0.149	1.0	5.0	5.0	µg/L	77-125	20
VOCs	1,3,5-Trimethylbenzene	Water	SW8260C	0.1	1.0	23	nv	µg/L	76-122	20
VOCs	1,3-Butadiene	Water	SW8260C	0.299	2.0	nv	nv	µg/L	45-147	20
VOCs	1,3-Dichlorobenzene	Water	SW8260C	0.110	1.0	600	nv	µg/L	79-120	20
VOCs	1,3-Dichloropropane	Water	SW8260C	0.120	1.0	nv	nv	µg/L	80-120	20
VOCs	1,4-Dichlorobenzene	Water	SW8260C	0.120	1.0	75	75	µg/L	79-120	20
VOCs	1,4-Dioxane [3]	Water	SW8260C	36.0	100	0.30	nv	µg/L	13-160	30
VOCs	2,2,4-Trimethylpentane	Water	SW8260C	0.391	1.0	nv	nv	µg/L	70-130	30
VOCs	2,2-Dichloropropane	Water	SW8260C	0.161	1.0	nv	nv	µg/L	58-130	20
VOCs	2-Butanone (MEK)	Water	SW8260C	1.19	10.0	511	nv	µg/L	44-160	20
VOCs	2-Chloro-1,3-butadiene	Water	SW8260C	1.45	50.0	nv	nv	µg/L	60-143	30
VOCs	2-Chlorotoluene	Water	SW8260C	0.106	1.0	nv	nv	µg/L	76-123	20
VOCs	2-Hexanone	Water	SW8260C	0.787	10.0	nv	nv	µg/L	67-149	20
VOCs	2-Nitropropane	Water	SW8260C	1.75	5.0	nv	nv	µg/L	58-143	30
VOCs	2-Propanol	Water	SW8260C	1.65	5.0	nv	nv	µg/L	10-160	30
VOCs	3,3-Dimethyl-1-butanol	Water	SW8260C	4.51	100	nv	nv	µg/L	55-148	30
VOCs	4-Chlorotoluene	Water	SW8260C	0.114	1.0	nv	nv	µg/L	75-122	20
VOCs	4-Ethyltoluene	Water	SW8260C	0.208	1.0	nv	nv	µg/L	74-127	20
VOCs	4-Methyl-2-Pentanone (MIBK)	Water	SW8260C	0.478	10.0	nv	nv	µg/L	68-142	20
VOCs	Acetone	Water	SW8260C	11.3	50.0	950	nv	µg/L	19-160	27
VOCs	Acrylonitrile	Water	SW8260C	0.671	10.0	nv	nv	µg/L	55-149	20
VOCs	Allyl Chloride	Water	SW8260C	1.7	5.0	nv	nv	µg/L	72-128	20
VOCs	Benzene	Water	SW8260C	0.094	1.0	5.0	5.0	µg/L	70-123	20
VOCs	Bromobenzene	Water	SW8260C	0.118	1.0	nv	nv	µg/L	73-121	20
VOCs	Bromochloromethane	Water	SW8260C	0.128	1.0	8.0	nv	µg/L	76-122	20
VOCs	Bromodichloromethane	Water	SW8260C	0.136	1.0	nv	80	µg/L	75-120	20
VOCs	Bromoethane	Water	SW8260C	0.129	10	nv	nv	µg/L	70-130	30
VOCs	Bromoform	Water	SW8260C	0.129	1.0	nv	80	µg/L	68-132	20
VOCs	Bromomethane	Water	SW8260C	0.605	5.0	5.0	nv	µg/L	10-160	25
VOCs	Carbon Disulfide	Water	SW8260C	0.096	1.0	nv	nv	µg/L	61-128	20
VOCs	Carbon Tetrachloride	Water	SW8260C	0.128	1.0	5.0	5.0	µg/L	68-126	20
VOCs	Chlorobenzene	Water	SW8260C	0.116	1.0	100	100	µg/L	80-121	20
VOCs	Chlorodibromomethane	Water	SW8260C	0.140	1.0	nv	80	µg/L	77-125	20
VOCs	Chloroethane	Water	SW8260C	0.192	5.0	nv	nv	µg/L	47-150	20
VOCs	Chloroform	Water	SW8260C	0.111	5.0	nv	80	µg/L	73-120	20
VOCs	Chloromethane	Water	SW8260C	0.960	2.5	nv	nv	µg/L	41-142	20
VOCs	cis-1,2-Dichloroethene	Water	SW8260C	0.126	1.0	70	70	µg/L	73-120	20
VOCs	cis-1,3-Dichloropropene	Water	SW8260C	0.111	1.0	nv	nv	µg/L	80-123	20
VOCs	Cyclohexane	Water	SW8260C	0.188	1.0	nv	nv	µg/L	71-124	20
VOCs	Cyclohexanone	Water	SW8260C	3.4	10.0	nv	nv	µg/L	70-130	30
VOCs	Dibromomethane	Water	SW8260C	0.122	1.0	nv	nv	µg/L	80-120	20
VOCs	Dichlorodifluoromethane	Water	SW8260C	0.374	5.0	nv	nv	µg/L	51-149	20
VOCs	Dichlorofluoromethane	Water	SW8260C	0.130	5.0	nv	nv	µg/L	65-133	20
VOCs	Dicyclopentadiene	Water	SW8260C	0.253	1.0	nv	nv	µg/L	74-126	20
VOCs	Di-Isopropyl Ether	Water	SW8260C	0.105	1.0	nv	nv	µg/L	58-138	20
VOCs	Ethanol	Water	SW8260C	42.0	100	nv	nv	µg/L	10-160	30
VOCs	Ethyl acetate	Water	SW8260C	3.59	10.0	nv	nv	µg/L	40-160	30
VOCs	Ethyl Ether	Water	SW8260C	0.115	1.0	nv	nv	µg/L	66-130	20
