Contract Number: C03275
Contract Name: NORTHFIELD BF 0241(58)

VERMONT

AGENCY OF TRANSPORTATION

PROPOSAL

STANDARD SPECIFICATIONS FOR CONSTRUCTION
DATED 2024 SHALL APPLY TO THIS CONTRACT

SPECIAL PROVISIONS

SCHEDULE OF ITEMS

ELECTRONIC BID BOND to be submitted in the amount of 5% of the Contractor's bid.

BIDDING PROCEDURE

Bid Proposals will not be read unless accompanied by an electronic bid bond, and they may be rejected as irregular if they are not in compliance with Agency specifications.

NOTE: All bid proposals shall be properly filled out and submitted electronically utilizing iCX Web System services.

VTrans Mission and Vision
Through excellent customer service, provide for the safe and efficient movement of people and goods.
A safe, reliable, and multimodal transportation system that grows the economy, is affordable to use and operate, and serves vulnerable populations.

Cover Page Proposal 1
Table of Contents 2
Project Special Provisions 3
225-0001 SOLDIER PILE AND LAGGING WALL 29
629-0002 WATER MAIN ON BRIDGE 37
675-0002 REMOVE AND RESET PRIVATE SIGN ASSEMBLY 39
679-0001 ORNAMENTAL STREET LIGHT ASSEMBLY 42
404 Corps of Engineers Permit 45
ANR RME Consultation 107
Flood Hazard Area and River Corridor Permit 110
Impact Plans 113
Soils Management Plan 116
PCF Procedures 798
PIF – Ornamental Street Lighting and Foundation 800
Letter to property owner, WESCO Realty, LLC 865
Required Contract Provisions for Federal Aid Construction Contracts FHWA 1273 868
USDOL Davis Bacon Wage Rates 2026 - Washington County 882
DBE Policy Required Contract Requirements CR110 - 2026 887
Attachment C - Standard State Contract and Grant Provisions Rev 2-13-26 892
USDOT Standard Title VI Nondiscrim Assurances Appendix A and E 902
Standard Federal EEO Construction Contract Specifications 905
Contractor EEO Certification Form - CA109 912
Vermont AOT Certificate of Compliance - CA271 913
Vermont AOT Minimum Labor and Truck Rates - CA101 917
Commodity Index Prices CA170 - Spec Book 2024 918
Proposal Schedule of Pay Items 919

SPECIAL PROVISIONS

1. NOTICE TO BIDDERS – CONTRACT COMPLETION DATE. This Contract shall be completed on or before October 29, 2027.

2. NOTICE TO BIDDERS – INCENTIVE/DISINCENTIVE (I/D). In accordance with Subsection 108.10 and as described below, there shall be an Incentive/Disincentive period on this Contract.

   (a) Dates and Meetings. The allowable I/D work period shall start at 7:00 a.m. and end 84 days later by 6:59 a.m. This 84 day work period is herein defined as the I/D period. The I/D period shall begin on June 1, 2027 at 7:00 a.m. and it shall end no later than August 24, 2027 at 6:59 a.m..

   During the I/D period, the Contractor will be allowed to work on the project for 24 hours per day, 7 days per week, including holiday periods. Night work will be allowed during the I/D period. See Notice to Bidders No. 4 & 5 for additional information and requirements regarding night work and noise restrictions.

   For this Contract, a public information meeting shall be held prior to the start of the I/D period, as described in Subsection 108.10(b).

   (b) Identified Work. All work identified below shall be completed before the end of the I/D period:

      (1) Bridge deck, bridge sidewalk, bridge rail, and approach slabs cast and cured for a minimum of 7 days, and attained the concrete compressive strengths specified in Subsection 501.16(b).

      (2) Restore Depot Square to original motor vehicle traffic flow configuration.

      (3) Type IIS base course and the Type IIIS intermediate course of pavement shall be placed and compacted through the project limits. Temporary pavement transverse tapers shall be installed at the begin and end of bridge deck, and at the existing pavement match locations.

      (4) Wingwalls #1 and #4 shall be installed and backfilled.

      (5) Construction of the portion of proposed water main that is supported by the superstructure.

      (6) The bridge and roadway shall be opened to two way traffic (two 12 foot lanes and two 2 foot shoulders) with temporary delineation.

Prior to and after the I/D period the Contractor will be allowed to maintain a minimum of one-lane (12 foot lane and two 2 foot shoulders) alternating traffic during daytime hours in order to perform work. No night work will be allowed during this time, and two-lane, two-way traffic must be maintained on the existing alignment during nighttime hours.

(c) Pay Schedule. The Contractor will receive a lump sum compensation of $150,000.00 for completing the identified work before the end of the I/D period.

In addition to the lump sum payment, the Contractor will also be compensated at a rate of $625.00 per hour for each hour that the identified work is completed prior to the end of the I/D period, up to a maximum total payment of $225,000.00 (including the lump sum payment). Only whole hours will count toward this extra incentive payment.

For each hour after the end of the I/D period that the identified work remains uncompleted, the Contractor will be assessed a disincentive at a rate of $625.00 per hour. The full hourly disincentive amount will be assessed for each hour during which the identified work is not completed for any portion of the hour. There shall be no maximum on the disincentive amount.

This assessed disincentive is separate from, and will be imposed in addition to, liquidated damages which may be imposed for failure to complete the Contract on time.

Payment for incentive or deduction for disincentive will be made under pay item 199.8101.

3. NOTICE TO BIDDERS – PROHIBITION OF RUSSIAN GOODS. The Contractor is hereby notified that, pursuant to Vermont Executive Order No. 02-22, dated March 3rd, 2022, the purchase of Russian-sourced goods and goods produced by Russian entities (defined as institutions or companies that are headquartered in Russia or have their principal place of business in Russia) is prohibited. The awarded Contractor must fill out and sign the Executive Order 02-22 Vendor Certification as part of Contract awarding process.

4. NOTICE TO BIDDERS – NIGHT WORK. The Contractor is hereby notified that night work will only be permitted during the Incentive/Disincentive period. Night will be as defined in Subsection 101.02. The Engineer may abbreviate this time period as necessary. All work shall be completed in accordance with the requirements of Subsection 105.14(c) and Subsection 105.14(d).

5. NOTICE TO BIDDERS – NOISE RESTRICTIONS. The Contractor is hereby notified that, in addition to the requirements of Subsection 105.14(c), no work shall be performed between 7:00 p.m. and 6:00 a.m. that creates a noise level exceeding 100 decibels. The decibel level shall be measured from the point of activity to the nearest occupied residence.

The Contractor shall provide the Engineer, for the duration of the work, with a Rion NL-20, CESVA SC160, Extech 407780A, or an approved equivalent sound level meter capable of meeting IEC 61672, Class 2 standards.

The cost for providing this equipment and meeting the specified noise level criteria will not be paid for separately but will be considered incidental to all other Contract items.

6. NOTICE TO BIDDERS – ELECTRONIC DOCUMENT MANAGEMENT. The Contractor is hereby notified that the Contractor, their subcontractors, and suppliers shall create both a Doc Express and an iCXWeb account. The Contractor shall use these applications for collection and management of electronic documents. Doc Express can be accessed at the following link: https://docexpress.com. iCXWeb can be accessed at the following link: vtrans.exevision.com/icx/Index.aspx.

   All costs associated with the use of Doc Express and iCXWeb will be considered incidental to Item 635.1100, Mobilization/Demobilization. The State will manage the applications including Contract setup upon Contract execution.

   To create an account and for more information regarding the use of Doc Express see the information at the following link:

   https://outside.vermont.gov/agency/vtrans/external/docs/construction/Contracting/DocExpressOverviewforContractors.docx.

   To create an account and for more information regarding the use of iCXWeb see the information at the following link: https://vtrans.vermont.gov/icx.

7. NOTICE TO BIDDERS – ELECTRONIC TICKETING VTRANS PORTAL. The Contractor is hereby notified that the Contractor, their subcontractors, and suppliers shall connect to the VTrans Portal and use the application for distribution and management of electronic tickets (e-tickets). VTrans Portal is a state cloud-based e-ticket database, including a web-based user interface and a jobsite mobile e-ticket application. VTrans Portal will interface with the Contractor's supplier existing point of sales or e-ticketing platform and will allow VTrans to manage bituminous material e-tickets.

   All costs associated with the use of VTrans Portal will be considered incidental to the appropriate Section 406 and Section 407 pay items. The Agency will manage the VTrans Portal application including Contract setup upon Contract execution.

   To create an account, connect to the VTrans Portal, and for more information regarding the use of VTrans Portal see the information at the following link: https://www.haulhub.com/vermont-agency-transport-22/

8. NOTICE TO BIDDERS – CONTACT WITH THE AGENCY. From the time of advertising until the actual bid opening for this Contract, all prospective Contractors, subcontractors, and suppliers shall direct all inquiries related to this Contract solely to the Agency's Contract Administration Section at AOT.ConstructionContractingInquiry@vermont.gov.

The deadline for submitting inquiries related to this Contract is 4:30 p.m. Eastern Time on May 13, 2026. Inquiries received prior to this time will receive a response from the Agency. Inquiries received after this time may receive a response at the Agency's discretion.

9. NOTICE TO BIDDERS – OTHER SPECIFICATIONS AND CONTRACT REQUIREMENTS.

404 Corps of Engineers Permit
ANR RME Consultation
Flood Hazard Area and River Corridor Permit
Impact Plans
Soils Management Plan
PCF Procedures
PIF – Ornamental Street Lighting and Foundation
Letter to property owner, WESCO Realty, LLC.
FHWA 1273 – Required Contract Provisions for Federal Aid Construction Contracts
USDOL Davis Bacon Wage Rates by County
Disadvantaged Business Enterprise (DBE) Policy Contract Requirements - CR-110
Attachment C - Standard State Provisions for Contracts and Grants
USDOT Standard Title VI Nondiscrimination Assurances Appendices A, E
Standard Federal Equal Employee Opportunity (EEO) Construction Contract Specifications CA26
Contractor Equal Employment Opportunity (EEO) Certification Form – CA109
Vermont Agency of Transportation Certificate of Compliance – CA271
Vermont Agency of Transportation Minimum Labor and Truck Rates – CA101
Commodity Index Prices – CA170
Schedule of Pay Items

10. NOTICE TO BIDDERS – NEW PREQUALIFICATION FORM. The Contractor is hereby notified that the Agency is required by the U.S. Department of Transportation to develop and maintain a list of information about all firms that bid on federally funded Contracts in accordance with *49 C.F.R. § 26.11*. The Agency has developed a new electronic form to collect this information. The Contractor shall fill out this form as part of their project-specific prequalification for every Contract that they bid on. A link to this form is provided in the prequalification form available through iCX and the Agency's website.

11. NOTICE TO BIDDERS – DAVIS-BACON. U.S. Department of Labor Davis-Bacon wage rates are applicable to this Contract. Copies of the applicable rates are included in this proposal.

