



Limited Phase II Environmental Site Assessment Report

The Yellow Barn Site
281 VT Route 15 West
Hardwick, VT 05836

EPA Cooperative Agreement Number:
BF-00A00480

August 6, 2019

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Sign-off Sheet

This document entitled, **Limited Phase II Environmental Site Assessment: Report, The Yellow Barn Site, 281 VT Route 15 West, Hardwick, VT 05836**, was prepared by Stantec Consulting Services Inc. (Stantec) for the Northeastern Vermont Development Association. The material in it reflects Stantec's best judgment given the information available at the time of preparation. Any use which a third party makes of this document, or any reliance on or decisions made based on it, are the responsibilities of such third parties. Stantec accepts no responsibility for damages, if any, suffered by any third party because of decisions made or actions based on this document.

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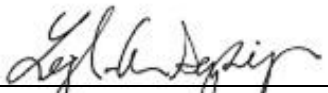
I certify under penalty of perjury that I am an environmental professional and that all content contained within this deliverable is to the best of my knowledge true and correct.

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EXECUTIVE SUMMARY

On behalf of the Northeastern Vermont Development Association, Stantec Consulting Services Inc. completed a Limited Phase II Environmental Site Assessment (ESA) of the Yellow Barn site located at 281 VT Route 15 West in Hardwick, Vermont (the Property). The Limited Phase II ESA was funded through a U.S. Environmental Protection Agency (EPA) Brownfield Community-Wide Assessment Grant. Property eligibility for use of Grant funding for the Limited Phase II ESA was approved by the EPA on January 29, 2019, and by the Vermont Department of Environmental Conservation (VTDEC) on January 30, 2019.

The work described herein was completed in general accordance with the scope, methods, and requirements detailed in: 1) Cooperative Agreement Number BF-00A00480; 2) the *Final Quality Assurance Project Plan (Revision 1) for Implementation of U.S. EPA Brownfields Coalition Assessment Grants at Petroleum and Hazardous Substance Sites* (EPA Tracking Number RFA 19014) prepared for the NVDA Brownfields Coalition Assessment Program and approved by the EPA on November 21, 2018; 3) the *Limited Phase II Environmental Site Assessment Work Plan* approved by the EPA and VTDEC on March 19, 2019; 4) the *Vermont Investigation and Remediation of Contaminated Properties Rule*, and 5) a modification to the Phase II ESA scope as approved by EPA and VTDEC via email communications on March 26, 2019.

The primary objective of this Limited Phase II ESA was to fill data gaps regarding the presence of contamination at the Property by assessing potential impacts to the Property's subsurface from the recognized environmental conditions identified during previous site investigations. Additionally, although not specifically named as a potential environmental issue based on the results of prior assessments, use of the south-abutting parcel as a railroad right-of-way was identified by Stantec as another potential contaminant source that warranted investigation under this Limited Phase II ESA.

The completed scope of work included the following elements:

- Completion of two (2) hand auger borings (SS-1 and SS-2) in the former waste storage area in the eastern portion of the Storage Shed and collection of two samples from each boring for analysis of volatile organic compounds, polynuclear aromatic hydrocarbons, and RCRA 8 metals (arsenic, barium, cadmium, chromium, lead, mercury selenium and silver);
- Advancement of eight (8) direct push soil borings (SB-1 to SB-6, SB-7A, and SB-8) to investigate the leach field area, a 275-gallon waste oil aboveground storage tank with floor staining, and an area of floor staining and floor cracks in the former auto service area of the Yellow Barn building. Included collection of one soil sample per boring for analysis of volatile organic compounds, polynuclear aromatic hydrocarbons, and RCRA 8 metals;
- Collection of one additional shallow soil sample each from three (3) of the eight (8) borings including SB-1, SB-2 and SB-8 to evaluate potential surficial impacts from the former use of south-abutting lot for rail operations. These shallow soil samples were analyzed for polynuclear aromatic hydrocarbons, RCRA-8 metals, pesticides, and herbicides;

- Completion of six (6) of the eight (8) borings as temporary 1-inch polyvinyl chloride monitoring wells (TW-1 to TW-5, and TW-8) and collection of groundwater samples for analysis of volatile organic compounds, polynuclear aromatic hydrocarbons, and RCRA 8 metals;
- Collection and analysis of additional groundwater samples from TW-1, TW-2 and TW-8 for analysis of polynuclear aromatic hydrocarbons, RCRA-8 metals, pesticides, and herbicide to evaluate potential impacts from the former use of south-abutting lot for rail operations;
- Collection of two soil vapor samples (SG-1 and SG-2) from the former auto service area and their analysis for VOCs;
- Survey of the temporary wells for elevation control to allow the calculation of groundwater contours and flow directions; and
- Collection of a sample of drummed well purge water and its analysis for waste characterization parameters including volatile organic compounds, semi-volatile organic compounds; RCRA 8 metals, polychlorinated biphenyls, pesticides, herbicides, total petroleum hydrocarbons, flashpoint, corrosivity (pH), and reactivity.

Soils encountered in the borings included sand with local gravelly or silty zones, sandy silt, and up to 16 feet of peat in borings SB-2, SB-3, SB-4, and SB-8. No field evidence of impacts (odor, staining, elevated photoionization detector readings) was noted in any of the soil samples collected from the borings. On April 18, 2019, measured water levels varied from a depth of 6.84 feet below top of well at TW-3 to 13.12 feet at TW-5. Calculated water table elevations ranged from 85.37 feet (TW-3) to 86.59 (TW-8). Based on the measured water table elevations, shallow groundwater flow at the Property was determined to be to the northwest towards the Lamoille River at a gradient of approximately 0.01 feet/foot.

Arsenic was detected in all soil samples submitted for analysis of metals. Detected concentrations of arsenic ranged from 2.66 milligrams per kilogram at SB-4 to 12.7 milligrams per kilogram at SB-1. All of the detected concentrations of arsenic are below the statewide background threshold value of 16 milligrams per kilogram that VTDEC has adopted for arsenic. All other metals concentrations either did not exceed the laboratory's reporting limit, or if detected above the reporting limit, did not exceed their related Vermont Screening Level (VSL) or Regional Screening Level (RSL). While various volatile organic compounds, polynuclear aromatic hydrocarbons, and pesticides were detected in some soil samples, no detected concentrations exceeded applicable VSL concentrations. No herbicides were detected in the analyzed soil samples at concentrations above laboratory reporting limits.

While various metals, volatile organic compounds, and pesticides were detected in some groundwater samples, no detected concentrations exceeded applicable Vermont Groundwater Quality Standards (VGQSs). No polynuclear aromatic hydrocarbons or herbicides were detected in the analyzed groundwater samples at concentrations above laboratory reporting limits.

Several volatile organic compounds were detected above laboratory reporting limits in the two soil vapor samples, but at concentrations less than the applicable Vapor Intrusion Screening Values (VISVs).

Several compounds in soil samples (polynuclear aromatic hydrocarbons [PAHs] and volatile organic compounds [VOCs]) and in soil gas samples (VOCs) had laboratory reporting limits that were above the compounds' associated VSLs or VISVs, respectively.

Based on the findings of this Limited Phase II ESA, Stantec makes the following recommendations:

- Although no exceedances of Vermont soil, groundwater, or soil gas standards were identified as part of the Phase II assessment, VTDEC has expressed concern that the completed Phase II soil investigation was of insufficient scope to positively confirm a lack of impacts in the site's leach field area, particularly from metals (arsenic, cadmium, and lead) that were detected at elevated levels in septic tank effluent in early 2018 by previous investigators. Also, VTDEC expressed concern regarding the PAH concentrations detected in shallow soil samples (SS-1 and SS-2) that had laboratory reporting limits that were above the compounds' associated VSLs. As discussed with VTDEC, Stantec recommends that these two issues be addressed as follows:
 1. Since it must be removed as part of the planned redevelopment of the site as the Yellow Barn Business Accelerator Project, remove the site septic system (septic tank and leach field piping) and collect soil samples from areas of septic discharge for analysis of contaminants of concern (metals). Based on the sampling results, no further action will be taken if samples do not contain metals concentrations exceeding VSLs. However, if concentrations do exceed standards, the area of impact will be mitigated by the emplacement of a minimum 18-inch barrier of clean soil and marker fabric and recording of an institutional control for the site in accordance with Section §35-901 of the *Investigation and Remediation of Contaminated Properties Rule* (IRule); and
 2. Resampling of the shallow soil sample locations SS-1 and SS-2 will be conducted with the samples being analyzed for PAHs by EPA Method 8270SIM, which should provide reporting limits that are below the applicable VSLs. Based on the sampling results, no further action will be taken if samples do not contain PAH concentrations exceeding standards. However, if concentrations do exceed standards, the area of impact will be mitigated by the emplacement of a minimum 18-inch barrier of clean soil and marker fabric and recording of an institutional control for the site in accordance with Section §35-901 of the IRule.
 3. The above recommendations will be presented in detail in an interim Corrective Action Plan (CAP) to be submitted to VTDEC for review and approval. Per guidance provided by VTDEC, the VOCs detected in soil and soil gas during the Phase II assessment that had laboratory reporting limits that were above the compounds' associated VSLs or VISVs, respectively, will not be required to be addressed by the CAP.
- Analytical results indicate that the drummed purge water does not contain contaminants of concern at concentrations greater than the Vermont Groundwater Quality Standards. Therefore, the drummed groundwater may be discharged to the ground surface at the site.

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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 report describing the completion of a Limited Phase II Environmental Site Assessment (ESA) of the Yellow Barn site located at 281 VT Route 15 West in Hardwick, Vermont (the "Property"). The Property location is shown on **Figure 1**. The Limited Phase II ESA was funded through a U.S. Environmental Protection Agency (EPA) Brownfield Community-Wide Assessment Grant (the "Grant"). Property eligibility for use of Grant funding for the Limited Phase II ESA was approved by the EPA on January 29, 2019, and by the Vermont Department of Environmental Conservation (VTDEC) on January 30, 2019. The work described herein was completed in general accordance with the scope, methods, and requirements detailed in:

- 1) Cooperative Agreement Number BF-00A00480;
- 2) the *Final Quality Assurance Project Plan (Revision 1) for Implementation of U.S. EPA Brownfields Coalition Assessment Grants at Petroleum and Hazardous Substance Sites (QAPP)* (EPA Tracking Number RFA 19014) prepared for the NVDA Brownfields Coalition Assessment Program and approved by the EPA on November 21, 2018 (Stantec 2018);
- 3) the *Limited Phase II Environmental Site Assessment Work Plan* (the "Work Plan") approved by the EPA and VTDEC on March 19, 2019 (Stantec 2019);
- 4) the *Investigation and Remediation of Contaminated Properties Rule* (IRule); and
- 5) a modification to the Phase II ESA scope as approved by EPA and VTDEC via email communications on March 26, 2019.



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Site Information
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2.0 SITE INFORMATION

The Yellow Barn site is located at 281 VT Route 15 West in Hardwick, Vermont. The Property location is shown on **Figure 1**. The IRule requires that submittals include certain information relative to the location and ownership of the Property. The following table provides a summary of required information:

Site Address:	281 VT Route 15 West, Hardwick, VT 05843
Latitude/Longitude:	44.515661°N, -72.376288W
Parcel #:	09001
Owner:	1781 Group LLC
Owner Address:	3707 Bridgeman Hill Road Hardwick, VT 05843
Owner Contact Information:	Owner Representative: Andrew Myer (802) 498-4835 andrew@vermontsoy.com



3.0 CURRENT USE OF THE PROPERTY AND ADJOINING SITES

Although the Property is developed with several structures as described in Section 4, the Property is not currently in active use.

Current uses of adjoining sites are as follows:

- North: VT Route 15 with (west to east) undeveloped land, a residence, and the Lamoille Valley Ford dealership beyond. Hardwick Lake is located to the north and the dam for Hardwick Lake is a few hundred feet north of the Property;
- East: VT Route 15 with Lamoille Valley Ford dealership and a used car lot;
- South: Former railroad right-of-way with the Hardwick Waste Water Treatment Plant (WWTP) beyond; and
- West: Wright Farm Road with the Lamoille River and agricultural land beyond.

The Property and vicinity layout are depicted on **Figure 2**.



4.0 PROPERTY DESCRIPTION AND HISTORY

The Property includes one parcel of land (Hardwick Tax Map Parcel 09001) that encompasses approximately 4.7 acres. The Property is developed with three buildings, as follows:

1. The main building on the Property is the structure referred to as the Yellow Barn, an approximately 34-foot-wide by 116-foot-long structure with three levels and no basement. It is a wood framed and sided structure with a gambrel roof. The ground floor level has a cement floor. It was a cow barn for many years, with castings for troughs and stalls still present on the western side of the ground floor. Later, the ground floor was finished off with sheetrock walls and ceiling and it became an auto service shop for approximately 30 years. The second and third floors appear to have been a hay loft, and later may have been used to store auto parts.
2. An open storage shed is located to the south of the barn and is approximately 26-feet-wide by 115-feet-long. It is a wood framed and sided (3 sides) structure with a dirt floor and a shed roof pitched toward the south.
3. The barn and the shed are connected to each other with an approximately 26-foot-long by 12-foot-wide wooden breezeway structure located at the west end of the structures.

A storage trailer was also observed on-site during prior Phase I ESAs conducted at the Property. However, during recent site visits, the trailer was no longer present at the Property.

A small stream is located near the southwestern corner of the Property and flows westerly toward the Lamoille River. The western portion of the Property contains a snowmobile trailhead. Possible wetlands were reported near the stream, between the trailhead parking area and the historic railway line that abuts the Property to the south.

Groundwater depth and flow directions at the Property were determined during the Limited Phase II ESA, as described in more detail in Sections 6.2.3 and 7.2 of this report. Based on the findings of this investigation, water levels in temporary wells ranged from approximately 6 to 13 feet below ground surface (bgs). Calculation of water table elevations in the wells indicates that shallow groundwater flow at the Property is to the northwest towards the Lamoille River at a gradient of approximately 0.01 feet/foot.

Prior subsurface investigations at the Property by Ross Environmental Associates (REA) indicated shallow soils in the vicinity of the Yellow Barn consist of fine to medium sand to a depth of four feet bgs, the maximum depth explored. Soils observed during this Limited Phase II ESA consisted largely of sand, sand and gravel, and peat. Soil descriptions are discussed further in Section 7.1 of this report.



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According to historical information provided in a Phase I ESA report completed in September 2018 by LE Environmental (LEE, 2018), the Property was vacant and unused except for the storage of new vehicles on the eastern portion of the Property by the adjacent Lamoille Valley Ford car dealership. The most recent Property use was the Greensboro Garage, an auto repair shop that operated for approximately 30 years. Use prior to the auto repair shop appears to have been agricultural.

The Property owner, 1781 Group LLC, plans to sell the Property to the Town of Hardwick. The Town, in cooperation with NVDA and the Vermont Center for an Agricultural Economy, plans to redevelop the Property as the Yellow Barn Business Accelerator Project that includes renovation of the Yellow Barn with four first-floor commercial tenant spaces and the construction of a new Accelerator Building on the Property west of the barn. The Accelerator Building will include additional tenant spaces and space for Jasper Hill Farm, a working dairy farm with an on-site creamery currently located in Greensboro Bend, Vermont.

Potential environmental concerns at the Property were evaluated as part of several site investigations conducted in 2017 and 2018. REA conducted a Phase I ESA in 2017 and documented their results in a Phase I ESA report dated September 22, 2017 (REA, 2017). Based on their Phase I ESA findings, REA identified several threats of a release of oil or hazardous materials (OHM) based on the historical use of the Property as an automotive garage, for auto body and heavy equipment maintenance and repair, and due to the presence of a floor drain and slop sink in the barn building, which were identified as recognized environmental conditions (RECs). REA recommended the collection and laboratory analysis of samples from the outfall of the floor drain, soil samples from exploratory test pits, and an effluent sample from the former septic tank to further evaluate these issues. The recommended work was subsequently conducted and documented in REA's letter report titled Septic Tank and Soil Sampling & Analysis dated January 9, 2018 (REA, 2018).

Both REA reports were evaluated during LEE's 2018 Phase I ESA of the Property and were appended and discussed in LEE's Phase I ESA Report and Tier 1 Vapor Encroachment Screening Report dated September 28, 2018 (LEE, 2018). LEE's Phase I ESA was the most recent environmental investigation conducted at the Property. Issues identified by LEE, including those raised in the REA reports, are discussed below.

1. REA's Phase I ESA identified one REC and two business environmental risks. The REC included historical site use of over 30 years as an auto garage with bodywork and equipment maintenance. One sealed floor drain and a slop sink located in the barn and connected to the on-site septic system were identified. The business environmental risks included accumulated solid waste (tires, car parts, empty containers) and use of hazardous substances and petroleum products on-site.



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2. REA subsequently conducted a Phase II ESA to investigate the REC which included septic tank and soil sampling and analysis. Five test pits (TP-1 to TP-5) were dug between the barn and the storage shed, and the septic tank was located. One septic tank effluent sample (designated "tank") and five soil samples were collected. The shop sink was reportedly connected to the septic tank. The soil sample locations included beneath the floor drain discharge pipe where it exited the barn (designated "SS-1"), at the floor drain outfall pipe discharge location (designated "outfall"), and three test pit locations between the barn and the shed (TP-2, TP-4, and TP-5). The floor drain in the vehicle service area, which was reportedly sealed in 2016, reportedly discharged to the ditch on the Property on the south side of the shed building. All the samples (soil and septic tank) were tested for volatile organic compounds (VOCs), and the outfall soil and septic tank effluent sample were tested for Resource Conservation and Recovery Act (RCRA)-8 metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver) and polychlorinated biphenyls (PCBs).
3. No Vermont standards were exceeded for VOCs for the soil samples or the septic effluent sample. No PCBs were detected at the floor drain outfall or in the septic tank effluent. The septic tank effluent, however, exceeded the Vermont Groundwater Enforcement Standard (VGES) for several metals including lead (13 times its VGES), arsenic (1.4 times its VGES) and cadmium (5.4 times its VGES). Soil metals concentrations at the outfall location were within background levels.
4. In summary, REA concluded that no Vermont action levels or standards were exceeded for the septic tank effluent or soil samples collected during their assessment. The concentrations of arsenic, cadmium and lead detected in the septic tank sample did exceed the applicable VGES; however, the standards don't apply specifically to septic tank effluent. The absence of VOCs and PCBs in the septic tank sample suggested the former septic system was not a significant threat to the subsurface environment. Based on these sample results and field observations, REA recommended no further work be completed. It should be noted that the VTDEC did not have an opportunity to review the Phase I ESA recommendations or proposed subsurface work as presented by REA prior to its implementation. Based on their review of the work post-completion, significant portions of the work as described in their report did not satisfy the VTDEC regulatory requirements in place at the time it was conducted, and as a result, was identified as a data gap by Stantec (see below) requiring further investigation under this Phase II ESA.
5. LEE's Phase I ESA findings, which include an evaluation of the prior REA Phase I/II ESA information, identified several RECs including:
 - a) possible subsurface contamination in the leach field area due to discharges from the septic tank that accepted, in addition to sanitary wastes, effluent from a former shop sink in the Yellow Barn;
 - b) possible subsurface contamination from petroleum, solvents, and polycyclic aromatic hydrocarbons (PAHs) due to historical Property use (auto repair/maintenance) and nearby off-site uses (south-abutting former rail bed); and



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- c) potential soil gas contamination on the Property due to historic Property use for auto repairs/maintenance and from the northeasterly-adjoining Lamoille Valley Ford property.

LEE's Phase I ESA recommended the completion of a supplemental Phase II ESA and a Tier II Vapor Encroachment Study (VES) to determine if contamination is present due to the identified RECs and the vapor encroachment concern, and to obtain additional data that can be considered as part of the proposed Property redevelopment process. As mentioned above, the VTDEC did not review the Phase I ESA recommendations or proposed subsurface work as presented by REA prior to its implementation, and significant portions of the work as described in their report did not satisfy the VTDEC regulatory requirements in place at the time it was conducted.

Following review of the available information, Stantec identified a number of data gaps in connection with the Property, including the following:

- Have the identified discharges to the site septic tank resulted in soil or groundwater impacts in the Property's leach field area from VOCs, petroleum, or metals;
- Have the surficial releases of OHM identified in the former Yellow Barn auto repair area and in the OHM storage area in the shed building result in soil or groundwater impacts at the Property from VOCs, petroleum, or metals;
- Has the presence of the south-abutting railroad right-of-way resulted in impacts to soil or groundwater quality at the Property from VOCs, petroleum, metals, pesticides, or herbicides; and
- Has the former use of the Property for auto repair/maintenance and the proximity of the northeasterly-adjoining Lamoille Valley Ford property result in soil vapor intrusion into the Yellow Barn building.

These data gaps informed Stantec's overall strategy for the Limited Phase II investigation at the Property. As described within the Work Plan, to address each data gap, media samples (soil, groundwater, and/or soil vapor) were proposed at each area of concern to determine whether any impact were present, and if present, at what magnitude. The specific scope of work that was proposed to address these data gaps is described in Section 5.0 below.



5.0 SCOPE OF WORK AND DEVIATIONS

The primary objective for this Limited Phase II ESA was to fill data gaps by assessing potential impacts to the Property's subsurface from the RECs identified during REA's and LEE's Phase I ESAs and Phase II ESA for the Property (REA, 2017; REA, 2018; LEE, 2018). Additionally, although not specifically identified as a REC in the REA and LEE reports, use of the south-abutting parcel as a railroad right-of-way was identified as another potential contaminant source to be investigated. The field assessment activities described below were performed in accordance with the Work Plan (Stantec 2019) and standard operating procedures (SOPs) included in the Work Plan and QAPP (Stantec 2018).

The Work Plan proposed implementation of the following scope of work:

- Completion of surficial soil sampling in the former waste storage area in the eastern portion of the Storage Shed;
- Advancement of eight (8) direct push soil borings and collection of soil samples to evaluate impacts from potential oil or hazardous material (OHM) releases;
- Installation of eight (8) temporary monitoring wells and collection of groundwater samples; and
- Collection of soil vapor samples.

Stantec's rationale for the location and purpose of the proposed borings and wells was as follows:

Area of Concern	Proposed Investigation
Leach Field	Investigation of subsurface impacts resulting from discharges of effluent from the Property septic tank (four borings: SB-1/TW-1 to SB-4/TW-4)
275-gal Waste Oil AST with Staining	Investigation of potential subsurface releases of OHM from interior waste oil aboveground storage tank with associated staining around the tank (one boring: SB-5/TW-5 on north exterior side of Yellow Barn)
Floor Crack with Staining	Investigation of potential subsurface releases of OHM through floor crack in former vehicle maintenance area (one boring: SB-6/TW-6 on south exterior side of Yellow Barn)
Former Waste Storage Area in East Portion of Storage Shed with Staining	Investigation of potential subsurface releases of OHM from former waste storage area in Storage Shed (two exterior borings [SB-7/TW-7 and SB-8/TW-8] and two surficial soil samples [SS-1 and SS-2] from stained area in Storage Shed interior)

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Scope of Work and Deviations

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Area of Concern	Proposed Investigation
Former Rail Bed Abutting Property to South	Investigation of potential subsurface releases of OHM from the former use of the south-abutting right of way for railroad operations. (three borings – use two Leach Field locations [SB-1/TW-1 and SB-2/TW-2] and southern Waste Storage Area location [SB-8/TW-8])
Vapor Intrusion Assessment	Investigation of potential vapor encroachment issues resulting from past Property use and off-site use of the adjacent Lamoille Valley Ford site (two sub-slab soil gas sampling locations [SG-1 and SG-2] in former auto repair area of Yellow Barn).

Based on field conditions, the following deviation from the scope of work was recommended:

After multiple tries to advance borings at locations SB-6 and SB-7, refusal was encountered at less than 10 feet with no apparent groundwater observed. The borings were intended to monitor the groundwater near the reported surface soil staining in the shed (SS-1 and SS-2 surface soil samples). Since the SB-6 and SB-7 borings could not be advanced deep enough to encounter groundwater, Stantec proposed collecting the SS-1 and SS-2 samples at the surface, as proposed, and adding two (2) additional deeper samples to be collected via hand auger at each location (one additional deeper sample per location). The intent of the deeper samples was to determine if surface impacts, if any, extended to depth. Stantec proposed that if the analytical results of the deeper soil samples indicated that surface impacts, if present, extended to depth, then we would infer that groundwater impacts were possibly present, thereby justifying additional drilling to evaluate potential contamination of groundwater in this area of the Property. Conversely, if surficial or deeper sampling indicated no impacts, then additional drilling would not be required.

The proposed modification to the scope of work was approved by VTDEC and EPA via email communications on March 26, 2019.



Work Performed
August 6, 2019

6.0 WORK PERFORMED

6.1 PRELIMINARY FIELD ACTIVITIES

6.1.1 Utility Clearance

Prior to conducting fieldwork, Stantec contacted Dig Safe so that underground utilities located on the public right-of-way adjacent to the Property could be marked. Additionally, Stantec contracted Vermont Underground Locators from Williston, Vermont to identify potential underground utilities/structures at the planned sampling locations. This utility clearance was completed on March 18, 2019.

6.2 SUBSURFACE ASSESSMENT

6.2.1 Surficial Soil Sampling

On March 29, 2019, Stantec collected surficial soil samples (SS-1 and SS-2) from the former waste storage area in the eastern portion of the Storage Shed. Sample locations are depicted on **Figure 3**. Although only collection of shallow (0-0.5 feet bgs) samples had been proposed as part of the Work Plan, as previously discussed an approved modification to the Work Plan included the collection of additional deeper soil samples from each location at a proposed depth of 4.0-4.5 feet bgs. However, due to frozen ground conditions, advancement of borings to the target depth was not possible. Using a combination of a shovel, digging bar, hand auger, and pick axe (all decontaminated before and between borings), Stantec was able to reach depths of 3.5 feet bgs at SS-1 and 3.6 feet at SS-2. Therefore, the deeper samples were collected from the 3.0-3.5-foot bgs interval for SS-1 and 3.0-3.6-foot bgs interval for SS-2. Please note that the deeper SS-2 sample depth interval was field designated in inches (36-43) rather than in feet as the SS-1 sample was designated (e.g. 3.0-3.5).

During boring advancement, the collected soil was logged for lithologic description using the Unified Soil Classification System and screened for visual/olfactory observations and for VOCs using a photoionization detector (PID) equipped with a 10.6 electron-volt (eV) lamp. Sample descriptions and field screening results are presented on the Borehole Logs provided in **Appendix A**.

Each soil sample was collected in properly-preserved glassware and submitted under appropriate chain of custody to Alpha Analytical (Alpha) of Westborough, Massachusetts for analysis of VOCs using EPA Methods 5035 (field preservation) and 8260C and 8011 (1,2-dibromoethane only); PAHs using EPA Method 8270D; and total Resource Conservation and Recovery Act (RCRA)-8 metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver) using EPA Methods 6010D and 7471B (mercury only).

Soil analytical results are discussed in Section 7.3 below. Laboratory analytical reports are provided in **Appendix B**.



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6.2.2 Soil Borings and Soil Sampling/Analysis

On March 25 and March 26, 2019, Stantec directed the advancement of nine soil borings (SB-1 through SB-8 and SB-7A) at the Property. Boring locations are depicted on **Figure 3**. Soil borings were advanced by New England Boring Contractors (NEBC) of Derry, New Hampshire using a track-mounted direct-push (Geoprobe®) drill rig. In general, borings were advanced to a maximum depth of 5-7 feet below the field-determined water table for soil sampling and installation of temporary monitoring wells. However, as previously discussed, borings SB-6, SB-7, and SB-7A encountered refusal before reaching the water table. As a result, temporary wells were not installed at these locations.

Soil samples were obtained by inserting a clear acetate liner into a hollow stainless-steel drill rod and driving the rod into the subsurface using a hydraulically driven hammer. The collected soil samples were continuously 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 eV lamp. Soil classification, visual/olfactory observations of soil conditions, and PID results are documented in the Monitoring Well Logs provided in **Appendix A**.

The Work Plan called for collection of one soil sample for laboratory analysis from each boring from the interval exhibiting the greatest environmental impact based on field observations (e.g., staining, odor, PID results) at each boring. Samples were collected from SB-1 to SB-6, SB-7A, and SB-8. Soil samples were not collected from SB-7 because the boring met refusal at a depth of 3.3 feet. The boring was moved to the south and re-drilled as SB-7A, and while the boring was only slightly deeper (7 feet), soil samples for field screening and laboratory analysis were collected from this boring. Since no environmental impacts were observed in any of the borings, the soil samples for laboratory analysis were collected from just above the field-determined soil-groundwater interface or from the boring terminus, whichever occurred first.

Samples selected for laboratory analysis were collected in properly-preserved glassware and submitted under appropriate chain of custody to Alpha for analysis of VOCs using EPA Methods 5035 (field preservation) and 8260C and 8011 (1,2-dibromoethane only), PAHs using EPA Method 8270D, and total RCRA-8 metals using EPA Methods 6010D and 7471B (mercury only).

For three of the borings located closest to the southerly-abutting former railroad right-of-way (SB-1, SB-2 and SB-8; see **Figure 3**), an additional shallow sample (0.5-1.5 feet bgs) was collected to evaluate potential impacts from the former use of southerly adjoining lot for rail operations. These shallow soil samples were collected in properly preserved glassware and submitted under appropriate chain of custody to Alpha for analysis of PAHs using EPA Method 8270D, RCRA-8 metals using EPA Methods 6010D and 7471B (mercury only), pesticides using EPA Method 8081B, and herbicides using EPA Method 8151A.

6.2.3 Temporary Monitoring Well Installation and Groundwater Sampling

Following soil sampling, all borings except SB-6, SB-7, and SB-7A were completed as temporary groundwater monitoring wells to facilitate groundwater sampling. The wells were constructed using 1-inch inner diameter (ID) Schedule 40 polyvinyl chloride (PVC) flush-threaded riser and



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screen with 0.010-inch slots. Once each well assembly was lowered to the bottom of the boring, a sand filter pack using 10/20 Colorado Sand was installed around the screened interval of the well to a depth of 1 to 2 feet above the well screen to prevent natural formation collapse, followed by a hydrated bentonite pellet seal. Since the 1-inch PVC wells were temporary, they were not installed with protective surface casings.

The wells were developed on March 26, 2019 by surging and pumping using a peristaltic pump to remove any fine sediment introduced during installation. An attempt was made to evacuate 10 well volumes of groundwater during a maximum well development period of one hour per well. A total of 7-9 gallons was purged from each well. Purge water was containerized in a steel 55-gallon open-top drum which was labeled and staged along the east wall of the Yellow Barn building.

The wells were surveyed on March 18, 2019 for elevation control using a laser level. A site-specific benchmark with an assumed elevation of 100.00 feet was established at the Property for use when surveying the wells. The benchmark was the northmost end of the steel strip on the threshold below the overhead garage door in the east wall of the Yellow Barn building. Survey point and ground elevations are provided in **Table 1**.

Groundwater samples were collected on March 27-28, 2019. Groundwater was purged/sampled using a peristaltic pump and low-flow sampling procedures. Sampling occurred once indicator field parameters (turbidity, dissolved oxygen, specific conductance, temperature, pH, and oxidation/reduction potential) stabilized per the EPA low-flow guidelines. Groundwater Sampling Field Data Sheets are provided in **Appendix C**.

As no evidence of free product was noted in any of the wells prior to sampling, groundwater samples were collected from each monitoring well in properly-preserved glassware and submitted under appropriate chain of custody to Alpha for analysis of VOCs using EPA Methods 8260C and 8011 (1,2-dibromoethane only), PAHs using EPA Method 8270D-SIM, and total RCRA-8 metals using EPA Methods 6020B and 7471A (mercury only).

Also, additional samples were collected from temporary wells TW-1, TW-2 and TW-8 to be analyzed for additional parameters intended to provide information on potential impacts from the south-abutting railway right-of-way, including pesticides using EPA Method 8081B and herbicides using EPA Method 8151A.

6.2.4 Vapor Intrusion Assessment

A vapor intrusion assessment was conducted on March 28-29, 2019 to provide a preliminary evaluation of the risk of subsurface vapor encroachment resulting from former use of the Property for auto repair/maintenance and from the northeastern adjoining Lamoille Valley Ford property. Two sub-slab soil vapor samples, SG-1 and SG-2, were collected from beneath the concrete floor within the auto repair area of the Yellow Barn building (see **Figure 3**). On March 28, 2019, at each location a hammer-drill was used to penetrate the concrete floor slab, and a 9-inch long stainless-steel vapor sampling point connected to Teflon tubing was inserted into the base course material immediately below the slab to a depth of 15 inches below the top of the floor slab. The annular



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space surrounding the probe was filled with clean sand, followed by 3 inches of hydrated bentonite. A 2-inch diameter aluminum road box was installed over the vapor point using cement and allowed to dry overnight before sampling.

On March 29, 2019, sub-slab vapor samples were collected from each vapor point using 1-liter Summa canisters fitted with a flow controller to ensure that the sample collection rate did not exceed 200 milliliters/minute (mL/min). The total sampling time interval was approximately 5 minutes per location. The initial vacuums on the Summa canisters were recorded on the chain of custody prior to sampling, and final vacuum readings just prior to sampling termination were also recorded.

Prior to sampling, helium gas was used to check for leaks in the sample train during collection of the sub-slab soil vapor samples. The leak check was performed by placing an enclosure over each vapor probe and maintaining a concentration of helium in the enclosure of 2.8 percent by volume (SG-1) and 3 percent by volume (SG-2), as measured using a hand-held helium meter. Helium concentrations from the vapor points measured 10 parts per million (ppm) or 0.001 percent (SG-1) and 75 parts per million or 0.0075 percent (SG-2). The helium concentrations from both vapor points were less than the target helium level of no higher than 5 percent of the helium concentration in the shroud (for SG-1, 5 percent of 2.8 percent shroud helium concentrations = 0.14 percent helium, for SG-2, 5 percent of the 3 percent shroud helium concentration = 0.15 percent helium). Since the vapor point helium concentrations were less than 5 percent of the shroud concentration, the vapor points were considered to have effective seals, so collection of the soil vapor sample could proceed.

As summarized in **Table 3**, the samples from each vapor point were submitted under appropriate chain of custody to Alpha for analysis of VOCs using EPA Method TO-15.

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

Field QA/QC samples, including duplicates and trip blanks were collected and analyzed in accordance with the QAPP (Stantec, 2018). Soil and groundwater field duplicate samples were collected from the same boring (SB-4/TW-4). The results of analysis for the duplicate samples are summarized in **Tables 2 and 3** for the soil and groundwater duplicates, respectively. As summarized within the data validation worksheets included in **Appendix D**, the calculated relative percent difference (RPD) for constituents detected in both samples met project limits. In addition to the duplicate samples, a trip blank provided by the laboratory accompanied the groundwater sample containers submitted to the laboratory for VOC analysis. The results of analysis for the trip blank indicated that VOCs were not detected above reporting limits.

Laboratory QA/QC samples included 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, were also analyzed to determine precision and accuracy. As summarized in the data validation worksheets included in **Appendix D**, review



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of the laboratory QA/QC data indicated that data are usable for their intended purpose and are not qualified, except for the following exceptions:

- The method blank had 0.38 µg/L of bromomethane detected. Bromomethane was detected between the method detection limit (MDL) and method reporting limit (MRL) in the TW-8 groundwater sample and was qualified as not detect at the reporting limit.
- The RPD calculated for 4,4'-DDT in sample TW-8 exceeded the method-specified limit. The 4,4'-DDT result for the TW-8 groundwater sample was flagged by the laboratory for being an Estimated (J) value; that is, the target analyte concentration is below the laboratory's quantitation or reporting limit (RL), but above the MDL or Estimated Detection Limit (EDL) for SPME-related analyses. Also, it was flagged "I" as one of the two columns used for its analysis had obvious interference (additional compounds co-eluting along with the 4,4'-DDT, thereby causing an inflated result). For this reason, the lower of the two column results was reported and was the cause of the "P" flag (an elevated relative percent difference or RPD value between the two columns). Since the value reported was from the column that did not show obvious interference, it more accurately reflects the true value of 4,4'-DDT in the sample. Given that the detected TW-8 4,4'-DDT concentration was level low (estimated to be between the RL and MDL), 4,4'-DDT was not detected in any other soil or groundwater sample, and the compound does not have a related VSL, this QA finding does not appear to significantly impact the findings of this investigation.

6.3 STANDARD OPERATING PROCEDURES

Stantec utilized the following standard operating procedures during the completion of this Limited Phase II ESA. Copies of these SOPs were previously provided to VTDEC and EPA as part of the Work Plan (Stantec 2019):

ES-RR&IH-001	Soil Sampling
ES-RR&IH-002	Decontamination Procedures
ES-RR&IH-003	Monitoring Well Installation
ES-RR&IH-004	Monitoring Well Abandonment
ES-RR&IH-005	Low Flow Groundwater Sampling
ES-RR&IH-006	Groundwater Sampling
ES-RR&IH-007	Air Sampling with Summa Canisters
ES-RR&IH-008	Waste Sampling
ESPA-011	Field Notebook
7.8	Direct Push Drilling
10.8	Gas Sampling from Probes
10.9	Chain of Custody Procedures



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6.4 INVESTIGATION-DERIVED WASTE

Purge water generated as part of the subsurface investigation activities was containerized in a labeled 55-gallon Department of Transportation (DOT)-approved drum and staged near the southeast corner of the Yellow Barn building. Drum contents were sampled on March 29, 2019 for waste characterization parameters including the following:

- VOCs using EPA Method 8260C;
- Semi-volatile organic compounds (SVOCs) using EPA Method 8270D;
- Total RCRA Metals using 6010D/7471B Series Methods;
- PCBs using EPA Method 8082A;
- Pesticides using EPA Method 8081B;
- Herbicides using EPA Method 8151A;
- Total Petroleum Hydrocarbons using EPA Method 8015D;
- Flashpoint using EPA Method 1010;
- Corrosivity (pH) using EPA Method 9040C; and
- Reactivity using EPA Method 7.3.

As much of the soil collected during the drilling process was required for submittal to Alpha for analysis, drill cuttings were not containerized and tested for waste characterization. Rather, what volume of soil remained after sampling was returned to the borings above the bentonite seal of the temporary wells.



7.0 RESULTS

7.1 SITE GEOLOGY

Soil boring termination depths ranged from 7 feet bgs at SB-7 to 20 feet bgs at SB-2, SB-3, SB-4 and SB-5. Boring refusal was encountered at SB-6 at 11 feet bgs and at SB-7 at 7 feet bgs. The reason for refusal (boulder, bedrock, other) was not determined. Soils encountered in the soil borings included sand with local gravelly or silty zones, sandy silt, and up to 16 feet of peat in borings SB-2, SB-3, SB-4, and SB-8. Observed soil types are described in more detail on the Monitoring Well Logs in **Appendix A**.

7.2 SITE HYDROGEOLOGY

Table 1 provides a summary of water level data collected from the temporary monitoring wells. On April 18, 2019, water levels varied from a depth of 6.84 feet below top of well at TW-3 to 13.12 feet at TW-5. Calculated water table elevations ranged from 85.37 feet (TW-3) to 86.59 (TW-8). As depicted on **Figure 4**, shallow groundwater flow at the Property is to the northwest towards the Lamoille River at a gradient of approximately 0.01 feet/foot.

7.3 SOIL QUALITY

No field evidence of impacts (odor, staining, elevated photoionization detector readings) was noted in any of the soil samples collected from the borings. A total of 16 soil samples collected from 10 separate locations were analyzed for the contaminants of concern previously described in Section 6.2.2. Soil sample analytical results were compared against Vermont Screening Levels (VSLs) as provided in Appendix A - § 35-APX-A1 of the IRule, and EPA Regional Screening Levels (RSLs). A summary of the soil quality results is provided below and in **Table 2**.

Metals

- Each RCRA metal (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver) was detected above laboratory reporting limits in one or more of the analyzed soil samples. Arsenic was detected in all the soil samples submitted for analysis of metals. Detected concentrations of arsenic ranged from 2.66 milligrams per kilogram (mg/kg) at SB-4 to 12.7 mg/kg at SB-1. All detected concentrations of arsenic are below the statewide background threshold value of 16 mg/kg that VTDEC has adopted for arsenic (VTDEC 2017). All other metals concentrations either did not exceed the laboratory's reporting limit, or if detected above the reporting limit, did not exceed its related VSL.



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Pesticides

- The only pesticide detected above laboratory reporting limits was dichlorodiphenyltrichloroethane (DDT) in SB-2 (0.5-1.5 feet) at a concentration 0.984 micrograms per kilogram ($\mu\text{g}/\text{kg}$). This concentration is well below the applicable RSL for DDT. There is no VSL for this compound.

Herbicides

- No herbicides were detected in the analyzed soil samples at concentrations above laboratory reporting limits.

PAHs

- Various PAHs were detected in several analyzed shallow soil samples including SB-8 (0.5-1.5 feet), SS-1 (0-0.5 feet), and SS-2 (0-0.5 feet) at concentrations above laboratory reporting limits. Detected compounds include benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, chrysene, fluoranthene, indeno(1,2,3-cd)pyrene, phenanthrene, pyrene, and/or benzo(a)pyrene TEQ. None of the detected concentrations exceeded applicable VSLs or RSLs.
- The laboratory reporting limit for benzo(a)pyrene exceeded its applicable VSL for both SS-1 soil samples and for the SS-2 (0-0.5 feet) sample.

VOCs

- Various VOCs including acetone, p-isopropyltoluene, methyl ethyl ketone (MEK), methyl isobutyl ketone (MIBK), were detected above laboratory reporting limits in several of the analyzed soil samples. None of the detected concentrations exceeded applicable VSLs or RSLs.
- The laboratory reporting limit for benzo(a)pyrene and trans-1,4-dichloro-2-butene exceeded its applicable VSL for both SS-1 soil samples and both SS-2 soil samples.

7.4 GROUNDWATER QUALITY

A total of 6 groundwater samples collected from 6 temporary wells were analyzed for the contaminants of concern previously described in Section 6.2.3. Groundwater sample analytical results were compared against Vermont Groundwater Quality Standards, as provided in Appendix One of Chapter 12 of the Environmental Protection Rules: Groundwater Protection Rule and Strategy. A summary of the groundwater quality results is provided below and in **Table 3**.



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Metals

- Various metals including arsenic, barium, cadmium, chromium, and/or lead were detected above laboratory reporting limits in all analyzed groundwater samples. None of the detected concentrations exceeded applicable Vermont Groundwater Quality Standards.

Pesticides

- The only pesticide detected above laboratory reporting limits was dichlorodiphenyltrichloroethane (DDT) in TW-8 at a concentration 0.016 micrograms per liter (µg/L). There is no applicable Vermont Groundwater Quality Standard for DDT.

Herbicides

- No herbicides were detected in the analyzed groundwater samples at concentrations above laboratory reporting limits.
- The laboratory reporting limit for 2-methyl-4-chlorophenoxyacetic acid (MCPA) exceeded its applicable Groundwater Quality Standard.

PAHs

- No PAHs were detected in the analyzed groundwater samples at concentrations above laboratory reporting limits.

VOCs

- Various VOCs including acetone, bromomethane, p-isopropyltoluene, methyl isobutyl ketone (MIBK), and toluene were detected above laboratory reporting limits in several of the analyzed groundwater samples. None of the detected concentrations exceeded applicable Vermont Groundwater Quality Standards.

7.5 VAPOR INTRUSION ASSESSMENT

Two (2) soil vapor samples were collected from two (2) locations in the auto service area of the Yellow Barn building and analyzed for VOCs. Soil vapor results were compared against Vermont Vapor Intrusion Screening Values – Sub-slab Soil Gas, as provided in Appendix A - § 35-APX-A2 of the IRule. A summary of the soil vapor quality results is provided below and in **Table 4**.

VOCs

- Several VOCs were detected above laboratory reporting limits in the two soil vapor samples, but at concentrations less than the applicable Vapor Intrusion Screening Values.



- The laboratory reporting limits for a number of compounds exceeded the applicable Vapor Intrusion Screening Values including benzyl chloride, ethylene dibromide, hexachlorobutadiene, naphthalene, and 1,1,2,-tetrachloroethane.

7.6 INVESTIGATION-DERIVED WASTE

Purged groundwater is currently stored on-Site in a drum pending disposal. Analytical results indicate that the drummed water does not contain contaminants of concern greater than the VGES. Therefore, the drummed groundwater may be discharged to the ground surface.

7.7 ELEVATED LABORATORY REPORTING LIMITS

As stated previously, the laboratory reporting limits of several compounds in soil, groundwater, or soil vapor samples exceeded applicable Vermont standards. This lack of reporting limits below standards for these compounds do not represent a significant data gap and these compounds are not considered to be contaminants of concern for the Property as these compounds were not detected in other samples from the same or different media at significant concentrations (above applicable standards).

However, of those compounds that had elevated laboratory reporting limiting, VTDEC has expressed specific concern regarding the PAH concentrations detected in the shallow SS-1 and SS-2 soil samples. Therefore, efforts to address these compounds in soil are provided later in this report.



8.0 UPDATED 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 information provided in the REA Phase I/II ESA reports and the LEE Phase I ESA report described previously.

8.1 PROPERTY DESCRIPTION

This section provides information on the physical setting of the Property, such as geology, hydrogeology, and structures that can provide preferential contaminant migration pathways that can affect contaminant fate and transport. Some of this data is presented in other sections of this report, but it has been included in this section to provide a comprehensive discussion of the Property CSM.

Surficial Geology

Soils encountered in the soil borings completed as part of this Phase II assessment included sand with local gravelly or silty zones, sandy silt, and up to 16 feet of peat in borings SB-2, SB-3, SB-4, and SB-8. Sand generally has higher permeability and lower contaminant retardation rates when compared to more fine-grained soils such as silts and clays. Peat is very fine grained, has very low permeability, and has higher contaminant retardation rates. It can often act as a barrier to vertical fluid flow (and contaminant migration) due to its relatively impermeable nature and can negatively impact some remedial strategies that rely on distributing an injected fluid throughout an impacted volume of contaminated media. Due to its organic composition, peat also has a high total organic carbon content that can negatively impact some remedial strategies that rely on oxidation processes.

Groundwater migration through surficial soil normally consists of flow through a porous media under the force of gravity in accordance with the local groundwater gradient. Normally, flow directions mimic surface topographic gradients, but local flow can be impacted by other factors (e.g. pumping wells) that can affect local flow directions, or by preferential flow pathways resulting from natural conditions (higher permeability zones caused by layers of higher permeability soil) or man-made conditions. No pumping wells are known to exist at the Property or in the near vicinity, so the calculated groundwater flow direction of northwest is expected to be a result of the nearby Lamoille River acting as the likely base level control for groundwater discharge at the Property.



Bedrock Geology

According to the Bedrock Geologic Map of Vermont (VTGS, 2011), bedrock at the Property is comprised of dark gray to silvery-gray, lustrous, fine-grained carbonaceous quartz-muscovite phyllite and silicic phyllite, and garnet-rich biotite-muscovite-quartz schist of the Devonian-Silurian Northfield Formation. This unit contains millimeter- to centimeter-thick beds of gray quartzite and metasiltstone, and thicker beds of quartz-feldspar grit or quartzite near base. A transition zone into the Waits River Formation west of the Guilford dome consists of as much as 5 percent beds of punky limestone. This area of Vermont is part of the Connecticut Valley Trough, a series of metasedimentary and metavolcanic rocks that were deposited in an extensional basin. As none of the borings completed during Stantec's Phase II assessment were advanced into bedrock, no bedrock cores were collected, so the above description was not confirmed. Nor was bedrock investigated as part of prior investigations conducted at the Property.

Groundwater flow through competent bedrock is typically via fractures, although shallow bedrock is often sufficiently fractured to act in a manner similar to a porous media and can be hydraulically connected to the overlying overburden aquifer. Because of the fracture-flow characteristic of bedrock, local flow directions can often vary significantly from the overall expected regional flow direction. Also, the volume of flow through fractures varies based on their inherent characteristics such as aperture width, the presence of infilling, the degree of the fracture's connectivity to the wider regional network of water-bearing fractures, and the bedrock hydraulic gradient. Those fractures with the highest volume of through-flow often act as preferential pathways in bedrock and targeting these particular fractures for investigation and possible remediation can greatly improve the effectiveness of remedial strategies.

Hydrogeology

On April 18, 2019, water levels varied from a depth of 6.84 feet to 13.12 feet below top of well (about 6 to 13 feet below ground surface). Calculated water table elevations ranged from 85.37 feet to 86.59. Shallow groundwater flow at the Property was calculated to be to the northwest towards the Lamoille River at a gradient of approximately 0.01 feet/foot.

The groundwater flow direction in bedrock was not investigated but may be similar to overburden (northwest) if the Lamoille River is acting as the local discharge zone for bedrock. However, it is possible that the bedrock discharge zone is some other base level control, such as the Connecticut River, which is located east of the Property. Additional investigation would be required to determine this.

Underground Site Structures

Subsurface structures such as utility conduits and leach field piping are often backfilled with coarse grained soil that can have a higher intrinsic permeability than the surrounding natural soil. As a result, utilities can create preferential pathways for groundwater (and potentially contaminant) migration. Potential preferential pathways at the Property include the subsurface



water line that appears to enter the Yellow Barn building along its southern wall approximately 40 feet east of the southwest corner of the building. The burial depth of the water line is not known but it is assumed to be at least 5 feet to prevent winter freezing. Backfill associated with the septic tank and leach field piping on the west site of the storage shed and Yellow Barn also represent potential preferential pathways. Again, the burial depths of these structures are not known but are assumed to be deep enough to prevent potential freezing during winter.

The potential risk posed by the water line does not appear to be significant given the calculated northwest direction of shallow groundwater flow. Since the water line appears to enter the Property from the east, the east-west orientation of the line would not likely allow any contamination entering the water line backfill from migrating to the east as the flow would be upgradient against the prevailing groundwater flow direction of northwest. To the west the line ends at the building as described above, so any contaminant migration in the backfill would simply be in the downgradient direction as would normally happen under natural flow conditions. As a result, it is unlikely that the presence of the water line would result in the expansion of any impacted area at the Property, particularly given the lack of any identified groundwater impacts to date in the Yellow Barn area of the Property.

Similarly, the leach field is unlikely to be the cause of any expansion of contaminated areas due to preferential flow. The leach field is designed to be the discharge area for sanitary effluent from the Property's septic tank. Flow to the leach field piping is assumed to discharge from the piping through perforations in the piping (slits or holes) at which point the effluent migrates downward to the water table under the force of gravity. At that point, the effluent and any contaminants contained therein will migrate under advective flow with the groundwater to the northwest. Based on the nature of the leach field and the likely construction of the subsurface discharge piping, it is unlikely that the leach field is acting as a preferential flow pathway.

8.2 CONTAMINANTS OF CONCERN

Multiple known or potential contaminant sources were identified by REA and LEE as a result of their Phase I/II assessments. These sources were largely a result of the past use of the Property for auto repair/maintenance, and documented releases of petroleum at the northeasterly-adjointing Lamoille Valley Ford property. In addition, while not specifically identified as a REC in the reports, use of the south-abutting parcel as a railroad right-of-way represents another potential contaminant source.

Specific known or potential contaminant sources include the following:

- Possible subsurface contamination in the leach field area due to discharges from the septic tank that accepted, in addition to sanitary wastes, effluent from a former shop sink in the Yellow Barn. Prior sampling of the Property's septic tank effluent by REA indicated the presence of elevated levels of metals, notably arsenic, cadmium, and lead;



- Possible subsurface contamination from petroleum, solvents, and metals due to historical on-site property use (auto repair/maintenance). Release mechanisms include surficial releases and releases to floor drains that formerly discharged to the ground surface;
- Potential subsurface contamination from petroleum, metals, pesticides, and/or herbicides due to former use of the south-abutting parcel as a former rail bed. Release mechanisms include aerial dispersion of pesticides and/or herbicides during their application as part of regular track maintenance; migration of polynuclear aromatic hydrocarbon (PAH)- and metal-containing dust from the rail right-of-way to the Property via wind-blown particulates; and migration of PAHs, metals, pesticides, and/or herbicides from the rail right-of-way to the Property via overland flow; and
- Potential soil gas contamination on the Property due to historic Property use for auto repair/maintenance and from the northeasterly-adjointing Lamoille Valley Ford property.

Potentially impacted media include soil, groundwater, surface water, and soil vapor. As previously mentioned, prior sampling of the Property's septic tank also indicated the presence of elevated levels of metals, notably arsenic, cadmium, and lead, in the septic effluent.

8.3 CONTAMINANT FATE AND TRANSPORT

Leach Field Discharges – Due to the previously detected presence of elevated levels of arsenic, cadmium, and lead in septic tank effluent, potential discharges from the tank to the associated leach field could impact the subsurface in the leach field area. Since borings were not completed within the leach field, but around the presumed south and west perimeter of the area, the soil types within the leach field area are not known. The soil observed in the leach field borings (SB-1 to SB-4) ranged from sand over sand and gravel (SB-1) to peat over silt (SB-2 to SB-4). Given the proximity of SB-1 to the septic tank and the presence of nearly all sand and gravel at the SB-1 location, this boring may be in or near the backfill for the leach field. However, the laboratory results for the soil samples collected from SB-1, including metals, were not significantly elevated above the results for the SB-2 to SB-4 soil samples. In fact, the results were very similar for all the leach field borings, suggesting either a lack of significant metals discharges to the leach field or that SB-1 is not, in fact, located in a portion of the leach field.

Discharges from the leach field piping would reasonably migrate downward under the force of gravity through the likely coarse-grained backfill until it reached the water table, where it would begin migrating with the prevailing groundwater flow to the northwest. With post-purging ORP values for TW-1 to TW-4 ranging from -75.1 mV (TW-4) to -296.1 mV (TW-1), conditions would likely be amenable to the development of soluble forms of any metals reaching the water table, thereby facilitating migration in their dissolved forms. Since metals are elemental contaminants, they cannot be degraded; they can only be dispersed or transformed. Dispersion occurs through migration of dissolved metals through the granular matrix of the water table aquifer. Transformation between more or less mobile forms of metals can be affected by redox potential; that is, metal solubilities generally increase with reducing redox potentials. In addition, since these COCs are positively charged, they will be more likely to bind to soils with higher cation exchange



capacities (such as clays or organic materials). The presence of peat in the leach field area of the Property may act to bind any metals in solution, thereby preventing their migration to any great distance. Being non-volatile, metals do not represent a vapor intrusion risk at the Property.

Surficial Releases/Floor Drain Discharges Resulting from Historical Property Use - Possible subsurface contamination resulting from surficial releases and releases to floor drains that formerly discharged to the ground surface include petroleum, solvents, and metals. Petroleum, including PAHs, may be readily degraded in the environment through volatilization, microbial activity, and other naturally occurring physical and geochemical processes. These contaminants can dissolve in groundwater to varying degrees depending on their individual solubility characteristics. 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. More soluble compounds (such as benzene) are more likely than less soluble compounds (such as naphthalene) to leach from soil due to precipitation events and enter the groundwater. These contaminants may also volatilize from soil and groundwater into the atmosphere, and therefore can increase vapor intrusion risks. When present as a non-aqueous phase liquid (NAPL), most petroleum compounds' specific gravity of less than 1.0 makes them float on the capillary fringe of the water table where they can act as a continuing source of dissolved contamination to the underlying groundwater. Once dissolved in groundwater, petroleum dispersion can occur through its migration with the advective flow of groundwater to the northwest.

Chlorinated solvents or chlorinated volatile organic compounds (cVOCs) are widely used industrial chemicals and as a result are common contaminants at industrial and other hazardous waste sites. These compounds tend to be heavier than water (specific gravity > 1.0) and as a result tend to sink in soil or groundwater under the influence of gravity until a denser layer is reached that causes the cVOC to pool and start moving horizontally. When present as a NAPL, they can act as a continuing source of dissolved phase contamination to groundwater deep in the aquifer. CVOCs are persistent in the environment and as a result tend to be less amenable to natural attenuation than petroleum compounds. These contaminants may also volatilize from soil and groundwater into the atmosphere, and therefore can increase vapor intrusion risks. Once dissolved in groundwater, cVOC dispersion can occur through its migration with the advective flow of groundwater (inferred to be west and/or south).

Fate and transport characteristics of metals are discussed above.

Notwithstanding the fate and transport characteristics of the contaminants of concern associated with surficial releases and releases to floor drains, prior investigations of the Property conducted in 2017 by Ross Environmental Associates, as well as the 2019 Stantec assessment, did not identify any significant subsurface impacts resulting from these release mechanisms.

Rail Bed Discharges - Potential subsurface contamination due to rail bed discharges includes petroleum, metals, pesticides, and/or herbicides. Release mechanisms include aerial dispersion of pesticides and/or herbicides during their application as part of regular track maintenance; migration of polynuclear aromatic hydrocarbon (PAH)- and metal-containing dust from the rail



right-of-way to the Property via wind-blown particulates; and migration of PAHs, metals, pesticides, and/or herbicides from the rail right-of-way to the Property via overland flow.

Pesticides and herbicides, once discharged, are affected by a number of processes including the amount of absorption (uptake) by plants, adsorption (binding) of the compounds by soil particles, erosion of impacted soil by overland water flow, migration in run-off water, leaching to groundwater, and degradation due to hydrolysis, microbial action, and volatilization. The strength of the chemical-soil bond depends on the compound's properties, its concentration in soil water, the soil pH, and the composition of the soil (percent sand, silt, loam, clay, and organic matter). If bound to the soil, the compound is unlikely to leach or runoff. Some highly soluble compounds bind strongly with soil. The more clay particles and organic matter that are in the soil, the more the compound is held by the soil and becomes immobile. Strongly adsorbed pesticide/herbicide molecules do not leach or move unless the soil particles to which they are adsorbed move (erode) with water. The longer the molecules of a pesticide or herbicide are held, the more likely it is that microbiological degradation will occur, which reduces the risk of leaching and runoff. These compounds do not generally represent a vapor intrusion risk.

Fate and transport characteristics of petroleum and metals are discussed above.

Notwithstanding the fate and transport characteristics of the contaminants of concern associated with rail bed releases, the 2019 Stantec assessment did not identify any significant subsurface impacts resulting from these release mechanisms.

8.4 POTENTIAL RECEPTORS AND EXPOSURE PATHWAYS

The area surrounding the Property is a mix of residential, commercial, agricultural, and institutional uses. Area properties are serviced by the municipal water supply, whose source is the Bridgeman Hill Reservoir. Given the presence of the Lamoille River, which is presumed to represent a discharge zone for local groundwater flow, between the Yellow Barn Property and Bridgeman Hill Road, it is not expected that contamination migrating from the Property, if any, is likely to impact the Hardwick municipal water supply.

Groundwater flow data generated from the Phase II data indicates that the Lamoille River, which is located just to the west of the Property, is likely a discharge zone for shallow groundwater migrating from the Property. Any contamination in groundwater at the Property could, therefore, impact the river. However, dilution in the river would likely decrease to some degree any contaminant concentrations discharging to this surficial water body. Also, given the lack of elevated concentrations of contaminants in groundwater at the Property, as shown by the Limited Phase II ESA results, the risk posed by the Property to the Lamoille River appears to be low.

The depth to groundwater at the Property has been determined to be in the range of 7–13 feet. Shallow groundwater can pose a risk to potential receptors such as utility workers or others who conduct excavations that intersect the water table. However, given the lack of elevated concentrations of contaminants in groundwater at the Property, as shown by the Limited Phase II ESA results, the risk posed by the Property to utility or construction workers appears to be low.



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Similarly, while surficial releases of contaminants at the Property could put site workers or trespassers at risk of exposure, the lack of elevated concentrations of contaminants in shallow soil at the Property, based on the Limited Phase II ESA results, the risk posed by the Property to site workers or trespassers appears to be low.

Lastly, the risk due to vapor intrusion from the former Property use for auto repair and the adjoining Lamoille Valley Ford dealership also appears to be low based on the Phase II results; therefore, workers in the site building do not appear to be at risk of exposure from volatile contaminants.



9.0 DATA GAPS

As previously discussed in Section 4, data gaps that were investigated as part of this Limited Phase II ESA included those listed below. A short discussion of the resolution of each data gap based on the Limited Phase II ESA findings follows each data gap.

Data Gap #1

- Have the identified discharges to the site septic tank resulted in soil or groundwater impacts in the Property's leach field area from VOCs, petroleum, or metals.

Resolution – Soil and groundwater testing in the area of the leach field (SB-1/TW-1 to SB-4/TW-4) showed a lack of standards exceedances for VOCs, petroleum-derived contaminants, and metals. Although elevated arsenic levels were detected in soil samples in this area, the concentrations did not exceed Vermont background levels for the metal and so this contaminant is not considered to be a site related COC. Despite the lack of standards exceedances, VTDEC has expressed concern that additional investigation is required to positively confirm a lack of impacts in the leach field area from septic tank discharges. Therefore, additional investigation of this data gap is recommended.

Data Gap #2

- Have the surficial releases of OHM identified in the former Yellow Barn auto repair area and in the OHM storage area in the shed building result in soil or groundwater impacts at the Property from VOCs, petroleum, or metals.

Resolution – Soil and groundwater testing at the SB-5/TW-5 to SB-8/TW-8 locations, and the SS-1 and SS-2 locations showed a lack of standards exceedances for VOCs, petroleum-derived contaminants, or metals. Although elevated arsenic levels were detected in soil samples in this area, the concentrations did not exceed Vermont background levels for the metal and so this contaminant is not considered to be a site related COC. The detection limits for several PAHs and VOCs in the SS-1 and SS-2 samples were elevated above standards, and of these compounds, VTDEC has expressed concern that the PAHs warrant concern, so additional investigation of this data gap is recommended.

Data Gap #3

- Has the presence of the south-abutting railroad right-of-way resulted in impacts to soil or groundwater quality at the Property from VOCs, petroleum, metals, pesticides, or herbicides?

Resolution – Soil and groundwater testing at the SB-1/TW-1, SB-2/TW-2, and SB-8/TW-8 locations showed a lack of standards exceedances for VOCs, metals,



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pesticides, and herbicides. Although elevated arsenic levels were detected in soil samples in this area, the concentrations did not exceed Vermont background levels for the metal and so this contaminant is not considered to be a site related COC. No additional investigation of this data gap is recommended.

Data Gap #4

- Has the former use of the Property for auto repair/maintenance and the proximity of the northeasterly-adjointing Lamoille Valley Ford property result in soil vapor intrusion into the Yellow Barn building.

Resolution – Soil vapor testing at the SG-1 and SG-2 locations showed a lack of standards exceedances for VOCs at these locations, suggesting a lack of the potential for vapor intrusion into the Yellow Barn building. The detection limits for several VOCs in the SG-1 and SG-2 samples were elevated above standards. However, VTDEC has not expressed concern regarding these compounds, so additional investigation of this data gap is not recommended.



10.0 RECOMMENDATIONS FOR ADDITIONAL INVESTIGATION

Based on the findings of this Limited Phase II ESA, Stantec makes the following recommendations:

- Although no exceedances of Vermont soil, groundwater, or soil gas standards were identified as part of the Phase II assessment, VTDEC has expressed concern that the completed Phase II soil investigation was insufficient to positively confirm a lack of impacts in the site's leach field area, particularly from metals (arsenic, cadmium, and lead) that were detected at elevated levels in septic tank effluent in 2017 by previous investigators. Also, VTDEC expressed concern regarding the PAH concentrations detected in shallow soil samples (SS-1 and SS-2) that had laboratory reporting limits that were above the compounds' associated VSLs. As discussed with VTDEC, Stantec recommends that these two issues be addressed as follows:
 1. Since it must be removed as part of the planned redevelopment of the Property as the Yellow Barn Business Accelerator Project, remove the site septic system (septic tank and leach field piping) and collect soil samples from areas of septic effluent discharge for analysis of contaminants of concern (metals). Based on the sampling results, no further action will be taken if samples do not contain metals concentrations exceeding VSLs. However, if concentrations do exceed standards, the area of impact will be mitigated by the emplacement of a minimum 18-inch barrier of clean soil and marker fabric and recording of an institutional control for the Property in accordance with Section §35-901 of the IRule;
 2. Resampling of the shallow soil sample locations SS-1 and SS-2 will be conducted with the samples being analyzed for PAHs by EPA Method 8270SIM, which should provide reporting limits that are below the applicable VSLs. Based on the sampling results, no further action will be taken if samples do not contain PAH concentrations exceeding VSLs. However, if concentrations do exceed standards, the area of impact will be mitigated by the emplacement of a minimum 18-inch barrier of clean soil and marker fabric and recording of an institutional control for the site in accordance with Section §35-901 of the IRule; and
 3. The above recommendations will be presented in detail in an interim Corrective Action Plan (CAP) to be submitted to VTDEC for review and approval. Per guidance provided by VTDEC, the VOCs detected in soil and soil gas during the Phase II assessment that had laboratory reporting limits that were above the compounds' associated VSLs or VISVs, respectively, will not be required to be addressed in the CAP.
- Analytical results indicate that the drummed purge water does not contain contaminants of concern at concentrations greater than the Vermont Groundwater Quality Standards. Therefore, the drummed groundwater may be discharged to the ground surface at the Property.



11.0 LIMITATIONS

Stantec has prepared this Limited Phase II ESA Report 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.

Stantec's observations, findings, and opinions must not be considered as scientific certainties, but only an opinion based on our professional judgment concerning the significance of the data gathered during the investigation. Specifically, Stantec does not and cannot represent that the Site contains no hazardous or toxic materials or other latent condition beyond that observed by Stantec.

Stantec does not warrant that this submittal represents an exhaustive study of all possible environmental concerns at the project area. The items investigated as part of this study represent likely sources of environmental concerns at the project area and are consequently believed to adequately address the public at risk at the present time.



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References
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12.0 REFERENCES

- Stantec. 2018. "FINAL Quality Assurance Project Plan (Revision 1) for Implementation of U.S. EPA Brownfields Coalition Assessment Grants at Petroleum and Hazardous Substance Sites, Northeastern Vermont Development Association, St. Johnsbury, Vermont, EPA Cooperative Agreement." November 16.
- Stantec. 2019. "Limited Phase II Environmental Site Assessment Work Plan."
- VTDEC. 2017. "An Evaluation of PAHs, Arsenic, and Lead in Background Soil Concentrations in Vermont."
- Ross Environmental Associates, Inc., 2017. Phase I Environmental Site Assessment Report, 281 VT Route 15, Hardwick, Vermont 05843. September 22.
- Ross Environmental Associates, Inc., 2018. Septic Tank and Soil Sampling & Analysis Report, Former Greensboro Garage/Yellow Barn, 281 VT Route 15, Hardwick, Vermont. January 9.
- LE Environmental, 2018. Phase I Environmental Site Assessment Report/Tier 1 Vapor Encroachment Screening Report, Yellow Barn Business Accelerator Project, 281 Vermont Route 15 West, Hardwick, Vermont. September 28.
- VTGS, 2011. Bedrock Geologic Map of Vermont. 2011.



Table 1
Summary of Well Gauging Data
Yellow Barn
281 VT Route 15 West
Hardwick, Vermont

Monitoring Well	Top of Well Elevation (ft) ¹	Ground Elevation (ft) ¹	Date	Depth to Water ² (ft)	Groundwater Elevation (ft)
TW-1	92.92	92.30	3/27/2019	9.20	83.72
	92.92		4/18/2019	7.45	85.47
TW-2	92.66	91.97	3/27/2019	8.96	83.70
	92.66		4/18/2019	7.25	85.41
TW-3	92.21	91.65	3/27/2019	8.55	83.66
	92.21		4/18/2019	6.84	85.37
TW-4	92.97	92.64	3/27/2019	9.25	83.72
	92.97		4/18/2019	7.54	85.43
TW-5	98.75	98.19	3/28/2019	14.96	83.79
	98.75		4/18/2019	13.12	85.63
TW-8	95.39	95.02	3/28/2019	10.59	84.80
	95.39		4/18/2019	8.80	86.59

Notes:

1. Elevations are referenced to a site benchmark (north end of metal strip in garage door opening on east end of barn)
2. Depth to water measured from top of PVC well casing.

Table 2
Summary of Soil Analytical Results
Limited Phase II Environmental Site Assessment
Yellow Barn
281 VT Route 15 West
Hardwick, Vermont

Sample Location		VSL	VT DEC Background	USEPA RSL		SB-1		SB-2		SB-3	SB-4		SB-5	SB-6	SB-7A
Sample Date						25-Mar-19	25-Mar-19	26-Mar-19	26-Mar-19	26-Mar-19	26-Mar-19	26-Mar-19	25-Mar-19	26-Mar-19	26-Mar-19
Sample ID						SB-1 (0.5-1.5)	SB-1 (8-11)	SB-2 (0.5-1.5)	SB-2 (10-14)	SB-3 (8-11)	SB-4 (10-15)	DUP	SB-5 (15-17)	SB-6 (5-9)	SB-7A (5-7)
Sample Depth		Residential	Rural / Urban	Residential	Industrial	0.5 - 1.5 ft	8 - 11 ft	0.5 - 1.5 ft	10 - 14 ft	8 - 11 ft	10 - 15 ft	10 - 15 ft	15 - 17 ft	5 - 9 ft	5 - 7 ft
Sample Type	Units	A	B	C	D	Primary	Primary	Primary	Primary	Primary	Primary	Field Duplicate	Primary	Primary	Primary
Metals (6010D/7471B)															
Arsenic	mg/kg	n/v	16	n/a	3.0	12.6	12.7	10.1	6.60	12.4	2.66	2.81	11.8	12.4	12.4
Barium	mg/kg	11,700	n/v	n/a	22,000	17.4	10.8	27.5	19.5	30.7	61.5	65.6	7.79	16.3	14.4
Cadmium	mg/kg	7.15	n/v	n/a	n/v	<0.044	<0.040	0.496 J	0.472	0.492 J	0.493 J	0.476 J	<0.047	0.436 J	0.754
Chromium	mg/kg	n/v	n/v	n/v	n/v	17.6	29.4	20.2	25.3	27.1	21.1	24.0	21.8	25.1	18.4
Lead	mg/kg	n/v	41 / 111	400	800	7.62	5.28	10.3	4.90	9.79	7.80	7.30	4.36	6.13	10.0
Mercury	mg/kg	10.9	n/v	n/a	4.6	<0.016	<0.014	<0.019	<0.015	<0.019	<0.020	0.030 J	<0.016	<0.016	<0.015
Selenium	mg/kg	382	n/v	n/a	580	0.487 J	0.430 J	0.409 J	<0.112	0.573 J	<0.151	<0.159	0.482 J	0.204 J	0.235 J
Silver	mg/kg	247	n/v	n/a	580	<0.126	<0.115	<0.152	<0.122	<0.162	<0.166	<0.175	<0.135	<0.131	<0.126
Pesticides (8081B)															
Aldrin	µg/kg	20.2	n/v	n/a	180	<0.668	-	<0.797	-	-	-	-	-	-	-
BHC, alpha-	µg/kg	n/v	n/v	86	360	<0.224	-	<0.268	-	-	-	-	-	-	-
BHC, beta-	µg/kg	n/v	n/v	300	1,300	<0.719	-	<0.858	-	-	-	-	-	-	-
BHC, delta-	µg/kg	n/v	n/v	n/v	n/v	<0.372	-	<0.443	-	-	-	-	-	-	-
Camphechlor (Toxaphene)	µg/kg	n/v	n/v	490	2,100	<9.96	-	<11.9	-	-	-	-	-	-	-
Chlordane (Total)	µg/kg	n/v	n/v	1,700	7,700	<6.28	-	<7.50	-	-	-	-	-	-	-
Chlordane, alpha-	µg/kg	n/v	n/v	n/v	n/v	<0.661	-	<0.788	-	-	-	-	-	-	-
Chlordane, trans- (gamma-Chlordane)	µg/kg	n/v	n/v	n/v	n/v	<0.626	-	<0.747	-	-	-	-	-	-	-
DDD (p,p'-DDD)	µg/kg	n/v	n/v	190	2,500	<0.677	-	<0.807	-	-	-	-	-	-	-
DDE (p,p'-DDE)	µg/kg	n/v	n/v	2,000	9,300	<0.439	-	0.984 J	-	-	-	-	-	-	-
DDT (p,p'-DDT)	µg/kg	n/v	n/v	1,900	8,500	<1.52	-	<1.82	-	-	-	-	-	-	-
Dieldrin	µg/kg	n/v	n/v	34	140	<0.593	-	<0.707	-	-	-	-	-	-	-
Endosulfan I	µg/kg	n/v	n/v	n/v	n/v	<0.448	-	<0.535	-	-	-	-	-	-	-
Endosulfan II	µg/kg	n/v	n/v	n/v	n/v	<0.634	-	<0.756	-	-	-	-	-	-	-
Endosulfan Sulfate	µg/kg	n/v	n/v	n/v	n/v	<0.376	-	<0.449	-	-	-	-	-	-	-
Endrin	µg/kg	n/v	n/v	1,900	25,000	<0.324	-	<0.387	-	-	-	-	-	-	-
Endrin Aldehyde	µg/kg	n/v	n/v	n/v	n/v	<0.830	-	<0.990	-	-	-	-	-	-	-
Endrin Ketone	µg/kg	n/v	n/v	n/v	n/v	<0.488	-	<0.583	-	-	-	-	-	-	-
Heptachlor	µg/kg	n/v	n/v	130	630	<0.425	-	<0.507	-	-	-	-	-	-	-
Heptachlor Epoxide	µg/kg	n/v	n/v	70	330	<1.07	-	<1.27	-	-	-	-	-	-	-
Lindane (Hexachlorocyclohexane, gamma)	µg/kg	n/v	n/v	570	2,500	<0.353	-	<0.422	-	-	-	-	-	-	-
Methoxychlor (4,4'-Methoxychlor)	µg/kg	n/v	n/v	32,000	410,000	<1.11	-	<1.32	-	-	-	-	-	-	-
Herbicides (8151A)															
2,4,5-TP (Silvex)	µg/kg	n/v	n/v	51,000	660,000	<5.25	-	<6.30	-	-	-	-	-	-	-
2,4-DB	µg/kg	n/v	n/v	190,000	2,500,000	<10.1	-	<12.2	-	-	-	-	-	-	-
Dicamba	µg/kg	n/v	n/v	190,000	2,500,000	<6.63	-	<7.96	-	-	-	-	-	-	-
Dichlorophenoxy acetic acid, 2,4- (2,4-D)	µg/kg	n/v	n/v	70,000	960,000	<12.4	-	<14.9	-	-	-	-	-	-	-
Dichloropropionic acid, 2,2- (Dalapon)	µg/kg	n/v	n/v	190,000	2,500,000	<12.9	-	<15.5	-	-	-	-	-	-	-
Dichloroprop	µg/kg	n/v	n/v	n/v	n/v	<11.3	-	<13.6	-	-	-	-	-	-	-
MCPA (2-Methyl-4-Chlorophenoxyacetic Acid)	µg/kg	n/v	n/v	3,200	41,000	<1,120	-	<1,340	-	-	-	-	-	-	-
MCPP (2-(2-Methyl-4-chlorophenoxy) propionic acid)	µg/kg	n/v	n/v	6,300	82,000	<1,240	-	<1,490	-	-	-	-	-	-	-
Trichlorophenoxy acetic acid, 2,4,5- (2,4,5-T)	µg/kg	n/v	n/v	63,000	820,000	<6.12	-	<7.34	-	-	-	-	-	-	-
Polycyclic Aromatic Hydrocarbons (8270D)															
Acenaphthene	µg/kg	n/v	n/v	360,000	4,500,000	<20	<18	<24	<20	<24	<25	<27	<21	<20	<19
Acenaphthylene	µg/kg	n/v	n/v	n/v	n/v	<30	<27	<36	<29	<36	<38	<40	<31	<31	<29
Anthracene	µg/kg	n/v	n/v	1,800,000	23,000,000	<38	<34	<46	<37	<46	<48	<51	<39	<39	<36
Benzo(a)anthracene	µg/kg	n/v	n/v	1,100	21,000	<22	<20	<27	<21	<26	<28	<29	<23	<22	<21
Benzo(a)pyrene	µg/kg	76	n/v	n/a	2,100	<48	<43	<58	<46	<58	<60	<63	<49	<48	<45
Benzo(b)fluoranthene	µg/kg	n/v	n/v	1,100	21,000	<33	<29	<40	<32	<40	<41	<44	<34	<33	<31
Benzo(g,h,i)perylene	µg/kg	n/v	n/v	n/v	n/v	<23	<20	<28	<22	<28	<29	<30	<24	<23	<22
Benzo(k)fluoranthene	µg/kg	n/v	n/v	11,000	210,000	<32	<28	<38	<30	<38	<39	<42	<32	<32	<30
Chloronaphthalene, 2-	µg/kg	n/v	n/v	480,000	6,000,000	<20	<17	<24	<19	<23	<24	<26	<20	<20	<18
Chrysene	µg/kg	n/v	n/v	110,000	2,100,000	<20	<18	<25	<20	<24	<25	<27	<21	<21	<19
Dibenzo(a,h)anthracene	µg/kg	n/v	n/v	110	2,100	<23	<20	<27	<22	<27	<28	<30	<23	<23	<21
Fluoranthene	µg/kg	n/v	n/v	240,000	3,000,000	<23	<20	<27	<22	<27	<28	<30	<23	<23	<21
Fluorene	µg/kg	n/v	n/v	240,000	3,000,000	<19	<17	<23	<18	<23	<24	<25	<20	<19	<18
Indeno(1,2,3-cd)pyrene	µg/kg	n/v	n/v	1,100	21,000	<28	<24	<33	<26	<33	<34	<36	<28	<28	<26
Methylnaphthalene, 1-	µg/kg	n/v	n/v	18,000	73,000	<23	<20	<27	<22	<27	<28	<30	<23	<23	<22
Methylnaphthalene, 2-	µg/kg	n/v	n/v	24,000	300,000	<24	<21	<29	<23	<28	<30	<31	<24	<24	<22
Naphthalene	µg/kg	1,420	n/v	n/a	17,000	<24	<21	<29	<23	<29	<30	<32	<24	<24	<23
Phenanthrene	µg/kg	n/v	n/v	n/v	n/v	<24	<21	<29	<23	<29	<30	<32	<24	<24	<22



Table 2
Summary of Soil Analytical Results
Limited Phase II Environmental Site Assessment
Yellow Barn
281 VT Route 15 West
Hardwick, Vermont

Sample Location Sample Date Sample ID Sample Depth Sample Type	Units	VSL	VT DEC Background	USEPA RSL		SB-1		SB-2		SB-3	SB-4		SB-5	SB-6	SB-7A
		Residential	Rural / Urban	Residential	Industrial	25-Mar-19 SB-1 (0.5-1.5) 0.5 - 1.5 ft Primary	25-Mar-19 SB-1 (8-11) 8 - 11 ft Primary	26-Mar-19 SB-2 (0.5-1.5) 0.5 - 1.5 ft Primary	26-Mar-19 SB-2 (10-14) 10 - 14 ft Primary	26-Mar-19 SB-3 (8-11) 8 - 11 ft Primary	26-Mar-19 SB-4 (10-15) 10 - 15 ft Primary	26-Mar-19 DUP 10 - 15 ft Field Duplicate	25-Mar-19 SB-5 (15-17) 15 - 17 ft Primary	26-Mar-19 SB-6 (5-9) 5 - 9 ft Primary	26-Mar-19 SB-7A (5-7) 5 - 7 ft Primary
A	B	C	D												
Pyrene	µg/kg	n/v	n/v	180,000	2,300,000	<20	<17	<24	<19	<23	<24	<26	<20	<20	<18
Toxic Equivalent Concentration															
Benzo(a)anthracene	0.10					0	0	0	0	0	0	0	0	0	0
Benzo(a)pyrene	1.00					0	0	0	0	0	0	0	0	0	0
Benzo(b)fluoranthene	0.10					0	0	0	0	0	0	0	0	0	0
Benzo(k)fluoranthene	0.01					0	0	0	0	0	0	0	0	0	0
Chrysene	0.01					0	0	0	0	0	0	0	0	0	0
Dibenzo(a,h)anthracene	1.00					0	0	0	0	0	0	0	0	0	0
Indeno(1,2,3-cd)pyrene	0.10					0	0	0	0	0	0	0	0	0	0
Total TEQ	µg/kg	76	26 / 580			0	0	0	0	0	0	0	0	0	0
Volatile Organic Compounds (8260C)															
Acetone	µg/kg	39,900,000	n/v	n/a	67,000,000	-	<3.5	-	31	110	73	110	<4.0	64	5.6 J
Acrylonitrile	µg/kg	n/v	n/v	250	1,100	-	<0.84	-	<0.78	<1.3	<1.3	<1.4	<0.95	<1.1	<0.78
Benzene	µg/kg	442	n/v	n/a	5,100	-	<0.12	-	<0.11	<0.19	<0.19	<0.20	<0.14	<0.15	<0.11
Bromobenzene	µg/kg	n/v	n/v	29,000	180,000	-	<0.11	-	<0.10	<0.17	<0.17	<0.18	<0.12	<0.13	<0.10
Bromodichloromethane	µg/kg	n/v	n/v	290	1,300	-	<0.08	-	<0.07	<0.13	<0.13	<0.13	<0.09	<0.10	<0.07
Bromoform (Tribromomethane)	µg/kg	n/v	n/v	19,000	86,000	-	<0.18	-	<0.17	<0.28	<0.29	<0.30	<0.20	<0.23	<0.17
Bromomethane (Methyl bromide)	µg/kg	n/v	n/v	680	3,000	-	<0.42	-	<0.40	<0.67	<0.68	<0.70	<0.48	<0.54	<0.40
Butylbenzene, n-	µg/kg	n/v	n/v	390,000	5,800,000	-	<0.12	-	<0.11	<0.19	<0.19	<0.20	<0.14	<0.15	<0.11
Butylbenzene, sec- (2-Phenylbutane)	µg/kg	n/v	n/v	780,000	12,000,000	-	<0.11	-	<0.10	<0.17	<0.17	<0.18	<0.12	<0.14	<0.10
Butylbenzene, tert-	µg/kg	n/v	n/v	780,000	12,000,000	-	<0.09	-	<0.08	<0.14	<0.14	<0.14	<0.10	<0.11	<0.08
Carbon Disulfide	µg/kg	n/v	n/v	77,000	350,000	-	<3.3	-	<3.1	<5.3	<5.3	<5.5	<3.8	<4.2	<3.1
Carbon Tetrachloride (Tetrachloromethane)	µg/kg	247	n/v	n/a	2,900	-	<0.17	-	<0.16	<0.27	<0.27	<0.28	<0.19	<0.21	<0.16
Chlorobenzene (Monochlorobenzene)	µg/kg	273,000	n/v	n/a	130,000	-	<0.09	-	<0.09	<0.15	<0.15	<0.15	<0.10	<0.12	<0.09
Chlorobromomethane	µg/kg	129,000	n/v	n/a	63,000	-	<0.15	-	<0.14	<0.24	<0.24	<0.25	<0.17	<0.19	<0.14
Chloroethane (Ethyl Chloride)	µg/kg	n/v	n/v	1,400,000	5,700,000	-	<0.33	-	<0.31	<0.52	<0.52	<0.54	<0.37	<0.42	<0.31
Chloroform (Trichloromethane)	µg/kg	n/v	n/v	320	1,400	-	<0.10	-	<0.10	<0.16	<0.16	<0.17	<0.12	<0.13	<0.10
Chloromethane	µg/kg	n/v	n/v	11,000	46,000	-	<0.68	-	<0.64	<1.1	<1.1	<1.1	<0.77	<0.86	<0.63
Chlorotoluene, 2-	µg/kg	n/v	n/v	160,000	2,300,000	-	<0.14	-	<0.13	<0.22	<0.22	<0.23	<0.16	<0.18	<0.13
Chlorotoluene, 4-	µg/kg	n/v	n/v	160,000	2,300,000	-	<0.08	-	<0.07	<0.12	<0.12	<0.13	<0.09	<0.10	<0.07
Dibromo-3-Chloropropane, 1,2- (DBCP)	µg/kg	3.27	n/v	n/a	64	-	<0.73	-	<0.68	<1.2	<1.2	<1.2	<0.82	<0.92	<0.68
Dibromochloromethane	µg/kg	n/v	n/v	8,300	39,000	-	<0.10	-	<0.10	<0.16	<0.16	<0.17	<0.12	<0.13	<0.10
Dibromomethane (Methylene Bromide)	µg/kg	n/v	n/v	2,400	9,900	-	<0.17	-	<0.16	<0.28	<0.28	<0.29	<0.20	<0.22	<0.16
Dichloro-2-Butene, trans-1,4-	µg/kg	n/v	n/v	7.4	32	-	<1.0	-	<0.97	<1.6	<1.6	<1.7	<1.2	<1.3	<0.97
Dichlorobenzene, 1,2-	µg/kg	n/v	n/v	180,000	930,000	-	<0.10	-	<0.10	<0.17	<0.17	<0.17	<0.12	<0.13	<0.10
Dichlorobenzene, 1,3-	µg/kg	n/v	n/v	n/v	n/v	-	<0.11	-	<0.10	<0.17	<0.17	<0.18	<0.12	<0.14	<0.10
Dichlorobenzene, 1,4-	µg/kg	n/v	n/v	2,600	11,000	-	<0.12	-	<0.12	<0.20	<0.20	<0.21	<0.14	<0.16	<0.12
Dichlorobutane, 1,4-	µg/kg	n/v	n/v	n/v	n/v	-	<0.16	-	<0.15	<0.26	<0.26	<0.27	<0.19	<0.21	<0.15
Dichlorodifluoromethane (Freon 12)	µg/kg	n/v	n/v	8,700	37,000	-	<0.67	-	<0.62	<1.1	<1.1	<1.1	<0.76	<0.85	<0.62
Dichloroethane, 1,1-	µg/kg	n/v	n/v	3,600	16,000	-	<0.11	-	<0.10	<0.17	<0.17	<0.18	<0.12	<0.13	<0.10
Dichloroethane, 1,2-	µg/kg	175	n/v	n/a	2,000	-	<0.19	-	<0.18	<0.30	<0.30	<0.31	<0.21	<0.24	<0.18
Dichloroethene, 1,1-	µg/kg	n/v	n/v	23,000	100,000	-	<0.17	-	<0.16	<0.28	<0.28	<0.29	<0.20	<0.22	<0.16
Dichloroethene, cis-1,2-	µg/kg	146,000	n/v	n/a	230,000	-	<0.13	-	<0.12	<0.20	<0.20	<0.21	<0.14	<0.16	<0.12
Dichloroethene, trans-1,2-	µg/kg	1,460,000	n/v	n/a	2,300,000	-	<0.10	-	<0.09	<0.16	<0.16	<0.16	<0.11	<0.13	<0.09
Dichloroethene-1,2- (sum)	µg/kg	n/v	n/v	n/v	n/v	-	<0.10	-	<0.09	<0.16	<0.16	<0.16	<0.11	<0.13	<0.09
Dichloropropane, 1,2-	µg/kg	n/v	n/v	1,600	6,600	-	<0.09	-	<0.09	<0.14	<0.14	<0.15	<0.10	<0.12	<0.09
Dichloropropane, 1,3-	µg/kg	n/v	n/v	160,000	2,300,000	-	<0.12	-	<0.11	<0.19	<0.19	<0.20	<0.14	<0.15	<0.11
Dichloropropane, 2,2-	µg/kg	n/v	n/v	n/v	n/v	-	<0.15	-	<0.14	<0.23	<0.23	<0.24	<0.17	<0.19	<0.14
Dichloropropene, 1,1-	µg/kg	n/v	n/v	n/v	n/v	-	<0.12	-	<0.11	<0.18	<0.18	<0.19	<0.13	<0.15	<0.11
Dichloropropene, 1,3- (sum of isomers cis + trans)	µg/kg	n/v	n/v	1,800	8,200	-	<0.12	-	<0.11	<0.18	<0.18	<0.19	<0.13	<0.15	<0.11
Dichloropropene, cis-1,3-	µg/kg	n/v	n/v	n/v	n/v	-	<0.12	-	<0.11	<0.18	<0.18	<0.19	<0.13	<0.15	<0.11
Dichloropropene, trans-1,3-	µg/kg	n/v	n/v	n/v	n/v	-	<0.20	-	<0.19	<0.32	<0.32	<0.33	<0.22	<0.25	<0.18
Ethyl Ether (Diethyl ether)	µg/kg	n/v	n/v	1,600,000	23,000,000	-	<0.25	-	<0.23	<0.40	<0.40	<0.41	<0.28	<0.32	<0.23
Ethyl Methacrylate	µg/kg	n/v	n/v	180,000	760,000	-	<1.2	-	<1.1	<1.8	<1.8	<1.9	<1.3	<1.5	<1.1
Ethylbenzene	µg/kg	2,210	n/v	n/a	25,000	-	<0.10	-	<0.10	<0.16	<0.16	<0.17	<0.12	<0.13	<0.10
Ethylene Dibromide (Dibromoethane, 1,2-)	µg/kg	n/v	n/v	36	160	-	<0.20	-	<0.19	<0.32	<0.32	<0.34	<0.23	<0.26	<0.19
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	µg/kg	n/v	n/v	1,200	5,300	-	<0.12	-	<0.12	<0.20	<0.20	<0.20	<0.14	<0.16	<0.12
Hexanone, 2- (Methyl Butyl Ketone)	µg/kg	n/v	n/v	20,000	130,000	-	<0.86	-	<0.80	<1.4	<1.4	<1.4	<0.98	<1.1	<0.80
Isopropylbenzene	µg/kg	n/v	n/v	190,000	990,000	-	<0.08	-	<0.07	<0.13	<0.13	<0.13	<0.09	<0.10	<0.07
Isopropyltoluene, p- (Cymene)	µg/kg	n/v	n/v	n/v	n/v	-	<0.08	-	<0.07	<0.13	<0.13	<0.13	<0.09	<0.10	<0.07
Methyl Ethyl Ketone (MEK) (2-Butanone)	µg/kg	26,000,000	n/v	n/a	19,000,000	-	<1.6	-	3.2 J	20	10 J	21	<1.8	6.4 J	<1.5
Methyl Isobutyl Ketone (MIBK)	µg/kg	n/v	n/v	3,300,000	14,000,000	-	<0.94	-	<0.87	2.3 J	<1.5	<1.5	<1.0	<1.2	<0.87



Table 2
Summary of Soil Analytical Results
Limited Phase II Environmental Site Assessment
Yellow Barn
281 VT Route 15 West
Hardwick, Vermont

Sample Location		VSL	VT DEC Background	USEPA RSL		SB-1		SB-2		SB-3	SB-4		SB-5	SB-6	SB-7A
Sample Date						25-Mar-19 SB-1 (0.5-1.5)	25-Mar-19 SB-1 (8-11)	26-Mar-19 SB-2 (0.5-1.5)	26-Mar-19 SB-2 (10-14)	26-Mar-19 SB-3 (8-11)	26-Mar-19 SB-4 (10-15)	26-Mar-19 DUP	25-Mar-19 SB-5 (15-17)	26-Mar-19 SB-6 (5-9)	26-Mar-19 SB-7A (5-7)
Sample ID						0.5 - 1.5 ft	8 - 11 ft	0.5 - 1.5 ft	10 - 14 ft	8 - 11 ft	10 - 15 ft	10 - 15 ft	15 - 17 ft	5 - 9 ft	5 - 7 ft
Sample Depth						Primary	Primary	Primary	Primary	Primary	Primary	Field Duplicate	Primary	Primary	Primary
Sample Type	Units	A	B	C	D										
Methyl tert-butyl ether (MTBE)	µg/kg	n/v	n/v	47,000	210,000	-	<0.15	-	<0.14	<0.23	<0.23	<0.24	<0.17	<0.19	<0.14
Methylene Chloride (Dichloromethane)	µg/kg	n/v	n/v	35,000	320,000	-	<1.7	-	<1.6	<2.6	<2.7	<2.8	<1.9	<2.1	<1.6
Naphthalene	µg/kg	1,420	n/v	n/a	17,000	-	<0.48	-	<0.44	<0.75	<0.76	<0.78	<0.54	<0.60	<0.44
Propylbenzene, n-	µg/kg	n/v	n/v	380,000	2,400,000	-	<0.12	-	<0.12	<0.20	<0.20	<0.21	<0.14	<0.16	<0.12
Styrene	µg/kg	n/v	n/v	600,000	3,500,000	-	<0.14	-	<0.13	<0.23	<0.23	<0.24	<0.16	<0.18	<0.13
Tetrachloroethane, 1,1,1,2-	µg/kg	n/v	n/v	2,000	8,800	-	<0.10	-	<0.09	<0.15	<0.15	<0.16	<0.11	<0.12	<0.09
Tetrachloroethane, 1,1,2,2-	µg/kg	n/v	n/v	600	2,700	-	<0.12	-	<0.11	<0.19	<0.19	<0.20	<0.14	<0.15	<0.11
Tetrachloroethene (PCE)	µg/kg	1,460	n/v	n/a	39,000	-	<0.14	-	<0.13	<0.23	<0.23	<0.24	<0.16	<0.18	<0.13
Tetrahydrofuran	µg/kg	n/v	n/v	1,800,000	9,400,000	-	<1.2	-	<1.1	<1.8	<1.8	<1.9	<1.3	<1.5	<1.1
Toluene	µg/kg	4,640,000	n/v	n/a	4,700,000	-	<0.40	-	<0.37	<0.63	<0.63	<0.66	<0.45	<0.50	<0.37
Trichlorobenzene, 1,2,3-	µg/kg	n/v	n/v	6,300	93,000	-	<0.24	-	<0.22	<0.37	<0.37	<0.39	<0.27	<0.30	<0.22
Trichlorobenzene, 1,2,4-	µg/kg	n/v	n/v	5,800	26,000	-	<0.20	-	<0.18	<0.32	<0.32	<0.33	<0.22	<0.25	<0.18
Trichloroethane, 1,1,1-	µg/kg	n/v	n/v	810,000	3,600,000	-	<0.12	-	<0.11	<0.19	<0.19	<0.20	<0.14	<0.15	<0.11
Trichloroethane, 1,1,2-	µg/kg	n/v	n/v	150	630	-	<0.20	-	<0.18	<0.31	<0.31	<0.32	<0.22	<0.25	<0.18
Trichloroethene (TCE)	µg/kg	442	n/v	n/a	1,900	-	<0.10	-	<0.09	<0.16	<0.16	<0.16	<0.11	<0.13	<0.09
Trichlorofluoromethane (Freon 11)	µg/kg	n/v	n/v	2,300,000	35,000,000	-	<0.51	-	<0.47	<0.81	<0.81	<0.84	<0.57	<0.64	<0.47
Trichloropropane, 1,2,3-	µg/kg	3.24	n/v	n/a	110	-	<0.09	-	<0.09	<0.15	<0.15	<0.15	<0.10	<0.12	<0.09
Trimethylbenzene, 1,2,4-	µg/kg	264,000	n/v	n/a	180,000	-	<0.24	-	<0.23	<0.39	<0.39	<0.40	<0.28	<0.31	<0.23
Trimethylbenzene, 1,3,5-	µg/kg	264,000	n/v	n/a	150,000	-	<0.14	-	<0.13	<0.22	<0.22	<0.23	<0.16	<0.18	<0.13
Total Trimethylbenzenes	µg/kg	264,000	n/v	n/v	n/v	-	0	-	0	0	0	0	0	0	0
Vinyl Acetate	µg/kg	n/v	n/v	91,000	380,000	-	<1.6	-	<1.5	<2.5	<2.5	<2.6	<1.8	<2.0	<1.5
Vinyl Chloride	µg/kg	n/v	n/v	59	1,700	-	<0.24	-	<0.23	<0.39	<0.39	<0.40	<0.28	<0.31	<0.23
Xylene, m & p-	µg/kg	n/v	n/v	n/v	n/v	-	<0.41	-	<0.38	<0.65	<0.65	<0.68	<0.46	<0.52	<0.38
Xylene, o-	µg/kg	n/v	n/v	65,000	280,000	-	<0.21	-	<0.20	<0.34	<0.34	<0.35	<0.24	<0.27	<0.20
Xylenes, Total	µg/kg	575,000	n/v	n/a	250,000	-	<0.21	-	<0.20	<0.34	<0.34	<0.35	<0.24	<0.27	<0.20

Notes:
VSL Vermont Screening Levels, Investigation and Remediation of Contaminated Properties Rule, July 27, 2017 (Appendix A - Soil Screening Levels).
A Vermont Soil Screening Levels
B VT DEC Background Soil Concentrations Rural / Urban
USEPA RSL United States Environmental Protection Agency Regional Screening Levels (RSLs)
C Resident Soil Screening Levels (TR=1E-06, THQ=0.1) (May 2018)
D Industrial Soil Screening Levels (TR=1E-06, THQ=0.1) (May 2018)
15.2 Measured concentration did not exceed the indicated standard.
B Concentration exceeds the indicated standard B.
<0.50 Non-detect value exceeds the most stringent of all criteria.
<0.03 Analyte was not detected at a concentration greater than the laboratory method detection limit.
- Parameter not analyzed / not available.
Blank cell no screening level applies
n/a Vermont Screening Levels (VSLs) for residential soil concentrations used; EPA Residential RSL not applicable.
n/v No standard/guideline value.
TEQ Toxic Equivalence Quotient relative to benzo(a)pyrene
TPH Total petroleum hydrocarbons
VT DEC Vermont Department of Environmental Conservation
Soil results are reported on a dry-weight basis.
Total Trihalomethanes: comprised of bromodichloromethane, bromoform, chloroform, and dibromochloromethane.
Total Trimethylbenzenes: 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene.