VOCs	Ethyl Methacrylate	Water	SW8260C	1.4	5.0	nv	nv	µg/L	72-129	30
VOCs	Ethyl tert-Butyl Ether	Water	SW8260C	0.270	1.0	nv	nv	µg/L	63-138	20
VOCs	Ethylbenzene	Water	SW8260C	0.137	1.0	700	700	µg/L	79-123	20
VOCs	Hexachloro-1,3-Butadiene	Water	SW8260C	0.337	1.0	nv	nv	µg/L	54-138	20
VOCs	Hexachloroethane	Water	SW8260C	0.316	1.0	nv	nv	µg/L	72-127	30
VOCs	Iodomethane	Water	SW8260C	1.71	10.0	nv	nv	µg/L	33-147	26
VOCs	Isobutanol	Water	SW8260C	42.1	100	nv	nv	µg/L	40-160	30
VOCs	Isopropylbenzene	Water	SW8260C	0.105	1.0	nv	nv	µg/L	76-127	20
VOCs	m&p-Xylene	Water	SW8260C	0.430	2.0	10000	10000	µg/L	80-122	20
VOCs	Methyl acetate	Water	SW8260C	4.3	20.0	nv	nv	µg/L	57-148	20
VOCs	Methyl Methacrylate	Water	SW8260C	1.52	5.0	nv	nv	µg/L	63-149	30
VOCs	Methyl Tert-Butyl Ether	Water	SW8260C	0.101	1.0	11	nv	µg/L	68-125	20
VOCs	Methylacrylonitrile	Water	SW8260C	14.2	50.0	nv	nv	µg/L	61-145	30
VOCs	Methylcyclohexane	Water	SW8260C	0.660	1.0	nv	nv	µg/L	68-126	20
VOCs	Methylene Chloride	Water	SW8260C	0.4	5.0	nv	5.00	µg/L	67-120	20
VOCs	Naphthalene	Water	SW8260C	1.0	5.0	0.50	nv	µg/L	54-135	20
VOCs	n-Butyl Alcohol	Water	SW8260C	150.0	200	nv	nv	µg/L	70-130	30
VOCs	n-Butylbenzene	Water	SW8260C	0.157	1.0	nv	nv	µg/L	73-125	20
VOCs	n-Hexane	Water	SW8260C	0.749	10.0	nv	nv	µg/L	57-133	20
VOCs	n-Octane	Water	SW8260C	0.566	1.0	nv	nv	µg/L	70-130	30
VOCs	n-Propylbenzene	Water	SW8260C	0.099	1.0	nv	nv	µg/L	77-124	20
VOCs	o-Xylene	Water	SW8260C	0.174	1.0	nv	nv	µg/L	80-122	20
VOCs	Pentachloroethane	Water	SW8260C	2.3	5.0	nv	nv	µg/L	10-160	30
VOCs	p-Isopropyltoluene	Water	SW8260C	0.120	1.0	nv	nv	µg/L	76-125	20
VOCs	Propene	Water	SW8260C	0.936	2.5	nv	nv	µg/L	10-160	20
VOCs	Propionitrile	Water	SW8260C	16.2	50.0	nv	nv	µg/L	49-160	30
VOCs	sec-Butylbenzene	Water	SW8260C	0.125	1.0	nv	nv	µg/L	75-125	20
VOCs	Styrene	Water	SW8260C	0.118	1.0	100	100	µg/L	73-130	20
VOCs	tert-Amyl Methyl Ether	Water	SW8260C	0.401	1.0	nv	nv	µg/L	66-125	20
VOCs	tert-Butyl Alcohol	Water	SW8260C	4.06	5.0	nv	nv	µg/L	27-160	30
VOCs	tert-Butylbenzene	Water	SW8260C	0.127	1.0	nv	nv	µg/L	76-124	20
VOCs	Tetrachloroethene	Water	SW8260C	0.300	1.0	5.0	5.0	µg/L	72-132	20
VOCs	Tetrahydrofuran	Water	SW8260C	0.929	5.0	nv	nv	µg/L	41-146	20
VOCs	Toluene	Water	SW8260C	0.278	1.0	1000	1000	µg/L	79-120	20
VOCs	trans-1,2-Dichloroethene	Water	SW8260C	0.149	1.0	100	100	µg/L	73-120	20
VOCs	trans-1,3-Dichloropropene	Water	SW8260C	0.118	1.0	nv	nv	µg/L	78-124	20
VOCs	trans-1,4-Dichloro-2-butene	Water	SW8260C	0.467	2.5	nv	nv	µg/L	33-144	20
VOCs	Trichloroethene	Water	SW8260C	0.190	1.0	nv	5.00	µg/L	78-124	20
VOCs	Trichlorofluoromethane	Water	SW8260C	0.16	5.0	nv	nv	µg/L	59-147	20
VOCs	Vinyl Acetate	Water	SW8260C	0.692	10.0	nv	nv	µg/L	11-160	20
VOCs	Vinyl Bromide	Water	SW8260C	0.300	1.0	nv	nv	µg/L	70-130	20
VOCs	Vinyl Chloride	Water	SW8260C	0.234	1.0	nv	2.00	µg/L	67-131	20
VOCs	Xylenes, Total	Water	SW8260C	0.174	3.0	10000	10000	µg/L	79-123	20
VOCs	1,2-Dibromo-3-Chloropropane	Water	SW8011	0.0075	0.020	nv	0.20	µg/L	60-140	20
VOCs	Ethylene dibromide	Water	SW8011	0.0054	0.010	0.05	0.05	µg/L	60-140	20
SVOCs	1,2,4,5-Tetrachlorobenzene	Water	SW8270D	0.0647	10.0	nv	nv	µg/L	31-121	27