12. NOTICE TO BIDDERS – STANDARD DRAWINGS. The Vermont Agency of Transportation Standard Drawings listed on the Index of Sheets are not included in the plan set, but may be found at the following address:
https://resources.vtrans.vermont.gov/resources/cadd/VAOTconSTD_Name.xml?_gl=1*6cpy62*_ga*MTU5MTQ3NTcyNi4xNzIwMjM5NjI0*_ga_V9WQH77KLW*czE3NTI3NTYyMzQkbzE3NCRnMSR0MTc1Mjc1NjkwMyRqNjAkbDAkaDA.

13. NOTICE TO BIDDERS – INFORMATIONAL DOCUMENTS. The Contractor is hereby notified that the following informational documents for this Contract are available on iCXWeb and the VTrans Bid Opportunities website. These documents are being provided during the bid solicitation period for informational purposes only.

(a) TMP Checklist

(b) Geotechnical Report

(c) Record Plans

(d) Northfield Route 12 Water Main Replacement Plans

(e) Northfield Route 12 Water Main As-Built DRAFT Sheet C3 and C4

(f) Soil Management Plan – 2025 Utility Relocation Completion Report

14. NOTICE TO BIDDERS – SURFACE WATER WITHDRAWAL. The Contractor is hereby notified that the Vermont state law, Act 135 of 2022, requires any person withdrawing surface water (as defined in 10 V.S.A. § 1002 (20)) to register with and report the water withdrawal and usage to the Vermont Department of Environmental Conservation beginning January 1, 2023. Guidance can be found here: https://dec.vermont.gov/watershed/rivers/streamflow-protection/act-135-surface-water-withdrawal-registration-and-reporting

15. NOTICE TO BIDDERS – ENVIRONMENTAL COMMITMENTS.

(a) Threatened, Endangered, and Rare Species.

The Contractor shall ensure all personnel working on the project site are made aware of the potential presence and protected status of the northern long-eared bat. No suitable bat habitat is present within the project limits and no Time-of-Year (TOY) restrictions are required.

The Contractor is hereby made aware of the potential for TOY restrictions related to proposed Waste, Borrow and Staging areas. Cutting trees ≥3 inches in diameter outside of the contract project limits shall require review under Section 105.25 Opening Off-Site Activity Areas.

(b) Invasive Material.

If invasive species are delineated on the Plans or found in the project area and confirmed by the Engineer, the invasive species, and any soil excavated from areas that contained the invasive species, will be termed invasive material.

The Contractor shall handle the invasive material in accordance with the VTrans State Highway System Roadside Terrestrial Invasive Plants Best Management Practices (BMPs). The Contractor shall stockpile the invasive material separately from other soil stockpile areas. A ground barrier and perimeter containment system shall be in place around the area intended for stockpiling the invasive material. Equipment shall be cleaned of all soil and plant matter prior to arriving on site in accordance with Subsection 107.06. The equipment used for excavation and transport of invasive material shall be cleaned of all soil and plant matter before being used for work in other areas in accordance with the BMPs.

To the extent possible, invasive material shall be reused on site. Invasive material shall only be reused on site in areas where the presence of the invasive species were clearly evident. If there is an excess of invasive material, it shall be wasted in accordance with the BMPs.

The cost of excavating invasive material will be paid for under the appropriate Contract excavation items. When invasive species are delineated on the Plans, the additional cost for handling invasive material, following the BMPs, cleaning equipment, and wasting excess invasive material will be incidental to all other Contract items. When invasive species are not delineated on the Plans, and compensation is not otherwise provided for in the Contract, the work of handling invasive material, following the BMPs, cleaning equipment, and wasting excess invasive material will be considered extra work in accordance with Subsection 104.03 and will be paid for in accordance with Subsection 109.06.

16. NOTICE TO BIDDERS – UTILITIES. Existing aerial facilities owned by Northfield Electric Department (maintained by Green Mountain Power), TDS Telecom, FirstLight Fiber, and Trans-Video will be adjusted, as necessary, by employees or agents of the above companies in accordance with the "Approximate Aerial Utility Relocation Route" shown in the Contract Plans. The Contractor is cautioned to protect these facilities from damage.

Existing underground facilities owned by TDS Telecom and the Town of Northfield (sewer) will not require adjustment. The Contractor is cautioned to protect these facilities from damage.

Existing underground water facilities owned by the Town of Northfield will be adjusted by the Contractor in accordance with the details and pay items included in the project plans, and all pertinent project specifications. The Contractor must coordinate inspection and testing, as needed, with the Town of Northfield.

Existing water valves owned by the Town of Northfield may require adjustments to match the new finished pavement elevation. Necessary elevation adjustments to municipally owned water valves will be performed by the Contractor in accordance with Item 629.2800, Adjust Elevation of Valve Box.

Existing sewer manholes owned by the Town of Northfield may require adjustments to match the new finished pavement elevation. Necessary elevation adjustments to municipally owned sewer manholes will be performed by the Contractor in accordance with Item 604.4200, Changing Elevation of Sewer Manholes.

Contacts for the above listed companies are as follows:

Northfield Electric Dept	Steve Fitzhugh	(802) 279-0311
Green Mountain Power Corp	Jason Jones	(802) 229-7929
TDS Telecom	Micale Vachon	(603) 833-0587
FirstLight Fiber	Heather Araujo	(978) 302-9334
Trans-Video	George Goodrich	(802) 371-8950
Town of Northfield (Water & Sewer)	Jim Russo	(802) 279-1274

There are areas of underground utilities that may require additional locating beyond normal dig safe measures. The Contractor is hereby notified that exploratory excavation to locate existing underground facilities may be necessary to protect these facilities from damage. Where approved by the Engineer, these utilities shall be located and/or exposed by methods such as air/vacuum excavation and/or hand digging to determine their exact location. This exploratory work shall be classified as Trench Excavation of Earth, Exploratory and payment shall be through Pay Item "204.2200, Trench Excavation of Earth, Exploratory, (N.A.B.I)."

The Contractor shall coordinate with the Town of Northfield if temporary fill is to be installed over the sewer manhole located near Sta 224+00 LT. All proposed work must be reviewed and approved by the Town prior to installation.

Employees or agents of the above listed companies are to be allowed free and full access within the project limits with the tools, materials, and equipment necessary to install, operate, maintain, place, replace, relocate, and remove their facilities.

There will be no extra compensation paid to the Contractor for any inconvenience caused by working around and with the companies or their facilities. Should the Contractor desire additional adjustments of the utility facilities for his/her convenience, proper arrangements shall be made in conformance with Subsection 105.09.

The Contractor shall notify the utility pole owner if excavation will be within 10 feet of an existing pole. The pole owner may choose to be onsite for this activity. There will be no excavation allowed within 5 feet of existing poles and anchoring.

The Contractor is advised that one or more of the parties to the Agreements for the construction of the various utility facilities included in this contract have the option of withdrawing the work from the contract. If any of the options are exercised, the contract utility work, in whole or in part, shall be deleted from the contract by the Engineer. The deletion of all or part of these utility items from the contract will not constitute any portion of an increase or decrease of 25% of the total original contract amount or of the original length shown in the contract as set forth in subsection 109.05, Compensation for Altered Plans or Quantities, and will not be subject to the provisions of 109.04, Changes in the Character of the Work.

Vermont Statutes Annotated, Title 30, Chapter 86 ("Dig Safe") requires notice to Dig Safe before starting excavation activities. The Contractor must telephone Dig Safe at 811 at least 72 hours (excluding Saturdays, Sundays and legal holidays) before, but not more than 30 days before, starting excavation activities at any location. In addition, before excavation and/or pavement grinding in or on the state highway right-of-way, the Contractor must contact the Agency's Traffic Signal Superintendent, Dan Ertel, to obtain/verify the location of Agency's underground utility facilities or to confirm the absence of such facilities. Dan can be reached at (802) 343-2188.

The Contractor is hereby notified that many towns are not members of Dig Safe. It is the Contractor's responsibility to check with towns prior to excavation and protect and restore utilities damaged within the project and as set forth in Subsection 107.12.

All Contractors, subcontractors or material suppliers involved in any project-related activity shall comply with all applicable codes and regulations related to working around live electrical lines; including, but not limited to maintaining the required minimum clear distance from an electrical utility facility. The Contractor's Competent Safety Officer shall be well versed in OSHA and VOSHA regulations, and shall be capable of implementing a plan to conform to these regulations during prosecution of work.

17. NOTICE TO BIDDERS – WATER MAIN. The Town of Northfield is installing a proposed water main prior to the beginning of construction for the bridge replacement project. The proposed water main will end within the limits of the bridge replacement project. The Contractor will coordinate with the Town of Northfield and refer to the proposed water main plans to install a new water main, supported by the proposed bridge, and connect into the newly installed water main system. This work will include connection to a water service line servicing the (now or formally) D & D Kenyon Real Estate property at the northwest quadrant of the project.

18. NOTICE TO BIDDERS – WORKING IN THE NECR RIGHT OF WAY.

(a) Right of Entry Permit. The Contractor is hereby notified that they will be required to apply for NECR's standard form Contractor Right of Entry License Agreement (the "CROE") 30 days prior to entering the railroad right of way for any reason, and abide by all of the terms and conditions contained therein. The estimated application fee for this permit is $1,750. The Contractor must comply with NECR's Roadway Worker Training Policy, NECR Roadway Worker Protection Training Policy and made a part hereof, if NECR, in its sole discretion, determines that such training is required. More information about the Right of Entry Permit application is available at:
https://www.gwrr.com/real_estate/accessing_property

(b) Roadway Worker Protection Training Policy.

(1) In order to maintain the integrity and security of the Property and Railroad's operations, prior to each employee of Licensee and its contractor entering upon the Property (each a "Licensee Applicant"), Licensee shall cause its employees, and shall cause its contractor to require its employees, to successfully complete the Genesee & Wyoming Inc. Roadway Worker Training Program (the "Program") on an annual basis to be administered by Roadway Worker Training, Inc. (the "Program Administer"), at the sole cost and expense of the Licensee or contractor, as the case may be (the current cost of which is $75.00 USD per Licensee Applicant). The Program shall be available via the internet and instructions to access the Program are set forth in Paragraph (11).

(2) Upon completion of the Program, the Licensee Applicant shall be required to satisfactorily complete a test administered by the Program Administer. The Program Administer shall be responsible for scoring such test and verifying whether the Licensee Applicant satisfies the requirements of Railroad to perform work on the Property. Any Licensee Applicant who fails to achieve a satisfactory score or who refuses to complete such test shall not be permitted to enter the Property.

(3) When a satisfactory score is achieved by the Licensee Applicant, the Program Administrator shall furnish a certificate (the "Certificate") to the business address of Licensee or its contractor, as the case may be, for distribution to the Licensee Applicant. Until receipt of the Certificate from the Program Administrator, the Licensee Applicant shall print a temporary certificate authorizing the Licensee Applicant's access to the Property.