Data Validation Qualifiers:
J The reported result is an estimated value.

Table 2
Summary of Soil Analytical Results
Limited Phase II Environmental Site Assessment
Yellow Barn
281 VT Route 15 West
Hardwick, Vermont

Sample Location Sample Date Sample ID Sample Depth Sample Type	Units	VSL	VT DEC Background	USEPA RSL		SB-8		SS-1		SS-2	
		Residential	Rural / Urban	Residential	Industrial	25-Mar-19 SB-8 (0.5-1.5)	25-Mar-19 SB-8 (10-14)	29-Mar-19 SS-1 (0-0.5)	29-Mar-19 SS-1 (3.0-3.5)	29-Mar-19 SS-2 (0-0.5)	29-Mar-19 SS-2 (36-43)
						0.5 - 1.5 ft	10 - 14 ft	0 - 0.5 ft	3 - 3.5 ft	0 - 0.5 ft	36 - 43 in
						Primary	Primary	Primary	Primary	Primary	Primary
A	B	C	D								
Metals (6010D/7471B)											
Arsenic	mg/kg	n/v	16	n/a	3.0	7.64	11.1	6.61	8.28	5.58	5.77
Barium	mg/kg	11,700	n/v	n/a	22,000	23.8	6.91	28.6	47.8	26.8	38.7
Cadmium	mg/kg	7.15	n/v	n/a	n/v	<0.043	<0.043	1.10	1.45	4.16	0.945
Chromium	mg/kg	n/v	n/v	n/v	n/v	12.4	19.1	12.2	25.2	11.4	29.2
Lead	mg/kg	n/v	41 / 111	400	800	20.8	6.89	95.8	159	127	6.58
Mercury	mg/kg	10.9	n/v	n/a	4.6	<0.015	<0.015	<0.017	0.020 J	<0.017	<0.018
Selenium	mg/kg	382	n/v	n/a	580	0.436 J	0.312 J	<0.125	<0.143	<0.128	<0.129
Silver	mg/kg	247	n/v	n/a	580	<0.123	<0.123	<0.137	<0.157	0.916	0.175 J
Pesticides (8081B)											
Aldrin	µg/kg	20.2	n/v	n/a	180	<0.611	-	-	-	-	-
BHC, alpha-	µg/kg	n/v	n/v	86	360	<0.205	-	-	-	-	-
BHC, beta-	µg/kg	n/v	n/v	300	1,300	<0.658	-	-	-	-	-
BHC, delta-	µg/kg	n/v	n/v	n/v	n/v	<0.340	-	-	-	-	-
Camphechlor (Toxaphene)	µg/kg	n/v	n/v	490	2,100	<9.11	-	-	-	-	-
Chlordane (Total)	µg/kg	n/v	n/v	1,700	7,700	<5.75	-	-	-	-	-
Chlordane, alpha-	µg/kg	n/v	n/v	n/v	n/v	<0.604	-	-	-	-	-
Chlordane, trans- (gamma-Chlordane)	µg/kg	n/v	n/v	n/v	n/v	<0.572	-	-	-	-	-
DDD (p,p'-DDD)	µg/kg	n/v	n/v	190	2,500	<0.619	-	-	-	-	-
DDE (p,p'-DDE)	µg/kg	n/v	n/v	2,000	9,300	<0.401	-	-	-	-	-
DDT (p,p'-DDT)	µg/kg	n/v	n/v	1,900	8,500	<1.40	-	-	-	-	-
Dieldrin	µg/kg	n/v	n/v	34	140	<0.542	-	-	-	-	-
Endosulfan I	µg/kg	n/v	n/v	n/v	n/v	<0.410	-	-	-	-	-
Endosulfan II	µg/kg	n/v	n/v	n/v	n/v	<0.580	-	-	-	-	-
Endosulfan Sulfate	µg/kg	n/v	n/v	n/v	n/v	<0.344	-	-	-	-	-
Endrin	µg/kg	n/v	n/v	1,900	25,000	<0.296	-	-	-	-	-
Endrin Aldehyde	µg/kg	n/v	n/v	n/v	n/v	<0.759	-	-	-	-	-
Endrin Ketone	µg/kg	n/v	n/v	n/v	n/v	<0.447	-	-	-	-	-
Heptachlor	µg/kg	n/v	n/v	130	630	<0.389	-	-	-	-	-
Heptachlor Epoxide	µg/kg	n/v	n/v	70	330	<0.976	-	-	-	-	-
Lindane (Hexachlorocyclohexane, gamma)	µg/kg	n/v	n/v	570	2,500	<0.323	-	-	-	-	-
Methoxychlor (4,4'-Methoxychlor)	µg/kg	n/v	n/v	32,000	410,000	<1.01	-	-	-	-	-
Herbicides (8151A)											
2,4,5-TP (Silvex)	µg/kg	n/v	n/v	51,000	660,000	<5.02	-	-	-	-	-
2,4-DB	µg/kg	n/v	n/v	190,000	2,500,000	<9.69	-	-	-	-	-
Dicamba	µg/kg	n/v	n/v	190,000	2,500,000	<6.34	-	-	-	-	-
Dichlorophenoxy acetic acid, 2,4- (2,4-D)	µg/kg	n/v	n/v	70,000	960,000	<11.9	-	-	-	-	-
Dichloropropionic acid, 2,2- (Dalapon)	µg/kg	n/v	n/v	190,000	2,500,000	<12.3	-	-	-	-	-
Dichloroprop	µg/kg	n/v	n/v	n/v	n/v	<10.8	-	-	-	-	-
MCPA (2-Methyl-4-Chlorophenoxyacetic Acid)	µg/kg	n/v	n/v	3,200	41,000	<1,070	-	-	-	-	-
MCPP (2-(2-Methyl-4-chlorophenoxy) propionic acid)	µg/kg	n/v	n/v	6,300	82,000	<1,190	-	-	-	-	-
Trichlorophenoxy acetic acid, 2,4,5- (2,4,5-T)	µg/kg	n/v	n/v	63,000	820,000	<5.84	-	-	-	-	-
Polycyclic Aromatic Hydrocarbons (8270D)											
Acenaphthene	µg/kg	n/v	n/v	360,000	4,500,000	<19	<20	<62	<68	<62	<23
Acenaphthylene	µg/kg	n/v	n/v	n/v	n/v	<28	<29	<93	<100	<93	<34
Anthracene	µg/kg	n/v	n/v	1,800,000	23,000,000	<36	<37	<120	<130	<120	<43
Benzo(a)anthracene	µg/kg	n/v	n/v	1,100	21,000	54 J	<22	<68	<74	<68	<25
Benzo(a)pyrene	µg/kg	76	n/v	n/a	2,100	56 J	<47	<150	<160	<150	<54
Benzo(b)fluoranthene	µg/kg	n/v	n/v	1,100	21,000	72 J	<32	<100	<110	<100	<37
Benzo(g,h,i)perylene	µg/kg	n/v	n/v	n/v	n/v	35 J	<22	160 J	<77	410 J	<26
Benzo(k)fluoranthene	µg/kg	n/v	n/v	11,000	210,000	<29	<30	<96	<100	<96	<35
Chloronaphthalene, 2-	µg/kg	n/v	n/v	480,000	6,000,000	<18	<19	<60	<65	<60	<22
Chrysene	µg/kg	n/v	n/v	110,000	2,100,000	53 J	<20	<62	<68	<63	<23
Dibenzo(a,h)anthracene	µg/kg	n/v	n/v	110	2,100	<21	<22	<70	<76	<70	<25
Fluoranthene	µg/kg	n/v	n/v	240,000	3,000,000	100 J	<22	<69	<76	<69	<25
Fluorene	µg/kg	n/v	n/v	240,000	3,000,000	<18	<18	<58	<64	<58	<21
Indeno(1,2,3-cd)pyrene	µg/kg	n/v	n/v	1,100	21,000	39 J	<27	<84	<92	140 J	<31
Methylnaphthalene, 1-	µg/kg	n/v	n/v	18,000	73,000	<21	<22	<70	<76	<70	<26
Methylnaphthalene, 2-	µg/kg	n/v	n/v	24,000	300,000	<22	<23	<73	<80	<73	<26
Naphthalene	µg/kg	1,420	n/v	n/a	17,000	<22	<23	<73	<80	<73	<27
Phenanthrene	µg/kg	n/v	n/v	n/v	n/v	40 J	<23	<73	<80	<73	<27



Table 2
Summary of Soil Analytical Results
Limited Phase II Environmental Site Assessment
Yellow Barn
281 VT Route 15 West
Hardwick, Vermont

Sample Location Sample Date Sample ID Sample Depth Sample Type	Units	VSL	VT DEC Background	USEPA RSL		SB-8		SS-1		SS-2	
		Residential	Rural / Urban	Residential	Industrial	25-Mar-19 SB-8 (0.5-1.5)	25-Mar-19 SB-8 (10-14)	29-Mar-19 SS-1 (0-0.5)	29-Mar-19 SS-1 (3.0-3.5)	29-Mar-19 SS-2 (0-0.5)	29-Mar-19 SS-2 (36-43)
						0.5 - 1.5 ft	10 - 14 ft	0 - 0.5 ft	3 - 3.5 ft	0 - 0.5 ft	36 - 43 in
						Primary	Primary	Primary	Primary	Primary	Primary
		A	B	C	D						
Pyrene	µg/kg	n/v	n/v	180,000	2,300,000	100 J	<19	<60	<65	63 J	<22
Toxic Equivalent Concentration											
Benzo(a)anthracene	0.10					5.4	0	0	0	0	0
Benzo(a)pyrene	1.00					56	0	0	0	0	0
Benzo(b)fluoranthene	0.10					7.2	0	0	0	0	0
Benzo(k)fluoranthene	0.01					0	0	0	0	0	0
Chrysene	0.01					0.5	0	0	0	0	0
Dibenzo(a,h)anthracene	1.00					0	0	0	0	0	0
Indeno(1,2,3-cd)pyrene	0.10					3.9	0	0	0	14	0
Total TEQ	µg/kg	76	26 / 580			73	0	0	0	14	0
Volatile Organic Compounds (8260C)											
Acetone	µg/kg	39,900,000	n/v	n/a	67,000,000	-	4.3 J	<390	<610	<390	440 J
Acrylonitrile	µg/kg	n/v	n/v	250	1,100	-	<0.70	<93	<150	<92	<100
Benzene	µg/kg	442	n/v	n/a	5,100	-	<0.10	<13	<21	<13	<14
Bromobenzene	µg/kg	n/v	n/v	29,000	180,000	-	<0.09	<12	<18	<12	<13
Bromodichloromethane	µg/kg	n/v	n/v	290	1,300	-	<0.07	<8.8	<14	<8.8	<9.5
Bromoform (Tribromomethane)	µg/kg	n/v	n/v	19,000	86,000	-	<0.15	<20	<31	<20	<22
Bromomethane (Methyl bromide)	µg/kg	n/v	n/v	680	3,000	-	<0.36	<47	<74	<47	<51
Butylbenzene, n-	µg/kg	n/v	n/v	390,000	5,800,000	-	<0.10	<14	<21	<13	<14
Butylbenzene, sec- (2-Phenylbutane)	µg/kg	n/v	n/v	780,000	12,000,000	-	<0.09	<12	<18	<12	<13
Butylbenzene, tert-	µg/kg	n/v	n/v	780,000	12,000,000	-	<0.07	<9.6	<15	<9.5	<10
Carbon Disulfide	µg/kg	n/v	n/v	77,000	350,000	-	<2.8	<370	<580	<360	<400
Carbon Tetrachloride (Tetrachloromethane)	µg/kg	247	n/v	n/a	2,900	-	<0.14	<19	<29	<18	<20
Chlorobenzene (Monochlorobenzene)	µg/kg	273,000	n/v	n/a	130,000	-	<0.08	<10	<16	<10	<11
Chlorobromomethane	µg/kg	129,000	n/v	n/a	63,000	-	<0.12	<17	<26	<16	<18
Chloroethane (Ethyl Chloride)	µg/kg	n/v	n/v	1,400,000	5,700,000	-	<0.28	<37	<57	<36	<40
Chloroform (Trichloromethane)	µg/kg	n/v	n/v	320	1,400	-	<0.09	<11	<18	<11	<12
Chloromethane	µg/kg	n/v	n/v	11,000	46,000	-	<0.57	<76	<120	<75	<81
Chlorotoluene, 2-	µg/kg	n/v	n/v	160,000	2,300,000	-	<0.12	<16	<24	<15	<17
Chlorotoluene, 4-	µg/kg	n/v	n/v	160,000	2,300,000	-	<0.07	<8.8	<14	<8.7	<9.4
Dibromo-3-Chloropropane, 1,2- (DBCP)	µg/kg	3.27	n/v	n/a	64	-	<0.61	<81	<130	<80	<87
Dibromochloromethane	µg/kg	n/v	n/v	8,300	39,000	-	<0.09	<11	<18	<11	<12
Dibromomethane (Methylene Bromide)	µg/kg	n/v	n/v	2,400	9,900	-	<0.15	<19	<30	<19	<21
Dichloro-2-Butene, trans-1,4-	µg/kg	n/v	n/v	7.4	32	-	<0.87	<120	<180	<110	<120
Dichlorobenzene, 1,2-	µg/kg	n/v	n/v	180,000	930,000	-	<0.09	<12	<18	<12	<12
Dichlorobenzene, 1,3-	µg/kg	n/v	n/v	n/v	n/v	-	<0.09	<12	<19	<12	<13
Dichlorobenzene, 1,4-	µg/kg	n/v	n/v	2,600	11,000	-	<0.10	<14	<22	<14	<15
Dichlorobutane, 1,4-	µg/kg	n/v	n/v	n/v	n/v	-	<0.14	<18	<29	<18	<20
Dichlorodifluoromethane (Freon 12)	µg/kg	n/v	n/v	8,700	37,000	-	<0.56	<74	<120	<74	<80
Dichloroethane, 1,1-	µg/kg	n/v	n/v	3,600	16,000	-	<0.09	<12	<18	<12	<13
Dichloroethane, 1,2-	µg/kg	175	n/v	n/a	2,000	-	<0.16	<21	<33	<21	<22
Dichloroethene, 1,1-	µg/kg	n/v	n/v	23,000	100,000	-	<0.15	<19	<30	<19	<21
Dichloroethene, cis-1,2-	µg/kg	146,000	n/v	n/a	230,000	-	<0.11	<14	<22	<14	<15
Dichloroethene, trans-1,2-	µg/kg	1,460,000	n/v	n/a	2,300,000	-	<0.08	<11	<17	<11	<12
Dichloroethene-1,2- (sum)	µg/kg	n/v	n/v	n/v	n/v	-	<0.08	<11	<17	<11	<12
Dichloropropane, 1,2-	µg/kg	n/v	n/v	1,600	6,600	-	<0.08	<10	<16	<10	<11
Dichloropropane, 1,3-	µg/kg	n/v	n/v	160,000	2,300,000	-	<0.10	<14	<21	<13	<14
Dichloropropane, 2,2-	µg/kg	n/v	n/v	n/v	n/v	-	<0.12	<16	<26	<16	<18
Dichloropropene, 1,1-	µg/kg	n/v	n/v	n/v	n/v	-	<0.10	<13	<20	<13	<14
Dichloropropene, 1,3- (sum of isomers cis + trans)	µg/kg	n/v	n/v	1,800	8,200	-	<0.10	<13	<20	<13	<14
Dichloropropene, cis-1,3-	µg/kg	n/v	n/v	n/v	n/v	-	<0.10	<13	<20	<13	<14
Dichloropropene, trans-1,3-	µg/kg	n/v	n/v	n/v	n/v	-	<0.17	<22	<35	<22	<24
Ethyl Ether (Diethyl ether)	µg/kg	n/v	n/v	1,600,000	23,000,000	-	<0.21	<28	<43	<27	<30
Ethyl Methacrylate	µg/kg	n/v	n/v	180,000	760,000	-	<0.97	<130	<200	<130	<140
Ethylbenzene	µg/kg	2,210	n/v	n/a	25,000	-	<0.09	<11	<18	<11	<12
Ethylene Dibromide (Dibromoethane, 1,2-)	µg/kg	n/v	n/v	36	160	-	<0.17	<23	<35	<22	<24
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	µg/kg	n/v	n/v	1,200	5,300	-	<0.10	<14	<21	<14	<15
Hexanone, 2- (Methyl Butyl Ketone)	µg/kg	n/v	n/v	20,000	130,000	-	<0.72	<96	<150	<95	<100
Isopropylbenzene	µg/kg	n/v	n/v	190,000	990,000	-	<0.07	<8.8	<14	<8.8	<9.5
Isopropyltoluene, p- (Cymene)	µg/kg	n/v	n/v	n/v	n/v	-	<0.07	<8.8	<14	<8.8	<9.5
Methyl Ethyl Ketone (MEK) (2-Butanone)	µg/kg	26,000,000	n/v	n/a	19,000,000	-	<1.4	<180	<280	<180	<190
Methyl Isobutyl Ketone (MIBK)	µg/kg	n/v	n/v	3,300,000	14,000,000	-	<0.78	<100	<160	<100	<110



Table 2
Summary of Soil Analytical Results
Limited Phase II Environmental Site Assessment
Yellow Barn
281 VT Route 15 West
Hardwick, Vermont

Sample Location		VSL	VT DEC Background	USEPA RSL		SB-8		SS-1		SS-2	
Sample Date						25-Mar-19	25-Mar-19	29-Mar-19	29-Mar-19	29-Mar-19	29-Mar-19
Sample ID						SB-8 (0.5-1.5)	SB-8 (10-14)	SS-1 (0-0.5)	SS-1 (3.0-3.5)	SS-2 (0-0.5)	SS-2 (36-43)
Sample Depth		Residential	Rural / Urban	Residential	Industrial	0.5 - 1.5 ft	10 - 14 ft	0 - 0.5 ft	3 - 3.5 ft	0 - 0.5 ft	36 - 43 in
Sample Type	Units	A	B	C	D	Primary	Primary	Primary	Primary	Primary	Primary
Methyl tert-butyl ether (MTBE)	µg/kg	n/v	n/v	47,000	210,000	-	<0.12	<16	<26	<16	<18
Methylene Chloride (Dichloromethane)	µg/kg	n/v	n/v	35,000	320,000	-	<1.4	<180	<290	<180	<200
Naphthalene	µg/kg	1,420	n/v	n/a	17,000	-	<0.40	<53	<82	<52	<57
Propylbenzene, n-	µg/kg	n/v	n/v	380,000	2,400,000	-	<0.10	<14	<22	<14	<15
Styrene	µg/kg	n/v	n/v	600,000	3,500,000	-	<0.12	<16	<25	<16	<17
Tetrachloroethane, 1,1,1,2-	µg/kg	n/v	n/v	2,000	8,800	-	<0.08	<11	<17	<11	<12
Tetrachloroethane, 1,1,2,2-	µg/kg	n/v	n/v	600	2,700	-	<0.10	<13	<21	<13	<14
Tetrachloroethene (PCE)	µg/kg	1,460	n/v	n/a	39,000	-	<0.12	<16	<25	<16	<17
Tetrahydrofuran	µg/kg	n/v	n/v	1,800,000	9,400,000	-	<0.98	<130	<200	<130	<140
Toluene	µg/kg	4,640,000	n/v	n/a	4,700,000	-	<0.33	<44	<69	<44	<47
Trichlorobenzene, 1,2,3-	µg/kg	n/v	n/v	6,300	93,000	-	<0.20	<26	<41	<26	<28
Trichlorobenzene, 1,2,4-	µg/kg	n/v	n/v	5,800	26,000	-	<0.17	<22	<34	<22	<24
Trichloroethane, 1,1,1-	µg/kg	n/v	n/v	810,000	3,600,000	-	<0.10	<14	<21	<13	<14
Trichloroethane, 1,1,2-	µg/kg	n/v	n/v	150	630	-	<0.16	<22	<34	<21	<23
Trichloroethene (TCE)	µg/kg	442	n/v	n/a	1,900	-	<0.08	<11	<17	<11	<12
Trichlorofluoromethane (Freon 11)	µg/kg	n/v	n/v	2,300,000	35,000,000	-	<0.43	<56	<88	<56	<61
Trichloropropane, 1,2,3-	µg/kg	3.24	n/v	n/a	110	-	<0.08	<10	<16	<10	<11
Trimethylbenzene, 1,2,4-	µg/kg	264,000	n/v	n/a	180,000	-	<0.20	<27	<42	<27	<29
Trimethylbenzene, 1,3,5-	µg/kg	264,000	n/v	n/a	150,000	-	<0.12	<16	<24	<16	<17
Total Trimethylbenzenes	µg/kg	264,000	n/v	n/v	n/v	-	0	0	0	0	0
Vinyl Acetate	µg/kg	n/v	n/v	91,000	380,000	-	<1.3	<170	<270	<170	<190
Vinyl Chloride	µg/kg	n/v	n/v	59	1,700	-	<0.20	<27	<42	<27	<29
Xylene, m & p-	µg/kg	n/v	n/v	n/v	n/v	-	<0.34	<45	<71	<45	<49
Xylene, o-	µg/kg	n/v	n/v	65,000	280,000	-	<0.18	<24	<37	<23	<25
Xylenes, Total	µg/kg	575,000	n/v	n/a	250,000	-	<0.18	<24	<37	<23	<25

Notes:

VSL Vermont Screening Levels, Investigation and Remediation of Contaminated Properties Rule, July 27, 2017 (Appendix A - Soil Screening Levels).

A Vermont Soil Screening Levels

B VT DEC Background Soil Concentrations Rural / Urban

USEPA RSL United States Environmental Protection Agency Regional Screening Levels (RSLs)

C Resident Soil Screening Levels (TR=1E-06, THQ=0.1) (May 2018)

D Industrial Soil Screening Levels (TR=1E-06, THQ=0.1) (May 2018)

15.2 Measured concentration did not exceed the indicated standard.

B Concentration exceeds the indicated standard B.

<0.50 Non-detect value exceeds the most stringent of all criteria.

<0.03 Analyte was not detected at a concentration greater than the laboratory method detection limit.

- Parameter not analyzed / not available.

Blank cell no screening level applies

n/a Vermont Screening Levels (VSLs) for residential soil concentrations used; EPA Residential RSL not applicable.

n/v No standard/guideline value.

TEQ Toxic Equivalence Quotient relative to benzo(a)pyrene

TPH Total petroleum hydrocarbons

VT DEC Vermont Department of Environmental Conservation

Soil results are reported on a dry-weight basis.

Total Trihalomethanes: comprised of bromodichloromethane, bromoform, chloroform, and dibromochloromethane.

Total Trimethylbenzenes: 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene.

Data Validation Qualifiers:

J The reported result is an estimated value.

Table 3
Summary of Groundwater Analytical Results
Limited Phase II Environmental Site Assessment
Yellow Barn
281 VT Route 15 West
Hardwick, Vermont

Sample Location			TW-1	TW-2	TW-3	TW-4		TW-5	TW-8
Sample Date		VSL	27-Mar-19	27-Mar-19	27-Mar-19	27-Mar-19	27-Mar-19	28-Mar-19	28-Mar-19
Sample ID		A	TW-1	TW-2	TW-3	TW-4	DUP-GW	TW-5	TW-8
Sample Type	Units		Primary	Primary	Primary	Primary	Field Duplicate	Primary	Primary
Total Metals (6020B/7470A)									
Arsenic	mg/L	0.01	0.00084	0.00085	0.00317	0.00711	0.00744	0.00259	0.00042 J
Barium	mg/L	2.0	0.00104	0.00423	0.03004	0.1208	0.1248	0.01632	0.00693
Cadmium	mg/L	0.005	<0.00005	<0.00005	0.00012 J	0.00022	0.00025	0.00008 J	<0.00005
Chromium	mg/L	0.10	0.00069 J	0.00114	0.00094 J	0.01144	0.01366	0.00179	0.00097 J
Lead	mg/L	0.015	<0.00034	0.00035 J	<0.00034	0.00742	0.00784	0.00366	<0.00034
Mercury	mg/L	0.002	<0.00009	<0.00009	<0.00009	<0.00009	<0.00009	<0.00009	<0.00009
Selenium	mg/L	0.05	<0.00173	<0.00173	<0.00173	<0.00173	<0.00173	<0.00173	<0.00173
Silver	mg/L	0.05	<0.00016	<0.00016	<0.00016	<0.00016	<0.00016	<0.00016	<0.00016
Pesticides (8081B)									
Aldrin	µg/L	0.05	<0.002	<0.002	-	-	-	-	<0.002
BHC, alpha-	µg/L	n/v	<0.003	<0.003	-	-	-	-	<0.003
BHC, beta-	µg/L	n/v	<0.004	<0.004	-	-	-	-	<0.004
BHC, delta-	µg/L	n/v	<0.003	<0.003	-	-	-	-	<0.003
Camphechlor (Toxaphene)	µg/L	3.0	<0.045	<0.045	-	-	-	-	<0.045
Chlordane (Total)	µg/L	2.0	<0.033	<0.033	-	-	-	-	<0.033
Chlordane, alpha-	µg/L	n/v	<0.005	<0.005	-	-	-	-	<0.005
Chlordane, trans- (gamma-Chlordane)	µg/L	n/v	<0.004	<0.004	-	-	-	-	<0.004
DDD (p,p'-DDD)	µg/L	n/v	<0.003	<0.003	-	-	-	-	<0.003
DDE (p,p'-DDE)	µg/L	n/v	<0.003	<0.003	-	-	-	-	<0.003
DDT (p,p'-DDT)	µg/L	n/v	<0.003	<0.003	-	-	-	-	0.019 J
Dieldrin	µg/L	0.02	<0.003	<0.003	-	-	-	-	<0.003
Endosulfan I	µg/L	n/v	<0.002	<0.002	-	-	-	-	<0.002
Endosulfan II	µg/L	n/v	<0.004	<0.004	-	-	-	-	<0.004
Endosulfan Sulfate	µg/L	n/v	<0.003	<0.003	-	-	-	-	<0.003
Endrin	µg/L	2.0	<0.003	<0.003	-	-	-	-	<0.003
Endrin Aldehyde	µg/L	n/v	<0.006	<0.006	-	-	-	-	<0.006
Endrin Ketone	µg/L	n/v	<0.003	<0.003	-	-	-	-	<0.003
Heptachlor	µg/L	0.4	<0.002	<0.002	-	-	-	-	<0.002
Heptachlor Epoxide	µg/L	0.2	<0.003	<0.003	-	-	-	-	<0.003
Lindane (Hexachlorocyclohexane, gamma)	µg/L	0.2	<0.003	<0.003	-	-	-	-	<0.003
Methoxychlor (4,4'-Methoxychlor)	µg/L	40	<0.005	<0.005	-	-	-	-	<0.005
Herbicides (8151A)									
2,4,5-TP (Silvex)	µg/L	50	<0.539	<0.539	-	-	-	-	<0.539
2,4-DB	µg/L	n/v	<0.729	<0.729	-	-	-	-	<0.729
Dicamba	µg/L	189	<0.243	<0.243	-	-	-	-	<0.243
Dichlorophenoxy acetic acid, 2,4- (2,4-D)	µg/L	70	<0.498	<0.498	-	-	-	-	<0.498
Dichloropropionic acid, 2,2- (Dalapon)	µg/L	200	<0.810	<0.810	-	-	-	-	<0.810
Dichloroprop	µg/L	140	<0.564	<0.564	-	-	-	-	<0.564
Dinitrobutyl Phenol (Dinoseb)	µg/L	7.0	<0.573	<0.573	-	-	-	-	<0.573
MCPA (2-Methyl-4-Chlorophenoxyacetic Acid)	µg/L	10	<63.2	<63.2	-	-	-	-	<63.2
MCPP (2-(2-Methyl-4-chlorophenoxy) propionic acid)	µg/L	n/v	<58.5	<58.5	-	-	-	-	<58.5
Trichlorophenoxy acetic acid, 2,4,5- (2,4,5-T)	µg/L	70	<0.531	<0.531	-	-	-	-	<0.531
Polycyclic Aromatic Hydrocarbons (8270D-SIM)									
Acenaphthene	µg/L	n/v	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Acenaphthylene	µg/L	n/v	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Anthracene	µg/L	2,100	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Benzo(a)anthracene	µg/L	n/v	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Benzo(a)pyrene	µg/L	0.2	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Benzo(b)fluoranthene	µg/L	n/v	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Benzo(g,h,i)perylene	µg/L	n/v	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Benzo(k)fluoranthene	µg/L	n/v	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Chloronaphthalene, 2-	µg/L	n/v	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Chrysene	µg/L	n/v	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Dibenzo(a,h)anthracene	µg/L	n/v	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Fluoranthene	µg/L	280	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Fluorene	µg/L	280	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Indeno(1,2,3-cd)pyrene	µg/L	n/v	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Methylnaphthalene, 1-	µg/L	n/v	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Methylnaphthalene, 2-	µg/L	n/v	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Naphthalene	µg/L	20	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Phenanthrene	µg/L	n/v	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Pyrene	µg/L	n/v	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Benzo(a)pyrene TEQ	µg/L	0.2	0	0	0	0	0	0	0
Volatile Organic Compounds (8011/8260C)									
Acetone	µg/L	700	<1.5	2.2 J	1.6 J	8.1	7.4	<1.5	<1.5
Acrylonitrile	µg/L	n/v	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43	<0.43
Benzene	µg/L	5.0	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
Bromobenzene	µg/L	n/v	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Bromodichloromethane	µg/L	80	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
Bromoform (Tribromomethane)	µg/L	80	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Bromomethane (Methyl bromide)	µg/L	10	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	0.26 UB
Butylbenzene, n-	µg/L	n/v	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
Butylbenzene, sec- (2-Phenylbutane)	µg/L	n/v	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18
Butylbenzene, tert-	µg/L	n/v	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Carbon Disulfide	µg/L	n/v	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Carbon Tetrachloride (Tetrachloromethane)	µg/L	5.0	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13
Chlorobenzene (Monochlorobenzene)	µg/L	100	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18
Chlorobromomethane	µg/L	90	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Chloroethane (Ethyl Chloride)	µg/L	n/v	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13
Chloroform (Trichloromethane)	µg/L	80	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
Chloromethane	µg/L	30	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chlorotoluene, 2-	µg/L	100	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
Chlorotoluene, 4-	µg/L	100	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18
Dibromo-3-Chloropropane, 1,2- (DBCP)	µg/L	n/v	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35
Dibromochloromethane	µg/L	80	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Dibromomethane (Methylene Bromide)	µg/L	n/v	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36
Dichloro-2-Butene, trans-1,4-	µg/L	n/v	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21
Dichlorobenzene, 1,2-	µg/L	600	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18
Dichlorobenzene, 1,3-	µg/L	600	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
Dichlorobenzene, 1,4-	µg/L	75	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
Dichlorobutane, 1,4-	µg/L	n/v	<0.46	<0.46	<0.46	<0.46	<0.46	<0.46	<0.46
Dichlorodifluoromethane (Freon 12)	µg/L	1,000	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24
Dichloroethane, 1,1-	µg/L	70	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21
Dichloroethane, 1,2-	µg/L	5.0	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13
Dichloroethene, 1,1-	µg/L	7.0	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
Dichloroethene, cis-1,2-	µg/L	70	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
Dichloroethene, trans-1,2-	µg/L	100	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
Dichloroethene-1,2- (sum)	µg/L	n/v	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
Dichloropropane, 1,2-	µg/L	5.0	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14
Dichloropropane, 1,3-	µg/L	0.5	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21
Dichloropropane, 2,2-	µg/L	n/v	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dichloropropene, 1,1-	µg/L	n/v	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24
Dichloropropene, 1,3- (sum of isomers cis + trans)	µg/L	n/v	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14
Dichloropropene, cis-1,3-	µg/L	n/v	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14
Dichloropropene, trans-1,3-	µg/L	n/v	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
Ethyl Ether (Diethyl ether)	µg/L	n/v	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
Ethyl Methacrylate	µg/L	n/v	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61
Ethylbenzene	µg/L	700	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
Ethylene Dibromide (Dibromoethane, 1,2-)	µg/L	0.05	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	µg/L	n/v	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
Hexanone, 2- (Methyl Butyl Ketone)	µg/L	n/v	<0.52	<0.52	<0.52	<0.52	<0.52	<0.52	<0.52
Isopropylbenzene	µg/L	n/v	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
Isopropyltoluene, p- (Cymene)	µg/L	n/v	<0.19	<0.19	0.24 J	<0.19	<0.19	<0.19	<0.19
Methyl Ethyl Ketone (MEK) (2-Butanone)	µg/L	4,200	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9



Table 3
Summary of Groundwater Analytical Results
Limited Phase II Environmental Site Assessment
Yellow Barn
281 VT Route 15 West
Hardwick, Vermont

Sample Location		VSL	TW-1	TW-2	TW-3	TW-4		TW-5	TW-8
Sample Date			27-Mar-19	27-Mar-19	27-Mar-19	27-Mar-19	27-Mar-19	28-Mar-19	28-Mar-19
Sample ID		A	TW-1	TW-2	TW-3	TW-4	DUP-GW	TW-5	TW-8
Sample Type	Units		Primary	Primary	Primary	Primary	Field Duplicate	Primary	Primary
Methyl Isobutyl Ketone (MIBK)	µg/L	n/v	<0.42	<0.42	4.1 J	<0.42	<0.42	<0.42	<0.42
Methyl tert-butyl ether (MTBE)	µg/L	2.0	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
Methylene Chloride (Dichloromethane)	µg/L	5.0	<0.68	<0.68	<0.68	<0.68	<0.68	<0.68	<0.68
Naphthalene	µg/L	20	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
Propylbenzene, n-	µg/L	n/v	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
Styrene	µg/L	100	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36
Tetrachloroethane, 1,1,1,2-	µg/L	70	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
Tetrachloroethane, 1,1,2,2-	µg/L	n/v	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
Tetrachloroethene (PCE)	µg/L	5.0	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18
Tetrahydrofuran	µg/L	n/v	<0.52	<0.52	<0.52	<0.52	<0.52	<0.52	<0.52
Toluene	µg/L	1,000	<0.20	<0.20	0.63 J	<0.20	<0.20	<0.20	<0.20
Trichlorobenzene, 1,2,3-	µg/L	100	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23
Trichlorobenzene, 1,2,4-	µg/L	70	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
Trichloroethane, 1,1,1-	µg/L	200	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
Trichloroethane, 1,1,2-	µg/L	5.0	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14
Trichloroethene (TCE)	µg/L	5.0	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18
Trichlorofluoromethane (Freon 11)	µg/L	2,100	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
Trichloropropane, 1,2,3-	µg/L	5.0	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18
Trimethylbenzene, 1,2,4-	µg/L	350	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
Trimethylbenzene, 1,3,5-	µg/L	350	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
Total Trimethylbenzenes	µg/L	350	0	0	0	0	0	0	0
Total Trihalomethanes	µg/L	80	0	0	0	0	0	0	0
Vinyl Acetate	µg/L	n/v	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31
Vinyl Chloride	µg/L	2.0	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07
Xylene, m & p-	µg/L	n/v	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Xylene, o-	µg/L	n/v	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39
Xylenes, Total	µg/L	10,000	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33

Notes:

VSL Vermont Groundwater Quality Standards, Chapter 12 of the Environmental Protection Rules: Groundwater Protection Rule, dated July 11, 2018. Appendix One, Table 1 (Primary Groundwater Quality Standards).

A Vermont DEC Groundwater Quality Standard

15.2 Measured concentration did not exceed the indicated standard.

<0.50 Non-detect value exceeds the criteria.

<0.03 Analyte was not detected at a concentration greater than the laboratory method detection limit.

n/v No standard/guideline value.

- Parameter not analyzed / not available.

Total Trihalomethanes: comprised of bromodichloromethane, bromoform, chloroform, and dibromochloromethane.

Total Trimethylbenzenes: 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene.

Data Validation Qualifiers:

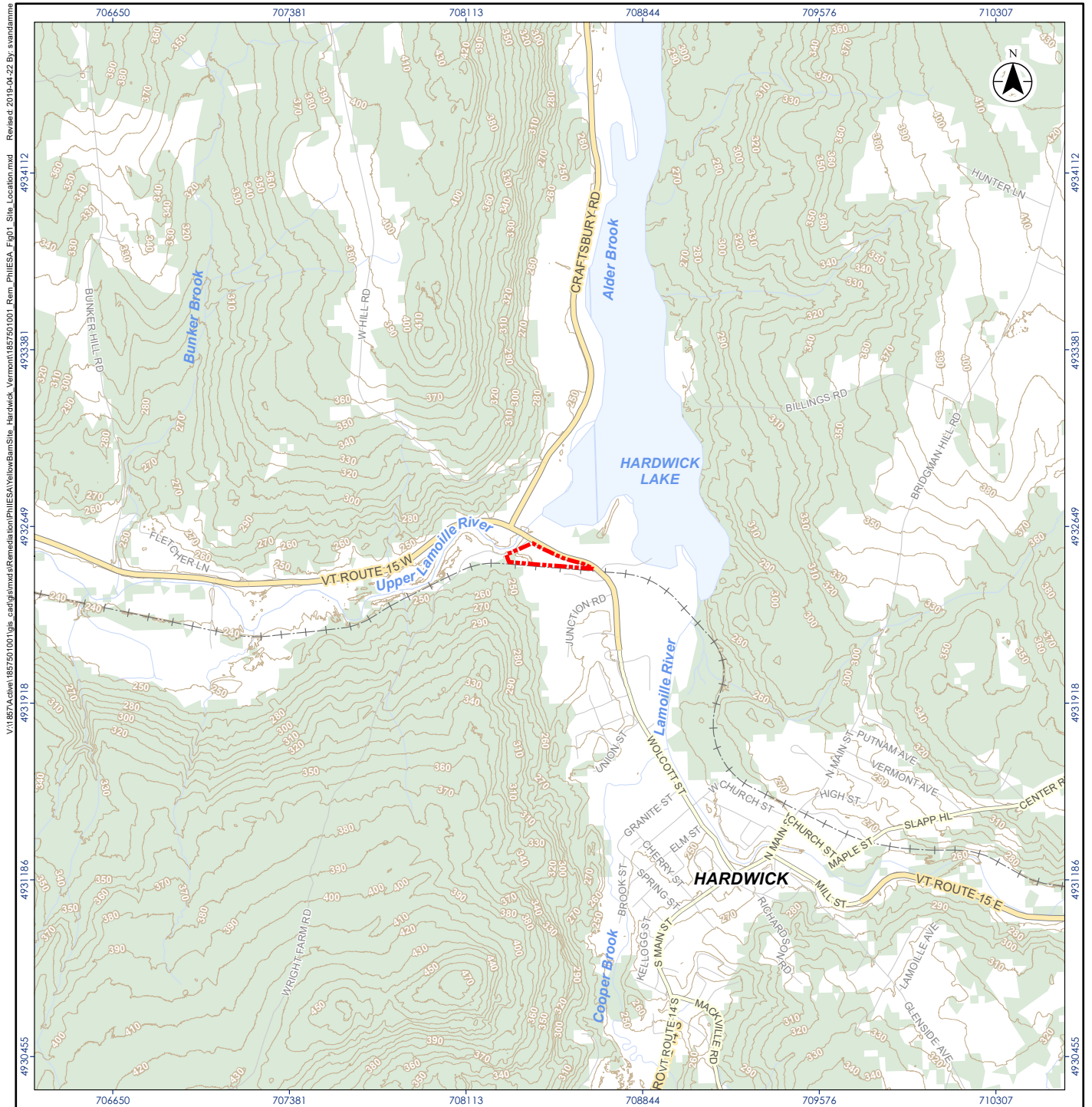
J The reported result is an estimated value.

Table 4
Summary of Soil Vapor Analytical Results
Limited Phase II Environmental Site Assessment
Yellow Barn
281 VT Route 15 West
Hardwick, Vermont

Sample Location Sample Date Sample ID Sample Type		VSL	SG-1 29-Mar-19 SG-1 Primary	SG-2 29-Mar-19 SG-2 Primary
	Units	A		
Volatile Organic Compounds (TO-15)				
Acetone	µg/m3	1,100,000	15.8	36.8
Allyl chloride (3-Chloropropene)	µg/m3	16	<1.40	<1.51
Benzene	µg/m3	4.3	<1.43	<1.54
Benzyl Chloride	µg/m3	1.9	<2.31	<2.49
Bromodichloromethane	µg/m3	1,400	<2.99	<3.22
Bromoform (Tribromomethane)	µg/m3	85	<4.62	<4.97
Bromomethane (Methyl bromide)	µg/m3	170	<1.74	<1.87
Butadiene, 1,3-	µg/m3	3.1	<0.989	<1.06
Carbon Disulfide	µg/m3	24,000	<1.39	4.52
Carbon Tetrachloride (Tetrachloromethane)	µg/m3	16	<2.81	<3.03
Chlorobenzene (Monochlorobenzene)	µg/m3	1,700	<2.06	<2.22
Chloroethane (Ethyl Chloride)	µg/m3	350,000	<1.18	<1.27
Chloroform (Trichloromethane)	µg/m3	4.1	<2.18	<2.35
Chloromethane	µg/m3	3,100	<0.923	<0.993
Cyclohexane	µg/m3	210,000	<1.54	<1.66
Dibromochloromethane	µg/m3	n/v	<3.81	<4.10
Dichlorobenzene, 1,2-	µg/m3	7,000	<2.69	<2.89
Dichlorobenzene, 1,3-	µg/m3	n/v	<2.69	<2.89
Dichlorobenzene, 1,4-	µg/m3	8.5	<2.69	<2.89
Dichlorodifluoromethane (Freon 12)	µg/m3	3,500	<2.21	<2.38
Dichloroethane, 1,1-	µg/m3	58	<1.81	<1.95
Dichloroethane, 1,2-	µg/m3	3.6	<1.81	<1.95
Dichloroethene, 1,1-	µg/m3	7,000	<1.77	<1.91
Dichloroethene, cis-1,2-	µg/m3	n/v	<1.77	<1.91
Dichloroethene, trans-1,2-	µg/m3	n/v	<1.77	<1.91
Dichloroethene-1,2- (sum)	µg/m3	n/v	<1.77	<1.91
Dichloropropane, 1,2-	µg/m3	9.4	<2.07	<2.22
Dichloropropene, 1,3- (sum of isomers cis + trans)	µg/m3	n/v	<2.03	<2.18
Dichloropropene, cis-1,3-	µg/m3	n/v	<2.03	<2.18
Dichloropropene, trans-1,3-	µg/m3	n/v	<2.03	<2.18
Dichlorotetrafluoroethane, 1,2- (Freon 114)	µg/m3	n/v	<3.12	<3.36
Dioxane, 1,4-	µg/m3	19	<1.61	<1.73
Ethanol	µg/m3	n/v	31.3	<22.6
Ethyl Acetate	µg/m3	2,400	<4.04	<4.32
Ethylbenzene	µg/m3	37	<1.94	<2.09
Ethylene Dibromide (Dibromoethane, 1,2-)	µg/m3	0.16	<3.44	<3.70
Ethyltoluene, 4-	µg/m3	n/v	<2.20	<2.36
Heptane (C7)	µg/m3	n/v	<1.83	<1.97
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	µg/m3	4.3	<4.77	<5.13
Hexane (n-Hexane)	µg/m3	24,000	<1.58	2.39
Hexanone, 2- (Methyl Butyl Ketone)	µg/m3	1,000	<1.83	<1.97
Isopropyl Alcohol (2-Propanol)	µg/m3	7,000	16.7	<2.95
Methyl Ethyl Ketone (MEK) (2-Butanone)	µg/m3	170,000	<3.30	5.75
Methyl Isobutyl Ketone (MIBK)	µg/m3	100,000	<4.59	<4.92
Methyl tert-butyl ether (MTBE)	µg/m3	360	<1.61	<1.73
Methylene Chloride (Dichloromethane)	µg/m3	3,400	<3.89	<4.17
Naphthalene	µg/m3	1	<2.34	<2.52
Propene	µg/m3	100,000	<1.93	5.01
Styrene	µg/m3	35,000	62.6	<2.05
Tetrachloroethane, 1,1,2,2-	µg/m3	1.6	<3.07	<3.30
Tetrachloroethene (PCE)	µg/m3	21	<3.03	<3.26
Tetrahydrofuran	µg/m3	70,000	<3.30	<3.54
Toluene	µg/m3	170,000	2.63	2.48
Trichlorobenzene, 1,2,4-	µg/m3	70	<3.32	<3.57
Trichloroethane, 1,1,1-	µg/m3	170,000	<2.44	<2.62
Trichloroethane, 1,1,2-	µg/m3	5.8	<2.44	<2.62
Trichloroethene (TCE)	µg/m3	6.7	<2.40	<2.59
Trichlorofluoromethane (Freon 11)	µg/m3	n/v	5.15	<2.70
Trichlorotrifluoroethane (Freon 113)	µg/m3	1,000,000	<3.43	<3.69
Trimethylbenzene, 1,2,4-	µg/m3	240	<2.20	3.13
Trimethylbenzene, 1,3,5-	µg/m3	n/v	<2.20	<2.36
Trimethylpentane, 2,2,4-	µg/m3	n/v	<2.09	<2.25
Vinyl Acetate	µg/m3	7,000	<7.85	<8.45
Vinyl Bromide (Bromoethene)	µg/m3	2.9	<1.95	<2.10
Vinyl Chloride	µg/m3	3.7	<1.14	<1.23
Xylene, m & p-	µg/m3	n/v	<3.88	<4.17
Xylene, o-	µg/m3	n/v	<1.94	<2.09
Xylenes, Total	µg/m3	3,500	<1.94	<2.09

Notes:

VSL	Vapor Intrusion Screening Values - Sub-Slab Soil Gas - Residential, Investigation and Remediation of Contaminated Properties Rule, July 27, 2017 (Appendix A - Vapor Intrusion Values).
A	DEC Soil Gas Target Levels - Residential Soil Gas
16.4	Concentration exceeds the criteria.
15.2	Measured concentration did not exceed the indicated standard.
<0.50	Non-detect value exceeds the criteria.
<0.03	Analyte was not detected at a concentration greater than the reporting limit.
n/v	No standard/guideline value.
µg/m3	microgram per cubic meter



Notes

1. Coordinate System: NAD 1983 UTM Zone 18N
2. Base features produced by Vermont Open Geodata Portal, <http://geodata.vermont.gov/pages/imagery>. Accessed April 21, 2019.
3. This figure is to be viewed in the context of the accompanying report and is subject to the limitations specified in that report.

Legend

	Approximate Site Boundary		Topographic Contour (ft)
	Expressway / Highway		Watercourse
	Major Road		Waterbody
	Minor Road		Wooded Area
	Former Railway		

0 1,000 2,000
Feet
1:24,000 (at original document size of 8.5x11)



Project Location 1857501001 REV A
281 VT Route 15 West
Hardwick, Vermont
Prepared by SVD on 4/22/2019

Client/Project
Northeastern Vermont Development Association
Phase II Environmental Site Assessment
Yellow Barn Site, Hardwick, Vermont

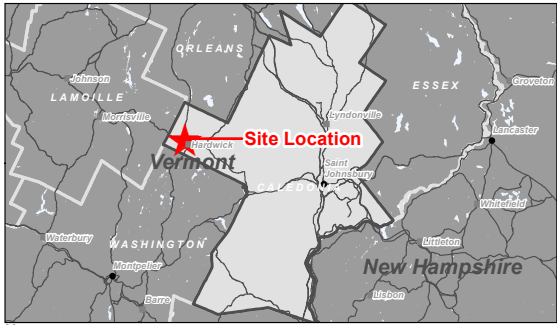
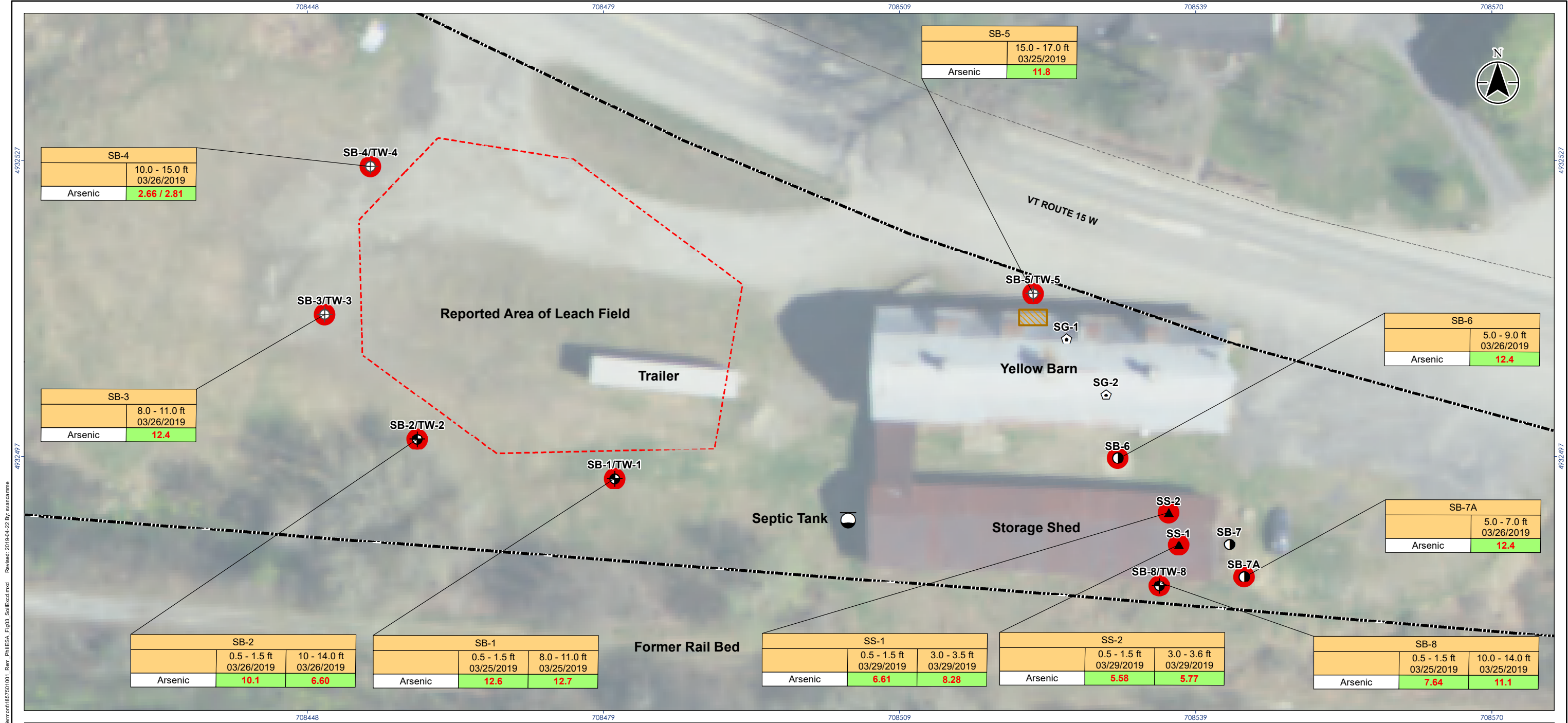
Figure No.

1

Title

Site Location Map

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.



Notes

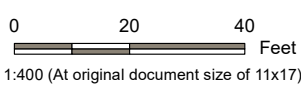
1. Coordinate System: NAD 1983 UTM Zone 18N
2. Base features produced by Vermont Open Geodata Portal, <http://geodata.vermont.gov/pages/imagery>. Accessed April 21, 2019.
3. This figure is to be viewed in the context of the accompanying report and is subject to the limitations specified in that report.
4. Orthoimagery © Vermont Open Geodata Portal, 2019. Imagery Date, 2018.
5. USEPA RSL - United States Environmental Protection Agency Regional Screening Levels (RSLs).
6. VSL - Vermont Screening Levels, Investigation and Remediation of Contaminated Properties Rule, July 27, 2018 (Appendix A - Soil Screening Levels).

Legend

- Soil Boring
- Soil Boring/Temporary Well
- Soil Boring/Temporary Well with Shallow Soil Sample
- Soil Gas Point
- Surficial Soil Sample
- Septic Tank

- Detected Soil Concentrations Exceed EPA Regional Screening Levels - Industrial
- Approximate Site Boundary
- Reported Area of Leach Field
- Waste Oil AST
- Parcel Boundary
- Concentration Exceeds EPA RSL Industrial Soil

Location ID	Sample Depth (feet)/ Sample Date
SB-4	10.0 - 15.0 ft 03/26/2019
Arsenic	2.66 / 2.81
Parameter	Concentration Exceeds Guidelines
	Original/Field Duplicate



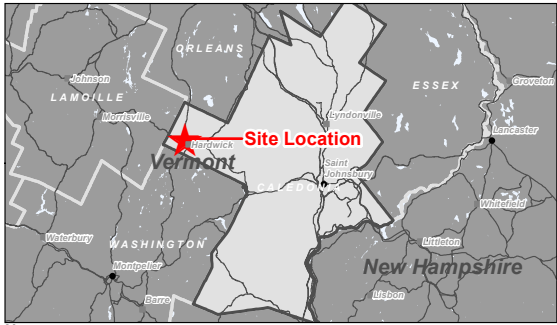
Project Location: 281 VT Route 15 West, Hardwick, Vermont. Prepared by SVD on 2019-04-22. 1857501001 REV A

Client/Project: Northeastern Vermont Development Association, Phase II Environmental Site Assessment, Yellow Barn Site, Hardwick, Vermont.

Figure No. 3

Title: Summary of Soil Analytical Results

		VSL	USEPA RSL	
Parameter	Units	Residential	Residential	Industrial
Arsenic	mg/kg	n/v	0.68	3.0



Notes

1. Coordinate System: NAD 1983 UTM Zone 18N
2. Base features produced by Vermont Open Geodata Portal, <http://geodata.vermont.gov/pages/imagery>. Accessed April 21, 2019.
3. This figure is to be viewed in the context of the accompanying report and is subject to the limitations specified in that report.
4. Orthoimagery © Vermont Open Geodata Portal, 2019. Imagery Date, 2018.
5. VSL - Vermont Groundwater Quality Standards, Chapter 12 of the Environmental Protection Rules: Groundwater Protection Rule, dated July 11, 2018, Appendix One, Table 1 (Primary Groundwater Quality Standards).

- Legend**
- Soil Boring
 - Soil Boring/Temporary Well
 - Soil Boring/Temporary Well with Shallow Soil Sample
 - Soil Gas Point
 - Surficial Soil Sample
 - Septic Tank
 - Detected Groundwater Concentrations below Vermont Groundwater Quality Standards
 - Groundwater Elevation (ft) on 4/18/2019
 - Groundwater Contour
 - Inferred Groundwater Contour
 - Inferred Direction of Groundwater Flow
 - Approximate Site Boundary
 - Reported Area of Leach Field
 - Waste Oil AST
 - Parcel Boundary

0 20 40 Feet
1:400 (At original document size of 11x17)



Project Location 1857501001 REVA
281 VT Route 15 West
Hardwick, Vermont Prepared by SVD on 2019-04-22

Client/Project
Northeastern Vermont Development Association
Phase II Environmental Site Assessment
Yellow Barn Site, Hardwick, Vermont

Figure No. **4**

Title
**Summary of Groundwater Analytical Results
and Inferred Direction of Groundwater Flow**

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.



Notes

1. Coordinate System: NAD 1983 UTM Zone 18N
2. Base features produced by Vermont Open Geodata Portal, <http://geodata.vermont.gov/pages/imagery>. Accessed April 21, 2019.
3. This figure is to be viewed in the context of the accompanying report and is subject to the limitations specified in that report.
4. Orthoimagery © Vermont Open Geodata Portal, 2019. Imagery Date, 2018.
5. VSL - Vapor Intrusion Screen Values - Sub-Slab Soil Gas - Residential, Investigation and Remediation of Contaminated Properties Rule, July 27, 2017 (Appendix A - Vapor Intrusion Values).

Legend

- Soil Boring
- Soil Boring/Temporary Well
- Soil Boring/Temporary Well with Shallow Soil Sample
- Soil Gas Point
- Surficial Soil Sample
- Septic Tank
- Sub-slab Soil Vapor Concentrations did not exceed Vapor Intrusion Screening Values
- Approximate Site Boundary
- Reported Area of Leach Field
- Waste Oil AST
- Parcel Boundary



Project Location: 281 VT Route 15 West, Hardwick, Vermont
1857501001 REVA
Prepared by SVD on 2019-04-22

Client/Project: Northeastern Vermont Development Association
Phase II Environmental Site Assessment
Yellow Barn Site, Hardwick, Vermont

Figure No. **5**

Title: **Summary of Soil Vapor Analytical Results**

APPENDICES

Limited Phase II Environmental Site Assessment Report
Yellow Barn, 281 Route 15 West, Hardwick, Vermont EPA
Cooperative Agreement No.: BF-00A00480-0

APPENDIX A

BOREHOLE AND MONITORING WELL LOGS





MONITORING WELL LOG

SB-1/TW-1

CLIENT Northeastern Vermont Development Association
LOCATION Yellow Barn Site, 281 VT Route 15, Hardwick, VT
DATES: BORING 3/25/2019 to 3/25/2019 WATER LEVEL 9.20

PROJECT No. 1857501001
BOREHOLE No. SB-1/TW-1
DATUM Top PVC

DEPTH (ft)	ELEVATION (ft)	SOIL DESCRIPTION	STRATA PLOT	WATER LEVEL	WELL CONSTRUCTION	SAMPLES				VOC CONCENTRATION (ppm or % LEL)
						TYPE	NUMBER	RECOVERY	N-VALUE OR RQD	
0		Damp, Brown ORGANICS.			Slip cap at surface.			in.		
		Damp, brown, fine to medium Sandy SILT, trace Gravel.			1-inch PVC riser packed in cuttings (0'-3')	GP	1	24		0.0
		Damp, brown medium to coarse SAND, trace Gravel, trace Silt.			1-inch PVC riser in bentonite (3'-4')	GP	2	30		0.1
5		Damp, brown medium to coarse SAND and GRAVEL, trace Silt.			1-inch PVC riser packed in sand (4'-5')					
					1-inch PVC screen packed in sand (5'-15')	GP	3	48		0.1
10		Wet, brown medium to coarse SAND and GRAVEL, trace Silt.				GP	4	30		0.0
15		Boring terminated at 15 feet.								
20										
Driller: New England Boring, Derry, NH; Stantec Field Representative: Jason Ward Geoprobe Well installed as temporary well.										



MONITORING WELL LOG

SB-2/TW-2

CLIENT Northeastern Vermont Development Association
 LOCATION Yellow Barn Site, 281 VT Route 15, Hardwick, VT
 DATES: BORING 3/26/2019 to 3/26/2019 WATER LEVEL 8.96

PROJECT No. 1857501001
 BOREHOLE No. SB-2/TW-2
 DATUM Top PVC

DEPTH (ft)	ELEVATION (ft)	SOIL DESCRIPTION	STRATA PLOT	WATER LEVEL	WELL CONSTRUCTION	SAMPLES				VOC CONCENTRATION (ppm or % LEL)
						TYPE	NUMBER	RECOVERY	N-VALUE OR RQD	
0		Damp, Brown ORGANICS over fine to medium SAND. Damp, PEAT with brown fine Sand and Silt.			Slip cap at surface	GP	1	20		0.1
					1-inch PVC riser packed in cuttings (1'-6')	GP	2	30		0.3
5		Same as above, trace Gravel.			1-inch PVC riser in bentonite (6'-7')	GP	3	40		0.3
					1-inch PVC riser packed in sand (7'-8')					
10		Same as above.				GP	4	32		0.0
		Wet, brown fine to medium SAND, trace Gravel, trace Silt.			1-inch PVC screen packed in sand (8'-18')	GP	5	35		0.1
15		Wet, brown fine to coarse SAND and GRAVEL, trace Silt.								
20		Boring terminated at 20 feet.								
Driller: New England Boring, Derry, NH; Stantec Field Representative: Jason Ward Geoprobe Well installed as temporary well.										



MONITORING WELL LOG

SB-3/TW-3

CLIENT Northeastern Vermont Development Association
LOCATION Yellow Barn Site, 281 VT Route 15, Hardwick, VT
DATES: BORING 3/26/2019 to 3/26/2019 WATER LEVEL 8.55

PROJECT No. 1857501001
BOREHOLE No. SB-3/TW-3
DATUM Top PVC

DEPTH (ft)	ELEVATION (ft)	SOIL DESCRIPTION	STRATA PLOT	WATER LEVEL	WELL CONSTRUCTION	SAMPLES				VOC CONCENTRATION (ppm or % LEL)
						TYPE	NUMBER	RECOVERY	N-VALUE OR RQD	
0		Damp, Organics and dark brown fine to medium SAND and GRAVEL. Damp, PEAT with dark brown fine Sandy SILT.			Slip cap at surface 1-inch PVC riser packed in cuttings (0'-3') 1-inch PVC riser in bentonite (3'-4') 1-inch PVC riser packed in sand (4'-5')	GP	1	30		0.0
5		Damp, PEAT with dark brown fine Sandy SILT.				GP	2	22		0.0
10		Wet, PEAT with dark brown fine Sandy SILT.			1-inch PVC screen packed in sand (5'-15')	GP	3	23		0.3
15		Wet, PEAT with dark brown fine Sandy SILT.				GP	4	40		0.1
20		Wet, brown fine to coarse SAND and GRAVEL, trace Silt.								
		Boring terminated at 20 feet.								
Driller: New England Boring, Derry, NH; Stantec Field Representative: Jason Ward Geoprobe Well installed as temporary well.										



MONITORING WELL LOG

SB-4/TW-4

CLIENT Northeastern Vermont Development Association
LOCATION Yellow Barn Site, 281 VT Route 15, Hardwick, VT
DATES: BORING 3/26/2019 to 3/26/2019 WATER LEVEL 9.25

PROJECT No. 1857501001
BOREHOLE No. SB-4/TW-4
DATUM Top PVC

DEPTH (ft)	ELEVATION (ft)	SOIL DESCRIPTION	STRATA PLOT	WATER LEVEL	WELL CONSTRUCTION	SAMPLES				VOC CONCENTRATION (ppm or % LEL)
						TYPE	NUMBER	RECOVERY	N-VALUE OR RQD	
0		Damp, ORGANICS with brown fine to medium SAND, trace Gravel, trace Silt. Damp, PEAT with dark brown fine Sandy SILT.			Slip cap at surface			in.		
					1-inch PVC riser packed in cuttings (1'-6')	GP	1	36		0.2
5		Damp, PEAT with dark brown fine Sandy SILT.			1-inch PVC riser in bentonite (6'-7')					
					1-inch PVC riser packed in sand (7'-8')	GP	2	34		0.3
10		Damp, PEAT with dark brown fine Sandy SILT.								
		Damp, dark brown/gray fine Sandy SILT.			1-inch PVC screen packed in sand (8'-18')	GP	3	48		0.3
15		Wet, dark gray fine Sandy SILT, trace medium sand, trace Gravel.								
						GP	4	60		0.3
20		Boring terminated at 20 feet.								
Driller: New England Boring, Derry, NH; Stantec Field Representative: Jason Ward Geoprobe Well installed as temporary well.										



MONITORING WELL LOG

SB-5/TW-5

CLIENT Northeastern Vermont Development Association
LOCATION Yellow Barn Site, 281 VT Route 15, Hardwick, VT
DATES: BORING 3/25/2019 to 3/25/2019 WATER LEVEL 14.96

PROJECT No. 1857501001
BOREHOLE No. SB-5/TW-5
DATUM Top PVC

DEPTH (ft)	ELEVATION (ft)	SOIL DESCRIPTION	STRATA PLOT	WATER LEVEL	WELL CONSTRUCTION	SAMPLES				VOC CONCENTRATION (ppm or % LEL)
						TYPE	NUMBER	RECOVERY	N-VALUE OR RQD	
0		Dry, brown fine to medium SAND, some Silt.			Slip cap installed			in.		
5		Dry, light brown to brown fine to coarse SAND and GRAVEL, trace Silt.			1-inch PVC riser packed in cuttings (1'-8')	GP	1	48		0.0
10		Dry, brown medium to coarse SAND and GRAVEL, trace Silt.			1-inch PVC riser in bentonite (8'-9') 1-inch PVC riser packed in sand (9'-10')	GP	2	60		0.0
15		Dry, dark brown fine to medium SAND, trace Gravel, trace Silt.			1-inch PVC screen packed in sand (10'-20')	GP	3	50		0.2
20		Wet, dark brown fine to medium SAND, trace Gravel, trace Silt.				GP	4	60		0.3
		Boring terminated at 20 feet.								
Driller: New England Boring, Derry, NH; Stantec Field Representative: Jason Ward Geoprobe Well installed as temporary well.										



MONITORING WELL LOG

SB-8/TW-8

CLIENT Northeastern Vermont Development Association
LOCATION Yellow Barn Site, 281 VT Route 15, Hardwick, VT
DATES: BORING 3/25/2019 to 3/25/2019 WATER LEVEL 10.59

PROJECT No. 1857501001
BOREHOLE No. SB-8/TW-8
DATUM Top PVC

DEPTH (ft)	ELEVATION (ft)	SOIL DESCRIPTION	STRATA PLOT	WATER LEVEL	WELL CONSTRUCTION	SAMPLES				VOC CONCENTRATION (ppm or % LEL)
						TYPE	NUMBER	RECOVERY	N-VALUE OR RQD	
0		Dark brown ORGANICS with fine Sandy SILT, trace Gravel.			Slip cap at surface	GP	1	15		0.0
		Damp, dark brown fine SAND and SILT.			1-inch PVC riser packed in cuttings (1'-6')	GP	2	26		0.0
5		Damp, dark brown fine to medium SAND and SILT.			1-inch PVC riser in bentonite (6'-7')	GP	3	30		0.2
					1-inch PVC riser packed in sand (7'-8')					
10		Damp, dark brown fine to coarse SAND, trace Silt, trace Gravel.			1-inch PVC screen packed in sand (8'-18')	GP	4	35		0.2
15		Wet, dark brown fine to coarse SAND, trace Silt, trace Gravel.				GP	5	35		0.1
		Wet, dark brown medium to coarse SAND and GRAVEL.								
20		Boring terminated at 20 feet.								
Driller: New England Boring, Derry, NH; Stantec Field Representative: Jason Ward Geoprobe Well installed as temporary well.										