TABLE 9
Water - Pace Laboratory Reporting Limits, Method Detection Limits, and Regulatory Standards
1249 Main Street
St. Johnsbury, VT

Analyte Group	Analyte	Matrix	Analytical Method	MDL	MRL	Vermont Groundwater Quality Standard (1)	EPA RSLs -MCL for Drinking Water (2)	Units	LCS Criteria (% R)	LCS RPDL (%)
SVOCs	1,2,4-Trichlorobenzene	Water	SW8270D	0.070	10.0	70	70	µg/L	24-120	29
SVOCs	1,2-Dichlorobenzene	Water	SW8270D	0.0713	10.0	600	600	µg/L	20-120	34
SVOCs	1,3,5-Trinitrobenzene	Water	SW8270D	1.32	10.0	nv	nv	µg/L	37-147	30
SVOCs	1,3-Dichlorobenzene	Water	SW8270D	0.132	10.0	600	nv	µg/L	17-120	35
SVOCs	1,3-Dinitrobenzene	Water	SW8270D	1.27	10.0	nv	nv	µg/L	34-120	30
SVOCs	1,4-Dichlorobenzene	Water	SW8270D	0.094	10.0	75	75	µg/L	18-120	34
SVOCs	1,4-Naphthoquinone	Water	SW8270D	36.1	50.0	nv	nv	µg/L	50-150	30
SVOCs	1-Methylnaphthalene	Water	SW8270D	0.079	1.0	nv	nv	µg/L	33-120	24
SVOCs	1-Naphthylamine	Water	SW8270D	0.289	10.0	nv	nv	µg/L	19-120	30
SVOCs	2,4,5-Trichlorophenol	Water	SW8270D	0.109	10.0	nv	nv	µg/L	44-120	22
SVOCs	2,4,6-Trichlorophenol	Water	SW8270D	0.100	10.0	nv	nv	µg/L	42-120	23
SVOCs	2,4-Dichlorophenol	Water	SW8270D	0.102	10.0	nv	nv	µg/L	36-120	26
SVOCs	2,4-Dimethylphenol	Water	SW8270D	0.0636	10.0	nv	nv	µg/L	33-120	26
SVOCs	2,4-Dinitrophenol	Water	SW8270D	2.3	10.0	nv	nv	µg/L	10-120	39
SVOCs	2,4-Dinitrotoluene	Water	SW8270D	0.098	10.0	nv	nv	µg/L	49-124	20
SVOCs	2,6-Dichlorophenol	Water	SW8270D	0.102	10.0	nv	nv	µg/L	19-136	30
SVOCs	2,6-Dinitrotoluene	Water	SW8270D	0.25	10.0	nv	nv	µg/L	46-120	21
SVOCs	2-Acetylaminofluorene	Water	SW8270D	0.253	10.0	nv	nv	µg/L	32-120	30
SVOCs	2-Chloronaphthalene	Water	SW8270D	0.065	1.0	nv	nv	µg/L	37-120	25
SVOCs	2-Chlorophenol	Water	SW8270D	0.133	10.0	nv	nv	µg/L	25-120	35
SVOCs	2-Methylnaphthalene	Water	SW8270D	0.117	1.0	nv	nv	µg/L	33-120	25
SVOCs	2-Methylphenol	Water	SW8270D	0.0929	10.0	nv	nv	µg/L	28-120	29
SVOCs	2-Naphthylamine	Water	SW8270D	4.48	10.0	nv	nv	µg/L	10-120	30
SVOCs	2-Nitroaniline	Water	SW8270D	0.102	10.0	nv	nv	µg/L	43-120	22
SVOCs	2-Nitrodiphenylamine	Water	SW8270D	0.203	10.0	nv	nv	µg/L	48-120	23
SVOCs	2-Nitrophenol	Water	SW8270D	0.117	10.0	nv	nv	µg/L	31-120	29
SVOCs	3&4-Methylphenol	Water	SW8270D	0.168	10.0	nv	nv	µg/L	31-120	30
SVOCs	3,3-Dichlorobenzidine	Water	SW8270D	0.212	10.0	nv	nv	µg/L	44-120	20
SVOCs	3,3'-Dimethylbenzidine	Water	SW8270D	3.92	10.0	nv	nv	µg/L	13-120	30
SVOCs	3-Methylcholanthrene	Water	SW8270D	0.164	10.0	nv	nv	µg/L	30-160	30
SVOCs	3-Nitroaniline	Water	SW8270D	0.087	10.0	nv	nv	µg/L	38-120	21
SVOCs	4-(Dimethylamino)azobenzene	Water	SW8270D	0.105	10.0	nv	nv	µg/L	27-120	30
SVOCs	4,6-Dinitro-2-Methylphenol	Water	SW8270D	1.12	10.0	nv	nv	µg/L	38-138	25
SVOCs	4-Aminobiphenyl	Water	SW8270D	0.461	10.0	nv	nv	µg/L	20-120	30
SVOCs	4-Bromophenyl-Phenylether	Water	SW8270D	0.088	10.0	nv	nv	µg/L	45-120	20
SVOCs	4-Chloro-3-Methylphenol	Water	SW8270D	0.131	10.0	nv	nv	µg/L	40-120	21
SVOCs	4-Chloroaniline	Water	SW8270D	0.234	10.0	nv	nv	µg/L	25-120	25
SVOCs	4-Chlorophenyl-Phenylether	Water	SW8270D	0.093	10.0	nv	nv	µg/L	44-120	20
SVOCs	4-Nitroaniline	Water	SW8270D	0.091	10.0	nv	nv	µg/L	18-160	21
SVOCs	4-Nitrophenol	Water	SW8270D	0.143	10.0	nv	nv	µg/L	10-120	33
SVOCs	5-Nitro-o-toluidine	Water	SW8270D	1.99	10.0	nv	nv	µg/L	34-120	30
SVOCs	7,12-Dimethylbenz[a]anthracene	Water	SW8270D	1.71	10.0	nv	nv	µg/L	14-124	30
SVOCs	a,a-Dimethylphenethylamine	Water	SW8270D	8.33	50.0	nv	nv	µg/L	10-129	30
SVOCs	Acenaphthene	Water	SW8270D	0.089	1.0	nv	nv	µg/L	41-120	22
SVOCs	Acenaphthylene	Water	SW8270D	0.092	1.0	nv	nv	µg/L	43-120	22
SVOCs	Acetophenone	Water	SW8270D	0.208	10.0	nv	nv	µg/L	29-120	28
SVOCs	Aniline	Water	SW8270D	2.43	10.0	nv	nv	µg/L	13-120	31
SVOCs	Anthracene	Water	SW8270D	0.080	1.0	343	nv	µg/L	45-120	20
SVOCs	Atrazine	Water	SW8270D	0.255	10.0	3.0	3.0	µg/L	39-141	20
SVOCs	Azobenzene	Water	SW8270D	0.105	10.0	nv	nv	µg/L	41-126	20
SVOCs	Benzaldehyde	Water	SW8270D	1.69	10.0	nv	nv	µg/L	10-160	40
SVOCs	Benzidine	Water	SW8270D	2.1	50.0	nv	nv	µg/L	10-120	36
SVOCs	Benzo(a)Anthracene	Water	SW8270D	0.199	1.0	nv	nv	µg/L	47-120	20