(4) For the avoidance of doubt, satisfactory completion of the Program as evidenced by receipt of a Certificate does not in itself grant permission to the Licensee Applicant to enter the Property, except as expressly permitted under and in strict compliance with the terms of the Agreement.

(5) The Licensee Applicant shall be responsible for carrying the Certificate at all times when on the Property.

(6) All communications regarding Licensee Applicants, the Program, or any other matters described in this section should be addressed to:

Michael Lundell
GWI Safety Department
13901 Sutton Park Drive South, Suite 180
Jacksonville, FL 32081
Mlundell@gwrr.com
(904) 596-1766

(7) Licensee and its contractor shall be responsible for managing and recovering Certificates from their employees who resign, retire or are terminated.

(8) Notwithstanding the receipt of a Certificate by a Licensee Applicant, Railroad reserves the right to reject any Licensee Applicant from entering upon the Property in Railroad's sole discretion in accordance with:

a. Genesee & Wyoming Inc. Code of Ethics and Conduct,

b. Genesee & Wyoming Inc. Contractor Safety Rules, or

c. Upon failure to comply with the terms and conditions of the Agreement and all applicable laws.

(9) To the extent that any portion of the requirements set forth in this section violates any law, ordinance, statute or regulation that portion shall be ignored and the Licensee or contractor, as the case may be, shall comply with all remaining portions of Railroad's Roadway Protection Training Policy, the Program or the related application process.

(10) Licensee or its contractor, as the case may be, shall be primarily responsible for enforcement of the Program; provided, however, that both Railroad and the Federal Railroad Administration reserve the right to audit Licensee and its contractor, as the case may be, for compliance with the Program and Railroad's Roadway Protection Training Policy. Should a Licensee or its contractor, as applicable, be found out of compliance, any and all fines or penalties incurred by Railroad due to such non-compliance shall be the sole obligation of the Licensee.

(11) To access the G&W Roadway Worker Protection Training for Railroad Contractors Course on the RWT On-Line University please follow these instructions:

a. Start at website https://railpros.com/training/

b. Click on the "Online Training" then "Select Courses" button

c. Select the G&W course by clicking on the course name

d. On the right-hand side of the page select "New User Registration"

e. Fill out all of the fields on the registration page and submit

f. You will receive a username and password via email

g. After receiving the username and password go back to the On-Line University page and select the G&W course again

h. Complete the registration process and training.

19. NOTICE TO BIDDERS – CONCURRENT CONSTRUCTION. The Contractor is made aware of the following VTrans construction project(s) which are expected to be in progress within the area of this project during its construction.

TABLE 1 – CONCURRENT CONSTRUCTION PROJECTS

Project	Contractor	Anticipated Contract Completion Date
Cross Brothers Dam Removal	Karina Daily - VNRC	TBD
Replacement of PID 133605	N/A	Spring 2027
Northfield ER P23-1(667)	Casella	October 2027

This list is not all-inclusive and it is possible there may be other VTrans, municipal, or private construction projects within the area of this project during its construction.

The Contractor shall coordinate construction schedules and traffic control with the work required for these projects.

There will be no extra compensation paid to the Contractor for any inconvenience caused by working around these or other projects.

20. NOTICE TO BIDDERS – SPECIAL CONSTRUCTION REQUIREMENTS.

(a) The Contractor shall maintain a safe access to all driveways and side roads at all times during the construction of this project.

(b) During construction outside of the allowed I/D period it will be necessary for the Contractor to maintain one-lane traffic for extended periods of time. In no case shall the paved width for this one-lane traffic, including shoulders, be reduced to less than 16 feet. This paved width shall remain free of obstructions and obstacles at all times.

(c) The Contractor shall position Portable Changeable Message Signs at locations determined by the Engineer properly warning motorists of the roadway conditions ahead. As directed by the Engineer, these locations may change during construction as needs arise based on daily work activities. The message to be displayed shall be submitted to the Engineer in advance for approval. The displayed message should accurately reflect what motorists can expect to encounter through the project area. The cost of providing the Portable Changeable Message Signs will be paid for under Contract item 641.1500 or 641.1700, as applicable. The Contractor shall also install and maintain appropriate construction signing warning the traveling public of the expected roadway surface conditions.

(d) Prior to final acceptance of the project, all drop inlets and bridge joints within the project limits shall be cleaned and all material within the drop inlets and bridge joints shall be removed. All paved areas adjacent to curbs shall be swept and cleaned of all extraneous material. Costs for this work will not be paid for directly, but will be considered incidental to all Contract items.

(e) There are special events throughout the year that may require close communication and coordination between the Contractor and the municipality to reduce conflicts. The municipality will advise the Engineer and Contractor of the specifics of each event and the Engineer will direct the Contractor as to what actions, if any, will be necessary on the Contractor's part to minimize impacts to the event. Special events that may conflict with Contractor operations are not limited to those which may be listed in this Notice to Bidders. There will be no extra compensation paid to the Contractor for any inconvenience caused by working around any listed or unlisted special events.

For more information about area special events, contact the following:

Northfield: Steve Mackenzie
Town Manager
Town of Northfield
51 South Main Street
802-485-9822

TABLE 1 – SCHEDULE OF KNOWN EVENTS

Event	Date
Norwich University Graduation	May 2026 and 2027
Northfield High School Graduation	June 2026 and 2027
Norwich University Move-in	August 2026 and 2027
Labor Day Weekend Activities	September 2026 and 2027

(f) This project requires the management and disposal of petroleum contaminated soil. The project will seek reimbursement from the Petroleum Cleanup Fund for items containing the supplemental description (PCF). Reference NTB Section 9 - PCF Procedures for Contractor and Environmental Professional (EP) requirements to properly manage petroleum contaminated soil and groundwater during construction.

21. NOTICE TO BIDDERS – AFAD. The Contractor is hereby notified that Automated Flagger Assistance Devices (AFADs) are remotely operated devices that enable a certified flagger to be positioned out of the lane of traffic and are used to control motorists through work zones.

AFADs shall only be used in situations where there is no more than one lane of approaching traffic that needs to be controlled. Additionally, since AFADs are not traffic control signals, they shall not be used to replace traffic signals or other continuously operating traffic control devices.

These devices may be used as a safety enhancement to flaggers on an hour-for-hour basis. AFADs shall meet the following requirements:

(a) All AFAD applications shall meet the requirements of the applicable sections of the current edition of the *Manual on Uniform Traffic Control Devices (MUTCD)*.

(b) All AFAD applications shall be in accordance with *NCHRP Report 350* or the *MASH* for the applicable test level and device weight. Documentation of the crashworthiness of the device shall be submitted to the Engineer for approval prior to use on the project.

(c) AFAD applications shall always be controlled by a flagger who has been trained in the operation of the AFAD and who meets the requirements of Section 630. The flagger shall not flag traffic and operate an AFAD at the same time.

(d) Should an AFAD malfunction or otherwise not function as intended they shall be replaced by another AFAD or flagger(s) or work shall cease and the roadway shall be opened to unrestricted traffic flow immediately.

(e) Each AFAD will be considered equivalent to one flagger and will be measured and paid for on an hourly basis under Item 630.1500 Flaggers. One hour of AFAD use shall be paid for as one hour of flagging.

(f) Flaggers will only be measured for payment when actually performing flagging duties. Flaggers controlling AFADs but not actually flagging will not be measured for payment, but will be considered incidental to the Contract lump sum price for Item 641.1000 Traffic Control, or Item 641.1100 Traffic Control, All-Inclusive, as applicable.

(g) The use of AFADs may be suspended at the discretion of the Engineer.

22. NOTICE TO BIDDERS – SUBSECTION 105.11(b). Subsection 105.11(b) is hereby modified by being deleted in its entirety and replaced with the following:

(a) Permanent Marking Layout. The Contractor shall be responsible for the layout of the permanent traffic markings in accordance with the Plans. The Engineer will verify the layout of the permanent traffic markings, including passing zones and breaks for town highways.

23. NOTICE TO BIDDERS – SUBSECTION 107.21(b). Subsection 107.21(b) is hereby modified by deleting the phrase "M-22-11" from the second sentence and replacing it with the phrase "M-24-02".

24. NOTICE TO BIDDERS – TABLE 108.12A. Table 108.12A is hereby modified by being deleted in its entirety and replaced with the following:

TABLE 108.12A – DAILY LIQUIDATED DAMAGES CHARGE PER WORKING DAY OF DELAY

Original Contract Amount		Daily Charge per Working Day of Delay
From More Than	To and Including	
$0	$1,500,000	$3,200
$1,500,000	$3,000,000	$3,400
$3,000,000	$5,000,000	$3,600
$5,000,000	$10,000,000	$4,100
$10,000,000	$15,000,000	$4,700
$15,000,000	$20,000,000	$5,200
$20,000,000	--	$5,800

25. NOTICE TO BIDDERS – SUBSECTION 501.03. Subsection 501.03 is hereby modified by relabeling Table 501.03B as Table 501.03C and by deleting the phrase "Table 501.03B" in the first and second sentences of Subsection 501.03(d) and replacing them with the phrase "Table 501.03C".

26. NOTICE TO BIDDERS – SUBSECTION 501.03. Subsection 501.03 is hereby further modified by adding the following paragraph as the second paragraph of the subsection, immediately before Table 501.03A:

When the Contract specifies Performance-Based Concrete, Class PCD or Performance-Based Concrete, Class PCS, the Contractor may supply a material meeting the requirements of either Table 501.03A or Table 501.03B for the class specified.

27. NOTICE TO BIDDERS – SUBSECTION 501.03. Subsection 501.03 is hereby further modified by adding the following as a new Table 501.03B:

TABLE 501.03B – PRESCRIPTIVE OPTIONS FOR CLASS PCD AND CLASS PCS

Concrete Class [1]	Min. 56-Day Comp. Strength (psi) [2]	Max. W/CM Ratio	Max. VSI [3]	Slump/ Spread Limit [4]	Air Content Limits	Cement (lbs/yd^3)	GGBFS (lbs/yd^3)	Total Cementitious Materials (lbs/yd^3)
PCD [5]	4,000	0.44	--	N/A	6.0% min.	330	330	660
PCS [5]	3,500	0.44	--	N/A	6.0% min.	330	330	660

[1] PCD = Performance Concrete, Deck

PCS = Performance Concrete, Substructure

[2] The concrete may be accepted if the design compressive strength from standard cured cylinders has been obtained at 28 days. Any 56 day acceptance cylinders shall be tested regardless of the results of earlier tests.

[3] Visual stability index (VSI) as determined in accordance with *ASTM C1611*.

[4] The mix shall not exhibit segregation. If the mix does exhibit segregation, the load shall be rejected. If the spread is equal to or exceeds 20 inches, the mix shall be classified as Class SCC concrete.

[5] Alkali-silica reactivity results shall be provided as specified in Subsection 501.03(c) for the aggregate and cementitious source combinations used. No other mix design qualification testing is required.