APPENDICES

Limited Phase II Environmental Site Assessment Report
Yellow Barn, 281 Route 15 West, Hardwick, Vermont EPA
Cooperative Agreement No.: BF-00A00480-0

APPENDIX B

LABORATORY ANALYTICAL REPORTS





ANALYTICAL REPORT

Lab Number:	L1911908
Client:	Stantec 5 Dartmouth Drive Suite 200 Auburn, NH 03032
ATTN:	Dave Allwine
Phone:	(603) 669-8672
Project Name:	HARDWICK YELLOW BARN
Project Number:	1857501001
Report Date:	03/31/19

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Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com



Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1911908
Report Date: 03/31/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1911908-01	SB-8 (0.5-1.5)	SOIL	HARDWICK, VT	03/25/19 11:50	03/26/19
L1911908-02	SB-8 (10'-14')	SOIL	HARDWICK, VT	03/25/19 12:05	03/26/19
L1911908-03	SB-5 (15'-17')	SOIL	HARDWICK, VT	03/25/19 13:15	03/26/19
L1911908-04	SB-1 (0.5-1.5)	SOIL	HARDWICK, VT	03/25/19 14:30	03/26/19
L1911908-05	SB-1 (8'-11')	SOIL	HARDWICK, VT	03/25/19 15:25	03/26/19

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1911908
Report Date: 03/31/19

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1911908
Report Date: 03/31/19

Case Narrative (continued)

Sample Receipt

The analysis of 8011 was not performed at the client's request.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Kelly Stenstrom

Title: Technical Director/Representative

Date: 03/31/19

ORGANICS

VOLATILES

Project Name: HARDWICK YELLOW BARN**Lab Number:** L1911908**Project Number:** 1857501001**Report Date:** 03/31/19**SAMPLE RESULTS**

Lab ID: L1911908-02
 Client ID: SB-8 (10'-14')
 Sample Location: HARDWICK, VT

Date Collected: 03/25/19 12:05
 Date Received: 03/26/19
 Field Prep: Not Specified

Sample Depth:

Matrix: Soil
 Analytical Method: 1,8260C
 Analytical Date: 03/29/19 00:03
 Analyst: MV
 Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	3.1	--	1
1,1-Dichloroethane	ND		ug/kg	0.61	--	1
Chloroform	ND		ug/kg	0.92	--	1
Carbon tetrachloride	ND		ug/kg	0.61	--	1
1,2-Dichloropropane	ND		ug/kg	0.61	--	1
Dibromochloromethane	ND		ug/kg	0.61	--	1
1,1,2-Trichloroethane	ND		ug/kg	0.61	--	1
Tetrachloroethene	ND		ug/kg	0.31	--	1
Chlorobenzene	ND		ug/kg	0.31	--	1
Trichlorofluoromethane	ND		ug/kg	2.4	--	1
1,2-Dichloroethane	ND		ug/kg	0.61	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.31	--	1
Bromodichloromethane	ND		ug/kg	0.31	--	1
trans-1,3-Dichloropropene	ND		ug/kg	0.61	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.31	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.31	--	1
1,1-Dichloropropene	ND		ug/kg	0.31	--	1
Bromoform	ND		ug/kg	2.4	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.31	--	1
Benzene	ND		ug/kg	0.31	--	1
Toluene	ND		ug/kg	0.61	--	1
Ethylbenzene	ND		ug/kg	0.61	--	1
Chloromethane	ND		ug/kg	2.4	--	1
Bromomethane	ND		ug/kg	1.2	--	1
Vinyl chloride	ND		ug/kg	0.61	--	1
Chloroethane	ND		ug/kg	1.2	--	1
1,1-Dichloroethene	ND		ug/kg	0.61	--	1
trans-1,2-Dichloroethene	ND		ug/kg	0.92	--	1

Project Name: HARDWICK YELLOW BARN**Lab Number:** L1911908**Project Number:** 1857501001**Report Date:** 03/31/19**SAMPLE RESULTS**

Lab ID: L1911908-02
 Client ID: SB-8 (10'-14')
 Sample Location: HARDWICK, VT

Date Collected: 03/25/19 12:05
 Date Received: 03/26/19
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.31	--	1
1,2-Dichlorobenzene	ND		ug/kg	1.2	--	1
1,3-Dichlorobenzene	ND		ug/kg	1.2	--	1
1,4-Dichlorobenzene	ND		ug/kg	1.2	--	1
Methyl tert butyl ether	ND		ug/kg	1.2	--	1
p/m-Xylene	ND		ug/kg	1.2	--	1
o-Xylene	ND		ug/kg	0.61	--	1
Xylenes, Total	ND		ug/kg	0.61	--	1
cis-1,2-Dichloroethene	ND		ug/kg	0.61	--	1
1,2-Dichloroethene, Total	ND		ug/kg	0.61	--	1
Dibromomethane	ND		ug/kg	1.2	--	1
1,4-Dichlorobutane	ND		ug/kg	6.1	--	1
1,2,3-Trichloropropane	ND		ug/kg	1.2	--	1
Styrene	ND		ug/kg	0.61	--	1
Dichlorodifluoromethane	ND		ug/kg	6.1	--	1
Acetone	ND		ug/kg	6.1	--	1
Carbon disulfide	ND		ug/kg	6.1	--	1
2-Butanone	ND		ug/kg	6.1	--	1
Vinyl acetate	ND		ug/kg	6.1	--	1
4-Methyl-2-pentanone	ND		ug/kg	6.1	--	1
2-Hexanone	ND		ug/kg	6.1	--	1
Ethyl methacrylate	ND		ug/kg	6.1	--	1
Acrylonitrile	ND		ug/kg	2.4	--	1
Bromochloromethane	ND		ug/kg	1.2	--	1
Tetrahydrofuran	ND		ug/kg	2.4	--	1
2,2-Dichloropropane	ND		ug/kg	1.2	--	1
1,2-Dibromoethane	ND		ug/kg	0.61	--	1
1,3-Dichloropropane	ND		ug/kg	1.2	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.31	--	1
Bromobenzene	ND		ug/kg	1.2	--	1
n-Butylbenzene	ND		ug/kg	0.61	--	1
sec-Butylbenzene	ND		ug/kg	0.61	--	1
tert-Butylbenzene	ND		ug/kg	1.2	--	1
o-Chlorotoluene	ND		ug/kg	1.2	--	1
p-Chlorotoluene	ND		ug/kg	1.2	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	1.8	--	1
Hexachlorobutadiene	ND		ug/kg	2.4	--	1

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1911908
Report Date: 03/31/19

SAMPLE RESULTS

Lab ID: L1911908-02
Client ID: SB-8 (10'-14')
Sample Location: HARDWICK, VT

Date Collected: 03/25/19 12:05
Date Received: 03/26/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Isopropylbenzene	ND		ug/kg	0.61	--	1
p-Isopropyltoluene	ND		ug/kg	0.61	--	1
Naphthalene	ND		ug/kg	2.4	--	1
n-Propylbenzene	ND		ug/kg	0.61	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	1.2	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	1.2	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	1.2	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	1.2	--	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	3.1	--	1
Ethyl ether	ND		ug/kg	1.2	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	94		70-130
Dibromofluoromethane	108		70-130

Project Name: HARDWICK YELLOW BARN**Lab Number:** L1911908**Project Number:** 1857501001**Report Date:** 03/31/19**SAMPLE RESULTS**

Lab ID: L1911908-03
 Client ID: SB-5 (15'-17')
 Sample Location: HARDWICK, VT

Date Collected: 03/25/19 13:15
 Date Received: 03/26/19
 Field Prep: Not Specified

Sample Depth:

Matrix: Soil
 Analytical Method: 1,8260C
 Analytical Date: 03/29/19 00:30
 Analyst: MV
 Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	4.1	--	1
1,1-Dichloroethane	ND		ug/kg	0.83	--	1
Chloroform	ND		ug/kg	1.2	--	1
Carbon tetrachloride	ND		ug/kg	0.83	--	1
1,2-Dichloropropane	ND		ug/kg	0.83	--	1
Dibromochloromethane	ND		ug/kg	0.83	--	1
1,1,2-Trichloroethane	ND		ug/kg	0.83	--	1
Tetrachloroethene	ND		ug/kg	0.41	--	1
Chlorobenzene	ND		ug/kg	0.41	--	1
Trichlorofluoromethane	ND		ug/kg	3.3	--	1
1,2-Dichloroethane	ND		ug/kg	0.83	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.41	--	1
Bromodichloromethane	ND		ug/kg	0.41	--	1
trans-1,3-Dichloropropene	ND		ug/kg	0.83	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.41	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.41	--	1
1,1-Dichloropropene	ND		ug/kg	0.41	--	1
Bromoform	ND		ug/kg	3.3	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.41	--	1
Benzene	ND		ug/kg	0.41	--	1
Toluene	ND		ug/kg	0.83	--	1
Ethylbenzene	ND		ug/kg	0.83	--	1
Chloromethane	ND		ug/kg	3.3	--	1
Bromomethane	ND		ug/kg	1.6	--	1
Vinyl chloride	ND		ug/kg	0.83	--	1
Chloroethane	ND		ug/kg	1.6	--	1
1,1-Dichloroethene	ND		ug/kg	0.83	--	1
trans-1,2-Dichloroethene	ND		ug/kg	1.2	--	1

Project Name: HARDWICK YELLOW BARN**Lab Number:** L1911908**Project Number:** 1857501001**Report Date:** 03/31/19**SAMPLE RESULTS**

Lab ID: L1911908-03
 Client ID: SB-5 (15'-17')
 Sample Location: HARDWICK, VT

Date Collected: 03/25/19 13:15
 Date Received: 03/26/19
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.41	--	1
1,2-Dichlorobenzene	ND		ug/kg	1.6	--	1
1,3-Dichlorobenzene	ND		ug/kg	1.6	--	1
1,4-Dichlorobenzene	ND		ug/kg	1.6	--	1
Methyl tert butyl ether	ND		ug/kg	1.6	--	1
p/m-Xylene	ND		ug/kg	1.6	--	1
o-Xylene	ND		ug/kg	0.83	--	1
Xylenes, Total	ND		ug/kg	0.83	--	1
cis-1,2-Dichloroethene	ND		ug/kg	0.83	--	1
1,2-Dichloroethene, Total	ND		ug/kg	0.83	--	1
Dibromomethane	ND		ug/kg	1.6	--	1
1,4-Dichlorobutane	ND		ug/kg	8.3	--	1
1,2,3-Trichloropropane	ND		ug/kg	1.6	--	1
Styrene	ND		ug/kg	0.83	--	1
Dichlorodifluoromethane	ND		ug/kg	8.3	--	1
Acetone	ND		ug/kg	8.3	--	1
Carbon disulfide	ND		ug/kg	8.3	--	1
2-Butanone	ND		ug/kg	8.3	--	1
Vinyl acetate	ND		ug/kg	8.3	--	1
4-Methyl-2-pentanone	ND		ug/kg	8.3	--	1
2-Hexanone	ND		ug/kg	8.3	--	1
Ethyl methacrylate	ND		ug/kg	8.3	--	1
Acrylonitrile	ND		ug/kg	3.3	--	1
Bromochloromethane	ND		ug/kg	1.6	--	1
Tetrahydrofuran	ND		ug/kg	3.3	--	1
2,2-Dichloropropane	ND		ug/kg	1.6	--	1
1,2-Dibromoethane	ND		ug/kg	0.83	--	1
1,3-Dichloropropane	ND		ug/kg	1.6	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.41	--	1
Bromobenzene	ND		ug/kg	1.6	--	1
n-Butylbenzene	ND		ug/kg	0.83	--	1
sec-Butylbenzene	ND		ug/kg	0.83	--	1
tert-Butylbenzene	ND		ug/kg	1.6	--	1
o-Chlorotoluene	ND		ug/kg	1.6	--	1
p-Chlorotoluene	ND		ug/kg	1.6	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	2.5	--	1
Hexachlorobutadiene	ND		ug/kg	3.3	--	1

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1911908
Report Date: 03/31/19

SAMPLE RESULTS

Lab ID: L1911908-03
Client ID: SB-5 (15'-17')
Sample Location: HARDWICK, VT

Date Collected: 03/25/19 13:15
Date Received: 03/26/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Isopropylbenzene	ND		ug/kg	0.83	--	1
p-Isopropyltoluene	ND		ug/kg	0.83	--	1
Naphthalene	ND		ug/kg	3.3	--	1
n-Propylbenzene	ND		ug/kg	0.83	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	1.6	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	1.6	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	1.6	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	1.6	--	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	4.1	--	1
Ethyl ether	ND		ug/kg	1.6	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	112		70-130

Project Name: HARDWICK YELLOW BARN**Lab Number:** L1911908**Project Number:** 1857501001**Report Date:** 03/31/19**SAMPLE RESULTS**

Lab ID: L1911908-05
 Client ID: SB-1 (8'-11')
 Sample Location: HARDWICK, VT

Date Collected: 03/25/19 15:25
 Date Received: 03/26/19
 Field Prep: Not Specified

Sample Depth:

Matrix: Soil
 Analytical Method: 1,8260C
 Analytical Date: 03/29/19 00:57
 Analyst: MV
 Percent Solids: 94%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	3.6	--	1
1,1-Dichloroethane	ND		ug/kg	0.73	--	1
Chloroform	ND		ug/kg	1.1	--	1
Carbon tetrachloride	ND		ug/kg	0.73	--	1
1,2-Dichloropropane	ND		ug/kg	0.73	--	1
Dibromochloromethane	ND		ug/kg	0.73	--	1
1,1,2-Trichloroethane	ND		ug/kg	0.73	--	1
Tetrachloroethene	ND		ug/kg	0.36	--	1
Chlorobenzene	ND		ug/kg	0.36	--	1
Trichlorofluoromethane	ND		ug/kg	2.9	--	1
1,2-Dichloroethane	ND		ug/kg	0.73	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.36	--	1
Bromodichloromethane	ND		ug/kg	0.36	--	1
trans-1,3-Dichloropropene	ND		ug/kg	0.73	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.36	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.36	--	1
1,1-Dichloropropene	ND		ug/kg	0.36	--	1
Bromoform	ND		ug/kg	2.9	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.36	--	1
Benzene	ND		ug/kg	0.36	--	1
Toluene	ND		ug/kg	0.73	--	1
Ethylbenzene	ND		ug/kg	0.73	--	1
Chloromethane	ND		ug/kg	2.9	--	1
Bromomethane	ND		ug/kg	1.5	--	1
Vinyl chloride	ND		ug/kg	0.73	--	1
Chloroethane	ND		ug/kg	1.5	--	1
1,1-Dichloroethene	ND		ug/kg	0.73	--	1
trans-1,2-Dichloroethene	ND		ug/kg	1.1	--	1

Project Name: HARDWICK YELLOW BARN**Lab Number:** L1911908**Project Number:** 1857501001**Report Date:** 03/31/19**SAMPLE RESULTS**

Lab ID: L1911908-05
Client ID: SB-1 (8'-11')
Sample Location: HARDWICK, VT

Date Collected: 03/25/19 15:25
Date Received: 03/26/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.36	--	1
1,2-Dichlorobenzene	ND		ug/kg	1.5	--	1
1,3-Dichlorobenzene	ND		ug/kg	1.5	--	1
1,4-Dichlorobenzene	ND		ug/kg	1.5	--	1
Methyl tert butyl ether	ND		ug/kg	1.5	--	1
p/m-Xylene	ND		ug/kg	1.5	--	1
o-Xylene	ND		ug/kg	0.73	--	1
Xylenes, Total	ND		ug/kg	0.73	--	1
cis-1,2-Dichloroethene	ND		ug/kg	0.73	--	1
1,2-Dichloroethene, Total	ND		ug/kg	0.73	--	1
Dibromomethane	ND		ug/kg	1.5	--	1
1,4-Dichlorobutane	ND		ug/kg	7.3	--	1
1,2,3-Trichloropropane	ND		ug/kg	1.5	--	1
Styrene	ND		ug/kg	0.73	--	1
Dichlorodifluoromethane	ND		ug/kg	7.3	--	1
Acetone	ND		ug/kg	7.3	--	1
Carbon disulfide	ND		ug/kg	7.3	--	1
2-Butanone	ND		ug/kg	7.3	--	1
Vinyl acetate	ND		ug/kg	7.3	--	1
4-Methyl-2-pentanone	ND		ug/kg	7.3	--	1
2-Hexanone	ND		ug/kg	7.3	--	1
Ethyl methacrylate	ND		ug/kg	7.3	--	1
Acrylonitrile	ND		ug/kg	2.9	--	1
Bromochloromethane	ND		ug/kg	1.5	--	1
Tetrahydrofuran	ND		ug/kg	2.9	--	1
2,2-Dichloropropane	ND		ug/kg	1.5	--	1
1,2-Dibromoethane	ND		ug/kg	0.73	--	1
1,3-Dichloropropane	ND		ug/kg	1.5	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.36	--	1
Bromobenzene	ND		ug/kg	1.5	--	1
n-Butylbenzene	ND		ug/kg	0.73	--	1
sec-Butylbenzene	ND		ug/kg	0.73	--	1
tert-Butylbenzene	ND		ug/kg	1.5	--	1
o-Chlorotoluene	ND		ug/kg	1.5	--	1
p-Chlorotoluene	ND		ug/kg	1.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	2.2	--	1
Hexachlorobutadiene	ND		ug/kg	2.9	--	1

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1911908
Report Date: 03/31/19

SAMPLE RESULTS

Lab ID: L1911908-05
Client ID: SB-1 (8'-11')
Sample Location: HARDWICK, VT

Date Collected: 03/25/19 15:25
Date Received: 03/26/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Isopropylbenzene	ND		ug/kg	0.73	--	1
p-Isopropyltoluene	ND		ug/kg	0.73	--	1
Naphthalene	ND		ug/kg	2.9	--	1
n-Propylbenzene	ND		ug/kg	0.73	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	1.5	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	1.5	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	1.5	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	1.5	--	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	3.6	--	1
Ethyl ether	ND		ug/kg	1.5	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	94		70-130
Dibromofluoromethane	109		70-130

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1911908
Report Date: 03/31/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
 Analytical Date: 03/28/19 20:52
 Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 02-03,05 Batch: WG1220924-5					
Methylene chloride	ND		ug/kg	5.0	--
1,1-Dichloroethane	ND		ug/kg	1.0	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	1.0	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.0	--
2-Chloroethylvinyl ether	ND		ug/kg	20	--
Tetrachloroethene	ND		ug/kg	0.50	--
Chlorobenzene	ND		ug/kg	0.50	--
Trichlorofluoromethane	ND		ug/kg	4.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	0.50	--
Bromodichloromethane	ND		ug/kg	0.50	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	0.50	--
1,3-Dichloropropene, Total	ND		ug/kg	0.50	--
1,1-Dichloropropene	ND		ug/kg	0.50	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.50	--
Benzene	ND		ug/kg	0.50	--
Toluene	ND		ug/kg	1.0	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	4.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	1.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1911908
Report Date: 03/31/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 03/28/19 20:52
Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 02-03,05 Batch: WG1220924-5					
Trichloroethene	ND		ug/kg	0.50	--
1,2-Dichlorobenzene	ND		ug/kg	2.0	--
1,3-Dichlorobenzene	ND		ug/kg	2.0	--
1,4-Dichlorobenzene	ND		ug/kg	2.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	1.0	--
Xylenes, Total	ND		ug/kg	1.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene, Total	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	2.0	--
1,4-Dichlorobutane	ND		ug/kg	10	--
1,2,3-Trichloropropane	ND		ug/kg	2.0	--
Styrene	ND		ug/kg	1.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	10	--
Carbon disulfide	ND		ug/kg	10	--
2-Butanone	ND		ug/kg	10	--
Vinyl acetate	ND		ug/kg	10	--
4-Methyl-2-pentanone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Ethyl methacrylate	ND		ug/kg	10	--
Acrolein	ND		ug/kg	25	--
Acrylonitrile	ND		ug/kg	4.0	--
Bromochloromethane	ND		ug/kg	2.0	--
Tetrahydrofuran	ND		ug/kg	4.0	--
2,2-Dichloropropane	ND		ug/kg	2.0	--
1,2-Dibromoethane	ND		ug/kg	1.0	--
1,3-Dichloropropane	ND		ug/kg	2.0	--

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1911908
Report Date: 03/31/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
 Analytical Date: 03/28/19 20:52
 Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 02-03,05 Batch: WG1220924-5					
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.50	--
Bromobenzene	ND		ug/kg	2.0	--
n-Butylbenzene	ND		ug/kg	1.0	--
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	2.0	--
1,3,5-Trichlorobenzene	ND		ug/kg	2.0	--
o-Chlorotoluene	ND		ug/kg	2.0	--
p-Chlorotoluene	ND		ug/kg	2.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.0	--
Hexachlorobutadiene	ND		ug/kg	4.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	4.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	2.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	2.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	--
trans-1,4-Dichloro-2-butene	ND		ug/kg	5.0	--
Ethyl ether	ND		ug/kg	2.0	--
Methyl Acetate	ND		ug/kg	4.0	--
Ethyl Acetate	ND		ug/kg	10	--
Isopropyl Ether	ND		ug/kg	2.0	--
Cyclohexane	ND		ug/kg	10	--
Tert-Butyl Alcohol	ND		ug/kg	20	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	2.0	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	2.0	--
1,4-Dioxane	ND		ug/kg	80	--
Methyl cyclohexane	ND		ug/kg	4.0	--

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1911908
Report Date: 03/31/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
 Analytical Date: 03/28/19 20:52
 Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 02-03,05 Batch: WG1220924-5					
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		ug/kg	4.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	111		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	107		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: HARDWICK YELLOW BARN

Project Number: 1857501001

Lab Number: L1911908

Report Date: 03/31/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 02-03,05 Batch: WG1220924-3 WG1220924-4								
Methylene chloride	94		84		70-130	11		30
1,1-Dichloroethane	97		86		70-130	12		30
Chloroform	104		92		70-130	12		30
Carbon tetrachloride	119		105		70-130	13		30
1,2-Dichloropropane	94		84		70-130	11		30
Dibromochloromethane	101		90		70-130	12		30
1,1,2-Trichloroethane	90		82		70-130	9		30
2-Chloroethylvinyl ether	91		81		70-130	12		30
Tetrachloroethene	101		88		70-130	14		30
Chlorobenzene	94		84		70-130	11		30
Trichlorofluoromethane	162	Q	141	Q	70-139	14		30
1,2-Dichloroethane	106		94		70-130	12		30
1,1,1-Trichloroethane	113		101		70-130	11		30
Bromodichloromethane	108		95		70-130	13		30
trans-1,3-Dichloropropene	96		85		70-130	12		30
cis-1,3-Dichloropropene	102		91		70-130	11		30
1,1-Dichloropropene	107		96		70-130	11		30
Bromoform	94		86		70-130	9		30
1,1,2,2-Tetrachloroethane	81		76		70-130	6		30
Benzene	96		85		70-130	12		30
Toluene	92		81		70-130	13		30
Ethylbenzene	95		85		70-130	11		30
Chloromethane	86		77		52-130	11		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HARDWICK YELLOW BARN

Project Number: 1857501001

Lab Number: L1911908

Report Date: 03/31/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 02-03,05 Batch: WG1220924-3 WG1220924-4								
Bromomethane	168	Q	137		57-147	20		30
Vinyl chloride	96		86		67-130	11		30
Chloroethane	157	Q	136		50-151	14		30
1,1-Dichloroethene	159	Q	139	Q	65-135	13		30
trans-1,2-Dichloroethene	100		89		70-130	12		30
Trichloroethene	101		89		70-130	13		30
1,2-Dichlorobenzene	92		83		70-130	10		30
1,3-Dichlorobenzene	95		84		70-130	12		30
1,4-Dichlorobenzene	92		81		70-130	13		30
Methyl tert butyl ether	100		89		66-130	12		30
p/m-Xylene	96		86		70-130	11		30
o-Xylene	96		87		70-130	10		30
cis-1,2-Dichloroethene	100		87		70-130	14		30
Dibromomethane	104		92		70-130	12		30
1,4-Dichlorobutane	79		72		70-130	9		30
1,2,3-Trichloropropane	87		79		68-130	10		30
Styrene	96		85		70-130	12		30
Dichlorodifluoromethane	115		100		30-146	14		30
Acetone	101		94		54-140	7		30
Carbon disulfide	150	Q	130		59-130	14		30
2-Butanone	91		88		70-130	3		30
Vinyl acetate	84		80		70-130	5		30
4-Methyl-2-pentanone	90		85		70-130	6		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HARDWICK YELLOW BARN

Project Number: 1857501001

Lab Number: L1911908

Report Date: 03/31/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 02-03,05 Batch: WG1220924-3 WG1220924-4								
2-Hexanone	85		79		70-130	7		30
Ethyl methacrylate	86		78		70-130	10		30
Acrolein	111		104		70-130	7		30
Acrylonitrile	87		82		70-130	6		30
Bromochloromethane	108		96		70-130	12		30
Tetrahydrofuran	83		90		66-130	8		30
2,2-Dichloropropane	106		92		70-130	14		30
1,2-Dibromoethane	96		85		70-130	12		30
1,3-Dichloropropane	92		84		69-130	9		30
1,1,1,2-Tetrachloroethane	98		88		70-130	11		30
Bromobenzene	92		82		70-130	11		30
n-Butylbenzene	91		82		70-130	10		30
sec-Butylbenzene	92		82		70-130	11		30
tert-Butylbenzene	93		82		70-130	13		30
1,3,5-Trichlorobenzene	98		86		70-139	13		30
o-Chlorotoluene	88		79		70-130	11		30
p-Chlorotoluene	91		80		70-130	13		30
1,2-Dibromo-3-chloropropane	90		84		68-130	7		30
Hexachlorobutadiene	104		90		67-130	14		30
Isopropylbenzene	91		82		70-130	10		30
p-Isopropyltoluene	94		84		70-130	11		30
Naphthalene	91		84		70-130	8		30
n-Propylbenzene	90		81		70-130	11		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HARDWICK YELLOW BARN

Project Number: 1857501001

Lab Number: L1911908

Report Date: 03/31/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 02-03,05 Batch: WG1220924-3 WG1220924-4								
1,2,3-Trichlorobenzene	95		86		70-130	10		30
1,2,4-Trichlorobenzene	96		86		70-130	11		30
1,3,5-Trimethylbenzene	92		82		70-130	11		30
1,2,4-Trimethylbenzene	92		82		70-130	11		30
trans-1,4-Dichloro-2-butene	76		75		70-130	1		30
Ethyl ether	153	Q	134	Q	67-130	13		30
Methyl Acetate	91		87		65-130	4		30
Ethyl Acetate	86		85		70-130	1		30
Isopropyl Ether	90		80		66-130	12		30
Cyclohexane	101		91		70-130	10		30
Tert-Butyl Alcohol	98		94		70-130	4		30
Ethyl-Tert-Butyl-Ether	100		90		70-130	11		30
Tertiary-Amyl Methyl Ether	102		92		70-130	10		30
1,4-Dioxane	112		103		65-136	8		30
Methyl cyclohexane	107		95		70-130	12		30
1,1,2-Trichloro-1,2,2-Trifluoroethane	171	Q	151	Q	70-130	12		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	109		107		70-130
Toluene-d8	95		96		70-130
4-Bromofluorobenzene	95		96		70-130
Dibromofluoromethane	109		109		70-130

SEMIVOLATILES

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1911908
Report Date: 03/31/19

SAMPLE RESULTS

Lab ID: L1911908-01
Client ID: SB-8 (0.5-1.5)
Sample Location: HARDWICK, VT

Date Collected: 03/25/19 11:50
Date Received: 03/26/19
Field Prep: Not Specified

Sample Depth:

Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 03/28/19 00:01
Analyst: EK
Percent Solids: 88%

Extraction Method: EPA 3546
Extraction Date: 03/26/19 18:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	150	--	1
2-Chloronaphthalene	ND		ug/kg	180	--	1
Fluoranthene	ND		ug/kg	110	--	1
Naphthalene	ND		ug/kg	180	--	1
Benzo(a)anthracene	ND		ug/kg	110	--	1
Benzo(a)pyrene	ND		ug/kg	150	--	1
Benzo(b)fluoranthene	ND		ug/kg	110	--	1
Benzo(k)fluoranthene	ND		ug/kg	110	--	1
Chrysene	ND		ug/kg	110	--	1
Acenaphthylene	ND		ug/kg	150	--	1
Anthracene	ND		ug/kg	110	--	1
Benzo(ghi)perylene	ND		ug/kg	150	--	1
Fluorene	ND		ug/kg	180	--	1
Phenanthrene	ND		ug/kg	110	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	110	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	150	--	1
Pyrene	ND		ug/kg	110	--	1
1-Methylnaphthalene	ND		ug/kg	180	--	1
2-Methylnaphthalene	ND		ug/kg	220	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	65		23-120
2-Fluorobiphenyl	112		30-120
4-Terphenyl-d14	76		18-120

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1911908
Report Date: 03/31/19

SAMPLE RESULTS

Lab ID: L1911908-02
Client ID: SB-8 (10'-14')
Sample Location: HARDWICK, VT

Date Collected: 03/25/19 12:05
Date Received: 03/26/19
Field Prep: Not Specified

Sample Depth:

Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 03/27/19 19:21
Analyst: EK
Percent Solids: 87%

Extraction Method: EPA 3546
Extraction Date: 03/26/19 18:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	150	--	1
2-Chloronaphthalene	ND		ug/kg	190	--	1
Fluoranthene	ND		ug/kg	110	--	1
Naphthalene	ND		ug/kg	190	--	1
Benzo(a)anthracene	ND		ug/kg	110	--	1
Benzo(a)pyrene	ND		ug/kg	150	--	1
Benzo(b)fluoranthene	ND		ug/kg	110	--	1
Benzo(k)fluoranthene	ND		ug/kg	110	--	1
Chrysene	ND		ug/kg	110	--	1
Acenaphthylene	ND		ug/kg	150	--	1
Anthracene	ND		ug/kg	110	--	1
Benzo(ghi)perylene	ND		ug/kg	150	--	1
Fluorene	ND		ug/kg	190	--	1
Phenanthrene	ND		ug/kg	110	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	110	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	150	--	1
Pyrene	ND		ug/kg	110	--	1
1-Methylnaphthalene	ND		ug/kg	190	--	1
2-Methylnaphthalene	ND		ug/kg	230	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	70		23-120
2-Fluorobiphenyl	109		30-120
4-Terphenyl-d14	85		18-120

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1911908
Report Date: 03/31/19

SAMPLE RESULTS

Lab ID: L1911908-03
Client ID: SB-5 (15'-17')
Sample Location: HARDWICK, VT

Date Collected: 03/25/19 13:15
Date Received: 03/26/19
Field Prep: Not Specified

Sample Depth:

Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 03/27/19 18:30
Analyst: EK
Percent Solids: 81%

Extraction Method: EPA 3546
Extraction Date: 03/26/19 18:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	160	--	1
2-Chloronaphthalene	ND		ug/kg	200	--	1
Fluoranthene	ND		ug/kg	120	--	1
Naphthalene	ND		ug/kg	200	--	1
Benzo(a)anthracene	ND		ug/kg	120	--	1
Benzo(a)pyrene	ND		ug/kg	160	--	1
Benzo(b)fluoranthene	ND		ug/kg	120	--	1
Benzo(k)fluoranthene	ND		ug/kg	120	--	1
Chrysene	ND		ug/kg	120	--	1
Acenaphthylene	ND		ug/kg	160	--	1
Anthracene	ND		ug/kg	120	--	1
Benzo(ghi)perylene	ND		ug/kg	160	--	1
Fluorene	ND		ug/kg	200	--	1
Phenanthrene	ND		ug/kg	120	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	160	--	1
Pyrene	ND		ug/kg	120	--	1
1-Methylnaphthalene	ND		ug/kg	200	--	1
2-Methylnaphthalene	ND		ug/kg	240	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	67		23-120
2-Fluorobiphenyl	106		30-120
4-Terphenyl-d14	78		18-120

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1911908
Report Date: 03/31/19

SAMPLE RESULTS

Lab ID: L1911908-04
Client ID: SB-1 (0.5-1.5)
Sample Location: HARDWICK, VT

Date Collected: 03/25/19 14:30
Date Received: 03/26/19
Field Prep: Not Specified

Sample Depth:

Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 03/27/19 18:56
Analyst: EK
Percent Solids: 84%

Extraction Method: EPA 3546
Extraction Date: 03/26/19 18:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	160	--	1
2-Chloronaphthalene	ND		ug/kg	200	--	1
Fluoranthene	ND		ug/kg	120	--	1
Naphthalene	ND		ug/kg	200	--	1
Benzo(a)anthracene	ND		ug/kg	120	--	1
Benzo(a)pyrene	ND		ug/kg	160	--	1
Benzo(b)fluoranthene	ND		ug/kg	120	--	1
Benzo(k)fluoranthene	ND		ug/kg	120	--	1
Chrysene	ND		ug/kg	120	--	1
Acenaphthylene	ND		ug/kg	160	--	1
Anthracene	ND		ug/kg	120	--	1
Benzo(ghi)perylene	ND		ug/kg	160	--	1
Fluorene	ND		ug/kg	200	--	1
Phenanthrene	ND		ug/kg	120	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	160	--	1
Pyrene	ND		ug/kg	120	--	1
1-Methylnaphthalene	ND		ug/kg	200	--	1
2-Methylnaphthalene	ND		ug/kg	240	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	69		23-120
2-Fluorobiphenyl	101		30-120
4-Terphenyl-d14	75		18-120

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1911908
Report Date: 03/31/19

SAMPLE RESULTS

Lab ID: L1911908-05
Client ID: SB-1 (8'-11')
Sample Location: HARDWICK, VT

Date Collected: 03/25/19 15:25
Date Received: 03/26/19
Field Prep: Not Specified

Sample Depth:

Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 03/27/19 11:49
Analyst: KR
Percent Solids: 94%

Extraction Method: EPA 3546
Extraction Date: 03/26/19 18:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	140	--	1
2-Chloronaphthalene	ND		ug/kg	170	--	1
Fluoranthene	ND		ug/kg	100	--	1
Naphthalene	ND		ug/kg	170	--	1
Benzo(a)anthracene	ND		ug/kg	100	--	1
Benzo(a)pyrene	ND		ug/kg	140	--	1
Benzo(b)fluoranthene	ND		ug/kg	100	--	1
Benzo(k)fluoranthene	ND		ug/kg	100	--	1
Chrysene	ND		ug/kg	100	--	1
Acenaphthylene	ND		ug/kg	140	--	1
Anthracene	ND		ug/kg	100	--	1
Benzo(ghi)perylene	ND		ug/kg	140	--	1
Fluorene	ND		ug/kg	170	--	1
Phenanthrene	ND		ug/kg	100	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	100	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	--	1
Pyrene	ND		ug/kg	100	--	1
1-Methylnaphthalene	ND		ug/kg	170	--	1
2-Methylnaphthalene	ND		ug/kg	210	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	70		23-120
2-Fluorobiphenyl	113		30-120
4-Terphenyl-d14	80		18-120

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1911908
Report Date: 03/31/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 03/27/19 19:19
Analyst: RC

Extraction Method: EPA 3546
Extraction Date: 03/26/19 18:43

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-05 Batch: WG1219853-1					
Acenaphthene	ND		ug/kg	130	--
2-Chloronaphthalene	ND		ug/kg	160	--
Fluoranthene	ND		ug/kg	97	--
Naphthalene	ND		ug/kg	160	--
Benzo(a)anthracene	ND		ug/kg	97	--
Benzo(a)pyrene	ND		ug/kg	130	--
Benzo(b)fluoranthene	ND		ug/kg	97	--
Benzo(k)fluoranthene	ND		ug/kg	97	--
Chrysene	ND		ug/kg	97	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	97	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	160	--
Phenanthrene	ND		ug/kg	97	--
Dibenzo(a,h)anthracene	ND		ug/kg	97	--
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	97	--
1-Methylnaphthalene	ND		ug/kg	160	--
2-Methylnaphthalene	ND		ug/kg	190	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	93		23-120
2-Fluorobiphenyl	84		30-120
4-Terphenyl-d14	92		18-120

Lab Control Sample Analysis **Batch Quality Control**

Project Name: HARDWICK YELLOW BARN

Project Number: 1857501001

Lab Number: L1911908

Report Date: 03/31/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-05 Batch: WG1219853-2 WG1219853-3								
Acenaphthene	90		91		31-137	1		50
2-Chloronaphthalene	92		91		40-140	1		50
Fluoranthene	89		88		40-140	1		50
Naphthalene	84		86		40-140	2		50
Benzo(a)anthracene	96		95		40-140	1		50
Benzo(a)pyrene	104		104		40-140	0		50
Benzo(b)fluoranthene	103		104		40-140	1		50
Benzo(k)fluoranthene	99		98		40-140	1		50
Chrysene	100		98		40-140	2		50
Acenaphthylene	96		95		40-140	1		50
Anthracene	85		83		40-140	2		50
Benzo(ghi)perylene	92		91		40-140	1		50
Fluorene	94		96		40-140	2		50
Phenanthrene	83		81		40-140	2		50
Dibenzo(a,h)anthracene	88		90		40-140	2		50
Indeno(1,2,3-cd)pyrene	92		90		40-140	2		50
Pyrene	87		88		35-142	1		50
1-Methylnaphthalene	90		90		26-130	0		50
2-Methylnaphthalene	87		87		40-140	0		50

Lab Control Sample Analysis**Batch Quality Control****Project Name:** HARDWICK YELLOW BARN**Lab Number:** L1911908**Project Number:** 1857501001**Report Date:** 03/31/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits

Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-05 Batch: WG1219853-2 WG1219853-3

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	97		99		23-120
2-Fluorobiphenyl	90		91		30-120
4-Terphenyl-d14	86		85		18-120

PESTICIDES

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1911908
Report Date: 03/31/19

SAMPLE RESULTS

Lab ID: L1911908-01
Client ID: SB-8 (0.5-1.5)
Sample Location: HARDWICK, VT

Date Collected: 03/25/19 11:50
Date Received: 03/26/19
Field Prep: Not Specified

Sample Depth:

Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 03/27/19 20:13
Analyst: BM
Percent Solids: 88%

Extraction Method: EPA 3546
Extraction Date: 03/26/19 19:02
Cleanup Method: EPA 3620B
Cleanup Date: 03/27/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.74	--	1	A
Lindane	ND		ug/kg	0.723	--	1	A
Alpha-BHC	ND		ug/kg	0.723	--	1	A
Beta-BHC	ND		ug/kg	1.74	--	1	A
Heptachlor	ND		ug/kg	0.868	--	1	A
Aldrin	ND		ug/kg	1.74	--	1	A
Heptachlor epoxide	ND		ug/kg	3.25	--	1	A
Endrin	ND		ug/kg	0.723	--	1	A
Endrin aldehyde	ND		ug/kg	2.17	--	1	A
Endrin ketone	ND		ug/kg	1.74	--	1	A
Dieldrin	ND		ug/kg	1.08	--	1	A
4,4'-DDE	ND		ug/kg	1.74	--	1	A
4,4'-DDD	ND		ug/kg	1.74	--	1	A
4,4'-DDT	ND		ug/kg	3.25	--	1	A
Endosulfan I	ND		ug/kg	1.74	--	1	A
Endosulfan II	ND		ug/kg	1.74	--	1	A
Endosulfan sulfate	ND		ug/kg	0.723	--	1	A
Methoxychlor	ND		ug/kg	3.25	--	1	A
Toxaphene	ND		ug/kg	32.5	--	1	A
Chlordane	ND		ug/kg	14.1	--	1	A
cis-Chlordane	ND		ug/kg	2.17	--	1	A
trans-Chlordane	ND		ug/kg	2.17	--	1	A

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1911908
Report Date: 03/31/19

SAMPLE RESULTS

Lab ID: L1911908-01
Client ID: SB-8 (0.5-1.5)
Sample Location: HARDWICK, VT

Date Collected: 03/25/19 11:50
Date Received: 03/26/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	81		30-150	B
Decachlorobiphenyl	139		30-150	B
2,4,5,6-Tetrachloro-m-xylene	83		30-150	A
Decachlorobiphenyl	90		30-150	A

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1911908
Report Date: 03/31/19

SAMPLE RESULTS

Lab ID: L1911908-01
Client ID: SB-8 (0.5-1.5)
Sample Location: HARDWICK, VT

Date Collected: 03/25/19 11:50
Date Received: 03/26/19
Field Prep: Not Specified

Sample Depth:

Matrix: Soil
Analytical Method: 1,8151A
Analytical Date: 03/30/19 09:39
Analyst: BM
Percent Solids: 88%
Methylation Date: 03/29/19 11:27

Extraction Method: EPA 8151A
Extraction Date: 03/28/19 17:28

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Chlorinated Herbicides by GC - Westborough Lab							
MCPP	ND		ug/kg	3770	--	1	A
MCPA	ND		ug/kg	3770	--	1	A
Dalapon	ND		ug/kg	37.7	--	1	A
Dicamba	ND		ug/kg	37.7	--	1	A
Dichloroprop	ND		ug/kg	37.7	--	1	A
2,4-D	ND		ug/kg	188	--	1	A
2,4-DB	ND		ug/kg	188	--	1	A
2,4,5-T	ND		ug/kg	188	--	1	A
2,4,5-TP (Silvex)	ND		ug/kg	188	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
DCAA	79		30-150	A
DCAA	60		30-150	B

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1911908
Report Date: 03/31/19

SAMPLE RESULTS

Lab ID: L1911908-04
Client ID: SB-1 (0.5-1.5)
Sample Location: HARDWICK, VT

Date Collected: 03/25/19 14:30
Date Received: 03/26/19
Field Prep: Not Specified

Sample Depth:

Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 03/27/19 20:26
Analyst: BM
Percent Solids: 84%

Extraction Method: EPA 3546
Extraction Date: 03/26/19 19:02
Cleanup Method: EPA 3620B
Cleanup Date: 03/27/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.90	--	1	A
Lindane	ND		ug/kg	0.790	--	1	A
Alpha-BHC	ND		ug/kg	0.790	--	1	A
Beta-BHC	ND		ug/kg	1.90	--	1	A
Heptachlor	ND		ug/kg	0.949	--	1	A
Aldrin	ND		ug/kg	1.90	--	1	A
Heptachlor epoxide	ND		ug/kg	3.56	--	1	A
Endrin	ND		ug/kg	0.790	--	1	A
Endrin aldehyde	ND		ug/kg	2.37	--	1	A
Endrin ketone	ND		ug/kg	1.90	--	1	A
Dieldrin	ND		ug/kg	1.18	--	1	A
4,4'-DDE	ND		ug/kg	1.90	--	1	A
4,4'-DDD	ND		ug/kg	1.90	--	1	A
4,4'-DDT	ND		ug/kg	3.56	--	1	A
Endosulfan I	ND		ug/kg	1.90	--	1	A
Endosulfan II	ND		ug/kg	1.90	--	1	A
Endosulfan sulfate	ND		ug/kg	0.790	--	1	A
Methoxychlor	ND		ug/kg	3.56	--	1	A
Toxaphene	ND		ug/kg	35.6	--	1	A
Chlordane	ND		ug/kg	15.4	--	1	A
cis-Chlordane	ND		ug/kg	2.37	--	1	A
trans-Chlordane	ND		ug/kg	2.37	--	1	A

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1911908
Report Date: 03/31/19

SAMPLE RESULTS

Lab ID: L1911908-04
Client ID: SB-1 (0.5-1.5)
Sample Location: HARDWICK, VT

Date Collected: 03/25/19 14:30
Date Received: 03/26/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	84		30-150	B
Decachlorobiphenyl	89		30-150	B
2,4,5,6-Tetrachloro-m-xylene	85		30-150	A
Decachlorobiphenyl	97		30-150	A

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1911908
Report Date: 03/31/19

SAMPLE RESULTS

Lab ID: L1911908-04
Client ID: SB-1 (0.5-1.5)
Sample Location: HARDWICK, VT

Date Collected: 03/25/19 14:30
Date Received: 03/26/19
Field Prep: Not Specified

Sample Depth:

Matrix: Soil
Analytical Method: 1,8151A
Analytical Date: 03/30/19 09:57
Analyst: BM
Percent Solids: 84%
Methylation Date: 03/29/19 11:27

Extraction Method: EPA 8151A
Extraction Date: 03/28/19 17:28

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Chlorinated Herbicides by GC - Westborough Lab							
MCPP	ND		ug/kg	3950	--	1	A
MCPA	ND		ug/kg	3950	--	1	A
Dalapon	ND		ug/kg	39.5	--	1	A
Dicamba	ND		ug/kg	39.5	--	1	A
Dichloroprop	ND		ug/kg	39.5	--	1	A
2,4-D	ND		ug/kg	197	--	1	A
2,4-DB	ND		ug/kg	197	--	1	A
2,4,5-T	ND		ug/kg	197	--	1	A
2,4,5-TP (Silvex)	ND		ug/kg	197	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
DCAA	79		30-150	A
DCAA	74		30-150	B

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1911908
Report Date: 03/31/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 03/27/19 19:22
Analyst: BM

Extraction Method: EPA 3546
Extraction Date: 03/26/19 10:03
Cleanup Method: EPA 3620B
Cleanup Date: 03/27/19

Parameter	Result	Qualifier	Units	RL	MDL	Column
Pesticides by GC - Westborough Lab for sample(s): 01,04 Batch: WG1219589-1						
Delta-BHC	ND		ug/kg	1.58	--	A
Lindane	ND		ug/kg	0.660	--	A
Alpha-BHC	ND		ug/kg	0.660	--	A
Beta-BHC	ND		ug/kg	1.58	--	A
Heptachlor	ND		ug/kg	0.792	--	A
Aldrin	ND		ug/kg	1.58	--	A
Heptachlor epoxide	ND		ug/kg	2.97	--	A
Endrin	ND		ug/kg	0.660	--	A
Endrin aldehyde	ND		ug/kg	1.98	--	A
Endrin ketone	ND		ug/kg	1.58	--	A
Dieldrin	ND		ug/kg	0.989	--	A
4,4'-DDE	ND		ug/kg	1.58	--	A
4,4'-DDD	ND		ug/kg	1.58	--	A
4,4'-DDT	ND		ug/kg	2.97	--	A
Endosulfan I	ND		ug/kg	1.58	--	A
Endosulfan II	ND		ug/kg	1.58	--	A
Endosulfan sulfate	ND		ug/kg	0.660	--	A
Methoxychlor	ND		ug/kg	2.97	--	A
Toxaphene	ND		ug/kg	29.7	--	A
Chlordane	ND		ug/kg	12.9	--	A
cis-Chlordane	ND		ug/kg	1.98	--	A
trans-Chlordane	ND		ug/kg	1.98	--	A

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1911908
Report Date: 03/31/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
 Analytical Date: 03/27/19 19:22
 Analyst: BM

Extraction Method: EPA 3546
 Extraction Date: 03/26/19 10:03
 Cleanup Method: EPA 3620B
 Cleanup Date: 03/27/19

Parameter	Result	Qualifier	Units	RL	MDL	Column
Pesticides by GC - Westborough Lab for sample(s): 01,04 Batch: WG1219589-1						

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	85		30-150	B
Decachlorobiphenyl	101		30-150	B
2,4,5,6-Tetrachloro-m-xylene	84		30-150	A
Decachlorobiphenyl	88		30-150	A

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1911908
Report Date: 03/31/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8151A
Analytical Date: 03/29/19 16:46
Analyst: SL

Extraction Method: EPA 8151A
Extraction Date: 03/28/19 07:47

Methylation Date: 03/29/19 11:27

Parameter	Result	Qualifier	Units	RL	MDL	Column
Chlorinated Herbicides by GC - Westborough Lab for sample(s): 01,04 Batch: WG1220522-1						
MCPP	ND		ug/kg	3300	--	A
MCPA	ND		ug/kg	3300	--	A
Dalapon	ND		ug/kg	33.0	--	A
Dicamba	ND		ug/kg	33.0	--	A
Dichloroprop	ND		ug/kg	33.0	--	A
2,4-D	ND		ug/kg	165	--	A
2,4-DB	ND		ug/kg	165	--	A
2,4,5-T	ND		ug/kg	165	--	A
2,4,5-TP (Silvex)	ND		ug/kg	165	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
DCAA	81		30-150	A
DCAA	75		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: HARDWICK YELLOW BARN

Project Number: 1857501001

Lab Number: L1911908

Report Date: 03/31/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Pesticides by GC - Westborough Lab Associated sample(s): 01,04 Batch: WG1219589-2 WG1219589-3									
Delta-BHC	107		114		30-150	6		30	A
Lindane	103		110		30-150	7		30	A
Alpha-BHC	108		115		30-150	6		30	A
Beta-BHC	96		102		30-150	6		30	A
Heptachlor	101		110		30-150	9		30	A
Aldrin	97		104		30-150	7		30	A
Heptachlor epoxide	103		109		30-150	6		30	A
Endrin	101		109		30-150	8		30	A
Endrin aldehyde	69		81		30-150	16		30	A
Endrin ketone	93		104		30-150	11		30	A
Dieldrin	103		111		30-150	7		30	A
4,4'-DDE	92		99		30-150	7		30	A
4,4'-DDD	95		102		30-150	7		30	A
4,4'-DDT	103		112		30-150	8		30	A
Endosulfan I	88		96		30-150	9		30	A
Endosulfan II	88		96		30-150	9		30	A
Endosulfan sulfate	71		88		30-150	21		30	A
Methoxychlor	92		99		30-150	7		30	A
cis-Chlordane	79		86		30-150	8		30	A
trans-Chlordane	76		82		30-150	8		30	A

Lab Control Sample Analysis **Batch Quality Control**

Project Name: HARDWICK YELLOW BARN

Project Number: 1857501001

Lab Number: L1911908

Report Date: 03/31/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Pesticides by GC - Westborough Lab Associated sample(s): 01,04 Batch: WG1219589-2 WG1219589-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	86		91		30-150	B
Decachlorobiphenyl	96		109		30-150	B
2,4,5,6-Tetrachloro-m-xylene	85		89		30-150	A
Decachlorobiphenyl	90		94		30-150	A

Lab Control Sample Analysis Batch Quality Control

Project Name: HARDWICK YELLOW BARN

Project Number: 1857501001

Lab Number: L1911908

Report Date: 03/31/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Chlorinated Herbicides by GC - Westborough Lab Associated sample(s): 01,04 Batch: WG1220522-2 WG1220522-3									
MCPP	72		78		30-150	8		30	A
MCPA	72		72		30-150	0		30	A
Dalapon	80		81		30-150	1		30	A
Dicamba	85		87		30-150	2		30	A
Dichloroprop	124		134		30-150	8		30	A
2,4-D	99		125		30-150	23		30	A
2,4-DB	85		90		30-150	6		30	A
2,4,5-T	89		92		30-150	3		30	A
2,4,5-TP (Silvex)	84		85		30-150	1		30	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
DCAA	85		83		30-150	A
DCAA	75		79		30-150	B

METALS

Project Name: HARDWICK YELLOW BARN**Lab Number:** L1911908**Project Number:** 1857501001**Report Date:** 03/31/19**SAMPLE RESULTS**

Lab ID: L1911908-01

Date Collected: 03/25/19 11:50

Client ID: SB-8 (0.5-1.5)

Date Received: 03/26/19

Sample Location: HARDWICK, VT

Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 88%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	7.64		mg/kg	0.436	--	1	03/27/19 07:25	03/27/19 11:37	EPA 3050B	1,6010D	LC
Barium, Total	23.8		mg/kg	0.436	--	1	03/27/19 07:25	03/27/19 11:37	EPA 3050B	1,6010D	LC
Cadmium, Total	ND		mg/kg	0.436	--	1	03/27/19 07:25	03/27/19 11:37	EPA 3050B	1,6010D	LC
Chromium, Total	12.4		mg/kg	0.436	--	1	03/27/19 07:25	03/27/19 11:37	EPA 3050B	1,6010D	LC
Lead, Total	20.8		mg/kg	2.18	--	1	03/27/19 07:25	03/27/19 11:37	EPA 3050B	1,6010D	LC
Mercury, Total	ND		mg/kg	0.071	--	1	03/28/19 04:00	03/28/19 11:14	EPA 7471B	1,7471B	GD
Selenium, Total	ND		mg/kg	0.872	--	1	03/27/19 07:25	03/27/19 11:37	EPA 3050B	1,6010D	LC
Silver, Total	ND		mg/kg	0.436	--	1	03/27/19 07:25	03/27/19 11:37	EPA 3050B	1,6010D	LC



Project Name: HARDWICK YELLOW BARN**Lab Number:** L1911908**Project Number:** 1857501001**Report Date:** 03/31/19**SAMPLE RESULTS**

Lab ID: L1911908-02

Date Collected: 03/25/19 12:05

Client ID: SB-8 (10'-14')

Date Received: 03/26/19

Sample Location: HARDWICK, VT

Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	11.1		mg/kg	0.434	--	1	03/27/19 07:25	03/27/19 11:41	EPA 3050B	1,6010D	LC
Barium, Total	6.91		mg/kg	0.434	--	1	03/27/19 07:25	03/27/19 11:41	EPA 3050B	1,6010D	LC
Cadmium, Total	ND		mg/kg	0.434	--	1	03/27/19 07:25	03/27/19 11:41	EPA 3050B	1,6010D	LC
Chromium, Total	19.1		mg/kg	0.434	--	1	03/27/19 07:25	03/27/19 11:41	EPA 3050B	1,6010D	LC
Lead, Total	6.89		mg/kg	2.17	--	1	03/27/19 07:25	03/27/19 11:41	EPA 3050B	1,6010D	LC
Mercury, Total	ND		mg/kg	0.073	--	1	03/28/19 04:00	03/28/19 11:51	EPA 7471B	1,7471B	GD
Selenium, Total	ND		mg/kg	0.868	--	1	03/27/19 07:25	03/27/19 11:41	EPA 3050B	1,6010D	LC
Silver, Total	ND		mg/kg	0.434	--	1	03/27/19 07:25	03/27/19 11:41	EPA 3050B	1,6010D	LC



Project Name: HARDWICK YELLOW BARN**Lab Number:** L1911908**Project Number:** 1857501001**Report Date:** 03/31/19**SAMPLE RESULTS**

Lab ID: L1911908-03

Date Collected: 03/25/19 13:15

Client ID: SB-5 (15'-17')

Date Received: 03/26/19

Sample Location: HARDWICK, VT

Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	11.8		mg/kg	0.477	--	1	03/27/19 07:25	03/27/19 11:46	EPA 3050B	1,6010D	LC
Barium, Total	7.79		mg/kg	0.477	--	1	03/27/19 07:25	03/27/19 11:46	EPA 3050B	1,6010D	LC
Cadmium, Total	ND		mg/kg	0.477	--	1	03/27/19 07:25	03/27/19 11:46	EPA 3050B	1,6010D	LC
Chromium, Total	21.8		mg/kg	0.477	--	1	03/27/19 07:25	03/27/19 11:46	EPA 3050B	1,6010D	LC
Lead, Total	4.36		mg/kg	2.38	--	1	03/27/19 07:25	03/27/19 11:46	EPA 3050B	1,6010D	LC
Mercury, Total	ND		mg/kg	0.078	--	1	03/28/19 04:00	03/28/19 11:53	EPA 7471B	1,7471B	GD
Selenium, Total	ND		mg/kg	0.954	--	1	03/27/19 07:25	03/27/19 11:46	EPA 3050B	1,6010D	LC
Silver, Total	ND		mg/kg	0.477	--	1	03/27/19 07:25	03/27/19 11:46	EPA 3050B	1,6010D	LC



Project Name: HARDWICK YELLOW BARN**Lab Number:** L1911908**Project Number:** 1857501001**Report Date:** 03/31/19**SAMPLE RESULTS**

Lab ID: L1911908-04

Date Collected: 03/25/19 14:30

Client ID: SB-1 (0.5-1.5)

Date Received: 03/26/19

Sample Location: HARDWICK, VT

Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	12.6		mg/kg	0.447	--	1	03/27/19 07:25	03/27/19 11:50	EPA 3050B	1,6010D	LC
Barium, Total	17.4		mg/kg	0.447	--	1	03/27/19 07:25	03/27/19 11:50	EPA 3050B	1,6010D	LC
Cadmium, Total	ND		mg/kg	0.447	--	1	03/27/19 07:25	03/27/19 11:50	EPA 3050B	1,6010D	LC
Chromium, Total	17.6		mg/kg	0.447	--	1	03/27/19 07:25	03/27/19 11:50	EPA 3050B	1,6010D	LC
Lead, Total	7.62		mg/kg	2.24	--	1	03/27/19 07:25	03/27/19 11:50	EPA 3050B	1,6010D	LC
Mercury, Total	ND		mg/kg	0.075	--	1	03/28/19 04:00	03/28/19 11:55	EPA 7471B	1,7471B	GD
Selenium, Total	ND		mg/kg	0.894	--	1	03/27/19 07:25	03/27/19 11:50	EPA 3050B	1,6010D	LC
Silver, Total	ND		mg/kg	0.447	--	1	03/27/19 07:25	03/27/19 11:50	EPA 3050B	1,6010D	LC



Project Name: HARDWICK YELLOW BARN**Lab Number:** L1911908**Project Number:** 1857501001**Report Date:** 03/31/19**SAMPLE RESULTS**

Lab ID: L1911908-05

Date Collected: 03/25/19 15:25

Client ID: SB-1 (8'-11')

Date Received: 03/26/19

Sample Location: HARDWICK, VT

Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 94%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	12.7		mg/kg	0.406	--	1	03/27/19 07:25	03/27/19 11:54	EPA 3050B	1,6010D	LC
Barium, Total	10.8		mg/kg	0.406	--	1	03/27/19 07:25	03/27/19 11:54	EPA 3050B	1,6010D	LC
Cadmium, Total	ND		mg/kg	0.406	--	1	03/27/19 07:25	03/27/19 11:54	EPA 3050B	1,6010D	LC
Chromium, Total	29.4		mg/kg	0.406	--	1	03/27/19 07:25	03/27/19 11:54	EPA 3050B	1,6010D	LC
Lead, Total	5.28		mg/kg	2.03	--	1	03/27/19 07:25	03/27/19 11:54	EPA 3050B	1,6010D	LC
Mercury, Total	ND		mg/kg	0.068	--	1	03/28/19 04:00	03/28/19 12:01	EPA 7471B	1,7471B	GD
Selenium, Total	ND		mg/kg	0.811	--	1	03/27/19 07:25	03/27/19 11:54	EPA 3050B	1,6010D	LC
Silver, Total	ND		mg/kg	0.406	--	1	03/27/19 07:25	03/27/19 11:54	EPA 3050B	1,6010D	LC



Project Name: HARDWICK YELLOW BARN

Lab Number: L1911908

Project Number: 1857501001

Report Date: 03/31/19

Method Blank Analysis Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-05 Batch: WG1219995-1										
Arsenic, Total	ND		mg/kg	0.400	--	1	03/27/19 07:25	03/27/19 10:28	1,6010D	LC
Barium, Total	ND		mg/kg	0.400	--	1	03/27/19 07:25	03/27/19 10:28	1,6010D	LC
Cadmium, Total	ND		mg/kg	0.400	--	1	03/27/19 07:25	03/27/19 10:28	1,6010D	LC
Chromium, Total	ND		mg/kg	0.400	--	1	03/27/19 07:25	03/27/19 10:28	1,6010D	LC
Lead, Total	ND		mg/kg	2.00	--	1	03/27/19 07:25	03/27/19 10:28	1,6010D	LC
Selenium, Total	ND		mg/kg	0.800	--	1	03/27/19 07:25	03/27/19 10:28	1,6010D	LC
Silver, Total	ND		mg/kg	0.400	--	1	03/27/19 07:25	03/27/19 10:28	1,6010D	LC

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-05 Batch: WG1220018-1										
Mercury, Total	ND		mg/kg	0.083	--	1	03/28/19 04:00	03/28/19 11:10	1,7471B	GD

Prep Information

Digestion Method: EPA 7471B

Lab Control Sample Analysis

Batch Quality Control

Project Name: HARDWICK YELLOW BARN

Project Number: 1857501001

Lab Number: L1911908

Report Date: 03/31/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-05 Batch: WG1219995-2 SRM Lot Number: D101-540								
Arsenic, Total	103		-		83-117	-		
Barium, Total	90		-		83-118	-		
Cadmium, Total	96		-		83-117	-		
Chromium, Total	91		-		81-118	-		
Lead, Total	99		-		83-117	-		
Selenium, Total	103		-		79-121	-		
Silver, Total	93		-		80-120	-		
Total Metals - Mansfield Lab Associated sample(s): 01-05 Batch: WG1220018-2 SRM Lot Number: D101-540								
Mercury, Total	86		-		65-135	-		

Matrix Spike Analysis **Batch Quality Control**

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1911908
Report Date: 03/31/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1219995-3 QC Sample: L1911945-01 Client ID: MS Sample												
Arsenic, Total	8.10	12	16.5	70	Q	-	-		75-125	-		20
Barium, Total	7.01	200	199	96		-	-		75-125	-		20
Cadmium, Total	ND	5.1	4.22	83		-	-		75-125	-		20
Chromium, Total	15.7	20	35.2	97		-	-		75-125	-		20
Lead, Total	7.31	51	51.9	87		-	-		75-125	-		20
Selenium, Total	ND	12	10.6	88		-	-		75-125	-		20
Silver, Total	ND	30	27.8	93		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1220018-3 QC Sample: L1911908-01 Client ID: SB-8 (0.5-1.5)												
Mercury, Total	ND	0.144	0.137	95		-	-		80-120	-		20

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Duplicate Analysis
Batch Quality Control

Lab Number: L1911908
Report Date: 03/31/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1219995-4 QC Sample: L1911945-01 Client ID: DUP Sample						
Arsenic, Total	8.10	5.18	mg/kg	44	Q	20
Barium, Total	7.01	8.98	mg/kg	25	Q	20
Cadmium, Total	ND	ND	mg/kg	NC		20
Chromium, Total	15.7	14.0	mg/kg	11		20
Lead, Total	7.31	5.46	mg/kg	29	Q	20
Selenium, Total	ND	ND	mg/kg	NC		20
Silver, Total	ND	ND	mg/kg	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1220018-4 QC Sample: L1911908-01 Client ID: SB-8 (0.5-1.5)						
Mercury, Total	ND	ND	mg/kg	NC		20

INORGANICS & MISCELLANEOUS

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1911908
Report Date: 03/31/19

SAMPLE RESULTS

Lab ID: L1911908-01
Client ID: SB-8 (0.5-1.5)
Sample Location: HARDWICK, VT

Date Collected: 03/25/19 11:50
Date Received: 03/26/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	88.1		%	0.100	NA	1	-	03/26/19 22:46	121,2540G	YA



Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1911908
Report Date: 03/31/19

SAMPLE RESULTS

Lab ID: L1911908-02
Client ID: SB-8 (10'-14')
Sample Location: HARDWICK, VT

Date Collected: 03/25/19 12:05
Date Received: 03/26/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.6		%	0.100	NA	1	-	03/26/19 22:46	121,2540G	YA



Project Name: HARDWICK YELLOW BARN**Project Number:** 1857501001**Lab Number:** L1911908**Report Date:** 03/31/19**SAMPLE RESULTS****Lab ID:** L1911908-03**Client ID:** SB-5 (15'-17')**Sample Location:** HARDWICK, VT**Date Collected:** 03/25/19 13:15**Date Received:** 03/26/19**Field Prep:** Not Specified**Sample Depth:****Matrix:** Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	80.6		%	0.100	NA	1	-	03/26/19 22:46	121,2540G	YA



Project Name: HARDWICK YELLOW BARN**Project Number:** 1857501001**Lab Number:** L1911908**Report Date:** 03/31/19**SAMPLE RESULTS****Lab ID:** L1911908-04**Client ID:** SB-1 (0.5-1.5)**Sample Location:** HARDWICK, VT**Date Collected:** 03/25/19 14:30**Date Received:** 03/26/19**Field Prep:** Not Specified**Sample Depth:****Matrix:** Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	84.1		%	0.100	NA	1	-	03/26/19 22:46	121,2540G	YA



Project Name: HARDWICK YELLOW BARN

Project Number: 1857501001

Lab Number: L1911908

Report Date: 03/31/19

SAMPLE RESULTS

Lab ID: L1911908-05

Client ID: SB-1 (8'-11')

Sample Location: HARDWICK, VT

Date Collected: 03/25/19 15:25

Date Received: 03/26/19

Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	94.0		%	0.100	NA	1	-	03/26/19 22:46	121,2540G	YA



Lab Duplicate Analysis
*Batch Quality Control***Project Name:** HARDWICK YELLOW BARN**Project Number:** 1857501001**Lab Number:** L1911908**Report Date:** 03/31/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-05 QC Batch ID: WG1219885-1 QC Sample: L1911908-01 Client ID: SB-8 (0.5-1.5)						
Solids, Total	88.1	89.9	%	2		20

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Serial_No:03311918:44
Lab Number: L1911908
Report Date: 03/31/19

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler **Custody Seal**
A Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1911908-01A	Glass 60mL/2oz unpreserved	A	NA		3.6	Y	Absent		8270TCL-PAH(14),PEST-8081(14),HERB-8151(14)
L1911908-01B	Glass 120ml/4oz unpreserved	A	NA		3.6	Y	Absent		8270TCL-PAH(14),PEST-8081(14),HERB-8151(14)
L1911908-01C	Plastic 2oz unpreserved for TS	A	NA		3.6	Y	Absent		AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),PB-TI(180),SE-TI(180),HG-T(28),CD-TI(180)
L1911908-01D	Plastic 2oz unpreserved for TS	A	NA		3.6	Y	Absent		TS(7)
L1911908-01E	Plastic 2oz unpreserved for TS	A	NA		3.6	Y	Absent		TS(7)
L1911908-01F	Glass 250ml/8oz unpreserved	A	NA		3.6	Y	Absent		8270TCL-PAH(14),PEST-8081(14),HERB-8151(14)
L1911908-02A	Vial MeOH preserved	A	NA		3.6	Y	Absent		8260HLW(14)
L1911908-02B	Vial water preserved	A	NA		3.6	Y	Absent	26-MAR-19 18:26	8260HLW(14)
L1911908-02C	Vial water preserved	A	NA		3.6	Y	Absent	26-MAR-19 18:26	8260HLW(14)
L1911908-02D	Glass 60mL/2oz unpreserved	A	NA		3.6	Y	Absent		8270TCL-PAH(14)
L1911908-02E	Vial Large Septa unpreserved (4oz)	A	NA		3.6	Y	Absent		8260HLW(14)
L1911908-02F	Glass 120ml/4oz unpreserved	A	NA		3.6	Y	Absent		8270TCL-PAH(14)
L1911908-02G	Plastic 2oz unpreserved for TS	A	NA		3.6	Y	Absent		AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),PB-TI(180),SE-TI(180),HG-T(28),CD-TI(180)
L1911908-02H	Plastic 2oz unpreserved for TS	A	NA		3.6	Y	Absent		TS(7)
L1911908-02H1	Plastic 2oz unpreserved for TS	A	NA		3.6	Y	Absent		TS(7)
L1911908-02Y	Vial unpreserved Extracts	A	NA		3.6	Y	Absent		-
L1911908-02Z	Vial unpreserved Extracts	A	NA		3.6	Y	Absent		-
L1911908-03A	Vial MeOH preserved	A	NA		3.6	Y	Absent		8260HLW(14)
L1911908-03B	Vial water preserved	A	NA		3.6	Y	Absent	26-MAR-19 18:26	8260HLW(14)
L1911908-03C	Vial water preserved	A	NA		3.6	Y	Absent	26-MAR-19 18:26	8260HLW(14)

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Serial_No:03311918:44
Lab Number: L1911908
Report Date: 03/31/19

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1911908-03D	Glass 60mL/2oz unpreserved	A	NA		3.6	Y	Absent		8270TCL-PAH(14)
L1911908-03E	Vial Large Septa unpreserved (4oz)	A	NA		3.6	Y	Absent		8260HLW(14)
L1911908-03F	Glass 120ml/4oz unpreserved	A	NA		3.6	Y	Absent		8270TCL-PAH(14)
L1911908-03G	Plastic 2oz unpreserved for TS	A	NA		3.6	Y	Absent		AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),PB-TI(180),SE-TI(180),HG-T(28),CD-TI(180)
L1911908-03H	Plastic 2oz unpreserved for TS	A	NA		3.6	Y	Absent		TS(7)
L1911908-03H1	Plastic 2oz unpreserved for TS	A	NA		3.6	Y	Absent		TS(7)
L1911908-03Y	Vial unpreserved Extracts	A	NA		3.6	Y	Absent		-
L1911908-03Z	Vial unpreserved Extracts	A	NA		3.6	Y	Absent		-
L1911908-04A	Glass 60mL/2oz unpreserved	A	NA		3.6	Y	Absent		8270TCL-PAH(14),PEST-8081(14),HERB-8151(14)
L1911908-04B	Glass 120ml/4oz unpreserved	A	NA		3.6	Y	Absent		8270TCL-PAH(14),PEST-8081(14),HERB-8151(14)
L1911908-04C	Plastic 2oz unpreserved for TS	A	NA		3.6	Y	Absent		AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),PB-TI(180),SE-TI(180),HG-T(28),CD-TI(180)
L1911908-04D	Plastic 2oz unpreserved for TS	A	NA		3.6	Y	Absent		TS(7)
L1911908-04E	Plastic 2oz unpreserved for TS	A	NA		3.6	Y	Absent		TS(7)
L1911908-04F	Glass 250ml/8oz unpreserved	A	NA		3.6	Y	Absent		8270TCL-PAH(14),PEST-8081(14),HERB-8151(14)
L1911908-05A	Vial MeOH preserved	A	NA		3.6	Y	Absent		8260HLW(14)
L1911908-05B	Vial water preserved	A	NA		3.6	Y	Absent	26-MAR-19 18:26	8260HLW(14)
L1911908-05C	Vial water preserved	A	NA		3.6	Y	Absent	26-MAR-19 18:26	8260HLW(14)
L1911908-05D	Glass 60mL/2oz unpreserved	A	NA		3.6	Y	Absent		8270TCL-PAH(14)
L1911908-05E	Vial Large Septa unpreserved (4oz)	A	NA		3.6	Y	Absent		8260HLW(14)
L1911908-05F	Glass 120ml/4oz unpreserved	A	NA		3.6	Y	Absent		8270TCL-PAH(14)
L1911908-05G	Plastic 2oz unpreserved for TS	A	NA		3.6	Y	Absent		AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),PB-TI(180),SE-TI(180),HG-T(28),CD-TI(180)
L1911908-05H	Plastic 2oz unpreserved for TS	A	NA		3.6	Y	Absent		TS(7)
L1911908-05H1	Plastic 2oz unpreserved for TS	A	NA		3.6	Y	Absent		TS(7)
L1911908-05Y	Vial unpreserved Extracts	A	NA		3.6	Y	Absent		-
L1911908-05Z	Vial unpreserved Extracts	A	NA		3.6	Y	Absent		-

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Serial_No:03311918:44
Lab Number: L1911908
Report Date: 03/31/19

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1911908
Report Date: 03/31/19

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCS D	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
	Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

Report Format: Data Usability Report



Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1911908
Report Date: 03/31/19

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- ND** - Not detected at the reporting limit (RL) for the sample.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.

Report Format: Data Usability Report



Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1911908
Report Date: 03/31/19

REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Alpha Analytical, Inc.Facility: **Company-wide**Department: **Quality Assurance**Title: **Certificate/Approval Program Summary**ID No.: **17873**

Revision 12

Published Date: 10/9/2018 4:58:19 PM

Page 1 of 1

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility**EPA 624/624.1:** m/p-xylene, o-xylene**EPA 8260C:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.**EPA 8270D:** NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.**EPA 6860:** SCM: Perchlorate**SM4500:** NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO₂, NO₃.**Mansfield Facility****SM 2540D:** TSS**EPA 8082A:** NPW: PCB: 1, 5, 31, 87, 101, 110, 141, 151, 153, 180, 183, 187.**EPA TO-15:** Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.**Biological Tissue Matrix:** EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:**Drinking Water****EPA 300.0:** Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE,****EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B****EPA 332:** Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.**Microbiology:** **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.****Non-Potable Water****SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH:** Ammonia-N and Kjeldahl-N, **EPA 350.1:** Ammonia-N, **LACHAT 10-107-06-1-B:** Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2:** Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300:** Chloride, Sulfate, Nitrate.**EPA 624.1:** Volatile Halocarbons & Aromatics,**EPA 608.3:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs**EPA 625.1:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.****Mansfield Facility:****Drinking Water****EPA 200.7:** Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1 Hg. EPA 522.****Non-Potable Water****EPA 200.7:** Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.**EPA 200.8:** Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.**EPA 245.1 Hg.****SM2340B**

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

 CHAIN OF CUSTODY						PAGE <u>1</u> OF <u>1</u>		Date Rec'd in Lab: <u>3/26/19</u>		ALPHA Job #: <u>1911908</u>																																																																														
Project Information						Report Information - Data Deliverables		Billing Information																																																																																
Client Information Client: <u>STANTEC</u> Address: <u>5 Dartmouth Dr</u> <u>ALBURN NH 03032</u> Phone: <u>603-498-4674</u> Email: <u>DOAN@STANTEC.COM</u> Additional Project Information:						Project Name: <u>Hardwick Yellow Barn</u> Project Location: <u>Hardwick Vt.</u> Project #: <u>1857501001</u> Project Manager: ALPHA Quote #:		☐ ADEx ☒ EMAIL ☐ Same as Client info PO #:																																																																																
Turn-Around Time ☐ Standard ☒ RUSH (only confirmed if pre-approved!) Date Due:						Regulatory Requirements & Project Information Requirements ☐ Yes ☒ No MA MCP Analytical Methods ☐ Yes ☒ No CT RCP Analytical Methods ☐ Yes ☒ No Matrix Spike Required on this SDG? (Required for MCP Inorganics) ☐ Yes ☒ No GW1 Standards (Info Required for Metals & EPH with Targets) ☐ Yes ☒ No NPDES RGP ☐ Other State /Fed Program Criteria																																																																																		
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Container Type P= Plastic A= Amber glass V= Vial G= Glass B= Bacteria cup C= Cube O= Other E= Encore D= BOD Bottle						Preservative A= None B= HCl C= HNO ₃ D= H ₂ SO ₄ E= NaOH F= MeOH G= NaHSO ₄ H= Na ₂ S ₂ O ₃ I= Ascorbic Acid J= NH ₄ Cl K= Zn Acetate O= Other						<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Container Type</th> <th>Preservative</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td><u>V/A</u></td> <td><u>A</u></td> <td><u>A</u></td> <td><u>A</u></td> <td><u>A</u></td> <td></td> <td></td> <td></td> </tr> <tr> <td><u>F/A</u></td> <td><u>A</u></td> <td><u>A</u></td> <td><u>A</u></td> <td><u>A</u></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		Container Type	Preservative							<u>V/A</u>	<u>A</u>	<u>A</u>	<u>A</u>	<u>A</u>				<u>F/A</u>	<u>A</u>	<u>A</u>	<u>A</u>	<u>A</u>																																																						
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Relinquished By: <u>[Signature]</u> Date/Time: <u>3-25-19 1630</u>						Received By: <u>[Signature]</u> Date/Time: <u>3/26/19 1315</u>						All samples submitted are subject to Alpha's Terms and Conditions. See reverse side. FORM NO: 01-01 (rev. 12-Mar-2012)																																																																												



ANALYTICAL REPORT

Lab Number:	L1912086
Client:	Stantec 5 Dartmouth Drive Suite 200 Auburn, NH 03032
ATTN:	Dave Allwine
Phone:	(603) 669-8672
Project Name:	HARDWICK, YELLOW BARN
Project Number:	1857501001
Report Date:	04/04/19

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com



Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912086
Report Date: 04/04/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1912086-01	SB-2 (0.5-1.5)	SOIL	HARDWICK, VT	03/26/19 09:00	03/27/19
L1912086-02	SB-2 (10'-14')	SOIL	HARDWICK, VT	03/26/19 09:30	03/27/19
L1912086-03	SB-3 (8'-11')	SOIL	HARDWICK, VT	03/26/19 10:30	03/27/19
L1912086-04	SB-4 (10'-15')	SOIL	HARDWICK, VT	03/26/19 11:20	03/27/19
L1912086-05	SB-7A (5'-7')	SOIL	HARDWICK, VT	03/26/19 12:30	03/27/19
L1912086-06	SB-6 (5'-9')	SOIL	HARDWICK, VT	03/26/19 13:30	03/27/19
L1912086-07	DUP	SOIL	HARDWICK, VT	03/26/19 00:00	03/27/19

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912086
Report Date: 04/04/19

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912086
Report Date: 04/04/19

Case Narrative (continued)

Report Revision

April 04, 2019: The Batch Quality Control for Pesticides analysis has been amended.

April 02, 2019: All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

The analyses performed were specified by the client.

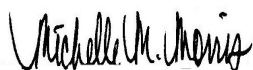
Pesticides

L1912086-01: The surrogate recovery is outside the method acceptance criteria for decachlorobiphenyl (22%) due to interference with the Internal Standard.

L1912086-01: The internal standard (IS) response for 1-bromo-2-nitrobenzene was above the acceptance criteria; however, the sample was not re-analyzed due to obvious interferences.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:



Michelle M. Morris

Title: Technical Director/Representative

Date: 04/04/19

ORGANICS

VOLATILES

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912086
Report Date: 04/04/19

SAMPLE RESULTS

Lab ID: L1912086-02
Client ID: SB-2 (10'-14')
Sample Location: HARDWICK, VT

Date Collected: 03/26/19 09:30
Date Received: 03/27/19
Field Prep: Not Specified

Sample Depth:

Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 03/30/19 01:14
Analyst: MV
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	3.4	1.6	1
1,1-Dichloroethane	ND		ug/kg	0.68	0.10	1
Chloroform	ND		ug/kg	1.0	0.10	1
Carbon tetrachloride	ND		ug/kg	0.68	0.16	1
1,2-Dichloropropane	ND		ug/kg	0.68	0.09	1
Dibromochloromethane	ND		ug/kg	0.68	0.10	1
1,1,2-Trichloroethane	ND		ug/kg	0.68	0.18	1
Tetrachloroethene	ND		ug/kg	0.34	0.13	1
Chlorobenzene	ND		ug/kg	0.34	0.09	1
Trichlorofluoromethane	ND		ug/kg	2.7	0.47	1
1,2-Dichloroethane	ND		ug/kg	0.68	0.18	1
1,1,1-Trichloroethane	ND		ug/kg	0.34	0.11	1
Bromodichloromethane	ND		ug/kg	0.34	0.07	1
trans-1,3-Dichloropropene	ND		ug/kg	0.68	0.19	1
cis-1,3-Dichloropropene	ND		ug/kg	0.34	0.11	1
1,3-Dichloropropene, Total	ND		ug/kg	0.34	0.11	1
1,1-Dichloropropene	ND		ug/kg	0.34	0.11	1
Bromoform	ND		ug/kg	2.7	0.17	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.34	0.11	1
Benzene	ND		ug/kg	0.34	0.11	1
Toluene	ND		ug/kg	0.68	0.37	1
Ethylbenzene	ND		ug/kg	0.68	0.10	1
Chloromethane	ND		ug/kg	2.7	0.64	1
Bromomethane	ND		ug/kg	1.4	0.40	1
Vinyl chloride	ND		ug/kg	0.68	0.23	1
Chloroethane	ND		ug/kg	1.4	0.31	1
1,1-Dichloroethene	ND		ug/kg	0.68	0.16	1
trans-1,2-Dichloroethene	ND		ug/kg	1.0	0.09	1

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912086
Report Date: 04/04/19

SAMPLE RESULTS

Lab ID: L1912086-02
Client ID: SB-2 (10'-14')
Sample Location: HARDWICK, VT

Date Collected: 03/26/19 09:30
Date Received: 03/27/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.34	0.09	1
1,2-Dichlorobenzene	ND		ug/kg	1.4	0.10	1
1,3-Dichlorobenzene	ND		ug/kg	1.4	0.10	1
1,4-Dichlorobenzene	ND		ug/kg	1.4	0.12	1
Methyl tert butyl ether	ND		ug/kg	1.4	0.14	1
p/m-Xylene	ND		ug/kg	1.4	0.38	1
o-Xylene	ND		ug/kg	0.68	0.20	1
Xylenes, Total	ND		ug/kg	0.68	0.20	1
cis-1,2-Dichloroethene	ND		ug/kg	0.68	0.12	1
1,2-Dichloroethene, Total	ND		ug/kg	0.68	0.09	1
Dibromomethane	ND		ug/kg	1.4	0.16	1
1,4-Dichlorobutane	ND		ug/kg	6.8	0.15	1
1,2,3-Trichloropropane	ND		ug/kg	1.4	0.09	1
Styrene	ND		ug/kg	0.68	0.13	1
Dichlorodifluoromethane	ND		ug/kg	6.8	0.62	1
Acetone	31		ug/kg	6.8	3.3	1
Carbon disulfide	ND		ug/kg	6.8	3.1	1
2-Butanone	3.2	J	ug/kg	6.8	1.5	1
Vinyl acetate	ND		ug/kg	6.8	1.5	1
4-Methyl-2-pentanone	ND		ug/kg	6.8	0.87	1
2-Hexanone	ND		ug/kg	6.8	0.80	1
Ethyl methacrylate	ND		ug/kg	6.8	1.1	1
Acrylonitrile	ND		ug/kg	2.7	0.78	1
Bromochloromethane	ND		ug/kg	1.4	0.14	1
Tetrahydrofuran	ND		ug/kg	2.7	1.1	1
2,2-Dichloropropane	ND		ug/kg	1.4	0.14	1
1,2-Dibromoethane	ND		ug/kg	0.68	0.19	1
1,3-Dichloropropane	ND		ug/kg	1.4	0.11	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.34	0.09	1
Bromobenzene	ND		ug/kg	1.4	0.10	1
n-Butylbenzene	ND		ug/kg	0.68	0.11	1
sec-Butylbenzene	ND		ug/kg	0.68	0.10	1
tert-Butylbenzene	ND		ug/kg	1.4	0.08	1
o-Chlorotoluene	ND		ug/kg	1.4	0.13	1
p-Chlorotoluene	ND		ug/kg	1.4	0.07	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	2.0	0.68	1
Hexachlorobutadiene	ND		ug/kg	2.7	0.12	1

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912086
Report Date: 04/04/19

SAMPLE RESULTS

Lab ID: L1912086-02
Client ID: SB-2 (10'-14')
Sample Location: HARDWICK, VT

Date Collected: 03/26/19 09:30
Date Received: 03/27/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Isopropylbenzene	ND		ug/kg	0.68	0.07	1
p-Isopropyltoluene	ND		ug/kg	0.68	0.07	1
Naphthalene	ND		ug/kg	2.7	0.44	1
n-Propylbenzene	ND		ug/kg	0.68	0.12	1
1,2,3-Trichlorobenzene	ND		ug/kg	1.4	0.22	1
1,2,4-Trichlorobenzene	ND		ug/kg	1.4	0.18	1
1,3,5-Trimethylbenzene	ND		ug/kg	1.4	0.13	1
1,2,4-Trimethylbenzene	ND		ug/kg	1.4	0.23	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	3.4	0.97	1
Ethyl ether	ND		ug/kg	1.4	0.23	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	96		70-130

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912086
Report Date: 04/04/19

SAMPLE RESULTS

Lab ID: L1912086-03
Client ID: SB-3 (8'-11')
Sample Location: HARDWICK, VT

Date Collected: 03/26/19 10:30
Date Received: 03/27/19
Field Prep: Not Specified

Sample Depth:

Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 03/30/19 01:39
Analyst: MV
Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	5.8	2.6	1
1,1-Dichloroethane	ND		ug/kg	1.2	0.17	1
Chloroform	ND		ug/kg	1.7	0.16	1
Carbon tetrachloride	ND		ug/kg	1.2	0.27	1
1,2-Dichloropropane	ND		ug/kg	1.2	0.14	1
Dibromochloromethane	ND		ug/kg	1.2	0.16	1
1,1,2-Trichloroethane	ND		ug/kg	1.2	0.31	1
Tetrachloroethene	ND		ug/kg	0.58	0.23	1
Chlorobenzene	ND		ug/kg	0.58	0.15	1
Trichlorofluoromethane	ND		ug/kg	4.6	0.81	1
1,2-Dichloroethane	ND		ug/kg	1.2	0.30	1
1,1,1-Trichloroethane	ND		ug/kg	0.58	0.19	1
Bromodichloromethane	ND		ug/kg	0.58	0.13	1
trans-1,3-Dichloropropene	ND		ug/kg	1.2	0.32	1
cis-1,3-Dichloropropene	ND		ug/kg	0.58	0.18	1
1,3-Dichloropropene, Total	ND		ug/kg	0.58	0.18	1
1,1-Dichloropropene	ND		ug/kg	0.58	0.18	1
Bromoform	ND		ug/kg	4.6	0.28	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.58	0.19	1
Benzene	ND		ug/kg	0.58	0.19	1
Toluene	ND		ug/kg	1.2	0.63	1
Ethylbenzene	ND		ug/kg	1.2	0.16	1
Chloromethane	ND		ug/kg	4.6	1.1	1
Bromomethane	ND		ug/kg	2.3	0.67	1
Vinyl chloride	ND		ug/kg	1.2	0.39	1
Chloroethane	ND		ug/kg	2.3	0.52	1
1,1-Dichloroethene	ND		ug/kg	1.2	0.28	1
trans-1,2-Dichloroethene	ND		ug/kg	1.7	0.16	1

Project Name: HARDWICK, YELLOW BARN**Lab Number:** L1912086**Project Number:** 1857501001**Report Date:** 04/04/19**SAMPLE RESULTS**

Lab ID: L1912086-03
 Client ID: SB-3 (8'-11')
 Sample Location: HARDWICK, VT

Date Collected: 03/26/19 10:30
 Date Received: 03/27/19
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.58	0.16	1
1,2-Dichlorobenzene	ND		ug/kg	2.3	0.17	1
1,3-Dichlorobenzene	ND		ug/kg	2.3	0.17	1
1,4-Dichlorobenzene	ND		ug/kg	2.3	0.20	1
Methyl tert butyl ether	ND		ug/kg	2.3	0.23	1
p/m-Xylene	ND		ug/kg	2.3	0.65	1
o-Xylene	ND		ug/kg	1.2	0.34	1
Xylenes, Total	ND		ug/kg	1.2	0.34	1
cis-1,2-Dichloroethene	ND		ug/kg	1.2	0.20	1
1,2-Dichloroethene, Total	ND		ug/kg	1.2	0.16	1
Dibromomethane	ND		ug/kg	2.3	0.28	1
1,4-Dichlorobutane	ND		ug/kg	12	0.26	1
1,2,3-Trichloropropane	ND		ug/kg	2.3	0.15	1
Styrene	ND		ug/kg	1.2	0.23	1
Dichlorodifluoromethane	ND		ug/kg	12	1.1	1
Acetone	110		ug/kg	12	5.6	1
Carbon disulfide	ND		ug/kg	12	5.3	1
2-Butanone	20		ug/kg	12	2.6	1
Vinyl acetate	ND		ug/kg	12	2.5	1
4-Methyl-2-pentanone	2.3	J	ug/kg	12	1.5	1
2-Hexanone	ND		ug/kg	12	1.4	1
Ethyl methacrylate	ND		ug/kg	12	1.8	1
Acrylonitrile	ND		ug/kg	4.6	1.3	1
Bromochloromethane	ND		ug/kg	2.3	0.24	1
Tetrahydrofuran	ND		ug/kg	4.6	1.8	1
2,2-Dichloropropane	ND		ug/kg	2.3	0.23	1
1,2-Dibromoethane	ND		ug/kg	1.2	0.32	1
1,3-Dichloropropane	ND		ug/kg	2.3	0.19	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.58	0.15	1
Bromobenzene	ND		ug/kg	2.3	0.17	1
n-Butylbenzene	ND		ug/kg	1.2	0.19	1
sec-Butylbenzene	ND		ug/kg	1.2	0.17	1
tert-Butylbenzene	ND		ug/kg	2.3	0.14	1
o-Chlorotoluene	ND		ug/kg	2.3	0.22	1
p-Chlorotoluene	ND		ug/kg	2.3	0.12	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.5	1.2	1
Hexachlorobutadiene	ND		ug/kg	4.6	0.20	1

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912086
Report Date: 04/04/19

SAMPLE RESULTS

Lab ID: L1912086-03
Client ID: SB-3 (8'-11')
Sample Location: HARDWICK, VT

Date Collected: 03/26/19 10:30
Date Received: 03/27/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Isopropylbenzene	ND		ug/kg	1.2	0.13	1
p-Isopropyltoluene	0.26	J	ug/kg	1.2	0.13	1
Naphthalene	ND		ug/kg	4.6	0.75	1
n-Propylbenzene	ND		ug/kg	1.2	0.20	1
1,2,3-Trichlorobenzene	ND		ug/kg	2.3	0.37	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.3	0.32	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.3	0.22	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.3	0.39	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	5.8	1.6	1
Ethyl ether	ND		ug/kg	2.3	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	97		70-130

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912086
Report Date: 04/04/19

SAMPLE RESULTS

Lab ID: L1912086-04
Client ID: SB-4 (10'-15')
Sample Location: HARDWICK, VT

Date Collected: 03/26/19 11:20
Date Received: 03/27/19
Field Prep: Not Specified

Sample Depth:

Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 03/30/19 02:06
Analyst: MV
Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	5.8	2.7	1
1,1-Dichloroethane	ND		ug/kg	1.2	0.17	1
Chloroform	ND		ug/kg	1.7	0.16	1
Carbon tetrachloride	ND		ug/kg	1.2	0.27	1
1,2-Dichloropropane	ND		ug/kg	1.2	0.14	1
Dibromochloromethane	ND		ug/kg	1.2	0.16	1
1,1,2-Trichloroethane	ND		ug/kg	1.2	0.31	1
Tetrachloroethene	ND		ug/kg	0.58	0.23	1
Chlorobenzene	ND		ug/kg	0.58	0.15	1
Trichlorofluoromethane	ND		ug/kg	4.6	0.81	1
1,2-Dichloroethane	ND		ug/kg	1.2	0.30	1
1,1,1-Trichloroethane	ND		ug/kg	0.58	0.19	1
Bromodichloromethane	ND		ug/kg	0.58	0.13	1
trans-1,3-Dichloropropene	ND		ug/kg	1.2	0.32	1
cis-1,3-Dichloropropene	ND		ug/kg	0.58	0.18	1
1,3-Dichloropropene, Total	ND		ug/kg	0.58	0.18	1
1,1-Dichloropropene	ND		ug/kg	0.58	0.18	1
Bromoform	ND		ug/kg	4.6	0.29	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.58	0.19	1
Benzene	ND		ug/kg	0.58	0.19	1
Toluene	ND		ug/kg	1.2	0.63	1
Ethylbenzene	ND		ug/kg	1.2	0.16	1
Chloromethane	ND		ug/kg	4.6	1.1	1
Bromomethane	ND		ug/kg	2.3	0.68	1
Vinyl chloride	ND		ug/kg	1.2	0.39	1
Chloroethane	ND		ug/kg	2.3	0.52	1
1,1-Dichloroethene	ND		ug/kg	1.2	0.28	1
trans-1,2-Dichloroethene	ND		ug/kg	1.7	0.16	1

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912086
Report Date: 04/04/19