SVOCs	Benzo(a)Pyrene	Water	SW8270D	0.038	1.0	0.20	0.20	µg/L	47-120	20
SVOCs	Benzo(b)Fluoranthene	Water	SW8270D	0.13	1.0	nv	nv	µg/L	46-120	20
SVOCs	Benzo(g,h,i)Perylene	Water	SW8270D	0.121	1.0	nv	nv	µg/L	48-121	20
SVOCs	Benzo(k)Fluoranthene	Water	SW8270D	0.12	1.0	nv	nv	µg/L	46-120	21
SVOCs	Benzoic acid	Water	SW8270D	4.4	10.0	nv	nv	µg/L	10-120	40
SVOCs	Benzyl alcohol	Water	SW8270D	0.563	10.0	nv	nv	µg/L	25-120	26
SVOCs	Benzyl Chloride	Water	SW8270D	--	50.00	nv	nv	µg/L	60-140	--
SVOCs	Benzylbutyl Phthalate	Water	SW8270D	0.765	3.0	nv	nv	µg/L	43-121	20
SVOCs	Biphenyl	Water	SW8270D	0.79	10.0	nv	nv	µg/L	38-120	27
SVOCs	Bis(2-Chlorethoxy)Methane	Water	SW8270D	0.116	10.0	nv	nv	µg/L	33-120	24
SVOCs	Bis(2-Chloroethyl)Ether	Water	SW8270D	0.137	10.0	nv	nv	µg/L	23-120	33
SVOCs	Bis(2-Chloroisopropyl)Ether	Water	SW8270D	0.308	10.0	nv	nv	µg/L	28-120	31
SVOCs	Bis(2-Ethylhexyl)Phthalate	Water	SW8270D	0.0895	3.0	6.0	6.0	µg/L	43-122	20
SVOCs	Caprolactam	Water	SW8270D	0.309	10.0	nv	nv	µg/L	10-120	26
SVOCs	Carbazole	Water	SW8270D	0.111	10.0	nv	nv	µg/L	51-122	20
SVOCs	Chlorobenzilate	Water	SW8270D	3.84	50.0	nv	nv	µg/L	29-128	30
SVOCs	Chrysene	Water	SW8270D	0.13	1.0	nv	nv	µg/L	48-120	20
SVOCs	Diallate	Water	SW8270D	0.52	10.0	nv	nv	µg/L	30-120	30
SVOCs	Dibenz(a,h)Anthracene	Water	SW8270D	0.0644	1.0	nv	nv	µg/L	47-120	20
SVOCs	Dibenzofuran	Water	SW8270D	0.097	10.0	nv	nv	µg/L	44-120	22
SVOCs	Diethyl Phthalate	Water	SW8270D	0.287	3.0	nv	nv	µg/L	48-122	20
SVOCs	Dimethoate	Water	SW8270D	5.1	50.0	nv	nv	µg/L	11-134	30
SVOCs	Dimethyl Phthalate	Water	SW8270D	0.26	3.0	nv	nv	µg/L	48-120	20
SVOCs	Di-n-Butyl Phthalate	Water	SW8270D	0.453	3.0	nv	nv	µg/L	49-121	20
SVOCs	Di-n-Octyl Phthalate	Water	SW8270D	0.932	3.0	nv	nv	µg/L	42-125	20
SVOCs	Dinoseb	Water	SW8270D	8.01	50.0	7.0	7.0	µg/L	39-120	30
SVOCs	Diphenylamine	Water	SW8270D	2.37	10.0	nv	nv	µg/L	35-120	20
SVOCs	Disulfoton	Water	SW8270D	0.267	10.0	0.30	nv	µg/L	32-120	30
SVOCs	Ethyl methanesulfonate	Water	SW8270D	0.326	10.0	nv	nv	µg/L	10-120	30
SVOCs	Famphur	Water	SW8270D	3.92	20.0	nv	nv	µg/L	32-120	30
SVOCs	Fluoranthene	Water	SW8270D	0.102	1.0	46	nv	µg/L	51-120	20
SVOCs	Fluorene	Water	SW8270D	0.0844	1.0	46	nv	µg/L	47-120	20
SVOCs	Hexachloro-1,3-Butadiene	Water	SW8270D	0.0968	10.0	nv	nv	µg/L	19-120	32
SVOCs	Hexachlorobenzene	Water	SW8270D	0.0755	1.0	1.0	1.0	µg/L	44-120	20
SVOCs	Hexachlorocyclopentadiene	Water	SW8270D	0.0598	10.0	50	50	µg/L	15-120	31
SVOCs	Hexachloroethane	Water	SW8270D	0.127	10.0	nv	nv	µg/L	15-120	37
SVOCs	Hexachlorophene	Water	SW8270D	1.44	50.0	nv	nv	µg/L	10-120	30
SVOCs	Hexachloropropene	Water	SW8270D	0.149	50.0	nv	nv	µg/L	10-120	30
SVOCs	Indeno(1,2,3-cd)Pyrene	Water	SW8270D	0.279	1.0	nv	nv	µg/L	49-122	20
SVOCs	Isophorone	Water	SW8270D	0.143	10.0	nv	nv	µg/L	36-120	23
SVOCs	Isosafrole	Water	SW8270D	3.88	10.0	nv	nv	µg/L	25-133	20
SVOCs	Kepone	Water	SW8270D	7.2	20.0	nv	nv	µg/L	10-120	30
SVOCs	Methapyrilene	Water	SW8270D	13.3	50.0	nv	nv	µg/L	10-120	30
SVOCs	Methyl methanesulfonate	Water	SW8270D	3.4	50.0	nv	nv	µg/L	10-120	30
SVOCs	Methyl parathion	Water	SW8270D	0.213	10.0	2.0	nv	µg/L	42-120	30
SVOCs	Mirex	Water	SW8270D	0.0776	0.20	nv	nv	µg/L	50-150	30
SVOCs	Naphthalene	Water	SW8270D	0.159	1.0	0.50	nv	µg/L	27-120	27
SVOCs	Nitrobenzene	Water	SW8270D	0.297	10.0	nv	nv	µg/L	27-120	29
SVOCs	n-Nitrosodibutylamine	Water	SW8270D	3.91	10.0	nv	nv	µg/L	13-143	30
SVOCs	n-Nitrosodiethylamine	Water	SW8270D	3.57	10.0	nv	nv	µg/L	10-120	30
SVOCs	n-Nitrosodimethylamine	Water	SW8270D	0.998	10.0	nv	nv	µg/L	10-120	40
SVOCs	n-Nitrosodimethylethylamine	Water	SW8270D	3.25	10.0	nv	nv	µg/L	10-120	30
SVOCs	n-Nitrosodi-n-Propylamine	Water	SW8270D	0.261	10.0	nv	nv	µg/L	31-120	28
SVOCs	n-Nitrosodiphenylamine	Water	SW8270D	2.37	10.0	nv	nv	µg/L	47-120	20
SVOCs	o-Toluidine	Water	SW8270D	3.53	10.0	nv	nv	µg/L	10-120	30
SVOCs	Parathion-ethyl	Water	SW8270D	0.379	10.0	nv	nv	µg/L	46-130	30
SVOCs	Pentachlorobenzene	Water	SW8270D	4.15	10.0	nv	nv	µg/L	25-120	30
SVOCs	Pentachloronitrobenzene	Water	SW8270D	4.15	10.0	nv	nv	µg/L	34-132	30