28. NOTICE TO BIDDERS – SUBSECTION 507.01(b). Subsection 507.01(b) is hereby modified by inserting the phrase “stainless-clad,” immediately after the phrase “Level II reinforcing includes dual-coated,”.

29. NOTICE TO BIDDERS – SUBSECTION 507.04(c). Subsection 507.04(c) is hereby modified by inserting the phrase “and hot-dipped galvanized” immediately after the phrase “Cut ends of continuously-galvanized”.

30. NOTICE TO BIDDERS – SUBSECTION 510.02. Subsection 510.02 is hereby modified by adding the following entry to the materials subsection list in numerical order:

High Early-Strength Portland-Limestone Cement 701.08

31. NOTICE TO BIDDERS – SUBSECTION 510.04. Subsection 510.04(a)(7) is hereby modified by being deleted in its entirety and replaced with the following:

(7) Mix Design Approval and Changes. After the mix design furnished by the Contractor has been reviewed and approved by the Structural Concrete Engineer, no changes to the mix design will be allowed except as defined in Table 510.04A. All changes to an approved mix design, including the addition of admixtures not previously included, shall require a revised mix design submittal for approval.

Following an approved change in accordance with Table 510.04A, the Contractor may still revert to the original approved mix design formulation. If a source change is requested due to a change in product or material name that does not include any change in product formulation or material characteristic, and this is substantiated by the product or material supplier in writing, re-testing is not required.

TABLE 510.04A – ALLOWABLE MIX DESIGN CHANGES

Previously Approved Component or Property Being Changed	Mix Design Resubmittal Requirements [1]	No. of Changes Allowed
Cement source [2]	If the alkali content (Na and K) of the new source is greater than that of the original source, and the original result from Subsection 510.04(a)(6)g. was greater than 0.08% expansion, then updated ASR testing is required. Otherwise, no qualification testing is required.	Unlimited
Cement proportioning (± 5% by volume)	No qualification testing required.	One
Aggregate proportioning (± 10% by volume)	No qualification testing required.	One
Aggregate source	ASR testing and gradation check by original Contractor method.	One
Slag source	If same grade is used, no qualification testing required.	Unlimited
Silica fume source	No qualification testing required.	Unlimited
Fly ash source	If either the calcium (CaO) or the alkali (Na and K) content of the new source is greater than that of the original source, and the original result from Subsection 510.04(a)(6)g. was greater than 0.08% expansion, then updated ASR testing is required. Otherwise, no qualification testing is required.	Unlimited
Air-entraining admixture source (Subsection 725.02(b))	Resubmittal of freeze/thaw durability qualification testing.	Unlimited
Shrinkage reducing admixture source (Subsection 725.02(k))	Resubmittal of shrinkage qualification testing.	Unlimited
Corrosion inhibiting admixture source (Subsection 725.02(k))	Resubmittal of shrinkage qualification testing. If shrinkage qualification testing of the original mix design is greater than 70% of shrinkage limit, then updated shrinkage testing is required.	Unlimited

Latex admixture source (Subsection 725.02(d))	Resubmittal of surface resistivity testing.	Unlimited
Accelerating admixture dosage increase (Subsection 725.02(i), Subsection 725.02(j))	Resubmittal of shrinkage qualification testing.	Unlimited
Accelerating admixture source (Subsection 725.02(i), Subsection 725.02(j))	No qualification testing required.	Unlimited
ASR mitigating admixture source and dosage decrease (Subsection 725.02(k))	Resubmittal of ASR qualification testing.	Unlimited
All other admixture source and dosage changes (Subsection 725.02)	No qualification testing required.	Unlimited

[1] All changes will require administrative submittal to establish proposed changes. Where required, resubmittal testing shall be completed using the same material sources and proportions from the original approved mix design.

[2] The same cement type from a different manufacturer. Type 1L may be substituted for Type I/II from the same source and Type 1L(HE) may be substituted for Type III from the same source.

In no case shall concrete from more than one mix design be permitted to be used during the same pour without prior written approval of the Engineer.

The approved mix design will be allowed consecutive re-approval if no material proportioning or material sources have changed from the previous year's approved mix design, except as allowed by Table 510.04A, and the mix design is submitted with updated aggregate properties and volumes adjusted accordingly. The aggregate properties shall be tested annually. Aggregate property values will be valid for 14 months from the date tested. The properties to be tested include, but are not limited to, specific gravity and absorption.

The mix design shall be accompanied by the previously completed and accepted mix qualification test data and any applicable updated test information. The submittal shall also include all applicable quality control test results and all requests for variance from the material requirements of these specifications.

32. NOTICE TO BIDDERS – SECTION 546. Section 546 is hereby modified by being deleted in its entirety and replaced with the following:

SECTION 546 – PRE-EXCAVATION OF ABUTMENT PILES

546.01 DESCRIPTION. This work shall consist of drilling a hole to remove all subsurface material and backfilling in designated areas to provide suitable pile placement or driving conditions, and furnishing all materials, equipment, labor, and services necessary to pre-excavate for piles in accordance with these provisions, the Plans, and as directed by the Engineer.

546.02 MATERIALS. Materials shall meet the requirements of the following subsections:

Sand Borrow and Cushion 703.03

546.03 CONSTRUCTION REQUIREMENTS. The pre-excavation of abutment piles shall consist of augering, pre-boring, or some other means of excavation to produce an excavation to the depth and diameter specified in the Contract. The excavation shall be maintained to allow for backfilling with sand in accordance with the Contract. Temporary casing will be considered an acceptable option.

Unless otherwise specified on the Plans, the entire pre-excavation shall be filled with sand and the temporary casing shall be removed prior to installing piles.

When suspected obstructions are encountered, the Contractor shall notify the Engineer in writing and recommend a course of action to advance the pre-excavation in an expedient manner. Upon notification, the Engineer will determine if an obstruction has been encountered.

546.04 DEFINITIONS.

(a) Earth. In addition to the definition of earth in Subsection 101.02, cobbles, boulders, and densely packed gravel will be considered excavation of earth.

(b) Rock. All excavation of bedrock as determined by the Engineer.

(c) Obstruction. Man-made or natural material encountered that is not anticipated based on boring logs or known obstructions identified in the plans. Boulders, cobbles, bedrock, and very dense till material are not considered obstructions.

546.05 METHOD OF MEASUREMENT. The quantities of Pre-Excavation of Abutment Piles, Earth and Pre-Excavation of Abutment Piles, Rock to be measured for payment will be the total number of linear feet of excavation to the depth specified in the Contract or as ordered by the Engineer, measured to the nearest linear foot.

(a) Earth. Where Structure Excavation and Pre-Excavation of Abutment Piles, Earth occur jointly or separately at the same location, measurement for Pre-Excavation of Abutment Piles, Earth will be made only below the lower limits of Structure Excavation.

(b) Rock. The quantity of Pre-Excavation of Abutment Piles, Rock to be measured for payment will be the total number of linear feet of excavation below the top surface of bedrock as determined by the Engineer.

(c) Obstructions. The quantity of Pre-Excavation for Piles Obstruction Drilling and Removal to be measured for payment will be the number of linear feet performed in the complete and accepted work, over the depth range in which obstructions are encountered, measured to the nearest 0.1 feet as determined by the Engineer. No measurement for Pre-Excavation of Abutment Piles, Earth or Pre-Excavation of Abutment Piles, Rock will be made within the limits of Pre-Excavation for Piles Obstruction Drilling and Removal.

(d) Furnishing Equipment. The quantity of Furnishing Equipment for Pre-Excavation for Piles to be measured for payment will be on a lump sum basis in the complete and accepted work.

546.06 BASIS OF PAYMENT. The accepted quantities of Pre-Excavation of Abutment Piles, Earth and Pre-Excavation of Abutment Piles, Rock will be paid for at the Contract unit price per linear foot. Payment will be full compensation for furnishing, transporting, storing, and installing the materials specified, including the sand; performing required excavation; operation and maintenance of the equipment for the pre-excavation for piles; and for furnishing all labor, materials, tools, other equipment, and incidentals necessary to complete the work.

The accepted quantity of Pre-Excavation for Piles Obstruction Drilling and Removal will be paid for at the Contract unit price per liner foot. Payment will be full compensation for performing the work of overcoming encountered obstructions and for furnishing all labor, materials, tools, equipment, and incidentals necessary to complete the work.

The accepted quantity of Furnishing Equipment for Pre-Excavation for Piles will be paid for at the Contract lump sum price. Payment will be full compensation for furnishing and mobilizing the required equipment to the project and demobilizing equipment from the project, including the erecting, dismantling, and all incidentals necessary to complete the work.

Partial payments for Furnishing Equipment for Pre-Excavation for Piles will be made as follows:

(a) The first payment of 75% of the Contract lump sum price will be made after pre-excavation equipment has been set up and pre-excavation operations have started.

(b) The remaining 25% of the Contract lump sum price will be paid when pre-excavation operations are complete and the equipment has been removed from the site.

Payment will be made under:

Pay Item		Pay Unit
546.1000	Pre-Excavation of Abutment Piles, Earth	Linear Foot
546.2000	Pre-Excavation of Abutment Piles, Rock	Linear Foot
546.3000	Pre-Excavation for Piles Obstruction Drilling and Removal	Linear Foot
546.4000	Furnishing Equipment for Pre-Excavation for Piles	Lump Sum

33. NOTICE TO BIDDERS – SUBSECTION 621.14. Subsection 621.14 is hereby modified by deleting the second paragraph in its entirety.

34. NOTICE TO BIDDERS – SUBSECTION 621.15. Subsection 621.15 is hereby modified by adding the word "anchors" to the first paragraph, immediately after the phrase "…for removing and disposing of materials, including…".

35. NOTICE TO BIDDERS – SUBSECTION 621.15. Subsection 621.15 is hereby further modified by deleting the second paragraph in its entirety.

36. NOTICE TO BIDDERS – SUBSECTION 621.15. Subsection 621.15 is hereby further modified by adding the phrase "Steel Beam Guardrail Offset Block; Terminal Connector for Steel Beam Guardrail; Traffic Barrier Delineator;" to the seventh paragraph, immediately after the phrase "The accepted quantity of…" and immediately before the phrase "…Replace Guardrail Post Assembly, W-Beam with 6 Foot Posts; Replace Guardrail Post Assembly, W-Beam with 8 Foot Posts; Replace Guardrail Post Assembly, Box Beam; and Replace Guardrail Post Assembly, Thrie Beam…"

37. NOTICE TO BIDDERS – SUBSECTION 621.15. Subsection 621.15 is hereby further modified by deleting the phrase "removing and disposing of damaged guardrail components;" from the eighth paragraph.

38. NOTICE TO BIDDERS – SUBSECTION 621.15. Subsection 621.15 is hereby further modified by deleting the ninth paragraph, which begins with the phrase "The accepted quantity of Steel Beam Guardrail Offset Block; Terminal Connector for Steel Beam Guardrail; Anchor for Steel Beam Guardrail;…" in its entirety and replacing it with the following:

The accepted quantity of Anchor for Steel Beam Guardrail; Anchor for Steel Beam Guardrail, MGS; and Anchor for Steel Beam to Box Beam Transition will be paid for at the Contract unit price for each. Payment will be full compensation for furnishing, transporting, handling, and placing the materials specified; and for furnishing all labor, materials, tools, equipment, and incidentals necessary to complete the work.