SAMPLE RESULTS

Lab ID: L1912086-04
Client ID: SB-4 (10'-15')
Sample Location: HARDWICK, VT

Date Collected: 03/26/19 11:20
Date Received: 03/27/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.58	0.16	1
1,2-Dichlorobenzene	ND		ug/kg	2.3	0.17	1
1,3-Dichlorobenzene	ND		ug/kg	2.3	0.17	1
1,4-Dichlorobenzene	ND		ug/kg	2.3	0.20	1
Methyl tert butyl ether	ND		ug/kg	2.3	0.23	1
p/m-Xylene	ND		ug/kg	2.3	0.65	1
o-Xylene	ND		ug/kg	1.2	0.34	1
Xylenes, Total	ND		ug/kg	1.2	0.34	1
cis-1,2-Dichloroethene	ND		ug/kg	1.2	0.20	1
1,2-Dichloroethene, Total	ND		ug/kg	1.2	0.16	1
Dibromomethane	ND		ug/kg	2.3	0.28	1
1,4-Dichlorobutane	ND		ug/kg	12	0.26	1
1,2,3-Trichloropropane	ND		ug/kg	2.3	0.15	1
Styrene	ND		ug/kg	1.2	0.23	1
Dichlorodifluoromethane	ND		ug/kg	12	1.1	1
Acetone	73		ug/kg	12	5.6	1
Carbon disulfide	ND		ug/kg	12	5.3	1
2-Butanone	10	J	ug/kg	12	2.6	1
Vinyl acetate	ND		ug/kg	12	2.5	1
4-Methyl-2-pentanone	ND		ug/kg	12	1.5	1
2-Hexanone	ND		ug/kg	12	1.4	1
Ethyl methacrylate	ND		ug/kg	12	1.8	1
Acrylonitrile	ND		ug/kg	4.6	1.3	1
Bromochloromethane	ND		ug/kg	2.3	0.24	1
Tetrahydrofuran	ND		ug/kg	4.6	1.8	1
2,2-Dichloropropane	ND		ug/kg	2.3	0.23	1
1,2-Dibromoethane	ND		ug/kg	1.2	0.32	1
1,3-Dichloropropane	ND		ug/kg	2.3	0.19	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.58	0.15	1
Bromobenzene	ND		ug/kg	2.3	0.17	1
n-Butylbenzene	ND		ug/kg	1.2	0.19	1
sec-Butylbenzene	ND		ug/kg	1.2	0.17	1
tert-Butylbenzene	ND		ug/kg	2.3	0.14	1
o-Chlorotoluene	ND		ug/kg	2.3	0.22	1
p-Chlorotoluene	ND		ug/kg	2.3	0.12	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.5	1.2	1
Hexachlorobutadiene	ND		ug/kg	4.6	0.20	1

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912086
Report Date: 04/04/19

SAMPLE RESULTS

Lab ID: L1912086-04
Client ID: SB-4 (10'-15')
Sample Location: HARDWICK, VT

Date Collected: 03/26/19 11:20
Date Received: 03/27/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Isopropylbenzene	ND		ug/kg	1.2	0.13	1
p-Isopropyltoluene	ND		ug/kg	1.2	0.13	1
Naphthalene	ND		ug/kg	4.6	0.76	1
n-Propylbenzene	ND		ug/kg	1.2	0.20	1
1,2,3-Trichlorobenzene	ND		ug/kg	2.3	0.37	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.3	0.32	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.3	0.22	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.3	0.39	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	5.8	1.6	1
Ethyl ether	ND		ug/kg	2.3	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	113		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	115		70-130
Dibromofluoromethane	97		70-130

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912086
Report Date: 04/04/19

SAMPLE RESULTS

Lab ID: L1912086-05
Client ID: SB-7A (5'-7')
Sample Location: HARDWICK, VT

Date Collected: 03/26/19 12:30
Date Received: 03/27/19
Field Prep: Not Specified

Sample Depth:

Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 03/30/19 02:31
Analyst: MV
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	3.4	1.6	1
1,1-Dichloroethane	ND		ug/kg	0.68	0.10	1
Chloroform	ND		ug/kg	1.0	0.10	1
Carbon tetrachloride	ND		ug/kg	0.68	0.16	1
1,2-Dichloropropane	ND		ug/kg	0.68	0.09	1
Dibromochloromethane	ND		ug/kg	0.68	0.10	1
1,1,2-Trichloroethane	ND		ug/kg	0.68	0.18	1
Tetrachloroethene	ND		ug/kg	0.34	0.13	1
Chlorobenzene	ND		ug/kg	0.34	0.09	1
Trichlorofluoromethane	ND		ug/kg	2.7	0.47	1
1,2-Dichloroethane	ND		ug/kg	0.68	0.18	1
1,1,1-Trichloroethane	ND		ug/kg	0.34	0.11	1
Bromodichloromethane	ND		ug/kg	0.34	0.07	1
trans-1,3-Dichloropropene	ND		ug/kg	0.68	0.18	1
cis-1,3-Dichloropropene	ND		ug/kg	0.34	0.11	1
1,3-Dichloropropene, Total	ND		ug/kg	0.34	0.11	1
1,1-Dichloropropene	ND		ug/kg	0.34	0.11	1
Bromoform	ND		ug/kg	2.7	0.17	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.34	0.11	1
Benzene	ND		ug/kg	0.34	0.11	1
Toluene	ND		ug/kg	0.68	0.37	1
Ethylbenzene	ND		ug/kg	0.68	0.10	1
Chloromethane	ND		ug/kg	2.7	0.63	1
Bromomethane	ND		ug/kg	1.4	0.40	1
Vinyl chloride	ND		ug/kg	0.68	0.23	1
Chloroethane	ND		ug/kg	1.4	0.31	1
1,1-Dichloroethene	ND		ug/kg	0.68	0.16	1
trans-1,2-Dichloroethene	ND		ug/kg	1.0	0.09	1

Project Name: HARDWICK, YELLOW BARN

Lab Number: L1912086

Project Number: 1857501001

Report Date: 04/04/19

SAMPLE RESULTS

Lab ID: L1912086-05
 Client ID: SB-7A (5'-7')
 Sample Location: HARDWICK, VT

Date Collected: 03/26/19 12:30
 Date Received: 03/27/19
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.34	0.09	1
1,2-Dichlorobenzene	ND		ug/kg	1.4	0.10	1
1,3-Dichlorobenzene	ND		ug/kg	1.4	0.10	1
1,4-Dichlorobenzene	ND		ug/kg	1.4	0.12	1
Methyl tert butyl ether	ND		ug/kg	1.4	0.14	1
p/m-Xylene	ND		ug/kg	1.4	0.38	1
o-Xylene	ND		ug/kg	0.68	0.20	1
Xylenes, Total	ND		ug/kg	0.68	0.20	1
cis-1,2-Dichloroethene	ND		ug/kg	0.68	0.12	1
1,2-Dichloroethene, Total	ND		ug/kg	0.68	0.09	1
Dibromomethane	ND		ug/kg	1.4	0.16	1
1,4-Dichlorobutane	ND		ug/kg	6.8	0.15	1
1,2,3-Trichloropropane	ND		ug/kg	1.4	0.09	1
Styrene	ND		ug/kg	0.68	0.13	1
Dichlorodifluoromethane	ND		ug/kg	6.8	0.62	1
Acetone	5.6	J	ug/kg	6.8	3.3	1
Carbon disulfide	ND		ug/kg	6.8	3.1	1
2-Butanone	ND		ug/kg	6.8	1.5	1
Vinyl acetate	ND		ug/kg	6.8	1.5	1
4-Methyl-2-pentanone	ND		ug/kg	6.8	0.87	1
2-Hexanone	ND		ug/kg	6.8	0.80	1
Ethyl methacrylate	ND		ug/kg	6.8	1.1	1
Acrylonitrile	ND		ug/kg	2.7	0.78	1
Bromochloromethane	ND		ug/kg	1.4	0.14	1
Tetrahydrofuran	ND		ug/kg	2.7	1.1	1
2,2-Dichloropropane	ND		ug/kg	1.4	0.14	1
1,2-Dibromoethane	ND		ug/kg	0.68	0.19	1
1,3-Dichloropropane	ND		ug/kg	1.4	0.11	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.34	0.09	1
Bromobenzene	ND		ug/kg	1.4	0.10	1
n-Butylbenzene	ND		ug/kg	0.68	0.11	1
sec-Butylbenzene	ND		ug/kg	0.68	0.10	1
tert-Butylbenzene	ND		ug/kg	1.4	0.08	1
o-Chlorotoluene	ND		ug/kg	1.4	0.13	1
p-Chlorotoluene	ND		ug/kg	1.4	0.07	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	2.0	0.68	1
Hexachlorobutadiene	ND		ug/kg	2.7	0.12	1

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912086
Report Date: 04/04/19

SAMPLE RESULTS

Lab ID: L1912086-05
Client ID: SB-7A (5'-7')
Sample Location: HARDWICK, VT

Date Collected: 03/26/19 12:30
Date Received: 03/27/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Isopropylbenzene	ND		ug/kg	0.68	0.07	1
p-Isopropyltoluene	ND		ug/kg	0.68	0.07	1
Naphthalene	ND		ug/kg	2.7	0.44	1
n-Propylbenzene	ND		ug/kg	0.68	0.12	1
1,2,3-Trichlorobenzene	ND		ug/kg	1.4	0.22	1
1,2,4-Trichlorobenzene	ND		ug/kg	1.4	0.18	1
1,3,5-Trimethylbenzene	ND		ug/kg	1.4	0.13	1
1,2,4-Trimethylbenzene	ND		ug/kg	1.4	0.23	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	3.4	0.97	1
Ethyl ether	ND		ug/kg	1.4	0.23	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	109		70-130
Dibromofluoromethane	97		70-130

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912086
Report Date: 04/04/19

SAMPLE RESULTS

Lab ID: L1912086-06
Client ID: SB-6 (5'-9')
Sample Location: HARDWICK, VT

Date Collected: 03/26/19 13:30
Date Received: 03/27/19
Field Prep: Not Specified

Sample Depth:

Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 03/30/19 02:57
Analyst: MV
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	4.6	2.1	1
1,1-Dichloroethane	ND		ug/kg	0.93	0.13	1
Chloroform	ND		ug/kg	1.4	0.13	1
Carbon tetrachloride	ND		ug/kg	0.93	0.21	1
1,2-Dichloropropane	ND		ug/kg	0.93	0.12	1
Dibromochloromethane	ND		ug/kg	0.93	0.13	1
1,1,2-Trichloroethane	ND		ug/kg	0.93	0.25	1
Tetrachloroethene	ND		ug/kg	0.46	0.18	1
Chlorobenzene	ND		ug/kg	0.46	0.12	1
Trichlorofluoromethane	ND		ug/kg	3.7	0.64	1
1,2-Dichloroethane	ND		ug/kg	0.93	0.24	1
1,1,1-Trichloroethane	ND		ug/kg	0.46	0.15	1
Bromodichloromethane	ND		ug/kg	0.46	0.10	1
trans-1,3-Dichloropropene	ND		ug/kg	0.93	0.25	1
cis-1,3-Dichloropropene	ND		ug/kg	0.46	0.15	1
1,3-Dichloropropene, Total	ND		ug/kg	0.46	0.15	1
1,1-Dichloropropene	ND		ug/kg	0.46	0.15	1
Bromoform	ND		ug/kg	3.7	0.23	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.46	0.15	1
Benzene	ND		ug/kg	0.46	0.15	1
Toluene	ND		ug/kg	0.93	0.50	1
Ethylbenzene	ND		ug/kg	0.93	0.13	1
Chloromethane	ND		ug/kg	3.7	0.86	1
Bromomethane	ND		ug/kg	1.8	0.54	1
Vinyl chloride	ND		ug/kg	0.93	0.31	1
Chloroethane	ND		ug/kg	1.8	0.42	1
1,1-Dichloroethene	ND		ug/kg	0.93	0.22	1
trans-1,2-Dichloroethene	ND		ug/kg	1.4	0.13	1

Project Name: HARDWICK, YELLOW BARN**Lab Number:** L1912086**Project Number:** 1857501001**Report Date:** 04/04/19**SAMPLE RESULTS**

Lab ID: L1912086-06
 Client ID: SB-6 (5'-9')
 Sample Location: HARDWICK, VT

Date Collected: 03/26/19 13:30
 Date Received: 03/27/19
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.46	0.13	1
1,2-Dichlorobenzene	ND		ug/kg	1.8	0.13	1
1,3-Dichlorobenzene	ND		ug/kg	1.8	0.14	1
1,4-Dichlorobenzene	ND		ug/kg	1.8	0.16	1
Methyl tert butyl ether	ND		ug/kg	1.8	0.19	1
p/m-Xylene	ND		ug/kg	1.8	0.52	1
o-Xylene	ND		ug/kg	0.93	0.27	1
Xylenes, Total	ND		ug/kg	0.93	0.27	1
cis-1,2-Dichloroethene	ND		ug/kg	0.93	0.16	1
1,2-Dichloroethene, Total	ND		ug/kg	0.93	0.13	1
Dibromomethane	ND		ug/kg	1.8	0.22	1
1,4-Dichlorobutane	ND		ug/kg	9.3	0.21	1
1,2,3-Trichloropropane	ND		ug/kg	1.8	0.12	1
Styrene	ND		ug/kg	0.93	0.18	1
Dichlorodifluoromethane	ND		ug/kg	9.3	0.85	1
Acetone	64		ug/kg	9.3	4.5	1
Carbon disulfide	ND		ug/kg	9.3	4.2	1
2-Butanone	6.4	J	ug/kg	9.3	2.0	1
Vinyl acetate	ND		ug/kg	9.3	2.0	1
4-Methyl-2-pentanone	ND		ug/kg	9.3	1.2	1
2-Hexanone	ND		ug/kg	9.3	1.1	1
Ethyl methacrylate	ND		ug/kg	9.3	1.5	1
Acrylonitrile	ND		ug/kg	3.7	1.1	1
Bromochloromethane	ND		ug/kg	1.8	0.19	1
Tetrahydrofuran	ND		ug/kg	3.7	1.5	1
2,2-Dichloropropane	ND		ug/kg	1.8	0.19	1
1,2-Dibromoethane	ND		ug/kg	0.93	0.26	1
1,3-Dichloropropane	ND		ug/kg	1.8	0.15	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.46	0.12	1
Bromobenzene	ND		ug/kg	1.8	0.13	1
n-Butylbenzene	ND		ug/kg	0.93	0.15	1
sec-Butylbenzene	ND		ug/kg	0.93	0.14	1
tert-Butylbenzene	ND		ug/kg	1.8	0.11	1
o-Chlorotoluene	ND		ug/kg	1.8	0.18	1
p-Chlorotoluene	ND		ug/kg	1.8	0.10	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	2.8	0.92	1
Hexachlorobutadiene	ND		ug/kg	3.7	0.16	1

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912086
Report Date: 04/04/19

SAMPLE RESULTS

Lab ID: L1912086-06
Client ID: SB-6 (5'-9')
Sample Location: HARDWICK, VT

Date Collected: 03/26/19 13:30
Date Received: 03/27/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Isopropylbenzene	ND		ug/kg	0.93	0.10	1
p-Isopropyltoluene	ND		ug/kg	0.93	0.10	1
Naphthalene	ND		ug/kg	3.7	0.60	1
n-Propylbenzene	ND		ug/kg	0.93	0.16	1
1,2,3-Trichlorobenzene	ND		ug/kg	1.8	0.30	1
1,2,4-Trichlorobenzene	ND		ug/kg	1.8	0.25	1
1,3,5-Trimethylbenzene	ND		ug/kg	1.8	0.18	1
1,2,4-Trimethylbenzene	ND		ug/kg	1.8	0.31	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	4.6	1.3	1
Ethyl ether	ND		ug/kg	1.8	0.32	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	92		70-130

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912086
Report Date: 04/04/19

SAMPLE RESULTS

Lab ID: L1912086-07
Client ID: DUP
Sample Location: HARDWICK, VT

Date Collected: 03/26/19 00:00
Date Received: 03/27/19
Field Prep: Not Specified

Sample Depth:

Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 03/30/19 03:23
Analyst: MV
Percent Solids: 63%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	6.0	2.8	1
1,1-Dichloroethane	ND		ug/kg	1.2	0.18	1
Chloroform	ND		ug/kg	1.8	0.17	1
Carbon tetrachloride	ND		ug/kg	1.2	0.28	1
1,2-Dichloropropane	ND		ug/kg	1.2	0.15	1
Dibromochloromethane	ND		ug/kg	1.2	0.17	1
1,1,2-Trichloroethane	ND		ug/kg	1.2	0.32	1
Tetrachloroethene	ND		ug/kg	0.60	0.24	1
Chlorobenzene	ND		ug/kg	0.60	0.15	1
Trichlorofluoromethane	ND		ug/kg	4.8	0.84	1
1,2-Dichloroethane	ND		ug/kg	1.2	0.31	1
1,1,1-Trichloroethane	ND		ug/kg	0.60	0.20	1
Bromodichloromethane	ND		ug/kg	0.60	0.13	1
trans-1,3-Dichloropropene	ND		ug/kg	1.2	0.33	1
cis-1,3-Dichloropropene	ND		ug/kg	0.60	0.19	1
1,3-Dichloropropene, Total	ND		ug/kg	0.60	0.19	1
1,1-Dichloropropene	ND		ug/kg	0.60	0.19	1
Bromoform	ND		ug/kg	4.8	0.30	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.60	0.20	1
Benzene	ND		ug/kg	0.60	0.20	1
Toluene	ND		ug/kg	1.2	0.66	1
Ethylbenzene	ND		ug/kg	1.2	0.17	1
Chloromethane	ND		ug/kg	4.8	1.1	1
Bromomethane	ND		ug/kg	2.4	0.70	1
Vinyl chloride	ND		ug/kg	1.2	0.40	1
Chloroethane	ND		ug/kg	2.4	0.54	1
1,1-Dichloroethene	ND		ug/kg	1.2	0.29	1
trans-1,2-Dichloroethene	ND		ug/kg	1.8	0.16	1

Project Name: HARDWICK, YELLOW BARN**Lab Number:** L1912086**Project Number:** 1857501001**Report Date:** 04/04/19**SAMPLE RESULTS**

Lab ID: L1912086-07
Client ID: DUP
Sample Location: HARDWICK, VT

Date Collected: 03/26/19 00:00
Date Received: 03/27/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.60	0.16	1
1,2-Dichlorobenzene	ND		ug/kg	2.4	0.17	1
1,3-Dichlorobenzene	ND		ug/kg	2.4	0.18	1
1,4-Dichlorobenzene	ND		ug/kg	2.4	0.21	1
Methyl tert butyl ether	ND		ug/kg	2.4	0.24	1
p/m-Xylene	ND		ug/kg	2.4	0.68	1
o-Xylene	ND		ug/kg	1.2	0.35	1
Xylenes, Total	ND		ug/kg	1.2	0.35	1
cis-1,2-Dichloroethene	ND		ug/kg	1.2	0.21	1
1,2-Dichloroethene, Total	ND		ug/kg	1.2	0.16	1
Dibromomethane	ND		ug/kg	2.4	0.29	1
1,4-Dichlorobutane	ND		ug/kg	12	0.27	1
1,2,3-Trichloropropane	ND		ug/kg	2.4	0.15	1
Styrene	ND		ug/kg	1.2	0.24	1
Dichlorodifluoromethane	ND		ug/kg	12	1.1	1
Acetone	110		ug/kg	12	5.8	1
Carbon disulfide	ND		ug/kg	12	5.5	1
2-Butanone	21		ug/kg	12	2.7	1
Vinyl acetate	ND		ug/kg	12	2.6	1
4-Methyl-2-pentanone	ND		ug/kg	12	1.5	1
2-Hexanone	ND		ug/kg	12	1.4	1
Ethyl methacrylate	ND		ug/kg	12	1.9	1
Acrylonitrile	ND		ug/kg	4.8	1.4	1
Bromochloromethane	ND		ug/kg	2.4	0.25	1
Tetrahydrofuran	ND		ug/kg	4.8	1.9	1
2,2-Dichloropropane	ND		ug/kg	2.4	0.24	1
1,2-Dibromoethane	ND		ug/kg	1.2	0.34	1
1,3-Dichloropropane	ND		ug/kg	2.4	0.20	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.60	0.16	1
Bromobenzene	ND		ug/kg	2.4	0.18	1
n-Butylbenzene	ND		ug/kg	1.2	0.20	1
sec-Butylbenzene	ND		ug/kg	1.2	0.18	1
tert-Butylbenzene	ND		ug/kg	2.4	0.14	1
o-Chlorotoluene	ND		ug/kg	2.4	0.23	1
p-Chlorotoluene	ND		ug/kg	2.4	0.13	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.6	1.2	1
Hexachlorobutadiene	ND		ug/kg	4.8	0.20	1

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912086
Report Date: 04/04/19

SAMPLE RESULTS

Lab ID: L1912086-07
Client ID: DUP
Sample Location: HARDWICK, VT

Date Collected: 03/26/19 00:00
Date Received: 03/27/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Isopropylbenzene	ND		ug/kg	1.2	0.13	1
p-Isopropyltoluene	ND		ug/kg	1.2	0.13	1
Naphthalene	ND		ug/kg	4.8	0.78	1
n-Propylbenzene	ND		ug/kg	1.2	0.21	1
1,2,3-Trichlorobenzene	ND		ug/kg	2.4	0.39	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.4	0.33	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.4	0.23	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.4	0.40	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	6.0	1.7	1
Ethyl ether	ND		ug/kg	2.4	0.41	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	111		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	114		70-130
Dibromofluoromethane	96		70-130

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912086
Report Date: 04/04/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 03/29/19 20:29
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 02-07 Batch: WG1221371-5					
Methylene chloride	ND		ug/kg	5.0	2.3
1,1-Dichloroethane	ND		ug/kg	1.0	0.14
Chloroform	ND		ug/kg	1.5	0.14
Carbon tetrachloride	ND		ug/kg	1.0	0.23
1,2-Dichloropropane	ND		ug/kg	1.0	0.12
Dibromochloromethane	ND		ug/kg	1.0	0.14
1,1,2-Trichloroethane	ND		ug/kg	1.0	0.27
2-Chloroethylvinyl ether	ND		ug/kg	20	1.6
Tetrachloroethene	ND		ug/kg	0.50	0.20
Chlorobenzene	ND		ug/kg	0.50	0.13
Trichlorofluoromethane	ND		ug/kg	4.0	0.70
1,2-Dichloroethane	ND		ug/kg	1.0	0.26
1,1,1-Trichloroethane	ND		ug/kg	0.50	0.17
Bromodichloromethane	ND		ug/kg	0.50	0.11
trans-1,3-Dichloropropene	ND		ug/kg	1.0	0.27
cis-1,3-Dichloropropene	ND		ug/kg	0.50	0.16
1,3-Dichloropropene, Total	ND		ug/kg	0.50	0.16
1,1-Dichloropropene	ND		ug/kg	0.50	0.16
Bromoform	ND		ug/kg	4.0	0.25
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.50	0.17
Benzene	ND		ug/kg	0.50	0.17
Toluene	ND		ug/kg	1.0	0.54
Ethylbenzene	ND		ug/kg	1.0	0.14
Chloromethane	ND		ug/kg	4.0	0.93
Bromomethane	ND		ug/kg	2.0	0.58
Vinyl chloride	ND		ug/kg	1.0	0.34
Chloroethane	ND		ug/kg	2.0	0.45
1,1-Dichloroethene	ND		ug/kg	1.0	0.24
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.14

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912086
Report Date: 04/04/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
 Analytical Date: 03/29/19 20:29
 Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 02-07 Batch: WG1221371-5					
Trichloroethene	ND		ug/kg	0.50	0.14
1,2-Dichlorobenzene	ND		ug/kg	2.0	0.14
1,3-Dichlorobenzene	ND		ug/kg	2.0	0.15
1,4-Dichlorobenzene	ND		ug/kg	2.0	0.17
Methyl tert butyl ether	ND		ug/kg	2.0	0.20
p/m-Xylene	ND		ug/kg	2.0	0.56
o-Xylene	ND		ug/kg	1.0	0.29
Xylenes, Total	ND		ug/kg	1.0	0.29
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18
1,2-Dichloroethene, Total	ND		ug/kg	1.0	0.14
Dibromomethane	ND		ug/kg	2.0	0.24
1,4-Dichlorobutane	ND		ug/kg	10	0.23
1,2,3-Trichloropropane	ND		ug/kg	2.0	0.13
Styrene	ND		ug/kg	1.0	0.20
Dichlorodifluoromethane	ND		ug/kg	10	0.92
Acetone	ND		ug/kg	10	4.8
Carbon disulfide	ND		ug/kg	10	4.6
2-Butanone	ND		ug/kg	10	2.2
Vinyl acetate	ND		ug/kg	10	2.2
4-Methyl-2-pentanone	ND		ug/kg	10	1.3
2-Hexanone	ND		ug/kg	10	1.2
Ethyl methacrylate	ND		ug/kg	10	1.6
Acrolein	ND		ug/kg	25	5.6
Acrylonitrile	ND		ug/kg	4.0	1.2
Bromochloromethane	ND		ug/kg	2.0	0.20
Tetrahydrofuran	ND		ug/kg	4.0	1.6
2,2-Dichloropropane	ND		ug/kg	2.0	0.20
1,2-Dibromoethane	ND		ug/kg	1.0	0.28
1,3-Dichloropropane	ND		ug/kg	2.0	0.17

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912086
Report Date: 04/04/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
 Analytical Date: 03/29/19 20:29
 Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 02-07 Batch: WG1221371-5					
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.50	0.13
Bromobenzene	ND		ug/kg	2.0	0.14
n-Butylbenzene	ND		ug/kg	1.0	0.17
sec-Butylbenzene	ND		ug/kg	1.0	0.15
tert-Butylbenzene	ND		ug/kg	2.0	0.12
1,3,5-Trichlorobenzene	ND		ug/kg	2.0	0.17
o-Chlorotoluene	ND		ug/kg	2.0	0.19
p-Chlorotoluene	ND		ug/kg	2.0	0.11
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.0	1.0
Hexachlorobutadiene	ND		ug/kg	4.0	0.17
Isopropylbenzene	ND		ug/kg	1.0	0.11
p-Isopropyltoluene	ND		ug/kg	1.0	0.11
Naphthalene	ND		ug/kg	4.0	0.65
n-Propylbenzene	ND		ug/kg	1.0	0.17
1,2,3-Trichlorobenzene	ND		ug/kg	2.0	0.32
1,2,4-Trichlorobenzene	ND		ug/kg	2.0	0.27
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	0.19
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	0.33
trans-1,4-Dichloro-2-butene	ND		ug/kg	5.0	1.4
Ethyl ether	ND		ug/kg	2.0	0.34
Methyl Acetate	ND		ug/kg	4.0	0.95
Ethyl Acetate	ND		ug/kg	10	1.2
Isopropyl Ether	ND		ug/kg	2.0	0.21
Cyclohexane	ND		ug/kg	10	0.54
Tert-Butyl Alcohol	ND		ug/kg	20	5.1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	2.0	0.13
Tertiary-Amyl Methyl Ether	ND		ug/kg	2.0	0.18
1,4-Dioxane	ND		ug/kg	80	35.
Methyl cyclohexane	ND		ug/kg	4.0	0.60

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912086
Report Date: 04/04/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
 Analytical Date: 03/29/19 20:29
 Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 02-07 Batch: WG1221371-5					
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		ug/kg	4.0	0.69

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	96		70-130

Lab Control Sample Analysis **Batch Quality Control**

Project Name: HARDWICK, YELLOW BARN

Project Number: 1857501001

Lab Number: L1912086

Report Date: 04/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 02-07 Batch: WG1221371-3 WG1221371-4								
Methylene chloride	96		96		70-130	0		30
1,1-Dichloroethane	101		103		70-130	2		30
Chloroform	96		97		70-130	1		30
Carbon tetrachloride	91		93		70-130	2		30
1,2-Dichloropropane	102		104		70-130	2		30
Dibromochloromethane	91		93		70-130	2		30
1,1,2-Trichloroethane	98		99		70-130	1		30
2-Chloroethylvinyl ether	103		108		70-130	5		30
Tetrachloroethene	91		92		70-130	1		30
Chlorobenzene	92		93		70-130	1		30
Trichlorofluoromethane	88		91		70-139	3		30
1,2-Dichloroethane	104		106		70-130	2		30
1,1,1-Trichloroethane	97		97		70-130	0		30
Bromodichloromethane	98		100		70-130	2		30
trans-1,3-Dichloropropene	100		101		70-130	1		30
cis-1,3-Dichloropropene	97		100		70-130	3		30
1,1-Dichloropropene	98		100		70-130	2		30
Bromoform	87		87		70-130	0		30
1,1,2,2-Tetrachloroethane	98		98		70-130	0		30
Benzene	96		98		70-130	2		30
Toluene	94		95		70-130	1		30
Ethylbenzene	96		98		70-130	2		30
Chloromethane	112		112		52-130	0		30

Lab Control Sample Analysis **Batch Quality Control**

Project Name: HARDWICK, YELLOW BARN

Project Number: 1857501001

Lab Number: L1912086

Report Date: 04/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 02-07 Batch: WG1221371-3 WG1221371-4								
Bromomethane	78		77		57-147	1		30
Vinyl chloride	101		100		67-130	1		30
Chloroethane	93		94		50-151	1		30
1,1-Dichloroethene	96		96		65-135	0		30
trans-1,2-Dichloroethene	96		95		70-130	1		30
Trichloroethene	97		96		70-130	1		30
1,2-Dichlorobenzene	94		93		70-130	1		30
1,3-Dichlorobenzene	93		94		70-130	1		30
1,4-Dichlorobenzene	95		94		70-130	1		30
Methyl tert butyl ether	97		99		66-130	2		30
p/m-Xylene	94		95		70-130	1		30
o-Xylene	94		95		70-130	1		30
cis-1,2-Dichloroethene	94		94		70-130	0		30
Dibromomethane	96		100		70-130	4		30
1,4-Dichlorobutane	110		110		70-130	0		30
1,2,3-Trichloropropane	97		98		68-130	1		30
Styrene	94		96		70-130	2		30
Dichlorodifluoromethane	96		99		30-146	3		30
Acetone	108		108		54-140	0		30
Carbon disulfide	91		92		59-130	1		30
2-Butanone	92		97		70-130	5		30
Vinyl acetate	113		112		70-130	1		30
4-Methyl-2-pentanone	104		106		70-130	2		30

Lab Control Sample Analysis **Batch Quality Control**

Project Name: HARDWICK, YELLOW BARN

Project Number: 1857501001

Lab Number: L1912086

Report Date: 04/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 02-07 Batch: WG1221371-3 WG1221371-4								
2-Hexanone	100		103		70-130	3		30
Ethyl methacrylate	90		95		70-130	5		30
Acrolein	108		107		70-130	1		30
Acrylonitrile	98		103		70-130	5		30
Bromochloromethane	94		93		70-130	1		30
Tetrahydrofuran	116		118		66-130	2		30
2,2-Dichloropropane	98		98		70-130	0		30
1,2-Dibromoethane	95		98		70-130	3		30
1,3-Dichloropropane	98		99		69-130	1		30
1,1,1,2-Tetrachloroethane	93		92		70-130	1		30
Bromobenzene	91		92		70-130	1		30
n-Butylbenzene	102		102		70-130	0		30
sec-Butylbenzene	97		96		70-130	1		30
tert-Butylbenzene	94		94		70-130	0		30
1,3,5-Trichlorobenzene	96		94		70-139	2		30
o-Chlorotoluene	98		98		70-130	0		30
p-Chlorotoluene	100		99		70-130	1		30
1,2-Dibromo-3-chloropropane	86		87		68-130	1		30
Hexachlorobutadiene	91		90		67-130	1		30
Isopropylbenzene	97		97		70-130	0		30
p-Isopropyltoluene	97		97		70-130	0		30
Naphthalene	92		92		70-130	0		30
n-Propylbenzene	99		98		70-130	1		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HARDWICK, YELLOW BARN

Project Number: 1857501001

Lab Number: L1912086

Report Date: 04/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 02-07 Batch: WG1221371-3 WG1221371-4								
1,2,3-Trichlorobenzene	92		92		70-130	0		30
1,2,4-Trichlorobenzene	94		94		70-130	0		30
1,3,5-Trimethylbenzene	98		97		70-130	1		30
1,2,4-Trimethylbenzene	98		98		70-130	0		30
trans-1,4-Dichloro-2-butene	116		108		70-130	7		30
Ethyl ether	100		101		67-130	1		30
Methyl Acetate	109		109		65-130	0		30
Ethyl Acetate	118		120		70-130	2		30
Isopropyl Ether	113		114		66-130	1		30
Cyclohexane	108		108		70-130	0		30
Tert-Butyl Alcohol	94		98		70-130	4		30
Ethyl-Tert-Butyl-Ether	104		105		70-130	1		30
Tertiary-Amyl Methyl Ether	95		95		70-130	0		30
1,4-Dioxane	94		94		65-136	0		30
Methyl cyclohexane	95		95		70-130	0		30
1,1,2-Trichloro-1,2,2-Trifluoroethane	97		97		70-130	0		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	108		109		70-130
Toluene-d8	99		100		70-130
4-Bromofluorobenzene	106		105		70-130
Dibromofluoromethane	96		98		70-130

SEMIVOLATILES

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912086
Report Date: 04/04/19

SAMPLE RESULTS

Lab ID: L1912086-01
Client ID: SB-2 (0.5-1.5)
Sample Location: HARDWICK, VT

Date Collected: 03/26/19 09:00
Date Received: 03/27/19
Field Prep: Not Specified

Sample Depth:

Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 03/28/19 21:38
Analyst: EK
Percent Solids: 70%

Extraction Method: EPA 3546
Extraction Date: 03/28/19 00:09

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	190	24.	1
2-Chloronaphthalene	ND		ug/kg	240	24.	1
Fluoranthene	ND		ug/kg	140	27.	1
Naphthalene	ND		ug/kg	240	29.	1
Benzo(a)anthracene	ND		ug/kg	140	27.	1
Benzo(a)pyrene	ND		ug/kg	190	58.	1
Benzo(b)fluoranthene	ND		ug/kg	140	40.	1
Benzo(k)fluoranthene	ND		ug/kg	140	38.	1
Chrysene	ND		ug/kg	140	25.	1
Acenaphthylene	ND		ug/kg	190	36.	1
Anthracene	ND		ug/kg	140	46.	1
Benzo(ghi)perylene	ND		ug/kg	190	28.	1
Fluorene	ND		ug/kg	240	23.	1
Phenanthrene	ND		ug/kg	140	29.	1
Dibenzo(a,h)anthracene	ND		ug/kg	140	27.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	190	33.	1
Pyrene	ND		ug/kg	140	24.	1
1-Methylnaphthalene	ND		ug/kg	240	27.	1
2-Methylnaphthalene	ND		ug/kg	280	29.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	91		23-120
2-Fluorobiphenyl	65		30-120
4-Terphenyl-d14	51		18-120

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912086
Report Date: 04/04/19

SAMPLE RESULTS

Lab ID: L1912086-02
Client ID: SB-2 (10'-14')
Sample Location: HARDWICK, VT

Date Collected: 03/26/19 09:30
Date Received: 03/27/19
Field Prep: Not Specified

Sample Depth:

Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 03/28/19 20:17
Analyst: EK
Percent Solids: 87%

Extraction Method: EPA 3546
Extraction Date: 03/28/19 00:09

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	150	20.	1
2-Chloronaphthalene	ND		ug/kg	190	19.	1
Fluoranthene	ND		ug/kg	110	22.	1
Naphthalene	ND		ug/kg	190	23.	1
Benzo(a)anthracene	ND		ug/kg	110	21.	1
Benzo(a)pyrene	ND		ug/kg	150	46.	1
Benzo(b)fluoranthene	ND		ug/kg	110	32.	1
Benzo(k)fluoranthene	ND		ug/kg	110	30.	1
Chrysene	ND		ug/kg	110	20.	1
Acenaphthylene	ND		ug/kg	150	29.	1
Anthracene	ND		ug/kg	110	37.	1
Benzo(ghi)perylene	ND		ug/kg	150	22.	1
Fluorene	ND		ug/kg	190	18.	1
Phenanthrene	ND		ug/kg	110	23.	1
Dibenzo(a,h)anthracene	ND		ug/kg	110	22.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	150	26.	1
Pyrene	ND		ug/kg	110	19.	1
1-Methylnaphthalene	ND		ug/kg	190	22.	1
2-Methylnaphthalene	ND		ug/kg	230	23.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	85		23-120
2-Fluorobiphenyl	71		30-120
4-Terphenyl-d14	54		18-120

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912086
Report Date: 04/04/19

SAMPLE RESULTS

Lab ID: L1912086-03
Client ID: SB-3 (8'-11')
Sample Location: HARDWICK, VT

Date Collected: 03/26/19 10:30
Date Received: 03/27/19
Field Prep: Not Specified

Sample Depth:

Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 03/28/19 22:05
Analyst: EK
Percent Solids: 69%

Extraction Method: EPA 3546
Extraction Date: 03/28/19 00:09

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	190	24.	1
2-Chloronaphthalene	ND		ug/kg	240	23.	1
Fluoranthene	ND		ug/kg	140	27.	1
Naphthalene	ND		ug/kg	240	29.	1
Benzo(a)anthracene	ND		ug/kg	140	26.	1
Benzo(a)pyrene	ND		ug/kg	190	58.	1
Benzo(b)fluoranthene	ND		ug/kg	140	40.	1
Benzo(k)fluoranthene	ND		ug/kg	140	38.	1
Chrysene	ND		ug/kg	140	24.	1
Acenaphthylene	ND		ug/kg	190	36.	1
Anthracene	ND		ug/kg	140	46.	1
Benzo(ghi)perylene	ND		ug/kg	190	28.	1
Fluorene	ND		ug/kg	240	23.	1
Phenanthrene	ND		ug/kg	140	29.	1
Dibenzo(a,h)anthracene	ND		ug/kg	140	27.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	190	33.	1
Pyrene	ND		ug/kg	140	23.	1
1-Methylnaphthalene	ND		ug/kg	240	27.	1
2-Methylnaphthalene	ND		ug/kg	280	28.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	95		23-120
2-Fluorobiphenyl	70		30-120
4-Terphenyl-d14	56		18-120

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912086
Report Date: 04/04/19

SAMPLE RESULTS

Lab ID: L1912086-04
Client ID: SB-4 (10'-15')
Sample Location: HARDWICK, VT

Date Collected: 03/26/19 11:20
Date Received: 03/27/19
Field Prep: Not Specified

Sample Depth:

Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 03/28/19 21:11
Analyst: EK
Percent Solids: 68%

Extraction Method: EPA 3546
Extraction Date: 03/28/19 00:09

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	200	25.	1
2-Chloronaphthalene	ND		ug/kg	240	24.	1
Fluoranthene	ND		ug/kg	150	28.	1
Naphthalene	ND		ug/kg	240	30.	1
Benzo(a)anthracene	ND		ug/kg	150	28.	1
Benzo(a)pyrene	ND		ug/kg	200	60.	1
Benzo(b)fluoranthene	ND		ug/kg	150	41.	1
Benzo(k)fluoranthene	ND		ug/kg	150	39.	1
Chrysene	ND		ug/kg	150	25.	1
Acenaphthylene	ND		ug/kg	200	38.	1
Anthracene	ND		ug/kg	150	48.	1
Benzo(ghi)perylene	ND		ug/kg	200	29.	1
Fluorene	ND		ug/kg	240	24.	1
Phenanthrene	ND		ug/kg	150	30.	1
Dibenzo(a,h)anthracene	ND		ug/kg	150	28.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	200	34.	1
Pyrene	ND		ug/kg	150	24.	1
1-Methylnaphthalene	ND		ug/kg	240	28.	1
2-Methylnaphthalene	ND		ug/kg	290	30.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	88		23-120
2-Fluorobiphenyl	55		30-120
4-Terphenyl-d14	38		18-120

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912086
Report Date: 04/04/19

SAMPLE RESULTS

Lab ID: L1912086-05
Client ID: SB-7A (5'-7')
Sample Location: HARDWICK, VT

Date Collected: 03/26/19 12:30
Date Received: 03/27/19
Field Prep: Not Specified

Sample Depth:

Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 03/28/19 22:32
Analyst: EK
Percent Solids: 87%

Extraction Method: EPA 3546
Extraction Date: 03/28/19 00:09

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	150	19.	1
2-Chloronaphthalene	ND		ug/kg	180	18.	1
Fluoranthene	ND		ug/kg	110	21.	1
Naphthalene	ND		ug/kg	180	23.	1
Benzo(a)anthracene	ND		ug/kg	110	21.	1
Benzo(a)pyrene	ND		ug/kg	150	45.	1
Benzo(b)fluoranthene	ND		ug/kg	110	31.	1
Benzo(k)fluoranthene	ND		ug/kg	110	30.	1
Chrysene	ND		ug/kg	110	19.	1
Acenaphthylene	ND		ug/kg	150	29.	1
Anthracene	ND		ug/kg	110	36.	1
Benzo(ghi)perylene	ND		ug/kg	150	22.	1
Fluorene	ND		ug/kg	180	18.	1
Phenanthrene	ND		ug/kg	110	22.	1
Dibenzo(a,h)anthracene	ND		ug/kg	110	21.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	150	26.	1
Pyrene	ND		ug/kg	110	18.	1
1-Methylnaphthalene	ND		ug/kg	180	22.	1
2-Methylnaphthalene	ND		ug/kg	220	22.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	93		23-120
2-Fluorobiphenyl	69		30-120
4-Terphenyl-d14	61		18-120

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912086
Report Date: 04/04/19

SAMPLE RESULTS

Lab ID: L1912086-06
Client ID: SB-6 (5'-9')
Sample Location: HARDWICK, VT

Date Collected: 03/26/19 13:30
Date Received: 03/27/19
Field Prep: Not Specified

Sample Depth:

Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 03/28/19 20:45
Analyst: EK
Percent Solids: 84%

Extraction Method: EPA 3546
Extraction Date: 03/28/19 00:09

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	160	20.	1
2-Chloronaphthalene	ND		ug/kg	200	20.	1
Fluoranthene	ND		ug/kg	120	23.	1
Naphthalene	ND		ug/kg	200	24.	1
Benzo(a)anthracene	ND		ug/kg	120	22.	1
Benzo(a)pyrene	ND		ug/kg	160	48.	1
Benzo(b)fluoranthene	ND		ug/kg	120	33.	1
Benzo(k)fluoranthene	ND		ug/kg	120	32.	1
Chrysene	ND		ug/kg	120	21.	1
Acenaphthylene	ND		ug/kg	160	31.	1
Anthracene	ND		ug/kg	120	39.	1
Benzo(ghi)perylene	ND		ug/kg	160	23.	1
Fluorene	ND		ug/kg	200	19.	1
Phenanthrene	ND		ug/kg	120	24.	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	23.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	160	28.	1
Pyrene	ND		ug/kg	120	20.	1
1-Methylnaphthalene	ND		ug/kg	200	23.	1
2-Methylnaphthalene	ND		ug/kg	240	24.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	90		23-120
2-Fluorobiphenyl	71		30-120
4-Terphenyl-d14	56		18-120

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912086
Report Date: 04/04/19

SAMPLE RESULTS

Lab ID: L1912086-07
Client ID: DUP
Sample Location: HARDWICK, VT

Date Collected: 03/26/19 00:00
Date Received: 03/27/19
Field Prep: Not Specified

Sample Depth:

Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 03/28/19 22:59
Analyst: EK
Percent Solids: 63%

Extraction Method: EPA 3546
Extraction Date: 03/28/19 00:09

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	210	27.	1
2-Chloronaphthalene	ND		ug/kg	260	26.	1
Fluoranthene	ND		ug/kg	160	30.	1
Naphthalene	ND		ug/kg	260	32.	1
Benzo(a)anthracene	ND		ug/kg	160	29.	1
Benzo(a)pyrene	ND		ug/kg	210	63.	1
Benzo(b)fluoranthene	ND		ug/kg	160	44.	1
Benzo(k)fluoranthene	ND		ug/kg	160	42.	1
Chrysene	ND		ug/kg	160	27.	1
Acenaphthylene	ND		ug/kg	210	40.	1
Anthracene	ND		ug/kg	160	51.	1
Benzo(ghi)perylene	ND		ug/kg	210	30.	1
Fluorene	ND		ug/kg	260	25.	1
Phenanthrene	ND		ug/kg	160	32.	1
Dibenzo(a,h)anthracene	ND		ug/kg	160	30.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	210	36.	1
Pyrene	ND		ug/kg	160	26.	1
1-Methylnaphthalene	ND		ug/kg	260	30.	1
2-Methylnaphthalene	ND		ug/kg	310	31.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	100		23-120
2-Fluorobiphenyl	73		30-120
4-Terphenyl-d14	64		18-120

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912086
Report Date: 04/04/19

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 03/28/19 21:27
Analyst: JG

Extraction Method: EPA 3546
Extraction Date: 03/28/19 00:09

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-07 Batch: WG1220372-1					
Acenaphthene	ND		ug/kg	130	17.
2-Chloronaphthalene	ND		ug/kg	160	16.
Fluoranthene	ND		ug/kg	98	19.
Naphthalene	ND		ug/kg	160	20.
Benzo(a)anthracene	ND		ug/kg	98	18.
Benzo(a)pyrene	ND		ug/kg	130	40.
Benzo(b)fluoranthene	ND		ug/kg	98	28.
Benzo(k)fluoranthene	ND		ug/kg	98	26.
Chrysene	ND		ug/kg	98	17.
Acenaphthylene	ND		ug/kg	130	25.
Anthracene	ND		ug/kg	98	32.
Benzo(ghi)perylene	ND		ug/kg	130	19.
Fluorene	ND		ug/kg	160	16.
Phenanthrene	ND		ug/kg	98	20.
Dibenzo(a,h)anthracene	ND		ug/kg	98	19.
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	23.
Pyrene	ND		ug/kg	98	16.
1-Methylnaphthalene	ND		ug/kg	160	19.
2-Methylnaphthalene	ND		ug/kg	200	20.

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	84		23-120
2-Fluorobiphenyl	87		30-120
4-Terphenyl-d14	92		18-120

Lab Control Sample Analysis **Batch Quality Control**

Project Name: HARDWICK, YELLOW BARN

Project Number: 1857501001

Lab Number: L1912086

Report Date: 04/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-07 Batch: WG1220372-2 WG1220372-3								
Acenaphthene	88		92		31-137	4		50
2-Chloronaphthalene	83		88		40-140	6		50
Fluoranthene	85		87		40-140	2		50
Naphthalene	79		82		40-140	4		50
Benzo(a)anthracene	90		96		40-140	6		50
Benzo(a)pyrene	104		107		40-140	3		50
Benzo(b)fluoranthene	100		102		40-140	2		50
Benzo(k)fluoranthene	97		101		40-140	4		50
Chrysene	89		92		40-140	3		50
Acenaphthylene	84		88		40-140	5		50
Anthracene	81		85		40-140	5		50
Benzo(ghi)perylene	86		91		40-140	6		50
Fluorene	92		95		40-140	3		50
Phenanthrene	80		84		40-140	5		50
Dibenzo(a,h)anthracene	86		90		40-140	5		50
Indeno(1,2,3-cd)pyrene	90		95		40-140	5		50
Pyrene	84		85		35-142	1		50
1-Methylnaphthalene	81		84		26-130	4		50
2-Methylnaphthalene	82		85		40-140	4		50

Lab Control Sample Analysis**Batch Quality Control****Project Name:** HARDWICK, YELLOW BARN**Lab Number:** L1912086**Project Number:** 1857501001**Report Date:** 04/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits

Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-07 Batch: WG1220372-2 WG1220372-3

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	85		89		23-120
2-Fluorobiphenyl	87		89		30-120
4-Terphenyl-d14	87		88		18-120

PESTICIDES

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912086
Report Date: 04/04/19

SAMPLE RESULTS

Lab ID: L1912086-01
Client ID: SB-2 (0.5-1.5)
Sample Location: HARDWICK, VT

Date Collected: 03/26/19 09:00
Date Received: 03/27/19
Field Prep: Not Specified

Sample Depth:

Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 03/29/19 12:43
Analyst: KEG
Percent Solids: 70%

Extraction Method: EPA 3546
Extraction Date: 03/28/19 00:57
Cleanup Method: EPA 3620B
Cleanup Date: 03/28/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	2.26	0.443	1	B
Lindane	ND		ug/kg	0.943	0.422	1	B
Alpha-BHC	ND		ug/kg	0.943	0.268	1	B
Beta-BHC	ND		ug/kg	2.26	0.858	1	B
Heptachlor	ND		ug/kg	1.13	0.507	1	B
Aldrin	ND		ug/kg	2.26	0.797	1	B
Heptachlor epoxide	ND		ug/kg	4.24	1.27	1	B
Endrin	ND		ug/kg	0.943	0.387	1	B
Endrin aldehyde	ND		ug/kg	2.83	0.990	1	B
Endrin ketone	ND		ug/kg	2.26	0.583	1	B
Dieldrin	ND		ug/kg	1.41	0.707	1	B
4,4'-DDE	0.984	JP	ug/kg	2.26	0.523	1	B
4,4'-DDD	ND		ug/kg	2.26	0.807	1	B
4,4'-DDT	ND		ug/kg	4.24	1.82	1	B
Endosulfan I	ND		ug/kg	2.26	0.535	1	B
Endosulfan II	ND		ug/kg	2.26	0.756	1	B
Endosulfan sulfate	ND		ug/kg	0.943	0.449	1	B
Methoxychlor	ND		ug/kg	4.24	1.32	1	B
Toxaphene	ND		ug/kg	42.4	11.9	1	B
Chlordane	ND		ug/kg	18.4	7.50	1	B
cis-Chlordane	ND		ug/kg	2.83	0.788	1	B
trans-Chlordane	ND		ug/kg	2.83	0.747	1	B

Project Name: HARDWICK, YELLOW BARN**Lab Number:** L1912086**Project Number:** 1857501001**Report Date:** 04/04/19**SAMPLE RESULTS**

Lab ID: L1912086-01

Date Collected: 03/26/19 09:00

Client ID: SB-2 (0.5-1.5)

Date Received: 03/27/19

Sample Location: HARDWICK, VT

Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	64		30-150	B
Decachlorobiphenyl	59		30-150	B
2,4,5,6-Tetrachloro-m-xylene	40		30-150	A
Decachlorobiphenyl	22	Q	30-150	A

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912086
Report Date: 04/04/19

SAMPLE RESULTS

Lab ID: L1912086-01
Client ID: SB-2 (0.5-1.5)
Sample Location: HARDWICK, VT

Date Collected: 03/26/19 09:00
Date Received: 03/27/19
Field Prep: Not Specified

Sample Depth:

Matrix: Soil
Analytical Method: 1,8151A
Analytical Date: 03/31/19 18:22
Analyst: DGM
Percent Solids: 70%
Methylation Date: 03/31/19 05:21

Extraction Method: EPA 8151A
Extraction Date: 03/30/19 01:14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Chlorinated Herbicides by GC - Westborough Lab							
MCPP	ND		ug/kg	4740	1490	1	A
MCPA	ND		ug/kg	4740	1340	1	A
Dalapon	ND		ug/kg	47.4	15.5	1	A
Dicamba	ND		ug/kg	47.4	7.96	1	A
Dichloroprop	ND		ug/kg	47.4	13.6	1	A
2,4-D	ND		ug/kg	237	14.9	1	A
2,4-DB	ND		ug/kg	237	12.2	1	A
2,4,5-T	ND		ug/kg	237	7.34	1	A
2,4,5-TP (Silvex)	ND		ug/kg	237	6.30	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
DCAA	100		30-150	A
DCAA	83		30-150	B

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912086
Report Date: 04/04/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 03/29/19 12:08
Analyst: KEG

Extraction Method: EPA 3546
Extraction Date: 03/28/19 00:57
Cleanup Method: EPA 3620B
Cleanup Date: 03/28/19

Parameter	Result	Qualifier	Units	RL	MDL	Column
Pesticides by GC - Westborough Lab for sample(s): 01 Batch: WG1220383-1						
Delta-BHC	ND		ug/kg	1.56	0.306	A
Lindane	ND		ug/kg	0.652	0.291	A
Alpha-BHC	ND		ug/kg	0.652	0.185	A
Beta-BHC	ND		ug/kg	1.56	0.593	A
Heptachlor	ND		ug/kg	0.782	0.351	A
Aldrin	ND		ug/kg	1.56	0.551	A
Heptachlor epoxide	ND		ug/kg	2.93	0.880	A
Endrin	ND		ug/kg	0.652	0.267	A
Endrin aldehyde	ND		ug/kg	1.96	0.684	A
Endrin ketone	ND		ug/kg	1.56	0.403	A
Dieldrin	ND		ug/kg	0.978	0.489	A
4,4'-DDE	ND		ug/kg	1.56	0.362	A
4,4'-DDD	ND		ug/kg	1.56	0.558	A
4,4'-DDT	ND		ug/kg	2.93	1.26	A
Endosulfan I	ND		ug/kg	1.56	0.370	A
Endosulfan II	ND		ug/kg	1.56	0.523	A
Endosulfan sulfate	ND		ug/kg	0.652	0.310	A
Methoxychlor	ND		ug/kg	2.93	0.913	A
Toxaphene	ND		ug/kg	29.3	8.21	A
Chlordane	ND		ug/kg	12.7	5.18	A
cis-Chlordane	ND		ug/kg	1.96	0.545	A
trans-Chlordane	ND		ug/kg	1.96	0.516	A
Delta-BHC	ND		ug/kg	1.56	0.306	B
Lindane	ND		ug/kg	0.652	0.291	B
Alpha-BHC	ND		ug/kg	0.652	0.185	B
Beta-BHC	ND		ug/kg	1.56	0.593	B
Heptachlor	ND		ug/kg	0.782	0.351	B
Aldrin	ND		ug/kg	1.56	0.551	B
Heptachlor epoxide	ND		ug/kg	2.93	0.880	B

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912086
Report Date: 04/04/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 03/29/19 12:08
Analyst: KEG

Extraction Method: EPA 3546
Extraction Date: 03/28/19 00:57
Cleanup Method: EPA 3620B
Cleanup Date: 03/28/19

Parameter	Result	Qualifier	Units	RL	MDL	Column
Pesticides by GC - Westborough Lab for sample(s): 01 Batch: WG1220383-1						
Endrin	ND		ug/kg	0.652	0.267	B
Endrin aldehyde	ND		ug/kg	1.96	0.684	B
Endrin ketone	ND		ug/kg	1.56	0.403	B
Dieldrin	ND		ug/kg	0.978	0.489	B
4,4'-DDE	ND		ug/kg	1.56	0.362	B
4,4'-DDD	ND		ug/kg	1.56	0.558	B
4,4'-DDT	ND		ug/kg	2.93	1.26	B
Endosulfan I	ND		ug/kg	1.56	0.370	B
Endosulfan II	ND		ug/kg	1.56	0.523	B
Endosulfan sulfate	ND		ug/kg	0.652	0.310	B
Methoxychlor	ND		ug/kg	2.93	0.913	B
Toxaphene	ND		ug/kg	29.3	8.21	B
Chlordane	ND		ug/kg	12.7	5.18	B
cis-Chlordane	ND		ug/kg	1.96	0.545	B
trans-Chlordane	ND		ug/kg	1.96	0.516	B

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	54		30-150	B
Decachlorobiphenyl	52		30-150	B
2,4,5,6-Tetrachloro-m-xylene	46		30-150	A
Decachlorobiphenyl	50		30-150	A

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912086
Report Date: 04/04/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8151A
Analytical Date: 03/31/19 23:45
Analyst: DGM

Extraction Method: EPA 8151A
Extraction Date: 03/30/19 01:14

Methylation Date: 03/31/19 05:21

Parameter	Result	Qualifier	Units	RL	MDL	Column
Chlorinated Herbicides by GC - Westborough Lab for sample(s): 01 Batch: WG1221287-1						
MCPP	ND		ug/kg	3250	1020	A
MCPA	ND		ug/kg	3250	921.	A
Dalapon	ND		ug/kg	32.5	10.6	A
Dicamba	ND		ug/kg	32.5	5.46	A
Dichloroprop	ND		ug/kg	32.5	9.34	A
2,4-D	ND		ug/kg	163	10.2	A
2,4-DB	ND		ug/kg	163	8.36	A
2,4,5-T	ND		ug/kg	163	5.04	A
2,4,5-TP (Silvex)	ND		ug/kg	163	4.33	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
DCAA	99		30-150	A
DCAA	88		30-150	B

Lab Control Sample Analysis Batch Quality Control

Project Name: HARDWICK, YELLOW BARN

Project Number: 1857501001

Lab Number: L1912086

Report Date: 04/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Pesticides by GC - Westborough Lab Associated sample(s): 01 Batch: WG1220383-2 WG1220383-3									
Delta-BHC	130		91		30-150	35	Q	30	A
Lindane	127		91		30-150	33	Q	30	A
Alpha-BHC	141		100		30-150	34	Q	30	A
Beta-BHC	112		78		30-150	36	Q	30	A
Heptachlor	133		97		30-150	31	Q	30	A
Aldrin	123		92		30-150	29		30	A
Heptachlor epoxide	96		78		30-150	21		30	A
Endrin	115		92		30-150	22		30	A
Endrin aldehyde	57		61		30-150	7		30	A
Endrin ketone	102		83		30-150	21		30	A
Dieldrin	116		94		30-150	21		30	A
4,4'-DDE	115		92		30-150	22		30	A
4,4'-DDD	115		90		30-150	24		30	A
4,4'-DDT	111		86		30-150	25		30	A
Endosulfan I	103		87		30-150	17		30	A
Endosulfan II	101		78		30-150	26		30	A
Endosulfan sulfate	91		80		30-150	13		30	A
Methoxychlor	91		78		30-150	15		30	A
cis-Chlordane	90		75		30-150	18		30	A
trans-Chlordane	96		69		30-150	33	Q	30	A

Lab Control Sample Analysis **Batch Quality Control**

Project Name: HARDWICK, YELLOW BARN

Project Number: 1857501001

Lab Number: L1912086

Report Date: 04/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Pesticides by GC - Westborough Lab Associated sample(s): 01 Batch: WG1220383-2 WG1220383-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	75		66		30-150	B
Decachlorobiphenyl	53		58		30-150	B
2,4,5,6-Tetrachloro-m-xylene	78		61		30-150	A
Decachlorobiphenyl	66		69		30-150	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: HARDWICK, YELLOW BARN

Project Number: 1857501001

Lab Number: L1912086

Report Date: 04/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Pesticides by GC - Westborough Lab Associated sample(s): 01 Batch: WG1220383-2 WG1220383-3									
Delta-BHC	116		106		30-150	9		30	B
Lindane	125		106		30-150	16		30	B
Alpha-BHC	131		115		30-150	13		30	B
Beta-BHC	103		93		30-150	10		30	B
Heptachlor	107		99		30-150	8		30	B
Aldrin	116		106		30-150	9		30	B
Heptachlor epoxide	103		107		30-150	4		30	B
Endrin	102		98		30-150	4		30	B
Endrin aldehyde	52		66		30-150	24		30	B
Endrin ketone	82		79		30-150	4		30	B
Dieldrin	108		101		30-150	7		30	B
4,4'-DDE	107		102		30-150	5		30	B
4,4'-DDD	99		94		30-150	5		30	B
4,4'-DDT	94		94		30-150	0		30	B
Endosulfan I	101		88		30-150	14		30	B
Endosulfan II	86		87		30-150	1		30	B
Endosulfan sulfate	71		66		30-150	7		30	B
Methoxychlor	77		71		30-150	8		30	B
cis-Chlordane	95		90		30-150	5		30	B
trans-Chlordane	104		98		30-150	6		30	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: HARDWICK, YELLOW BARN

Project Number: 1857501001

Lab Number: L1912086

Report Date: 04/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Pesticides by GC - Westborough Lab Associated sample(s): 01 Batch: WG1220383-2 WG1220383-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	75		66		30-150	B
Decachlorobiphenyl	53		58		30-150	B
2,4,5,6-Tetrachloro-m-xylene	78		61		30-150	A
Decachlorobiphenyl	66		69		30-150	A

Lab Control Sample Analysis Batch Quality Control

Project Name: HARDWICK, YELLOW BARN

Project Number: 1857501001

Lab Number: L1912086

Report Date: 04/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Chlorinated Herbicides by GC - Westborough Lab Associated sample(s): 01 Batch: WG1221287-2 WG1221287-3									
MCPP	104		98		30-150	6		30	A
MCPA	89		84		30-150	6		30	A
Dalapon	94		80		30-150	16		30	A
Dicamba	104		97		30-150	7		30	A
Dichloroprop	100		94		30-150	6		30	A
2,4-D	111		103		30-150	7		30	A
2,4-DB	95		87		30-150	9		30	A
2,4,5-T	111		104		30-150	7		30	A
2,4,5-TP (Silvex)	108		101		30-150	7		30	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
DCAA	105		100		30-150	A
DCAA	100		94		30-150	B

METALS

Project Name: HARDWICK, YELLOW BARN**Lab Number:** L1912086**Project Number:** 1857501001**Report Date:** 04/04/19**SAMPLE RESULTS**

Lab ID: L1912086-01

Date Collected: 03/26/19 09:00

Client ID: SB-2 (0.5-1.5)

Date Received: 03/27/19

Sample Location: HARDWICK, VT

Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	10.1		mg/kg	0.538	0.112	1	03/28/19 19:40	03/29/19 14:29	EPA 3050B	1,6010D	LC
Barium, Total	27.5		mg/kg	0.538	0.094	1	03/28/19 19:40	03/29/19 14:29	EPA 3050B	1,6010D	LC
Cadmium, Total	0.496	J	mg/kg	0.538	0.053	1	03/28/19 19:40	03/29/19 14:29	EPA 3050B	1,6010D	LC
Chromium, Total	20.2		mg/kg	0.538	0.052	1	03/28/19 19:40	03/29/19 14:29	EPA 3050B	1,6010D	LC
Lead, Total	10.3		mg/kg	2.69	0.144	1	03/28/19 19:40	03/29/19 14:29	EPA 3050B	1,6010D	LC
Mercury, Total	ND		mg/kg	0.090	0.019	1	03/28/19 08:20	03/28/19 13:50	EPA 7471B	1,7471B	GD
Selenium, Total	0.409	J	mg/kg	1.08	0.139	1	03/28/19 19:40	03/29/19 14:29	EPA 3050B	1,6010D	LC
Silver, Total	ND		mg/kg	0.538	0.152	1	03/28/19 19:40	03/29/19 14:29	EPA 3050B	1,6010D	LC



Project Name: HARDWICK, YELLOW BARN**Lab Number:** L1912086**Project Number:** 1857501001**Report Date:** 04/04/19**SAMPLE RESULTS**

Lab ID: L1912086-02

Date Collected: 03/26/19 09:30

Client ID: SB-2 (10'-14')

Date Received: 03/27/19

Sample Location: HARDWICK, VT

Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	6.60		mg/kg	0.433	0.090	1	03/28/19 19:40	03/29/19 14:33	EPA 3050B	1,6010D	LC
Barium, Total	19.5		mg/kg	0.433	0.075	1	03/28/19 19:40	03/29/19 14:33	EPA 3050B	1,6010D	LC
Cadmium, Total	0.472		mg/kg	0.433	0.042	1	03/28/19 19:40	03/29/19 14:33	EPA 3050B	1,6010D	LC
Chromium, Total	25.3		mg/kg	0.433	0.042	1	03/28/19 19:40	03/29/19 14:33	EPA 3050B	1,6010D	LC
Lead, Total	4.90		mg/kg	2.16	0.116	1	03/28/19 19:40	03/29/19 14:33	EPA 3050B	1,6010D	LC
Mercury, Total	ND		mg/kg	0.072	0.015	1	03/28/19 08:20	03/28/19 13:56	EPA 7471B	1,7471B	GD
Selenium, Total	ND		mg/kg	0.866	0.112	1	03/28/19 19:40	03/29/19 14:33	EPA 3050B	1,6010D	LC
Silver, Total	ND		mg/kg	0.433	0.122	1	03/28/19 19:40	03/29/19 14:33	EPA 3050B	1,6010D	LC



Project Name: HARDWICK, YELLOW BARN**Lab Number:** L1912086**Project Number:** 1857501001**Report Date:** 04/04/19**SAMPLE RESULTS**

Lab ID: L1912086-03

Date Collected: 03/26/19 10:30

Client ID: SB-3 (8'-11')

Date Received: 03/27/19

Sample Location: HARDWICK, VT

Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 69%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	12.4		mg/kg	0.573	0.119	1	03/28/19 19:40	03/29/19 14:38	EPA 3050B	1,6010D	LC
Barium, Total	30.7		mg/kg	0.573	0.100	1	03/28/19 19:40	03/29/19 14:38	EPA 3050B	1,6010D	LC
Cadmium, Total	0.492	J	mg/kg	0.573	0.056	1	03/28/19 19:40	03/29/19 14:38	EPA 3050B	1,6010D	LC
Chromium, Total	27.1		mg/kg	0.573	0.055	1	03/28/19 19:40	03/29/19 14:38	EPA 3050B	1,6010D	LC
Lead, Total	9.79		mg/kg	2.86	0.153	1	03/28/19 19:40	03/29/19 14:38	EPA 3050B	1,6010D	LC
Mercury, Total	ND		mg/kg	0.090	0.019	1	03/28/19 08:20	03/28/19 13:58	EPA 7471B	1,7471B	GD
Selenium, Total	0.573	J	mg/kg	1.14	0.148	1	03/28/19 19:40	03/29/19 14:38	EPA 3050B	1,6010D	LC
Silver, Total	ND		mg/kg	0.573	0.162	1	03/28/19 19:40	03/29/19 14:38	EPA 3050B	1,6010D	LC



Project Name: HARDWICK, YELLOW BARN**Lab Number:** L1912086**Project Number:** 1857501001**Report Date:** 04/04/19**SAMPLE RESULTS**

Lab ID: L1912086-04

Date Collected: 03/26/19 11:20

Client ID: SB-4 (10'-15')

Date Received: 03/27/19

Sample Location: HARDWICK, VT

Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	2.66		mg/kg	0.587	0.122	1	03/28/19 19:40	03/29/19 14:43	EPA 3050B	1,6010D	LC
Barium, Total	61.5		mg/kg	0.587	0.102	1	03/28/19 19:40	03/29/19 14:43	EPA 3050B	1,6010D	LC
Cadmium, Total	0.493	J	mg/kg	0.587	0.058	1	03/28/19 19:40	03/29/19 14:43	EPA 3050B	1,6010D	LC
Chromium, Total	21.1		mg/kg	0.587	0.056	1	03/28/19 19:40	03/29/19 14:43	EPA 3050B	1,6010D	LC
Lead, Total	7.80		mg/kg	2.94	0.157	1	03/28/19 19:40	03/29/19 14:43	EPA 3050B	1,6010D	LC
Mercury, Total	ND		mg/kg	0.093	0.020	1	03/28/19 08:20	03/28/19 14:00	EPA 7471B	1,7471B	GD
Selenium, Total	ND		mg/kg	1.17	0.151	1	03/28/19 19:40	03/29/19 14:43	EPA 3050B	1,6010D	LC
Silver, Total	ND		mg/kg	0.587	0.166	1	03/28/19 19:40	03/29/19 14:43	EPA 3050B	1,6010D	LC



Project Name: HARDWICK, YELLOW BARN**Lab Number:** L1912086**Project Number:** 1857501001**Report Date:** 04/04/19**SAMPLE RESULTS**

Lab ID: L1912086-05

Date Collected: 03/26/19 12:30

Client ID: SB-7A (5'-7')

Date Received: 03/27/19

Sample Location: HARDWICK, VT

Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	12.4		mg/kg	0.443	0.092	1	03/28/19 19:40	03/29/19 14:47	EPA 3050B	1,6010D	LC
Barium, Total	14.4		mg/kg	0.443	0.077	1	03/28/19 19:40	03/29/19 14:47	EPA 3050B	1,6010D	LC
Cadmium, Total	0.754		mg/kg	0.443	0.044	1	03/28/19 19:40	03/29/19 14:47	EPA 3050B	1,6010D	LC
Chromium, Total	18.4		mg/kg	0.443	0.043	1	03/28/19 19:40	03/29/19 14:47	EPA 3050B	1,6010D	LC
Lead, Total	10.0		mg/kg	2.22	0.119	1	03/28/19 19:40	03/29/19 14:47	EPA 3050B	1,6010D	LC
Mercury, Total	ND		mg/kg	0.073	0.015	1	03/28/19 08:20	03/28/19 14:01	EPA 7471B	1,7471B	GD
Selenium, Total	0.235	J	mg/kg	0.887	0.114	1	03/28/19 19:40	03/29/19 14:47	EPA 3050B	1,6010D	LC
Silver, Total	ND		mg/kg	0.443	0.126	1	03/28/19 19:40	03/29/19 14:47	EPA 3050B	1,6010D	LC



Project Name: HARDWICK, YELLOW BARN**Lab Number:** L1912086**Project Number:** 1857501001**Report Date:** 04/04/19**SAMPLE RESULTS**

Lab ID: L1912086-06

Date Collected: 03/26/19 13:30

Client ID: SB-6 (5'-9')

Date Received: 03/27/19

Sample Location: HARDWICK, VT

Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	12.4		mg/kg	0.464	0.096	1	03/28/19 19:40	03/29/19 15:38	EPA 3050B	1,6010D	LC
Barium, Total	16.3		mg/kg	0.464	0.081	1	03/28/19 19:40	03/29/19 15:38	EPA 3050B	1,6010D	LC
Cadmium, Total	0.436	J	mg/kg	0.464	0.045	1	03/28/19 19:40	03/29/19 15:38	EPA 3050B	1,6010D	LC
Chromium, Total	25.1		mg/kg	0.464	0.045	1	03/28/19 19:40	03/29/19 15:38	EPA 3050B	1,6010D	LC
Lead, Total	6.13		mg/kg	2.32	0.124	1	03/28/19 19:40	03/29/19 15:38	EPA 3050B	1,6010D	LC
Mercury, Total	ND		mg/kg	0.076	0.016	1	03/28/19 08:20	03/28/19 14:03	EPA 7471B	1,7471B	GD
Selenium, Total	0.204	J	mg/kg	0.927	0.120	1	03/28/19 19:40	03/29/19 15:38	EPA 3050B	1,6010D	LC
Silver, Total	ND		mg/kg	0.464	0.131	1	03/28/19 19:40	03/29/19 15:38	EPA 3050B	1,6010D	LC



Project Name: HARDWICK, YELLOW BARN**Lab Number:** L1912086**Project Number:** 1857501001**Report Date:** 04/04/19**SAMPLE RESULTS**

Lab ID: L1912086-07

Date Collected: 03/26/19 00:00

Client ID: DUP

Date Received: 03/27/19

Sample Location: HARDWICK, VT

Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 63%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	2.81		mg/kg	0.618	0.128	1	03/28/19 19:40	03/29/19 15:42	EPA 3050B	1,6010D	LC
Barium, Total	65.6		mg/kg	0.618	0.108	1	03/28/19 19:40	03/29/19 15:42	EPA 3050B	1,6010D	LC
Cadmium, Total	0.476	J	mg/kg	0.618	0.061	1	03/28/19 19:40	03/29/19 15:42	EPA 3050B	1,6010D	LC
Chromium, Total	24.0		mg/kg	0.618	0.059	1	03/28/19 19:40	03/29/19 15:42	EPA 3050B	1,6010D	LC
Lead, Total	7.30		mg/kg	3.09	0.166	1	03/28/19 19:40	03/29/19 15:42	EPA 3050B	1,6010D	LC
Mercury, Total	0.030	J	mg/kg	0.10	0.021	1	03/28/19 08:20	03/28/19 14:05	EPA 7471B	1,7471B	GD
Selenium, Total	ND		mg/kg	1.24	0.159	1	03/28/19 19:40	03/29/19 15:42	EPA 3050B	1,6010D	LC
Silver, Total	ND		mg/kg	0.618	0.175	1	03/28/19 19:40	03/29/19 15:42	EPA 3050B	1,6010D	LC



Project Name: HARDWICK, YELLOW BARN

Lab Number: L1912086

Project Number: 1857501001

Report Date: 04/04/19

Method Blank Analysis Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-07 Batch: WG1220448-1										
Mercury, Total	ND		mg/kg	0.083	0.018	1	03/28/19 08:20	03/28/19 13:16	1,7471B	GD

Prep Information

Digestion Method: EPA 7471B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-07 Batch: WG1220768-1										
Arsenic, Total	ND		mg/kg	0.400	0.083	1	03/28/19 19:40	03/29/19 10:25	1,6010D	LC
Barium, Total	ND		mg/kg	0.400	0.070	1	03/28/19 19:40	03/29/19 10:25	1,6010D	LC
Cadmium, Total	ND		mg/kg	0.400	0.039	1	03/28/19 19:40	03/29/19 12:30	1,6010D	LC
Chromium, Total	ND		mg/kg	0.400	0.038	1	03/28/19 19:40	03/29/19 12:30	1,6010D	LC
Lead, Total	ND		mg/kg	2.00	0.107	1	03/28/19 19:40	03/29/19 10:25	1,6010D	LC
Selenium, Total	ND		mg/kg	0.800	0.103	1	03/28/19 19:40	03/29/19 10:25	1,6010D	LC
Silver, Total	ND		mg/kg	0.400	0.113	1	03/28/19 19:40	03/29/19 10:25	1,6010D	LC

Prep Information

Digestion Method: EPA 3050B

Lab Control Sample Analysis

Batch Quality Control

Project Name: HARDWICK, YELLOW BARN

Project Number: 1857501001

Lab Number: L1912086

Report Date: 04/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-07 Batch: WG1220448-2 SRM Lot Number: D101-540								
Mercury, Total	96		-		65-135	-		
Total Metals - Mansfield Lab Associated sample(s): 01-07 Batch: WG1220768-2 SRM Lot Number: D101-540								
Arsenic, Total	105		-		83-117	-		
Barium, Total	101		-		83-118	-		
Cadmium, Total	104		-		83-117	-		
Chromium, Total	102		-		81-118	-		
Lead, Total	98		-		83-117	-		
Selenium, Total	104		-		79-121	-		
Silver, Total	103		-		80-120	-		

Matrix Spike Analysis

Batch Quality Control

Project Name: HARDWICK, YELLOW BARN

Lab Number: L1912086

Project Number: 1857501001

Report Date: 04/04/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-07			QC Batch ID: WG1220448-3		WG1220448-4	QC Sample: L1911897-03		Client ID: MS Sample				
Mercury, Total	0.055J	0.15	0.234	156	Q	0.256	170	Q	80-120	9		20
Total Metals - Mansfield Lab Associated sample(s): 01-07			QC Batch ID: WG1220768-3		WG1220768-4	QC Sample: L1912160-02		Client ID: MS Sample				
Arsenic, Total	2.37	10.2	11.4	89		11.4	90		75-125	0		20
Barium, Total	15.8	169	188	102		187	103		75-125	1		20
Cadmium, Total	0.157J	4.32	4.20	97		4.31	101		75-125	3		20
Chromium, Total	3.05	16.9	19.2	95		19.5	99		75-125	2		20
Lead, Total	3.30J	43.2	41.1	95		41.8	98		75-125	2		20
Selenium, Total	0.240J	10.2	10.2	100		10.0	100		75-125	2		20
Silver, Total	ND	25.4	26.4	104		26.5	106		75-125	0		20

INORGANICS & MISCELLANEOUS

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912086
Report Date: 04/04/19

SAMPLE RESULTS

Lab ID: L1912086-01
Client ID: SB-2 (0.5-1.5)
Sample Location: HARDWICK, VT

Date Collected: 03/26/19 09:00
Date Received: 03/27/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	69.8		%	0.100	NA	1	-	03/27/19 20:52	121,2540G	YA



Project Name: HARDWICK, YELLOW BARN**Project Number:** 1857501001**Lab Number:** L1912086**Report Date:** 04/04/19**SAMPLE RESULTS****Lab ID:** L1912086-02**Client ID:** SB-2 (10'-14')**Sample Location:** HARDWICK, VT**Date Collected:** 03/26/19 09:30**Date Received:** 03/27/19**Field Prep:** Not Specified**Sample Depth:****Matrix:** Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.8		%	0.100	NA	1	-	03/27/19 20:52	121,2540G	YA



Project Name: HARDWICK, YELLOW BARN**Project Number:** 1857501001**Lab Number:** L1912086**Report Date:** 04/04/19**SAMPLE RESULTS****Lab ID:** L1912086-03**Client ID:** SB-3 (8'-11')**Sample Location:** HARDWICK, VT**Date Collected:** 03/26/19 10:30**Date Received:** 03/27/19**Field Prep:** Not Specified**Sample Depth:****Matrix:** Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	69.3		%	0.100	NA	1	-	03/27/19 21:12	121,2540G	YA



Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912086
Report Date: 04/04/19

SAMPLE RESULTS

Lab ID: L1912086-04
Client ID: SB-4 (10'-15')
Sample Location: HARDWICK, VT

Date Collected: 03/26/19 11:20
Date Received: 03/27/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	67.6		%	0.100	NA	1	-	03/27/19 21:12	121,2540G	YA



Project Name: HARDWICK, YELLOW BARN

Project Number: 1857501001

Lab Number: L1912086

Report Date: 04/04/19

SAMPLE RESULTS

Lab ID: L1912086-05

Client ID: SB-7A (5'-7')

Sample Location: HARDWICK, VT

Date Collected: 03/26/19 12:30

Date Received: 03/27/19

Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	87.4		%	0.100	NA	1	-	03/27/19 21:12	121,2540G	YA



Project Name: HARDWICK, YELLOW BARN**Project Number:** 1857501001**Lab Number:** L1912086**Report Date:** 04/04/19**SAMPLE RESULTS****Lab ID:** L1912086-06**Client ID:** SB-6 (5'-9')**Sample Location:** HARDWICK, VT**Date Collected:** 03/26/19 13:30**Date Received:** 03/27/19**Field Prep:** Not Specified**Sample Depth:****Matrix:** Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	83.6		%	0.100	NA	1	-	03/27/19 21:12	121,2540G	YA



Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912086
Report Date: 04/04/19

SAMPLE RESULTS

Lab ID: L1912086-07
Client ID: DUP
Sample Location: HARDWICK, VT

Date Collected: 03/26/19 00:00
Date Received: 03/27/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	63.2		%	0.100	NA	1	-	03/27/19 21:12	121,2540G	YA



Lab Duplicate Analysis

Batch Quality Control

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912086
Report Date: 04/04/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1220346-1 QC Sample: L1912086-01 Client ID: SB-2 (0.5-1.5)						
Solids, Total	69.8	72.7	%	4		20
General Chemistry - Westborough Lab Associated sample(s): 03-07 QC Batch ID: WG1220353-1 QC Sample: L1912169-01 Client ID: DUP Sample						
Solids, Total	37.1	61.2	%	49	Q	20

Project Name: HARDWICK, YELLOW BARN**Lab Number:** L1912086**Project Number:** 1857501001**Report Date:** 04/04/19**Sample Receipt and Container Information**

Were project specific reporting limits specified?

YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1912086-01A	Plastic 2oz unpreserved for TS	A	NA		3.4	Y	Absent		TS(7)
L1912086-01B	Plastic 2oz unpreserved for TS	A	NA		3.4	Y	Absent		TS(7)
L1912086-01C	Plastic 2oz unpreserved for TS	A	NA		3.4	Y	Absent		TS(7)
L1912086-01D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.4	Y	Absent		AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),PB-TI(180),SE-TI(180),HG-T(28),CD-TI(180)
L1912086-01E	Glass 120ml/4oz unpreserved	A	NA		3.4	Y	Absent		8270TCL-PAH(14),PEST-8081(14),HERB-8151(14)
L1912086-01F	Glass 250ml/8oz unpreserved	A	NA		3.4	Y	Absent		8270TCL-PAH(14),PEST-8081(14),HERB-8151(14)
L1912086-02A	Vial MeOH preserved	A	NA		3.4	Y	Absent		8260HLW(14)
L1912086-02B	Vial water preserved	A	NA		3.4	Y	Absent	27-MAR-19 19:44	8260HLW(14)
L1912086-02C	Vial water preserved	A	NA		3.4	Y	Absent	27-MAR-19 19:44	8260HLW(14)
L1912086-02D	Plastic 2oz unpreserved for TS	A	NA		3.4	Y	Absent		TS(7)
L1912086-02E	Plastic 2oz unpreserved for TS	A	NA		3.4	Y	Absent		TS(7)
L1912086-02F	Plastic 2oz unpreserved for TS	A	NA		3.4	Y	Absent		TS(7)
L1912086-02G	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.4	Y	Absent		AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),PB-TI(180),SE-TI(180),HG-T(28),CD-TI(180)
L1912086-02H	Glass 120ml/4oz unpreserved	A	NA		3.4	Y	Absent		8270TCL-PAH(14)
L1912086-02I	Vial Large Septa unpreserved (4oz)	A	NA		3.4	Y	Absent		8270TCL-PAH(14)
L1912086-03A	Vial MeOH preserved	A	NA		3.4	Y	Absent		8260HLW(14)
L1912086-03B	Vial water preserved	A	NA		3.4	Y	Absent	27-MAR-19 19:44	8260HLW(14)
L1912086-03C	Vial water preserved	A	NA		3.4	Y	Absent	27-MAR-19 19:44	8260HLW(14)
L1912086-03D	Plastic 2oz unpreserved for TS	A	NA		3.4	Y	Absent		TS(7)
L1912086-03E	Plastic 2oz unpreserved for TS	A	NA		3.4	Y	Absent		TS(7)
L1912086-03F	Plastic 2oz unpreserved for TS	A	NA		3.4	Y	Absent		TS(7)

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Serial_No:04041914:10
Lab Number: L1912086
Report Date: 04/04/19

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1912086-03G	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.4	Y	Absent		AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),PB-TI(180),SE-TI(180),HG-T(28),CD-TI(180)
L1912086-03H	Glass 120ml/4oz unpreserved	A	NA		3.4	Y	Absent		8270TCL-PAH(14)
L1912086-03I	Vial Large Septa unpreserved (4oz)	A	NA		3.4	Y	Absent		8270TCL-PAH(14)
L1912086-04A	Vial MeOH preserved	A	NA		3.4	Y	Absent		8260HLW(14)
L1912086-04B	Vial water preserved	A	NA		3.4	Y	Absent	27-MAR-19 19:44	8260HLW(14)
L1912086-04C	Vial water preserved	A	NA		3.4	Y	Absent	27-MAR-19 19:44	8260HLW(14)
L1912086-04D	Plastic 2oz unpreserved for TS	A	NA		3.4	Y	Absent		TS(7)
L1912086-04E	Plastic 2oz unpreserved for TS	A	NA		3.4	Y	Absent		TS(7)
L1912086-04F	Plastic 2oz unpreserved for TS	A	NA		3.4	Y	Absent		TS(7)
L1912086-04G	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.4	Y	Absent		AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),PB-TI(180),SE-TI(180),HG-T(28),CD-TI(180)
L1912086-04H	Glass 120ml/4oz unpreserved	A	NA		3.4	Y	Absent		8270TCL-PAH(14)
L1912086-04I	Vial Large Septa unpreserved (4oz)	A	NA		3.4	Y	Absent		8270TCL-PAH(14)
L1912086-05A	Vial MeOH preserved	A	NA		3.4	Y	Absent		8260HLW(14)
L1912086-05B	Vial water preserved	A	NA		3.4	Y	Absent	27-MAR-19 19:44	8260HLW(14)
L1912086-05C	Vial water preserved	A	NA		3.4	Y	Absent	27-MAR-19 19:44	8260HLW(14)
L1912086-05D	Plastic 2oz unpreserved for TS	A	NA		3.4	Y	Absent		TS(7)
L1912086-05E	Plastic 2oz unpreserved for TS	A	NA		3.4	Y	Absent		TS(7)
L1912086-05F	Plastic 2oz unpreserved for TS	A	NA		3.4	Y	Absent		TS(7)
L1912086-05G	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.4	Y	Absent		AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),PB-TI(180),SE-TI(180),HG-T(28),CD-TI(180)
L1912086-05H	Glass 120ml/4oz unpreserved	A	NA		3.4	Y	Absent		8270TCL-PAH(14)
L1912086-05I	Vial Large Septa unpreserved (4oz)	A	NA		3.4	Y	Absent		8270TCL-PAH(14)
L1912086-06A	Vial MeOH preserved	A	NA		3.4	Y	Absent		8260HLW(14)
L1912086-06B	Vial water preserved	A	NA		3.4	Y	Absent	27-MAR-19 19:44	8260HLW(14)
L1912086-06C	Vial water preserved	A	NA		3.4	Y	Absent	27-MAR-19 19:44	8260HLW(14)
L1912086-06D	Plastic 2oz unpreserved for TS	A	NA		3.4	Y	Absent		TS(7)
L1912086-06E	Plastic 2oz unpreserved for TS	A	NA		3.4	Y	Absent		TS(7)

Project Name: HARDWICK, YELLOW BARN**Lab Number:** L1912086**Project Number:** 1857501001**Report Date:** 04/04/19**Container Information**

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1912086-06F	Plastic 2oz unpreserved for TS	A	NA		3.4	Y	Absent		TS(7)
L1912086-06G	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.4	Y	Absent		AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),PB-TI(180),SE-TI(180),HG-T(28),CD-TI(180)
L1912086-06H	Glass 120ml/4oz unpreserved	A	NA		3.4	Y	Absent		8270TCL-PAH(14)
L1912086-06I	Vial Large Septa unpreserved (4oz)	A	NA		3.4	Y	Absent		8270TCL-PAH(14)
L1912086-07A	Vial MeOH preserved	A	NA		3.4	Y	Absent		8260HLW(14)
L1912086-07B	Vial water preserved	A	NA		3.4	Y	Absent	27-MAR-19 19:44	8260HLW(14)
L1912086-07C	Vial water preserved	A	NA		3.4	Y	Absent	27-MAR-19 19:44	8260HLW(14)
L1912086-07D	Plastic 2oz unpreserved for TS	A	NA		3.4	Y	Absent		TS(7)
L1912086-07E	Plastic 2oz unpreserved for TS	A	NA		3.4	Y	Absent		TS(7)
L1912086-07F	Plastic 2oz unpreserved for TS	A	NA		3.4	Y	Absent		TS(7)
L1912086-07G	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.4	Y	Absent		AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),PB-TI(180),SE-TI(180),HG-T(28),CD-TI(180)
L1912086-07H	Glass 120ml/4oz unpreserved	A	NA		3.4	Y	Absent		8270TCL-PAH(14)
L1912086-07I	Vial Large Septa unpreserved (4oz)	A	NA		3.4	Y	Absent		8270TCL-PAH(14)

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912086
Report Date: 04/04/19

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCS D	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

Report Format: DU Report with 'J' Qualifiers



Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912086
Report Date: 04/04/19

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- J** - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- ND** - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.