TABLE 9
Water - Pace Laboratory Reporting Limits, Method Detection Limits, and Regulatory Standards
1249 Main Street
St. Johnsbury, VT

Analyte Group	Analyte	Matrix	Analytical Method	MDL	MRL	Vermont Groundwater Quality Standard [1]	EPA RSLs -MCL for Drinking Water [2]	Units	LCS Criteria (% R)	LCS RPDL (%)
SVOCs	Pentachlorophenol	Water	SW8270D	0.313	1.00	1.0	1.0	µg/L	23-120	25
SVOCs	Phenanthrene	Water	SW8270D	0.112	1.00	nv	nv	µg/L	46-120	20
SVOCs	Phenol	Water	SW8270D	4.33	10.0	nv	nv	µg/L	10-120	36
SVOCs	Pyrene	Water	SW8270D	0.107	1.00	nv	nv	µg/L	47-120	20
SVOCs	Pyridine	Water	SW8270D	2.48	10.0	nv	nv	µg/L	10-120	38
SVOCs	Safrole	Water	SW8270D	3.68	10.0	nv	nv	µg/L	21-120	30
PAHs	1-Methylnaphthalene	Water	SW8270D-SIM	0.02	0.05	nv	nv	µg/L	43-120	20
PAHs	2-Chloronaphthalene	Water	SW8270D-SIM	0.0165	0.05	nv	nv	µg/L	39-120	20
PAHs	2-Methylnaphthalene	Water	SW8270D-SIM	0.028	0.05	nv	nv	µg/L	40-120	20
PAHs	Acenaphthene	Water	SW8270D-SIM	0.019	0.050	nv	nv	µg/L	42-120	20
PAHs	Acenaphthylene	Water	SW8270D-SIM	0.01700	0.050	nv	nv	µg/L	43-120	20
PAHs	Anthracene	Water	SW8270D-SIM	0.01900	0.050	343	nv	µg/L	43-127	20
PAHs	Benzo(a)Anthracene	Water	SW8270D-SIM	0.02000	0.050	nv	nv	µg/L	46-120	20
PAHs	Benzo(a)Pyrene	Water	SW8270D-SIM	0.018	0.050	0.20	0.20	µg/L	44-122	20
PAHs	Benzo(b)Fluoranthene	Water	SW8270D-SIM	0.017	0.050	nv	nv	µg/L	43-122	20
PAHs	Benzo(g,h,i)Perylene	Water	SW8270D-SIM	0.018	0.050	nv	nv	µg/L	25-137	23
PAHs	Benzo(k)Fluoranthene	Water	SW8270D-SIM	0.02	0.050	nv	nv	µg/L	39-128	22
PAHs	Chrysene	Water	SW8270D-SIM	0.018	0.050	nv	nv	µg/L	42-129	20
PAHs	Dibenz(a,h)Anthracene	Water	SW8270D-SIM	0.018	0.050	nv	nv	µg/L	25-139	22
PAHs	Fluoranthene	Water	SW8270D-SIM	0.011	0.050	46	nv	µg/L	48-131	20
PAHs	Fluorene	Water	SW8270D-SIM	0.017	0.050	46	nv	µg/L	42-120	20
PAHs	Indeno(1,2,3-cd)Pyrene	Water	SW8270D-SIM	0.018	0.050	nv	nv	µg/L	37-133	20
PAHs	Naphthalene	Water	SW8270D-SIM	0.128	0.05	0.50	nv	µg/L	30-120	22
PAHs	Phenanthrene	Water	SW8270D-SIM	0.018	0.050	nv	nv	µg/L	42-120	20
PAHs	Pyrene	Water	SW8270D-SIM	0.017	0.050	nv	nv	µg/L	38-124	20
OCPs	4,4-DDD	Water	SW8081B	0.0170	0.050	nv	nv	µg/L	56-140	22
OCPs	4,4-DDE	Water	SW8081B	0.0164	0.050	nv	nv	µg/L	52-128	22
OCPs	4,4-DDT	Water	SW8081B	0.0177	0.050	nv	nv	µg/L	50-141	23
OCPs	Aldrin	Water	SW8081B	0.00813	0.050	0.10	nv	µg/L	22-124	34
OCPs	Alpha BHC	Water	SW8081B	0.0166	0.050	nv	nv	µg/L	54-130	23
OCPs	Beta BHC	Water	SW8081B	0.0184	0.050	nv	nv	µg/L	53-136	20
OCPs	Chlordane	Water	SW8081B	0.0977	5.0	nv	nv	µg/L	80-120	15
OCPs	Chlorpyrifos	Water	SW8081B	0.0179	0.050	20	nv	µg/L	70-130	20
OCPs	Delta BHC	Water	SW8081B	0.0197	0.050	nv	nv	µg/L	54-133	20
OCPs	Dieldrin	Water	SW8081B	0.00751	0.050	0.02	nv	µg/L	59-133	20
OCPs	Endosulfan I	Water	SW8081B	0.0179	0.050	nv	nv	µg/L	57-131	20
OCPs	Endosulfan II	Water	SW8081B	0.0176	0.050	nv	nv	µg/L	58-133	20
OCPs	Endosulfan Sulfate	Water	SW8081B	0.0196	0.050	nv	nv	µg/L	58-133	21
OCPs	Endrin	Water	SW8081B	0.0189	0.050	2.0	2.0	µg/L	57-134	21
OCPs	Endrin Aldehyde	Water	SW8081B	0.0142	0.050	nv	nv	µg/L	53-129	20
OCPs	Endrin Ketone	Water	SW8081B	0.0170	0.050	nv	nv	µg/L	60-145	20
OCPs	Gamma Bhc	Water	SW8081B	0.0176	0.050	0.20	0.20	µg/L	55-129	20
OCPs	Heptachlor	Water	SW8081B	0.0108	0.050	0.40	0.40	µg/L	27-132	31
OCPs	Heptachlor Epoxide	Water	SW8081B	0.0175	0.050	0.20	0.20	µg/L	57-130	20
OCPs	Hexachlorobenzene	Water	SW8081B	0.0134	0.050	1.0	1.0	µg/L	--	--
OCPs	Methoxychlor	Water	SW8081B	0.0193	0.050	40	40	µg/L	54-155	24
OCPs	Toxaphene	Water	SW8081B	0.168	0.50	3.0	3.0	µg/L	--	--
Herbicides	2,4,5-T	Water	SW8151A	0.258	2.0	70	nv	µg/L	54-120	20
Herbicides	2,4,5-TP (Silvex)	Water	SW8151A	0.335	2.0	50	50	µg/L	50-125	20
Herbicides	2,4-D	Water	SW8151A	0.547	2.0	70	70	µg/L	50-120	20
Herbicides	2,4-DB	Water	SW8151A	0.302	4.0	nv	nv	µg/L	53-140	20
Herbicides	Bentazon	Water	SW8151A	0.311	2.0	nv	nv	µg/L	60-140	20
Herbicides	Dalapon	Water	SW8151A	0.3	2.0	200	200	µg/L	32-120	20
Herbicides	Dicamba	Water	SW8151A	0.245	2.0	nv	nv	µg/L	51-120	20
Herbicides	Dichloroprop	Water	SW8151A	0.778	2.0	140	nv	µg/L	55-127	20
Herbicides	Dinoseb	Water	SW8151A	--	2.0	7.0	7.0	µg/L	--	--
Herbicides	MCPA	Water	SW8151A	13.1	200	nv	nv	µg/L	10-160	40
Herbicides	MCPP	Water	SW8151A	7.15	200	nv	nv	µg/L	10-160	23
Herbicides	Pentachlorophenol	Water	SW8151A	0.111	1.0	1.0	1.0	µg/L	41-120	20
Herbicides	Picloram	Water	SW8151A	0.408	2.0	nv	500.00	µg/L	60-140	20
PCBs	PCB 1016	Water	SW8082A	0.020	0.50	nv	nv	µg/L	36-135	29
PCBs	PCB 1221	Water	SW8082A	0.024	0.50	nv	nv	µg/L	42-131	25
PCBs	PCB 1232	Water	SW8082A	0.021	0.50	nv	nv	µg/L	42-131	25
PCBs	PCB 1242	Water	SW8082A	0.024	0.50	nv	nv	µg/L	42-131	25
PCBs	PCB 1248	Water	SW8082A	0.013	0.50	nv	nv	µg/L	42-131	25
PCBs	PCB 1254	Water	SW8082A	0.018	0.50	nv	nv	µg/L	42-131	25
PCBs	PCB 1260	Water	SW8082A	0.015	0.50	nv	nv	µg/L	42-131	25
TPH	Gasoline Range Organics	Water	SW8015B	31.6	100	nv	nv	µg/L	70-124	20
TPH	Diesel Range Organics	Water	SW8015B	33.3	100	nv	nv	µg/L	50-150	20
TPH	Oil Range Organics	Water	SW8015B	83.3	250	nv	nv	µg/L	--	--
Metals	Arsenic	Water	SW6020B	0.18	2.0	10	10	µg/L	80-120	20
Metals	Barium	Water	SW6020B	0.381	5.0	2000	2000	µg/L	80-120	20
Metals	Cadmium	Water	SW6020B	0.15	1.0	5.0	nv	µg/L	80-120	20
Metals	Chromium	Water	SW6020B	1.24	2.0	100	100	µg/L	80-120	20
Metals	Lead	Water	SW6020B	0.849	2.0	15	15	µg/L	80-120	20
Metals	Selenium	Water	SW6020B	0.3	2.0	50	50	µg/L	80-120	20
Metals	Silver	Water	SW6020B	0.07	2.0	nv	nv	µg/L	80-120	20
Metals	Arsenic	Water	SW6010D	6.45	10.0	10	10	µg/L	80-120	20
Metals	Barium	Water	SW6010D	0.795	5.0	2000	2000	µg/L	80-120	20
Metals	Cadmium	Water	SW6010D	0.55	2.0	5.0	nv	µg/L	80-120	20
Metals	Chromium	Water	SW6010D	1.63	10.0	100	100	µg/L	80-120	20
Metals	Lead	Water	SW6010D	2.27	5.0	15	15	µg/L	80-120	20
Metals	Selenium	Water	SW6010D	6.16	10.0	50	50	µg/L	80-120	20
Metals	Silver	Water	SW6010D	1.31	5.0	nv	nv	µg/L	80-120	20
Metals	Mercury	Water	SW7470A	0.1000	0.20	nv	2.00	µg/L	80-120	20

This table has been reviewed and is current and accurate as of the date of this document.