39. NOTICE TO BIDDERS – SUBSECTION 621.15. Subsection 621.15 is hereby modified by deleting the following pay items from the list of pay items:

621.0110 Removal of Guardrail Posts..... Each
621.0120 Removal of Guardrail Offset Blocks ..... Each

40. NOTICE TO BIDDERS – SUBSECTION 646.04(d). Subsection 646.04(d) is hereby modified by deleting the first sentence of the first paragraph in its entirety and replacing it with the following:

The Contractor shall be responsible for the layout for the permanent traffic markings as specified in Subsection 105.11(b).

41. NOTICE TO BIDDERS – SUBSECTION 646.07(a)(2)a. Subsection 646.07(a)(2)a. is hereby modified by deleting the first sentence of the first paragraph in its entirety and replacing it with the following:

> Initial dry retroreflectivity minimums for surface applied epoxy shall be 250 millicandelas per square meter per lux (mcd/m2/lx) for yellow markings and 350 mcd/m2/lx for white markings.

42. NOTICE TO BIDDERS – SUBSECTION 646.09(b)(2)a. Subsection 646.09(b)(2)a. is hereby modified by deleting the first sentence of the first paragraph in its entirety and replacing it with the following:

> Initial dry retroreflectivity minimums for surface-applied extruded thermoplastic shall be 250 mcd/m2/lx for yellow markings and 350 mcd/m2/lx for white markings.

43. NOTICE TO BIDDERS – SUBSECTION 701.08. Subsection 701.08 is hereby made a new subsection of the specifications as follows:

701.08 HIGH EARLY-STRENGTH PORTLAND-LIMESTONE CEMENT. High early strength Portland-limestone cement shall meet the requirements of AASHTO M 240 and ASTM C595, Type IL (HE).

37. NOTICE TO BIDDERS – SUBSECTION 702.01. Subsection 702.01 is hereby modified by deleting the phrase "*AASHTO PP 113*" from the second paragraph and replacing it with the phrase "*AASHTO R 118*".

38. NOTICE TO BIDDERS – SUBSECTION 702.03. Subsection 702.03 is hereby modified by being deleted in its entirety and replaced with the following:

702.03 WARM-MIX ASPHALT TECHNOLOGIES. Warm-mix asphalt (WMA) technologies shall allow asphalt mixtures to be produced and placed at temperatures lower than hot-mix asphalt by temporarily reducing binder viscosity through foaming processes or by the inclusion of organic or chemical additives. WMA technologies shall meet the following requirements:

(a) Foaming. WMA technologies utilizing foaming processes shall be evaluated in accordance with the *Bituminous Concrete Policy Manual*.

(b) Organic or Chemical Additives. WMA technologies using organic or chemical additives shall be evaluated in accordance with the AASHTO Product Evaluation & Audit Solutions work plan for *Evaluation of Warm Mix Asphalt Technologies and Anti-Strip Additives*, be one of the products listed on the Agency's *Approved Products List*, and meet the following requirements:

(1) PG Binder Grading. The product shall not change the classified performance grade or traffic designation of the base asphalt binder as determined in accordance with *AASHTO M 332*.

(2) Tensile Strength Ratio (TSR). WMA mixtures shall achieve a TSR value greater than or equal to that of the corresponding control (non-WMA) mixture as determined in accordance with *AASHTO T 283*.

(3) Final Rut Depth. WMA mixtures shall have a final rut depth 1/2 inch (12.5 mm), or less, after a minimum of 10,000 passes, as determined in accordance with *AASHTO T 324*.

WMA technologies that also act as an anti-strip agent, and are dosed to abate stripping, shall also meet the requirements of Subsection 702.04 and will be evaluated separately.

39. NOTICE TO BIDDERS – SUBSECTION 702.04. Subsection 702.04 is hereby modified by being deleted in its entirety and replaced with the following:

702.04 ANTI-STRIP ADDITIVES. Anti-strip additives (ASA) used to abate stripping between asphalts and aggregate shall be heat stable for all temperature ranges prescribed for the asphalt binder and capable of thorough dispersion in the binder without losing their effectiveness when in storage and at the designated mixture temperatures. The ASA shall also be capable of improving the moisture sensitivity and rutting susceptibility, and reducing film stripping of the bituminous concrete mixture. ASAs shall be evaluated in accordance with the AASHTO Product Evaluation & Audit Solutions work plan for *Evaluation of Warm Mix Asphalt Technologies and Anti-Strip Additives*, be one of the products listed on the Agency's *Approved Products List*, and meet the following requirements:

(a) PG Binder Grading. The product shall not change the classified performance grade or traffic designations of the base asphalt binder.

(b) Tensile Strength Ratio (TSR). Limestone ASA mixtures shall have a TSR greater than or equal to the result corresponding to the limestone control (non-ASA) mixture. Granite ASA mixtures shall have a minimum TSR value that is greater than or equal to the result corresponding to the granite control (non-ASA) mixture and a minimum of 80%, as determined in accordance with *AASHTO T 283*.

(c) Final Rut Depth. Granite ASA mixtures shall have a final rut depth of 1/2 inch (12.5 mm), or less, as determined in accordance with *AASHTO T 324*.

(d) Stripping Inflection Point (SIP). Granite ASA mixtures shall have a SIP that is greater than or equal to the result corresponding to the granite control (non-ASA) mixture, as determined in accordance with *AASHTO T 324*.

(e) Loss of Adhesion. ASAs shall have a maximum loss of adhesion of 5% in both the limestone and granite samples as determined in accordance with *ASTM D3625*.

40. NOTICE TO BIDDERS – SUBSECTION 713.01. Subsection 713.01 is hereby modified by relabeling subpart (h) as subpart (i) and inserting the following as the new subpart (h):

(h) Stainless-Clad Reinforcing Steel. Stainless-clad reinforcing steel shall meet the requirements of *AASHTO M 329*.

41. NOTICE TO BIDDERS – TABLE 716.02B. Table 716.02B is hereby modified by deleting the third row in its entirety and replacing it with the following:

Air voids	4.00%	4.00%	4.00%	4.00%	3.00%

42. NOTICE TO BIDDERS – SUBSECTION 716.02(b)(2). Subsection 716.02(b)(2) is hereby modified by deleting subpart a. in its entirety and relabeling subparts b. through e. as a. through d.

43. NOTICE TO BIDDERS – SUBSECTION 716.02(b)(3). Subsection 716.02(b)(3) is hereby modified by deleting subparts d. and e. and Table 716.02E in their entirety and replacing them with the following:

d. Evaluate mixture moisture sensitivity and rutting susceptibility using the Hamburg wheel tracker test (HWTT) to ensure the criteria outlined in Table 716.02E are met. Specimen fabrication, conditioning, and test procedures for the HWTT shall be in accordance with *AASHTO T 324* as modified in the Agency's *Bituminous Concrete Policy Manual*. The HWTT will not be applicable to material used for non-paver placed pavement, surface preparation, temporary pavement, curbs, gutters, or sidewalks.

e. Determine mixture cracking tolerance index (CT-Index) using the indirect tensile cracking test to ensure the criteria outlined in Table 716.02E are met. Specimen fabrication, conditioning, and test procedures for determination of the CT-Index shall be in accordance with *ASTM D8225* as modified in the Agency's *Bituminous*

Concrete Policy Manual. The CT-Index will not be applicable to material used for non-paver placed pavement, surface preparation, temporary pavement, curbs, gutters, or sidewalks.

TABLE 716.02E – MIXTURE PERFORMANCE CHARACTERISTICS

Mix Type	Hamburg Wheel Tracker Test			Indirect Tensile Cracking Test
	Maximum Rut Depth	Minimum Number of Passes	Minimum Stripping Inflection Point (SIP)	Minimum Average CT-Index Value
Type IS	1/2 in. (12.5 mm)	20,000 passes	15,000 passes	Report
Type IIS	1/2 in. (12.5 mm)	20,000 passes	15,000 passes	45
Type IIIS	1/2 in. (12.5 mm)	20,000 passes	15,000 passes	70
Type IVS	1/2 in. (12.5 mm)	20,000 passes	15,000 passes	85
Type IVSB	1/2 in. (12.5 mm)	20,000 passes	15,000 passes	85

44. NOTICE TO BIDDERS – SUBSECTION 728.02. When material is supplied in accordance with Subsection 728.02(b) or Subsection 728.02(e), material in accordance with *AASHTO M 180-18* may be substituted in place of material meeting *AASHTO M 180-23*.

SECTION 225-0001 – SOLDIER PILE AND LAGGING WALL

225-0001.01 DESCRIPTION. This work shall consist of constructing a soldier pile and lagging wall in accordance with these specifications, the Plans, and as directed by the Engineer.

225-0001.02 MATERIALS. Materials shall meet the requirements of the following subsections:

Granular Backfill for Structures.....704.08
Drainage Aggregate 704.16
Preformed Joint Filler, Cork, and Asphalt-Treated Felt 707.06
Structural Lumber and Timber.....709.01
Corrugated Polyethylene Pipe (CPEP) 710.03
Polyvinyl Chloride (PVC) Plastic Pipe.....710.05
Bar Reinforcement.....713.01
Mechanical Splices for Bar Reinforcement 713.02
Welded Wire Reinforcement 713.03
Welded Stud Shear Connectors 714.10
Geotextile for Underdrain Trench Lining.....720.05
Galvanizing.....726.06
Steel Piling.....730.01
Slope Drainage.....760.03

Structural concrete backfill for the rock socket and shaft section shall conform to the requirements of Section 541 for Concrete, Class SCC, with the exception that the maximum aggregate size shall be 1/2 inch, the 56 day surface resistivity test is not required, and an anti-washout admixture shall not be used for underwater concrete. Flowable fill backfill for soldier piles shall conform to the requirements of Section 541 for Flowable Fill, Excavatable.

Concrete for the cast-in-place wall facings and copings shall conform to the requirements of Section 541 for Concrete, Class A.

Steel piling shall consist of one continuous steel section. No splices will be allowed unless approved in writing by the Engineer. Steel piling shall be galvanized for its full length in accordance with Subsection 506.03 and Subsection 506.22(b). The fabrication requirements of Subsection 506.03 shall not apply. The Contractor may leave the portion of the flange bare where the shear studs are to be welded. The limits of this area will be detailed on the Plans. Stud shear connectors shall be field welded to piles in accordance with Section 508.

Timber lagging shall be untreated timber conforming to the dimensions, species, and stress-grades specified on the Plans and shall be acceptable to the Engineer. The requirements of Subsection 709.01(b)(1) shall not apply.

Strip drains, sheet drains, and PVC drains shall conform to the requirements specified on the Plans.

225-0001.03 SUBMITTALS.