Report Format: DU Report with 'J' Qualifiers



Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912086
Report Date: 04/04/19

REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Alpha Analytical, Inc.

ID No.:17873

Facility: **Company-wide**

Revision 12

Department: **Quality Assurance**

Published Date: 10/9/2018 4:58:19 PM

Title: **Certificate/Approval Program Summary**

Page 1 of 1

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility**EPA 624/624.1:** m/p-xylene, o-xylene**EPA 8260C:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.**EPA 8270D:** NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.**EPA 6860:** SCM: Perchlorate**SM4500:** NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO₂, NO₃.**Mansfield Facility****SM 2540D:** TSS**EPA 8082A:** NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.**EPA TO-15:** Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.**Biological Tissue Matrix:** EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:**Drinking Water****EPA 300.0:** Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE,****EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B****EPA 332:** Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.**Microbiology:** **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.****Non-Potable Water****SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH:** Ammonia-N and Kjeldahl-N, **EPA 350.1:** Ammonia-N, **LACHAT 10-107-06-1-B:** Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2:** Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300:** Chloride, Sulfate, Nitrate.**EPA 624.1:** Volatile Halocarbons & Aromatics,**EPA 608.3:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs**EPA 625.1:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.****Mansfield Facility:****Drinking Water****EPA 200.7:** Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1 Hg. EPA 522.****Non-Potable Water****EPA 200.7:** Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.**EPA 200.8:** Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.**EPA 245.1 Hg.****SM2340B**

For a complete listing of analytes and methods, please contact your Alpha Project Manager.



CHAIN OF CUSTODY

PAGE _____ OF _____

Date Rec'd in Lab: 3-27-19

ALPHA Job #: L1912086

8 Walkup Drive
Westboro, MA 01581
Tel: 508-898-9220

320 Forbes Blvd
Mansfield, MA 02048
Tel: 508-822-9300

Client Information

Client: STANTZ
Address: 5 DARTMOUTH DR
AUBURN NH 03032
Phone: 603-498-4674
Email: D.Allison@STANTZ.com

Additional Project Information:

Project Information

Project Name:	Harlowick, Yellow Barn
Project Location:	Harlowick, VT
Project #:	1857501001
Project Manager:	Dave Allwine
ALPHA Quote #:	

Turn-Around Time

☐ Standard ☒ **RUSH** (only confirmed if pre-approved)

Date Due:

Report Information - Data Deliverables

☐ ADEx ☒ EMAIL

Billing Information

☐ Same as Client info	PO #:

Regulatory Requirements & Project Information Requirements

☐ Yes ☒ No MA MCP Analytical Methods ☐ Yes ☒ No CT RCP Analytical Methods
☐ Yes ☒ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☒ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☒ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

[illegible]

Container Type

P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative

A= None
B= HCl
C= HNO₃
D= H₂SO₄
E= NaOH
F= MeOH
G= NaHSO₄
H= Na₂S₂O₃
I= Ascorbic Acid
J= NH₄Cl
K= Zn Acetate
O= Other

Container Type

Preservative

Received By:

Date/Time

Retinquinshed By:

Date/Time

Received By:

Date/Time

All samples submitted are subject to Alpha's Terms and Conditions.
See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)



ANALYTICAL REPORT

Lab Number:	L1912311
Client:	Stantec 5 Dartmouth Drive Suite 200 Auburn, NH 03032
ATTN:	Dave Allwine
Phone:	(603) 669-8672
Project Name:	HARDWICK, YELLOW BARN
Project Number:	1857501001
Report Date:	04/02/19

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com



Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912311
Report Date: 04/02/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1912311-01	TW-1	WATER	HARDWICK, VT	03/27/19 15:20	03/28/19
L1912311-02	TW-2	WATER	HARDWICK, VT	03/27/19 13:45	03/28/19
L1912311-03	TW-3	WATER	HARDWICK, VT	03/27/19 12:30	03/28/19
L1912311-04	TW-4	WATER	HARDWICK, VT	03/27/19 10:00	03/28/19
L1912311-05	DUP	WATER	HARDWICK, VT	03/27/19 00:00	03/28/19
L1912311-06	TRIP	WATER	HARDWICK, VT	03/27/19 00:00	03/28/19

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912311
Report Date: 04/02/19

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912311
Report Date: 04/02/19

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

L1912311-06: One of the Volatile Organics and Method 8011 containers was received broken; however, there was adequate sample remaining to perform the requested analyses.

Microextractables

L1912311-06: The sample has an elevated detection limit due to limited sample volume available for analysis.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

 Kelly Stenstrom

Title: Technical Director/Representative

Date: 04/02/19

ORGANICS

VOLATILES

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912311
Report Date: 04/02/19

SAMPLE RESULTS

Lab ID: L1912311-01
Client ID: TW-1
Sample Location: HARDWICK, VT

Date Collected: 03/27/19 15:20
Date Received: 03/28/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 04/01/19 14:34
Analyst: AWS

Extraction Method: EPA 8011
Extraction Date: 04/01/19 12:07

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.004	1	A

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912311
Report Date: 04/02/19

SAMPLE RESULTS

Lab ID: L1912311-01
Client ID: TW-1
Sample Location: HARDWICK, VT

Date Collected: 03/27/19 15:20
Date Received: 03/28/19
Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 03/29/19 14:47
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	0.68	1
1,1-Dichloroethane	ND		ug/l	0.75	0.21	1
Chloroform	ND		ug/l	0.75	0.22	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.8	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	0.75	0.14	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	0.50	0.18	1
Trichlorofluoromethane	ND		ug/l	2.5	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	0.50	0.16	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	0.14	1
1,1-Dichloropropene	ND		ug/l	2.5	0.24	1
Bromoform	ND		ug/l	2.0	0.25	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
Chloromethane	ND		ug/l	2.5	0.20	1
Bromomethane	ND		ug/l	1.0	0.26	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	1.0	0.13	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	0.16	1

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912311
Report Date: 04/02/19

SAMPLE RESULTS

Lab ID: L1912311-01
Client ID: TW-1
Sample Location: HARDWICK, VT

Date Collected: 03/27/19 15:20
Date Received: 03/28/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	ND		ug/l	0.50	0.16	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.18	1
1,3-Dichlorobenzene	ND		ug/l	2.5	0.19	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.19	1
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	0.19	1
Dibromomethane	ND		ug/l	5.0	0.36	1
1,4-Dichlorobutane	ND		ug/l	5.0	0.46	1
1,2,3-Trichloropropane	ND		ug/l	5.0	0.18	1
Styrene	ND		ug/l	1.0	0.36	1
Dichlorodifluoromethane	ND		ug/l	5.0	0.24	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	0.30	1
2-Butanone	ND		ug/l	5.0	1.9	1
Vinyl acetate	ND		ug/l	5.0	0.31	1
4-Methyl-2-pentanone	ND		ug/l	5.0	0.42	1
2-Hexanone	ND		ug/l	5.0	0.52	1
Ethyl methacrylate	ND		ug/l	5.0	0.61	1
Acrylonitrile	ND		ug/l	5.0	0.43	1
Bromochloromethane	ND		ug/l	2.5	0.15	1
Tetrahydrofuran	ND		ug/l	5.0	0.52	1
2,2-Dichloropropane	ND		ug/l	2.5	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
1,3-Dichloropropane	ND		ug/l	2.5	0.21	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	0.16	1
Bromobenzene	ND		ug/l	2.5	0.15	1
n-Butylbenzene	ND		ug/l	0.50	0.19	1
sec-Butylbenzene	ND		ug/l	0.50	0.18	1
tert-Butylbenzene	ND		ug/l	2.5	0.20	1
o-Chlorotoluene	ND		ug/l	2.5	0.22	1
p-Chlorotoluene	ND		ug/l	2.5	0.18	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.35	1
Hexachlorobutadiene	ND		ug/l	0.50	0.22	1

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912311
Report Date: 04/02/19

SAMPLE RESULTS

Lab ID: L1912311-01
Client ID: TW-1
Sample Location: HARDWICK, VT

Date Collected: 03/27/19 15:20
Date Received: 03/28/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Isopropylbenzene	ND		ug/l	0.50	0.19	1
p-Isopropyltoluene	ND		ug/l	0.50	0.19	1
Naphthalene	ND		ug/l	2.5	0.22	1
n-Propylbenzene	ND		ug/l	0.50	0.17	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.23	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.22	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	0.21	1
Ethyl ether	ND		ug/l	2.5	0.16	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	104		70-130

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912311
Report Date: 04/02/19

SAMPLE RESULTS

Lab ID: L1912311-02
Client ID: TW-2
Sample Location: HARDWICK, VT

Date Collected: 03/27/19 13:45
Date Received: 03/28/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 04/01/19 14:47
Analyst: AWS

Extraction Method: EPA 8011
Extraction Date: 04/01/19 12:07

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.004	1	A

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912311
Report Date: 04/02/19

SAMPLE RESULTS

Lab ID: L1912311-02
Client ID: TW-2
Sample Location: HARDWICK, VT

Date Collected: 03/27/19 13:45
Date Received: 03/28/19
Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 03/29/19 15:14
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	0.68	1
1,1-Dichloroethane	ND		ug/l	0.75	0.21	1
Chloroform	ND		ug/l	0.75	0.22	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.8	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	0.75	0.14	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	0.50	0.18	1
Trichlorofluoromethane	ND		ug/l	2.5	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	0.50	0.16	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	0.14	1
1,1-Dichloropropene	ND		ug/l	2.5	0.24	1
Bromoform	ND		ug/l	2.0	0.25	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
Chloromethane	ND		ug/l	2.5	0.20	1
Bromomethane	ND		ug/l	1.0	0.26	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	1.0	0.13	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	0.16	1

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912311
Report Date: 04/02/19

SAMPLE RESULTS

Lab ID: L1912311-02
Client ID: TW-2
Sample Location: HARDWICK, VT

Date Collected: 03/27/19 13:45
Date Received: 03/28/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	ND		ug/l	0.50	0.16	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.18	1
1,3-Dichlorobenzene	ND		ug/l	2.5	0.19	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.19	1
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	0.19	1
Dibromomethane	ND		ug/l	5.0	0.36	1
1,4-Dichlorobutane	ND		ug/l	5.0	0.46	1
1,2,3-Trichloropropane	ND		ug/l	5.0	0.18	1
Styrene	ND		ug/l	1.0	0.36	1
Dichlorodifluoromethane	ND		ug/l	5.0	0.24	1
Acetone	2.2	J	ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	0.30	1
2-Butanone	ND		ug/l	5.0	1.9	1
Vinyl acetate	ND		ug/l	5.0	0.31	1
4-Methyl-2-pentanone	ND		ug/l	5.0	0.42	1
2-Hexanone	ND		ug/l	5.0	0.52	1
Ethyl methacrylate	ND		ug/l	5.0	0.61	1
Acrylonitrile	ND		ug/l	5.0	0.43	1
Bromochloromethane	ND		ug/l	2.5	0.15	1
Tetrahydrofuran	ND		ug/l	5.0	0.52	1
2,2-Dichloropropane	ND		ug/l	2.5	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
1,3-Dichloropropane	ND		ug/l	2.5	0.21	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	0.16	1
Bromobenzene	ND		ug/l	2.5	0.15	1
n-Butylbenzene	ND		ug/l	0.50	0.19	1
sec-Butylbenzene	ND		ug/l	0.50	0.18	1
tert-Butylbenzene	ND		ug/l	2.5	0.20	1
o-Chlorotoluene	ND		ug/l	2.5	0.22	1
p-Chlorotoluene	ND		ug/l	2.5	0.18	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.35	1
Hexachlorobutadiene	ND		ug/l	0.50	0.22	1

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912311
Report Date: 04/02/19

SAMPLE RESULTS

Lab ID: L1912311-02
Client ID: TW-2
Sample Location: HARDWICK, VT

Date Collected: 03/27/19 13:45
Date Received: 03/28/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Isopropylbenzene	ND		ug/l	0.50	0.19	1
p-Isopropyltoluene	ND		ug/l	0.50	0.19	1
Naphthalene	ND		ug/l	2.5	0.22	1
n-Propylbenzene	ND		ug/l	0.50	0.17	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.23	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.22	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	0.21	1
Ethyl ether	ND		ug/l	2.5	0.16	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	105		70-130

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912311
Report Date: 04/02/19

SAMPLE RESULTS

Lab ID: L1912311-03
Client ID: TW-3
Sample Location: HARDWICK, VT

Date Collected: 03/27/19 12:30
Date Received: 03/28/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 04/01/19 15:01
Analyst: AWS

Extraction Method: EPA 8011
Extraction Date: 04/01/19 12:07

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.004	1	A

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912311
Report Date: 04/02/19

SAMPLE RESULTS

Lab ID: L1912311-03
Client ID: TW-3
Sample Location: HARDWICK, VT

Date Collected: 03/27/19 12:30
Date Received: 03/28/19
Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 03/29/19 15:42
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	0.68	1
1,1-Dichloroethane	ND		ug/l	0.75	0.21	1
Chloroform	ND		ug/l	0.75	0.22	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.8	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	0.75	0.14	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	0.50	0.18	1
Trichlorofluoromethane	ND		ug/l	2.5	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	0.50	0.16	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	0.14	1
1,1-Dichloropropene	ND		ug/l	2.5	0.24	1
Bromoform	ND		ug/l	2.0	0.25	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	0.63	J	ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
Chloromethane	ND		ug/l	2.5	0.20	1
Bromomethane	ND		ug/l	1.0	0.26	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	1.0	0.13	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	0.16	1

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912311
Report Date: 04/02/19

SAMPLE RESULTS

Lab ID: L1912311-03
Client ID: TW-3
Sample Location: HARDWICK, VT

Date Collected: 03/27/19 12:30
Date Received: 03/28/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	ND		ug/l	0.50	0.16	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.18	1
1,3-Dichlorobenzene	ND		ug/l	2.5	0.19	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.19	1
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	0.19	1
Dibromomethane	ND		ug/l	5.0	0.36	1
1,4-Dichlorobutane	ND		ug/l	5.0	0.46	1
1,2,3-Trichloropropane	ND		ug/l	5.0	0.18	1
Styrene	ND		ug/l	1.0	0.36	1
Dichlorodifluoromethane	ND		ug/l	5.0	0.24	1
Acetone	1.6	J	ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	0.30	1
2-Butanone	ND		ug/l	5.0	1.9	1
Vinyl acetate	ND		ug/l	5.0	0.31	1
4-Methyl-2-pentanone	4.1	J	ug/l	5.0	0.42	1
2-Hexanone	ND		ug/l	5.0	0.52	1
Ethyl methacrylate	ND		ug/l	5.0	0.61	1
Acrylonitrile	ND		ug/l	5.0	0.43	1
Bromochloromethane	ND		ug/l	2.5	0.15	1
Tetrahydrofuran	ND		ug/l	5.0	0.52	1
2,2-Dichloropropane	ND		ug/l	2.5	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
1,3-Dichloropropane	ND		ug/l	2.5	0.21	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	0.16	1
Bromobenzene	ND		ug/l	2.5	0.15	1
n-Butylbenzene	ND		ug/l	0.50	0.19	1
sec-Butylbenzene	ND		ug/l	0.50	0.18	1
tert-Butylbenzene	ND		ug/l	2.5	0.20	1
o-Chlorotoluene	ND		ug/l	2.5	0.22	1
p-Chlorotoluene	ND		ug/l	2.5	0.18	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.35	1
Hexachlorobutadiene	ND		ug/l	0.50	0.22	1

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912311
Report Date: 04/02/19

SAMPLE RESULTS

Lab ID: L1912311-03
Client ID: TW-3
Sample Location: HARDWICK, VT

Date Collected: 03/27/19 12:30
Date Received: 03/28/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Isopropylbenzene	ND		ug/l	0.50	0.19	1
p-Isopropyltoluene	0.24	J	ug/l	0.50	0.19	1
Naphthalene	ND		ug/l	2.5	0.22	1
n-Propylbenzene	ND		ug/l	0.50	0.17	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.23	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.22	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	0.21	1
Ethyl ether	ND		ug/l	2.5	0.16	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	103		70-130

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912311
Report Date: 04/02/19

SAMPLE RESULTS

Lab ID: L1912311-04
Client ID: TW-4
Sample Location: HARDWICK, VT

Date Collected: 03/27/19 10:00
Date Received: 03/28/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 04/01/19 15:15
Analyst: AWS

Extraction Method: EPA 8011
Extraction Date: 04/01/19 12:07

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.004	1	A

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912311
Report Date: 04/02/19

SAMPLE RESULTS

Lab ID: L1912311-04
Client ID: TW-4
Sample Location: HARDWICK, VT

Date Collected: 03/27/19 10:00
Date Received: 03/28/19
Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 03/29/19 16:10
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	0.68	1
1,1-Dichloroethane	ND		ug/l	0.75	0.21	1
Chloroform	ND		ug/l	0.75	0.22	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.8	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	0.75	0.14	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	0.50	0.18	1
Trichlorofluoromethane	ND		ug/l	2.5	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	0.50	0.16	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	0.14	1
1,1-Dichloropropene	ND		ug/l	2.5	0.24	1
Bromoform	ND		ug/l	2.0	0.25	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
Chloromethane	ND		ug/l	2.5	0.20	1
Bromomethane	ND		ug/l	1.0	0.26	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	1.0	0.13	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	0.16	1

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912311
Report Date: 04/02/19

SAMPLE RESULTS

Lab ID: L1912311-04
Client ID: TW-4
Sample Location: HARDWICK, VT

Date Collected: 03/27/19 10:00
Date Received: 03/28/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	ND		ug/l	0.50	0.16	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.18	1
1,3-Dichlorobenzene	ND		ug/l	2.5	0.19	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.19	1
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	0.19	1
Dibromomethane	ND		ug/l	5.0	0.36	1
1,4-Dichlorobutane	ND		ug/l	5.0	0.46	1
1,2,3-Trichloropropane	ND		ug/l	5.0	0.18	1
Styrene	ND		ug/l	1.0	0.36	1
Dichlorodifluoromethane	ND		ug/l	5.0	0.24	1
Acetone	8.1		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	0.30	1
2-Butanone	ND		ug/l	5.0	1.9	1
Vinyl acetate	ND		ug/l	5.0	0.31	1
4-Methyl-2-pentanone	ND		ug/l	5.0	0.42	1
2-Hexanone	ND		ug/l	5.0	0.52	1
Ethyl methacrylate	ND		ug/l	5.0	0.61	1
Acrylonitrile	ND		ug/l	5.0	0.43	1
Bromochloromethane	ND		ug/l	2.5	0.15	1
Tetrahydrofuran	ND		ug/l	5.0	0.52	1
2,2-Dichloropropane	ND		ug/l	2.5	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
1,3-Dichloropropane	ND		ug/l	2.5	0.21	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	0.16	1
Bromobenzene	ND		ug/l	2.5	0.15	1
n-Butylbenzene	ND		ug/l	0.50	0.19	1
sec-Butylbenzene	ND		ug/l	0.50	0.18	1
tert-Butylbenzene	ND		ug/l	2.5	0.20	1
o-Chlorotoluene	ND		ug/l	2.5	0.22	1
p-Chlorotoluene	ND		ug/l	2.5	0.18	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.35	1
Hexachlorobutadiene	ND		ug/l	0.50	0.22	1

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912311
Report Date: 04/02/19

SAMPLE RESULTS

Lab ID: L1912311-04
Client ID: TW-4
Sample Location: HARDWICK, VT

Date Collected: 03/27/19 10:00
Date Received: 03/28/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Isopropylbenzene	ND		ug/l	0.50	0.19	1
p-Isopropyltoluene	ND		ug/l	0.50	0.19	1
Naphthalene	ND		ug/l	2.5	0.22	1
n-Propylbenzene	ND		ug/l	0.50	0.17	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.23	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.22	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	0.21	1
Ethyl ether	ND		ug/l	2.5	0.16	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	105		70-130

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912311
Report Date: 04/02/19

SAMPLE RESULTS

Lab ID: L1912311-05
Client ID: DUP
Sample Location: HARDWICK, VT

Date Collected: 03/27/19 00:00
Date Received: 03/28/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 04/01/19 15:29
Analyst: AWS

Extraction Method: EPA 8011
Extraction Date: 04/01/19 12:07

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.004	1	A

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912311
Report Date: 04/02/19

SAMPLE RESULTS

Lab ID: L1912311-05
Client ID: DUP
Sample Location: HARDWICK, VT

Date Collected: 03/27/19 00:00
Date Received: 03/28/19
Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 03/29/19 16:37
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	0.68	1
1,1-Dichloroethane	ND		ug/l	0.75	0.21	1
Chloroform	ND		ug/l	0.75	0.22	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.8	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	0.75	0.14	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	0.50	0.18	1
Trichlorofluoromethane	ND		ug/l	2.5	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	0.50	0.16	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	0.14	1
1,1-Dichloropropene	ND		ug/l	2.5	0.24	1
Bromoform	ND		ug/l	2.0	0.25	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
Chloromethane	ND		ug/l	2.5	0.20	1
Bromomethane	ND		ug/l	1.0	0.26	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	1.0	0.13	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	0.16	1

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912311
Report Date: 04/02/19

SAMPLE RESULTS

Lab ID: L1912311-05
Client ID: DUP
Sample Location: HARDWICK, VT

Date Collected: 03/27/19 00:00
Date Received: 03/28/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	ND		ug/l	0.50	0.16	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.18	1
1,3-Dichlorobenzene	ND		ug/l	2.5	0.19	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.19	1
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	0.19	1
Dibromomethane	ND		ug/l	5.0	0.36	1
1,4-Dichlorobutane	ND		ug/l	5.0	0.46	1
1,2,3-Trichloropropane	ND		ug/l	5.0	0.18	1
Styrene	ND		ug/l	1.0	0.36	1
Dichlorodifluoromethane	ND		ug/l	5.0	0.24	1
Acetone	7.4		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	0.30	1
2-Butanone	ND		ug/l	5.0	1.9	1
Vinyl acetate	ND		ug/l	5.0	0.31	1
4-Methyl-2-pentanone	ND		ug/l	5.0	0.42	1
2-Hexanone	ND		ug/l	5.0	0.52	1
Ethyl methacrylate	ND		ug/l	5.0	0.61	1
Acrylonitrile	ND		ug/l	5.0	0.43	1
Bromochloromethane	ND		ug/l	2.5	0.15	1
Tetrahydrofuran	ND		ug/l	5.0	0.52	1
2,2-Dichloropropane	ND		ug/l	2.5	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
1,3-Dichloropropane	ND		ug/l	2.5	0.21	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	0.16	1
Bromobenzene	ND		ug/l	2.5	0.15	1
n-Butylbenzene	ND		ug/l	0.50	0.19	1
sec-Butylbenzene	ND		ug/l	0.50	0.18	1
tert-Butylbenzene	ND		ug/l	2.5	0.20	1
o-Chlorotoluene	ND		ug/l	2.5	0.22	1
p-Chlorotoluene	ND		ug/l	2.5	0.18	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.35	1
Hexachlorobutadiene	ND		ug/l	0.50	0.22	1

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912311
Report Date: 04/02/19

SAMPLE RESULTS

Lab ID: L1912311-05
Client ID: DUP
Sample Location: HARDWICK, VT

Date Collected: 03/27/19 00:00
Date Received: 03/28/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Isopropylbenzene	ND		ug/l	0.50	0.19	1
p-Isopropyltoluene	ND		ug/l	0.50	0.19	1
Naphthalene	ND		ug/l	2.5	0.22	1
n-Propylbenzene	ND		ug/l	0.50	0.17	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.23	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.22	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	0.21	1
Ethyl ether	ND		ug/l	2.5	0.16	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	105		70-130

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912311
Report Date: 04/02/19

SAMPLE RESULTS

Lab ID: L1912311-06
Client ID: TRIP
Sample Location: HARDWICK, VT

Date Collected: 03/27/19 00:00
Date Received: 03/28/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 04/01/19 15:43
Analyst: AWS

Extraction Method: EPA 8011
Extraction Date: 04/01/19 12:07

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.018	0.007	1	A

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912311
Report Date: 04/02/19

SAMPLE RESULTS

Lab ID: L1912311-06
Client ID: TRIP
Sample Location: HARDWICK, VT

Date Collected: 03/27/19 00:00
Date Received: 03/28/19
Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 03/29/19 17:05
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	0.68	1
1,1-Dichloroethane	ND		ug/l	0.75	0.21	1
Chloroform	ND		ug/l	0.75	0.22	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.8	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	0.75	0.14	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	0.50	0.18	1
Trichlorofluoromethane	ND		ug/l	2.5	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	0.50	0.16	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	0.14	1
1,1-Dichloropropene	ND		ug/l	2.5	0.24	1
Bromoform	ND		ug/l	2.0	0.25	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
Chloromethane	ND		ug/l	2.5	0.20	1
Bromomethane	ND		ug/l	1.0	0.26	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	1.0	0.13	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	0.16	1

Project Name: HARDWICK, YELLOW BARN**Lab Number:** L1912311**Project Number:** 1857501001**Report Date:** 04/02/19**SAMPLE RESULTS**

Lab ID: L1912311-06
Client ID: TRIP
Sample Location: HARDWICK, VT

Date Collected: 03/27/19 00:00
Date Received: 03/28/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	ND		ug/l	0.50	0.16	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.18	1
1,3-Dichlorobenzene	ND		ug/l	2.5	0.19	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.19	1
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	0.19	1
Dibromomethane	ND		ug/l	5.0	0.36	1
1,4-Dichlorobutane	ND		ug/l	5.0	0.46	1
1,2,3-Trichloropropane	ND		ug/l	5.0	0.18	1
Styrene	ND		ug/l	1.0	0.36	1
Dichlorodifluoromethane	ND		ug/l	5.0	0.24	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	0.30	1
2-Butanone	ND		ug/l	5.0	1.9	1
Vinyl acetate	ND		ug/l	5.0	0.31	1
4-Methyl-2-pentanone	ND		ug/l	5.0	0.42	1
2-Hexanone	ND		ug/l	5.0	0.52	1
Ethyl methacrylate	ND		ug/l	5.0	0.61	1
Acrylonitrile	ND		ug/l	5.0	0.43	1
Bromochloromethane	ND		ug/l	2.5	0.15	1
Tetrahydrofuran	ND		ug/l	5.0	0.52	1
2,2-Dichloropropane	ND		ug/l	2.5	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
1,3-Dichloropropane	ND		ug/l	2.5	0.21	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	0.16	1
Bromobenzene	ND		ug/l	2.5	0.15	1
n-Butylbenzene	ND		ug/l	0.50	0.19	1
sec-Butylbenzene	ND		ug/l	0.50	0.18	1
tert-Butylbenzene	ND		ug/l	2.5	0.20	1
o-Chlorotoluene	ND		ug/l	2.5	0.22	1
p-Chlorotoluene	ND		ug/l	2.5	0.18	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.35	1
Hexachlorobutadiene	ND		ug/l	0.50	0.22	1

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912311
Report Date: 04/02/19

SAMPLE RESULTS

Lab ID: L1912311-06
Client ID: TRIP
Sample Location: HARDWICK, VT

Date Collected: 03/27/19 00:00
Date Received: 03/28/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Isopropylbenzene	ND		ug/l	0.50	0.19	1
p-Isopropyltoluene	ND		ug/l	0.50	0.19	1
Naphthalene	ND		ug/l	2.5	0.22	1
n-Propylbenzene	ND		ug/l	0.50	0.17	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.23	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.22	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	0.21	1
Ethyl ether	ND		ug/l	2.5	0.16	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	104		70-130

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912311
Report Date: 04/02/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
 Analytical Date: 03/29/19 10:37
 Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-06 Batch: WG1221273-5					
Methylene chloride	ND		ug/l	3.0	0.68
1,1-Dichloroethane	ND		ug/l	0.75	0.21
Chloroform	ND		ug/l	0.75	0.22
Carbon tetrachloride	ND		ug/l	0.50	0.13
1,2-Dichloropropane	ND		ug/l	1.8	0.14
Dibromochloromethane	ND		ug/l	0.50	0.15
1,1,2-Trichloroethane	ND		ug/l	0.75	0.14
2-Chloroethylvinyl ether	ND		ug/l	10	0.40
Tetrachloroethene	ND		ug/l	0.50	0.18
Chlorobenzene	ND		ug/l	0.50	0.18
Trichlorofluoromethane	ND		ug/l	2.5	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
1,1,1-Trichloroethane	ND		ug/l	0.50	0.16
Bromodichloromethane	ND		ug/l	0.50	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14
1,3-Dichloropropene, Total	ND		ug/l	0.50	0.14
1,1-Dichloropropene	ND		ug/l	2.5	0.24
Bromoform	ND		ug/l	2.0	0.25
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	0.75	0.20
Ethylbenzene	ND		ug/l	0.50	0.17
Chloromethane	ND		ug/l	2.5	0.20
Bromomethane	ND		ug/l	1.0	0.26
Vinyl chloride	ND		ug/l	1.0	0.07
Chloroethane	ND		ug/l	1.0	0.13
1,1-Dichloroethene	ND		ug/l	0.50	0.17
trans-1,2-Dichloroethene	ND		ug/l	0.75	0.16

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912311
Report Date: 04/02/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
 Analytical Date: 03/29/19 10:37
 Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-06 Batch: WG1221273-5					
1,2-Dichloroethene, Total	ND		ug/l	0.50	0.16
Trichloroethene	ND		ug/l	0.50	0.18
1,2-Dichlorobenzene	ND		ug/l	2.5	0.18
1,3-Dichlorobenzene	ND		ug/l	2.5	0.19
1,4-Dichlorobenzene	ND		ug/l	2.5	0.19
Methyl tert butyl ether	ND		ug/l	1.0	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
cis-1,2-Dichloroethene	ND		ug/l	0.50	0.19
Dibromomethane	ND		ug/l	5.0	0.36
1,4-Dichlorobutane	ND		ug/l	5.0	0.46
Iodomethane	ND		ug/l	5.0	0.40
1,2,3-Trichloropropane	ND		ug/l	5.0	0.18
Styrene	ND		ug/l	1.0	0.36
Dichlorodifluoromethane	ND		ug/l	5.0	0.24
Acetone	ND		ug/l	5.0	1.5
Carbon disulfide	ND		ug/l	5.0	0.30
2-Butanone	ND		ug/l	5.0	1.9
Vinyl acetate	ND		ug/l	5.0	0.31
4-Methyl-2-pentanone	ND		ug/l	5.0	0.42
2-Hexanone	ND		ug/l	5.0	0.52
Ethyl methacrylate	ND		ug/l	5.0	0.61
Acrolein	ND		ug/l	5.0	0.44
Acrylonitrile	ND		ug/l	5.0	0.43
Bromochloromethane	ND		ug/l	2.5	0.15
Tetrahydrofuran	ND		ug/l	5.0	0.52
2,2-Dichloropropane	ND		ug/l	2.5	0.20
1,2-Dibromoethane	ND		ug/l	2.0	0.19

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912311
Report Date: 04/02/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
 Analytical Date: 03/29/19 10:37
 Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-06 Batch: WG1221273-5					
1,3-Dichloropropane	ND		ug/l	2.5	0.21
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	0.16
Bromobenzene	ND		ug/l	2.5	0.15
n-Butylbenzene	ND		ug/l	0.50	0.19
sec-Butylbenzene	ND		ug/l	0.50	0.18
tert-Butylbenzene	ND		ug/l	2.5	0.20
o-Chlorotoluene	ND		ug/l	2.5	0.22
p-Chlorotoluene	ND		ug/l	2.5	0.18
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.35
Hexachlorobutadiene	ND		ug/l	0.50	0.22
Isopropylbenzene	ND		ug/l	0.50	0.19
p-Isopropyltoluene	ND		ug/l	0.50	0.19
Naphthalene	ND		ug/l	2.5	0.22
n-Propylbenzene	ND		ug/l	0.50	0.17
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.23
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.22
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,3,5-Trichlorobenzene	ND		ug/l	2.0	0.14
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	0.21
Halothane	ND		ug/l	2.5	0.29
Ethyl ether	ND		ug/l	2.5	0.16
Methyl Acetate	ND		ug/l	10	0.23
Ethyl Acetate	ND		ug/l	10	0.72
Isopropyl Ether	ND		ug/l	2.0	0.42
Cyclohexane	ND		ug/l	10	0.27
Tert-Butyl Alcohol	ND		ug/l	10	1.4
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	0.18
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	0.28

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912311
Report Date: 04/02/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
 Analytical Date: 03/29/19 10:37
 Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-06 Batch: WG1221273-5					
1,4-Dioxane	ND		ug/l	250	61.
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		ug/l	10	0.15
Methyl cyclohexane	ND		ug/l	10	0.40
p-Diethylbenzene	ND		ug/l	2.0	0.39
4-Ethyltoluene	ND		ug/l	2.0	0.34
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.0	0.54

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	101		70-130

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912311
Report Date: 04/02/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 04/01/19 13:24
Analyst: AWS

Extraction Method: EPA 8011
Extraction Date: 04/01/19 12:07

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 01-06 Batch: WG1221692-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.004	A

Lab Control Sample Analysis **Batch Quality Control**

Project Name: HARDWICK, YELLOW BARN

Project Number: 1857501001

Lab Number: L1912311

Report Date: 04/02/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-06 Batch: WG1221273-3 WG1221273-4								
Methylene chloride	110		110		70-130	0		20
1,1-Dichloroethane	120		120		70-130	0		20
Chloroform	110		110		70-130	0		20
Carbon tetrachloride	110		110		63-132	0		20
1,2-Dichloropropane	110		120		70-130	9		20
Dibromochloromethane	99		98		63-130	1		20
1,1,2-Trichloroethane	100		100		70-130	0		20
2-Chloroethylvinyl ether	130		130		70-130	0		20
Tetrachloroethene	98		96		70-130	2		20
Chlorobenzene	100		100		75-130	0		25
Trichlorofluoromethane	110		100		62-150	10		20
1,2-Dichloroethane	120		120		70-130	0		20
1,1,1-Trichloroethane	110		110		67-130	0		20
Bromodichloromethane	110		110		67-130	0		20
trans-1,3-Dichloropropene	100		100		70-130	0		20
cis-1,3-Dichloropropene	110		110		70-130	0		20
1,1-Dichloropropene	110		110		70-130	0		20
Bromoform	99		97		54-136	2		20
1,1,2,2-Tetrachloroethane	100		99		67-130	1		20
Benzene	110		110		70-130	0		25
Toluene	100		100		70-130	0		25
Ethylbenzene	100		100		70-130	0		20
Chloromethane	120		120		64-130	0		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: HARDWICK, YELLOW BARN

Project Number: 1857501001

Lab Number: L1912311

Report Date: 04/02/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-06 Batch: WG1221273-3 WG1221273-4								
Bromomethane	95		93		39-139	2		20
Vinyl chloride	110		110		55-140	0		20
Chloroethane	100		100		55-138	0		20
1,1-Dichloroethene	110		110		61-145	0		25
trans-1,2-Dichloroethene	110		110		70-130	0		20
Trichloroethene	110		110		70-130	0		25
1,2-Dichlorobenzene	96		96		70-130	0		20
1,3-Dichlorobenzene	99		97		70-130	2		20
1,4-Dichlorobenzene	97		96		70-130	1		20
Methyl tert butyl ether	110		110		63-130	0		20
p/m-Xylene	100		100		70-130	0		20
o-Xylene	105		100		70-130	5		20
cis-1,2-Dichloroethene	110		110		70-130	0		20
Dibromomethane	110		110		70-130	0		20
1,4-Dichlorobutane	110		110		70-130	0		20
Iodomethane	54	Q	59	Q	70-130	9		20
1,2,3-Trichloropropane	100		100		64-130	0		20
Styrene	100		100		70-130	0		20
Dichlorodifluoromethane	100		100		36-147	0		20
Acetone	130		120		58-148	8		20
Carbon disulfide	110		110		51-130	0		20
2-Butanone	120		120		63-138	0		20
Vinyl acetate	130		120		70-130	8		20

Lab Control Sample Analysis **Batch Quality Control**

Project Name: HARDWICK, YELLOW BARN

Project Number: 1857501001

Lab Number: L1912311

Report Date: 04/02/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-06 Batch: WG1221273-3 WG1221273-4								
4-Methyl-2-pentanone	100		110		59-130	10		20
2-Hexanone	110		110		57-130	0		20
Ethyl methacrylate	99		96		70-130	3		20
Acrolein	120		120		70-130	0		20
Acrylonitrile	120		120		70-130	0		20
Bromochloromethane	110		110		70-130	0		20
Tetrahydrofuran	120		130		58-130	8		20
2,2-Dichloropropane	120		110		63-133	9		20
1,2-Dibromoethane	97		97		70-130	0		20
1,3-Dichloropropane	100		100		70-130	0		20
1,1,1,2-Tetrachloroethane	100		100		64-130	0		20
Bromobenzene	95		93		70-130	2		20
n-Butylbenzene	100		100		53-136	0		20
sec-Butylbenzene	100		100		70-130	0		20
tert-Butylbenzene	99		98		70-130	1		20
o-Chlorotoluene	100		100		70-130	0		20
p-Chlorotoluene	100		100		70-130	0		20
1,2-Dibromo-3-chloropropane	96		95		41-144	1		20
Hexachlorobutadiene	93		90		63-130	3		20
Isopropylbenzene	100		100		70-130	0		20
p-Isopropyltoluene	100		100		70-130	0		20
Naphthalene	94		94		70-130	0		20
n-Propylbenzene	100		100		69-130	0		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: HARDWICK, YELLOW BARN

Project Number: 1857501001

Lab Number: L1912311

Report Date: 04/02/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-06 Batch: WG1221273-3 WG1221273-4								
1,2,3-Trichlorobenzene	92		92		70-130	0		20
1,2,4-Trichlorobenzene	93		93		70-130	0		20
1,3,5-Trimethylbenzene	100		100		64-130	0		20
1,3,5-Trichlorobenzene	95		94		70-130	1		20
1,2,4-Trimethylbenzene	100		100		70-130	0		20
trans-1,4-Dichloro-2-butene	120		120		70-130	0		20
Halothane	110		100		70-130	10		20
Ethyl ether	110		110		59-134	0		20
Methyl Acetate	130		130		70-130	0		20
Ethyl Acetate	130		120		70-130	8		20
Isopropyl Ether	130		130		70-130	0		20
Cyclohexane	120		120		70-130	0		20
Tert-Butyl Alcohol	118		116		70-130	2		20
Ethyl-Tert-Butyl-Ether	120		120		70-130	0		20
Tertiary-Amyl Methyl Ether	110		110		66-130	0		20
1,4-Dioxane	98		94		56-162	4		20
1,1,2-Trichloro-1,2,2-Trifluoroethane	110		100		70-130	10		20
Methyl cyclohexane	110		100		70-130	10		20
p-Diethylbenzene	100		98		70-130	2		20
4-Ethyltoluene	100		100		70-130	0		20
1,2,4,5-Tetramethylbenzene	100		99		70-130	1		20

Lab Control Sample Analysis**Batch Quality Control****Project Name:** HARDWICK, YELLOW BARN**Lab Number:** L1912311**Project Number:** 1857501001**Report Date:** 04/02/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits

Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-06 Batch: WG1221273-3 WG1221273-4

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	110		108		70-130
Toluene-d8	97		95		70-130
4-Bromofluorobenzene	100		100		70-130
Dibromofluoromethane	103		102		70-130

Lab Control Sample Analysis**Batch Quality Control****Project Name:** HARDWICK, YELLOW BARN**Project Number:** 1857501001**Lab Number:** L1912311**Report Date:** 04/02/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab Associated sample(s): 01-06 Batch: WG1221692-2									
1,2-Dibromoethane	102		-		80-120	-		20	A

SEMIVOLATILES

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912311
Report Date: 04/02/19

SAMPLE RESULTS

Lab ID: L1912311-01
Client ID: TW-1
Sample Location: HARDWICK, VT

Date Collected: 03/27/19 15:20
Date Received: 03/28/19
Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 03/31/19 16:42
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 03/29/19 04:50

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.10	0.04	1
2-Chloronaphthalene	ND		ug/l	0.20	0.04	1
Fluoranthene	ND		ug/l	0.10	0.04	1
Naphthalene	ND		ug/l	0.10	0.04	1
Benzo(a)anthracene	ND		ug/l	0.10	0.02	1
Benzo(a)pyrene	ND		ug/l	0.10	0.04	1
Benzo(b)fluoranthene	ND		ug/l	0.10	0.02	1
Benzo(k)fluoranthene	ND		ug/l	0.10	0.04	1
Chrysene	ND		ug/l	0.10	0.04	1
Acenaphthylene	ND		ug/l	0.10	0.04	1
Anthracene	ND		ug/l	0.10	0.04	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.04	1
Fluorene	ND		ug/l	0.10	0.04	1
Phenanthrene	ND		ug/l	0.10	0.02	1
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.04	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.04	1
Pyrene	ND		ug/l	0.10	0.04	1
1-Methylnaphthalene	ND		ug/l	0.10	0.04	1
2-Methylnaphthalene	ND		ug/l	0.10	0.05	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	118		23-120
2-Fluorobiphenyl	87		15-120
4-Terphenyl-d14	58		41-149

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912311
Report Date: 04/02/19

SAMPLE RESULTS

Lab ID: L1912311-02
Client ID: TW-2
Sample Location: HARDWICK, VT

Date Collected: 03/27/19 13:45
Date Received: 03/28/19
Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 03/31/19 17:08
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 03/29/19 04:50

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.10	0.04	1
2-Chloronaphthalene	ND		ug/l	0.20	0.04	1
Fluoranthene	ND		ug/l	0.10	0.04	1
Naphthalene	ND		ug/l	0.10	0.04	1
Benzo(a)anthracene	ND		ug/l	0.10	0.02	1
Benzo(a)pyrene	ND		ug/l	0.10	0.04	1
Benzo(b)fluoranthene	ND		ug/l	0.10	0.02	1
Benzo(k)fluoranthene	ND		ug/l	0.10	0.04	1
Chrysene	ND		ug/l	0.10	0.04	1
Acenaphthylene	ND		ug/l	0.10	0.04	1
Anthracene	ND		ug/l	0.10	0.04	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.04	1
Fluorene	ND		ug/l	0.10	0.04	1
Phenanthrene	ND		ug/l	0.10	0.02	1
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.04	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.04	1
Pyrene	ND		ug/l	0.10	0.04	1
1-Methylnaphthalene	ND		ug/l	0.10	0.04	1
2-Methylnaphthalene	ND		ug/l	0.10	0.05	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	103		23-120
2-Fluorobiphenyl	78		15-120
4-Terphenyl-d14	58		41-149

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912311
Report Date: 04/02/19

SAMPLE RESULTS

Lab ID: L1912311-03
Client ID: TW-3
Sample Location: HARDWICK, VT

Date Collected: 03/27/19 12:30
Date Received: 03/28/19
Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 03/31/19 17:35
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 03/29/19 04:50

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.10	0.04	1
2-Chloronaphthalene	ND		ug/l	0.20	0.04	1
Fluoranthene	ND		ug/l	0.10	0.04	1
Naphthalene	ND		ug/l	0.10	0.04	1
Benzo(a)anthracene	ND		ug/l	0.10	0.02	1
Benzo(a)pyrene	ND		ug/l	0.10	0.04	1
Benzo(b)fluoranthene	ND		ug/l	0.10	0.02	1
Benzo(k)fluoranthene	ND		ug/l	0.10	0.04	1
Chrysene	ND		ug/l	0.10	0.04	1
Acenaphthylene	ND		ug/l	0.10	0.04	1
Anthracene	ND		ug/l	0.10	0.04	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.04	1
Fluorene	ND		ug/l	0.10	0.04	1
Phenanthrene	ND		ug/l	0.10	0.02	1
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.04	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.04	1
Pyrene	ND		ug/l	0.10	0.04	1
1-Methylnaphthalene	ND		ug/l	0.10	0.04	1
2-Methylnaphthalene	ND		ug/l	0.10	0.05	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	126	Q	23-120
2-Fluorobiphenyl	63		15-120
4-Terphenyl-d14	53		41-149

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912311
Report Date: 04/02/19

SAMPLE RESULTS

Lab ID: L1912311-04
Client ID: TW-4
Sample Location: HARDWICK, VT

Date Collected: 03/27/19 10:00
Date Received: 03/28/19
Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 03/31/19 18:01
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 03/29/19 04:50

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.10	0.04	1
2-Chloronaphthalene	ND		ug/l	0.20	0.04	1
Fluoranthene	ND		ug/l	0.10	0.04	1
Naphthalene	ND		ug/l	0.10	0.04	1
Benzo(a)anthracene	ND		ug/l	0.10	0.02	1
Benzo(a)pyrene	ND		ug/l	0.10	0.04	1
Benzo(b)fluoranthene	ND		ug/l	0.10	0.02	1
Benzo(k)fluoranthene	ND		ug/l	0.10	0.04	1
Chrysene	ND		ug/l	0.10	0.04	1
Acenaphthylene	ND		ug/l	0.10	0.04	1
Anthracene	ND		ug/l	0.10	0.04	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.04	1
Fluorene	ND		ug/l	0.10	0.04	1
Phenanthrene	ND		ug/l	0.10	0.02	1
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.04	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.04	1
Pyrene	ND		ug/l	0.10	0.04	1
1-Methylnaphthalene	ND		ug/l	0.10	0.04	1
2-Methylnaphthalene	ND		ug/l	0.10	0.05	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	109		23-120
2-Fluorobiphenyl	89		15-120
4-Terphenyl-d14	60		41-149

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912311
Report Date: 04/02/19

SAMPLE RESULTS

Lab ID: L1912311-05
Client ID: DUP
Sample Location: HARDWICK, VT

Date Collected: 03/27/19 00:00
Date Received: 03/28/19
Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 03/31/19 18:28
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 03/29/19 04:50

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.10	0.04	1
2-Chloronaphthalene	ND		ug/l	0.20	0.04	1
Fluoranthene	ND		ug/l	0.10	0.04	1
Naphthalene	ND		ug/l	0.10	0.04	1
Benzo(a)anthracene	ND		ug/l	0.10	0.02	1
Benzo(a)pyrene	ND		ug/l	0.10	0.04	1
Benzo(b)fluoranthene	ND		ug/l	0.10	0.02	1
Benzo(k)fluoranthene	ND		ug/l	0.10	0.04	1
Chrysene	ND		ug/l	0.10	0.04	1
Acenaphthylene	ND		ug/l	0.10	0.04	1
Anthracene	ND		ug/l	0.10	0.04	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.04	1
Fluorene	ND		ug/l	0.10	0.04	1
Phenanthrene	ND		ug/l	0.10	0.02	1
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.04	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.04	1
Pyrene	ND		ug/l	0.10	0.04	1
1-Methylnaphthalene	ND		ug/l	0.10	0.04	1
2-Methylnaphthalene	ND		ug/l	0.10	0.05	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	111		23-120
2-Fluorobiphenyl	66		15-120
4-Terphenyl-d14	57		41-149

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912311
Report Date: 04/02/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 03/31/19 15:22
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 03/29/19 04:50

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01-05 Batch: WG1220907-1					
Acenaphthene	ND		ug/l	0.10	0.04
2-Chloronaphthalene	ND		ug/l	0.20	0.04
Fluoranthene	ND		ug/l	0.10	0.04
Naphthalene	ND		ug/l	0.10	0.04
Benzo(a)anthracene	ND		ug/l	0.10	0.02
Benzo(a)pyrene	ND		ug/l	0.10	0.04
Benzo(b)fluoranthene	ND		ug/l	0.10	0.02
Benzo(k)fluoranthene	ND		ug/l	0.10	0.04
Chrysene	ND		ug/l	0.10	0.04
Acenaphthylene	ND		ug/l	0.10	0.04
Anthracene	ND		ug/l	0.10	0.04
Benzo(ghi)perylene	ND		ug/l	0.10	0.04
Fluorene	ND		ug/l	0.10	0.04
Phenanthrene	ND		ug/l	0.10	0.02
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.04
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.04
Pyrene	ND		ug/l	0.10	0.04
1-Methylnaphthalene	ND		ug/l	0.10	0.04
2-Methylnaphthalene	ND		ug/l	0.10	0.05

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	93		23-120
2-Fluorobiphenyl	69		15-120
4-Terphenyl-d14	58		41-149

Lab Control Sample Analysis Batch Quality Control

Project Name: HARDWICK, YELLOW BARN

Project Number: 1857501001

Lab Number: L1912311

Report Date: 04/02/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01-05 Batch: WG1220907-2 WG1220907-3								
Acenaphthene	117		113		40-140	3		40
2-Chloronaphthalene	103		107		40-140	4		40
Fluoranthene	108		103		40-140	5		40
Naphthalene	104		103		40-140	1		40
Benzo(a)anthracene	119		112		40-140	6		40
Benzo(a)pyrene	121		113		40-140	7		40
Benzo(b)fluoranthene	115		109		40-140	5		40
Benzo(k)fluoranthene	118		113		40-140	4		40
Chrysene	121		115		40-140	5		40
Acenaphthylene	112		111		40-140	1		40
Anthracene	112		107		40-140	5		40
Benzo(ghi)perylene	114		109		40-140	4		40
Fluorene	121		117		40-140	3		40
Phenanthrene	105		101		40-140	4		40
Dibenzo(a,h)anthracene	117		112		40-140	4		40
Indeno(1,2,3-cd)pyrene	118		113		40-140	4		40
Pyrene	108		103		40-140	5		40
1-Methylnaphthalene	102		102		40-140	0		40
2-Methylnaphthalene	102		101		40-140	1		40

Lab Control Sample Analysis**Batch Quality Control****Project Name:** HARDWICK, YELLOW BARN**Lab Number:** L1912311**Project Number:** 1857501001**Report Date:** 04/02/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01-05 Batch: WG1220907-2 WG1220907-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	119		118		23-120
2-Fluorobiphenyl	88		89		15-120
4-Terphenyl-d14	78		76		41-149

PESTICIDES

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912311
Report Date: 04/02/19

SAMPLE RESULTS

Lab ID: L1912311-01
Client ID: TW-1
Sample Location: HARDWICK, VT

Date Collected: 03/27/19 15:20
Date Received: 03/28/19
Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8081B
Analytical Date: 04/02/19 13:58
Analyst: KEG

Extraction Method: EPA 3510C
Extraction Date: 04/02/19 09:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/l	0.014	0.003	1	A
Lindane	ND		ug/l	0.014	0.003	1	A
Alpha-BHC	ND		ug/l	0.014	0.003	1	A
Beta-BHC	ND		ug/l	0.014	0.004	1	A
Heptachlor	ND		ug/l	0.014	0.002	1	A
Aldrin	ND		ug/l	0.014	0.002	1	A
Heptachlor epoxide	ND		ug/l	0.014	0.003	1	A
Endrin	ND		ug/l	0.029	0.003	1	A
Endrin aldehyde	ND		ug/l	0.029	0.006	1	A
Endrin ketone	ND		ug/l	0.029	0.003	1	A
Dieldrin	ND		ug/l	0.029	0.003	1	A
4,4'-DDE	ND		ug/l	0.029	0.003	1	A
4,4'-DDD	ND		ug/l	0.029	0.003	1	A
4,4'-DDT	ND		ug/l	0.029	0.003	1	A
Endosulfan I	ND		ug/l	0.014	0.002	1	A
Endosulfan II	ND		ug/l	0.029	0.004	1	A
Endosulfan sulfate	ND		ug/l	0.029	0.003	1	A
Methoxychlor	ND		ug/l	0.143	0.005	1	A
Toxaphene	ND		ug/l	0.143	0.045	1	A
Chlordane	ND		ug/l	0.143	0.033	1	A
cis-Chlordane	ND		ug/l	0.014	0.005	1	A
trans-Chlordane	ND		ug/l	0.014	0.004	1	A

Project Name: HARDWICK, YELLOW BARN**Lab Number:** L1912311**Project Number:** 1857501001**Report Date:** 04/02/19**SAMPLE RESULTS**

Lab ID: L1912311-01

Date Collected: 03/27/19 15:20

Client ID: TW-1

Date Received: 03/28/19

Sample Location: HARDWICK, VT

Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	77		30-150	A
Decachlorobiphenyl	82		30-150	A
2,4,5,6-Tetrachloro-m-xylene	76		30-150	B
Decachlorobiphenyl	80		30-150	B

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912311
Report Date: 04/02/19

SAMPLE RESULTS

Lab ID: L1912311-01
Client ID: TW-1
Sample Location: HARDWICK, VT

Date Collected: 03/27/19 15:20
Date Received: 03/28/19
Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8151A
Analytical Date: 04/01/19 17:56
Analyst: DGM

Extraction Method: EPA 8151A
Extraction Date: 03/30/19 02:06

Methylation Date: 03/31/19 20:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Chlorinated Herbicides by GC - Westborough Lab							
MCPP	ND		ug/l	500	58.5	1	A
MCPA	ND		ug/l	500	63.2	1	A
Dalapon	ND		ug/l	20.0	0.810	1	A
Dicamba	ND		ug/l	1.00	0.243	1	A
Dichloroprop	ND		ug/l	10.0	0.564	1	A
2,4-D	ND		ug/l	10.0	0.498	1	A
2,4-DB	ND		ug/l	10.0	0.729	1	A
2,4,5-T	ND		ug/l	2.00	0.531	1	A
2,4,5-TP (Silvex)	ND		ug/l	2.00	0.539	1	A
Dinoseb	ND		ug/l	5.00	0.573	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
DCAA	113		30-150	A
DCAA	89		30-150	B

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912311
Report Date: 04/02/19

SAMPLE RESULTS

Lab ID: L1912311-02
Client ID: TW-2
Sample Location: HARDWICK, VT

Date Collected: 03/27/19 13:45
Date Received: 03/28/19
Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8081B
Analytical Date: 04/02/19 14:11
Analyst: KEG

Extraction Method: EPA 3510C
Extraction Date: 04/02/19 09:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/l	0.014	0.003	1	A
Lindane	ND		ug/l	0.014	0.003	1	A
Alpha-BHC	ND		ug/l	0.014	0.003	1	A
Beta-BHC	ND		ug/l	0.014	0.004	1	A
Heptachlor	ND		ug/l	0.014	0.002	1	A
Aldrin	ND		ug/l	0.014	0.002	1	A
Heptachlor epoxide	ND		ug/l	0.014	0.003	1	A
Endrin	ND		ug/l	0.029	0.003	1	A
Endrin aldehyde	ND		ug/l	0.029	0.006	1	A
Endrin ketone	ND		ug/l	0.029	0.003	1	A
Dieldrin	ND		ug/l	0.029	0.003	1	A
4,4'-DDE	ND		ug/l	0.029	0.003	1	A
4,4'-DDD	ND		ug/l	0.029	0.003	1	A
4,4'-DDT	ND		ug/l	0.029	0.003	1	A
Endosulfan I	ND		ug/l	0.014	0.002	1	A
Endosulfan II	ND		ug/l	0.029	0.004	1	A
Endosulfan sulfate	ND		ug/l	0.029	0.003	1	A
Methoxychlor	ND		ug/l	0.143	0.005	1	A
Toxaphene	ND		ug/l	0.143	0.045	1	A
Chlordane	ND		ug/l	0.143	0.033	1	A
cis-Chlordane	ND		ug/l	0.014	0.005	1	A
trans-Chlordane	ND		ug/l	0.014	0.004	1	A

Project Name: HARDWICK, YELLOW BARN**Lab Number:** L1912311**Project Number:** 1857501001**Report Date:** 04/02/19**SAMPLE RESULTS**

Lab ID: L1912311-02

Date Collected: 03/27/19 13:45

Client ID: TW-2

Date Received: 03/28/19

Sample Location: HARDWICK, VT

Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	77		30-150	A
Decachlorobiphenyl	81		30-150	A
2,4,5,6-Tetrachloro-m-xylene	77		30-150	B
Decachlorobiphenyl	83		30-150	B

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912311
Report Date: 04/02/19

SAMPLE RESULTS

Lab ID: L1912311-02
Client ID: TW-2
Sample Location: HARDWICK, VT

Date Collected: 03/27/19 13:45
Date Received: 03/28/19
Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8151A
Analytical Date: 04/01/19 18:13
Analyst: DGM

Extraction Method: EPA 8151A
Extraction Date: 03/30/19 02:06

Methylation Date: 03/31/19 20:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Chlorinated Herbicides by GC - Westborough Lab							
MCPP	ND		ug/l	500	58.5	1	A
MCPA	ND		ug/l	500	63.2	1	A
Dalapon	ND		ug/l	20.0	0.810	1	A
Dicamba	ND		ug/l	1.00	0.243	1	A
Dichloroprop	ND		ug/l	10.0	0.564	1	A
2,4-D	ND		ug/l	10.0	0.498	1	A
2,4-DB	ND		ug/l	10.0	0.729	1	A
2,4,5-T	ND		ug/l	2.00	0.531	1	A
2,4,5-TP (Silvex)	ND		ug/l	2.00	0.539	1	A
Dinoseb	ND		ug/l	5.00	0.573	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
DCAA	107		30-150	A
DCAA	87		30-150	B

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912311
Report Date: 04/02/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8151A
Analytical Date: 04/01/19 11:28
Analyst: DGM

Extraction Method: EPA 8151A
Extraction Date: 03/30/19 02:06

Methylation Date: 03/31/19 20:30

Parameter	Result	Qualifier	Units	RL	MDL	Column
Chlorinated Herbicides by GC - Westborough Lab for sample(s): 01-02 Batch: WG1221294-1						
MCPPP	ND		ug/l	500	58.5	A
MCPA	ND		ug/l	500	63.2	A
Dalapon	ND		ug/l	20.0	0.810	A
Dicamba	ND		ug/l	1.00	0.243	A
Dichloroprop	ND		ug/l	10.0	0.564	A
2,4-D	ND		ug/l	10.0	0.498	A
2,4-DB	ND		ug/l	10.0	0.729	A
2,4,5-T	ND		ug/l	2.00	0.531	A
2,4,5-TP (Silvex)	ND		ug/l	2.00	0.539	A
Dinoseb	ND		ug/l	5.00	0.573	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
DCAA	112		30-150	A
DCAA	84		30-150	B

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912311
Report Date: 04/02/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 04/02/19 13:20
Analyst: KEG

Extraction Method: EPA 3510C
Extraction Date: 04/02/19 09:05

Parameter	Result	Qualifier	Units	RL	MDL	Column
Pesticides by GC - Westborough Lab for sample(s): 01-02 Batch: WG1222050-1						
Delta-BHC	ND		ug/l	0.014	0.003	A
Lindane	ND		ug/l	0.014	0.003	A
Alpha-BHC	ND		ug/l	0.014	0.003	A
Beta-BHC	ND		ug/l	0.014	0.004	A
Heptachlor	ND		ug/l	0.014	0.002	A
Aldrin	ND		ug/l	0.014	0.002	A
Heptachlor epoxide	ND		ug/l	0.014	0.003	A
Endrin	ND		ug/l	0.029	0.003	A
Endrin aldehyde	ND		ug/l	0.029	0.006	A
Endrin ketone	ND		ug/l	0.029	0.003	A
Dieldrin	ND		ug/l	0.029	0.003	A
4,4'-DDE	ND		ug/l	0.029	0.003	A
4,4'-DDD	ND		ug/l	0.029	0.003	A
4,4'-DDT	ND		ug/l	0.029	0.003	A
Endosulfan I	ND		ug/l	0.014	0.002	A
Endosulfan II	ND		ug/l	0.029	0.004	A
Endosulfan sulfate	ND		ug/l	0.029	0.003	A
Methoxychlor	ND		ug/l	0.143	0.005	A
Toxaphene	ND		ug/l	0.143	0.045	A
Chlordane	ND		ug/l	0.143	0.033	A
cis-Chlordane	ND		ug/l	0.014	0.005	A
trans-Chlordane	ND		ug/l	0.014	0.004	A

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912311
Report Date: 04/02/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 04/02/19 13:20
Analyst: KEG

Extraction Method: EPA 3510C
Extraction Date: 04/02/19 09:05

Parameter	Result	Qualifier	Units	RL	MDL	Column
Pesticides by GC - Westborough Lab for sample(s): 01-02 Batch: WG1222050-1						

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	72		30-150	A
Decachlorobiphenyl	69		30-150	A
2,4,5,6-Tetrachloro-m-xylene	71		30-150	B
Decachlorobiphenyl	70		30-150	B

Lab Control Sample Analysis Batch Quality Control

Project Name: HARDWICK, YELLOW BARN

Project Number: 1857501001

Lab Number: L1912311

Report Date: 04/02/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Chlorinated Herbicides by GC - Westborough Lab Associated sample(s): 01-02 Batch: WG1221294-2 WG1221294-3									
MCPP	101		100		30-150	1		25	A
MCPA	84		75		30-150	11		25	A
Dalapon	88		69		30-150	24		25	A
Dicamba	92		85		30-150	8		25	A
Dichloroprop	88		88		30-150	0		25	A
2,4-D	94		91		30-150	3		25	A
2,4-DB	86		77		30-150	11		25	A
2,4,5-T	97		90		30-150	7		25	A
2,4,5-TP (Silvex)	96		88		30-150	9		25	A
Dinoseb	91		86		30-150	6		25	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
DCAA	113		107		30-150	A
DCAA	88		87		30-150	B

Lab Control Sample Analysis Batch Quality Control

Project Name: HARDWICK, YELLOW BARN

Project Number: 1857501001

Lab Number: L1912311

Report Date: 04/02/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Pesticides by GC - Westborough Lab Associated sample(s): 01-02 Batch: WG1222050-2 WG1222050-3									
Delta-BHC	75		68		30-150	9		20	A
Lindane	84		77		30-150	9		20	A
Alpha-BHC	87		79		30-150	10		20	A
Beta-BHC	88		74		30-150	17		20	A
Heptachlor	83		76		30-150	8		20	A
Aldrin	87		79		30-150	10		20	A
Heptachlor epoxide	91		82		30-150	10		20	A
Endrin	92		83		30-150	10		20	A
Endrin aldehyde	80		73		30-150	9		20	A
Endrin ketone	89		78		30-150	12		20	A
Dieldrin	94		85		30-150	11		20	A
4,4'-DDE	91		83		30-150	9		20	A
4,4'-DDD	87		79		30-150	10		20	A
4,4'-DDT	96		85		30-150	12		20	A
Endosulfan I	84		76		30-150	9		20	A
Endosulfan II	83		75		30-150	10		20	A
Endosulfan sulfate	83		74		30-150	12		20	A
Methoxychlor	85		77		30-150	9		20	A
cis-Chlordane	81		75		30-150	8		20	A
trans-Chlordane	82		75		30-150	8		20	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: HARDWICK, YELLOW BARN

Project Number: 1857501001

Lab Number: L1912311

Report Date: 04/02/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Pesticides by GC - Westborough Lab Associated sample(s): 01-02 Batch: WG1222050-2 WG1222050-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	74		67		30-150	A
Decachlorobiphenyl	71		67		30-150	A
2,4,5,6-Tetrachloro-m-xylene	69		67		30-150	B
Decachlorobiphenyl	78		79		30-150	B

METALS

Project Name: HARDWICK, YELLOW BARN**Lab Number:** L1912311**Project Number:** 1857501001**Report Date:** 04/02/19**SAMPLE RESULTS**

Lab ID: L1912311-01

Date Collected: 03/27/19 15:20

Client ID: TW-1

Date Received: 03/28/19

Sample Location: HARDWICK, VT

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	0.00084		mg/l	0.00050	0.00016	1	04/01/19 08:25	04/01/19 12:47	EPA 3005A	1,6020B	AM
Barium, Total	0.00104		mg/l	0.00050	0.00017	1	04/01/19 08:25	04/01/19 12:47	EPA 3005A	1,6020B	AM
Cadmium, Total	ND		mg/l	0.00020	0.00005	1	04/01/19 08:25	04/01/19 12:47	EPA 3005A	1,6020B	AM
Chromium, Total	0.00069	J	mg/l	0.00100	0.00017	1	04/01/19 08:25	04/01/19 12:47	EPA 3005A	1,6020B	AM
Lead, Total	ND		mg/l	0.00100	0.00034	1	04/01/19 08:25	04/01/19 12:47	EPA 3005A	1,6020B	AM
Mercury, Total	ND		mg/l	0.00020	0.00009	1	03/29/19 10:49	03/29/19 21:02	EPA 7470A	1,7470A	EA
Selenium, Total	ND		mg/l	0.00500	0.00173	1	04/01/19 08:25	04/01/19 12:47	EPA 3005A	1,6020B	AM
Silver, Total	ND		mg/l	0.00040	0.00016	1	04/01/19 08:25	04/01/19 12:47	EPA 3005A	1,6020B	AM



Project Name: HARDWICK, YELLOW BARN**Lab Number:** L1912311**Project Number:** 1857501001**Report Date:** 04/02/19**SAMPLE RESULTS**

Lab ID: L1912311-02

Date Collected: 03/27/19 13:45

Client ID: TW-2

Date Received: 03/28/19

Sample Location: HARDWICK, VT

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	0.00085		mg/l	0.00050	0.00016	1	04/01/19 08:25	04/01/19 12:51	EPA 3005A	1,6020B	AM
Barium, Total	0.00423		mg/l	0.00050	0.00017	1	04/01/19 08:25	04/01/19 12:51	EPA 3005A	1,6020B	AM
Cadmium, Total	ND		mg/l	0.00020	0.00005	1	04/01/19 08:25	04/01/19 12:51	EPA 3005A	1,6020B	AM
Chromium, Total	0.00114		mg/l	0.00100	0.00017	1	04/01/19 08:25	04/01/19 12:51	EPA 3005A	1,6020B	AM
Lead, Total	0.00035	J	mg/l	0.00100	0.00034	1	04/01/19 08:25	04/01/19 12:51	EPA 3005A	1,6020B	AM
Mercury, Total	ND		mg/l	0.00020	0.00009	1	03/29/19 10:49	03/29/19 21:32	EPA 7470A	1,7470A	EA
Selenium, Total	ND		mg/l	0.00500	0.00173	1	04/01/19 08:25	04/01/19 12:51	EPA 3005A	1,6020B	AM
Silver, Total	ND		mg/l	0.00040	0.00016	1	04/01/19 08:25	04/01/19 12:51	EPA 3005A	1,6020B	AM



Project Name: HARDWICK, YELLOW BARN**Lab Number:** L1912311**Project Number:** 1857501001**Report Date:** 04/02/19**SAMPLE RESULTS**

Lab ID: L1912311-03

Date Collected: 03/27/19 12:30

Client ID: TW-3

Date Received: 03/28/19

Sample Location: HARDWICK, VT

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	0.00317		mg/l	0.00050	0.00016	1	04/01/19 08:25	04/01/19 12:56	EPA 3005A	1,6020B	AM
Barium, Total	0.03004		mg/l	0.00050	0.00017	1	04/01/19 08:25	04/01/19 12:56	EPA 3005A	1,6020B	AM
Cadmium, Total	0.00012	J	mg/l	0.00020	0.00005	1	04/01/19 08:25	04/01/19 12:56	EPA 3005A	1,6020B	AM
Chromium, Total	0.00094	J	mg/l	0.00100	0.00017	1	04/01/19 08:25	04/01/19 12:56	EPA 3005A	1,6020B	AM
Lead, Total	ND		mg/l	0.00100	0.00034	1	04/01/19 08:25	04/01/19 12:56	EPA 3005A	1,6020B	AM
Mercury, Total	ND		mg/l	0.00020	0.00009	1	03/29/19 10:49	03/29/19 21:33	EPA 7470A	1,7470A	EA
Selenium, Total	ND		mg/l	0.00500	0.00173	1	04/01/19 08:25	04/01/19 12:56	EPA 3005A	1,6020B	AM
Silver, Total	ND		mg/l	0.00040	0.00016	1	04/01/19 08:25	04/01/19 12:56	EPA 3005A	1,6020B	AM



Project Name: HARDWICK, YELLOW BARN**Lab Number:** L1912311**Project Number:** 1857501001**Report Date:** 04/02/19**SAMPLE RESULTS**

Lab ID: L1912311-04

Date Collected: 03/27/19 10:00

Client ID: TW-4

Date Received: 03/28/19

Sample Location: HARDWICK, VT

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	0.00711		mg/l	0.00050	0.00016	1	04/01/19 08:25	04/01/19 13:00	EPA 3005A	1,6020B	AM
Barium, Total	0.1208		mg/l	0.00050	0.00017	1	04/01/19 08:25	04/01/19 13:00	EPA 3005A	1,6020B	AM
Cadmium, Total	0.00022		mg/l	0.00020	0.00005	1	04/01/19 08:25	04/01/19 13:00	EPA 3005A	1,6020B	AM
Chromium, Total	0.01144		mg/l	0.00100	0.00017	1	04/01/19 08:25	04/01/19 13:00	EPA 3005A	1,6020B	AM
Lead, Total	0.00742		mg/l	0.00100	0.00034	1	04/01/19 08:25	04/01/19 13:00	EPA 3005A	1,6020B	AM
Mercury, Total	ND		mg/l	0.00020	0.00009	1	03/29/19 10:49	03/29/19 21:35	EPA 7470A	1,7470A	EA
Selenium, Total	ND		mg/l	0.00500	0.00173	1	04/01/19 08:25	04/01/19 13:00	EPA 3005A	1,6020B	AM
Silver, Total	ND		mg/l	0.00040	0.00016	1	04/01/19 08:25	04/01/19 13:00	EPA 3005A	1,6020B	AM



Project Name: HARDWICK, YELLOW BARN**Lab Number:** L1912311**Project Number:** 1857501001**Report Date:** 04/02/19**SAMPLE RESULTS**

Lab ID: L1912311-05

Date Collected: 03/27/19 00:00

Client ID: DUP

Date Received: 03/28/19

Sample Location: HARDWICK, VT

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	0.00744		mg/l	0.00050	0.00016	1	04/01/19 08:25	04/01/19 13:05	EPA 3005A	1,6020B	AM
Barium, Total	0.1248		mg/l	0.00050	0.00017	1	04/01/19 08:25	04/01/19 13:05	EPA 3005A	1,6020B	AM
Cadmium, Total	0.00025		mg/l	0.00020	0.00005	1	04/01/19 08:25	04/01/19 13:05	EPA 3005A	1,6020B	AM
Chromium, Total	0.01366		mg/l	0.00100	0.00017	1	04/01/19 08:25	04/01/19 13:05	EPA 3005A	1,6020B	AM
Lead, Total	0.00784		mg/l	0.00100	0.00034	1	04/01/19 08:25	04/01/19 13:05	EPA 3005A	1,6020B	AM
Mercury, Total	ND		mg/l	0.00020	0.00009	1	03/29/19 10:49	03/29/19 21:41	EPA 7470A	1,7470A	EA
Selenium, Total	ND		mg/l	0.00500	0.00173	1	04/01/19 08:25	04/01/19 13:05	EPA 3005A	1,6020B	AM
Silver, Total	ND		mg/l	0.00040	0.00016	1	04/01/19 08:25	04/01/19 13:05	EPA 3005A	1,6020B	AM



Project Name: HARDWICK, YELLOW BARN

Lab Number: L1912311

Project Number: 1857501001

Report Date: 04/02/19

Method Blank Analysis Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-05 Batch: WG1221027-1										
Mercury, Total	ND		mg/l	0.00020	0.00009	1	03/29/19 10:49	03/29/19 20:59	1,7470A	EA

Prep Information

Digestion Method: EPA 7470A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-05 Batch: WG1221644-1										
Arsenic, Total	ND		mg/l	0.00050	0.00016	1	04/01/19 08:25	04/01/19 11:55	1,6020B	AM
Barium, Total	ND		mg/l	0.00050	0.00017	1	04/01/19 08:25	04/01/19 11:55	1,6020B	AM
Cadmium, Total	ND		mg/l	0.00020	0.00005	1	04/01/19 08:25	04/01/19 11:55	1,6020B	AM
Chromium, Total	ND		mg/l	0.00100	0.00017	1	04/01/19 08:25	04/01/19 11:55	1,6020B	AM
Lead, Total	ND		mg/l	0.00100	0.00034	1	04/01/19 08:25	04/01/19 11:55	1,6020B	AM
Selenium, Total	ND		mg/l	0.00500	0.00173	1	04/01/19 08:25	04/01/19 11:55	1,6020B	AM
Silver, Total	ND		mg/l	0.00040	0.00016	1	04/01/19 08:25	04/01/19 11:55	1,6020B	AM

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: HARDWICK, YELLOW BARN

Project Number: 1857501001

Lab Number: L1912311

Report Date: 04/02/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-05 Batch: WG1221027-2								
Mercury, Total	106		-		80-120	-		
Total Metals - Mansfield Lab Associated sample(s): 01-05 Batch: WG1221644-2								
Arsenic, Total	93		-		80-120	-		
Barium, Total	91		-		80-120	-		
Cadmium, Total	101		-		80-120	-		
Chromium, Total	92		-		80-120	-		
Lead, Total	96		-		80-120	-		
Selenium, Total	100		-		80-120	-		
Silver, Total	97		-		80-120	-		

Matrix Spike Analysis

Batch Quality Control

Project Name: HARDWICK, YELLOW BARN

Project Number: 1857501001

Lab Number: L1912311

Report Date: 04/02/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-05			QC Batch ID: WG1221027-3			QC Sample: L1912311-01			Client ID: TW-1			
Mercury, Total	ND	0.005	0.00537	107		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-05			QC Batch ID: WG1221644-3			QC Sample: L1912257-08			Client ID: MS Sample			
Arsenic, Total	0.0018J	0.12	0.1223	102		-	-		75-125	-		20
Barium, Total	0.4140	2	2.398	99		-	-		75-125	-		20
Cadmium, Total	0.0018J	0.051	0.05350	105		-	-		75-125	-		20
Chromium, Total	0.0069J	0.2	0.2032	102		-	-		75-125	-		20
Lead, Total	0.0192	0.51	0.5538	105		-	-		75-125	-		20
Selenium, Total	ND	0.12	0.122	102		-	-		75-125	-		20
Silver, Total	ND	0.05	0.05136	103		-	-		75-125	-		20

Lab Duplicate Analysis
*Batch Quality Control***Project Name:** HARDWICK, YELLOW BARN**Project Number:** 1857501001**Lab Number:** L1912311**Report Date:** 04/02/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1221027-4 QC Sample: L1912311-01 Client ID: TW-1						
Mercury, Total	ND	ND	mg/l	NC		20

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Serial_No:04021920:02
Lab Number: L1912311
Report Date: 04/02/19

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler **Custody Seal**
A Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1912311-01A	Vial HCl preserved	A	NA		4.1	Y	Absent		8260(14)
L1912311-01B	Vial HCl preserved	A	NA		4.1	Y	Absent		8260(14)
L1912311-01C	Vial HCl preserved	A	NA		4.1	Y	Absent		8260(14)
L1912311-01D	Vial Na2S2O3 preserved	A	NA		4.1	Y	Absent		8011(14)
L1912311-01E	Vial Na2S2O3 preserved	A	NA		4.1	Y	Absent		8011(14)
L1912311-01F	Amber 120ml unpreserved	A	7	7	4.1	Y	Absent		PEST-8081(7)
L1912311-01G	Amber 120ml unpreserved	A	7	7	4.1	Y	Absent		PEST-8081(7)
L1912311-01H	Plastic 250ml HNO3 preserved	A	<2	<2	4.1	Y	Absent		BA-6020T(180),SE-6020T(180),CR-6020T(180),PB-6020T(180),AS-6020T(180),AG-6020T(180),CD-6020T(180),HG-T(28)
L1912311-01I	Amber 1000ml unpreserved	A	7	7	4.1	Y	Absent		HERB-8151(7)
L1912311-01J	Amber 1000ml unpreserved	A	7	7	4.1	Y	Absent		HERB-8151(7)
L1912311-01K	Amber 1000ml unpreserved	A	7	7	4.1	Y	Absent		PAHTCL-SIM(7)
L1912311-01L	Amber 1000ml unpreserved	A	7	7	4.1	Y	Absent		PAHTCL-SIM(7)
L1912311-02A	Vial HCl preserved	A	NA		4.1	Y	Absent		8260(14)
L1912311-02B	Vial HCl preserved	A	NA		4.1	Y	Absent		8260(14)
L1912311-02C	Vial HCl preserved	A	NA		4.1	Y	Absent		8260(14)
L1912311-02D	Vial Na2S2O3 preserved	A	NA		4.1	Y	Absent		8011(14)
L1912311-02E	Vial Na2S2O3 preserved	A	NA		4.1	Y	Absent		8011(14)
L1912311-02F	Amber 120ml unpreserved	A	7	7	4.1	Y	Absent		PEST-8081(7)
L1912311-02G	Amber 120ml unpreserved	A	7	7	4.1	Y	Absent		PEST-8081(7)
L1912311-02H	Plastic 250ml HNO3 preserved	A	<2	<2	4.1	Y	Absent		BA-6020T(180),SE-6020T(180),CR-6020T(180),PB-6020T(180),AS-6020T(180),AG-6020T(180),CD-6020T(180),HG-T(28)
L1912311-02I	Amber 1000ml unpreserved	A	7	7	4.1	Y	Absent		HERB-8151(7)

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Serial_No:04021920:02
Lab Number: L1912311
Report Date: 04/02/19

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1912311-02J	Amber 1000ml unpreserved	A	7	7	4.1	Y	Absent		HERB-8151(7)
L1912311-02K	Amber 1000ml unpreserved	A	7	7	4.1	Y	Absent		PAHTCL-SIM(7)
L1912311-02L	Amber 1000ml unpreserved	A	7	7	4.1	Y	Absent		PAHTCL-SIM(7)
L1912311-03A	Vial HCl preserved	A	NA		4.1	Y	Absent		8260(14)
L1912311-03B	Vial HCl preserved	A	NA		4.1	Y	Absent		8260(14)
L1912311-03C	Vial HCl preserved	A	NA		4.1	Y	Absent		8260(14)
L1912311-03D	Vial Na2S2O3 preserved	A	NA		4.1	Y	Absent		8011(14)
L1912311-03E	Vial Na2S2O3 preserved	A	NA		4.1	Y	Absent		8011(14)
L1912311-03F	Plastic 250ml HNO3 preserved	A	<2	<2	4.1	Y	Absent		BA-6020T(180),SE-6020T(180),CR-6020T(180),PB-6020T(180),AS-6020T(180),AG-6020T(180),CD-6020T(180),HG-T(28)
L1912311-03G	Amber 1000ml unpreserved	A	7	7	4.1	Y	Absent		PAHTCL-SIM(7)
L1912311-03H	Amber 1000ml unpreserved	A	7	7	4.1	Y	Absent		PAHTCL-SIM(7)
L1912311-03K	Amber 1000ml unpreserved	A	7	7	4.1	Y	Absent		-
L1912311-03L	Amber 1000ml unpreserved	A	7	7	4.1	Y	Absent		-
L1912311-04A	Vial HCl preserved	A	NA		4.1	Y	Absent		8260(14)
L1912311-04B	Vial HCl preserved	A	NA		4.1	Y	Absent		8260(14)
L1912311-04C	Vial HCl preserved	A	NA		4.1	Y	Absent		8260(14)
L1912311-04D	Vial Na2S2O3 preserved	A	NA		4.1	Y	Absent		8011(14)
L1912311-04E	Vial Na2S2O3 preserved	A	NA		4.1	Y	Absent		8011(14)
L1912311-04F	Plastic 500ml HNO3 preserved	A	<2	<2	4.1	Y	Absent		BA-6020T(180),SE-6020T(180),CR-6020T(180),PB-6020T(180),AS-6020T(180),AG-6020T(180),CD-6020T(180),HG-T(28)
L1912311-04G	Amber 1000ml unpreserved	A	7	7	4.1	Y	Absent		PAHTCL-SIM(7)
L1912311-04H	Amber 1000ml unpreserved	A	7	7	4.1	Y	Absent		PAHTCL-SIM(7)
L1912311-04K	Amber 1000ml unpreserved	A	7	7	4.1	Y	Absent		-
L1912311-04L	Amber 1000ml unpreserved	A	7	7	4.1	Y	Absent		-
L1912311-05A	Vial HCl preserved	A	NA		4.1	Y	Absent		8260(14)
L1912311-05B	Vial HCl preserved	A	NA		4.1	Y	Absent		8260(14)
L1912311-05C	Vial HCl preserved	A	NA		4.1	Y	Absent		8260(14)
L1912311-05D	Vial Na2S2O3 preserved	A	NA		4.1	Y	Absent		8011(14)

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Serial_No:04021920:02
Lab Number: L1912311
Report Date: 04/02/19

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1912311-05E	Vial Na2S2O3 preserved	A	NA		4.1	Y	Absent		8011(14)
L1912311-05F	Plastic 250ml HNO3 preserved	A	<2	<2	4.1	Y	Absent		BA-6020T(180),SE-6020T(180),CR-6020T(180),PB-6020T(180),AS-6020T(180),AG-6020T(180),CD-6020T(180),HG-T(28)
L1912311-05G	Amber 1000ml unpreserved	A	7	7	4.1	Y	Absent		PAHTCL-SIM(7)
L1912311-05H	Amber 1000ml unpreserved	A	7	7	4.1	Y	Absent		PAHTCL-SIM(7)
L1912311-05K	Amber 1000ml unpreserved	A	7	7	4.1	Y	Absent		-
L1912311-05L	Amber 1000ml unpreserved	A	7	7	4.1	Y	Absent		-
L1912311-06A	Vial HCl preserved	A	NA		4.1	Y	Absent		8011(14),8260(14)
L1912311-06B	Vial HCl preserved	A	NA		4.1	Y	Absent		8011(14),8260(14)

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912311
Report Date: 04/02/19

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCS D	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

Report Format: DU Report with 'J' Qualifiers



Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912311
Report Date: 04/02/19

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- J** - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- ND** - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.

Report Format: DU Report with 'J' Qualifiers



Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912311
Report Date: 04/02/19

REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Alpha Analytical, Inc.

ID No.:17873

Facility: **Company-wide**

Revision 12

Department: **Quality Assurance**

Published Date: 10/9/2018 4:58:19 PM

Title: **Certificate/Approval Program Summary**

Page 1 of 1

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility**EPA 624/624.1:** m/p-xylene, o-xylene**EPA 8260C:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.**EPA 8270D:** NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.**EPA 6860:** SCM: Perchlorate**SM4500:** NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO₂, NO₃.**Mansfield Facility****SM 2540D:** TSS**EPA 8082A:** NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.**EPA TO-15:** Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.**Biological Tissue Matrix:** EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:**Drinking Water****EPA 300.0:** Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE,****EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B****EPA 332:** Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.**Microbiology:** **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.****Non-Potable Water****SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH:** Ammonia-N and Kjeldahl-N, **EPA 350.1:** Ammonia-N, **LACHAT 10-107-06-1-B:** Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2:** Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300:** Chloride, Sulfate, Nitrate.**EPA 624.1:** Volatile Halocarbons & Aromatics,**EPA 608.3:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs**EPA 625.1:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.****Mansfield Facility:****Drinking Water****EPA 200.7:** Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1 Hg. EPA 522.****Non-Potable Water****EPA 200.7:** Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.**EPA 200.8:** Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.**EPA 245.1 Hg.****SM2340B**

For a complete listing of analytes and methods, please contact your Alpha Project Manager.



CHAIN OF CUSTODY

PAGE 1 OF 1

8 Walkup Drive
Westboro, MA 01581
Tel: 508-898-9220

320 Forbes Blvd
Mansfield, MA 02048
Tel: 508-822-9300

Date Rec'd in Lab:

ALPHA Job #: **L1912311**

Client Information

Client: **STANTEC**Address: **5 Danvers Dr****AUBURN NH 03032**Phone: **603-498-4674**Email: **D.Aillwine@STANTEC.COM**

Additional Project Information:

MSA # 111/19

Project Information

Project Name: **Handwick, Yellow Barn**Project Location: **Handwick VT**Project #: **1057501001**Project Manager: **DAVE AILLWINE**

ALPHA Quote #:

Turn-Around Time

☐ Standard ☒ RUSH (only confirmed if pre-approved!)