Notes:

[1] Vermont Groundwater Quality Standard, Appendix One, Table 1, July 2019 (Primary Groundwater Quality Standards).

[2] EPA Regional Screening Levels, May 2021

[3] Laboratory detection limits exceed the Vermont Groundwater Quality Standard for this analyte.

MDLs and control limits are subject to change as new studies are performed.

-- = not applicable or not available

% = percent

% = percent recovery

µg/L = micrograms per liter

CAS = Chemical Abstracts Service

EPA = United States Environmental Protection Agency

LCS = laboratory control sample

MDL = method detection limit

MRL = method reporting limit

MS = matrix spike

nv = no established screening level value

OCPs = organochlorine pesticides

PAHs = polynuclear aromatic hydrocarbons

PCBs = polychlorinated biphenyls

QA = quality assurance

RPDL = relative percent difference limit

SIM = selected ion monitoring

SL = screening level

SVOC = semi-volatile organic compound

TPH = total petroleum hydrocarbons

VOC = volatile organic compound

VTDEC = Vermont Department of Environmental Conservation

TABLE 10
Air - Pace Laboratory Reporting Limits, Method Detection Limits, and Regulatory Standards
1249 Main Street
St. Johnsbury, VT

Analyte Group	Analyte	Matrix	Analytical Method	MDL	MRL	Vermont Air Screening Levels - Indoor Air Standards, Resident [1]	Vermont Air Screening Levels - Vapor Intrusion Standards [1]	EPA Regional Air Sreening Levels - Resident Air [2]	Units	LCS Criteria (% R)
VOCs	Acetone	Air	EPA TO-15	0.135	2.97	nv	nv	32000	µg/m^3	70-130
VOCs	Allyl Chloride	Air	EPA TO-15	0.171	0.63	nv	nv	0.47	µg/m^3	70-130
VOCs	Benzene	Air	EPA TO-15	0.147	0.64	0.13	4.3	0.36	µg/m^3	70-130
VOCs	Benzyl Chloride	Air	EPA TO-15	0.311	1.04	nv	nv	0.06	µg/m^3	70-144
VOCs	Bromodichloromethane	Air	EPA TO-15	0.292	1.34	nv	nv	0.08	µg/m^3	70-130
VOCs	Bromoform	Air	EPA TO-15	0.813	6.21	nv	nv	2.60	µg/m^3	70-130
VOCs	Bromomethane	Air	EPA TO-15	0.236	0.78	nv	nv	5.20	µg/m^3	70-130
VOCs	1,3-Butadiene	Air	EPA TO-15	0.125	4.43	nv	nv	0.09	µg/m^3	70-130
VOCs	Carbon Disulfide	Air	EPA TO-15	0.169	0.62	nv	nv	730	µg/m^3	70-130
VOCs	Carbon Tetrachloride	Air	EPA TO-15	0.368	1.26	0.17	5.7	0.47	µg/m^3	70-130
VOCs	Chlorobenzene	Air	EPA TO-15	0.278	0.92	nv	nv	52	µg/m^3	70-130
VOCs	Chloroethane	Air	EPA TO-15	0.129	0.53	10000	330000	10000	µg/m^3	70-130
VOCs	Chloroform	Air	EPA TO-15	0.279	0.97	0.04	1.3	0.12	µg/m^3	70-130
VOCs	Chloromethane	Air	EPA TO-15	0.112	0.41	nv	nv	94	µg/m^3	70-130
VOCs	2-Chlorotoluene	Air	EPA TO-15	0.312	1.03	nv	nv	nv	µg/m^3	70-130
VOCs	Cyclohexane	Air	EPA TO-15	0.184	0.69	nv	nv	6300	µg/m^3	70-130
VOCs	Chlorodibromomethane	Air	EPA TO-15	0.420	1.70	nv	nv	nv	µg/m^3	70-130
VOCs	1,2-Dibromoethane	Air	EPA TO-15	0.142	1.54	nv	nv	0.0047	µg/m^3	70-130
VOCs	1,2-Dichlorobenzene	Air	EPA TO-15	0.363	1.20	nv	nv	210	µg/m^3	70-130
VOCs	1,3-Dichlorobenzene	Air	EPA TO-15	0.359	1.20	nv	nv	nv	µg/m^3	70-130
VOCs	1,4-Dichlorobenzene	Air	EPA TO-15	0.335	1.20	nv	nv	0.26	µg/m^3	70-130
VOCs	1,2-Dichloroethane	Air	EPA TO-15	0.249	0.81	nv	nv	0.11	µg/m^3	70-130
VOCs	1,1-Dichloroethane	Air	EPA TO-15	0.206	0.80	0.63	21.0	1.80	µg/m^3	70-130
VOCs	1,1-Dichloroethene	Air	EPA TO-15	0.194	0.79	200	6700	210	µg/m^3	70-130
VOCs	cis-1,2-Dichloroethene	Air	EPA TO-15	0.154	0.79	nv	nv	nv	µg/m^3	70-130
VOCs	trans-1,2-Dichloroethene	Air	EPA TO-15	0.184	0.79	nv	nv	42	µg/m^3	70-130
VOCs	1,2-Dichloropropane	Air	EPA TO-15	0.277	0.92	nv	nv	0.76	µg/m^3	70-130
VOCs	cis-1,3-Dichloropropene	Air	EPA TO-15	0.267	0.91	nv	nv	nv	µg/m^3	70-130
VOCs	trans-1,3-Dichloropropene	Air	EPA TO-15	0.197	0.91	nv	nv	nv	µg/m^3	70-130
VOCs	1,4-Dioxane	Air	EPA TO-15	0.200	0.72	nv	nv	0.56	µg/m^3	70-152
VOCs	Ethanol	Air	EPA TO-15	0.157	1.19	nv	nv	nv	µg/m^3	52-158
VOCs	Ethylbenzene	Air	EPA TO-15	0.219	0.87	0.40	13	1.10	µg/m^3	70-130
VOCs	4-Ethyltoluene	Air	EPA TO-15	0.327	0.98	nv	nv	nv	µg/m^3	70-130
VOCs	Trichlorofluoromethane	Air	EPA TO-15	0.378	1.12	nv	nv	nv	µg/m^3	70-130
VOCs	Dichlorodifluoromethane	Air	EPA TO-15	0.297	0.99	nv	nv	100	µg/m^3	69-143
VOCs	1,1,2-Trichlorotrifluoroethane	Air	EPA TO-15	0.527	1.53	nv	nv	5200	µg/m^3	70-130
VOCs	Heptane	Air	EPA TO-15	0.256	0.82	nv	nv	420	µg/m^3	70-130
VOCs	Hexachloro-1,3-Butadiene	Air	EPA TO-15	0.700	6.73	nv	nv	0.13	µg/m^3	70-145
VOCs	n-Hexane	Air	EPA TO-15	0.161	0.71	nv	nv	730	µg/m^3	70-130
VOCs	Isopropylbenzene	Air	EPA TO-15	0.277	0.98	nv	nv	420	µg/m^3	70-130
VOCs	Methylene Chloride	Air	EPA TO-15	0.161	0.69	60.34	2000	100	µg/m^3	70-130
VOCs	Methyl Butyl Ketone	Air	EPA TO-15	0.279	5.11	nv	nv	31	µg/m^3	70-150
VOCs	2-Butanone (MEK)	Air	EPA TO-15	0.145	3.69	nv	nv	5200	µg/m^3	70-130
VOCs	4-Methyl-2-Pentanone (MIBK)	Air	EPA TO-15	0.266	5.12	nv	nv	3100	µg/m^3	70-142
VOCs	Methyl Methacrylate	Air	EPA TO-15	0.317	0.82	nv	nv	730	µg/m^3	70-130
VOCs	Methyl Tert-Butyl Ether	Air	EPA TO-15	0.182	0.72	nv	nv	11	µg/m^3	70-130
VOCs	Naphthalene	Air	EPA TO-15	0.806	3.30	0.262	1.0	0.08	µg/m^3	70-155
VOCs	2-Propanol	Air	EPA TO-15	0.217	3.07	nv	nv	210	µg/m^3	66-150
VOCs	Propene	Air	EPA TO-15	0.160	0.69	nv	nv	3100	µg/m^3	54-155
VOCs	Styrene	Air	EPA TO-15	0.198	0.85	nv	nv	1000	µg/m^3	70-130
VOCs	1,1,2,2-Tetrachloroethane	Air	EPA TO-15	0.396	1.37	nv	nv	0.05	µg/m^3	70-130
VOCs	Tetrachloroethene	Air	EPA TO-15	0.337	1.36	0.63	21	11	µg/m^3	70-130
VOCs	Tetrahydrofuran	Air	EPA TO-15	0.150	0.59	nv	nv	2100	µg/m^3	70-140
VOCs	Toluene	Air	EPA TO-15	0.188	0.75	nv	nv	5200	µg/m^3	70-130
VOCs	1,2,4-Trichlorobenzene	Air	EPA TO-15	1.100	4.66	nv	nv	2.10	µg/m^3	70-155
VOCs	1,1,1-Trichloroethane	Air	EPA TO-15	0.362	1.09	nv	nv	5200	µg/m^3	70-130
VOCs	1,1,2-Trichloroethane	Air	EPA TO-15	0.156	1.09	nv	nv	0.18	µg/m^3	70-130
VOCs	Trichloroethene	Air	EPA TO-15	0.292	1.07	0.20	6.7	0.48	µg/m^3	70-130
VOCs	1,2,4-Trimethylbenzene	Air	EPA TO-15	0.237	0.98	60	2000	63	µg/m^3	70-130
VOCs	1,3,5-Trimethylbenzene	Air	EPA TO-15	0.310	0.98	nv	nv	63	µg/m^3	70-130
VOCs	2,2,4-Trimethylpentane	Air	EPA TO-15	0.213	0.93	nv	nv	nv	µg/m^3	70-130
VOCs	Vinyl Chloride	Air	EPA TO-15	0.117	0.51	0.11	3.7	0.17	µg/m^3	70-130
VOCs	Vinyl Bromide	Air	EPA TO-15	0.318	0.88	nv	nv	0.19	µg/m^3	70-130
VOCs	Vinyl Acetate	Air	EPA TO-15	0.225	0.70	nv	nv	210	µg/m^3	70-130
VOCs	m&p-Xylene	Air	EPA TO-15	0.410	1.73	nv	nv	100	µg/m^3	70-130
VOCs	o-Xylene	Air	EPA TO-15	0.274	0.87	nv	nv	100	µg/m^3	70-130
Fixed Gases	Helium	Air	ASTM D1946	0.0259	0.100	nv	nv	nv	%	70-130