(a) Qualifications. The Contractor shall submit proof and details of the following:

(1) Three projects in the past 5 years where the Contractor or subcontractor performing the work has successfully installed soldier pile and lagging walls of similar size and difficulty to the ones shown on the Plans, and a minimum of one project requiring similar on-site topographical and geotechnical conditions to those described in the Contract.

(2) The on-site superintendent shall have a minimum of 2 years of experience in supervising construction of soldier pile and lagging walls of similar size and difficulty to those shown on the Plans, and in similar geotechnical conditions to those described in the Contract. The work experience shall be direct supervisory responsibility for the on-site soldier pile and lagging wall construction operations. Project management level positions indirectly supervising on-site soldier pile and lagging wall construction operations will not be considered acceptable for this experience requirement.

(3) The drill rig operators shall have had a minimum of 1 year of experience drilling similar diameters and lengths, and in similar conditions.

Details describing the equipment and methods used, difficulties encountered and how they were overcome, shall be included. For each project cited, the name and telephone number of someone who can be contacted as a reference shall be included.

The Contractor shall submit this information to the Engineer for review, evaluation, and approval prior to submitting detailed information as required under Subsection 225-0001.03(b). The Engineer will render a decision within 7 calendar days after receipt of the submission. The Contractor or subcontractor will not be permitted to install soldier pile and lagging walls without this approval.

The Engineer may suspend the soldier pile and lagging wall construction if the Contractor substitutes unapproved field personnel without prior approval by the Engineer. The Contractor shall be fully liable for the additional costs resulting from the suspension of work and no adjustments in Contract time resulting from such suspension of work will be allowed.

(b) Soldier Pile Wall Construction Plan. The Contractor shall submit a soldier pile wall construction plan at least 30 calendar days before the soldier pile wall preconstruction meeting. Soldier pile wall construction shall not begin until the construction plan submittal has been accepted.

The submittal shall include, but not be limited to, the following information:

(1) Concrete and flowable fill mix designs.

(2) Material data sheets.

(3) A list and description of proposed equipment to be used, including, but not limited to, cranes, drills, augers, final cleaning equipment, tremies, and pumps.

(4) The construction sequence and the sequence of hole excavation.

(5) Details of hole excavation methods, including methods to drill through cobbles and boulders and clean the hole excavation.

(6) The method to be used to prevent caving (temporary sleeves or casings).

(7) Details of pile placement support bracing and centralization methods.

(8) Details of concrete and flowable fill placement methods, including equipment and the procedures for concreting through a conduit or tremie.

(9) Equipment and methods required to excavate soil and install timber lagging, sheet drains, separation geotextiles, and drainage aggregate backfill.

(10) The methods to be used for installing lagging and backpacking of voids behind lagging.

If alternate construction procedures are proposed or necessary, a revised soldier pile wall construction plan submittal may be required. If the work deviates from the accepted submittal without prior approval, the Engineer may suspend soldier pile wall construction until a revised plan is accepted.

225-0001.04 PRECONSTRUCTION MEETING. A soldier pile wall preconstruction meeting shall be held before starting soldier pile wall construction to discuss the construction and inspection of the walls. The Contractor shall schedule the meeting. If this meeting occurs before all soldier pile wall submittals have been accepted, additional preconstruction meetings may be required before beginning construction of soldier pile walls without accepted submittals. The Engineer, Regional Construction Engineer, Geotechnical Engineering Manager, Contractor, and soldier pile wall subcontractor superintendent shall attend preconstruction meetings.

225-0001.05 CONSTRUCTION REQUIREMENTS.

(a) General Requirements. Soldier pile wall materials shall be loaded, transported, unloaded, and stored so that materials are kept clean and free of damage. Bent, damaged or defective materials will be rejected. Steel materials shall be stored on blocking at least 12 inches above the ground and shall be protected at all times from damage. The Contractor shall ensure that all steel is free from dirt, dust, loose mill scale, loose rust, paint, oil, or other foreign materials prior to being placed.

The Contractor shall perform all work in a manner that causes no subsidence of the surrounding ground surface. If subsidence occurs, the Contractor shall cease work and provide a written plan to prevent subsidence for approval by the Engineer. The Contractor shall repair all damage that resulted from the subsidence at no additional cost to the Agency.

(b) Piles. The Contractor shall pre-excavate holes for soldier piles as shown on the Plans. Temporary sleeves or casings are required. Jetting is not permitted.

After the holes have been excavated to the proper depth, all loose rock, earth, and debris shall be removed from the bottom of the hole by approved methods. The Contractor shall check and verify that all holes have been excavated to a sufficient depth to assure a competent, non-yielding socket foundation.

If over excavation occurs, the holes shall be filled to the required elevations with drainage aggregate before piles are set.

If a temporary slope is shown on the Plans, it shall be excavated before piles are installed. Otherwise, piles shall be installed before excavation for soldier pile walls is performed.

Piles shall be installed within 1 inch of the horizontal and vertical alignment shown on the Plans and with no negative batter (piles leaning forward). Alignment variation between piles shall be minimized. If piles are misaligned, the thickness of the concrete facing shall be adjusted so that the face of the wall is straight and the minimum required facing thickness is maintained in all areas. A minimum of 3 inches of clearance shall be maintained around the pile.

The rotation about the vertical axis of the pile shall not vary by more than 5° from that shown on the Plans.

For each pile out of tolerance, the Contractor shall provide a satisfactory replacement or provide a modification that shall be approved by the Engineer prior to being implemented. Replacements or modifications shall be performed at no additional cost to the Agency.

Piles shall be installed to the required elevations in accordance with the Plans. If necessary, piles shall be cut off at the elevations shown on the Plans along a plane normal to the pile axis. The cut surface of the piles shall be ground smooth, the edges deburred, and the coating repaired.

Once piles are set, the holes shall be backfilled with structural concrete and flowable fill to the elevations shown on the Plans. Structural concrete backfill and flowable fill backfill shall be placed in accordance with the following requirements:

(1) Structural concrete backfill and flowable fill backfill shall be placed as soon as possible after the soldier pile element has been placed and inspected and approved by the Engineer.

(2) Structural concrete backfill placement shall proceed in one operation from the bottom of the hole to the elevation shown on the Plans. Any fluids shall be removed and the remaining portions of the holes filled with flowable fill backfill. Flowable fill backfill placement shall continue in one operation from the top of structural concrete backfill to the elevation shown on the Plans.

(3) Structural concrete backfill shall be placed in such a manner that it can be pumped, or flow by gravity through a tremie to the bottom of the excavation. It shall flow easily around the soldier pile element without vibration so that the concrete is not inadvertently mixed with drilling fluid, groundwater, soil, or rock. The concrete shall displace drilling slurry or water while rising in the borehole and in the annular space between the soldier pile element and the borehole wall. The concrete shall not segregate or become leached of cement paste in the process.

(4) If water is not present, the structural concrete backfill shall be deposited around the soldier pile element evenly using a concrete pump or tremie.

(5) If placing structural concrete backfill underwater the Contractor shall use a concrete pump or tremie. The discharge end of the tube on the tremie or concrete pump shall include a device to seal out water while the tube is first filled with concrete. Throughout the underwater concrete placement operation, the discharge end of the tube shall remain submerged in the concrete at least 5 feet, and the placement shall be continuous until the work is completed, resulting in a seamless, uniform casting.

(6) During structural concrete backfill and flowable fill backfill placement, the backfill level in the drilled hole shall be continually monitored by the Contractor and the Engineer.

(7) Structural concrete backfill shall be cured for at least 3 days or achieve 50% of the design 28 day compressive strength before any hole excavation or excavation within 3 socket diameters is performed. Flowable fill backfill shall be cured for at least 24 hours before lagging is installed.

(c) Excavation. The Contractor shall not excavate behind soldier pile walls unless a temporary slope is shown on the Plans. If a temporary slope is shown on the Plans, the slope shall be excavated as shown. Otherwise, the Contractor shall excavate in front of piles from the top down in accordance with the accepted submittals. Excavation shall be conducted in staged horizontal lifts with a maximum height of 4 feet. Timber lagging shall be used for temporary support of excavations in accordance with the accepted submittals.

Temporary support shall be installed within 24 hours of the excavation of each lift unless otherwise approved. The installation may be delayed if it can be demonstrated that delays will not adversely affect excavation stability. If excavation faces will be exposed for more than 24 hours, polyethylene sheets anchored at the top and bottom of lifts shall be used to protect excavation faces from changes in moisture content. Excavation shall proceed at a pace that prevents movement of unsupported soil. If unstable material is encountered during excavation, the Contractor shall take suitable measures to stabilize it and prevent ground displacement. The Contractor shall notify the Engineer regarding any necessary changes to the approved installation plan.

Flowable fill and material in between piles shall be removed as necessary to install timber lagging. Lagging shall be installed such that there is at least 3 inches of contact in the horizontal direction between the lagging and the pile flanges. The next lift shall not be excavated until temporary support for the current lift has been accepted.

(d) Drainage. The Contractor shall control drainage during construction in the vicinity of soldier pile walls. Run-off shall be directed away from soldier pile walls and areas above and behind the walls.

Permanent wall drainage systems shall be installed as shown on the Plans. Sheet drains shall be placed with the geotextile side facing away from wall faces. Sheet drains shall be secured so that drains are in continuous contact with the surfaces to which they are attached and to allow for full flow for the entire height of soldier pile walls. Discontinuous sheet drains are not allowed. If splices are needed, sheet drains shall be overlapped by at least 12 inches so flow is not impeded. Sheet drains shall be connected to drainage aggregate leveling pads by embedding sheet drain ends at least 4 inches into the drainage aggregate.

(e) Leveling Pads and Concrete Facing. Aggregate leveling pads shall be constructed as shown on the Plans and compacted with a vibratory compactor to the satisfaction of the Engineer.

Concrete facing shall be constructed in accordance with the Plans and Section 541. The forms shall not be removed until the concrete attains a compressive strength of at least 3,400 psi. If required, concrete form liners shall be in accordance with the pattern specified on the Plans.

(f) Backfill. Backfill shall be placed behind piles and the concrete facing in accordance with Subsection 204.05. Voids behind the concrete facing, lagging, and piles shall be backfilled with drainage aggregate meeting the requirements of Subsection 704.16. The Contractor shall ensure that all voids between the concrete facing and lagging and between piles, lagging, and excavation faces are filled with drainage aggregate. Backfilling shall be completed as each lift is constructed. Drainage aggregate shall be compacted to the satisfaction of the Engineer.

(g) Cleaning of Piles after Construction. Exposed galvanized surfaces of piles shall be cleaned with a 2,500 psi pressure washer after wall construction is complete. Galvanized surfaces that are exposed and damaged shall be repaired in accordance with Subsection 726.06.

225-0001.06 METHOD OF MEASUREMENT. The quantity of Soldier Pile and Lagging Wall to be measured for payment will be on a lump sum basis in the complete and accepted work.