Date Due:

Report Information - Data Deliverables

☐ ADEX ☒ EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☐ Yes ☒ No MA MCP Analytical Methods ☐ Yes ☒ No CT RCP Analytical Methods
☐ Yes ☒ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☒ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☒ No NPDES RGP
☐ Other State /Fed Program Criteria

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler Initials												
		Date	Time														
12311-01	TW-1	3-27-19	1520	GW	JW	X	X		X								
02	TW-2	3-27-19	1345	GW	JW	X	X		X								
03	TW-3	3-27-19	1230	GW	JW	X	X		X								
04	TW-4	3-27-19	1000	GW	JW	X	X		X								
05	DUP	3-27-19	-	GW	JW	X	X		X								
06	TRIP	-	-	-	-	X											

Container Type

P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative

A= None
B= HCl
C= HNO₃
D= H₂SO₄
E= NaOH
F= MeOH
G= NaHSO₄
H= Na₂S₂O₃
I= Ascorbic Acid
J= NH₄Cl
K= Zn Acetate
O= Other

Container Type

Preservative

A/V A P A

A/B A C A

Retrieved By:

Date/Time

Received By:

Date/Time

All samples submitted are subject to
Alpha's Terms and Conditions.
See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)



ANALYTICAL REPORT

Lab Number:	L1912577
Client:	Stantec 5 Dartmouth Drive Suite 200 Auburn, NH 03032
ATTN:	Dave Allwine
Phone:	(603) 669-8672
Project Name:	HARDWICK, YELLOW BARN
Project Number:	1857501001
Report Date:	04/03/19

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com



Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912577
Report Date: 04/03/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1912577-01	TW-5	WATER	HARDWICK, VT.	03/26/19 10:30	03/29/19
L1912577-02	TW-8	WATER	HARDWICK, VT.	03/26/19 16:00	03/29/19

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912577
Report Date: 04/03/19

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912577
Report Date: 04/03/19

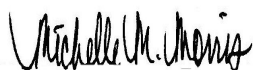
Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:



Michelle M. Morris

Title: Technical Director/Representative

Date: 04/03/19

ORGANICS

VOLATILES

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912577
Report Date: 04/03/19

SAMPLE RESULTS

Lab ID: L1912577-01
Client ID: TW-5
Sample Location: HARDWICK, VT.

Date Collected: 03/26/19 10:30
Date Received: 03/29/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 04/01/19 18:02
Analyst: AWS

Extraction Method: EPA 8011
Extraction Date: 04/01/19 12:07

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.004	1	A

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912577
Report Date: 04/03/19

SAMPLE RESULTS

Lab ID: L1912577-01
Client ID: TW-5
Sample Location: HARDWICK, VT.

Date Collected: 03/26/19 10:30
Date Received: 03/29/19
Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 04/02/19 09:20
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	0.68	1
1,1-Dichloroethane	ND		ug/l	0.75	0.21	1
Chloroform	ND		ug/l	0.75	0.22	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.8	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	0.75	0.14	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	0.50	0.18	1
Trichlorofluoromethane	ND		ug/l	2.5	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	0.50	0.16	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	0.14	1
1,1-Dichloropropene	ND		ug/l	2.5	0.24	1
Bromoform	ND		ug/l	2.0	0.25	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
Chloromethane	ND		ug/l	2.5	0.20	1
Bromomethane	ND		ug/l	1.0	0.26	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	1.0	0.13	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	0.16	1

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912577
Report Date: 04/03/19

SAMPLE RESULTS

Lab ID: L1912577-01
Client ID: TW-5
Sample Location: HARDWICK, VT.

Date Collected: 03/26/19 10:30
Date Received: 03/29/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	ND		ug/l	0.50	0.16	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.18	1
1,3-Dichlorobenzene	ND		ug/l	2.5	0.19	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.19	1
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	0.19	1
Dibromomethane	ND		ug/l	5.0	0.36	1
1,4-Dichlorobutane	ND		ug/l	5.0	0.46	1
1,2,3-Trichloropropane	ND		ug/l	5.0	0.18	1
Styrene	ND		ug/l	1.0	0.36	1
Dichlorodifluoromethane	ND		ug/l	5.0	0.24	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	0.30	1
2-Butanone	ND		ug/l	5.0	1.9	1
Vinyl acetate	ND		ug/l	5.0	0.31	1
4-Methyl-2-pentanone	ND		ug/l	5.0	0.42	1
2-Hexanone	ND		ug/l	5.0	0.52	1
Ethyl methacrylate	ND		ug/l	5.0	0.61	1
Acrylonitrile	ND		ug/l	5.0	0.43	1
Bromochloromethane	ND		ug/l	2.5	0.15	1
Tetrahydrofuran	ND		ug/l	5.0	0.52	1
2,2-Dichloropropane	ND		ug/l	2.5	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
1,3-Dichloropropane	ND		ug/l	2.5	0.21	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	0.16	1
Bromobenzene	ND		ug/l	2.5	0.15	1
n-Butylbenzene	ND		ug/l	0.50	0.19	1
sec-Butylbenzene	ND		ug/l	0.50	0.18	1
tert-Butylbenzene	ND		ug/l	2.5	0.20	1
o-Chlorotoluene	ND		ug/l	2.5	0.22	1
p-Chlorotoluene	ND		ug/l	2.5	0.18	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.35	1
Hexachlorobutadiene	ND		ug/l	0.50	0.22	1

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912577
Report Date: 04/03/19

SAMPLE RESULTS

Lab ID: L1912577-01
Client ID: TW-5
Sample Location: HARDWICK, VT.

Date Collected: 03/26/19 10:30
Date Received: 03/29/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Isopropylbenzene	ND		ug/l	0.50	0.19	1
p-Isopropyltoluene	ND		ug/l	0.50	0.19	1
Naphthalene	ND		ug/l	2.5	0.22	1
n-Propylbenzene	ND		ug/l	0.50	0.17	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.23	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.22	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	0.21	1
Ethyl ether	ND		ug/l	2.5	0.16	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	105		70-130

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912577
Report Date: 04/03/19

SAMPLE RESULTS

Lab ID: L1912577-02
Client ID: TW-8
Sample Location: HARDWICK, VT.

Date Collected: 03/26/19 16:00
Date Received: 03/29/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 04/01/19 18:16
Analyst: AWS

Extraction Method: EPA 8011
Extraction Date: 04/01/19 12:07

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.004	1	A

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912577
Report Date: 04/03/19

SAMPLE RESULTS

Lab ID: L1912577-02
Client ID: TW-8
Sample Location: HARDWICK, VT.

Date Collected: 03/26/19 16:00
Date Received: 03/29/19
Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 04/02/19 09:56
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	0.68	1
1,1-Dichloroethane	ND		ug/l	0.75	0.21	1
Chloroform	ND		ug/l	0.75	0.22	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.8	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	0.75	0.14	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	0.50	0.18	1
Trichlorofluoromethane	ND		ug/l	2.5	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	0.50	0.16	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	0.14	1
1,1-Dichloropropene	ND		ug/l	2.5	0.24	1
Bromoform	ND		ug/l	2.0	0.25	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
Chloromethane	ND		ug/l	2.5	0.20	1
Bromomethane	0.50	J	ug/l	1.0	0.26	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	1.0	0.13	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	0.16	1

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912577
Report Date: 04/03/19

SAMPLE RESULTS

Lab ID: L1912577-02
Client ID: TW-8
Sample Location: HARDWICK, VT.

Date Collected: 03/26/19 16:00
Date Received: 03/29/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	ND		ug/l	0.50	0.16	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.18	1
1,3-Dichlorobenzene	ND		ug/l	2.5	0.19	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.19	1
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	0.19	1
Dibromomethane	ND		ug/l	5.0	0.36	1
1,4-Dichlorobutane	ND		ug/l	5.0	0.46	1
1,2,3-Trichloropropane	ND		ug/l	5.0	0.18	1
Styrene	ND		ug/l	1.0	0.36	1
Dichlorodifluoromethane	ND		ug/l	5.0	0.24	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	0.30	1
2-Butanone	ND		ug/l	5.0	1.9	1
Vinyl acetate	ND		ug/l	5.0	0.31	1
4-Methyl-2-pentanone	ND		ug/l	5.0	0.42	1
2-Hexanone	ND		ug/l	5.0	0.52	1
Ethyl methacrylate	ND		ug/l	5.0	0.61	1
Acrylonitrile	ND		ug/l	5.0	0.43	1
Bromochloromethane	ND		ug/l	2.5	0.15	1
Tetrahydrofuran	ND		ug/l	5.0	0.52	1
2,2-Dichloropropane	ND		ug/l	2.5	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
1,3-Dichloropropane	ND		ug/l	2.5	0.21	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	0.16	1
Bromobenzene	ND		ug/l	2.5	0.15	1
n-Butylbenzene	ND		ug/l	0.50	0.19	1
sec-Butylbenzene	ND		ug/l	0.50	0.18	1
tert-Butylbenzene	ND		ug/l	2.5	0.20	1
o-Chlorotoluene	ND		ug/l	2.5	0.22	1
p-Chlorotoluene	ND		ug/l	2.5	0.18	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.35	1
Hexachlorobutadiene	ND		ug/l	0.50	0.22	1

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912577
Report Date: 04/03/19

SAMPLE RESULTS

Lab ID: L1912577-02
Client ID: TW-8
Sample Location: HARDWICK, VT.

Date Collected: 03/26/19 16:00
Date Received: 03/29/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Isopropylbenzene	ND		ug/l	0.50	0.19	1
p-Isopropyltoluene	ND		ug/l	0.50	0.19	1
Naphthalene	ND		ug/l	2.5	0.22	1
n-Propylbenzene	ND		ug/l	0.50	0.17	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.23	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.22	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	0.21	1
Ethyl ether	ND		ug/l	2.5	0.16	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	103		70-130

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912577
Report Date: 04/03/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 04/01/19 13:24
Analyst: AWS

Extraction Method: EPA 8011
Extraction Date: 04/01/19 12:07

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 01-02 Batch: WG1221692-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.004	A

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912577
Report Date: 04/03/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
 Analytical Date: 04/02/19 08:44
 Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-02 Batch: WG1222118-5					
Methylene chloride	ND		ug/l	3.0	0.68
1,1-Dichloroethane	ND		ug/l	0.75	0.21
Chloroform	ND		ug/l	0.75	0.22
Carbon tetrachloride	ND		ug/l	0.50	0.13
1,2-Dichloropropane	ND		ug/l	1.8	0.14
Dibromochloromethane	ND		ug/l	0.50	0.15
1,1,2-Trichloroethane	ND		ug/l	0.75	0.14
Tetrachloroethene	ND		ug/l	0.50	0.18
Chlorobenzene	ND		ug/l	0.50	0.18
Trichlorofluoromethane	ND		ug/l	2.5	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
1,1,1-Trichloroethane	ND		ug/l	0.50	0.16
Bromodichloromethane	ND		ug/l	0.50	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14
1,3-Dichloropropene, Total	ND		ug/l	0.50	0.14
1,1-Dichloropropene	ND		ug/l	2.5	0.24
Bromoform	ND		ug/l	2.0	0.25
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	0.75	0.20
Ethylbenzene	ND		ug/l	0.50	0.17
Chloromethane	ND		ug/l	2.5	0.20
Bromomethane	0.38	J	ug/l	1.0	0.26
Vinyl chloride	ND		ug/l	1.0	0.07
Chloroethane	ND		ug/l	1.0	0.13
1,1-Dichloroethene	ND		ug/l	0.50	0.17
trans-1,2-Dichloroethene	ND		ug/l	0.75	0.16
1,2-Dichloroethene, Total	ND		ug/l	0.50	0.16

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912577
Report Date: 04/03/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
 Analytical Date: 04/02/19 08:44
 Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-02 Batch: WG1222118-5					
Trichloroethene	ND		ug/l	0.50	0.18
1,2-Dichlorobenzene	ND		ug/l	2.5	0.18
1,3-Dichlorobenzene	ND		ug/l	2.5	0.19
1,4-Dichlorobenzene	ND		ug/l	2.5	0.19
Methyl tert butyl ether	ND		ug/l	1.0	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
cis-1,2-Dichloroethene	ND		ug/l	0.50	0.19
Dibromomethane	ND		ug/l	5.0	0.36
1,4-Dichlorobutane	ND		ug/l	5.0	0.46
1,2,3-Trichloropropane	ND		ug/l	5.0	0.18
Styrene	ND		ug/l	1.0	0.36
Dichlorodifluoromethane	ND		ug/l	5.0	0.24
Acetone	ND		ug/l	5.0	1.5
Carbon disulfide	ND		ug/l	5.0	0.30
2-Butanone	ND		ug/l	5.0	1.9
Vinyl acetate	ND		ug/l	5.0	0.31
4-Methyl-2-pentanone	ND		ug/l	5.0	0.42
2-Hexanone	ND		ug/l	5.0	0.52
Ethyl methacrylate	ND		ug/l	5.0	0.61
Acrylonitrile	ND		ug/l	5.0	0.43
Bromochloromethane	ND		ug/l	2.5	0.15
Tetrahydrofuran	ND		ug/l	5.0	0.52
2,2-Dichloropropane	ND		ug/l	2.5	0.20
1,2-Dibromoethane	ND		ug/l	2.0	0.19
1,3-Dichloropropane	ND		ug/l	2.5	0.21
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	0.16
Bromobenzene	ND		ug/l	2.5	0.15

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912577
Report Date: 04/03/19

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 04/02/19 08:44
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-02 Batch: WG1222118-5					
n-Butylbenzene	ND		ug/l	0.50	0.19
sec-Butylbenzene	ND		ug/l	0.50	0.18
tert-Butylbenzene	ND		ug/l	2.5	0.20
o-Chlorotoluene	ND		ug/l	2.5	0.22
p-Chlorotoluene	ND		ug/l	2.5	0.18
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.35
Hexachlorobutadiene	ND		ug/l	0.50	0.22
Isopropylbenzene	ND		ug/l	0.50	0.19
p-Isopropyltoluene	ND		ug/l	0.50	0.19
Naphthalene	ND		ug/l	2.5	0.22
n-Propylbenzene	ND		ug/l	0.50	0.17
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.23
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.22
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	0.21
Ethyl ether	ND		ug/l	2.5	0.16

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	105		70-130

Lab Control Sample Analysis**Batch Quality Control****Project Name:** HARDWICK, YELLOW BARN**Project Number:** 1857501001**Lab Number:** L1912577**Report Date:** 04/03/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab Associated sample(s): 01-02 Batch: WG1221692-2									
1,2-Dibromoethane	102		-		80-120	-		20	A

Lab Control Sample Analysis **Batch Quality Control**

Project Name: HARDWICK, YELLOW BARN

Project Number: 1857501001

Lab Number: L1912577

Report Date: 04/03/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG1222118-3 WG1222118-4								
Methylene chloride	110		110		70-130	0		20
1,1-Dichloroethane	110		100		70-130	10		20
Chloroform	100		100		70-130	0		20
Carbon tetrachloride	73		69		63-132	6		20
1,2-Dichloropropane	100		100		70-130	0		20
Dibromochloromethane	94		88		63-130	7		20
1,1,2-Trichloroethane	98		96		70-130	2		20
Tetrachloroethene	93		90		70-130	3		20
Chlorobenzene	100		100		75-130	0		25
Trichlorofluoromethane	89		87		62-150	2		20
1,2-Dichloroethane	100		100		70-130	0		20
1,1,1-Trichloroethane	96		92		67-130	4		20
Bromodichloromethane	100		99		67-130	1		20
trans-1,3-Dichloropropene	84		80		70-130	5		20
cis-1,3-Dichloropropene	96		93		70-130	3		20
1,1-Dichloropropene	91		89		70-130	2		20
Bromoform	96		91		54-136	5		20
1,1,2,2-Tetrachloroethane	98		98		67-130	0		20
Benzene	100		100		70-130	0		25
Toluene	100		100		70-130	0		25
Ethylbenzene	110		100		70-130	10		20
Chloromethane	100		98		64-130	2		20
Bromomethane	84		77		39-139	9		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: HARDWICK, YELLOW BARN

Project Number: 1857501001

Lab Number: L1912577

Report Date: 04/03/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG1222118-3 WG1222118-4								
Vinyl chloride	98		94		55-140	4		20
Chloroethane	110		110		55-138	0		20
1,1-Dichloroethene	93		92		61-145	1		25
trans-1,2-Dichloroethene	99		98		70-130	1		20
Trichloroethene	97		95		70-130	2		25
1,2-Dichlorobenzene	100		99		70-130	1		20
1,3-Dichlorobenzene	100		100		70-130	0		20
1,4-Dichlorobenzene	100		99		70-130	1		20
Methyl tert butyl ether	93		93		63-130	0		20
p/m-Xylene	110		105		70-130	5		20
o-Xylene	110		110		70-130	0		20
cis-1,2-Dichloroethene	100		100		70-130	0		20
Dibromomethane	100		99		70-130	1		20
1,4-Dichlorobutane	100		99		70-130	1		20
1,2,3-Trichloropropane	97		96		64-130	1		20
Styrene	115		110		70-130	4		20
Dichlorodifluoromethane	72		69		36-147	4		20
Acetone	120		120		58-148	0		20
Carbon disulfide	100		98		51-130	2		20
2-Butanone	110		100		63-138	10		20
Vinyl acetate	100		100		70-130	0		20
4-Methyl-2-pentanone	90		86		59-130	5		20
2-Hexanone	93		91		57-130	2		20

Lab Control Sample Analysis Batch Quality Control

Project Name: HARDWICK, YELLOW BARN

Project Number: 1857501001

Lab Number: L1912577

Report Date: 04/03/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG1222118-3 WG1222118-4								
Ethyl methacrylate	89		88		70-130	1		20
Acrylonitrile	110		110		70-130	0		20
Bromochloromethane	110		110		70-130	0		20
Tetrahydrofuran	95		91		58-130	4		20
2,2-Dichloropropane	93		89		63-133	4		20
1,2-Dibromoethane	96		91		70-130	5		20
1,3-Dichloropropane	99		94		70-130	5		20
1,1,1,2-Tetrachloroethane	92		86		64-130	7		20
Bromobenzene	98		98		70-130	0		20
n-Butylbenzene	100		100		53-136	0		20
sec-Butylbenzene	100		99		70-130	1		20
tert-Butylbenzene	99		99		70-130	0		20
o-Chlorotoluene	100		100		70-130	0		20
p-Chlorotoluene	100		100		70-130	0		20
1,2-Dibromo-3-chloropropane	88		82		41-144	7		20
Hexachlorobutadiene	99		92		63-130	7		20
Isopropylbenzene	100		100		70-130	0		20
p-Isopropyltoluene	100		100		70-130	0		20
Naphthalene	99		97		70-130	2		20
n-Propylbenzene	100		100		69-130	0		20
1,2,3-Trichlorobenzene	98		95		70-130	3		20
1,2,4-Trichlorobenzene	98		96		70-130	2		20
1,3,5-Trimethylbenzene	100		100		64-130	0		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: HARDWICK, YELLOW BARN

Project Number: 1857501001

Lab Number: L1912577

Report Date: 04/03/19

Parameter	LCS %Recovery	Qual	LCS %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG1222118-3 WG1222118-4								
1,2,4-Trimethylbenzene	110		110		70-130	0		20
trans-1,4-Dichloro-2-butene	85		82		70-130	4		20
Ethyl ether	95		93		59-134	2		20

Surrogate	LCS %Recovery	Qual	LCS %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	106		105		70-130
Toluene-d8	101		101		70-130
4-Bromofluorobenzene	101		102		70-130
Dibromofluoromethane	104		105		70-130

SEMIVOLATILES

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912577
Report Date: 04/03/19

SAMPLE RESULTS

Lab ID: L1912577-01
Client ID: TW-5
Sample Location: HARDWICK, VT.

Date Collected: 03/26/19 10:30
Date Received: 03/29/19
Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 03/31/19 18:54
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 03/29/19 23:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.10	0.04	1
2-Chloronaphthalene	ND		ug/l	0.20	0.04	1
Fluoranthene	ND		ug/l	0.10	0.04	1
Naphthalene	ND		ug/l	0.10	0.04	1
Benzo(a)anthracene	ND		ug/l	0.10	0.02	1
Benzo(a)pyrene	ND		ug/l	0.10	0.04	1
Benzo(b)fluoranthene	ND		ug/l	0.10	0.02	1
Benzo(k)fluoranthene	ND		ug/l	0.10	0.04	1
Chrysene	ND		ug/l	0.10	0.04	1
Acenaphthylene	ND		ug/l	0.10	0.04	1
Anthracene	ND		ug/l	0.10	0.04	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.04	1
Fluorene	ND		ug/l	0.10	0.04	1
Phenanthrene	ND		ug/l	0.10	0.02	1
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.04	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.04	1
Pyrene	ND		ug/l	0.10	0.04	1
1-Methylnaphthalene	ND		ug/l	0.10	0.04	1
2-Methylnaphthalene	ND		ug/l	0.10	0.05	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	90		23-120
2-Fluorobiphenyl	75		15-120
4-Terphenyl-d14	56		41-149

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912577
Report Date: 04/03/19

SAMPLE RESULTS

Lab ID: L1912577-02
Client ID: TW-8
Sample Location: HARDWICK, VT.

Date Collected: 03/26/19 16:00
Date Received: 03/29/19
Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 03/31/19 19:21
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 03/29/19 23:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.10	0.04	1
2-Chloronaphthalene	ND		ug/l	0.20	0.04	1
Fluoranthene	ND		ug/l	0.10	0.04	1
Naphthalene	ND		ug/l	0.10	0.04	1
Benzo(a)anthracene	ND		ug/l	0.10	0.02	1
Benzo(a)pyrene	ND		ug/l	0.10	0.04	1
Benzo(b)fluoranthene	ND		ug/l	0.10	0.02	1
Benzo(k)fluoranthene	ND		ug/l	0.10	0.04	1
Chrysene	ND		ug/l	0.10	0.04	1
Acenaphthylene	ND		ug/l	0.10	0.04	1
Anthracene	ND		ug/l	0.10	0.04	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.04	1
Fluorene	ND		ug/l	0.10	0.04	1
Phenanthrene	ND		ug/l	0.10	0.02	1
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.04	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.04	1
Pyrene	ND		ug/l	0.10	0.04	1
1-Methylnaphthalene	ND		ug/l	0.10	0.04	1
2-Methylnaphthalene	ND		ug/l	0.10	0.05	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	81		23-120
2-Fluorobiphenyl	69		15-120
4-Terphenyl-d14	56		41-149

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912577
Report Date: 04/03/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 03/31/19 15:22
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 03/29/19 04:50

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01-02 Batch: WG1220907-1					
Acenaphthene	ND		ug/l	0.10	0.04
2-Chloronaphthalene	ND		ug/l	0.20	0.04
Fluoranthene	ND		ug/l	0.10	0.04
Naphthalene	ND		ug/l	0.10	0.04
Benzo(a)anthracene	ND		ug/l	0.10	0.02
Benzo(a)pyrene	ND		ug/l	0.10	0.04
Benzo(b)fluoranthene	ND		ug/l	0.10	0.02
Benzo(k)fluoranthene	ND		ug/l	0.10	0.04
Chrysene	ND		ug/l	0.10	0.04
Acenaphthylene	ND		ug/l	0.10	0.04
Anthracene	ND		ug/l	0.10	0.04
Benzo(ghi)perylene	ND		ug/l	0.10	0.04
Fluorene	ND		ug/l	0.10	0.04
Phenanthrene	ND		ug/l	0.10	0.02
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.04
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.04
Pyrene	ND		ug/l	0.10	0.04
1-Methylnaphthalene	ND		ug/l	0.10	0.04
2-Methylnaphthalene	ND		ug/l	0.10	0.05

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	93		23-120
2-Fluorobiphenyl	69		15-120
4-Terphenyl-d14	58		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: HARDWICK, YELLOW BARN

Project Number: 1857501001

Lab Number: L1912577

Report Date: 04/03/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01-02 Batch: WG1220907-2 WG1220907-3								
Acenaphthene	117		113		40-140	3		40
2-Chloronaphthalene	103		107		40-140	4		40
Fluoranthene	108		103		40-140	5		40
Naphthalene	104		103		40-140	1		40
Benzo(a)anthracene	119		112		40-140	6		40
Benzo(a)pyrene	121		113		40-140	7		40
Benzo(b)fluoranthene	115		109		40-140	5		40
Benzo(k)fluoranthene	118		113		40-140	4		40
Chrysene	121		115		40-140	5		40
Acenaphthylene	112		111		40-140	1		40
Anthracene	112		107		40-140	5		40
Benzo(ghi)perylene	114		109		40-140	4		40
Fluorene	121		117		40-140	3		40
Phenanthrene	105		101		40-140	4		40
Dibenzo(a,h)anthracene	117		112		40-140	4		40
Indeno(1,2,3-cd)pyrene	118		113		40-140	4		40
Pyrene	108		103		40-140	5		40
1-Methylnaphthalene	102		102		40-140	0		40
2-Methylnaphthalene	102		101		40-140	1		40

Lab Control Sample Analysis**Batch Quality Control****Project Name:** HARDWICK, YELLOW BARN**Lab Number:** L1912577**Project Number:** 1857501001**Report Date:** 04/03/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01-02 Batch: WG1220907-2 WG1220907-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	119		118		23-120
2-Fluorobiphenyl	88		89		15-120
4-Terphenyl-d14	78		76		41-149

PESTICIDES

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912577
Report Date: 04/03/19

SAMPLE RESULTS

Lab ID: L1912577-02
Client ID: TW-8
Sample Location: HARDWICK, VT.

Date Collected: 03/26/19 16:00
Date Received: 03/29/19
Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8081B
Analytical Date: 04/03/19 10:09
Analyst: KEG

Extraction Method: EPA 3510C
Extraction Date: 04/02/19 13:39

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/l	0.014	0.003	1	A
Lindane	ND		ug/l	0.014	0.003	1	A
Alpha-BHC	ND		ug/l	0.014	0.003	1	A
Beta-BHC	ND		ug/l	0.014	0.004	1	A
Heptachlor	ND		ug/l	0.014	0.002	1	A
Aldrin	ND		ug/l	0.014	0.002	1	A
Heptachlor epoxide	ND		ug/l	0.014	0.003	1	A
Endrin	ND		ug/l	0.029	0.003	1	A
Endrin aldehyde	ND		ug/l	0.029	0.006	1	A
Endrin ketone	ND		ug/l	0.029	0.003	1	A
Dieldrin	ND		ug/l	0.029	0.003	1	A
4,4'-DDE	ND		ug/l	0.029	0.003	1	A
4,4'-DDD	ND		ug/l	0.029	0.003	1	A
4,4'-DDT	0.019	JIP	ug/l	0.029	0.003	1	B
Endosulfan I	ND		ug/l	0.014	0.002	1	A
Endosulfan II	ND		ug/l	0.029	0.004	1	A
Endosulfan sulfate	ND		ug/l	0.029	0.003	1	A
Methoxychlor	ND		ug/l	0.143	0.005	1	A
Toxaphene	ND		ug/l	0.143	0.045	1	A
Chlordane	ND		ug/l	0.143	0.033	1	A
cis-Chlordane	ND		ug/l	0.014	0.005	1	A
trans-Chlordane	ND		ug/l	0.014	0.004	1	A

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912577
Report Date: 04/03/19

SAMPLE RESULTS

Lab ID: L1912577-02
Client ID: TW-8
Sample Location: HARDWICK, VT.

Date Collected: 03/26/19 16:00
Date Received: 03/29/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	59		30-150	A
Decachlorobiphenyl	68		30-150	A
2,4,5,6-Tetrachloro-m-xylene	59		30-150	B
Decachlorobiphenyl	59		30-150	B

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912577
Report Date: 04/03/19

SAMPLE RESULTS

Lab ID: L1912577-02
Client ID: TW-8
Sample Location: HARDWICK, VT.

Date Collected: 03/26/19 16:00
Date Received: 03/29/19
Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8151A
Analytical Date: 04/01/19 17:38
Analyst: DGM

Extraction Method: EPA 8151A
Extraction Date: 03/30/19 02:06

Methylation Date: 03/31/19 20:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Chlorinated Herbicides by GC - Westborough Lab							
MCPP	ND		ug/l	500	58.5	1	A
MCPA	ND		ug/l	500	63.2	1	A
Dalapon	ND		ug/l	20.0	0.810	1	A
Dicamba	ND		ug/l	1.00	0.243	1	A
Dichloroprop	ND		ug/l	10.0	0.564	1	A
2,4-D	ND		ug/l	10.0	0.498	1	A
2,4-DB	ND		ug/l	10.0	0.729	1	A
2,4,5-T	ND		ug/l	2.00	0.531	1	A
2,4,5-TP (Silvex)	ND		ug/l	2.00	0.539	1	A
Dinoseb	ND		ug/l	5.00	0.573	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
DCAA	114		30-150	A
DCAA	84		30-150	B

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912577
Report Date: 04/03/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8151A
Analytical Date: 04/01/19 11:28
Analyst: DGM

Extraction Method: EPA 8151A
Extraction Date: 03/30/19 02:06

Methylation Date: 03/31/19 20:30

Parameter	Result	Qualifier	Units	RL	MDL	Column
Chlorinated Herbicides by GC - Westborough Lab for sample(s): 02 Batch: WG1221294-1						
MCPP	ND		ug/l	500	58.5	A
MCPA	ND		ug/l	500	63.2	A
Dalapon	ND		ug/l	20.0	0.810	A
Dicamba	ND		ug/l	1.00	0.243	A
Dichloroprop	ND		ug/l	10.0	0.564	A
2,4-D	ND		ug/l	10.0	0.498	A
2,4-DB	ND		ug/l	10.0	0.729	A
2,4,5-T	ND		ug/l	2.00	0.531	A
2,4,5-TP (Silvex)	ND		ug/l	2.00	0.539	A
Dinoseb	ND		ug/l	5.00	0.573	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
DCAA	112		30-150	A
DCAA	84		30-150	B

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912577
Report Date: 04/03/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 04/02/19 13:20
Analyst: KEG

Extraction Method: EPA 3510C
Extraction Date: 04/02/19 09:05

Parameter	Result	Qualifier	Units	RL	MDL	Column
Pesticides by GC - Westborough Lab for sample(s): 02 Batch: WG1222050-1						
Delta-BHC	ND		ug/l	0.014	0.003	A
Lindane	ND		ug/l	0.014	0.003	A
Alpha-BHC	ND		ug/l	0.014	0.003	A
Beta-BHC	ND		ug/l	0.014	0.004	A
Heptachlor	ND		ug/l	0.014	0.002	A
Aldrin	ND		ug/l	0.014	0.002	A
Heptachlor epoxide	ND		ug/l	0.014	0.003	A
Endrin	ND		ug/l	0.029	0.003	A
Endrin aldehyde	ND		ug/l	0.029	0.006	A
Endrin ketone	ND		ug/l	0.029	0.003	A
Dieldrin	ND		ug/l	0.029	0.003	A
4,4'-DDE	ND		ug/l	0.029	0.003	A
4,4'-DDD	ND		ug/l	0.029	0.003	A
4,4'-DDT	ND		ug/l	0.029	0.003	A
Endosulfan I	ND		ug/l	0.014	0.002	A
Endosulfan II	ND		ug/l	0.029	0.004	A
Endosulfan sulfate	ND		ug/l	0.029	0.003	A
Methoxychlor	ND		ug/l	0.143	0.005	A
Toxaphene	ND		ug/l	0.143	0.045	A
Chlordane	ND		ug/l	0.143	0.033	A
cis-Chlordane	ND		ug/l	0.014	0.005	A
trans-Chlordane	ND		ug/l	0.014	0.004	A

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912577
Report Date: 04/03/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
 Analytical Date: 04/02/19 13:20
 Analyst: KEG

Extraction Method: EPA 3510C
 Extraction Date: 04/02/19 09:05

Parameter	Result	Qualifier	Units	RL	MDL	Column
Pesticides by GC - Westborough Lab for sample(s): 02 Batch: WG1222050-1						

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	72		30-150	A
Decachlorobiphenyl	69		30-150	A
2,4,5,6-Tetrachloro-m-xylene	71		30-150	B
Decachlorobiphenyl	70		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: HARDWICK, YELLOW BARN

Project Number: 1857501001

Lab Number: L1912577

Report Date: 04/03/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Chlorinated Herbicides by GC - Westborough Lab Associated sample(s): 02 Batch: WG1221294-2 WG1221294-3									
MCPP	101		100		30-150	1		25	A
MCPA	84		75		30-150	11		25	A
Dalapon	88		69		30-150	24		25	A
Dicamba	92		85		30-150	8		25	A
Dichloroprop	88		88		30-150	0		25	A
2,4-D	94		91		30-150	3		25	A
2,4-DB	86		77		30-150	11		25	A
2,4,5-T	97		90		30-150	7		25	A
2,4,5-TP (Silvex)	96		88		30-150	9		25	A
Dinoseb	91		86		30-150	6		25	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
DCAA	113		107		30-150	A
DCAA	88		87		30-150	B

Lab Control Sample Analysis Batch Quality Control

Project Name: HARDWICK, YELLOW BARN

Project Number: 1857501001

Lab Number: L1912577

Report Date: 04/03/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Pesticides by GC - Westborough Lab Associated sample(s): 02 Batch: WG1222050-2 WG1222050-3									
Delta-BHC	75		68		30-150	9		20	A
Lindane	84		77		30-150	9		20	A
Alpha-BHC	87		79		30-150	10		20	A
Beta-BHC	88		74		30-150	17		20	A
Heptachlor	83		76		30-150	8		20	A
Aldrin	87		79		30-150	10		20	A
Heptachlor epoxide	91		82		30-150	10		20	A
Endrin	92		83		30-150	10		20	A
Endrin aldehyde	80		73		30-150	9		20	A
Endrin ketone	89		78		30-150	12		20	A
Dieldrin	94		85		30-150	11		20	A
4,4'-DDE	91		83		30-150	9		20	A
4,4'-DDD	87		79		30-150	10		20	A
4,4'-DDT	96		85		30-150	12		20	A
Endosulfan I	84		76		30-150	9		20	A
Endosulfan II	83		75		30-150	10		20	A
Endosulfan sulfate	83		74		30-150	12		20	A
Methoxychlor	85		77		30-150	9		20	A
cis-Chlordane	81		75		30-150	8		20	A
trans-Chlordane	82		75		30-150	8		20	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: HARDWICK, YELLOW BARN

Project Number: 1857501001

Lab Number: L1912577

Report Date: 04/03/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits

Pesticides by GC - Westborough Lab Associated sample(s): 02 Batch: WG1222050-2 WG1222050-3

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	74		67		30-150	A
Decachlorobiphenyl	71		67		30-150	A
2,4,5,6-Tetrachloro-m-xylene	69		67		30-150	B
Decachlorobiphenyl	78		79		30-150	B

METALS

Project Name: HARDWICK, YELLOW BARN**Lab Number:** L1912577**Project Number:** 1857501001**Report Date:** 04/03/19**SAMPLE RESULTS**

Lab ID: L1912577-01

Date Collected: 03/26/19 10:30

Client ID: TW-5

Date Received: 03/29/19

Sample Location: HARDWICK, VT.

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	0.00259		mg/l	0.00050	0.00016	1	04/01/19 09:39	04/01/19 12:56	EPA 3005A	1,6020B	AM
Barium, Total	0.01632		mg/l	0.00050	0.00017	1	04/01/19 09:39	04/01/19 12:56	EPA 3005A	1,6020B	AM
Cadmium, Total	0.00008	J	mg/l	0.00020	0.00005	1	04/01/19 09:39	04/01/19 12:56	EPA 3005A	1,6020B	AM
Chromium, Total	0.00179		mg/l	0.00100	0.00017	1	04/01/19 09:39	04/01/19 12:56	EPA 3005A	1,6020B	AM
Lead, Total	0.00366		mg/l	0.00100	0.00034	1	04/01/19 09:39	04/01/19 12:56	EPA 3005A	1,6020B	AM
Mercury, Total	ND		mg/l	0.00020	0.00009	1	04/01/19 11:29	04/01/19 21:49	EPA 7470A	1,7470A	EA
Selenium, Total	ND		mg/l	0.00500	0.00173	1	04/01/19 09:39	04/01/19 12:56	EPA 3005A	1,6020B	AM
Silver, Total	ND		mg/l	0.00040	0.00016	1	04/01/19 09:39	04/01/19 12:56	EPA 3005A	1,6020B	AM



Project Name: HARDWICK, YELLOW BARN**Lab Number:** L1912577**Project Number:** 1857501001**Report Date:** 04/03/19**SAMPLE RESULTS**

Lab ID: L1912577-02

Date Collected: 03/26/19 16:00

Client ID: TW-8

Date Received: 03/29/19

Sample Location: HARDWICK, VT.

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	0.00042	J	mg/l	0.00050	0.00016	1	04/01/19 09:39	04/01/19 13:00	EPA 3005A	1,6020B	AM
Barium, Total	0.00693		mg/l	0.00050	0.00017	1	04/01/19 09:39	04/01/19 13:00	EPA 3005A	1,6020B	AM
Cadmium, Total	ND		mg/l	0.00020	0.00005	1	04/01/19 09:39	04/01/19 13:00	EPA 3005A	1,6020B	AM
Chromium, Total	0.00097	J	mg/l	0.00100	0.00017	1	04/01/19 09:39	04/01/19 13:00	EPA 3005A	1,6020B	AM
Lead, Total	ND		mg/l	0.00100	0.00034	1	04/01/19 09:39	04/01/19 13:00	EPA 3005A	1,6020B	AM
Mercury, Total	ND		mg/l	0.00020	0.00009	1	04/01/19 11:29	04/01/19 21:54	EPA 7470A	1,7470A	EA
Selenium, Total	ND		mg/l	0.00500	0.00173	1	04/01/19 09:39	04/01/19 13:00	EPA 3005A	1,6020B	AM
Silver, Total	ND		mg/l	0.00040	0.00016	1	04/01/19 09:39	04/01/19 13:00	EPA 3005A	1,6020B	AM



Project Name: HARDWICK, YELLOW BARN

Lab Number: L1912577

Project Number: 1857501001

Report Date: 04/03/19

Method Blank Analysis Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-02 Batch: WG1221659-1										
Arsenic, Total	ND		mg/l	0.00050	0.00016	1	04/01/19 09:39	04/01/19 13:19	1,6020B	AM
Barium, Total	ND		mg/l	0.00050	0.00017	1	04/01/19 09:39	04/01/19 13:19	1,6020B	AM
Cadmium, Total	ND		mg/l	0.00020	0.00005	1	04/01/19 09:39	04/01/19 13:19	1,6020B	AM
Chromium, Total	ND		mg/l	0.00100	0.00017	1	04/01/19 09:39	04/01/19 13:19	1,6020B	AM
Lead, Total	ND		mg/l	0.00100	0.00034	1	04/01/19 09:39	04/01/19 13:19	1,6020B	AM
Selenium, Total	ND		mg/l	0.00500	0.00173	1	04/01/19 09:39	04/01/19 13:19	1,6020B	AM
Silver, Total	ND		mg/l	0.00040	0.00016	1	04/01/19 09:39	04/01/19 13:19	1,6020B	AM

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-02 Batch: WG1221708-1										
Mercury, Total	ND		mg/l	0.00020	0.00009	1	04/01/19 11:29	04/01/19 21:34	1,7470A	EA

Prep Information

Digestion Method: EPA 7470A

Lab Control Sample Analysis

Batch Quality Control

Project Name: HARDWICK, YELLOW BARN

Project Number: 1857501001

Lab Number: L1912577

Report Date: 04/03/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG1221659-2								
Arsenic, Total	96		-		80-120	-		
Barium, Total	100		-		80-120	-		
Cadmium, Total	102		-		80-120	-		
Chromium, Total	95		-		80-120	-		
Lead, Total	102		-		80-120	-		
Selenium, Total	102		-		80-120	-		
Silver, Total	101		-		80-120	-		
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG1221708-2								
Mercury, Total	105		-		80-120	-		

Matrix Spike Analysis

Batch Quality Control

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912577
Report Date: 04/03/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02			QC Batch ID: WG1221659-3		WG1221659-4	QC Sample: L1912250-03		Client ID: MS Sample				
Arsenic, Total	0.00023J	0.12	0.1258	105		0.1264	105		75-125	0		20
Barium, Total	0.09457	2	2.170	104		2.179	104		75-125	0		20
Cadmium, Total	ND	0.051	0.05217	102		0.05251	103		75-125	1		20
Chromium, Total	0.00140	0.2	0.2017	100		0.2040	101		75-125	1		20
Lead, Total	ND	0.51	0.5464	107		0.5323	104		75-125	3		20
Selenium, Total	0.00588	0.12	0.127	101		0.128	102		75-125	1		20
Silver, Total	ND	0.05	0.05345	107		0.05161	103		75-125	4		20
Total Metals - Mansfield Lab Associated sample(s): 01-02			QC Batch ID: WG1221659-7		WG1221659-8	QC Sample: L1912478-04		Client ID: MS Sample				
Arsenic, Total	0.0028	0.12	0.1258	102		0.1281	104		75-125	2		20
Barium, Total	0.2567	2	2.340	104		2.325	103		75-125	1		20
Cadmium, Total	0.0001J	0.051	0.05526	108		0.05274	103		75-125	5		20
Chromium, Total	0.0035	0.2	0.2071	102		0.2066	102		75-125	0		20
Lead, Total	0.0013	0.51	0.5308	104		0.5259	103		75-125	1		20
Selenium, Total	ND	0.12	0.120	100		0.128	107		75-125	6		20
Silver, Total	ND	0.05	0.05228	104		0.05002	100		75-125	4		20
Total Metals - Mansfield Lab Associated sample(s): 01-02			QC Batch ID: WG1221708-3		WG1221708-4	QC Sample: L1912755-01		Client ID: MS Sample				
Mercury, Total	ND	0.005	0.00510	102		0.00511	102		75-125	0		20

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Serial_No:04031914:06
Lab Number: L1912577
Report Date: 04/03/19

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler **Custody Seal**
A Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1912577-01A	Plastic 250ml HNO3 preserved	A	<2	<2	2.7	Y	Absent		BA-6020T(180),SE-6020T(180),CR-6020T(180),PB-6020T(180),AS-6020T(180),AG-6020T(180),CD-6020T(180),HG-T(28)
L1912577-01B	Amber 1000ml unpreserved	A	7	7	2.7	Y	Absent		PAHTCL-SIM(7)
L1912577-01C	Amber 1000ml unpreserved	A	7	7	2.7	Y	Absent		PAHTCL-SIM(7)
L1912577-01D	Vial Na2S2O3 preserved	A	NA		2.7	Y	Absent		8011(14)
L1912577-01E	Vial Na2S2O3 preserved	A	NA		2.7	Y	Absent		8011(14)
L1912577-01F	Vial HCl preserved	A	NA		2.7	Y	Absent		8260(14)
L1912577-01G	Vial HCl preserved	A	NA		2.7	Y	Absent		8260(14)
L1912577-01H	Vial HCl preserved	A	NA		2.7	Y	Absent		8260(14)
L1912577-02A	Plastic 250ml HNO3 preserved	A	<2	<2	2.7	Y	Absent		BA-6020T(180),SE-6020T(180),CR-6020T(180),PB-6020T(180),AS-6020T(180),AG-6020T(180),CD-6020T(180),HG-T(28)
L1912577-02B	Amber 1000ml unpreserved	A	7	7	2.7	Y	Absent		HERB-8151(7)
L1912577-02C	Amber 1000ml unpreserved	A	7	7	2.7	Y	Absent		HERB-8151(7)
L1912577-02D	Amber 120ml unpreserved	A	7	7	2.7	Y	Absent		PEST-8081(7)
L1912577-02E	Amber 120ml unpreserved	A	7	7	2.7	Y	Absent		PEST-8081(7)
L1912577-02F	Amber 1000ml unpreserved	A	7	7	2.7	Y	Absent		PAHTCL-SIM(7)
L1912577-02G	Amber 1000ml unpreserved	A	7	7	2.7	Y	Absent		PAHTCL-SIM(7)
L1912577-02H	Vial Na2S2O3 preserved	A	NA		2.7	Y	Absent		8011(14)
L1912577-02I	Vial Na2S2O3 preserved	A	NA		2.7	Y	Absent		8011(14)
L1912577-02J	Vial HCl preserved	A	NA		2.7	Y	Absent		8260(14)
L1912577-02K	Vial HCl preserved	A	NA		2.7	Y	Absent		8260(14)
L1912577-02L	Vial HCl preserved	A	NA		2.7	Y	Absent		8260(14)

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912577
Report Date: 04/03/19

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCS D	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

Report Format: DU Report with 'J' Qualifiers



Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912577
Report Date: 04/03/19

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- J** - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- ND** - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.

Report Format: DU Report with 'J' Qualifiers



Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912577
Report Date: 04/03/19

REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Alpha Analytical, Inc.

ID No.:17873

Facility: **Company-wide**

Revision 12

Department: **Quality Assurance**

Published Date: 10/9/2018 4:58:19 PM

Title: **Certificate/Approval Program Summary**

Page 1 of 1

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility**EPA 624/624.1:** m/p-xylene, o-xylene**EPA 8260C:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.**EPA 8270D:** NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.**EPA 6860:** SCM: Perchlorate**SM4500:** NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO₂, NO₃.**Mansfield Facility****SM 2540D:** TSS**EPA 8082A:** NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.**EPA TO-15:** Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.**Biological Tissue Matrix:** EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:**Drinking Water****EPA 300.0:** Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO₃-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE,****EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B****EPA 332:** Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.**Microbiology:** SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.**Non-Potable Water****SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH₃-BH:** Ammonia-N and Kjeldahl-N, **EPA 350.1:** Ammonia-N, **LACHAT 10-107-06-1-B:** Ammonia-N, **EPA 351.1, SM4500NO₃-F, EPA 353.2:** Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO₄-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300:** Chloride, Sulfate, Nitrate.**EPA 624.1:** Volatile Halocarbons & Aromatics,**EPA 608.3:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs**EPA 625.1:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.**Microbiology:** SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**Mansfield Facility:****Drinking Water****EPA 200.7:** Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1 Hg.****EPA 522.****Non-Potable Water****EPA 200.7:** Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.**EPA 200.8:** Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.**EPA 245.1 Hg.****SM2340B**

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

PAGE 1 OF 1

3/29/10

320 Forbes Blvd
Mansfield, MA 02048
Tel: 508-822-9300

MSA # 1/1/19

ANALYSIS		SAMPLE INFO
VOC:	☒ 8260 ☐ 624 ☐ 524.2 ☒ PAH ☒ B011	Filtration ☐ Field ☐ Lab to do
SVOC:	☐ ABN	Preservation ☐ Lab to do
METALS:	☒ MCP 13 ☐ MCP 14 ☐ RCP 15	
	☐ RCRA5 ☒ DTA-1 ☐ RCRAB	
EPH:	☐ Ranges & Targets ☐ Ranges Only	
VPH:	☐ Ranges & Targets ☐ Ranges Only	
PCB	☒ APEST B011 ☒ HCBES14	
TPH:	☐ Quant Only ☐ Fingerprint	
		Sample Comments

TOTAL # BOTTLES

[illegible]

A = None
B = HCl
C = HNO₃
D = H₂SO₄
E = NaOH
F = MeOH
G = NaHSO₄
H = Na₂S₂O₃
I = Ascorbic Acid
J = NH₄Cl
K = Zn Acetate
O = Other

A

Relinquished By: 

3-28-19/1930

Received By: *[Signature]*

P-28710:2

All samples submitted are subject to Alpha's Terms and Conditions.

See reverse side.
FORM NO: 01-01 (rev. 12-Mar-2012)



ANALYTICAL REPORT

Lab Number:	L1912854
Client:	Stantec 5 Dartmouth Drive Suite 200 Auburn, NH 03032
ATTN:	Dave Allwine
Phone:	(603) 669-8672
Project Name:	HARDWICK YELLOW BARN
Project Number:	1857501001
Report Date:	04/04/19

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508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com



Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1912854
Report Date: 04/04/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1912854-01	SS-1 (0'-0.5')	SOIL	HARDWICK, VT	03/29/19 10:00	04/01/19
L1912854-02	SS-1 (3.0-3.5')	SOIL	HARDWICK, VT	03/29/19 12:50	04/01/19
L1912854-03	SS-2 (0'-0.5')	SOIL	HARDWICK, VT	03/29/19 13:35	04/01/19
L1912854-04	SS-2 (36"-43")	SOIL	HARDWICK, VT	03/29/19 15:45	04/01/19
L1912854-05	DRUM	WATER	HARDWICK, VT	03/29/19 17:35	04/01/19

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1912854
Report Date: 04/04/19

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1912854
Report Date: 04/04/19

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

The analyses performed were specified by the client.

Semivolatile Organics

L1912854-01, -02 and -03: The sample has elevated detection limits due to the limited sample volume utilized during extraction, as required by the sample matrix.

The WG1221883-2/-3 LCS/LCSD recoveries, associated with L1912854-05, are below the acceptance criteria for benzidine (9%/1%); however, it has been identified as a "difficult" analyte. The results of the associated samples are reported.

Total Metals

The WG1222379-3 MS recovery, performed on L1912854-01, is outside the acceptance criteria for mercury (132%). A post digestion spike was performed and was within acceptance criteria.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:



Amita Naik

Title: Technical Director/Representative

Date: 04/04/19

ORGANICS

VOLATILES

Project Name: HARDWICK YELLOW BARN**Lab Number:** L1912854**Project Number:** 1857501001**Report Date:** 04/04/19**SAMPLE RESULTS**

Lab ID: L1912854-01
 Client ID: SS-1 (0'-0.5')
 Sample Location: HARDWICK, VT

Date Collected: 03/29/19 10:00
 Date Received: 04/01/19
 Field Prep: Not Specified

Sample Depth:

Matrix: Soil
 Analytical Method: 1,8260C
 Analytical Date: 04/03/19 21:08
 Analyst: MV
 Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methylene chloride	ND		ug/kg	410	180	1
1,1-Dichloroethane	ND		ug/kg	81	12.	1
Chloroform	ND		ug/kg	120	11.	1
Carbon tetrachloride	ND		ug/kg	81	19.	1
1,2-Dichloropropane	ND		ug/kg	81	10.	1
Dibromochloromethane	ND		ug/kg	81	11.	1
1,1,2-Trichloroethane	ND		ug/kg	81	22.	1
Tetrachloroethene	ND		ug/kg	41	16.	1
Chlorobenzene	ND		ug/kg	41	10.	1
Trichlorofluoromethane	ND		ug/kg	320	56.	1
1,2-Dichloroethane	ND		ug/kg	81	21.	1
1,1,1-Trichloroethane	ND		ug/kg	41	14.	1
Bromodichloromethane	ND		ug/kg	41	8.8	1
trans-1,3-Dichloropropene	ND		ug/kg	81	22.	1
cis-1,3-Dichloropropene	ND		ug/kg	41	13.	1
1,3-Dichloropropene, Total	ND		ug/kg	41	13.	1
1,1-Dichloropropene	ND		ug/kg	41	13.	1
Bromoform	ND		ug/kg	320	20.	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	41	13.	1
Benzene	ND		ug/kg	41	13.	1
Toluene	ND		ug/kg	81	44.	1
Ethylbenzene	ND		ug/kg	81	11.	1
Chloromethane	ND		ug/kg	320	76.	1
Bromomethane	ND		ug/kg	160	47.	1
Vinyl chloride	ND		ug/kg	81	27.	1
Chloroethane	ND		ug/kg	160	37.	1
1,1-Dichloroethene	ND		ug/kg	81	19.	1
trans-1,2-Dichloroethene	ND		ug/kg	120	11.	1

Project Name: HARDWICK YELLOW BARN**Lab Number:** L1912854**Project Number:** 1857501001**Report Date:** 04/04/19**SAMPLE RESULTS**

Lab ID: L1912854-01
 Client ID: SS-1 (0'-0.5')
 Sample Location: HARDWICK, VT

Date Collected: 03/29/19 10:00
 Date Received: 04/01/19
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Trichloroethene	ND		ug/kg	41	11.	1
1,2-Dichlorobenzene	ND		ug/kg	160	12.	1
1,3-Dichlorobenzene	ND		ug/kg	160	12.	1
1,4-Dichlorobenzene	ND		ug/kg	160	14.	1
Methyl tert butyl ether	ND		ug/kg	160	16.	1
p/m-Xylene	ND		ug/kg	160	45.	1
o-Xylene	ND		ug/kg	81	24.	1
Xylenes, Total	ND		ug/kg	81	24.	1
cis-1,2-Dichloroethene	ND		ug/kg	81	14.	1
1,2-Dichloroethene, Total	ND		ug/kg	81	11.	1
Dibromomethane	ND		ug/kg	160	19.	1
1,4-Dichlorobutane	ND		ug/kg	810	18.	1
1,2,3-Trichloropropane	ND		ug/kg	160	10.	1
Styrene	ND		ug/kg	81	16.	1
Dichlorodifluoromethane	ND		ug/kg	810	74.	1
Acetone	ND		ug/kg	810	390	1
Carbon disulfide	ND		ug/kg	810	370	1
2-Butanone	ND		ug/kg	810	180	1
Vinyl acetate	ND		ug/kg	810	170	1
4-Methyl-2-pentanone	ND		ug/kg	810	100	1
2-Hexanone	ND		ug/kg	810	96.	1
Ethyl methacrylate	ND		ug/kg	810	130	1
Acrylonitrile	ND		ug/kg	320	93.	1
Bromochloromethane	ND		ug/kg	160	17.	1
Tetrahydrofuran	ND		ug/kg	320	130	1
2,2-Dichloropropane	ND		ug/kg	160	16.	1
1,2-Dibromoethane	ND		ug/kg	81	23.	1
1,3-Dichloropropane	ND		ug/kg	160	14.	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	41	11.	1
Bromobenzene	ND		ug/kg	160	12.	1
n-Butylbenzene	ND		ug/kg	81	14.	1
sec-Butylbenzene	ND		ug/kg	81	12.	1
tert-Butylbenzene	ND		ug/kg	160	9.6	1
o-Chlorotoluene	ND		ug/kg	160	16.	1
p-Chlorotoluene	ND		ug/kg	160	8.8	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	240	81.	1
Hexachlorobutadiene	ND		ug/kg	320	14.	1

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1912854
Report Date: 04/04/19

SAMPLE RESULTS

Lab ID: L1912854-01
Client ID: SS-1 (0'-0.5')
Sample Location: HARDWICK, VT

Date Collected: 03/29/19 10:00
Date Received: 04/01/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	ND		ug/kg	81	8.8	1
p-Isopropyltoluene	ND		ug/kg	81	8.8	1
Naphthalene	ND		ug/kg	320	53.	1
n-Propylbenzene	ND		ug/kg	81	14.	1
1,2,3-Trichlorobenzene	ND		ug/kg	160	26.	1
1,2,4-Trichlorobenzene	ND		ug/kg	160	22.	1
1,3,5-Trimethylbenzene	ND		ug/kg	160	16.	1
1,2,4-Trimethylbenzene	ND		ug/kg	160	27.	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	410	120	1
Ethyl ether	ND		ug/kg	160	28.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	96		70-130

Project Name: HARDWICK YELLOW BARN**Lab Number:** L1912854**Project Number:** 1857501001**Report Date:** 04/04/19**SAMPLE RESULTS**

Lab ID: L1912854-02
 Client ID: SS-1 (3.0-3.5')
 Sample Location: HARDWICK, VT

Date Collected: 03/29/19 12:50
 Date Received: 04/01/19
 Field Prep: Not Specified

Sample Depth:

Matrix: Soil
 Analytical Method: 1,8260C
 Analytical Date: 04/03/19 21:34
 Analyst: MV
 Percent Solids: 71%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methylene chloride	ND		ug/kg	630	290	1
1,1-Dichloroethane	ND		ug/kg	130	18.	1
Chloroform	ND		ug/kg	190	18.	1
Carbon tetrachloride	ND		ug/kg	130	29.	1
1,2-Dichloropropane	ND		ug/kg	130	16.	1
Dibromochloromethane	ND		ug/kg	130	18.	1
1,1,2-Trichloroethane	ND		ug/kg	130	34.	1
Tetrachloroethene	ND		ug/kg	63	25.	1
Chlorobenzene	ND		ug/kg	63	16.	1
Trichlorofluoromethane	ND		ug/kg	510	88.	1
1,2-Dichloroethane	ND		ug/kg	130	33.	1
1,1,1-Trichloroethane	ND		ug/kg	63	21.	1
Bromodichloromethane	ND		ug/kg	63	14.	1
trans-1,3-Dichloropropene	ND		ug/kg	130	35.	1
cis-1,3-Dichloropropene	ND		ug/kg	63	20.	1
1,3-Dichloropropene, Total	ND		ug/kg	63	20.	1
1,1-Dichloropropene	ND		ug/kg	63	20.	1
Bromoform	ND		ug/kg	510	31.	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	63	21.	1
Benzene	ND		ug/kg	63	21.	1
Toluene	ND		ug/kg	130	69.	1
Ethylbenzene	ND		ug/kg	130	18.	1
Chloromethane	ND		ug/kg	510	120	1
Bromomethane	ND		ug/kg	250	74.	1
Vinyl chloride	ND		ug/kg	130	42.	1
Chloroethane	ND		ug/kg	250	57.	1
1,1-Dichloroethene	ND		ug/kg	130	30.	1
trans-1,2-Dichloroethene	ND		ug/kg	190	17.	1

Project Name: HARDWICK YELLOW BARN**Lab Number:** L1912854**Project Number:** 1857501001**Report Date:** 04/04/19**SAMPLE RESULTS**

Lab ID: L1912854-02
 Client ID: SS-1 (3.0-3.5')
 Sample Location: HARDWICK, VT

Date Collected: 03/29/19 12:50
 Date Received: 04/01/19
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Trichloroethene	ND		ug/kg	63	17.	1
1,2-Dichlorobenzene	ND		ug/kg	250	18.	1
1,3-Dichlorobenzene	ND		ug/kg	250	19.	1
1,4-Dichlorobenzene	ND		ug/kg	250	22.	1
Methyl tert butyl ether	ND		ug/kg	250	26.	1
p/m-Xylene	ND		ug/kg	250	71.	1
o-Xylene	ND		ug/kg	130	37.	1
Xylenes, Total	ND		ug/kg	130	37.	1
cis-1,2-Dichloroethene	ND		ug/kg	130	22.	1
1,2-Dichloroethene, Total	ND		ug/kg	130	17.	1
Dibromomethane	ND		ug/kg	250	30.	1
1,4-Dichlorobutane	ND		ug/kg	1300	29.	1
1,2,3-Trichloropropane	ND		ug/kg	250	16.	1
Styrene	ND		ug/kg	130	25.	1
Dichlorodifluoromethane	ND		ug/kg	1300	120	1
Acetone	ND		ug/kg	1300	610	1
Carbon disulfide	ND		ug/kg	1300	580	1
2-Butanone	ND		ug/kg	1300	280	1
Vinyl acetate	ND		ug/kg	1300	270	1
4-Methyl-2-pentanone	ND		ug/kg	1300	160	1
2-Hexanone	ND		ug/kg	1300	150	1
Ethyl methacrylate	ND		ug/kg	1300	200	1
Acrylonitrile	ND		ug/kg	510	150	1
Bromochloromethane	ND		ug/kg	250	26.	1
Tetrahydrofuran	ND		ug/kg	510	200	1
2,2-Dichloropropane	ND		ug/kg	250	26.	1
1,2-Dibromoethane	ND		ug/kg	130	35.	1
1,3-Dichloropropane	ND		ug/kg	250	21.	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	63	17.	1
Bromobenzene	ND		ug/kg	250	18.	1
n-Butylbenzene	ND		ug/kg	130	21.	1
sec-Butylbenzene	ND		ug/kg	130	18.	1
tert-Butylbenzene	ND		ug/kg	250	15.	1
o-Chlorotoluene	ND		ug/kg	250	24.	1
p-Chlorotoluene	ND		ug/kg	250	14.	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	380	130	1
Hexachlorobutadiene	ND		ug/kg	510	21.	1

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1912854
Report Date: 04/04/19

SAMPLE RESULTS

Lab ID: L1912854-02
Client ID: SS-1 (3.0-3.5')
Sample Location: HARDWICK, VT

Date Collected: 03/29/19 12:50
Date Received: 04/01/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	ND		ug/kg	130	14.	1
p-Isopropyltoluene	ND		ug/kg	130	14.	1
Naphthalene	ND		ug/kg	510	82.	1
n-Propylbenzene	ND		ug/kg	130	22.	1
1,2,3-Trichlorobenzene	ND		ug/kg	250	41.	1
1,2,4-Trichlorobenzene	ND		ug/kg	250	34.	1
1,3,5-Trimethylbenzene	ND		ug/kg	250	24.	1
1,2,4-Trimethylbenzene	ND		ug/kg	250	42.	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	630	180	1
Ethyl ether	ND		ug/kg	250	43.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	97		70-130

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1912854
Report Date: 04/04/19

SAMPLE RESULTS

Lab ID: L1912854-03
Client ID: SS-2 (0'-0.5')
Sample Location: HARDWICK, VT

Date Collected: 03/29/19 13:35
Date Received: 04/01/19
Field Prep: Not Specified

Sample Depth:

Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 04/03/19 22:00
Analyst: MV
Percent Solids: 79%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methylene chloride	ND		ug/kg	400	180	1
1,1-Dichloroethane	ND		ug/kg	80	12.	1
Chloroform	ND		ug/kg	120	11.	1
Carbon tetrachloride	ND		ug/kg	80	18.	1
1,2-Dichloropropane	ND		ug/kg	80	10.	1
Dibromochloromethane	ND		ug/kg	80	11.	1
1,1,2-Trichloroethane	ND		ug/kg	80	21.	1
Tetrachloroethene	ND		ug/kg	40	16.	1
Chlorobenzene	ND		ug/kg	40	10.	1
Trichlorofluoromethane	ND		ug/kg	320	56.	1
1,2-Dichloroethane	ND		ug/kg	80	21.	1
1,1,1-Trichloroethane	ND		ug/kg	40	13.	1
Bromodichloromethane	ND		ug/kg	40	8.8	1
trans-1,3-Dichloropropene	ND		ug/kg	80	22.	1
cis-1,3-Dichloropropene	ND		ug/kg	40	13.	1
1,3-Dichloropropene, Total	ND		ug/kg	40	13.	1
1,1-Dichloropropene	ND		ug/kg	40	13.	1
Bromoform	ND		ug/kg	320	20.	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	40	13.	1
Benzene	ND		ug/kg	40	13.	1
Toluene	ND		ug/kg	80	44.	1
Ethylbenzene	ND		ug/kg	80	11.	1
Chloromethane	ND		ug/kg	320	75.	1
Bromomethane	ND		ug/kg	160	47.	1
Vinyl chloride	ND		ug/kg	80	27.	1
Chloroethane	ND		ug/kg	160	36.	1
1,1-Dichloroethene	ND		ug/kg	80	19.	1
trans-1,2-Dichloroethene	ND		ug/kg	120	11.	1

Project Name: HARDWICK YELLOW BARN**Lab Number:** L1912854**Project Number:** 1857501001**Report Date:** 04/04/19**SAMPLE RESULTS**

Lab ID: L1912854-03
 Client ID: SS-2 (0'-0.5')
 Sample Location: HARDWICK, VT

Date Collected: 03/29/19 13:35
 Date Received: 04/01/19
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Trichloroethene	ND		ug/kg	40	11.	1
1,2-Dichlorobenzene	ND		ug/kg	160	12.	1
1,3-Dichlorobenzene	ND		ug/kg	160	12.	1
1,4-Dichlorobenzene	ND		ug/kg	160	14.	1
Methyl tert butyl ether	ND		ug/kg	160	16.	1
p/m-Xylene	ND		ug/kg	160	45.	1
o-Xylene	ND		ug/kg	80	23.	1
Xylenes, Total	ND		ug/kg	80	23.	1
cis-1,2-Dichloroethene	ND		ug/kg	80	14.	1
1,2-Dichloroethene, Total	ND		ug/kg	80	11.	1
Dibromomethane	ND		ug/kg	160	19.	1
1,4-Dichlorobutane	ND		ug/kg	800	18.	1
1,2,3-Trichloropropane	ND		ug/kg	160	10.	1
Styrene	ND		ug/kg	80	16.	1
Dichlorodifluoromethane	ND		ug/kg	800	74.	1
Acetone	ND		ug/kg	800	390	1
Carbon disulfide	ND		ug/kg	800	360	1
2-Butanone	ND		ug/kg	800	180	1
Vinyl acetate	ND		ug/kg	800	170	1
4-Methyl-2-pentanone	ND		ug/kg	800	100	1
2-Hexanone	ND		ug/kg	800	95.	1
Ethyl methacrylate	ND		ug/kg	800	130	1
Acrylonitrile	ND		ug/kg	320	92.	1
Bromochloromethane	ND		ug/kg	160	16.	1
Tetrahydrofuran	ND		ug/kg	320	130	1
2,2-Dichloropropane	ND		ug/kg	160	16.	1
1,2-Dibromoethane	ND		ug/kg	80	22.	1
1,3-Dichloropropane	ND		ug/kg	160	13.	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	40	11.	1
Bromobenzene	ND		ug/kg	160	12.	1
n-Butylbenzene	ND		ug/kg	80	13.	1
sec-Butylbenzene	ND		ug/kg	80	12.	1
tert-Butylbenzene	ND		ug/kg	160	9.5	1
o-Chlorotoluene	ND		ug/kg	160	15.	1
p-Chlorotoluene	ND		ug/kg	160	8.7	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	240	80.	1
Hexachlorobutadiene	ND		ug/kg	320	14.	1

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1912854
Report Date: 04/04/19

SAMPLE RESULTS

Lab ID: L1912854-03
Client ID: SS-2 (0'-0.5')
Sample Location: HARDWICK, VT

Date Collected: 03/29/19 13:35
Date Received: 04/01/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	ND		ug/kg	80	8.8	1
p-Isopropyltoluene	ND		ug/kg	80	8.8	1
Naphthalene	ND		ug/kg	320	52.	1
n-Propylbenzene	ND		ug/kg	80	14.	1
1,2,3-Trichlorobenzene	ND		ug/kg	160	26.	1
1,2,4-Trichlorobenzene	ND		ug/kg	160	22.	1
1,3,5-Trimethylbenzene	ND		ug/kg	160	16.	1
1,2,4-Trimethylbenzene	ND		ug/kg	160	27.	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	400	110	1
Ethyl ether	ND		ug/kg	160	27.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	97		70-130

Project Name: HARDWICK YELLOW BARN**Lab Number:** L1912854**Project Number:** 1857501001**Report Date:** 04/04/19**SAMPLE RESULTS**

Lab ID: L1912854-04
 Client ID: SS-2 (36"-43")
 Sample Location: HARDWICK, VT

Date Collected: 03/29/19 15:45
 Date Received: 04/01/19
 Field Prep: Not Specified

Sample Depth:

Matrix: Soil
 Analytical Method: 1,8260C
 Analytical Date: 04/03/19 22:26
 Analyst: MV
 Percent Solids: 75%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methylene chloride	ND		ug/kg	440	200	1
1,1-Dichloroethane	ND		ug/kg	87	13.	1
Chloroform	ND		ug/kg	130	12.	1
Carbon tetrachloride	ND		ug/kg	87	20.	1
1,2-Dichloropropane	ND		ug/kg	87	11.	1
Dibromochloromethane	ND		ug/kg	87	12.	1
1,1,2-Trichloroethane	ND		ug/kg	87	23.	1
Tetrachloroethene	ND		ug/kg	44	17.	1
Chlorobenzene	ND		ug/kg	44	11.	1
Trichlorofluoromethane	ND		ug/kg	350	61.	1
1,2-Dichloroethane	ND		ug/kg	87	22.	1
1,1,1-Trichloroethane	ND		ug/kg	44	14.	1
Bromodichloromethane	ND		ug/kg	44	9.5	1
trans-1,3-Dichloropropene	ND		ug/kg	87	24.	1
cis-1,3-Dichloropropene	ND		ug/kg	44	14.	1
1,3-Dichloropropene, Total	ND		ug/kg	44	14.	1
1,1-Dichloropropene	ND		ug/kg	44	14.	1
Bromoform	ND		ug/kg	350	22.	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	44	14.	1
Benzene	ND		ug/kg	44	14.	1
Toluene	ND		ug/kg	87	47.	1
Ethylbenzene	ND		ug/kg	87	12.	1
Chloromethane	ND		ug/kg	350	81.	1
Bromomethane	ND		ug/kg	170	51.	1
Vinyl chloride	ND		ug/kg	87	29.	1
Chloroethane	ND		ug/kg	170	40.	1
1,1-Dichloroethene	ND		ug/kg	87	21.	1
trans-1,2-Dichloroethene	ND		ug/kg	130	12.	1

Project Name: HARDWICK YELLOW BARN**Lab Number:** L1912854**Project Number:** 1857501001**Report Date:** 04/04/19**SAMPLE RESULTS**

Lab ID: L1912854-04
 Client ID: SS-2 (36"-43")
 Sample Location: HARDWICK, VT

Date Collected: 03/29/19 15:45
 Date Received: 04/01/19
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Trichloroethene	ND		ug/kg	44	12.	1
1,2-Dichlorobenzene	ND		ug/kg	170	12.	1
1,3-Dichlorobenzene	ND		ug/kg	170	13.	1
1,4-Dichlorobenzene	ND		ug/kg	170	15.	1
Methyl tert butyl ether	ND		ug/kg	170	18.	1
p/m-Xylene	ND		ug/kg	170	49.	1
o-Xylene	ND		ug/kg	87	25.	1
Xylenes, Total	ND		ug/kg	87	25.	1
cis-1,2-Dichloroethene	ND		ug/kg	87	15.	1
1,2-Dichloroethene, Total	ND		ug/kg	87	12.	1
Dibromomethane	ND		ug/kg	170	21.	1
1,4-Dichlorobutane	ND		ug/kg	870	20.	1
1,2,3-Trichloropropane	ND		ug/kg	170	11.	1
Styrene	ND		ug/kg	87	17.	1
Dichlorodifluoromethane	ND		ug/kg	870	80.	1
Acetone	440	J	ug/kg	870	420	1
Carbon disulfide	ND		ug/kg	870	400	1
2-Butanone	ND		ug/kg	870	190	1
Vinyl acetate	ND		ug/kg	870	190	1
4-Methyl-2-pentanone	ND		ug/kg	870	110	1
2-Hexanone	ND		ug/kg	870	100	1
Ethyl methacrylate	ND		ug/kg	870	140	1
Acrylonitrile	ND		ug/kg	350	100	1
Bromochloromethane	ND		ug/kg	170	18.	1
Tetrahydrofuran	ND		ug/kg	350	140	1
2,2-Dichloropropane	ND		ug/kg	170	18.	1
1,2-Dibromoethane	ND		ug/kg	87	24.	1
1,3-Dichloropropane	ND		ug/kg	170	14.	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	44	12.	1
Bromobenzene	ND		ug/kg	170	13.	1
n-Butylbenzene	ND		ug/kg	87	14.	1
sec-Butylbenzene	ND		ug/kg	87	13.	1
tert-Butylbenzene	ND		ug/kg	170	10.	1
o-Chlorotoluene	ND		ug/kg	170	17.	1
p-Chlorotoluene	ND		ug/kg	170	9.4	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	260	87.	1
Hexachlorobutadiene	ND		ug/kg	350	15.	1

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1912854
Report Date: 04/04/19

SAMPLE RESULTS

Lab ID: L1912854-04
Client ID: SS-2 (36"-43")
Sample Location: HARDWICK, VT

Date Collected: 03/29/19 15:45
Date Received: 04/01/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	ND		ug/kg	87	9.5	1
p-Isopropyltoluene	ND		ug/kg	87	9.5	1
Naphthalene	ND		ug/kg	350	57.	1
n-Propylbenzene	ND		ug/kg	87	15.	1
1,2,3-Trichlorobenzene	ND		ug/kg	170	28.	1
1,2,4-Trichlorobenzene	ND		ug/kg	170	24.	1
1,3,5-Trimethylbenzene	ND		ug/kg	170	17.	1
1,2,4-Trimethylbenzene	ND		ug/kg	170	29.	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	440	120	1
Ethyl ether	ND		ug/kg	170	30.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	97		70-130

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1912854
Report Date: 04/04/19

SAMPLE RESULTS

Lab ID: L1912854-05
Client ID: DRUM
Sample Location: HARDWICK, VT

Date Collected: 03/29/19 17:35
Date Received: 04/01/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8011
Analytical Date: 04/03/19 16:28
Analyst: AWS

Extraction Method: EPA 8011
Extraction Date: 04/03/19 12:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.004	1	A
1,2-Dibromo-3-chloropropane	ND		ug/l	0.010	0.005	1	A

Project Name: HARDWICK YELLOW BARN**Lab Number:** L1912854**Project Number:** 1857501001**Report Date:** 04/04/19**SAMPLE RESULTS**

Lab ID: L1912854-05
 Client ID: DRUM
 Sample Location: HARDWICK, VT

Date Collected: 03/29/19 17:35
 Date Received: 04/01/19
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 1,8260C
 Analytical Date: 04/02/19 22:19
 Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	0.68	1
1,1-Dichloroethane	ND		ug/l	0.75	0.21	1
Chloroform	ND		ug/l	0.75	0.22	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.8	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	0.75	0.14	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	0.50	0.18	1
Trichlorofluoromethane	ND		ug/l	2.5	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	0.50	0.16	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	0.14	1
1,1-Dichloropropene	ND		ug/l	2.5	0.24	1
Bromoform	ND		ug/l	2.0	0.25	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
Chloromethane	ND		ug/l	2.5	0.20	1
Bromomethane	ND		ug/l	1.0	0.26	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	1.0	0.13	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	0.16	1

Project Name: HARDWICK YELLOW BARN**Lab Number:** L1912854**Project Number:** 1857501001**Report Date:** 04/04/19**SAMPLE RESULTS**

Lab ID: L1912854-05
Client ID: DRUM
Sample Location: HARDWICK, VT

Date Collected: 03/29/19 17:35
Date Received: 04/01/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	ND		ug/l	0.50	0.16	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.18	1
1,3-Dichlorobenzene	ND		ug/l	2.5	0.19	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.19	1
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	0.19	1
Dibromomethane	ND		ug/l	5.0	0.36	1
1,4-Dichlorobutane	ND		ug/l	5.0	0.46	1
1,2,3-Trichloropropane	ND		ug/l	5.0	0.18	1
Styrene	ND		ug/l	1.0	0.36	1
Dichlorodifluoromethane	ND		ug/l	5.0	0.24	1
Acetone	7.7		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	0.30	1
2-Butanone	ND		ug/l	5.0	1.9	1
Vinyl acetate	ND		ug/l	5.0	0.31	1
4-Methyl-2-pentanone	ND		ug/l	5.0	0.42	1
2-Hexanone	ND		ug/l	5.0	0.52	1
Ethyl methacrylate	ND		ug/l	5.0	0.61	1
Acrylonitrile	ND		ug/l	5.0	0.43	1
Bromochloromethane	ND		ug/l	2.5	0.15	1
Tetrahydrofuran	ND		ug/l	5.0	0.52	1
2,2-Dichloropropane	ND		ug/l	2.5	0.20	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
1,3-Dichloropropane	ND		ug/l	2.5	0.21	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	0.16	1
Bromobenzene	ND		ug/l	2.5	0.15	1
n-Butylbenzene	ND		ug/l	0.50	0.19	1
sec-Butylbenzene	ND		ug/l	0.50	0.18	1
tert-Butylbenzene	ND		ug/l	2.5	0.20	1
o-Chlorotoluene	ND		ug/l	2.5	0.22	1
p-Chlorotoluene	ND		ug/l	2.5	0.18	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.35	1
Hexachlorobutadiene	ND		ug/l	0.50	0.22	1

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1912854
Report Date: 04/04/19

SAMPLE RESULTS

Lab ID: L1912854-05
Client ID: DRUM
Sample Location: HARDWICK, VT

Date Collected: 03/29/19 17:35
Date Received: 04/01/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Isopropylbenzene	ND		ug/l	0.50	0.19	1
p-Isopropyltoluene	ND		ug/l	0.50	0.19	1
Naphthalene	ND		ug/l	2.5	0.22	1
n-Propylbenzene	ND		ug/l	0.50	0.17	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.23	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.22	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19	1
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	0.21	1
Ethyl ether	ND		ug/l	2.5	0.16	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	109		70-130
4-Bromofluorobenzene	110		70-130
Dibromofluoromethane	94		70-130

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1912854
Report Date: 04/04/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8011
Analytical Date: 04/03/19 13:55
Analyst: AWS

Extraction Method: EPA 8011
Extraction Date: 04/03/19 12:20

Parameter	Result	Qualifier	Units	RL	MDL
Microextractables by GC - Westborough Lab for sample(s): 05 Batch: WG1222530-1					
1,2-Dibromoethane	ND		ug/l	0.010	0.004 A
1,2-Dibromo-3-chloropropane	ND		ug/l	0.010	0.005 A

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1912854
Report Date: 04/04/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
 Analytical Date: 04/02/19 20:13
 Analyst: KJD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 05 Batch: WG1222599-5					
Methylene chloride	ND		ug/l	3.0	0.68
1,1-Dichloroethane	ND		ug/l	0.75	0.21
Chloroform	ND		ug/l	0.75	0.22
Carbon tetrachloride	ND		ug/l	0.50	0.13
1,2-Dichloropropane	ND		ug/l	1.8	0.14
Dibromochloromethane	ND		ug/l	0.50	0.15
1,1,2-Trichloroethane	ND		ug/l	0.75	0.14
2-Chloroethylvinyl ether	ND		ug/l	10	0.40
Tetrachloroethene	ND		ug/l	0.50	0.18
Chlorobenzene	ND		ug/l	0.50	0.18
Trichlorofluoromethane	ND		ug/l	2.5	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
1,1,1-Trichloroethane	ND		ug/l	0.50	0.16
Bromodichloromethane	ND		ug/l	0.50	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14
1,3-Dichloropropene, Total	ND		ug/l	0.50	0.14
1,1-Dichloropropene	ND		ug/l	2.5	0.24
Bromoform	ND		ug/l	2.0	0.25
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	0.75	0.20
Ethylbenzene	ND		ug/l	0.50	0.17
Chloromethane	ND		ug/l	2.5	0.20
Bromomethane	ND		ug/l	1.0	0.26
Vinyl chloride	ND		ug/l	1.0	0.07
Chloroethane	ND		ug/l	1.0	0.13
1,1-Dichloroethene	ND		ug/l	0.50	0.17
trans-1,2-Dichloroethene	ND		ug/l	0.75	0.16

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1912854
Report Date: 04/04/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 04/02/19 20:13
Analyst: KJD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 05 Batch: WG1222599-5					
1,2-Dichloroethene, Total	ND		ug/l	0.50	0.16
Trichloroethene	ND		ug/l	0.50	0.18
1,2-Dichlorobenzene	ND		ug/l	2.5	0.18
1,3-Dichlorobenzene	ND		ug/l	2.5	0.19
1,4-Dichlorobenzene	ND		ug/l	2.5	0.19
Methyl tert butyl ether	ND		ug/l	1.0	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
cis-1,2-Dichloroethene	ND		ug/l	0.50	0.19
Dibromomethane	ND		ug/l	5.0	0.36
1,4-Dichlorobutane	ND		ug/l	5.0	0.46
Iodomethane	ND		ug/l	5.0	0.40
1,2,3-Trichloropropane	ND		ug/l	5.0	0.18
Styrene	ND		ug/l	1.0	0.36
Dichlorodifluoromethane	ND		ug/l	5.0	0.24
Acetone	ND		ug/l	5.0	1.5
Carbon disulfide	ND		ug/l	5.0	0.30
2-Butanone	ND		ug/l	5.0	1.9
Vinyl acetate	ND		ug/l	5.0	0.31
4-Methyl-2-pentanone	ND		ug/l	5.0	0.42
2-Hexanone	ND		ug/l	5.0	0.52
Ethyl methacrylate	ND		ug/l	5.0	0.61
Acrolein	ND		ug/l	5.0	0.44
Acrylonitrile	ND		ug/l	5.0	0.43
Bromochloromethane	ND		ug/l	2.5	0.15
Tetrahydrofuran	ND		ug/l	5.0	0.52
2,2-Dichloropropane	ND		ug/l	2.5	0.20
1,2-Dibromoethane	ND		ug/l	2.0	0.19

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1912854
Report Date: 04/04/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
 Analytical Date: 04/02/19 20:13
 Analyst: KJD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 05 Batch: WG1222599-5					
1,3-Dichloropropane	ND		ug/l	2.5	0.21
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	0.16
Bromobenzene	ND		ug/l	2.5	0.15
n-Butylbenzene	ND		ug/l	0.50	0.19
sec-Butylbenzene	ND		ug/l	0.50	0.18
tert-Butylbenzene	ND		ug/l	2.5	0.20
o-Chlorotoluene	ND		ug/l	2.5	0.22
p-Chlorotoluene	ND		ug/l	2.5	0.18
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.35
Hexachlorobutadiene	ND		ug/l	0.50	0.22
Isopropylbenzene	ND		ug/l	0.50	0.19
p-Isopropyltoluene	ND		ug/l	0.50	0.19
Naphthalene	ND		ug/l	2.5	0.22
n-Propylbenzene	ND		ug/l	0.50	0.17
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.23
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.22
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.22
1,3,5-Trichlorobenzene	ND		ug/l	2.0	0.14
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	0.21
Halothane	ND		ug/l	2.5	0.29
Ethyl ether	ND		ug/l	2.5	0.16
Methyl Acetate	ND		ug/l	10	0.23
Ethyl Acetate	ND		ug/l	10	0.72
Isopropyl Ether	ND		ug/l	2.0	0.42
Cyclohexane	ND		ug/l	10	0.27
Tert-Butyl Alcohol	ND		ug/l	10	1.4
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	0.18
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	0.28

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1912854
Report Date: 04/04/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
 Analytical Date: 04/02/19 20:13
 Analyst: KJD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 05 Batch: WG1222599-5					
1,4-Dioxane	ND		ug/l	250	61.
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		ug/l	10	0.15
Methyl cyclohexane	ND		ug/l	10	0.40
p-Diethylbenzene	ND		ug/l	2.0	0.39
4-Ethyltoluene	ND		ug/l	2.0	0.34
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.0	0.54

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	109		70-130
4-Bromofluorobenzene	113		70-130
Dibromofluoromethane	91		70-130

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1912854
Report Date: 04/04/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
 Analytical Date: 04/03/19 20:16
 Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 01-04 Batch: WG1222939-5					
Methylene chloride	ND		ug/kg	250	110
1,1-Dichloroethane	ND		ug/kg	50	7.2
Chloroform	ND		ug/kg	75	7.0
Carbon tetrachloride	ND		ug/kg	50	12.
1,2-Dichloropropane	ND		ug/kg	50	6.2
Dibromochloromethane	ND		ug/kg	50	7.0
1,1,2-Trichloroethane	ND		ug/kg	50	13.
2-Chloroethylvinyl ether	ND		ug/kg	1000	82.
Tetrachloroethene	ND		ug/kg	25	9.8
Chlorobenzene	ND		ug/kg	25	6.4
Trichlorofluoromethane	ND		ug/kg	200	35.
1,2-Dichloroethane	ND		ug/kg	50	13.
1,1,1-Trichloroethane	ND		ug/kg	25	8.4
Bromodichloromethane	ND		ug/kg	25	5.4
trans-1,3-Dichloropropene	ND		ug/kg	50	14.
cis-1,3-Dichloropropene	ND		ug/kg	25	7.9
1,3-Dichloropropene, Total	ND		ug/kg	25	7.9
1,1-Dichloropropene	ND		ug/kg	25	8.0
Bromoform	ND		ug/kg	200	12.
1,1,2,2-Tetrachloroethane	ND		ug/kg	25	8.3
Benzene	ND		ug/kg	25	8.3
Toluene	ND		ug/kg	50	27.
Ethylbenzene	ND		ug/kg	50	7.0
Chloromethane	ND		ug/kg	200	47.
Bromomethane	ND		ug/kg	100	29.
Vinyl chloride	ND		ug/kg	50	17.
Chloroethane	ND		ug/kg	100	23.
1,1-Dichloroethene	ND		ug/kg	50	12.
trans-1,2-Dichloroethene	ND		ug/kg	75	6.8

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1912854
Report Date: 04/04/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
 Analytical Date: 04/03/19 20:16
 Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 01-04 Batch: WG1222939-5					
Trichloroethene	ND		ug/kg	25	6.8
1,2-Dichlorobenzene	ND		ug/kg	100	7.2
1,3-Dichlorobenzene	ND		ug/kg	100	7.4
1,4-Dichlorobenzene	ND		ug/kg	100	8.6
Methyl tert butyl ether	ND		ug/kg	100	10.
p/m-Xylene	ND		ug/kg	100	28.
o-Xylene	ND		ug/kg	50	14.
Xylenes, Total	ND		ug/kg	50	14.
cis-1,2-Dichloroethene	ND		ug/kg	50	8.8
1,2-Dichloroethene, Total	ND		ug/kg	50	6.8
Dibromomethane	ND		ug/kg	100	12.
1,4-Dichlorobutane	ND		ug/kg	500	11.
1,2,3-Trichloropropane	ND		ug/kg	100	6.4
Styrene	ND		ug/kg	50	9.8
Dichlorodifluoromethane	ND		ug/kg	500	46.
Acetone	ND		ug/kg	500	240
Carbon disulfide	ND		ug/kg	500	230
2-Butanone	ND		ug/kg	500	110
Vinyl acetate	ND		ug/kg	500	110
4-Methyl-2-pentanone	ND		ug/kg	500	64.
2-Hexanone	ND		ug/kg	500	59.
Ethyl methacrylate	ND		ug/kg	500	79.
Acrolein	ND		ug/kg	1200	280
Acrylonitrile	ND		ug/kg	200	58.
Bromochloromethane	ND		ug/kg	100	10.
Tetrahydrofuran	ND		ug/kg	200	80.
2,2-Dichloropropane	ND		ug/kg	100	10.
1,2-Dibromoethane	ND		ug/kg	50	14.
1,3-Dichloropropane	ND		ug/kg	100	8.4