This table has been reviewed and is current and accurate as of the date of this document.

Notes:

[1] Vermont Investigation and Remediation of Contaminated Properties Rule, Air Screening Levels, July 2019 (Appendix A - Vapor Intrusion Values).

[2] EPA Regional Air Screening Levels - Resident Air, May 2021

MDLs and control limits are subject to change as new studies are performed.

-- = not applicable or not available

% = percent

% R = percent recovery

µg/m^3 = micrograms per cubic meter

CAS = Chemical Abstracts Service

EPA = United States Environmental Protection Agency

LCS = laboratory control sample

MDL = method detection limit

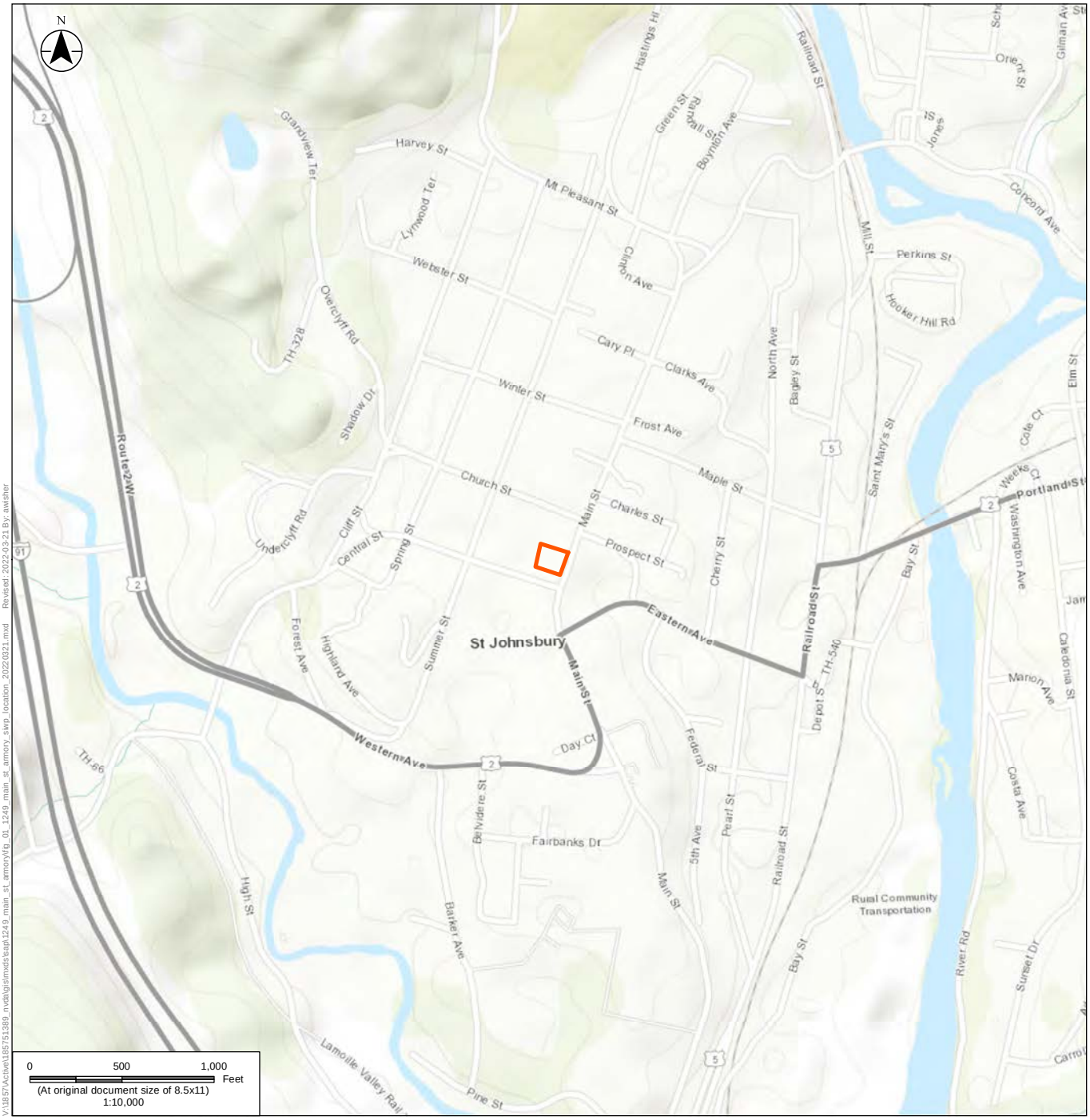
MRL = method reporting limit

nv = no established screening level value

RPDL = relative percent difference limit

VOC = volatile organic compound

FIGURES



Approximate Property Boundary

Notes

1. Coordinate System: NAD 1983 UTM Zone 18N
2. Data Sources: State of Vermont CAD/GIS
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Stantec