The quantity of Soldier Piles for Soldier Pile and Lagging Wall to be measured for payment will be the total number of linear feet of soldier piles installed, accepted, and left in place, measured to the nearest linear foot.

The quantity of Drilled Hole in Earth for Soldier Pile and Lagging Wall to be measured for payment will be the total number of linear feet of excavation from original ground to the top surface of bedrock as determined by the Engineer, measured to the nearest linear foot.

The quantity of Drilled Hole in Rock for Soldier Pile and Lagging Wall to be measured for payment will be the total number of linear feet of excavation performed below the top surface of intact bedrock as determined by the Engineer, measured to the nearest linear foot.

The quantity of Timber Lagging for Soldier Pile and Lagging Wall to be measured for payment will be the total number of square feet of timber lagging installed in the complete and accepted work.

The quantity of Concrete Facing for Soldier Pile and Lagging Wall to be measured for payment will be the total number of square feet of wall surface area, including area below finished grade, in the complete and accepted work.

225-0001.07 BASIS OF PAYMENT. The accepted quantity of Soldier Pile and Lagging Wall will be paid for at the Contract lump sum price. Payment will be full compensation for preparing all required submittals; furnishing and installing steel piles, timber lagging, concrete facing, form liners, structural concrete backfill, flowable fill backfill, galvanizing, reinforcing steel, mechanical connectors, welded stud shear connectors, expansion material, granular backfill, drainage aggregate, filter fabric, geotextiles, underdrain pipe, PVC pipe, and sheet drains; performing all required excavation, including drilled holes; and for furnishing all labor, materials, tools, equipment, and incidentals necessary to complete the work.

The accepted quantity of Soldier Piles for Soldier Pile and Lagging Wall will be paid for at the Contract unit price per linear foot. Payment will be full compensation for furnishing, transporting, storing, handling, and placing the material specified, including piles, structural concrete backfill, flowable fill backfill, galvanizing, welded stud shear connectors, metal shoes, and splices; and for furnishing all labor, materials, tools, equipment, and incidentals necessary to complete the work.

The accepted quantities of Drilled Hole in Earth for Soldier Pile and Lagging Wall and Drilled Hole in Rock for Soldier Pile and Lagging Wall will be paid for at the Contract unit price per linear foot. Payment will be full compensation for furnishing, transporting, storing, and installing the materials specified, including the temporary casing; performing required excavation; and for furnishing all labor, materials, tools, equipment, and incidentals necessary to complete the work.

The accepted quantity of Timber Lagging for Soldier Pile and Lagging Wall will be paid for at the Contract unit price per square foot. Payment will be full compensation for preparing all required submittals; for excavation, timber lagging, granular backfill, and drainage aggregate; and for furnishing all labor, materials, tools, equipment, and incidentals necessary to complete the work.

The accepted quantity of Concrete Facing for Soldier Pile and Lagging Wall will be paid for at the Contract unit price per square foot. Payment will be full compensation for preparing all required submittals; furnishing and installing concrete, form liners, reinforcing steel, mechanical connectors, expansion material, filter fabric, geotextiles, underdrain pipe, PVC pipe, and sheet drains; and for furnishing all labor, materials, tools, equipment, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item		Pay Unit
225.0300001	Soldier Pile and Lagging Wall	Lump Sum
225.0300002	Soldier Piles for Soldier Pile and Lagging Wall	Linear Foot
225.0300003	Drilled Hole in Earth for Soldier Pile and Lagging Wall	Linear Foot
225.0300004	Drilled Hole in Rock for Soldier Pile and Lagging Wall	Linear Foot
225.0300005	Timber Lagging for Soldier Pile and Lagging Wall	Square Foot
225.0300006	Concrete Facing for Soldier Pile and Lagging Wall	Square Foot

SECTION 629-0002 – WATER MAIN ON BRIDGE

629-0002.01 DESCRIPTION. This work shall consist of furnishing and installing a water main on a bridge, and sections of water main off the bridge as necessary to connect with other water lines, within the limits indicated on the Plans.

The work under this section shall be performed in accordance with these provisions, the Plans, and Section 629.

629-0002.02 MATERIALS.

(a) All materials that encounter potable water shall be *NSF/ANSI 61* certified.

(b) All appurtenances, including, but not limited to, water main piping; fittings; joint restraints, if specified; valves and valve boxes; insulation; jacketing (outer protective jacket and inner protective jacket or vapor barrier if specified); insulation kits for fittings and joints; heat trace tape and heat trace conduits, if specified; expansion fittings/joints; pipe roller supports, including threaded rods and nuts; steel pipe supports, including high-strength bolts, nuts, and washers and any vertical, lateral, or horizontal angles, channels, etc.; steel wear protection shields; utility sleeves or casing pipes; casing spacers; and casing end seals shall be as specified on the Plans.

629-0002.03 SUBMITTALS. Fabrication drawings and manufacturers' technical data sheets shall be submitted in accordance with Subsection 629.04 and shall include all appurtenances, including, but not limited to, water main piping; fittings; joint restraints, if specified; valves and valve boxes; insulation, jacketing (outer protective jacket and inner protective jacket or vapor barrier if specified); insulation kits for fittings and joints; heat trace tape and heat trace conduits, if specified; expansion fittings/joints; pipe roller supports, including threaded rods and nuts; steel pipe supports, including high-strength bolts, nuts, and washers, and any vertical, lateral, or horizontal angles, channels, etc.; steel wear protection shields; utility sleeves or casing pipes; casing spacers; and casing end seals.

629-0002.04 CONSTRUCTION REQUIREMENTS. All work shall be performed in accordance with Section 506 and Section 629.

The Contractor shall adjust the pipe so that no pipe joints occur within 12 inches of any pipe hanger assembly.

629-0002.05 QUALITY ASSURANCE. The pipe and fittings furnished and installed under this item shall be tested in accordance with the requirements for pressure and leakage tests and flushing, disinfecting, and testing as specified in Section 629. Payment for testing and disinfecting will be made under pay item 629.4300.

629-0002.06 METHOD OF MEASUREMENT. The quantity of Water Main on Bridge, All-Inclusive to be measured for payment will be on a lump sum basis for the complete and accepted work.

629-0002.07 BASIS OF PAYMENT. The accepted quantity of Water Main on Bridge, All-Inclusive will be paid for at the Contract lump sum price. Payment will be full compensation for performing all work necessary to provide a complete and working water main across the bridge and off the bridge within the limits indicated on the Plans, as directed by the Engineer, including opening and closing valves and curb stops; attaching and removing end caps; removal of the existing water main and its supports from the bridge if not covered under a different pay item; attaching the new water main to the bridge and passing it through the utility sleeve or casing pipe; using the materials specified on the Plans; making all necessary adjustments to the water main and connecting the water main on the bridge to the water main off the bridge; providing specialized labor and materials; performing all excavation, dewatering, and removal of the existing valves, valve boxes, curb stops, curb boxes, utility sleeves or casing pipes, joint restraints, laterals or service lines, corporation stops, fittings, and the existing water main off the bridge; installing the water main off the bridge; placing bedding and backfilling; installing all tapping valves and sleeves, fittings, water system piping, gate valves with valve boxes, curb stops with curb boxes, corporation stops, laterals or service lines, joint restraints, concrete thrust restraints, blow-off assemblies, permanent manual and automatic air releases, and connecting the water main to the existing water system piping beyond the bridge to the limits shown on the Plans; and for furnishing all labor, materials, tools, equipment, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item		Pay Unit
629.1700002	Water Main on Bridge, All-Inclusive	Lump Sum

SECTION 675-0002 – REMOVE AND RESET PRIVATE SIGN ASSEMBLY

675-0002.01 DESCRIPTION. This work shall consist of removing and resetting private sign assemblies and appurtenances, including posts and lighting, at the locations indicated on the Plans and as directed by the Engineer.

The work under this section shall be performed in accordance with these provisions, the Plans, Section 541, Section 625, Section 675, Section 678, and Section 679.

675-0002.02 MATERIALS. Materials shall meet the requirements of the following subsections:

Anchor Bolts for Signals, Lighting, and Overhead Signs.....714.09
Electrical Conduit 752.06
Junction Boxes .....752.09(a)
Grounding Electrodes.....752.11
Highway Illumination Conductor Cable.....753.06

Existing materials shall be re-used. If existing materials are not re-usable as determined by the Engineer, they shall be replaced in-kind using new, commercially available materials that match the existing materials as closely as possible.

Concrete for sign foundations, if deemed necessary, shall conform to the requirements of Section 541 for Concrete, Class B.

Any incidentals necessary to provide lighting to the sign shall conform to the requirements of Section 625, Section 678, and Section 679.

Backfill shall be in situ material.

675-0002.03 CONSTRUCTION REQUIREMENTS. Unless otherwise shown on the Plans, prior to performing the work, the Contractor shall coordinate with the property owner and the Engineer to determine an acceptable location in which to reset the sign assembly following construction, as well as a temporary location to place the sign assembly during construction, if needed.

Sign materials to be re-used shall be removed and handled in a manner that will prevent damage. Signs designated for re-use that are damaged by the Contractor's operations shall be repaired or replaced at no additional cost to the Agency.

Foundations shall be removed in their entirety. Holes resulting from the removal of sign posts and foundations shall be backfilled with suitable material and the area restored to a condition similar to that of the adjacent area.

Existing electric services shall be capped and abandoned unless otherwise shown on the Plans.

The Contractor shall construct the foundation for the private sign to be reset matching the size and depth of the foundation of the sign at its existing location. The Contractor shall supply new hardware and accessories as needed for resetting and anchoring of the existing sign.

Existing post conditions are indicated on the Plans. Posts found in satisfactory condition shall be removed and re-installed in a manner consistent with the original placement of the posts or as directed by the Engineer. Posts shall be erected plumb.

The Contractor shall provide necessary electrical connections including new conduit, junction boxes, conductors and any other incidentals required to provide lighting to the sign in working order. Relocated signs and lighting shall be mounted in a manner consistent with the original configuration. Relocated lighting shall be in working order as acceptable to the Engineer.

675-0002.04 METHOD OF MEASUREMENT. The quantity of Remove Private Sign Assembly, Non-Lighted and Remove Private Sign Assembly, Lighted to be measured for payment will be the number or private sign assemblies removed in the complete and accepted work. A sign assembly shall consist of a single set of posts, all signs attached to those posts, all lighting elements attached to or associated with those signs, and any foundation attached to the posts.

The quantity of Remove and Reset Private Sign Assembly, Non-Lighted and Remove and Reset Private Sign Assembly, Lighted to be measured for payment will be the number of private sign assemblies removed and reset in the complete and accepted work.

675-0002.05 BASIS OF PAYMENT. The accepted quantity of Remove Private Sign Assembly, Non-Lighted and Remove Private Sign Assembly, Lighted will be paid for at the Contract unit price per each. Payment will be full compensation for removing the signs and posts; abandoning necessary electrical components; performing any required foundation excavation and backfilling; and for furnishing all labor, materials, tools, equipment, and incidentals necessary to complete the work.