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1912854
Report Date: 04/04/19

**Method Blank Analysis
Batch Quality Control**

Analytical Method: 1,8260C
Analytical Date: 04/03/19 20:16
Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 01-04 Batch: WG1222939-5					
1,1,1,2-Tetrachloroethane	ND		ug/kg	25	6.6
Bromobenzene	ND		ug/kg	100	7.2
n-Butylbenzene	ND		ug/kg	50	8.4
sec-Butylbenzene	ND		ug/kg	50	7.3
tert-Butylbenzene	ND		ug/kg	100	5.9
1,3,5-Trichlorobenzene	ND		ug/kg	100	8.6
o-Chlorotoluene	ND		ug/kg	100	9.6
p-Chlorotoluene	ND		ug/kg	100	5.4
1,2-Dibromo-3-chloropropane	ND		ug/kg	150	50.
Hexachlorobutadiene	ND		ug/kg	200	8.4
Isopropylbenzene	ND		ug/kg	50	5.4
p-Isopropyltoluene	ND		ug/kg	50	5.4
Naphthalene	ND		ug/kg	200	32.
n-Propylbenzene	ND		ug/kg	50	8.6
1,2,3-Trichlorobenzene	ND		ug/kg	100	16.
1,2,4-Trichlorobenzene	ND		ug/kg	100	14.
1,3,5-Trimethylbenzene	ND		ug/kg	100	9.6
1,2,4-Trimethylbenzene	ND		ug/kg	100	17.
trans-1,4-Dichloro-2-butene	ND		ug/kg	250	71.
Halothane	ND		ug/kg	500	9.0
Ethyl ether	ND		ug/kg	100	17.
Methyl Acetate	ND		ug/kg	200	48.
Ethyl Acetate	ND		ug/kg	500	60.
Isopropyl Ether	ND		ug/kg	100	11.
Cyclohexane	ND		ug/kg	500	27.
Tert-Butyl Alcohol	ND		ug/kg	1000	260
Ethyl-Tert-Butyl-Ether	ND		ug/kg	100	6.4
Tertiary-Amyl Methyl Ether	ND		ug/kg	100	8.8
1,4-Dioxane	ND		ug/kg	4000	1800

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1912854
Report Date: 04/04/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
 Analytical Date: 04/03/19 20:16
 Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 01-04 Batch: WG1222939-5					
Methyl cyclohexane	ND		ug/kg	200	30.
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		ug/kg	200	35.
p-Diethylbenzene	ND		ug/kg	100	8.8
4-Ethyltoluene	ND		ug/kg	100	19.
1,2,4,5-Tetramethylbenzene	ND		ug/kg	100	9.6

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	96		70-130

Lab Control Sample Analysis Batch Quality Control

Project Name: HARDWICK YELLOW BARN

Project Number: 1857501001

Lab Number: L1912854

Report Date: 04/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab Associated sample(s): 05 Batch: WG1222530-2									
1,2-Dibromoethane	116		-		80-120	-		20	A
1,2-Dibromo-3-chloropropane	115		-		80-120	-		20	A

Lab Control Sample Analysis **Batch Quality Control**

Project Name: HARDWICK YELLOW BARN

Project Number: 1857501001

Lab Number: L1912854

Report Date: 04/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 05 Batch: WG1222599-3 WG1222599-4								
Methylene chloride	94		88		70-130	7		20
1,1-Dichloroethane	100		99		70-130	1		20
Chloroform	96		95		70-130	1		20
Carbon tetrachloride	94		92		63-132	2		20
1,2-Dichloropropane	98		98		70-130	0		20
Dibromochloromethane	91		89		63-130	2		20
1,1,2-Trichloroethane	97		93		70-130	4		20
2-Chloroethylvinyl ether	82		78		70-130	5		20
Tetrachloroethene	92		92		70-130	0		20
Chlorobenzene	96		96		75-130	0		25
Trichlorofluoromethane	92		89		62-150	3		20
1,2-Dichloroethane	97		95		70-130	2		20
1,1,1-Trichloroethane	94		93		67-130	1		20
Bromodichloromethane	93		92		67-130	1		20
trans-1,3-Dichloropropene	100		100		70-130	0		20
cis-1,3-Dichloropropene	93		93		70-130	0		20
1,1-Dichloropropene	97		96		70-130	1		20
Bromoform	87		89		54-136	2		20
1,1,2,2-Tetrachloroethane	100		100		67-130	0		20
Benzene	96		94		70-130	2		25
Toluene	100		100		70-130	0		25
Ethylbenzene	98		98		70-130	0		20
Chloromethane	88		86		64-130	2		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: HARDWICK YELLOW BARN

Project Number: 1857501001

Lab Number: L1912854

Report Date: 04/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 05 Batch: WG1222599-3 WG1222599-4								
Bromomethane	38	Q	39		39-139	3		20
Vinyl chloride	95		92		55-140	3		20
Chloroethane	89		87		55-138	2		20
1,1-Dichloroethene	87		87		61-145	0		25
trans-1,2-Dichloroethene	91		90		70-130	1		20
Trichloroethene	88		88		70-130	0		25
1,2-Dichlorobenzene	96		97		70-130	1		20
1,3-Dichlorobenzene	99		99		70-130	0		20
1,4-Dichlorobenzene	98		99		70-130	1		20
Methyl tert butyl ether	90		87		63-130	3		20
p/m-Xylene	95		95		70-130	0		20
o-Xylene	95		95		70-130	0		20
cis-1,2-Dichloroethene	91		92		70-130	1		20
Dibromomethane	88		85		70-130	3		20
1,4-Dichlorobutane	110		110		70-130	0		20
Iodomethane	15	Q	14	Q	70-130	7		20
1,2,3-Trichloropropane	92		90		64-130	2		20
Styrene	95		90		70-130	5		20
Dichlorodifluoromethane	91		88		36-147	3		20
Acetone	92		90		58-148	2		20
Carbon disulfide	89		87		51-130	2		20
2-Butanone	84		79		63-138	6		20
Vinyl acetate	100		96		70-130	4		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: HARDWICK YELLOW BARN

Project Number: 1857501001

Lab Number: L1912854

Report Date: 04/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 05 Batch: WG1222599-3 WG1222599-4								
4-Methyl-2-pentanone	84		82		59-130	2		20
2-Hexanone	90		83		57-130	8		20
Ethyl methacrylate	86		84		70-130	2		20
Acrolein	78		81		70-130	4		20
Acrylonitrile	90		90		70-130	0		20
Bromochloromethane	90		87		70-130	3		20
Tetrahydrofuran	93		90		58-130	3		20
2,2-Dichloropropane	100		100		63-133	0		20
1,2-Dibromoethane	93		88		70-130	6		20
1,3-Dichloropropane	100		100		70-130	0		20
1,1,1,2-Tetrachloroethane	94		93		64-130	1		20
Bromobenzene	96		95		70-130	1		20
n-Butylbenzene	100		110		53-136	10		20
sec-Butylbenzene	100		100		70-130	0		20
tert-Butylbenzene	100		100		70-130	0		20
o-Chlorotoluene	110		110		70-130	0		20
p-Chlorotoluene	100		110		70-130	10		20
1,2-Dibromo-3-chloropropane	77		73		41-144	5		20
Hexachlorobutadiene	80		82		63-130	2		20
Isopropylbenzene	100		100		70-130	0		20
p-Isopropyltoluene	100		100		70-130	0		20
Naphthalene	81		82		70-130	1		20
n-Propylbenzene	100		110		69-130	10		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: HARDWICK YELLOW BARN

Project Number: 1857501001

Lab Number: L1912854

Report Date: 04/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 05 Batch: WG1222599-3 WG1222599-4								
1,2,3-Trichlorobenzene	82		82		70-130	0		20
1,2,4-Trichlorobenzene	84		86		70-130	2		20
1,3,5-Trimethylbenzene	100		100		64-130	0		20
1,3,5-Trichlorobenzene	89		91		70-130	2		20
1,2,4-Trimethylbenzene	100		100		70-130	0		20
trans-1,4-Dichloro-2-butene	93		91		70-130	2		20
Halothane	88		87		70-130	1		20
Ethyl ether	92		88		59-134	4		20
Methyl Acetate	88		89		70-130	1		20
Ethyl Acetate	90		86		70-130	5		20
Isopropyl Ether	100		100		70-130	0		20
Cyclohexane	97		95		70-130	2		20
Tert-Butyl Alcohol	82		80		70-130	2		20
Ethyl-Tert-Butyl-Ether	94		92		70-130	2		20
Tertiary-Amyl Methyl Ether	89		86		66-130	3		20
1,4-Dioxane	66		66		56-162	0		20
1,1,2-Trichloro-1,2,2-Trifluoroethane	89		87		70-130	2		20
Methyl cyclohexane	90		87		70-130	3		20
p-Diethylbenzene	99		100		70-130	1		20
4-Ethyltoluene	100		100		70-130	0		20
1,2,4,5-Tetramethylbenzene	94		95		70-130	1		20

Lab Control Sample Analysis **Batch Quality Control**

Project Name: HARDWICK YELLOW BARN

Project Number: 1857501001

Lab Number: L1912854

Report Date: 04/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 05 Batch: WG1222599-3 WG1222599-4								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	103		102		70-130
Toluene-d8	110		110		70-130
4-Bromofluorobenzene	108		110		70-130
Dibromofluoromethane	95		94		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: HARDWICK YELLOW BARN

Project Number: 1857501001

Lab Number: L1912854

Report Date: 04/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01-04 Batch: WG1222939-3 WG1222939-4								
Methylene chloride	98		99		70-130	1		30
1,1-Dichloroethane	106		107		70-130	1		30
Chloroform	109		110		70-130	1		30
Carbon tetrachloride	101		102		70-130	1		30
1,2-Dichloropropane	106		107		70-130	1		30
Dibromochloromethane	104		107		70-130	3		30
1,1,2-Trichloroethane	106		109		70-130	3		30
2-Chloroethylvinyl ether	119		121		70-130	2		30
Tetrachloroethene	106		106		70-130	0		30
Chlorobenzene	107		108		70-130	1		30
Trichlorofluoromethane	100		101		70-139	1		30
1,2-Dichloroethane	100		103		70-130	3		30
1,1,1-Trichloroethane	103		104		70-130	1		30
Bromodichloromethane	104		106		70-130	2		30
trans-1,3-Dichloropropene	108		110		70-130	2		30
cis-1,3-Dichloropropene	111		112		70-130	1		30
1,1-Dichloropropene	106		106		70-130	0		30
Bromoform	107		108		70-130	1		30
1,1,2,2-Tetrachloroethane	107		107		70-130	0		30
Benzene	108		109		70-130	1		30
Toluene	108		109		70-130	1		30
Ethylbenzene	111		111		70-130	0		30
Chloromethane	104		104		52-130	0		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HARDWICK YELLOW BARN

Project Number: 1857501001

Lab Number: L1912854

Report Date: 04/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01-04 Batch: WG1222939-3 WG1222939-4								
Bromomethane	114		111		57-147	3		30
Vinyl chloride	106		105		67-130	1		30
Chloroethane	118		118		50-151	0		30
1,1-Dichloroethene	106		106		65-135	0		30
trans-1,2-Dichloroethene	107		107		70-130	0		30
Trichloroethene	106		106		70-130	0		30
1,2-Dichlorobenzene	108		107		70-130	1		30
1,3-Dichlorobenzene	109		109		70-130	0		30
1,4-Dichlorobenzene	107		107		70-130	0		30
Methyl tert butyl ether	107		108		66-130	1		30
p/m-Xylene	113		114		70-130	1		30
o-Xylene	115		115		70-130	0		30
cis-1,2-Dichloroethene	110		110		70-130	0		30
Dibromomethane	104		107		70-130	3		30
1,4-Dichlorobutane	107		108		70-130	1		30
1,2,3-Trichloropropane	105		106		68-130	1		30
Styrene	118		118		70-130	0		30
Dichlorodifluoromethane	97		97		30-146	0		30
Acetone	109		102		54-140	7		30
Carbon disulfide	102		102		59-130	0		30
2-Butanone	100		100		70-130	0		30
Vinyl acetate	104		103		70-130	1		30
4-Methyl-2-pentanone	95		94		70-130	1		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HARDWICK YELLOW BARN

Project Number: 1857501001

Lab Number: L1912854

Report Date: 04/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01-04 Batch: WG1222939-3 WG1222939-4								
2-Hexanone	97		100		70-130	3		30
Ethyl methacrylate	104		106		70-130	2		30
Acrolein	104		103		70-130	1		30
Acrylonitrile	109		110		70-130	1		30
Bromochloromethane	108		109		70-130	1		30
Tetrahydrofuran	99		103		66-130	4		30
2,2-Dichloropropane	107		104		70-130	3		30
1,2-Dibromoethane	107		109		70-130	2		30
1,3-Dichloropropane	107		109		69-130	2		30
1,1,1,2-Tetrachloroethane	107		107		70-130	0		30
Bromobenzene	109		109		70-130	0		30
n-Butylbenzene	110		109		70-130	1		30
sec-Butylbenzene	113		112		70-130	1		30
tert-Butylbenzene	113		112		70-130	1		30
1,3,5-Trichlorobenzene	109		106		70-139	3		30
o-Chlorotoluene	112		110		70-130	2		30
p-Chlorotoluene	112		111		70-130	1		30
1,2-Dibromo-3-chloropropane	104		106		68-130	2		30
Hexachlorobutadiene	108		105		67-130	3		30
Isopropylbenzene	114		114		70-130	0		30
p-Isopropyltoluene	113		113		70-130	0		30
Naphthalene	109		110		70-130	1		30
n-Propylbenzene	113		111		70-130	2		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HARDWICK YELLOW BARN

Project Number: 1857501001

Lab Number: L1912854

Report Date: 04/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01-04 Batch: WG1222939-3 WG1222939-4								
1,2,3-Trichlorobenzene	107		108		70-130	1		30
1,2,4-Trichlorobenzene	107		107		70-130	0		30
1,3,5-Trimethylbenzene	113		113		70-130	0		30
1,2,4-Trimethylbenzene	116		115		70-130	1		30
trans-1,4-Dichloro-2-butene	102		104		70-130	2		30
Halothane	106		106		70-130	0		20
Ethyl ether	115		116		67-130	1		30
Methyl Acetate	101		101		65-130	0		30
Ethyl Acetate	106		104		70-130	2		30
Isopropyl Ether	106		107		66-130	1		30
Cyclohexane	102		102		70-130	0		30
Tert-Butyl Alcohol	103		101		70-130	2		30
Ethyl-Tert-Butyl-Ether	108		110		70-130	2		30
Tertiary-Amyl Methyl Ether	110		112		70-130	2		30
1,4-Dioxane	101		102		65-136	1		30
Methyl cyclohexane	103		102		70-130	1		30
1,1,2-Trichloro-1,2,2-Trifluoroethane	101		101		70-130	0		30
p-Diethylbenzene	112		112		70-130	0		30
4-Ethyltoluene	113		113		70-130	0		30
1,2,4,5-Tetramethylbenzene	116		114		70-130	2		30

Lab Control Sample Analysis Batch Quality Control

Project Name: HARDWICK YELLOW BARN

Lab Number: L1912854

Project Number: 1857501001

Report Date: 04/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits

Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01-04 Batch: WG1222939-3 WG1222939-4

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	94		95		70-130
Toluene-d8	101		100		70-130
4-Bromofluorobenzene	103		102		70-130
Dibromofluoromethane	97		95		70-130

SEMIVOLATILES

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1912854
Report Date: 04/04/19

SAMPLE RESULTS

Lab ID: L1912854-01
Client ID: SS-1 (0'-0.5')
Sample Location: HARDWICK, VT

Date Collected: 03/29/19 10:00
Date Received: 04/01/19
Field Prep: Not Specified

Sample Depth:

Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 04/03/19 01:05
Analyst: EK
Percent Solids: 81%

Extraction Method: EPA 3546
Extraction Date: 04/02/19 06:10

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	480	62.	1
2-Chloronaphthalene	ND		ug/kg	600	60.	1
Fluoranthene	ND		ug/kg	360	69.	1
Naphthalene	ND		ug/kg	600	73.	1
Benzo(a)anthracene	ND		ug/kg	360	68.	1
Benzo(a)pyrene	ND		ug/kg	480	150	1
Benzo(b)fluoranthene	ND		ug/kg	360	100	1
Benzo(k)fluoranthene	ND		ug/kg	360	96.	1
Chrysene	ND		ug/kg	360	62.	1
Acenaphthylene	ND		ug/kg	480	93.	1
Anthracene	ND		ug/kg	360	120	1
Benzo(ghi)perylene	160	J	ug/kg	480	71.	1
Fluorene	ND		ug/kg	600	58.	1
Phenanthrene	ND		ug/kg	360	73.	1
Dibenzo(a,h)anthracene	ND		ug/kg	360	70.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	480	84.	1
Pyrene	ND		ug/kg	360	60.	1
1-Methylnaphthalene	ND		ug/kg	600	70.	1
2-Methylnaphthalene	ND		ug/kg	720	73.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	111		23-120
2-Fluorobiphenyl	123	Q	30-120
4-Terphenyl-d14	107		18-120

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1912854
Report Date: 04/04/19

SAMPLE RESULTS

Lab ID: L1912854-02
Client ID: SS-1 (3.0-3.5')
Sample Location: HARDWICK, VT

Date Collected: 03/29/19 12:50
Date Received: 04/01/19
Field Prep: Not Specified

Sample Depth:

Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 04/03/19 22:05
Analyst: SZ
Percent Solids: 71%

Extraction Method: EPA 3546
Extraction Date: 04/02/19 06:10

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	530	68.	1
2-Chloronaphthalene	ND		ug/kg	660	65.	1
Fluoranthene	ND		ug/kg	400	76.	1
Naphthalene	ND		ug/kg	660	80.	1
Benzo(a)anthracene	ND		ug/kg	400	74.	1
Benzo(a)pyrene	ND		ug/kg	530	160	1
Benzo(b)fluoranthene	ND		ug/kg	400	110	1
Benzo(k)fluoranthene	ND		ug/kg	400	100	1
Chrysene	ND		ug/kg	400	68.	1
Acenaphthylene	ND		ug/kg	530	100	1
Anthracene	ND		ug/kg	400	130	1
Benzo(ghi)perylene	ND		ug/kg	530	77.	1
Fluorene	ND		ug/kg	660	64.	1
Phenanthrene	ND		ug/kg	400	80.	1
Dibenzo(a,h)anthracene	ND		ug/kg	400	76.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	530	92.	1
Pyrene	ND		ug/kg	400	65.	1
1-Methylnaphthalene	ND		ug/kg	660	76.	1
2-Methylnaphthalene	ND		ug/kg	790	80.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	65		23-120
2-Fluorobiphenyl	90		30-120
4-Terphenyl-d14	73		18-120

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1912854
Report Date: 04/04/19

SAMPLE RESULTS

Lab ID: L1912854-03
Client ID: SS-2 (0'-0.5')
Sample Location: HARDWICK, VT

Date Collected: 03/29/19 13:35
Date Received: 04/01/19
Field Prep: Not Specified

Sample Depth:

Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 04/03/19 01:56
Analyst: EK
Percent Solids: 79%

Extraction Method: EPA 3546
Extraction Date: 04/02/19 06:10

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	480	62.	1
2-Chloronaphthalene	ND		ug/kg	600	60.	1
Fluoranthene	ND		ug/kg	360	69.	1
Naphthalene	ND		ug/kg	600	73.	1
Benzo(a)anthracene	ND		ug/kg	360	68.	1
Benzo(a)pyrene	ND		ug/kg	480	150	1
Benzo(b)fluoranthene	ND		ug/kg	360	100	1
Benzo(k)fluoranthene	ND		ug/kg	360	96.	1
Chrysene	ND		ug/kg	360	63.	1
Acenaphthylene	ND		ug/kg	480	93.	1
Anthracene	ND		ug/kg	360	120	1
Benzo(ghi)perylene	410	J	ug/kg	480	71.	1
Fluorene	ND		ug/kg	600	58.	1
Phenanthrene	ND		ug/kg	360	73.	1
Dibenzo(a,h)anthracene	ND		ug/kg	360	70.	1
Indeno(1,2,3-cd)pyrene	140	J	ug/kg	480	84.	1
Pyrene	63	J	ug/kg	360	60.	1
1-Methylnaphthalene	ND		ug/kg	600	70.	1
2-Methylnaphthalene	ND		ug/kg	720	73.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	98		23-120
2-Fluorobiphenyl	109		30-120
4-Terphenyl-d14	91		18-120

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1912854
Report Date: 04/04/19

SAMPLE RESULTS

Lab ID: L1912854-04
Client ID: SS-2 (36"-43")
Sample Location: HARDWICK, VT

Date Collected: 03/29/19 15:45
Date Received: 04/01/19
Field Prep: Not Specified

Sample Depth:

Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 04/03/19 01:31
Analyst: EK
Percent Solids: 75%

Extraction Method: EPA 3546
Extraction Date: 04/02/19 06:10

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	180	23.	1
2-Chloronaphthalene	ND		ug/kg	220	22.	1
Fluoranthene	ND		ug/kg	130	25.	1
Naphthalene	ND		ug/kg	220	27.	1
Benzo(a)anthracene	ND		ug/kg	130	25.	1
Benzo(a)pyrene	ND		ug/kg	180	54.	1
Benzo(b)fluoranthene	ND		ug/kg	130	37.	1
Benzo(k)fluoranthene	ND		ug/kg	130	35.	1
Chrysene	ND		ug/kg	130	23.	1
Acenaphthylene	ND		ug/kg	180	34.	1
Anthracene	ND		ug/kg	130	43.	1
Benzo(ghi)perylene	ND		ug/kg	180	26.	1
Fluorene	ND		ug/kg	220	21.	1
Phenanthrene	ND		ug/kg	130	27.	1
Dibenzo(a,h)anthracene	ND		ug/kg	130	25.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	180	31.	1
Pyrene	ND		ug/kg	130	22.	1
1-Methylnaphthalene	ND		ug/kg	220	26.	1
2-Methylnaphthalene	ND		ug/kg	260	26.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	45		23-120
2-Fluorobiphenyl	62		30-120
4-Terphenyl-d14	52		18-120

Project Name: HARDWICK YELLOW BARN**Lab Number:** L1912854**Project Number:** 1857501001**Report Date:** 04/04/19**SAMPLE RESULTS**

Lab ID: L1912854-05
 Client ID: DRUM
 Sample Location: HARDWICK, VT

Date Collected: 03/29/19 17:35
 Date Received: 04/01/19
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 1,8270D
 Analytical Date: 04/03/19 02:39
 Analyst: SZ

Extraction Method: EPA 3510C
 Extraction Date: 04/01/19 20:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzidine	ND		ug/l	20	8.1	1
1,2,4-Trichlorobenzene	ND		ug/l	5.0	0.66	1
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.67	1
1,2-Dichlorobenzene	ND		ug/l	2.0	0.73	1
1,3-Dichlorobenzene	ND		ug/l	2.0	0.69	1
1,4-Dichlorobenzene	ND		ug/l	2.0	0.71	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.4	1
2,4-Dinitrotoluene	ND		ug/l	5.0	0.84	1
2,6-Dinitrotoluene	ND		ug/l	5.0	1.1	1
Azobenzene	ND		ug/l	2.0	0.75	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.62	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.73	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.70	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.63	1
Hexachlorocyclopentadiene	ND		ug/l	20	7.8	1
Isophorone	ND		ug/l	5.0	0.60	1
Nitrobenzene	ND		ug/l	2.0	0.75	1
NDPA/DPA	ND		ug/l	2.0	0.64	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.70	1
Bis(2-ethylhexyl)phthalate	2.5	J	ug/l	3.0	0.91	1
Butyl benzyl phthalate	ND		ug/l	5.0	1.3	1
Di-n-butylphthalate	ND		ug/l	5.0	0.69	1
Di-n-octylphthalate	ND		ug/l	5.0	1.1	1
Diethyl phthalate	2.6	J	ug/l	5.0	0.63	1
Dimethyl phthalate	ND		ug/l	5.0	0.65	1
Biphenyl	ND		ug/l	2.0	0.76	1
Aniline	ND		ug/l	2.0	0.65	1
4-Chloroaniline	ND		ug/l	5.0	0.63	1

Project Name: HARDWICK YELLOW BARN**Lab Number:** L1912854**Project Number:** 1857501001**Report Date:** 04/04/19**SAMPLE RESULTS****Lab ID:** L1912854-05**Date Collected:** 03/29/19 17:35**Client ID:** DRUM**Date Received:** 04/01/19**Sample Location:** HARDWICK, VT**Field Prep:** Not Specified**Sample Depth:**

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
2-Nitroaniline	ND		ug/l	5.0	1.1	1
3-Nitroaniline	ND		ug/l	5.0	1.2	1
4-Nitroaniline	ND		ug/l	5.0	1.3	1
Dibenzofuran	ND		ug/l	2.0	0.66	1
n-Nitrosodimethylamine	ND		ug/l	2.0	0.67	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.68	1
p-Chloro-m-cresol	ND		ug/l	2.0	0.62	1
2-Chlorophenol	ND		ug/l	2.0	0.63	1
2,4-Dichlorophenol	ND		ug/l	5.0	0.77	1
2,4-Dimethylphenol	ND		ug/l	5.0	1.6	1
2-Nitrophenol	ND		ug/l	10	1.5	1
4-Nitrophenol	ND		ug/l	10	1.8	1
2,4-Dinitrophenol	ND		ug/l	20	5.5	1
4,6-Dinitro-o-cresol	ND		ug/l	10	2.1	1
Phenol	ND		ug/l	5.0	1.9	1
2-Methylphenol	ND		ug/l	5.0	1.0	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	1.1	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.72	1
Benzoic Acid	ND		ug/l	50	13.	1
Benzyl Alcohol	ND		ug/l	2.0	0.72	1
Carbazole	ND		ug/l	2.0	0.63	1
Pyridine	ND		ug/l	3.5	1.9	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	49		21-120
Phenol-d6	32		10-120
Nitrobenzene-d5	91		23-120
2-Fluorobiphenyl	89		15-120
2,4,6-Tribromophenol	97		10-120
4-Terphenyl-d14	90		41-149

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1912854
Report Date: 04/04/19

SAMPLE RESULTS

Lab ID: L1912854-05
Client ID: DRUM
Sample Location: HARDWICK, VT

Date Collected: 03/29/19 17:35
Date Received: 04/01/19
Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 04/02/19 16:20
Analyst: CB

Extraction Method: EPA 3510C
Extraction Date: 04/01/19 20:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.10	0.04	1
2-Chloronaphthalene	ND		ug/l	0.20	0.04	1
Fluoranthene	ND		ug/l	0.10	0.04	1
Hexachlorobutadiene	ND		ug/l	0.50	0.04	1
Naphthalene	ND		ug/l	0.10	0.04	1
Benzo(a)anthracene	0.02	J	ug/l	0.10	0.02	1
Benzo(a)pyrene	ND		ug/l	0.10	0.04	1
Benzo(b)fluoranthene	ND		ug/l	0.10	0.02	1
Benzo(k)fluoranthene	ND		ug/l	0.10	0.04	1
Chrysene	ND		ug/l	0.10	0.04	1
Acenaphthylene	0.05	J	ug/l	0.10	0.04	1
Anthracene	ND		ug/l	0.10	0.04	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.04	1
Fluorene	ND		ug/l	0.10	0.04	1
Phenanthrene	ND		ug/l	0.10	0.02	1
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.04	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.04	1
Pyrene	ND		ug/l	0.10	0.04	1
1-Methylnaphthalene	ND		ug/l	0.10	0.04	1
2-Methylnaphthalene	ND		ug/l	0.10	0.05	1
Pentachlorophenol	0.29	J	ug/l	0.80	0.22	1
Hexachlorobenzene	ND		ug/l	0.80	0.03	1
Hexachloroethane	ND		ug/l	0.80	0.03	1

Project Name: HARDWICK YELLOW BARN**Lab Number:** L1912854**Project Number:** 1857501001**Report Date:** 04/04/19**SAMPLE RESULTS**

Lab ID: L1912854-05

Date Collected: 03/29/19 17:35

Client ID: DRUM

Date Received: 04/01/19

Sample Location: HARDWICK, VT

Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	44		21-120
Phenol-d6	31		10-120
Nitrobenzene-d5	81		23-120
2-Fluorobiphenyl	92		15-120
2,4,6-Tribromophenol	95		10-120
4-Terphenyl-d14	69		41-149

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1912854
Report Date: 04/04/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 04/02/19 21:44
Analyst: SZ

Extraction Method: EPA 3510C
Extraction Date: 04/01/19 20:44

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 05 Batch: WG1221883-1					
Acenaphthene	ND		ug/l	2.0	0.59
Benzidine	ND		ug/l	20	8.1
1,2,4-Trichlorobenzene	ND		ug/l	5.0	0.66
Hexachlorobenzene	ND		ug/l	2.0	0.58
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.67
2-Chloronaphthalene	ND		ug/l	2.0	0.64
1,2-Dichlorobenzene	ND		ug/l	2.0	0.73
1,3-Dichlorobenzene	ND		ug/l	2.0	0.69
1,4-Dichlorobenzene	ND		ug/l	2.0	0.71
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.4
2,4-Dinitrotoluene	ND		ug/l	5.0	0.84
2,6-Dinitrotoluene	ND		ug/l	5.0	1.1
Azobenzene	ND		ug/l	2.0	0.75
Fluoranthene	ND		ug/l	2.0	0.57
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.62
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.73
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.70
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.63
Hexachlorobutadiene	ND		ug/l	2.0	0.72
Hexachlorocyclopentadiene	ND		ug/l	20	7.8
Hexachloroethane	ND		ug/l	2.0	0.68
Isophorone	ND		ug/l	5.0	0.60
Naphthalene	ND		ug/l	2.0	0.68
Nitrobenzene	ND		ug/l	2.0	0.75
NDPA/DPA	ND		ug/l	2.0	0.64
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.70
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	0.91
Butyl benzyl phthalate	ND		ug/l	5.0	1.3
Di-n-butylphthalate	ND		ug/l	5.0	0.69

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1912854
Report Date: 04/04/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 04/02/19 21:44
Analyst: SZ

Extraction Method: EPA 3510C
Extraction Date: 04/01/19 20:44

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 05 Batch: WG1221883-1					
Di-n-octylphthalate	ND		ug/l	5.0	1.1
Diethyl phthalate	ND		ug/l	5.0	0.63
Dimethyl phthalate	ND		ug/l	5.0	0.65
Benzo(a)anthracene	ND		ug/l	2.0	0.61
Benzo(a)pyrene	ND		ug/l	2.0	0.54
Benzo(b)fluoranthene	ND		ug/l	2.0	0.64
Benzo(k)fluoranthene	ND		ug/l	2.0	0.60
Chrysene	ND		ug/l	2.0	0.54
Acenaphthylene	ND		ug/l	2.0	0.66
Anthracene	ND		ug/l	2.0	0.64
Benzo(ghi)perylene	ND		ug/l	2.0	0.61
Fluorene	ND		ug/l	2.0	0.62
Phenanthrene	ND		ug/l	2.0	0.61
Dibenzo(a,h)anthracene	ND		ug/l	2.0	0.55
Indeno(1,2,3-cd)pyrene	ND		ug/l	2.0	0.71
Pyrene	ND		ug/l	2.0	0.57
Biphenyl	ND		ug/l	2.0	0.76
Aniline	ND		ug/l	2.0	0.65
4-Chloroaniline	ND		ug/l	5.0	0.63
1-Methylnaphthalene	ND		ug/l	2.0	0.67
2-Nitroaniline	ND		ug/l	5.0	1.1
3-Nitroaniline	ND		ug/l	5.0	1.2
4-Nitroaniline	ND		ug/l	5.0	1.3
Dibenzofuran	ND		ug/l	2.0	0.66
2-Methylnaphthalene	ND		ug/l	2.0	0.72
n-Nitrosodimethylamine	ND		ug/l	2.0	0.67
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.68
p-Chloro-m-cresol	ND		ug/l	2.0	0.62
2-Chlorophenol	ND		ug/l	2.0	0.63

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1912854
Report Date: 04/04/19

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 04/02/19 21:44
Analyst: SZ

Extraction Method: EPA 3510C
Extraction Date: 04/01/19 20:44

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 05 Batch: WG1221883-1					
2,4-Dichlorophenol	ND		ug/l	5.0	0.77
2,4-Dimethylphenol	ND		ug/l	5.0	1.6
2-Nitrophenol	ND		ug/l	10	1.5
4-Nitrophenol	ND		ug/l	10	1.8
2,4-Dinitrophenol	ND		ug/l	20	5.5
4,6-Dinitro-o-cresol	ND		ug/l	10	2.1
Pentachlorophenol	ND		ug/l	10	3.4
Phenol	ND		ug/l	5.0	1.9
2-Methylphenol	ND		ug/l	5.0	1.0
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	1.1
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.72
Benzoic Acid	ND		ug/l	50	13.
Benzyl Alcohol	ND		ug/l	2.0	0.72
Carbazole	ND		ug/l	2.0	0.63
Pyridine	ND		ug/l	3.5	1.9

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	55		21-120
Phenol-d6	34		10-120
Nitrobenzene-d5	100		23-120
2-Fluorobiphenyl	94		15-120
2,4,6-Tribromophenol	99		10-120
4-Terphenyl-d14	92		41-149

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1912854
Report Date: 04/04/19

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 04/02/19 15:01
Analyst: CB

Extraction Method: EPA 3510C
Extraction Date: 04/01/19 20:45

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 05 Batch: WG1221884-1					
Acenaphthene	ND		ug/l	0.10	0.04
2-Chloronaphthalene	ND		ug/l	0.20	0.04
Fluoranthene	ND		ug/l	0.10	0.04
Hexachlorobutadiene	ND		ug/l	0.50	0.04
Naphthalene	ND		ug/l	0.10	0.04
Benzo(a)anthracene	ND		ug/l	0.10	0.02
Benzo(a)pyrene	ND		ug/l	0.10	0.04
Benzo(b)fluoranthene	ND		ug/l	0.10	0.02
Benzo(k)fluoranthene	ND		ug/l	0.10	0.04
Chrysene	ND		ug/l	0.10	0.04
Acenaphthylene	ND		ug/l	0.10	0.04
Anthracene	ND		ug/l	0.10	0.04
Benzo(ghi)perylene	ND		ug/l	0.10	0.04
Fluorene	ND		ug/l	0.10	0.04
Phenanthrene	ND		ug/l	0.10	0.02
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.04
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.04
Pyrene	ND		ug/l	0.10	0.04
1-Methylnaphthalene	ND		ug/l	0.10	0.04
2-Methylnaphthalene	ND		ug/l	0.10	0.05
Pentachlorophenol	0.26	J	ug/l	0.80	0.22
Hexachlorobenzene	ND		ug/l	0.80	0.03
Hexachloroethane	ND		ug/l	0.80	0.03

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1912854
Report Date: 04/04/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
 Analytical Date: 04/02/19 15:01
 Analyst: CB

Extraction Method: EPA 3510C
 Extraction Date: 04/01/19 20:45

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 05 Batch: WG1221884-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	49		21-120
Phenol-d6	34		10-120
Nitrobenzene-d5	85		23-120
2-Fluorobiphenyl	95		15-120
2,4,6-Tribromophenol	97		10-120
4-Terphenyl-d14	71		41-149

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1912854
Report Date: 04/04/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 04/02/19 14:44
Analyst: RC

Extraction Method: EPA 3546
Extraction Date: 04/02/19 03:30

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-04 Batch: WG1221966-1					
Acenaphthene	ND		ug/kg	130	17.
2-Chloronaphthalene	ND		ug/kg	160	16.
Fluoranthene	ND		ug/kg	99	19.
Naphthalene	ND		ug/kg	160	20.
Benzo(a)anthracene	ND		ug/kg	99	18.
Benzo(a)pyrene	ND		ug/kg	130	40.
Benzo(b)fluoranthene	ND		ug/kg	99	28.
Benzo(k)fluoranthene	ND		ug/kg	99	26.
Chrysene	ND		ug/kg	99	17.
Acenaphthylene	ND		ug/kg	130	25.
Anthracene	ND		ug/kg	99	32.
Benzo(ghi)perylene	ND		ug/kg	130	19.
Fluorene	ND		ug/kg	160	16.
Phenanthrene	ND		ug/kg	99	20.
Dibenzo(a,h)anthracene	ND		ug/kg	99	19.
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	23.
Pyrene	ND		ug/kg	99	16.
1-Methylnaphthalene	ND		ug/kg	160	19.
2-Methylnaphthalene	ND		ug/kg	200	20.

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	83		23-120
2-Fluorobiphenyl	98		30-120
4-Terphenyl-d14	99		18-120

Lab Control Sample Analysis **Batch Quality Control**

Project Name: HARDWICK YELLOW BARN

Project Number: 1857501001

Lab Number: L1912854

Report Date: 04/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 05 Batch: WG1221883-2 WG1221883-3								
Acenaphthene	77		76		37-111	1		30
Benzidine	9	Q	1	Q	10-75	172	Q	30
1,2,4-Trichlorobenzene	70		73		39-98	4		30
Hexachlorobenzene	85		87		40-140	2		30
Bis(2-chloroethyl)ether	70		73		40-140	4		30
2-Chloronaphthalene	76		78		40-140	3		30
1,2-Dichlorobenzene	63		64		40-140	2		30
1,3-Dichlorobenzene	60		63		40-140	5		30
1,4-Dichlorobenzene	62		64		36-97	3		30
3,3'-Dichlorobenzidine	59		66		40-140	11		30
2,4-Dinitrotoluene	89		90		48-143	1		30
2,6-Dinitrotoluene	92		95		40-140	3		30
Azobenzene	86		85		40-140	1		30
Fluoranthene	77		76		40-140	1		30
4-Chlorophenyl phenyl ether	87		88		40-140	1		30
4-Bromophenyl phenyl ether	87		88		40-140	1		30
Bis(2-chloroisopropyl)ether	83		87		40-140	5		30
Bis(2-chloroethoxy)methane	76		83		40-140	9		30
Hexachlorobutadiene	70		74		40-140	6		30
Hexachlorocyclopentadiene	50		52		40-140	4		30
Hexachloroethane	67		69		40-140	3		30
Isophorone	79		84		40-140	6		30
Naphthalene	68		69		40-140	1		30

Lab Control Sample Analysis **Batch Quality Control**

Project Name: HARDWICK YELLOW BARN

Project Number: 1857501001

Lab Number: L1912854

Report Date: 04/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 05 Batch: WG1221883-2 WG1221883-3								
Nitrobenzene	83		87		40-140	5		30
NDPA/DPA	85		84		40-140	1		30
n-Nitrosodi-n-propylamine	80		85		29-132	6		30
Bis(2-ethylhexyl)phthalate	92		93		40-140	1		30
Butyl benzyl phthalate	81		81		40-140	0		30
Di-n-butylphthalate	79		79		40-140	0		30
Di-n-octylphthalate	93		92		40-140	1		30
Diethyl phthalate	87		87		40-140	0		30
Dimethyl phthalate	89		90		40-140	1		30
Benzo(a)anthracene	84		82		40-140	2		30
Benzo(a)pyrene	94		89		40-140	5		30
Benzo(b)fluoranthene	92		86		40-140	7		30
Benzo(k)fluoranthene	90		91		40-140	1		30
Chrysene	85		86		40-140	1		30
Acenaphthylene	79		81		45-123	3		30
Anthracene	74		72		40-140	3		30
Benzo(ghi)perylene	87		82		40-140	6		30
Fluorene	81		82		40-140	1		30
Phenanthrene	70		69		40-140	1		30
Dibenzo(a,h)anthracene	84		81		40-140	4		30
Indeno(1,2,3-cd)pyrene	84		80		40-140	5		30
Pyrene	76		76		26-127	0		30
Biphenyl	78		80		40-140	3		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HARDWICK YELLOW BARN

Project Number: 1857501001

Lab Number: L1912854

Report Date: 04/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 05 Batch: WG1221883-2 WG1221883-3								
Aniline	35	Q	35	Q	40-140	0		30
4-Chloroaniline	39	Q	58		40-140	39	Q	30
1-Methylnaphthalene	70		72		41-103	3		30
2-Nitroaniline	97		98		52-143	1		30
3-Nitroaniline	59		71		25-145	18		30
4-Nitroaniline	88		84		51-143	5		30
Dibenzofuran	80		82		40-140	2		30
2-Methylnaphthalene	70		70		40-140	0		30
n-Nitrosodimethylamine	47		50		22-74	6		30
2,4,6-Trichlorophenol	85		87		30-130	2		30
p-Chloro-m-cresol	85		86		23-97	1		30
2-Chlorophenol	71		74		27-123	4		30
2,4-Dichlorophenol	80		86		30-130	7		30
2,4-Dimethylphenol	77		71		30-130	8		30
2-Nitrophenol	97		105		30-130	8		30
4-Nitrophenol	80		73		10-80	9		30
2,4-Dinitrophenol	103		107		20-130	4		30
4,6-Dinitro-o-cresol	114		115		20-164	1		30
Pentachlorophenol	79		83		9-103	5		30
Phenol	34		36		12-110	6		30
2-Methylphenol	62		65		30-130	5		30
3-Methylphenol/4-Methylphenol	57		61		30-130	7		30
2,4,5-Trichlorophenol	97		95		30-130	2		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HARDWICK YELLOW BARN

Project Number: 1857501001

Lab Number: L1912854

Report Date: 04/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 05 Batch: WG1221883-2 WG1221883-3								
Benzoic Acid	35		39		10-164	11		30
Benzyl Alcohol	68		73		26-116	7		30
Carbazole	75		73		55-144	3		30
Pyridine	33		22		10-66	40	Q	30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	50		51		21-120
Phenol-d6	33		35		10-120
Nitrobenzene-d5	86		89		23-120
2-Fluorobiphenyl	81		83		15-120
2,4,6-Tribromophenol	88		89		10-120
4-Terphenyl-d14	80		78		41-149

Lab Control Sample Analysis **Batch Quality Control**

Project Name: HARDWICK YELLOW BARN

Lab Number: L1912854

Project Number: 1857501001

Report Date: 04/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 05 Batch: WG1221884-2 WG1221884-3								
Acenaphthene	88		86		40-140	2		40
2-Chloronaphthalene	104		97		40-140	7		40
Fluoranthene	108		106		40-140	2		40
Hexachlorobutadiene	115		108		40-140	6		40
Naphthalene	89		84		40-140	6		40
Benzo(a)anthracene	118		113		40-140	4		40
Benzo(a)pyrene	128		123		40-140	4		40
Benzo(b)fluoranthene	130		118		40-140	10		40
Benzo(k)fluoranthene	111		109		40-140	2		40
Chrysene	115		111		40-140	4		40
Acenaphthylene	102		96		40-140	6		40
Anthracene	108		104		40-140	4		40
Benzo(ghi)perylene	123		116		40-140	6		40
Fluorene	102		98		40-140	4		40
Phenanthrene	101		99		40-140	2		40
Dibenzo(a,h)anthracene	116		109		40-140	6		40
Indeno(1,2,3-cd)pyrene	123		116		40-140	6		40
Pyrene	108		107		40-140	1		40
1-Methylnaphthalene	93		88		40-140	6		40
2-Methylnaphthalene	93		88		40-140	6		40
Pentachlorophenol	125		121		40-140	3		40
Hexachlorobenzene	112		109		40-140	3		40
Hexachloroethane	78		74		40-140	5		40

Lab Control Sample Analysis**Batch Quality Control****Project Name:** HARDWICK YELLOW BARN**Lab Number:** L1912854**Project Number:** 1857501001**Report Date:** 04/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 05 Batch: WG1221884-2 WG1221884-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	51		48		21-120
Phenol-d6	35		33		10-120
Nitrobenzene-d5	87		82		23-120
2-Fluorobiphenyl	93		88		15-120
2,4,6-Tribromophenol	104		99		10-120
4-Terphenyl-d14	73		72		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: HARDWICK YELLOW BARN

Project Number: 1857501001

Lab Number: L1912854

Report Date: 04/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04 Batch: WG1221966-2 WG1221966-3								
Acenaphthene	76		77		31-137	1		50
2-Chloronaphthalene	55		71		40-140	25		50
Fluoranthene	83		78		40-140	6		50
Naphthalene	72		72		40-140	0		50
Benzo(a)anthracene	81		81		40-140	0		50
Benzo(a)pyrene	86		86		40-140	0		50
Benzo(b)fluoranthene	83		88		40-140	6		50
Benzo(k)fluoranthene	84		78		40-140	7		50
Chrysene	76		75		40-140	1		50
Acenaphthylene	59		81		40-140	31		50
Anthracene	82		80		40-140	2		50
Benzo(ghi)perylene	76		59		40-140	25		50
Fluorene	79		77		40-140	3		50
Phenanthrene	78		76		40-140	3		50
Dibenzo(a,h)anthracene	79		68		40-140	15		50
Indeno(1,2,3-cd)pyrene	84		74		40-140	13		50
Pyrene	81		75		35-142	8		50
1-Methylnaphthalene	65		74		26-130	13		50
2-Methylnaphthalene	66		74		40-140	11		50

Lab Control Sample Analysis **Batch Quality Control**

Project Name: HARDWICK YELLOW BARN

Lab Number: L1912854

Project Number: 1857501001

Report Date: 04/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits

Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04 Batch: WG1221966-2 WG1221966-3

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	79		84		23-120
2-Fluorobiphenyl	53		75		30-120
4-Terphenyl-d14	82		79		18-120

PETROLEUM HYDROCARBONS

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1912854
Report Date: 04/04/19

SAMPLE RESULTS

Lab ID: L1912854-05
Client ID: DRUM
Sample Location: HARDWICK, VT

Date Collected: 03/29/19 17:35
Date Received: 04/01/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8015D(M)
Analytical Date: 04/02/19 13:17
Analyst: MEO

Extraction Method: EPA 3510C
Extraction Date: 04/02/19 00:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH	114	J	ug/l	200	42.0	1
Surrogate	% Recovery		Qualifier	Acceptance Criteria		
o-Terphenyl	91			40-140		

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1912854
Report Date: 04/04/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 04/02/19 11:05
Analyst: MEO

Extraction Method: EPA 3510C
Extraction Date: 04/02/19 00:22

Parameter	Result	Qualifier	Units	RL	MDL
Petroleum Hydrocarbon Quantitation - Westborough Lab for sample(s): 05 Batch: WG1221927-1					
TPH	ND		ug/l	200	42.0

Surrogate	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	84		40-140

Lab Control Sample Analysis**Batch Quality Control****Project Name:** HARDWICK YELLOW BARN**Lab Number:** L1912854**Project Number:** 1857501001**Report Date:** 04/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Petroleum Hydrocarbon Quantitation - Westborough Lab Associated sample(s): 05 Batch: WG1221927-2								
TPH	94		-		40-140	-		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
o-Terphenyl	79				40-140

PCBS

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1912854
Report Date: 04/04/19

SAMPLE RESULTS

Lab ID: L1912854-05
Client ID: DRUM
Sample Location: HARDWICK, VT

Date Collected: 03/29/19 17:35
Date Received: 04/01/19
Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8082A
Analytical Date: 04/03/19 21:57
Analyst: HT

Extraction Method: EPA 3510C
Extraction Date: 04/02/19 00:01
Cleanup Method: EPA 3665A
Cleanup Date: 04/02/19
Cleanup Method: EPA 3660B
Cleanup Date: 04/02/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/l	0.250	0.016	1	A
Aroclor 1221	ND		ug/l	0.250	0.022	1	A
Aroclor 1232	ND		ug/l	0.250	0.046	1	A
Aroclor 1242	ND		ug/l	0.250	0.036	1	A
Aroclor 1248	ND		ug/l	0.250	0.046	1	A
Aroclor 1254	ND		ug/l	0.250	0.017	1	A
Aroclor 1260	ND		ug/l	0.250	0.034	1	A
Aroclor 1262	ND		ug/l	0.250	0.033	1	A
Aroclor 1268	ND		ug/l	0.250	0.032	1	A
PCBs, Total	ND		ug/l	0.250	0.016	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	89		30-150	B
Decachlorobiphenyl	53		30-150	B
2,4,5,6-Tetrachloro-m-xylene	90		30-150	A
Decachlorobiphenyl	73		30-150	A

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1912854
Report Date: 04/04/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8082A
Analytical Date: 04/03/19 22:09
Analyst: HT

Extraction Method: EPA 3510C
Extraction Date: 04/02/19 00:01
Cleanup Method: EPA 3665A
Cleanup Date: 04/02/19
Cleanup Method: EPA 3660B
Cleanup Date: 04/02/19

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 05 Batch: WG1221920-1						
Aroclor 1016	ND		ug/l	0.250	0.016	A
Aroclor 1221	ND		ug/l	0.250	0.022	A
Aroclor 1232	ND		ug/l	0.250	0.046	A
Aroclor 1242	ND		ug/l	0.250	0.036	A
Aroclor 1248	ND		ug/l	0.250	0.046	A
Aroclor 1254	ND		ug/l	0.250	0.017	A
Aroclor 1260	ND		ug/l	0.250	0.034	A
Aroclor 1262	ND		ug/l	0.250	0.033	A
Aroclor 1268	ND		ug/l	0.250	0.032	A
PCBs, Total	ND		ug/l	0.250	0.016	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	79		30-150	B
Decachlorobiphenyl	61		30-150	B
2,4,5,6-Tetrachloro-m-xylene	82		30-150	A
Decachlorobiphenyl	88		30-150	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: HARDWICK YELLOW BARN

Project Number: 1857501001

Lab Number: L1912854

Report Date: 04/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 05 Batch: WG1221920-2 WG1221920-3									
Aroclor 1016	85		99		40-140	14		50	A
Aroclor 1260	85		89		40-140	4		50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	70		78		30-150	B
Decachlorobiphenyl	61		64		30-150	B
2,4,5,6-Tetrachloro-m-xylene	74		84		30-150	A
Decachlorobiphenyl	88		92		30-150	A

PESTICIDES

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1912854
Report Date: 04/04/19

SAMPLE RESULTS

Lab ID: L1912854-05
Client ID: DRUM
Sample Location: HARDWICK, VT

Date Collected: 03/29/19 17:35
Date Received: 04/01/19
Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8081B
Analytical Date: 04/02/19 12:38
Analyst: BM

Extraction Method: EPA 3510C
Extraction Date: 04/02/19 00:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/l	0.014	0.003	1	A
Lindane	ND		ug/l	0.014	0.003	1	A
Alpha-BHC	ND		ug/l	0.014	0.003	1	A
Beta-BHC	ND		ug/l	0.014	0.004	1	A
Heptachlor	ND		ug/l	0.014	0.002	1	A
Aldrin	ND		ug/l	0.014	0.002	1	A
Heptachlor epoxide	ND		ug/l	0.014	0.003	1	A
Endrin	ND		ug/l	0.029	0.003	1	A
Endrin aldehyde	ND		ug/l	0.029	0.006	1	A
Endrin ketone	ND		ug/l	0.029	0.003	1	A
Dieldrin	ND		ug/l	0.029	0.003	1	A
4,4'-DDE	ND		ug/l	0.029	0.003	1	A
4,4'-DDD	ND		ug/l	0.029	0.003	1	A
4,4'-DDT	ND	IP	ug/l	0.029	0.003	1	B
Endosulfan I	ND		ug/l	0.014	0.002	1	A
Endosulfan II	ND		ug/l	0.029	0.004	1	A
Endosulfan sulfate	ND		ug/l	0.029	0.003	1	A
Methoxychlor	ND		ug/l	0.143	0.005	1	A
Toxaphene	ND		ug/l	0.143	0.045	1	A
Chlordane	ND		ug/l	0.143	0.033	1	A
cis-Chlordane	ND		ug/l	0.014	0.005	1	A
trans-Chlordane	ND		ug/l	0.014	0.004	1	A

Project Name: HARDWICK YELLOW BARN**Lab Number:** L1912854**Project Number:** 1857501001**Report Date:** 04/04/19**SAMPLE RESULTS**

Lab ID: L1912854-05

Date Collected: 03/29/19 17:35

Client ID: DRUM

Date Received: 04/01/19

Sample Location: HARDWICK, VT

Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	68		30-150	A
Decachlorobiphenyl	95		30-150	A
2,4,5,6-Tetrachloro-m-xylene	61		30-150	B
Decachlorobiphenyl	75		30-150	B

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1912854
Report Date: 04/04/19

SAMPLE RESULTS

Lab ID: L1912854-05
Client ID: DRUM
Sample Location: HARDWICK, VT

Date Collected: 03/29/19 17:35
Date Received: 04/01/19
Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8151A
Analytical Date: 04/04/19 09:36
Analyst: DGM

Extraction Method: EPA 8151A
Extraction Date: 04/02/19 07:41

Methylation Date: 04/03/19 00:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Chlorinated Herbicides by GC - Westborough Lab							
MCPPP	ND		ug/l	500	58.5	1	A
MCPA	ND		ug/l	500	63.2	1	A
Dalapon	ND		ug/l	20.0	0.810	1	A
Dicamba	ND		ug/l	1.00	0.243	1	A
Dichloroprop	ND		ug/l	10.0	0.564	1	A
2,4-D	ND		ug/l	10.0	0.498	1	A
2,4-DB	ND		ug/l	10.0	0.729	1	A
2,4,5-T	ND		ug/l	2.00	0.531	1	A
2,4,5-TP (Silvex)	ND		ug/l	2.00	0.539	1	A
Dinoseb	ND		ug/l	5.00	0.573	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
DCAA	112		30-150	A
DCAA	96		30-150	B

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1912854
Report Date: 04/04/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 04/02/19 12:03
Analyst: BM

Extraction Method: EPA 3510C
Extraction Date: 04/02/19 00:05

Parameter	Result	Qualifier	Units	RL	MDL	Column
Pesticides by GC - Westborough Lab for sample(s): 05 Batch: WG1221922-1						
Delta-BHC	ND		ug/l	0.014	0.003	A
Lindane	ND		ug/l	0.014	0.003	A
Alpha-BHC	ND		ug/l	0.014	0.003	A
Beta-BHC	ND		ug/l	0.014	0.004	A
Heptachlor	ND		ug/l	0.014	0.002	A
Aldrin	ND		ug/l	0.014	0.002	A
Heptachlor epoxide	ND		ug/l	0.014	0.003	A
Endrin	ND		ug/l	0.029	0.003	A
Endrin aldehyde	ND		ug/l	0.029	0.006	A
Endrin ketone	ND		ug/l	0.029	0.003	A
Dieldrin	ND		ug/l	0.029	0.003	A
4,4'-DDE	ND		ug/l	0.029	0.003	A
4,4'-DDD	ND		ug/l	0.029	0.003	A
4,4'-DDT	ND		ug/l	0.029	0.003	A
Endosulfan I	ND		ug/l	0.014	0.002	A
Endosulfan II	ND		ug/l	0.029	0.004	A
Endosulfan sulfate	ND		ug/l	0.029	0.003	A
Methoxychlor	ND		ug/l	0.143	0.005	A
Toxaphene	ND		ug/l	0.143	0.045	A
Chlordane	ND		ug/l	0.143	0.033	A
cis-Chlordane	ND		ug/l	0.014	0.005	A
trans-Chlordane	ND		ug/l	0.014	0.004	A

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1912854
Report Date: 04/04/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
 Analytical Date: 04/02/19 12:03
 Analyst: BM

Extraction Method: EPA 3510C
 Extraction Date: 04/02/19 00:05

Parameter	Result	Qualifier	Units	RL	MDL	Column
Pesticides by GC - Westborough Lab for sample(s): 05 Batch: WG1221922-1						

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	67		30-150	A
Decachlorobiphenyl	97		30-150	A
2,4,5,6-Tetrachloro-m-xylene	65		30-150	B
Decachlorobiphenyl	77		30-150	B

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1912854
Report Date: 04/04/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8151A
Analytical Date: 04/04/19 09:54
Analyst: DGM

Extraction Method: EPA 8151A
Extraction Date: 04/02/19 07:41

Methylation Date: 04/03/19 00:40

Parameter	Result	Qualifier	Units	RL	MDL	Column
Chlorinated Herbicides by GC - Westborough Lab for sample(s): 05 Batch: WG1222024-1						
MCPP	ND		ug/l	500	58.5	A
MCPA	ND		ug/l	500	63.2	A
Dalapon	ND		ug/l	20.0	0.810	A
Dicamba	ND		ug/l	1.00	0.243	A
Dichloroprop	ND		ug/l	10.0	0.564	A
2,4-D	ND		ug/l	10.0	0.498	A
2,4-DB	ND		ug/l	10.0	0.729	A
2,4,5-T	ND		ug/l	2.00	0.531	A
2,4,5-TP (Silvex)	ND		ug/l	2.00	0.539	A
Dinoseb	ND		ug/l	5.00	0.573	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
DCAA	83		30-150	A
DCAA	69		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: HARDWICK YELLOW BARN

Project Number: 1857501001

Lab Number: L1912854

Report Date: 04/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Pesticides by GC - Westborough Lab Associated sample(s): 05 Batch: WG1221922-2 WG1221922-3									
Delta-BHC	89		58		30-150	42	Q	20	A
Lindane	82		54		30-150	41	Q	20	A
Alpha-BHC	89		58		30-150	43	Q	20	A
Beta-BHC	81		52		30-150	44	Q	20	A
Heptachlor	76		52		30-150	38	Q	20	A
Aldrin	75		52		30-150	37	Q	20	A
Heptachlor epoxide	77		52		30-150	39	Q	20	A
Endrin	92		61		30-150	40	Q	20	A
Endrin aldehyde	85		58		30-150	37	Q	20	A
Endrin ketone	102		70		30-150	37	Q	20	A
Dieldrin	93		62		30-150	40	Q	20	A
4,4'-DDE	88		59		30-150	40	Q	20	A
4,4'-DDD	94		62		30-150	41	Q	20	A
4,4'-DDT	94		63		30-150	40	Q	20	A
Endosulfan I	81		55		30-150	39	Q	20	A
Endosulfan II	87		59		30-150	39	Q	20	A
Endosulfan sulfate	97		66		30-150	39	Q	20	A
Methoxychlor	87		59		30-150	37	Q	20	A
cis-Chlordane	73		50		30-150	38	Q	20	A
trans-Chlordane	80		54		30-150	39	Q	20	A

Lab Control Sample Analysis Batch Quality Control

Project Name: HARDWICK YELLOW BARN

Lab Number: L1912854

Project Number: 1857501001

Report Date: 04/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits

Pesticides by GC - Westborough Lab Associated sample(s): 05 Batch: WG1221922-2 WG1221922-3

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	67		45		30-150	A
Decachlorobiphenyl	100		69		30-150	A
2,4,5,6-Tetrachloro-m-xylene	64		44		30-150	B
Decachlorobiphenyl	81		56		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: HARDWICK YELLOW BARN

Project Number: 1857501001

Lab Number: L1912854

Report Date: 04/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Chlorinated Herbicides by GC - Westborough Lab Associated sample(s): 05 Batch: WG1222024-2 WG1222024-3									
MCPP	96		104		30-150	8		25	A
MCPA	68		79		30-150	15		25	A
Dalapon	75		86		30-150	14		25	A
Dicamba	77		88		30-150	13		25	A
Dichloroprop	78		90		30-150	14		25	A
2,4-D	83		97		30-150	16		25	A
2,4-DB	73		87		30-150	18		25	A
2,4,5-T	82		97		30-150	17		25	A
2,4,5-TP (Silvex)	83		96		30-150	15		25	A
Dinoseb	76		94		30-150	21		25	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
DCAA	89		95		30-150	A
DCAA	80		89		30-150	B

METALS

Project Name: HARDWICK YELLOW BARN**Lab Number:** L1912854**Project Number:** 1857501001**Report Date:** 04/04/19**SAMPLE RESULTS**

Lab ID: L1912854-01

Date Collected: 03/29/19 10:00

Client ID: SS-1 (0'-0.5')

Date Received: 04/01/19

Sample Location: HARDWICK, VT

Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	6.61		mg/kg	0.484	0.101	1	04/03/19 07:20	04/03/19 14:48	EPA 3050B	1,6010D	LC
Barium, Total	28.6		mg/kg	0.484	0.084	1	04/03/19 07:20	04/03/19 14:48	EPA 3050B	1,6010D	LC
Cadmium, Total	1.10		mg/kg	0.484	0.047	1	04/03/19 07:20	04/03/19 14:48	EPA 3050B	1,6010D	LC
Chromium, Total	12.2		mg/kg	0.484	0.047	1	04/03/19 07:20	04/03/19 14:48	EPA 3050B	1,6010D	LC
Lead, Total	95.8		mg/kg	2.42	0.130	1	04/03/19 07:20	04/03/19 14:48	EPA 3050B	1,6010D	LC
Mercury, Total	ND		mg/kg	0.078	0.017	1	04/03/19 05:50	04/03/19 10:29	EPA 7471B	1,7471B	GD
Selenium, Total	ND		mg/kg	0.968	0.125	1	04/03/19 07:20	04/03/19 14:48	EPA 3050B	1,6010D	LC
Silver, Total	ND		mg/kg	0.484	0.137	1	04/03/19 07:20	04/03/19 14:48	EPA 3050B	1,6010D	LC



Project Name: HARDWICK YELLOW BARN**Lab Number:** L1912854**Project Number:** 1857501001**Report Date:** 04/04/19**SAMPLE RESULTS**

Lab ID: L1912854-02

Date Collected: 03/29/19 12:50

Client ID: SS-1 (3.0-3.5')

Date Received: 04/01/19

Sample Location: HARDWICK, VT

Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 71%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	8.28		mg/kg	0.554	0.115	1	04/03/19 07:20	04/03/19 14:52	EPA 3050B	1,6010D	LC
Barium, Total	47.8		mg/kg	0.554	0.096	1	04/03/19 07:20	04/03/19 14:52	EPA 3050B	1,6010D	LC
Cadmium, Total	1.45		mg/kg	0.554	0.054	1	04/03/19 07:20	04/03/19 14:52	EPA 3050B	1,6010D	LC
Chromium, Total	25.2		mg/kg	0.554	0.053	1	04/03/19 07:20	04/03/19 14:52	EPA 3050B	1,6010D	LC
Lead, Total	159		mg/kg	2.77	0.148	1	04/03/19 07:20	04/03/19 14:52	EPA 3050B	1,6010D	LC
Mercury, Total	0.020	J	mg/kg	0.089	0.019	1	04/02/19 08:20	04/02/19 12:24	EPA 7471B	1,7471B	GD
Selenium, Total	ND		mg/kg	1.11	0.143	1	04/03/19 07:20	04/03/19 14:52	EPA 3050B	1,6010D	LC
Silver, Total	ND		mg/kg	0.554	0.157	1	04/03/19 07:20	04/03/19 14:52	EPA 3050B	1,6010D	LC



Project Name: HARDWICK YELLOW BARN**Lab Number:** L1912854**Project Number:** 1857501001**Report Date:** 04/04/19**SAMPLE RESULTS**

Lab ID: L1912854-03

Date Collected: 03/29/19 13:35

Client ID: SS-2 (0'-0.5')

Date Received: 04/01/19

Sample Location: HARDWICK, VT

Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 79%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	5.58		mg/kg	0.498	0.104	1	04/03/19 07:20	04/03/19 14:56	EPA 3050B	1,6010D	LC
Barium, Total	26.8		mg/kg	0.498	0.087	1	04/03/19 07:20	04/03/19 14:56	EPA 3050B	1,6010D	LC
Cadmium, Total	4.16		mg/kg	0.498	0.049	1	04/03/19 07:20	04/03/19 14:56	EPA 3050B	1,6010D	LC
Chromium, Total	11.4		mg/kg	0.498	0.048	1	04/03/19 07:20	04/03/19 14:56	EPA 3050B	1,6010D	LC
Lead, Total	127		mg/kg	2.49	0.133	1	04/03/19 07:20	04/03/19 14:56	EPA 3050B	1,6010D	LC
Mercury, Total	ND		mg/kg	0.081	0.017	1	04/02/19 08:20	04/02/19 12:26	EPA 7471B	1,7471B	GD
Selenium, Total	ND		mg/kg	0.995	0.128	1	04/03/19 07:20	04/03/19 14:56	EPA 3050B	1,6010D	LC
Silver, Total	0.916		mg/kg	0.498	0.141	1	04/03/19 07:20	04/03/19 14:56	EPA 3050B	1,6010D	LC



Project Name: HARDWICK YELLOW BARN**Lab Number:** L1912854**Project Number:** 1857501001**Report Date:** 04/04/19**SAMPLE RESULTS**

Lab ID: L1912854-04

Date Collected: 03/29/19 15:45

Client ID: SS-2 (36"-43")

Date Received: 04/01/19

Sample Location: HARDWICK, VT

Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 75%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	5.77		mg/kg	0.500	0.104	1	04/03/19 07:20	04/03/19 15:01	EPA 3050B	1,6010D	LC
Barium, Total	38.7		mg/kg	0.500	0.087	1	04/03/19 07:20	04/03/19 15:01	EPA 3050B	1,6010D	LC
Cadmium, Total	0.945		mg/kg	0.500	0.049	1	04/03/19 07:20	04/03/19 15:01	EPA 3050B	1,6010D	LC
Chromium, Total	29.2		mg/kg	0.500	0.048	1	04/03/19 07:20	04/03/19 15:01	EPA 3050B	1,6010D	LC
Lead, Total	6.58		mg/kg	2.50	0.134	1	04/03/19 07:20	04/03/19 15:01	EPA 3050B	1,6010D	LC
Mercury, Total	ND		mg/kg	0.084	0.018	1	04/02/19 08:20	04/02/19 12:28	EPA 7471B	1,7471B	GD
Selenium, Total	ND		mg/kg	1.00	0.129	1	04/03/19 07:20	04/03/19 15:01	EPA 3050B	1,6010D	LC
Silver, Total	0.175	J	mg/kg	0.500	0.141	1	04/03/19 07:20	04/03/19 15:01	EPA 3050B	1,6010D	LC



Project Name: HARDWICK YELLOW BARN**Lab Number:** L1912854**Project Number:** 1857501001**Report Date:** 04/04/19**SAMPLE RESULTS**

Lab ID: L1912854-05

Date Collected: 03/29/19 17:35

Client ID: DRUM

Date Received: 04/01/19

Sample Location: HARDWICK, VT

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	0.008		mg/l	0.005	0.002	1	04/02/19 13:38	04/03/19 21:12	EPA 3005A	1,6010D	AB
Barium, Total	0.019		mg/l	0.010	0.002	1	04/02/19 13:38	04/03/19 21:12	EPA 3005A	1,6010D	AB
Cadmium, Total	ND		mg/l	0.005	0.001	1	04/02/19 13:38	04/03/19 21:12	EPA 3005A	1,6010D	AB
Chromium, Total	0.008	J	mg/l	0.010	0.002	1	04/02/19 13:38	04/03/19 21:12	EPA 3005A	1,6010D	AB
Lead, Total	ND		mg/l	0.010	0.003	1	04/02/19 13:38	04/03/19 21:12	EPA 3005A	1,6010D	AB
Mercury, Total	ND		mg/l	0.00020	0.00009	1	04/02/19 09:33	04/02/19 19:15	EPA 7470A	1,7470A	EA
Selenium, Total	ND		mg/l	0.010	0.004	1	04/02/19 13:38	04/03/19 21:12	EPA 3005A	1,6010D	AB
Silver, Total	ND		mg/l	0.007	0.003	1	04/02/19 13:38	04/03/19 21:12	EPA 3005A	1,6010D	AB



Project Name: HARDWICK YELLOW BARN

Lab Number: L1912854

Project Number: 1857501001

Report Date: 04/04/19

Method Blank Analysis Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 02-04 Batch: WG1221997-1										
Mercury, Total	ND		mg/kg	0.083	0.018	1	04/02/19 08:20	04/02/19 12:08	1,7471B	GD

Prep Information

Digestion Method: EPA 7471B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 05 Batch: WG1222056-1										
Mercury, Total	ND		mg/l	0.00020	0.00009	1	04/02/19 09:33	04/02/19 19:06	1,7470A	EA

Prep Information

Digestion Method: EPA 7470A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 05 Batch: WG1222170-1										
Arsenic, Total	ND		mg/l	0.005	0.002	1	04/02/19 13:38	04/03/19 20:35	1,6010D	AB
Barium, Total	ND		mg/l	0.010	0.002	1	04/02/19 13:38	04/03/19 20:35	1,6010D	AB
Cadmium, Total	ND		mg/l	0.005	0.001	1	04/02/19 13:38	04/03/19 20:35	1,6010D	AB
Chromium, Total	ND		mg/l	0.010	0.002	1	04/02/19 13:38	04/03/19 20:35	1,6010D	AB
Lead, Total	ND		mg/l	0.010	0.003	1	04/02/19 13:38	04/03/19 20:35	1,6010D	AB
Selenium, Total	ND		mg/l	0.010	0.004	1	04/02/19 13:38	04/03/19 20:35	1,6010D	AB
Silver, Total	ND		mg/l	0.007	0.003	1	04/02/19 13:38	04/03/19 20:35	1,6010D	AB

Prep Information

Digestion Method: EPA 3005A

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1912854
Report Date: 04/04/19

Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1222379-1									
Mercury, Total	ND	mg/kg	0.083	0.018	1	04/03/19 05:50	04/03/19 10:25	1,7471B	GD

Prep Information

Digestion Method: EPA 7471B

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-04 Batch: WG1222424-1									
Arsenic, Total	ND	mg/kg	0.400	0.083	1	04/03/19 07:20	04/03/19 10:05	1,6010D	LC
Barium, Total	ND	mg/kg	0.400	0.070	1	04/03/19 07:20	04/03/19 10:05	1,6010D	LC
Cadmium, Total	ND	mg/kg	0.400	0.039	1	04/03/19 07:20	04/03/19 10:05	1,6010D	LC
Chromium, Total	ND	mg/kg	0.400	0.038	1	04/03/19 07:20	04/03/19 10:05	1,6010D	LC
Lead, Total	ND	mg/kg	2.00	0.107	1	04/03/19 07:20	04/03/19 10:05	1,6010D	LC
Selenium, Total	ND	mg/kg	0.800	0.103	1	04/03/19 07:20	04/03/19 10:05	1,6010D	LC
Silver, Total	ND	mg/kg	0.400	0.113	1	04/03/19 07:20	04/03/19 10:05	1,6010D	LC

Prep Information

Digestion Method: EPA 3050B

Lab Control Sample Analysis

Batch Quality Control

Project Name: HARDWICK YELLOW BARN

Project Number: 1857501001

Lab Number: L1912854

Report Date: 04/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02-04 Batch: WG1221997-2 SRM Lot Number: D101-540								
Mercury, Total	93		-		65-135	-		
Total Metals - Mansfield Lab Associated sample(s): 05 Batch: WG1222056-2								
Mercury, Total	102		-		80-120	-		
Total Metals - Mansfield Lab Associated sample(s): 05 Batch: WG1222170-2								
Arsenic, Total	103		-		80-120	-		
Barium, Total	102		-		80-120	-		
Cadmium, Total	107		-		80-120	-		
Chromium, Total	100		-		80-120	-		
Lead, Total	102		-		80-120	-		
Selenium, Total	107		-		80-120	-		
Silver, Total	105		-		80-120	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1222379-2 SRM Lot Number: D101-540								
Mercury, Total	112		-		65-135	-		

Lab Control Sample Analysis **Batch Quality Control**

Project Name: HARDWICK YELLOW BARN

Project Number: 1857501001

Lab Number: L1912854

Report Date: 04/04/19

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 Batch: WG1222424-2 SRM Lot Number: D101-540					
Arsenic, Total	102	-	83-117	-	
Barium, Total	87	-	83-118	-	
Cadmium, Total	96	-	83-117	-	
Chromium, Total	93	-	81-118	-	
Lead, Total	98	-	83-117	-	
Selenium, Total	101	-	79-121	-	
Silver, Total	94	-	80-120	-	

Matrix Spike Analysis **Batch Quality Control**

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1912854
Report Date: 04/04/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02-04 QC Batch ID: WG1221997-3 QC Sample: L1912943-01 Client ID: MS Sample												
Mercury, Total	0.222	0.132	0.308	65	Q	-	-		80-120	-		20
Total Metals - Mansfield Lab Associated sample(s): 05 QC Batch ID: WG1222056-3 QC Sample: L1912713-01 Client ID: MS Sample												
Mercury, Total	ND	0.005	0.00518	104		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 05 QC Batch ID: WG1222170-3 QC Sample: L1912474-01 Client ID: MS Sample												
Arsenic, Total	ND	0.12	0.129	108		-	-		75-125	-		20
Barium, Total	0.132	2	2.13	100		-	-		75-125	-		20
Cadmium, Total	ND	0.051	0.052	102		-	-		75-125	-		20
Chromium, Total	ND	0.2	0.194	97		-	-		75-125	-		20
Lead, Total	ND	0.51	0.500	98		-	-		75-125	-		20
Selenium, Total	ND	0.12	0.124	103		-	-		75-125	-		20
Silver, Total	ND	0.05	0.052	105		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1222379-3 QC Sample: L1912854-01 Client ID: SS-1 (0'-0.5')												
Mercury, Total	ND	0.156	0.206	132	Q	-	-		80-120	-		20

Matrix Spike Analysis

Batch Quality Control

Project Name: HARDWICK YELLOW BARN

Project Number: 1857501001

Lab Number: L1912854

Report Date: 04/04/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1222424-3 WG1222424-4 QC Sample: L1913201-07 Client ID: MS Sample									
Arsenic, Total	2.23	12.2	16.2	115	14.4	102	75-125	12	20
Barium, Total	12.1	203	194	90	197	93	75-125	2	20
Cadmium, Total	0.526	5.17	5.49	96	5.22	92	75-125	5	20
Chromium, Total	3.66	20.3	22.6	93	24.5	104	75-125	8	20
Lead, Total	86.4	51.7	132	88	138	101	75-125	4	20
Selenium, Total	ND	12.2	11.8	97	11.7	98	75-125	1	20
Silver, Total	ND	30.4	30.9	102	31.0	104	75-125	0	20

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Duplicate Analysis
Batch Quality Control

Lab Number: L1912854
Report Date: 04/04/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02-04 QC Batch ID: WG1221997-4 QC Sample: L1912943-01 Client ID: DUP Sample						
Mercury, Total	0.222	0.163	mg/kg	31	Q	20
Total Metals - Mansfield Lab Associated sample(s): 05 QC Batch ID: WG1222056-4 QC Sample: L1912713-01 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1222379-4 QC Sample: L1912854-01 Client ID: SS-1 (0'-0.5')						
Mercury, Total	ND	ND	mg/kg	NC		20

INORGANICS & MISCELLANEOUS

Project Name: HARDWICK YELLOW BARN**Project Number:** 1857501001**Lab Number:** L1912854**Report Date:** 04/04/19**SAMPLE RESULTS****Lab ID:** L1912854-01**Client ID:** SS-1 (0'-0.5')**Sample Location:** HARDWICK, VT**Date Collected:** 03/29/19 10:00**Date Received:** 04/01/19**Field Prep:** Not Specified**Sample Depth:****Matrix:** Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	80.7		%	0.100	NA	1	-	04/01/19 21:50	121,2540G	YA



Project Name: HARDWICK YELLOW BARN

Project Number: 1857501001

Lab Number: L1912854

Report Date: 04/04/19

SAMPLE RESULTS

Lab ID: L1912854-02

Client ID: SS-1 (3.0-3.5')

Sample Location: HARDWICK, VT

Date Collected: 03/29/19 12:50

Date Received: 04/01/19

Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	70.5		%	0.100	NA	1	-	04/01/19 21:50	121,2540G	YA



Project Name: HARDWICK YELLOW BARN

Project Number: 1857501001

Lab Number: L1912854

Report Date: 04/04/19

SAMPLE RESULTS

Lab ID: L1912854-03

Client ID: SS-2 (0'-0.5')

Sample Location: HARDWICK, VT

Date Collected: 03/29/19 13:35

Date Received: 04/01/19

Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	79.1		%	0.100	NA	1	-	04/01/19 21:50	121,2540G	YA



Project Name: HARDWICK YELLOW BARN**Project Number:** 1857501001**Lab Number:** L1912854**Report Date:** 04/04/19**SAMPLE RESULTS****Lab ID:** L1912854-04**Client ID:** SS-2 (36"-43")**Sample Location:** HARDWICK, VT**Date Collected:** 03/29/19 15:45**Date Received:** 04/01/19**Field Prep:** Not Specified**Sample Depth:****Matrix:** Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	75.2		%	0.100	NA	1	-	04/01/19 21:50	121,2540G	YA



Project Name: HARDWICK YELLOW BARN

Project Number: 1857501001

Lab Number: L1912854

Report Date: 04/04/19

SAMPLE RESULTS

Lab ID: L1912854-05

Client ID: DRUM

Sample Location: HARDWICK, VT

Date Collected: 03/29/19 17:35

Date Received: 04/01/19

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
pH (H)	9.0		SU	-	NA	1	-	04/01/19 22:58	121,4500H+-B	AS
Flash Point	>150		deg F	70	NA	1	-	04/02/19 03:00	1,1010A	SB
Cyanide, Reactive	ND		mg/l	1.0	1.0	1	04/03/19 03:38	04/03/19 04:33	125,7.3	KF
Sulfide, Reactive	ND		mg/l	1.0	1.0	1	04/03/19 03:38	04/03/19 04:29	125,7.3	KF



Project Name: HARDWICK YELLOW BARN

Lab Number: L1912854

Project Number: 1857501001

Report Date: 04/04/19

Method Blank Analysis Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 05 Batch: WG1222374-1										
Sulfide, Reactive	ND		mg/l	1.0	1.0	1	04/03/19 03:38	04/03/19 04:28	125,7.3	KF
General Chemistry - Westborough Lab for sample(s): 05 Batch: WG1222375-1										
Cyanide, Reactive	ND		mg/l	1.0	1.0	1	04/03/19 03:38	04/03/19 04:32	125,7.3	KF

Lab Control Sample Analysis

Batch Quality Control

Project Name: HARDWICK YELLOW BARN

Project Number: 1857501001

Lab Number: L1912854

Report Date: 04/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 05 Batch: WG1221902-1								
pH	100		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 05 Batch: WG1221963-1								
Flash Point	100		-		96-104	-		
General Chemistry - Westborough Lab Associated sample(s): 05 Batch: WG1222374-2								
Sulfide, Reactive	74		-		60-125	-		25
General Chemistry - Westborough Lab Associated sample(s): 05 Batch: WG1222375-2								
Cyanide, Reactive	70		-		30-125	-		25

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Duplicate Analysis
Batch Quality Control

Lab Number: L1912854
Report Date: 04/04/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG1221889-1 QC Sample: L1911191-11 Client ID: DUP Sample						
Solids, Total	74.0	74.9	%	1		20
General Chemistry - Westborough Lab Associated sample(s): 05 QC Batch ID: WG1221902-2 QC Sample: L1912854-05 Client ID: DRUM						
pH (H)	9.0	8.9	SU	1		5
General Chemistry - Westborough Lab Associated sample(s): 05 QC Batch ID: WG1222374-3 QC Sample: L1913203-01 Client ID: DUP Sample						
Sulfide, Reactive	ND	ND	mg/l	NC		25
General Chemistry - Westborough Lab Associated sample(s): 05 QC Batch ID: WG1222375-3 QC Sample: L1913203-01 Client ID: DUP Sample						
Cyanide, Reactive	ND	ND	mg/l	NC		25

Project Name: HARDWICK YELLOW BARN**Lab Number:** L1912854**Project Number:** 1857501001**Report Date:** 04/04/19**Sample Receipt and Container Information**

Were project specific reporting limits specified?

YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1912854-01A	Vial MeOH preserved	A	NA		3.2	Y	Absent		8260H(14)
L1912854-01B	Vial water preserved	A	NA		3.2	Y	Absent	01-APR-19 18:05	HOLD-8260(14)
L1912854-01C	Vial water preserved	A	NA		3.2	Y	Absent	01-APR-19 18:05	HOLD-8260(14)
L1912854-01D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.2	Y	Absent		AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),PB-TI(180),SE-TI(180),HG-T(28),CD-TI(180)
L1912854-01E	Vial Large Septa unpreserved (4oz)	A	NA		3.2	Y	Absent		HOLD-8260(14)
L1912854-01F	Glass 120ml/4oz unpreserved	A	NA		3.2	Y	Absent		8270TCL-PAH(14)
L1912854-01G	Plastic 2oz unpreserved for TS	A	NA		3.2	Y	Absent		TS(7)
L1912854-02A	Vial MeOH preserved	A	NA		3.2	Y	Absent		8260H(14)
L1912854-02B	Vial water preserved	A	NA		3.2	Y	Absent	01-APR-19 18:05	HOLD-8260(14)
L1912854-02C	Vial water preserved	A	NA		3.2	Y	Absent	01-APR-19 18:05	HOLD-8260(14)
L1912854-02D	Glass 60mL/2oz unpreserved	A	NA		3.2	Y	Absent		8270TCL-PAH(14)
L1912854-02E	Vial Large Septa unpreserved (4oz)	A	NA		3.2	Y	Absent		-
L1912854-02F	Glass 120ml/4oz unpreserved	A	NA		3.2	Y	Absent		8270TCL-PAH(14)
L1912854-02G	Plastic 2oz unpreserved for TS	A	NA		3.2	Y	Absent		TS(7)
L1912854-02H	Plastic 2oz unpreserved for TS	A	NA		3.2	Y	Absent		TS(7)
L1912854-02J	Plastic 2oz unpreserved for TS	A	NA		3.2	Y	Absent		AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),PB-TI(180),SE-TI(180),HG-T(28),CD-TI(180)
L1912854-03A	Vial MeOH preserved	A	NA		3.2	Y	Absent		8260H(14)
L1912854-03B	Vial water preserved	A	NA		3.2	Y	Absent	01-APR-19 18:05	HOLD-8260(14)
L1912854-03C	Vial water preserved	A	NA		3.2	Y	Absent	01-APR-19 18:05	HOLD-8260(14)
L1912854-03D	Glass 60mL/2oz unpreserved	A	NA		3.2	Y	Absent		8270TCL-PAH(14)
L1912854-03E	Vial Large Septa unpreserved (4oz)	A	NA		3.2	Y	Absent		-

Project Name: HARDWICK YELLOW BARN**Lab Number:** L1912854**Project Number:** 1857501001**Report Date:** 04/04/19**Container Information**

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1912854-03F	Glass 120ml/4oz unpreserved	A	NA		3.2	Y	Absent		8270TCL-PAH(14)
L1912854-03G	Plastic 2oz unpreserved for TS	A	NA		3.2	Y	Absent		TS(7)
L1912854-03H	Plastic 2oz unpreserved for TS	A	NA		3.2	Y	Absent		TS(7)
L1912854-03J	Plastic 2oz unpreserved for TS	A	NA		3.2	Y	Absent		AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),PB-TI(180),SE-TI(180),HG-T(28),CD-TI(180)
L1912854-04A	Vial MeOH preserved	A	NA		3.2	Y	Absent		8260H(14)
L1912854-04B	Vial water preserved	A	NA		3.2	Y	Absent	01-APR-19 18:05	HOLD-8260(14)
L1912854-04C	Vial water preserved	A	NA		3.2	Y	Absent	01-APR-19 18:05	HOLD-8260(14)
L1912854-04D	Glass 60mL/2oz unpreserved	A	NA		3.2	Y	Absent		8270TCL-PAH(14)
L1912854-04E	Vial Large Septa unpreserved (4oz)	A	NA		3.2	Y	Absent		-
L1912854-04F	Glass 120ml/4oz unpreserved	A	NA		3.2	Y	Absent		8270TCL-PAH(14)
L1912854-04G	Plastic 2oz unpreserved for TS	A	NA		3.2	Y	Absent		TS(7)
L1912854-04H	Plastic 2oz unpreserved for TS	A	NA		3.2	Y	Absent		TS(7)
L1912854-04J	Plastic 2oz unpreserved for TS	A	NA		3.2	Y	Absent		AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),PB-TI(180),SE-TI(180),HG-T(28),CD-TI(180)
L1912854-05A	Vial HCl preserved	A	NA		3.2	Y	Absent		8011(14),8260(14)
L1912854-05B	Vial HCl preserved	A	NA		3.2	Y	Absent		8011(14),HOLD-8260(14),8260(14)
L1912854-05C	Vial HCl preserved	A	NA		3.2	Y	Absent		8011(14),HOLD-8260(14),8260(14)
L1912854-05D	Amber 120ml unpreserved	A	7	7	3.2	Y	Absent		PEST-8081(7)
L1912854-05E	Amber 120ml unpreserved	A	7	7	3.2	Y	Absent		PEST-8081(7)
L1912854-05F	Plastic 250ml HNO3 preserved	A	<2	<2	3.2	Y	Absent		AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),PB-TI(180),SE-TI(180),HG-T(28),CD-TI(180)
L1912854-05G	Amber 500ml unpreserved	A	7	7	3.2	Y	Absent		REACTS(7),REACTCN(7),FLASH(),PH-4500(.01)
L1912854-05H	Amber 1000ml unpreserved	A	7	7	3.2	Y	Absent		8270TCL(7),8270TCL-SIM(7)
L1912854-05I	Amber 1000ml unpreserved	A	7	7	3.2	Y	Absent		8270TCL(7),8270TCL-SIM(7)
L1912854-05J	Amber 1000ml unpreserved	A	7	7	3.2	Y	Absent		TPH-DRO-D(7)
L1912854-05K	Amber 1000ml unpreserved	A	7	7	3.2	Y	Absent		TPH-DRO-D(7)
L1912854-05L	Amber 1000ml unpreserved	A	7	7	3.2	Y	Absent		HERB-8151(7)

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Serial_No:04041917:48
Lab Number: L1912854
Report Date: 04/04/19

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1912854-05M	Amber 1000ml unpreserved	A	7	7	3.2	Y	Absent		HERB-8151(7)
L1912854-05N	Amber 1000ml unpreserved	A	7	7	3.2	Y	Absent		PCB-8082(7)
L1912854-05P	Amber 1000ml unpreserved	A	7	7	3.2	Y	Absent		PCB-8082(7)

Project Name: HARDWICK YELLOW BARN**Lab Number:** L1912854**Project Number:** 1857501001**Report Date:** 04/04/19

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCS D	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

Report Format: DU Report with 'J' Qualifiers

Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1912854
Report Date: 04/04/19

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- J** - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- ND** - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.