Project Location
Former St. Johnsbury Armory Site
1249 Main Street
St Johnsbury, Vermont 05819

Client/Project 185751389
Northeastern Vermont Development Association
EPA Brownfields Coalition Assessment Grant
Phase II Environmental Site Assessment
Sampling and Analysis Plan

Title
Property Location Map

Figure No.
1

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Stantec

- Hazardous Sites
- Hazardous Waste Generators
- Underground Storage Tank (working)
- Dry Cleaner
- Approximate 2,000 Foot Buffer
- Approximate Property Boundary
- Other Parcels

Notes

1. Coordinate System: NAD 1983 UTM Zone 18N
2. Data Sources: State of Vermont GIS/CAD
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance

Project Location

Former St. Johnsbury Armory Site
1249 Main Street
St Johnsbury, Vermont 05819

Client/Project 185751389

Northeastern Vermont Development Association
EPA Brownfields Coalition Assessment Grant
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Sampling and Analysis Plan

Title

Vermont Agency of Natural Resources Natural Resource Atlas Review

Figure No.

2

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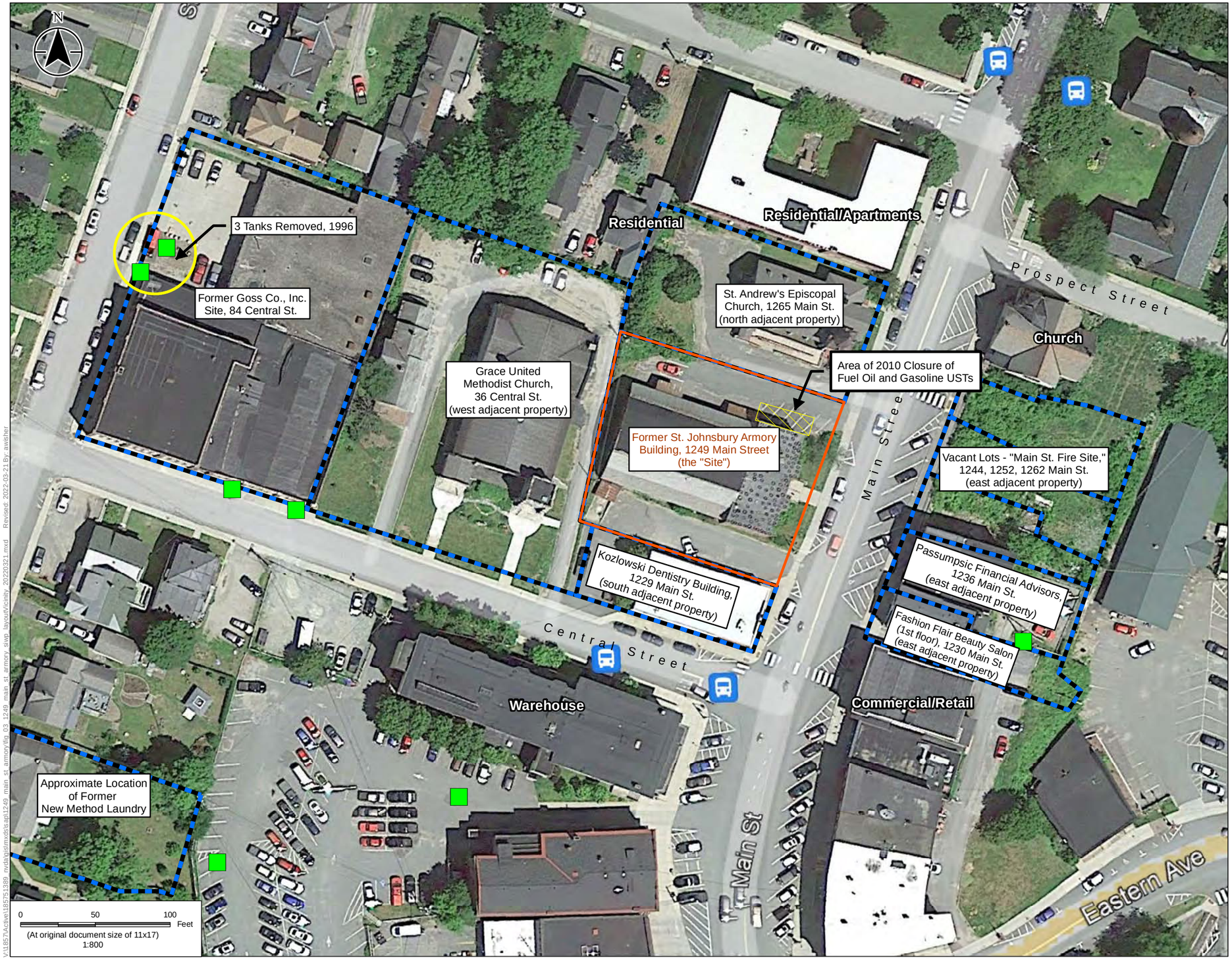

Stantec

Historical Tank Locations (Sanborn Fire Insurance Maps, 1943, 1958, and 1964)

Approximate Property Boundary

Notes

1. Coordinate System: NAD 1983 UTM Zone 18N
2. Data Sources: State of Vermont CAD/GIS
3. Background:Source: Esri, Maxar, GeoEye, Earthstar Geographics,
4. CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User
5. Community

Project Location

Former St. Johnsbury Armory Site
1249 Main Street
St Johnsbury, Vermont 05819

Client/Project 185751424

Northeastern Vermont Development Association
EPA Brownfields Coalition Assessment Grant
Phase II Environmental Site Assessment
Sampling and Analysis Plan

Title

Property Layout and Vicinity Map

Figure No.

3

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Stantec

- Proposed Soil Sampling Location
- Proposed Soil/Groundwater Sampling Location
- Approximate Property Boundary

Notes
1. Coordinate System: NAD 1983 UTM Zone 18N
2. Data Sources: State of Vermont CAD/GIS
3. Background: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Project Location
Former St. Johnsbury Armory Site
1249 Main Street
St Johnsbury, Vermont 05819

Client/Project 185751424
Northeastern Vermont Development Association
EPA Brownfields Coalition Assessment Grant
Phase II Environmental Site Assessment
Sampling and Analysis Plan

Title
Proposed Sample Locations

Figure No.
4

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