Report Format: DU Report with 'J' Qualifiers



Project Name: HARDWICK YELLOW BARN
Project Number: 1857501001

Lab Number: L1912854
Report Date: 04/04/19

REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.
- 125 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates IIIA, April 1998.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Alpha Analytical, Inc.Facility: **Company-wide**Department: **Quality Assurance**Title: **Certificate/Approval Program Summary**ID No.: **17873**

Revision 12

Published Date: 10/9/2018 4:58:19 PM

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Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility**EPA 624/624.1:** m/p-xylene, o-xylene**EPA 8260C:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.**EPA 8270D:** NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.**EPA 6860:** SCM: Perchlorate**SM4500:** NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO₂, NO₃.**Mansfield Facility****SM 2540D:** TSS**EPA 8082A:** NPW: PCB: 1, 5, 31, 87, 101, 110, 141, 151, 153, 180, 183, 187.**EPA TO-15:** Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.**Biological Tissue Matrix:** EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:**Drinking Water****EPA 300.0:** Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE,****EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B****EPA 332:** Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.**Microbiology:** **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.****Non-Potable Water****SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH:** Ammonia-N and Kjeldahl-N, **EPA 350.1:** Ammonia-N, **LACHAT 10-107-06-1-B:** Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2:** Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300:** Chloride, Sulfate, Nitrate.**EPA 624.1:** Volatile Halocarbons & Aromatics,**EPA 608.3:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs**EPA 625.1:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.****Mansfield Facility:****Drinking Water****EPA 200.7:** Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1 Hg. EPA 522.****Non-Potable Water****EPA 200.7:** Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.**EPA 200.8:** Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.**EPA 245.1 Hg.****SM2340B**

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

PAGE 1 OF 1

8 Walkup Drive
Westboro, MA 01581
Tel: 508-898-9220

320 Forbes Blvd
Mansfield, MA 02048
Tel: 508-822-9300

Client Information

Client: STANTEC
Address: 5 Dantmarck Dr
Auburn, NH 03032
Phone: 603-498-4674

Email: D.Allwin@STANTEC.ca

Additional Project Information:

MS4 # 1/1/19

Project Information

Project Name:	Harwick Keller Barn
Project Location:	Harwick Vt.
Project #:	1857501001
Project Manager:	Dave Allum
ALPHA Quote #:	

Turn-Around Time

☐ Standard ☒ RUSH (only confirmed if pre-approved)

Date Due:

Date Rec'd in Lab:

Report Information - Data Deliverables

ALPHA Job #:

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☐ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☐ No NPDES RGP
☐ Other State /Fed Program Criteria

Criteria

ANALYSIS VOC: ☒ 8260 ☐ 824 ☐ 5242 ☒ 8011 METALS: ☒ PAH ☒ 6270D METALS: ☐ MCP 13 ☐ MCP 14 ☐ MCP 15 EPH: ☐ RCRA5 ☒ RCRA8 ☐ PP-13 VPH: ☐ Ranges & Targets ☐ Ranges Only ☐ PCB ☒ PEST 30&1 ☒ Heavy EIS TPH: ☐ Quant Only ☐ Fingerprint SVOCs 8270 PCB 8062 TPH 8015 Flash/Ph/Resistivity	SAMPLE INFO Filtration ☐ Field ☐ Lab to do Preservation ☐ Lab to do
Sample Comments	

TOTAL # BOTTLES

[illegible]

Container Type

P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative

A = None
B = HCl
C = HNO₃
D = H₂SO₄
E = NaOH
F = MeOH
G = NaHSO₄
H = Na₂S₂O₃
I = Ascorbic Acid
J = NH₄Cl
K = Zn Acetate
Q = Other

Container Type

Date/Time

Received By:

Date/Time

All samples submitted are subject to Alpha's Terms and Conditions.
See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)



ANALYTICAL REPORT

Lab Number:	L1912988
Client:	Stantec 5 Dartmouth Drive Suite 200 Auburn, NH 03032
ATTN:	Dave Allwine
Phone:	(603) 669-8672
Project Name:	HARDWICK, YELLOW BARN
Project Number:	1857501001
Report Date:	04/03/19

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA030), NH NELAP (2062), CT (PH-0141), DoD (L2474), FL (E87814), IL (200081), LA (85084), ME (MA00030), MD (350), NJ (MA015), NY (11627), NC (685), OH (CL106), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #P330-17-00150), USFWS (Permit #206964).

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com



Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912988
Report Date: 04/03/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1912988-01	SG-1	SOIL_VAPOR	HARDWICK, VT	03/29/19 17:00	04/01/19
L1912988-02	SG-2	SOIL_VAPOR	HARDWICK, VT	03/29/19 16:35	04/01/19

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912988
Report Date: 04/03/19

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912988
Report Date: 04/03/19

Case Narrative (continued)

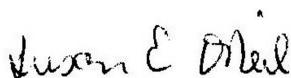
Volatile Organics in Air

Canisters were released from the laboratory on March 19, 2019. The canister certification results are provided as an addendum.

L1912988-01 and -02: Prior to sample analysis, the canisters were pressurized with UHP Nitrogen due to canister size. The pressurization resulted in a dilution of the samples. The reporting limits have been elevated accordingly.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:



Susan O'Neil

Title: Technical Director/Representative

Date: 04/03/19

AIR

Project Name: HARDWICK, YELLOW BARN**Lab Number:** L1912988**Project Number:** 1857501001**Report Date:** 04/03/19**SAMPLE RESULTS**

Lab ID: L1912988-01 D

Client ID: SG-1

Sample Location: HARDWICK, VT

Date Collected: 03/29/19 17:00

Date Received: 04/01/19

Field Prep: Not Specified

Sample Depth:

Matrix: Soil_Vapor

Analytical Method: 48,TO-15

Analytical Date: 04/02/19 20:44

Analyst: EW

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Propylene	ND	1.12	--	ND	1.93	--		2.233
Dichlorodifluoromethane	ND	0.447	--	ND	2.21	--		2.233
Chloromethane	ND	0.447	--	ND	0.923	--		2.233
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.447	--	ND	3.12	--		2.233
Vinyl chloride	ND	0.447	--	ND	1.14	--		2.233
1,3-Butadiene	ND	0.447	--	ND	0.989	--		2.233
Bromomethane	ND	0.447	--	ND	1.74	--		2.233
Chloroethane	ND	0.447	--	ND	1.18	--		2.233
Ethyl Alcohol	16.6	11.2	--	31.3	21.1	--		2.233
Vinyl bromide	ND	0.447	--	ND	1.95	--		2.233
Acetone	6.67	2.23	--	15.8	5.30	--		2.233
Trichlorofluoromethane	0.916	0.447	--	5.15	2.51	--		2.233
iso-Propyl Alcohol	6.80	1.12	--	16.7	2.75	--		2.233
1,1-Dichloroethene	ND	0.447	--	ND	1.77	--		2.233
Methylene chloride	ND	1.12	--	ND	3.89	--		2.233
3-Chloropropene	ND	0.447	--	ND	1.40	--		2.233
Carbon disulfide	ND	0.447	--	ND	1.39	--		2.233
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.447	--	ND	3.43	--		2.233
trans-1,2-Dichloroethene	ND	0.447	--	ND	1.77	--		2.233
1,1-Dichloroethane	ND	0.447	--	ND	1.81	--		2.233
Methyl tert butyl ether	ND	0.447	--	ND	1.61	--		2.233
Vinyl acetate	ND	2.23	--	ND	7.85	--		2.233
2-Butanone	ND	1.12	--	ND	3.30	--		2.233



Project Name: HARDWICK, YELLOW BARN**Lab Number:** L1912988**Project Number:** 1857501001**Report Date:** 04/03/19**SAMPLE RESULTS**

Lab ID: L1912988-01 D

Client ID: SG-1

Sample Location: HARDWICK, VT

Date Collected: 03/29/19 17:00

Date Received: 04/01/19

Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
cis-1,2-Dichloroethene	ND	0.447	--	ND	1.77	--		2.233
Ethyl Acetate	ND	1.12	--	ND	4.04	--		2.233
Chloroform	ND	0.447	--	ND	2.18	--		2.233
Tetrahydrofuran	ND	1.12	--	ND	3.30	--		2.233
1,2-Dichloroethane	ND	0.447	--	ND	1.81	--		2.233
n-Hexane	ND	0.447	--	ND	1.58	--		2.233
1,1,1-Trichloroethane	ND	0.447	--	ND	2.44	--		2.233
Benzene	ND	0.447	--	ND	1.43	--		2.233
Carbon tetrachloride	ND	0.447	--	ND	2.81	--		2.233
Cyclohexane	ND	0.447	--	ND	1.54	--		2.233
Xylene (Total)	ND	0.447	--	ND	1.94	--		2.233
1,2-Dichloropropane	ND	0.447	--	ND	2.07	--		2.233
Bromodichloromethane	ND	0.447	--	ND	2.99	--		2.233
1,4-Dioxane	ND	0.447	--	ND	1.61	--		2.233
Trichloroethene	ND	0.447	--	ND	2.40	--		2.233
2,2,4-Trimethylpentane	ND	0.447	--	ND	2.09	--		2.233
Heptane	ND	0.447	--	ND	1.83	--		2.233
cis-1,3-Dichloropropene	ND	0.447	--	ND	2.03	--		2.233
4-Methyl-2-pentanone	ND	1.12	--	ND	4.59	--		2.233
trans-1,3-Dichloropropene	ND	0.447	--	ND	2.03	--		2.233
1,1,2-Trichloroethane	ND	0.447	--	ND	2.44	--		2.233
1,2-Dichloroethene (total)	ND	0.447	--	ND	1.77	--		2.233
Toluene	0.699	0.447	--	2.63	1.68	--		2.233
1,3-Dichloropropene, Total	ND	0.447	--	ND	2.03	--		2.233
2-Hexanone	ND	0.447	--	ND	1.83	--		2.233
Dibromochloromethane	ND	0.447	--	ND	3.81	--		2.233



Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912988
Report Date: 04/03/19

SAMPLE RESULTS

Lab ID: L1912988-01 D
 Client ID: SG-1
 Sample Location: HARDWICK, VT

Date Collected: 03/29/19 17:00
 Date Received: 04/01/19
 Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
1,2-Dibromoethane	ND	0.447	--	ND	3.44	--		2.233
Tetrachloroethene	ND	0.447	--	ND	3.03	--		2.233
Chlorobenzene	ND	0.447	--	ND	2.06	--		2.233
Ethylbenzene	ND	0.447	--	ND	1.94	--		2.233
p/m-Xylene	ND	0.893	--	ND	3.88	--		2.233
Bromoform	ND	0.447	--	ND	4.62	--		2.233
Styrene	14.7	0.447	--	62.6	1.90	--		2.233
1,1,2,2-Tetrachloroethane	ND	0.447	--	ND	3.07	--		2.233
o-Xylene	ND	0.447	--	ND	1.94	--		2.233
4-Ethyltoluene	ND	0.447	--	ND	2.20	--		2.233
1,3,5-Trimethylbenzene	ND	0.447	--	ND	2.20	--		2.233
1,2,4-Trimethylbenzene	ND	0.447	--	ND	2.20	--		2.233
Benzyl chloride	ND	0.447	--	ND	2.31	--		2.233
1,3-Dichlorobenzene	ND	0.447	--	ND	2.69	--		2.233
1,4-Dichlorobenzene	ND	0.447	--	ND	2.69	--		2.233
1,2-Dichlorobenzene	ND	0.447	--	ND	2.69	--		2.233
1,2,4-Trichlorobenzene	ND	0.447	--	ND	3.32	--		2.233
Naphthalene	ND	0.447	--	ND	2.34	--		2.233
Hexachlorobutadiene	ND	0.447	--	ND	4.77	--		2.233

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	102		60-140
Bromochloromethane	125		60-140
chlorobenzene-d5	102		60-140



Project Name: HARDWICK, YELLOW BARN**Lab Number:** L1912988**Project Number:** 1857501001**Report Date:** 04/03/19**SAMPLE RESULTS**

Lab ID: L1912988-02 D

Client ID: SG-2

Sample Location: HARDWICK, VT

Date Collected: 03/29/19 16:35

Date Received: 04/01/19

Field Prep: Not Specified

Sample Depth:

Matrix: Soil_Vapor

Analytical Method: 48,TO-15

Analytical Date: 04/02/19 21:23

Analyst: EW

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Propylene	2.91	1.20	--	5.01	2.07	--		2.403
Dichlorodifluoromethane	ND	0.481	--	ND	2.38	--		2.403
Chloromethane	ND	0.481	--	ND	0.993	--		2.403
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.481	--	ND	3.36	--		2.403
Vinyl chloride	ND	0.481	--	ND	1.23	--		2.403
1,3-Butadiene	ND	0.481	--	ND	1.06	--		2.403
Bromomethane	ND	0.481	--	ND	1.87	--		2.403
Chloroethane	ND	0.481	--	ND	1.27	--		2.403
Ethyl Alcohol	ND	12.0	--	ND	22.6	--		2.403
Vinyl bromide	ND	0.481	--	ND	2.10	--		2.403
Acetone	15.5	2.40	--	36.8	5.70	--		2.403
Trichlorofluoromethane	ND	0.481	--	ND	2.70	--		2.403
iso-Propyl Alcohol	ND	1.20	--	ND	2.95	--		2.403
1,1-Dichloroethene	ND	0.481	--	ND	1.91	--		2.403
Methylene chloride	ND	1.20	--	ND	4.17	--		2.403
3-Chloropropene	ND	0.481	--	ND	1.51	--		2.403
Carbon disulfide	1.45	0.481	--	4.52	1.50	--		2.403
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.481	--	ND	3.69	--		2.403
trans-1,2-Dichloroethene	ND	0.481	--	ND	1.91	--		2.403
1,1-Dichloroethane	ND	0.481	--	ND	1.95	--		2.403
Methyl tert butyl ether	ND	0.481	--	ND	1.73	--		2.403
Vinyl acetate	ND	2.40	--	ND	8.45	--		2.403
2-Butanone	1.95	1.20	--	5.75	3.54	--		2.403



Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912988
Report Date: 04/03/19

SAMPLE RESULTS

Lab ID: L1912988-02 D
 Client ID: SG-2
 Sample Location: HARDWICK, VT

Date Collected: 03/29/19 16:35
 Date Received: 04/01/19
 Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
cis-1,2-Dichloroethene	ND	0.481	--	ND	1.91	--		2.403
Ethyl Acetate	ND	1.20	--	ND	4.32	--		2.403
Chloroform	ND	0.481	--	ND	2.35	--		2.403
Tetrahydrofuran	ND	1.20	--	ND	3.54	--		2.403
1,2-Dichloroethane	ND	0.481	--	ND	1.95	--		2.403
n-Hexane	0.678	0.481	--	2.39	1.70	--		2.403
1,1,1-Trichloroethane	ND	0.481	--	ND	2.62	--		2.403
Benzene	ND	0.481	--	ND	1.54	--		2.403
Carbon tetrachloride	ND	0.481	--	ND	3.03	--		2.403
Cyclohexane	ND	0.481	--	ND	1.66	--		2.403
1,2-Dichloropropane	ND	0.481	--	ND	2.22	--		2.403
Xylene (Total)	ND	0.481	--	ND	2.09	--		2.403
Bromodichloromethane	ND	0.481	--	ND	3.22	--		2.403
1,4-Dioxane	ND	0.481	--	ND	1.73	--		2.403
Trichloroethene	ND	0.481	--	ND	2.59	--		2.403
2,2,4-Trimethylpentane	ND	0.481	--	ND	2.25	--		2.403
Heptane	ND	0.481	--	ND	1.97	--		2.403
cis-1,3-Dichloropropene	ND	0.481	--	ND	2.18	--		2.403
4-Methyl-2-pentanone	ND	1.20	--	ND	4.92	--		2.403
trans-1,3-Dichloropropene	ND	0.481	--	ND	2.18	--		2.403
1,1,2-Trichloroethane	ND	0.481	--	ND	2.62	--		2.403
1,2-Dichloroethene (total)	ND	0.481	--	ND	1.91	--		2.403
Toluene	0.658	0.481	--	2.48	1.81	--		2.403
2-Hexanone	ND	0.481	--	ND	1.97	--		2.403
1,3-Dichloropropene, Total	ND	0.481	--	ND	2.18	--		2.403
Dibromochloromethane	ND	0.481	--	ND	4.10	--		2.403



Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912988
Report Date: 04/03/19

SAMPLE RESULTS

Lab ID: L1912988-02 D
 Client ID: SG-2
 Sample Location: HARDWICK, VT

Date Collected: 03/29/19 16:35
 Date Received: 04/01/19
 Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
1,2-Dibromoethane	ND	0.481	--	ND	3.70	--		2.403
Tetrachloroethene	ND	0.481	--	ND	3.26	--		2.403
Chlorobenzene	ND	0.481	--	ND	2.22	--		2.403
Ethylbenzene	ND	0.481	--	ND	2.09	--		2.403
p/m-Xylene	ND	0.961	--	ND	4.17	--		2.403
Bromoform	ND	0.481	--	ND	4.97	--		2.403
Styrene	ND	0.481	--	ND	2.05	--		2.403
1,1,2,2-Tetrachloroethane	ND	0.481	--	ND	3.30	--		2.403
o-Xylene	ND	0.481	--	ND	2.09	--		2.403
4-Ethyltoluene	ND	0.481	--	ND	2.36	--		2.403
1,3,5-Trimethylbenzene	ND	0.481	--	ND	2.36	--		2.403
1,2,4-Trimethylbenzene	0.637	0.481	--	3.13	2.36	--		2.403
Benzyl chloride	ND	0.481	--	ND	2.49	--		2.403
1,3-Dichlorobenzene	ND	0.481	--	ND	2.89	--		2.403
1,4-Dichlorobenzene	ND	0.481	--	ND	2.89	--		2.403
1,2-Dichlorobenzene	ND	0.481	--	ND	2.89	--		2.403
1,2,4-Trichlorobenzene	ND	0.481	--	ND	3.57	--		2.403
Naphthalene	ND	0.481	--	ND	2.52	--		2.403
Hexachlorobutadiene	ND	0.481	--	ND	5.13	--		2.403

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	93		60-140
Bromochloromethane	114		60-140
chlorobenzene-d5	98		60-140



Project Name: HARDWICK, YELLOW BARN**Lab Number:** L1912988**Project Number:** 1857501001**Report Date:** 04/03/19

Method Blank Analysis Batch Quality Control

Analytical Method: 48,TO-15

Analytical Date: 04/02/19 15:04

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab for sample(s): 01-02 Batch: WG1222274-4								
Chlorodifluoromethane	ND	0.200	--	ND	0.707	--		1
Propylene	ND	0.500	--	ND	0.861	--		1
Propane	ND	0.500	--	ND	0.902	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.200	--	ND	1.40	--		1
Methanol	ND	5.00	--	ND	6.55	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Butane	ND	0.200	--	ND	0.475	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethyl Alcohol	ND	5.00	--	ND	9.42	--		1
Dichlorofluoromethane	ND	0.200	--	ND	0.842	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acrolein	ND	0.500	--	ND	1.15	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Acetonitrile	ND	0.200	--	ND	0.336	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
iso-Propyl Alcohol	ND	0.500	--	ND	1.23	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
Pentane	ND	0.200	--	ND	0.590	--		1
Ethyl ether	ND	0.200	--	ND	0.606	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
tert-Butyl Alcohol	ND	0.500	--	ND	1.52	--		1



Project Name: HARDWICK, YELLOW BARN**Lab Number:** L1912988**Project Number:** 1857501001**Report Date:** 04/03/19

Method Blank Analysis Batch Quality Control

Analytical Method: 48,TO-15

Analytical Date: 04/02/19 15:04

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab for sample(s): 01-02 Batch: WG1222274-4								
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	1.00	--	ND	3.52	--		1
Xylene (Total)	ND	0.200	--	ND	0.869	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
2,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Isopropyl Ether	ND	0.200	--	ND	0.836	--		1
Ethyl-Tert-Butyl-Ether	ND	0.200	--	ND	0.836	--		1
1,2-Dichloroethene (total)	ND	0.200	--	ND	0.793	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
1,1-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,3-Dichloropropene, Total	ND	0.200	--	ND	0.908	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1



Project Name: HARDWICK, YELLOW BARN**Lab Number:** L1912988**Project Number:** 1857501001**Report Date:** 04/03/19

Method Blank Analysis Batch Quality Control

Analytical Method: 48,TO-15

Analytical Date: 04/02/19 15:04

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab for sample(s): 01-02 Batch: WG1222274-4								
Cyclohexane	ND	0.200	--	ND	0.688	--		1
Tertiary-Amyl Methyl Ether	ND	0.200	--	ND	0.836	--		1
Dibromomethane	ND	0.200	--	ND	1.42	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Methyl Methacrylate	ND	0.500	--	ND	2.05	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
1,3-Dichloropropane	ND	0.200	--	ND	0.924	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Butyl Acetate	ND	0.500	--	ND	2.38	--		1
Octane	ND	0.200	--	ND	0.934	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
1,1,1,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1



Project Name: HARDWICK, YELLOW BARN**Lab Number:** L1912988**Project Number:** 1857501001**Report Date:** 04/03/19

Method Blank Analysis Batch Quality Control

Analytical Method: 48,TO-15

Analytical Date: 04/02/19 15:04

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab for sample(s): 01-02 Batch: WG1222274-4								
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
1,2,3-Trichloropropane	ND	0.200	--	ND	1.21	--		1
Nonane (C9)	ND	0.200	--	ND	1.05	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
Bromobenzene	ND	0.200	--	ND	0.793	--		1
o-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
n-Propylbenzene	ND	0.200	--	ND	0.983	--		1
p-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
tert-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Decane (C10)	ND	0.200	--	ND	1.16	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2-Dibromo-3-chloropropane	ND	0.200	--	ND	1.93	--		1



Project Name: HARDWICK, YELLOW BARN**Lab Number:** L1912988**Project Number:** 1857501001**Report Date:** 04/03/19

Method Blank Analysis Batch Quality Control

Analytical Method: 48,TO-15

Analytical Date: 04/02/19 15:04

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab for sample(s): 01-02 Batch: WG1222274-4								
Undecane	ND	0.200	--	ND	1.28	--		1
Dodecane (C12)	ND	0.200	--	ND	1.39	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1
1,2,3-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Lab Control Sample Analysis

Batch Quality Control

Project Name: HARDWICK, YELLOW BARN

Project Number: 1857501001

Lab Number: L1912988

Report Date: 04/03/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-02 Batch: WG1222274-3								
Chlorodifluoromethane	96		-		70-130	-		
Propylene	127		-		70-130	-		
Propane	101		-		70-130	-		
Dichlorodifluoromethane	88		-		70-130	-		
Chloromethane	105		-		70-130	-		
1,2-Dichloro-1,1,2,2-tetrafluoroethane	102		-		70-130	-		
Methanol	100		-		70-130	-		
Vinyl chloride	110		-		70-130	-		
1,3-Butadiene	111		-		70-130	-		
Butane	99		-		70-130	-		
Bromomethane	104		-		70-130	-		
Chloroethane	110		-		70-130	-		
Ethyl Alcohol	104		-		40-160	-		
Dichlorofluoromethane	89		-		70-130	-		
Vinyl bromide	99		-		70-130	-		
Acrolein	101		-		70-130	-		
Acetone	77		-		40-160	-		
Acetonitrile	108		-		70-130	-		
Trichlorofluoromethane	80		-		70-130	-		
iso-Propyl Alcohol	90		-		40-160	-		
Acrylonitrile	101		-		70-130	-		
Pentane	95		-		70-130	-		
Ethyl ether	93		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: HARDWICK, YELLOW BARN

Project Number: 1857501001

Lab Number: L1912988

Report Date: 04/03/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-02 Batch: WG1222274-3								
1,1-Dichloroethene	100		-		70-130	-		
tert-Butyl Alcohol	96		-		70-130	-		
Methylene chloride	106		-		70-130	-		
3-Chloropropene	115		-		70-130	-		
Carbon disulfide	100		-		70-130	-		
1,1,2-Trichloro-1,2,2-Trifluoroethane	100		-		70-130	-		
trans-1,2-Dichloroethene	99		-		70-130	-		
1,1-Dichloroethane	103		-		70-130	-		
Methyl tert butyl ether	96		-		70-130	-		
Vinyl acetate	113		-		70-130	-		
2-Butanone	103		-		70-130	-		
cis-1,2-Dichloroethene	103		-		70-130	-		
Ethyl Acetate	127		-		70-130	-		
Chloroform	113		-		70-130	-		
Tetrahydrofuran	117		-		70-130	-		
2,2-Dichloropropane	101		-		70-130	-		
1,2-Dichloroethane	97		-		70-130	-		
n-Hexane	103		-		70-130	-		
Isopropyl Ether	94		-		70-130	-		
Ethyl-Tert-Butyl-Ether	92		-		70-130	-		
1,2-Dichloroethene (total)	101		-			-		
1,2-Dichloroethene (total)	101		-			-		
1,1,1-Trichloroethane	91		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: HARDWICK, YELLOW BARN

Project Number: 1857501001

Lab Number: L1912988

Report Date: 04/03/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-02 Batch: WG1222274-3								
1,1-Dichloropropene	96		-		70-130	-		
Benzene	103		-		70-130	-		
Carbon tetrachloride	97		-		70-130	-		
Cyclohexane	104		-		70-130	-		
Tertiary-Amyl Methyl Ether	94		-		70-130	-		
Dibromomethane	90		-		70-130	-		
1,2-Dichloropropane	102		-		70-130	-		
Bromodichloromethane	98		-		70-130	-		
1,4-Dioxane	103		-		70-130	-		
Trichloroethene	101		-		70-130	-		
2,2,4-Trimethylpentane	106		-		70-130	-		
Methyl Methacrylate	70		-		40-160	-		
Heptane	102		-		70-130	-		
cis-1,3-Dichloropropene	111		-		70-130	-		
4-Methyl-2-pentanone	102		-		70-130	-		
trans-1,3-Dichloropropene	95		-		70-130	-		
1,1,2-Trichloroethane	105		-		70-130	-		
Toluene	110		-		70-130	-		
1,3-Dichloropropane	101		-		70-130	-		
2-Hexanone	114		-		70-130	-		
Dibromochloromethane	114		-		70-130	-		
1,2-Dibromoethane	112		-		70-130	-		
Butyl Acetate	111		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: HARDWICK, YELLOW BARN

Project Number: 1857501001

Lab Number: L1912988

Report Date: 04/03/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-02 Batch: WG1222274-3								
Octane	101		-		70-130	-		
Tetrachloroethene	109		-		70-130	-		
1,1,1,2-Tetrachloroethane	107		-		70-130	-		
Chlorobenzene	111		-		70-130	-		
Ethylbenzene	111		-		70-130	-		
p/m-Xylene	110		-		70-130	-		
Bromoform	128		-		70-130	-		
Styrene	115		-		70-130	-		
1,1,2,2-Tetrachloroethane	115		-		70-130	-		
o-Xylene	112		-		70-130	-		
1,2,3-Trichloropropane	101		-		70-130	-		
Nonane (C9)	100		-		70-130	-		
Isopropylbenzene	106		-		70-130	-		
Bromobenzene	103		-		70-130	-		
o-Chlorotoluene	104		-		70-130	-		
n-Propylbenzene	104		-		70-130	-		
p-Chlorotoluene	102		-		70-130	-		
4-Ethyltoluene	110		-		70-130	-		
1,3,5-Trimethylbenzene	113		-		70-130	-		
tert-Butylbenzene	103		-		70-130	-		
1,2,4-Trimethylbenzene	115		-		70-130	-		
Decane (C10)	108		-		70-130	-		
Benzyl chloride	122		-		70-130	-		

Lab Control Sample Analysis Batch Quality Control

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Project Number: 1857501001

Lab Number: L1912988

Report Date: 04/03/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-02 Batch: WG1222274-3								
1,3-Dichlorobenzene	107		-		70-130	-		
1,4-Dichlorobenzene	103		-		70-130	-		
sec-Butylbenzene	107		-		70-130	-		
p-Isopropyltoluene	97		-		70-130	-		
1,2-Dichlorobenzene	115		-		70-130	-		
n-Butylbenzene	108		-		70-130	-		
1,2-Dibromo-3-chloropropane	111		-		70-130	-		
Undecane	110		-		70-130	-		
Dodecane (C12)	112		-		70-130	-		
1,2,4-Trichlorobenzene	127		-		70-130	-		
Naphthalene	111		-		70-130	-		
1,2,3-Trichlorobenzene	112		-		70-130	-		
Hexachlorobutadiene	109		-		70-130	-		

Project Name: HARDWICK, YELLOW BARN

Serial_No:04031916:16
Lab Number: L1912988

Project Number: 1857501001

Report Date: 04/03/19

Canister and Flow Controller Information

Samplenum	Client ID	Media ID	Media Type	Date Prepared	Bottle Order	Cleaning Batch ID	Can Leak Check	Initial Pressure (in. Hg)	Pressure on Receipt (in. Hg)	Flow Controller Leak Chk	Flow Out mL/min	Flow In mL/min	% RPD
L1912988-01	SG-1	01101	Flow 4	03/19/19	287560		-	-	-	Pass	150	154	3
L1912988-01	SG-1	2166	1.0L Can	03/19/19	287560	L1910334-02	Pass	-29.2	-3.0	-	-	-	-
L1912988-02	SG-2	0098	Flow 1	03/19/19	287560		-	-	-	Pass	150	169	12
L1912988-02	SG-2	860	1.0L Can	03/19/19	287560	L1910334-02	Pass	-29.3	-3.6	-	-	-	-

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1910334
Report Date: 04/03/19

Air Canister Certification Results

Lab ID: L1910334-02
Client ID: CAN 830 SHELF 15
Sample Location:

Date Collected: 03/15/19 08:00
Date Received: 03/15/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Analytical Method: 48,TO-15
Analytical Date: 03/16/19 20:31
Analyst: TS

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Chlorodifluoromethane	ND	0.200	--	ND	0.707	--		1
Propylene	ND	0.500	--	ND	0.861	--		1
Propane	ND	0.500	--	ND	0.902	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Methanol	ND	5.00	--	ND	6.55	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Butane	ND	0.200	--	ND	0.475	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Dichlorofluoromethane	ND	0.200	--	ND	0.842	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acrolein	ND	0.500	--	ND	1.15	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Acetonitrile	ND	0.200	--	ND	0.336	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
Pentane	ND	0.200	--	ND	0.590	--		1
Ethyl ether	ND	0.200	--	ND	0.606	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1



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Sample Location:

Date Collected: 03/15/19 08:00
Date Received: 03/15/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	1.00	--	ND	3.52	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
Xylenes, total	ND	0.600	--	ND	0.869	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
2,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Diisopropyl ether	ND	0.200	--	ND	0.836	--		1
tert-Butyl Ethyl Ether	ND	0.200	--	ND	0.836	--		1
1,2-Dichloroethene (total)	ND	1.00	--	ND	1.00	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
1,1-Dichloropropene	ND	0.200	--	ND	0.908	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
tert-Amyl Methyl Ether	ND	0.200	--	ND	0.836	--		1



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Sample Location:

Date Collected: 03/15/19 08:00
Date Received: 03/15/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Dibromomethane	ND	0.200	--	ND	1.42	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Methyl Methacrylate	ND	0.500	--	ND	2.05	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
1,3-Dichloropropane	ND	0.200	--	ND	0.924	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Butyl acetate	ND	0.500	--	ND	2.38	--		1
Octane	ND	0.200	--	ND	0.934	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
1,1,1,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1



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Client ID: CAN 830 SHELF 15
Sample Location:

Date Collected: 03/15/19 08:00
Date Received: 03/15/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
o-Xylene	ND	0.200	--	ND	0.869	--		1
1,2,3-Trichloropropane	ND	0.200	--	ND	1.21	--		1
Nonane	ND	0.200	--	ND	1.05	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
Bromobenzene	ND	0.200	--	ND	0.793	--		1
2-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
n-Propylbenzene	ND	0.200	--	ND	0.983	--		1
4-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
tert-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Decane	ND	0.200	--	ND	1.16	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2-Dibromo-3-chloropropane	ND	0.200	--	ND	1.93	--		1
Undecane	ND	0.200	--	ND	1.28	--		1
Dodecane	ND	0.200	--	ND	1.39	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1
1,2,3-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1



Project Name: BATCH CANISTER CERTIFICATION**Lab Number:** L1910334**Project Number:** CANISTER QC BAT**Report Date:** 04/03/19**Air Canister Certification Results**

Lab ID: L1910334-02

Date Collected: 03/15/19 08:00

Client ID: CAN 830 SHELF 15

Date Received: 03/15/19

Sample Location:

Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								

Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds				
No Tentatively Identified Compounds				

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	84		60-140
Bromochloromethane	85		60-140
chlorobenzene-d5	84		60-140

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Client ID: CAN 830 SHELF 15
Sample Location:

Date Collected: 03/15/19 08:00
Date Received: 03/15/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Analytical Method: 48,TO-15-SIM
Analytical Date: 03/16/19 20:31
Analyst: TS

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.050	--	ND	0.349	--		1
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,3-Butadiene	ND	0.020	--	ND	0.044	--		1
Bromomethane	ND	0.020	--	ND	0.078	--		1
Chloroethane	ND	0.100	--	ND	0.264	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.050	--	ND	0.281	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
Freon-113	ND	0.050	--	ND	0.383	--		1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Chloroform	ND	0.020	--	ND	0.098	--		1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Benzene	ND	0.100	--	ND	0.319	--		1
Carbon tetrachloride	ND	0.020	--	ND	0.126	--		1
1,2-Dichloropropane	ND	0.020	--	ND	0.092	--		1



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Sample Location:

Date Collected: 03/15/19 08:00
Date Received: 03/15/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
Bromodichloromethane	ND	0.020	--	ND	0.134	--		1
1,4-Dioxane	ND	0.100	--	ND	0.360	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
cis-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
1,1,2-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Toluene	ND	0.050	--	ND	0.188	--		1
Dibromochloromethane	ND	0.020	--	ND	0.170	--		1
1,2-Dibromoethane	ND	0.020	--	ND	0.154	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1
1,1,1,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
Chlorobenzene	ND	0.100	--	ND	0.461	--		1
Ethylbenzene	ND	0.020	--	ND	0.087	--		1
p/m-Xylene	ND	0.040	--	ND	0.174	--		1
Bromoform	ND	0.020	--	ND	0.207	--		1
Styrene	ND	0.020	--	ND	0.085	--		1
1,1,2,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
o-Xylene	ND	0.020	--	ND	0.087	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
4-Ethyltoluene	ND	0.020	--	ND	0.098	--		1
1,3,5-Trimethybenzene	ND	0.020	--	ND	0.098	--		1
1,2,4-Trimethylbenzene	ND	0.020	--	ND	0.098	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
1,4-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1



Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

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Report Date: 04/03/19

Air Canister Certification Results

Lab ID: L1910334-02
Client ID: CAN 830 SHELF 15
Sample Location:

Date Collected: 03/15/19 08:00
Date Received: 03/15/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Naphthalene	ND	0.050	--	ND	0.262	--		1
1,2,3-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Hexachlorobutadiene	ND	0.050	--	ND	0.533	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	87		60-140
bromochloromethane	85		60-140
chlorobenzene-d5	85		60-140

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Serial_No:04031916:16
Lab Number: L1912988
Report Date: 04/03/19

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
N/A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1912988-01A	Canister - 1 Liter	N/A	NA			Y	Absent		TO15-LL(30)
L1912988-02A	Canister - 1 Liter	N/A	NA			Y	Absent		TO15-LL(30)

Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912988
Report Date: 04/03/19

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCS D	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
	Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

Report Format: Data Usability Report



Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912988
Report Date: 04/03/19

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- ND** - Not detected at the reporting limit (RL) for the sample.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.

Report Format: Data Usability Report



Project Name: HARDWICK, YELLOW BARN
Project Number: 1857501001

Lab Number: L1912988
Report Date: 04/03/19

REFERENCES

- 48 Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air. Second Edition. EPA/625/R-96/010b, January 1999.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Alpha Analytical, Inc.Facility: **Company-wide**Department: **Quality Assurance**Title: **Certificate/Approval Program Summary**ID No.: **17873**Revision **12**

Published Date: 10/9/2018 4:58:19 PM

Page 1 of 1

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility**EPA 624/624.1:** m/p-xylene, o-xylene**EPA 8260C:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.**EPA 8270D:** NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.**EPA 6860:** SCM: Perchlorate**SM4500:** NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO₂, NO₃.**Mansfield Facility****SM 2540D:** TSS**EPA 8082A:** NPW: PCB: 1, 5, 31, 87, 101, 110, 141, 151, 153, 180, 183, 187.**EPA TO-15:** Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.**Biological Tissue Matrix:** EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:**Drinking Water****EPA 300.0:** Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO₃-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE,****EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B****EPA 332:** Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.**Microbiology:** **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.****Non-Potable Water****SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH₃-BH:** Ammonia-N and Kjeldahl-N, **EPA 350.1:** Ammonia-N, **LACHAT 10-107-06-1-B:** Ammonia-N, **EPA 351.1, SM4500NO₃-F, EPA 353.2:** Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO₄-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300:** Chloride, Sulfate, Nitrate.**EPA 624.1:** Volatile Halocarbons & Aromatics,**EPA 608.3:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs**EPA 625.1:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.****Mansfield Facility:****Drinking Water****EPA 200.7:** Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1 Hg. EPA 522.****Non-Potable Water****EPA 200.7:** Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.**EPA 200.8:** Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.**EPA 245.1 Hg.****SM2340B**

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

APPENDICES

Limited Phase II Environmental Site Assessment Report
Yellow Barn, 281 Route 15 West, Hardwick, Vermont EPA
Cooperative Agreement No.: BF-00A00480-0

APPENDIX C

GROUNDWATER SAMPLING FIELD DATA SHEETS



Gallons Purged:

Gallons Purged:

03856

Phone:603-669-8672

Site: Urowick St. Yellow Barn

Sampler: Jason Wisco

Date: 3-27-19

Well Type: Temp 1"

Well Diameter: 16"

Pump Depth:

DTB:

DTW: 8.55

Well ID: TW-3

Equipment

60000
Y51556
Hoch 2100 G

Purge Start:

Sample Time:

[illegible]

Notes:

TW-3 Sampled @ 1230

Gallons Purged:

Gallons Purged:

Gallons Purged:

Gallons Purged:

APPENDICES

Limited Phase II Environmental Site Assessment Report
Yellow Barn, 281 Route 15 West, Hardwick, Vermont EPA
Cooperative Agreement No.: BF-00A00480-0

APPENDIX D

DATA VALIDATION WORKSHEETS



DATA VALIDATION WORKSHEET

GENERAL INFORMATION:

Lab Name:	Alpha Analytical
Lab SDG/Project/Work Order:	L1911908
Project Name:	The Yellow Barn Site Limited Phase II ESA EPA Cooperative Agreement Number: BF-00A00480
Stantec Project Number:	18575001001
Client:	Northeastern Vermont Development Association
Validator Name:	Sarah Von Raesfeld
Date of Validation:	April 5, 2019

SAMPLE INFORMATION:

Number of Samples:	5	
Matrix:	Soil	
Number of Trip Blanks:	None	
Number of Equipment Blanks:	None	
Number of Field Duplicates	None	
Date of Sample Collection:	March 25, 2019	
<u>Sample Name:</u> SB-8 (0.5-1.5)	<u>Analyses:</u> PAHs (EPA 8270D) OCPs (EPA 8081B) Chlorinated Herbicides (EPA 8151A) RCRA Metals (EPA 6010D) Mercury (EPA 7471B)	<u>Batches:</u> WG1220328 WG1220325 WG1221059 WG1220016 WG1220501
SB-8 (10-14)	VOCs (EPA 8260C) PAHs (EPA 8270D) RCRA Metals (EPA 6010D) Mercury (EPA 7471B)	WG1220924 WG1220328 WG1220016 WG1220501
SB-5 (15-17)	VOCs (EPA 8260C) PAHs (EPA 8270D) RCRA Metals (EPA 6010D) Mercury (EPA 7471B)	WG1220924 WG1220328 WG1220016 WG1220501
SB-1 (0.5-1.5)	PAHs (EPA 8270D) OCPs (EPA 8081B) Chlorinated Herbicides (EPA 8151A) RCRA Metals (EPA 6010D) Mercury (EPA 7471B)	WG1220328 WG1220325 WG1221059 WG1220016 WG1220501
SB-1 (8-11)	VOCs (EPA 8260C) PAHs (EPA 8270D) RCRA Metals (EPA 6010D) Mercury (EPA 7471B)	WG1220924 WG1219932 WG1220016 WG1220501

GENERAL DATA VALIDATION:

<u>Case Narrative:</u>
The laboratory case narrative did not identify any non-conformances.
<u>Chain of Custody:</u>
The COC is complete. Method SW8011 was requested on the COC but later cancelled via email. All requested analyses were performed.
<u>Sample Receipt:</u>
The samples were received within the acceptable temperature range of 0° - 6° C.
<u>Holding Times:</u>
All samples were analyzed within the required holding times.
<u>Trip Blank Review:</u>
No trip blanks were collected.
<u>Equipment Blank Review:</u>
No equipment blanks were collected.
<u>Surrogates:</u>
All surrogate recoveries were within acceptance criteria.
<u>Second Column Confirmation:</u>
All column confirmations met acceptance criteria.
<u>Elevated Reporting Limits:</u>
No elevated MDLs or MRLs were reported.

PER ANALYSES:

Volatile Organic Compounds, Method 8260C (Batch WG1220924)
<u>Method Blank:</u>
No analytes were detected above the MDL in the laboratory method blank. No qualifiers are needed.
<u>Laboratory Control Sample/Laboratory Control Sample Duplicate:</u>
The LCS and/or LCSD percent recoveries exceeded the upper acceptance criteria for 1,1,2-trichloro-1,2,2-trifluoroethane, 1,1-dichloroethene, bromomethane, carbon disulfide, chloroethane, ethyl ether, and trichlorofluoromethane. All of the VOCs were not detected in the associated samples; no data were qualified.
All other recoveries and RPDs were within the acceptance limits. No qualifiers are needed.
<u>Matrix Spike/Matrix Spike Duplicate:</u>
Project-specific MS/MSD samples were not analyzed.
Polycyclic Aromatic Hydrocarbons, Method 8270D (Batches WG1220328 and WG1219932)
<u>Method Blank:</u>
No analytes were detected above the MDL in the laboratory method blank. No qualifiers are needed.

<u>Laboratory Control Sample/Laboratory Control Sample Duplicate:</u> The LCS/LCSD percent recoveries and RPD were within the acceptance limits. No qualifiers are needed.
<u>Matrix Spike/Matrix Spike Duplicate:</u> Project-specific MS/MSD samples were not analyzed.
Organochlorine Pesticides, Method 8081B (Batch WG1220325)
<u>Method Blank:</u> No analytes were detected above the MDL in the laboratory method blank. No qualifiers are needed.
<u>Laboratory Control Sample/Laboratory Control Sample Duplicate:</u> The LCS/LCSD percent recoveries and RPD were within the acceptance limits. No qualifiers are needed.
<u>Matrix Spike/Matrix Spike Duplicate:</u> Project-specific MS/MSD samples were not analyzed.
Chlorinated Herbicides, Method 8151A (Batch WG1221059)
<u>Method Blank:</u> No analytes were detected above the MDL in the laboratory method blank. No qualifiers are needed.
<u>Laboratory Control Sample/Laboratory Control Sample Duplicate:</u> The LCS/LCSD percent recoveries and RPD were within the acceptance limits. No qualifiers are needed.
<u>Matrix Spike/Matrix Spike Duplicate:</u> Project-specific MS/MSD samples were not analyzed.
Metals, Method 6010D (Batch WG1220016)
<u>Method Blank:</u> The method blank had 0.180 mg/kg of arsenic detected. Arsenic was not detected in the associated samples; no data were qualified
<u>Laboratory Control Sample/Laboratory Control Sample Duplicate:</u> The LCS/LCSD percent recoveries and RPD were within the acceptance limits. No qualifiers are needed
<u>Matrix Spike/Matrix Spike Duplicate:</u> Project-specific MS/MSD samples were not analyzed.
Mercury, Method 7471B (Batch WG1220501)
<u>Method Blank:</u> Mercury was not detected above the MDL in the laboratory method blank. No qualifiers are needed.
<u>Laboratory Control Sample/Laboratory Control Sample Duplicate:</u> The LCS/LCSD percent recoveries and RPD were within the acceptance limits. No qualifiers are needed

Matrix Spike/Matrix Spike Duplicate:

Sample SB-8 (0.5-1.5) was analyzed as the project-specific MS/MSD sample. Spike recoveries and RPD were within the acceptance limits. No qualifiers are needed.

FIELD DUPLICATE REVIEW: No field duplicates were collected for this SDG.

DETERMINATION:

The data in this work order have been validated. No data were qualified; all data are usable for their intended purpose.

NOTES:

Laboratory assigned flags (J). Analytical results flagged by the laboratory as estimated values in the final laboratory report are assigned a qualifier of **J** to denote that the result is an estimated value based on the analyses. This qualifier is not one that is assigned based on data validation review or quality of data. In the case where the laboratory reports sample results between the MDL and MRL, the resulting data was flagged with **J** to denote that the result is estimated.

Data validation assigned qualifiers (U, UJ, J, R). The following qualifiers may be assigned to data in this data set based on the results of the data validation procedure (documented on this form). In general data qualifiers are defined as follows:

- **U** Indicates the analyte was analyzed for, but was not detected above the reported sample quantitation limit (MRL, or MDL if reported). Results assigned this qualifier are considered undetected at the MRL, or MDL if reported.
- **UJ** Indicates the analyte was not detected above the quantitation limit or MRL (MDL, if reported); however, the MRL (MDL, if reported) is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. Results assigned this qualifier are considered undetected at the estimated MRL (MDL, if reported).
- **J** Indicates the analyte was positively identified; however, the associated numerical value is the approximate concentration of the analyte in the sample. Results assigned this qualifier as considered and detected at an estimated value.
- **R** Indicates the presence or absence of the analyte cannot be confirmed due to serious laboratory deficiencies in the ability to analyze the sample and meet quality control criteria. Results assigned this qualifier are rejected and considered unusable.

REFERENCES:

EPA. 2002. *Guidance on Environmental Data Verification and Data Validation, EPA QA/G-8*. USEPA. November 2002.

EPA. 2016. United States Environmental Protection Agency (USEPA) *National Functional Guidelines for Superfund Organic Methods Data Review*. EPA-540-R-2016-002. Office of Superfund Remediation and Technology Innovation. September.

EPA. 2017. *USEPA National Functional Guidelines for Superfund Organic Methods Data Review, EPA-540-R-2017-001*. Office of Superfund Remediation and Technology Innovation. January.

DATA VALIDATION WORKSHEET

GENERAL INFORMATION:

Lab Name:	Alpha Analytical
Lab SDG/Project/Work Order:	L1912086
Project Name:	The Yellow Barn Site Limited Phase II ESA EPA Cooperative Agreement Number: BF-00A00480
Stantec Project Number:	18575001001
Client:	Northeastern Vermont Development Association
Validator Name:	Sarah Von Raesfeld
Date of Validation:	April 5, 2019

SAMPLE INFORMATION:

Number of Samples:	6	
Matrix:	Soil	
Number of Trip Blanks:	None	
Number of Equipment Blanks:	None	
Number of Field Duplicates	One	
Date of Sample Collection:	March 26, 2019	
<u>Sample Name:</u> SB-2 (0.5-1.5)	<u>Analyses:</u> PAHs (EPA 8270D) OCPs (EPA 8081B) Chlorinated Herbicides (EPA 8151A) RCRA Metals (EPA 6010D) Mercury (EPA 7471B)	<u>Batches:</u> WG1220673 WG1221031 WG1221532 WG1220953 WG1220501
SB-2 (10-14)	VOCs (EPA 8260C) PAHs (EPA 8270D) RCRA Metals (EPA 6010D) Mercury (EPA 7471B)	WG1221371 WG1220673 WG1220953 WG1220501
SB-3 (8-11)	VOCs (EPA 8260C) PAHs (EPA 8270D) RCRA Metals (EPA 6010D) Mercury (EPA 7471B)	WG1221371 WG1220673 WG1220953 WG1220501
SB-4 (10-15)	VOCs (EPA 8260C) PAHs (EPA 8270D) RCRA Metals (EPA 6010D) Mercury (EPA 7471B)	WG1221371 WG1220673 WG1220953 WG1220501
SB-6 (5-9)	VOCs (EPA 8260C) PAHs (EPA 8270D) RCRA Metals (EPA 6010D) Mercury (EPA 7471B)	WG1221371 WG1220673 WG1220953 WG1220501
SB-7A (5-7)	VOCs (EPA 8260C) PAHs (EPA 8270D) RCRA Metals (EPA 6010D) Mercury (EPA 7471B)	WG1221371 WG1220673 WG1220953 WG1220501

<u>Sample Name:</u>	<u>Analyses:</u>	<u>Batches:</u>
DUP	VOCs (EPA 8260C) PAHs (EPA 8270D) RCRA Metals (EPA 6010D) Mercury (EPA 7471B)	WG1221371 WG1220673 WG1220953 WG1220501

GENERAL DATA VALIDATION:

Case Narrative:

The laboratory narrated spike recoveries that did exceed acceptance limits. Non-conformances that did not meet project criteria are summarized below.

Chain of Custody:

The COC is complete. All requested analyses were performed.

Sample Receipt:

The samples were received within the acceptable temperature range of 0° - 6° C.

Holding Times:

All samples were analyzed within the required holding times.

Trip Blank Review:

No trip blanks were collected.

Equipment Blank Review:

No equipment blanks were collected.

Surrogates:

All surrogate recoveries were within acceptance criteria.

Second Column Confirmation:

The RPD calculated for 4,4'-DDE in sample SB-2 (0.5-1.5) exceeded the method-specified limit. The result was qualified as estimated (J).

Elevated Reporting Limits:

No elevated MDLs or MRLs were reported.

PER ANALYSES:

Volatile Organic Compounds, Method 8260C (Batch WG1221371)

Method Blank:

No analytes were detected above the MDL in the laboratory method blank. No qualifiers are needed.

Laboratory Control Sample/Laboratory Control Sample Duplicate:

The LCS/LCSD percent recoveries and RPD were within the acceptance limits. No qualifiers are needed.

Matrix Spike/Matrix Spike Duplicate:

Project-specific MS/MSD samples were not analyzed.

Polycyclic Aromatic Hydrocarbons, Method 8270D (Batch WG1220673)
<u>Method Blank:</u> No analytes were detected above the MDL in the laboratory method blank. No qualifiers are needed.
<u>Laboratory Control Sample/Laboratory Control Sample Duplicate:</u> The LCS/LCSD percent recoveries and RPD were within the acceptance limits. No qualifiers are needed.
<u>Matrix Spike/Matrix Spike Duplicate:</u> Project-specific MS/MSD samples were not analyzed.
Organochlorine Pesticides, Method 8081B (Batch WG1221031)
<u>Method Blank:</u> No analytes were detected above the MDL in the laboratory method blank. No qualifiers are needed.
<u>Laboratory Control Sample/Laboratory Control Sample Duplicate:</u> Several LCS/LCSD RPDs exceeded the acceptance criteria for column A. All sample results were reported from column B; no qualifiers are needed.
<u>Matrix Spike/Matrix Spike Duplicate:</u> Project-specific MS/MSD samples were not analyzed.
Chlorinated Herbicides, Method 8151A (Batch WG1221532)
<u>Method Blank:</u> No analytes were detected above the MDL in the laboratory method blank. No qualifiers are needed.
<u>Laboratory Control Sample/Laboratory Control Sample Duplicate:</u> The LCS/LCSD percent recoveries and RPD were within the acceptance limits. No qualifiers are needed.
<u>Matrix Spike/Matrix Spike Duplicate:</u> Project-specific MS/MSD samples were not analyzed.
Metals, Method 6010D (Batch WG1220953)
<u>Method Blank:</u> No analytes were detected above the MDL in the laboratory method blank. No qualifiers are needed.
<u>Laboratory Control Sample/Laboratory Control Sample Duplicate:</u> The LCS/LCSD percent recoveries and RPD were within the acceptance limits. No qualifiers are needed.
<u>Matrix Spike/Matrix Spike Duplicate:</u> Project-specific MS/MSD samples were not analyzed.

Mercury, Method 7471B (Batches WG1220501)

Method Blank:

Mercury was not detected above the MDL in the laboratory method blank. No qualifiers are needed.

Laboratory Control Sample/Laboratory Control Sample Duplicate:

The LCS/LCSD percent recoveries and RPD were within the acceptance limits. No qualifiers are needed

Matrix Spike/Matrix Spike Duplicate:

Project-specific MS/MSD samples were not analyzed.

FIELD DUPLICATE REVIEW:

One field duplicate pair was collected. Sample DUP is a field duplicate of sample SB-4 (10-15). RPDs are calculated between the results of the original and field duplicate samples for constituents detected in both samples at concentrations exceeding five-times their respective MRLs. Constituents meeting criteria are tabulated below. The calculated RPDs met project limits. No qualifiers are needed.

Sample Name	Constituent	Result (mg/kg)	Reporting Limit (mg/kg)	RPD
SB-4 (10-15)	Acetone	0.073	0.012	40%
DUP		0.110	0.012	
SB-4 (10-15)	Barium	61.5	0.587	6.0%
DUP		65.6	0.618	
SB-4 (10-15)	Chromium	21.1	0.587	13%
DUP		24	0.618	

DETERMINATION:

The data in this work order have been validated. All data that have not been rejected ("R" flagged) are usable as qualified:

<u>Sample ID</u>	<u>Method</u>	<u>Analyte</u>	<u>Original Result</u>	<u>Validated Result</u>	<u>Units</u>	<u>Reason Code</u>
SB-2 (0.5-1.5)	EPA 8081B	4,4'-DDE	0.984 JIP	0.984 J	µg/kg	Column Confirmation

µg/kg – micrograms per kilogram

NOTES:

Laboratory assigned flags (J). Analytical results flagged by the laboratory as estimated values in the final laboratory report are assigned a qualifier of **J** to denote that the result is an estimated value based on the analyses. This qualifier is not one that is assigned based on data validation review or quality of data. In the case where the laboratory reports sample results between the MDL and MRL, the resulting data was flagged with **J** to denote that the result is estimated.

Data validation assigned qualifiers (U, UJ, J, R). The following qualifiers may be assigned to data in this data set based on the results of the data validation procedure (documented on this form). In general data qualifiers are defined as follows:

- **U** Indicates the analyte was analyzed for, but was not detected above the reported sample quantitation limit (MRL, or MDL if reported). Results assigned this qualifier are considered undetected at the MRL, or MDL if reported.
- **UJ** Indicates the analyte was not detected above the quantitation limit or MRL (MDL, if reported); however, the MRL (MDL, if reported) is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. Results assigned this qualifier are considered undetected at the estimated MRL (MDL, if reported).
- **J** Indicates the analyte was positively identified; however, the associated numerical value is the approximate concentration of the analyte in the sample. Results assigned this qualifier as considered and detected at an estimated value.
- **R** Indicates the presence or absence of the analyte cannot be confirmed due to serious laboratory deficiencies in the ability to analyze the sample and meet quality control criteria. Results assigned this qualifier are rejected and considered unusable.

REFERENCES:

EPA. 2002. *Guidance on Environmental Data Verification and Data Validation, EPA QA/G-8*. USEPA. November 2002.

EPA. 2016. United States Environmental Protection Agency (USEPA) *National Functional Guidelines for Superfund Organic Methods Data Review*. EPA-540-R-2016-002. Office of Superfund Remediation and Technology Innovation. September.

EPA. 2017. *USEPA National Functional Guidelines for Superfund Organic Methods Data Review, EPA-540-R-2017-001*. Office of Superfund Remediation and Technology Innovation. January.

DATA VALIDATION WORKSHEET

GENERAL INFORMATION:

Lab Name:	Alpha Analytical
Lab SDG/Project/Work Order:	L1912311
Project Name:	The Yellow Barn Site Limited Phase II ESA EPA Cooperative Agreement Number: BF-00A00480
Stantec Project Number:	18575001001
Client:	Northeastern Vermont Development Association
Validator Name:	Sarah Von Raesfeld
Date of Validation:	April 4, 2019

SAMPLE INFORMATION:

Number of Samples:	4
Matrix:	Groundwater
Number of Trip Blanks:	One
Number of Equipment Blanks:	None
Number of Field Duplicates	One
Date of Sample Collection:	March 27, 2019

<u>Sample Name:</u>	<u>Analyses:</u>	<u>Batches:</u>
TW-1	VOCs (EPA 8260C) EDB (EPA 8011) PAHs (EPA 8270D SIM) RCRA Metals (EPA 6020B) Mercury (EPA 7470A) OCPs (EPA 8081B) Chlorinated Herbicides (EPA 8151A)	WG1221273 WG1221695 WG1221523 WG1221630 WG1221247 WG1222084 WG1221672
TW-2	VOCs (EPA 8260C) EDB (EPA 8011) PAHs (EPA 8270D SIM) RCRA Metals (EPA 6020B) Mercury (EPA 7470A) OCPs (EPA 8081B) Chlorinated Herbicides (EPA 8151A)	WG1221273 WG1221695 WG1221523 WG1221630 WG1221247 WG1222084 WG1221672
TW-3	VOCs (EPA 8260C) EDB (EPA 8011) PAHs (EPA 8270D SIM) RCRA Metals (EPA 6020B) Mercury (EPA 7470A)	WG1221273 WG1221695 WG1221523 WG1221630 WG1221247

<u>Sample Name:</u> TW-4	<u>Analyses:</u> VOCs (EPA 8260C) EDB (EPA 8011) PAHs (EPA 8270D SIM) RCRA Metals (EPA 6020B) Mercury (EPA 7470A)	<u>Batches:</u> WG1221273 WG1221695 WG1221523 WG1221630 WG1221247
DUP	EDB (EPA 8011) VOCs (EPA 8260C) PAHs (EPA 8270D SIM) RCRA Metals (EPA 6020B) Mercury (EPA 7470A)	WG1221695 WG1221273 WG1221523 WG1221630 WG1221247
TRIP	VOCs (EPA 8260C) EDB (EPA 8011)	WG1221273 WG1221695

GENERAL DATA VALIDATION:

Case Narrative:

The laboratory case narrative did not identify any non-conformances.

Chain of Custody:

The COC is complete. All requested analyses were performed.

Sample Receipt:

The samples were received within the acceptable temperature range of 0° - 6° C.

Holding Times:

All samples were analyzed within the required holding times.

Trip Blank Review:

No VOCs were detected above the MDL in the trip blank sample.

Equipment Blank Review:

No equipment blanks were collected.

Surrogates:

The PAH DMC recovery exceeded laboratory-established control limits for nitrobenzene-d5 in sample TW-3. The associated PAHs were not detected; no data were qualified.

Second Column Confirmation:

All column confirmations met acceptance criteria.

Elevated Reporting Limits:

One sample, TRIP, was analyzed from a reduced volume; sample MDLs and MRLs were raised accordingly.

PER ANALYSES:

Volatile Organic Compounds, Method 8260C (Batch WG1221273)
<u>Method Blank:</u> No analytes were detected above the MDL in the laboratory method blank. No qualifiers are needed.
<u>Laboratory Control Sample/Laboratory Control Sample Duplicate:</u> The LCS/LCSD percent recoveries exceeded the upper acceptance criteria for iodomethane. Iodomethane was not detected in the associated samples; no data were qualified. All other recoveries and RPDs were within the acceptance limits. No qualifiers are needed.
<u>Matrix Spike/Matrix Spike Duplicate:</u> Project-specific MS/MSD samples were not analyzed.
Ethylene Dibromide, Method 8011 (Batch WG1221695)
<u>Method Blank:</u> EDB was not detected above the MDL in the laboratory method blank. No qualifiers are needed.
<u>Laboratory Control Sample/Laboratory Control Sample Duplicate:</u> The LCS/LCSD percent recoveries and RPD were within the acceptance limits. No qualifiers are needed.
<u>Matrix Spike/Matrix Spike Duplicate:</u> Project-specific MS/MSD samples were not analyzed.
Polycyclic Aromatic Hydrocarbons, Method 8270D SIM (Batch WG1221523)
<u>Method Blank:</u> No analytes were detected above the MDL in the laboratory method blank. No qualifiers are needed.
<u>Laboratory Control Sample/Laboratory Control Sample Duplicate:</u> The LCS/LCSD percent recoveries and RPD were within the acceptance limits. No qualifiers are needed.
<u>Matrix Spike/Matrix Spike Duplicate:</u> Project-specific MS/MSD samples were not analyzed.
Organochlorine Pesticides, Method 8081B (Batch WG1222084)
<u>Method Blank:</u> No analytes were detected above the MDL in the laboratory method blank. No qualifiers are needed.
<u>Laboratory Control Sample/Laboratory Control Sample Duplicate:</u> The LCS/LCSD percent recoveries and RPD were within the acceptance limits. No qualifiers are needed.
<u>Matrix Spike/Matrix Spike Duplicate:</u> Project-specific MS/MSD samples were not analyzed.

Chlorinated Herbicides, Method 8151A (Batch WG1221672)
<u>Method Blank:</u> No analytes were detected above the MDL in the laboratory method blank. No qualifiers are needed.
<u>Laboratory Control Sample/Laboratory Control Sample Duplicate:</u> The LCS/LCSD percent recoveries and RPD were within the acceptance limits. No qualifiers are needed.
<u>Matrix Spike/Matrix Spike Duplicate:</u> Project-specific MS/MSD samples were not analyzed.
Metals, Method 60120B (Batch WG1221630)
<u>Method Blank:</u> No analytes were detected above the MDL in the laboratory method blank. No qualifiers are needed.
<u>Laboratory Control Sample/Laboratory Control Sample Duplicate:</u> The LCS/LCSD percent recoveries and RPD were within the acceptance limits. No qualifiers are needed
<u>Matrix Spike/Matrix Spike Duplicate:</u> Project-specific MS/MSD samples were not analyzed.
Mercury, Method 7471B (Batch WG1221247)
<u>Method Blank:</u> Mercury was not detected above the MDL in the laboratory method blank. No qualifiers are needed.
<u>Laboratory Control Sample/Laboratory Control Sample Duplicate:</u> The LCS/LCSD percent recoveries and RPD were within the acceptance limits. No qualifiers are needed
<u>Matrix Spike/Matrix Spike Duplicate:</u> Sample TW-3 was analyzed as the project-specific MS/MSD sample. Spike recoveries and RPD were within the acceptance limits. No qualifiers are needed.

FIELD DUPLICATE REVIEW:

One field duplicate pair was collected. Sample DUP is a field duplicate of sample TW-4. RPDs are calculated between the results of the original and field duplicate samples for constituents detected in both samples at concentrations exceeding five-times their respective MRLs. Constituents meeting criteria are tabulated below. The calculated RPDs met project limits. No qualifiers are needed.

Sample Name	Constituent	Result (mg/L)	Reporting Limit (mg/L)	RPD
TW-4	Total arsenic	0.00711	0.0005	5%
DUP		0.00744	0.0005	
TW-4	Total barium	0.1208	0.0005	3%
DUP		0.1248	0.0005	
TW-4	Total chromium	0.01144	0.001	18%
DUP		0.01366	0.001	
TW-4	Total lead	0.00742	0.001	6%
DUP		0.00784	0.001	

DETERMINATION:

The data in this work order have been validated. No data were qualified; all data are usable for their intended purpose.

NOTES:

Laboratory assigned flags (J). Analytical results flagged by the laboratory as estimated values in the final laboratory report are assigned a qualifier of **J** to denote that the result is an estimated value based on the analyses. This qualifier is not one that is assigned based on data validation review or quality of data. In the case where the laboratory reports sample results between the MDL and MRL, the resulting data was flagged with **J** to denote that the result is estimated.

Data validation assigned qualifiers (U, UJ, J, R). The following qualifiers may be assigned to data in this data set based on the results of the data validation procedure (documented on this form). In general data qualifiers are defined as follows:

- **U** Indicates the analyte was analyzed for, but was not detected above the reported sample quantitation limit (MRL, or MDL if reported). Results assigned this qualifier are considered undetected at the MRL, or MDL if reported.
- **UJ** Indicates the analyte was not detected above the quantitation limit or MRL (MDL, if reported); however, the MRL (MDL, if reported) is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. Results assigned this qualifier are considered undetected at the estimated MRL (MDL, if reported).
- **J** Indicates the analyte was positively identified; however, the associated numerical value is the approximate concentration of the analyte in the sample. Results assigned this qualifier as considered and detected at an estimated value.
- **R** Indicates the presence or absence of the analyte cannot be confirmed due to serious laboratory deficiencies in the ability to analyze the sample and meet quality control criteria. Results assigned this qualifier are rejected and considered unusable.

REFERENCES:

EPA. 2002. *Guidance on Environmental Data Verification and Data Validation, EPA QA/G-8*. USEPA. November 2002.

EPA. 2016. United States Environmental Protection Agency (USEPA) *National Functional Guidelines for Superfund Organic Methods Data Review*. EPA-540-R-2016-002. Office of Superfund Remediation and Technology Innovation. September.

EPA. 2017. *USEPA National Functional Guidelines for Superfund Organic Methods Data Review, EPA-540-R-2017-001*. Office of Superfund Remediation and Technology Innovation. January.

DATA VALIDATION WORKSHEET

GENERAL INFORMATION:

Lab Name:	Alpha Analytical
Lab SDG/Project/Work Order:	L1912577
Project Name:	The Yellow Barn Site Limited Phase II ESA EPA Cooperative Agreement Number: BF-00A00480
Stantec Project Number:	18575001001
Client:	Northeastern Vermont Development Association
Validator Name:	Sarah Von Raesfeld
Date of Validation:	April 6, 2019

SAMPLE INFORMATION:

Number of Samples:	2	
Matrix:	Groundwater	
Number of Trip Blanks:	None	
Number of Equipment Blanks:	None	
Number of Field Duplicates	None	
Date of Sample Collection:	March 28, 2019	
<u>Sample Name:</u> TW-5	<u>Analyses:</u> VOCs (EPA 8260C) EDB (EPA 8011) PAHs (EPA 8270D SIM) RCRA Metals (EPA 6020B) Mercury (EPA 7470A)	<u>Batch:</u> WG1222118 WG1221695 WG1221523 WG1221629 WG1221870
<u>Sample Name:</u> TW-8	<u>Analyses:</u> VOCs (EPA 8260C) EDB (EPA 8011) PAHs (EPA 8270D SIM) RCRA Metals (EPA 6020B) Mercury (EPA 7470A) OCPs (EPA 8081B) Chlorinated Herbicides (EPA 8151A)	<u>Batch:</u> WG1222118 WG1221695 WG1221523 WG1221629 WG1221870 WG1222504 WG1221672

GENERAL DATA VALIDATION:

<u>Case Narrative:</u> The laboratory case narrative did not identify any non-conformances.
<u>Chain of Custody:</u> The COC is complete. All requested analyses were performed.
<u>Sample Receipt:</u> The samples were received within the acceptable temperature range of 0° - 6° C.
<u>Holding Times:</u> All samples were analyzed within the required holding times.
<u>Trip Blank Review:</u> No trip blank samples were submitted.

<u>Equipment Blank Review:</u> No equipment blanks were collected.
<u>Surrogates:</u> All surrogate recoveries were within the acceptance criteria.
<u>Second Column Confirmation:</u> The RPD calculated for 4,4'-DDT in sample TW-8 exceeded the method-specified limit. The result was qualified as estimated (J).
<u>Elevated Reporting Limits:</u> No elevated reporting limits were reported.

PER ANALYSES:

Volatile Organic Compounds, Method 8260C (Batch WG1222118)
<u>Method Blank:</u> The method blank had 0.38 µg/L of bromomethane detected. Bromomethane was detected between the MDL and MRL in sample TW-8 and was qualified as not detect at the reporting limit (UB).
<u>Laboratory Control Sample/Laboratory Control Sample Duplicate:</u> The LCS/LCSD percent recoveries and RPD were within the acceptance limits. No qualifiers are needed.
<u>Matrix Spike/Matrix Spike Duplicate:</u> Project-specific MS/MSD samples were not analyzed.
Ethylene Dibromide, Method 8011 (Batch WG1221695)
<u>Method Blank:</u> EDB was not detected above the MDL in the laboratory method blank. No qualifiers are needed.
<u>Laboratory Control Sample/Laboratory Control Sample Duplicate:</u> The LCS/LCSD percent recoveries and RPD were within the acceptance limits. No qualifiers are needed.
<u>Matrix Spike/Matrix Spike Duplicate:</u> Project-specific MS/MSD samples were not analyzed.
Polycyclic Aromatic Hydrocarbons, Method 8270D SIM (Batch WG1221523)
<u>Method Blank:</u> No analytes were detected above the MDL in the laboratory method blank. No qualifiers are needed.
<u>Laboratory Control Sample/Laboratory Control Sample Duplicate:</u> The LCS/LCSD percent recoveries and RPD were within the acceptance limits. No qualifiers are needed.
<u>Matrix Spike/Matrix Spike Duplicate:</u> Project-specific MS/MSD samples were not analyzed.

Organochlorine Pesticides, Method 8081B (Batch WG1222504)
<u>Method Blank:</u> No analytes were detected above the MDL in the laboratory method blank. No qualifiers are needed.
<u>Laboratory Control Sample/Laboratory Control Sample Duplicate:</u> The LCS/LCSD percent recoveries and RPD were within the acceptance limits. No qualifiers are needed.
<u>Matrix Spike/Matrix Spike Duplicate:</u> Project-specific MS/MSD samples were not analyzed.
Chlorinated Herbicides, Method 8151A (Batch WG1221672)
<u>Method Blank:</u> No analytes were detected above the MDL in the laboratory method blank. No qualifiers are needed.
<u>Laboratory Control Sample/Laboratory Control Sample Duplicate:</u> The LCS/LCSD percent recoveries and RPD were within the acceptance limits. No qualifiers are needed.
<u>Matrix Spike/Matrix Spike Duplicate:</u> Project-specific MS/MSD samples were not analyzed.
Metals, Method 6020B (Batch WG1221629)
<u>Method Blank:</u> No analytes were detected above the MDL in the laboratory method blank. No qualifiers are needed.
<u>Laboratory Control Sample:</u> The LCS percent recoveries were within the acceptance limits. No qualifiers are needed.
<u>Matrix Spike/Matrix Spike Duplicate:</u> Project-specific MS/MSD samples were not analyzed.
Mercury, Method 7470A (Batch WG1221870)
<u>Method Blank:</u> Mercury was not detected above the MDL in the laboratory method blank. No qualifiers are needed.
<u>Laboratory Control Sample:</u> The LCS percent recovery was within the acceptance limits. No qualifiers are needed.
<u>Matrix Spike/Matrix Spike Duplicate:</u> Sample TW-3 was analyzed as the project-specific MS/MSD sample. Spike recoveries and RPD were within the acceptance limits. No qualifiers are needed.

FIELD DUPLICATE REVIEW: No field duplicates were collected for this SDG.

DETERMINATION:

The data in this work order have been validated. All data that have not been rejected ("R" flagged) are usable as qualified:

<u>Sample ID</u>	<u>Method</u>	<u>Analyte</u>	<u>Original Result</u>	<u>Validated Result</u>	<u>Units</u>	<u>Reason Code</u>
TW-8	EPA 8260B	Bromomethane	0.50 J	1.0 UB	µg/L	MB Detection
TW-8	EPA 8081B	4,4'-DDT	0.019 JIP	0.019 J	µg/L	Column Confirmation

µg/L – micrograms per liter

MB – method blank

NOTES:

Laboratory assigned flags (J). Analytical results flagged by the laboratory as estimated values in the final laboratory report are assigned a qualifier of **J** to denote that the result is an estimated value based on the analyses. This qualifier is not one that is assigned based on data validation review or quality of data. In the case where the laboratory reports sample results between the MDL and MRL, the resulting data was flagged with **J** to denote that the result is estimated.

Data validation assigned qualifiers (U, UJ, J, R). The following qualifiers may be assigned to data in this data set based on the results of the data validation procedure (documented on this form). In general data qualifiers are defined as follows:

- **U** Indicates the analyte was analyzed for, but was not detected above the reported sample quantitation limit (MRL, or MDL if reported). Results assigned this qualifier are considered undetected at the MRL, or MDL if reported.
- **UJ** Indicates the analyte was not detected above the quantitation limit or MRL (MDL, if reported); however, the MRL (MDL, if reported) is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. Results assigned this qualifier are considered undetected at the estimated MRL (MDL, if reported).
- **J** Indicates the analyte was positively identified; however, the associated numerical value is the approximate concentration of the analyte in the sample. Results assigned this qualifier as considered and detected at an estimated value.
- **R** Indicates the presence or absence of the analyte cannot be confirmed due to serious laboratory deficiencies in the ability to analyze the sample and meet quality control criteria. Results assigned this qualifier are rejected and considered unusable.

REFERENCES:

EPA. 2002. *Guidance on Environmental Data Verification and Data Validation, EPA QA/G-8*. USEPA. November 2002.

EPA. 2016. United States Environmental Protection Agency (USEPA) *National Functional Guidelines for Superfund Organic Methods Data Review*. EPA-540-R-2016-002. Office of Superfund Remediation and Technology Innovation. September.

EPA. 2017. *USEPA National Functional Guidelines for Superfund Organic Methods Data Review, EPA-540-R-2017-001*. Office of Superfund Remediation and Technology Innovation. January.

DATA VALIDATION WORKSHEET

GENERAL INFORMATION:

Lab Name:	Alpha Analytical
Lab SDG/Project/Work Order:	L1912854
Project Name:	The Yellow Barn Site Limited Phase II ESA EPA Cooperative Agreement Number: BF-00A00480
Stantec Project Number:	18575001001
Client:	Northeastern Vermont Development Association
Validator Name:	Sarah Von Raesfeld
Date of Validation:	April 5, 2019

SAMPLE INFORMATION:

Number of Samples:		4
Matrix:		Soil
Number of Trip Blanks:		None
Number of Equipment Blanks:		None
Number of Field Duplicates		None
Date of Sample Collection:		March 29, 2019
<u>Sample Name:</u>	<u>Analyses:</u>	<u>Batch:</u>
SS-1 (0'-0.5')	RCRA Metals (EPA 6010D) Mercury (EPA 7471B) VOCs (EPA 8260C) PAHs (EPA 8270D)	WG1222424 WG1222379 WG1222939 WG1221966
SS-1 (3.0-3.5')	RCRA Metals (EPA 6010D) Mercury (EPA 7471B) VOCs (EPA 8260C) PAHs (EPA 8270D)	WG1222424 WG1221997 WG1222939 WG1221966
SS-2 (0'-0.5')	RCRA Metals (EPA 6010D) Mercury (EPA 7471B) VOCs (EPA 8260C) PAHs (EPA 8270D)	WG1222424 WG1221997 WG1222939 WG1221966
SS-2 (36-43")"	RCRA Metals (EPA 6010D) Mercury (EPA 7471B) VOCs (EPA 8260C) PAHs (EPA 8270D)	WG1222424 WG1221997 WG1222939 WG1221966

GENERAL DATA VALIDATION:

Case Narrative:

The laboratory narrated spike recoveries that did exceed acceptance limits. Non-conformances that did not meet project criteria are summarized below.

Chain of Custody:

The COC is complete. All requested analyses were performed.

<u>Sample Receipt:</u> The samples were received within the acceptable temperature range of 0° - 6° C.
<u>Holding Times:</u> All samples were analyzed within the required holding times.
<u>Trip Blank Review:</u> No trip blanks were collected.
<u>Equipment Blank Review:</u> No equipment blanks were collected.
<u>Surrogates:</u> The PAH surrogate recovery exceeded laboratory-established control limits for 2-fluorobiphenyl in sample SS-1 (0'-0.5'). The associated PAHs were not detected; no data were qualified.
<u>Elevated Reporting Limits:</u> Samples SS-1 (0'-0.5'), SS-1 (3.0-3.5'), and SS-2 (0'-0.5') were analyzed from a reduced volume due to the nature of the sample matrix; PAH MDLs and MRLs were raised accordingly.

PER ANALYSES:

Volatile Organic Compounds, Method 8260C (Batch WG1222939)
<u>Method Blank:</u> No analytes were detected above the MDL in the laboratory method blank. No qualifiers are needed.
<u>Laboratory Control Sample/Laboratory Control Sample Duplicate:</u> The LCS/LCSD percent recoveries and RPD were within the acceptance limits. No qualifiers are needed.
<u>Matrix Spike/Matrix Spike Duplicate:</u> Project-specific MS/MSD samples were not analyzed.
Polycyclic Aromatic Hydrocarbons, Method 8270D (Batch WG1221966)
<u>Method Blank:</u> No analytes were detected above the MDL in the laboratory method blank. No qualifiers are needed.
<u>Laboratory Control Sample/Laboratory Control Sample Duplicate:</u> The LCS/LCSD percent recoveries and RPD were within the acceptance limits. No qualifiers are needed.
<u>Matrix Spike/Matrix Spike Duplicate:</u> Project-specific MS/MSD samples were not analyzed.
Metals, Method 6010D (Batch WG1222424)
<u>Method Blank:</u> No analytes were detected above the MDL in the laboratory method blank. No qualifiers are needed.

<u>Laboratory Control Sample/Laboratory Control Sample Duplicate:</u> The LCS/LCSD percent recoveries and RPD were within the acceptance limits. No qualifiers are needed
<u>Matrix Spike/Matrix Spike Duplicate:</u> Project-specific MS/MSD samples were not analyzed.
Mercury, Method 7471B (Batches WG1222379 and WG1221997)
<u>Method Blank:</u> Mercury was not detected above the MDL in the laboratory method blank. No qualifiers are needed.
<u>Laboratory Control Sample/Laboratory Control Sample Duplicate:</u> The LCS/LCSD percent recoveries and RPD were within the acceptance limits. No qualifiers are needed
<u>Matrix Spike/Matrix Spike Duplicate:</u> Project sample SS-1 (0'-0.5') was analyzed as the MS/MSD. The matrix spike percent recovery exceeded the upper control limit; mercury was not detected in the sample and therefore was not qualified.

FIELD DUPLICATE REVIEW: No field duplicates were collected for this SDG.

DETERMINATION:

The data in this work order have been validated. No data were qualified; all data are usable for their intended purpose.

NOTES:

Laboratory assigned flags (J). Analytical results flagged by the laboratory as estimated values in the final laboratory report are assigned a qualifier of **J** to denote that the result is an estimated value based on the analyses. This qualifier is not one that is assigned based on data validation review or quality of data. In the case where the laboratory reports sample results between the MDL and MRL, the resulting data was flagged with **J** to denote that the result is estimated.

Data validation assigned qualifiers (U, UJ, J, R). The following qualifiers may be assigned to data in this data set based on the results of the data validation procedure (documented on this form). In general data qualifiers are defined as follows:

- **U** Indicates the analyte was analyzed for, but was not detected above the reported sample quantitation limit (MRL, or MDL if reported). Results assigned this qualifier are considered undetected at the MRL, or MDL if reported.
- **UJ** Indicates the analyte was not detected above the quantitation limit or MRL (MDL, if reported); however, the MRL (MDL, if reported) is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. Results assigned this qualifier are considered undetected at the estimated MRL (MDL, if reported).
- **J** Indicates the analyte was positively identified; however, the associated numerical value is the approximate concentration of the analyte in the sample. Results assigned this qualifier as considered and detected at an estimated value.
- **R** Indicates the presence or absence of the analyte cannot be confirmed due to serious laboratory deficiencies in the ability to analyze the sample and meet quality control criteria. Results assigned this qualifier are rejected and considered unusable.

REFERENCES:

EPA. 2002. *Guidance on Environmental Data Verification and Data Validation, EPA QA/G-8*. USEPA. November 2002.

EPA. 2016. United States Environmental Protection Agency (USEPA) *National Functional Guidelines for Superfund Organic Methods Data Review*. EPA-540-R-2016-002. Office of Superfund Remediation and Technology Innovation. September.

EPA. 2017. *USEPA National Functional Guidelines for Superfund Organic Methods Data Review, EPA-540-R-2017-001*. Office of Superfund Remediation and Technology Innovation. January.

DATA VALIDATION WORKSHEET

GENERAL INFORMATION:

Lab Name:	Alpha Analytical
Lab SDG/Project/Work Order:	L1912988
Project Name:	The Yellow Barn Site Limited Phase II ESA EPA Cooperative Agreement Number: BF-00A00480
Stantec Project Number:	18575001001
Client:	Northeastern Vermont Development Association
Validator Name:	Sarah Von Raesfeld
Date of Validation:	April 4, 2019

SAMPLE INFORMATION:

CRIM 12-101 CRIMINALS		
Number of Samples:	Two	
Matrix:	Soil Vapor	
Number of Trip Blanks:	None	
Number of Equipment Blanks:	None	
Number of Field Duplicates	None	
Date of Sample Collection:	March 29, 2019	
<u>Sample:</u>	<u>Analyses:</u>	<u>Batch:</u>
SG-1	VOCs (EPA TO-15)	WG1193314
SG-2	VOCs (EPA TO-15)	WG1191864

GENERAL DATA VALIDATION:

<u>Case Narrative:</u> The laboratory case narrative noted elevated detection limits. Laboratory non-conformances and any associated qualified data are detailed below.
<u>Chain of Custody:</u> COC is complete. All requested analyses were performed.
<u>Sample Receipt:</u> The samples were received at ambient temperatures, per method requirements.
<u>Holding Times:</u> All samples were analyzed within the required method holding times.
<u>Trip Blank Review:</u> Not Applicable.
<u>Equipment Blank Review:</u> Not Applicable.
<u>Surrogates:</u> All surrogate percent recoveries were within laboratory acceptance criteria.

Elevated Reporting Limits:

Both samples with pressurized prior to analysis, which resulted in a dilution of the samples. The laboratory MRLs were raised accordingly; no data were qualified.

PER ANALYSES:

Volatile Organic Compounds, Method TO-15 (Batch WG222274)
<u>Method Blanks:</u> No VOCs were detected above the MRL in the method blank. No qualifiers are needed.
<u>Laboratory Control Sample/Laboratory Control Sample Duplicate:</u> LCS/LCSD percent recoveries were within the acceptance criteria. No qualifiers are needed.
<u>Matrix Spike/Matrix Spike Duplicate:</u> A MS/MSD sample was not analyzed.

FIELD DUPLICATE REVIEW: No field duplicates were collected for this SDG.

DETERMINATION:

The data in this work order have been validated. No data were qualified; all data are usable for their intended purpose.

NOTES:

Data validation assigned qualifiers (U, UJ, J, R). The following qualifiers may be assigned to data in this data set based on the results of the data validation procedure (documented on this form). In general data qualifiers are defined as follows:

- **U** Indicates the analyte was analyzed for, but was not detected above the reported sample quantitation limit (MRL, or MDL if reported). Results assigned this qualifier are considered undetected at the MRL, or MDL if reported.
- **UJ** Indicates the analyte was not detected above the quantitation limit or MRL (MDL, if reported); however, the MRL (MDL, if reported) is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. Results assigned this qualifier are considered undetected at the estimated MRL (MDL, if reported).
- **J** Indicates the analyte was positively identified; however, the associated numerical value is the approximate concentration of the analyte in the sample. Results assigned this qualifier are considered and detected at an estimated value.
- **R** Indicates the presence or absence of the analyte cannot be confirmed due to serious laboratory deficiencies in the ability to analyze the sample and meet quality control criteria. Results assigned this qualifier are rejected and considered unusable.

REFERENCES:

EPA. 2002. *Guidance on Environmental Data Verification and Data Validation*, EPA QA/G-8. USEPA. November 2002.

EPA. 2016. United States Environmental Protection Agency (USEPA) *National Functional Guidelines for Superfund Organic Methods Data Review*, EPA-540-R-2016-002. Office of Superfund Remediation and Technology Innovation (OSRTI). September 2016.

EPA. 2017. *USEPA National Functional Guidelines for Inorganic Superfund Data Review*, EPA-540-R-2017-001. OSRTI. January 2017.