The accepted quantity of Remove and Reset Private Sign Assembly, Non-Lighted and Remove and Reset Private Sign Assembly, Lighted will be paid for at the Contract unit price per each. Payment will be full compensation for removing the signs and posts; performing any required excavation; transporting, handling, and temporarily storing the sign assembly components; resetting in a temporary location during construction as needed; providing new hardware components, accessories, concrete, and other materials as needed; furnishing and installing any electrical components needed for lighting elements; disposing of any materials deemed unusable; resetting the sign assembly in the location indicated on the Plans or as directed by the Engineer; performing any required foundation design, excavation, construction, and backfilling; and for furnishing all labor, materials, tools, equipment, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	Pay Unit
675.5000001 Remove Private Sign Assembly, Non-Lighted	Each
675.5000002 Remove Private Sign Assembly, Lighted	Each
675.6000001 Remove and Reset Private Sign Assembly, Non-Lighted	Each
675.6000002 Remove and Reset Private Sign Assembly, Lighted	Each

SECTION 679-0001 – ORNAMENTAL STREET LIGHT ASSEMBLY

679-0001.01 DESCRIPTION. This work shall consist of furnishing and installing ornamental street light assemblies, complete with luminaire, wiring, fuses, foundations, and fuse holders internal to the pole hand hole, with grounding electrodes installed, and all other items necessary to provide a complete and operational system.

The work under this section shall be performed in accordance with these provisions, the Plans, and Section 679.

679-0001.02 MATERIALS. Materials shall meet the requirements of the following subsections:

Bar Reinforcement 713.01
Anchor Bolts for Signals, Lighting, and Overhead Signs.....714.09
Bearing Pads 731.01
Electrical Conduit 752.06
Grounding Electrodes 752.11
Highway Illumination Conductor Cable.....753.06

Concrete for ornamental street light assembly foundations shall be Concrete, Class B in accordance with Section 541.

Anchor bolts shall meet the requirements shown on the Plans.

The ornamental street light assembly shall be of the type and manufacturer specified on the Plans.

679-0001.03 CONSTRUCTION REQUIREMENTS. The Contractor shall submit working drawings in accordance with Subsection 105.06 and Subsection 679.04, in addition to the manufacturer's descriptive literature for the materials specified.

Transport, storage, handling, and installation of products shall be in accordance with the manufacturer's instructions. The Contractor shall protect all parts of the ornamental street light assemblies and maintain them in an undamaged condition until they are installed and accepted for payment. Factory applied shipping wrap of cardboard or other material shall remain in place throughout handling and installation to protect assembly finish. The factory shipping wrap shall only be removed after final assembly installation. Pole grips, truck arms, jaws, trailers, and any other surfaces that contact assemblies prior to or during installation shall be fully and thickly padded to prevent scratching assemblies.

Ornamental street light pole foundations shall be installed true to line and grade as shown on the Plans or as directed by the Engineer.

Ornamental street light assembly foundations shall be installed at the locations indicated and in the configurations shown on the Plans. All locations shall be field approved by the Engineer prior to installation.

The Contractor shall provide and install the grounding electrode and associated ground wiring for each ornamental street light assembly. Each assembly shall be provided with its own separate ground rod adjacent to its foundation and bonded to the pole's grounding lug, as shown on the Plans. In the case of bridge deck mounted ornamental street light assemblies, the grounding method shall be in accordance with the *National Electrical Code*.

Poles shall be installed plumb and true on the foundations and in strict accordance with the manufacturer's instructions. If needed, stainless steel flat washers or stainless-steel horseshoe shims shall be used to plumb the poles. For aluminum bases mounted on concrete, a 1/8 inch thick preformed fabric bearing pad shall be placed on the concrete surface. Sealant shall not be placed under the ornamental street light base to allow for drainage.

Ornamental luminaires shall be installed with the correct optical system orientation, socket position, and inclination angle to meet the specified photometric requirements. Ornamental luminaires shall be installed at the orientation to the roadway as specified on the Plans. All ornamental street light assembly components shall be cleaned of all dirt, dust, and fingerprints prior to acceptance.

A wattage identification sticker shall be installed inside the base hand hole. No other identifying numbers except the manufacturer's nameplate shall be installed on the poles, arms, or luminaries, unless otherwise specified on the Plans.

Splices and junctions shall be made in accordance with Section 678.

Acceptance of the ornamental street light assemblies shall be in accordance with Subsection 679.16.

Any components damaged due to Contractor negligence shall be replaced with new components at the Contractor's expense, and as directed by the Engineer.

679-0001.04 METHOD OF MEASUREMENT. The quantity of Ornamental Street Light Assembly and Ornamental Street Light Foundation of the type specified to be measured for payment will be for each ornamental street light assembly and ornamental street light foundation installed in the complete and accepted work.

679-0001.05 BASIS OF PAYMENT. The accepted quantity of Ornamental Street Light Assembly of the type specified will be paid for at the Contract unit price per each. Payment will be full compensation for furnishing, transporting, handling, and placing the materials specified including poles, luminaries, bracket arms, and photocells; for providing a complete street light assembly, wired in place; performing all splices and junctions; and for furnishing all labor, materials, tools, equipment, and incidentals necessary to complete the work.

The accepted quantity of Ornamental Street Light Foundation will be paid for at the Contract unit price for each. Payment will be full compensation for furnishing, transporting, handling, assembling, and placing the materials specified, including concrete, reinforcing bar, electrical conduit, anchor bolts, grounding electrodes, preformed fabric bearing pads, highway illumination conductor cable, and accessories; and for furnishing all labor, materials, tools, equipment, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	Pay Unit
679.4600001 Ornamental Street Light Assembly	Each
679.4600002 Ornamental Street Light Foundation	Each

DEPARTMENT OF THE ARMY
US ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
696 VIRGINIA ROAD
CONCORD MA 01742-2751

January 17, 2024

CENAE-RDNH/VT-62
Regulatory Division
File Number: NAE-2023-02108

Ms. Jessie Johnson
VTrans Biologist
Vermont Agency of Transportation
219 North Main Street
Barre, Vermont 05641
Sent by email: jessie.johnson@vermont.gov

Dear Ms. Johnson:

The U.S. Army Corps of Engineers (USACE) has reviewed your application to place fill in a total of about 3,089 sq. ft. (0.07 acre) of the Dog River in conjunction with the replacement of a deficient structure, on the same alignment, Bridge No. 60 with a new single span bridge on VT Route 12 in Northfield, Vermont. The work is shown on the enclosed plans, on thirteen sheets, titled "NORTHFIELD BF 0241(58)" and dated "3/6/2023", "2-MARCH-2023", "7/5/2023" and "2/7/2023".

Based on the information that you have provided, we verify that the activity is authorized under General Permit #18 of the enclosed December 6, 2022, federal permits known as the Vermont General Permits (GPs). The GPs are also available at https://www.nae.usace.army.mil/Missions/Regulatory/State-General-Permits/Vermont-General-Permit.

Please review the enclosed GPs carefully, in particular the general conditions beginning on page 27, and ensure that you and all personnel performing work authorized by the GPs are fully aware of and comply with its terms and conditions. A copy of the GPs and this verification letter shall be available at the work site as required by General Condition 27.

You must complete and return the enclosed Work Start Notification Form to this office before the anticipated start date. You must complete and return the enclosed Compliance Certification Form within one month following the completion of the authorized work.

This authorization presumes that the work as described above and as shown on your plans noted above is in waters of the U.S. If you wish, you may request an approved jurisdictional determination (which may be appealed), by contacting the USACE district for further instruction.

This authorization expires on December 6, 2027. You must commence or have under contract to commence the work authorized herein by December 6, 2027, and complete the work by December 6, 2028. If not, you must contact this office to determine the need for further authorization and we recommend you contact us *before* the work authorized herein expires. Please contact us immediately if you change the plans or construction methods for work in our jurisdiction as we must approve any changes before you undertake them. Performing work within our jurisdiction that is not specifically authorized by this determination or failing to comply with the special condition(s) provided above or all the terms and conditions of the GPs may subject you to the enforcement provisions of our regulations.

This authorization does not obviate the need to obtain other federal, state, or local authorizations required by law. Applicants are responsible for applying for and obtaining any other approvals.

We continually strive to improve our customer service. To better serve you, we would appreciate your completing our Customer Service Survey located at https://regulatory.ops.usace.army.mil/customer-service-survey.

Please contact Michael S. Adams of my staff at (802) 872-2893 or michael.s.adams@usace.army.mil if you have any questions.

Sincerely,

Frank J Del Giudice

Digitally signed by Frank J Del Giudice
Date: 2024.01.18 06:46:28 -05'00'

Frank J. DelGiudice
Chief, NH & VT Section
Regulatory Division

Enclosures

cc:
Mr. Jaron Borg, VT DEC, jaron.borg@vermont.gov
Ms. Jessie Johnson, VTrans, jessie.johnson@vermont.gov

NORTHFIELD BF 0241(58)

Vermont Agency of Natural Resources

vermont.gov

LEGEND

- Parcels (standardized)
- Town Boundary

NOTES

Map created using ANR's Natural Resources Atlas

1,219.0 0 610.00 1,219.0 Meters

WGS_1984_Web_Mercator_Auxiliary_Sphere 1" = 2000 Ft. 1cm = 240 Meters

© Vermont Agency of Natural Resources

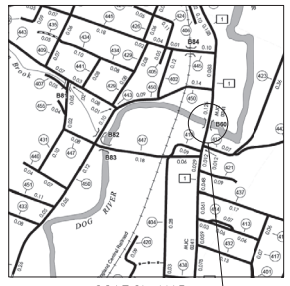
THIS MAP IS NOT TO BE USED FOR NAVIGATION

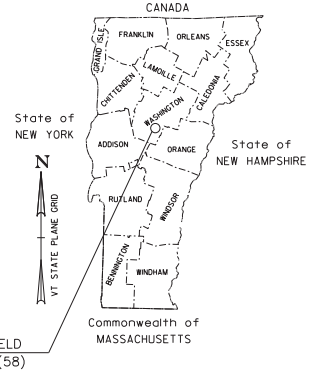
DISCLAIMER: This map is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. ANR and the State of Vermont make no representations of any kind, including but not limited to, the warranties of merchantability, or fitness for a particular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

REVIEWER NOTES:

1. A 12 WEEK BRIDGE CLOSURE PERIOD IS ANTICIPATED
2. ANY STRUCTURAL ELEMENTS SHOWN IN THE PLANS ARE CONCEPTUAL IN NATURE AND HAVE NOT BEEN FULLY DESIGNED
3. IT IS ANTICIPATED THAT ADDITIONAL R.O.W. WILL BE REQUIRED
4. IT IS ANTICIPATED THAT OVERHEAD UTILITIES WILL BE RELOCATED

STATE OF VERMONT
AGENCY OF TRANSPORTATION





PROPOSED IMPROVEMENT
BRIDGE PROJECT

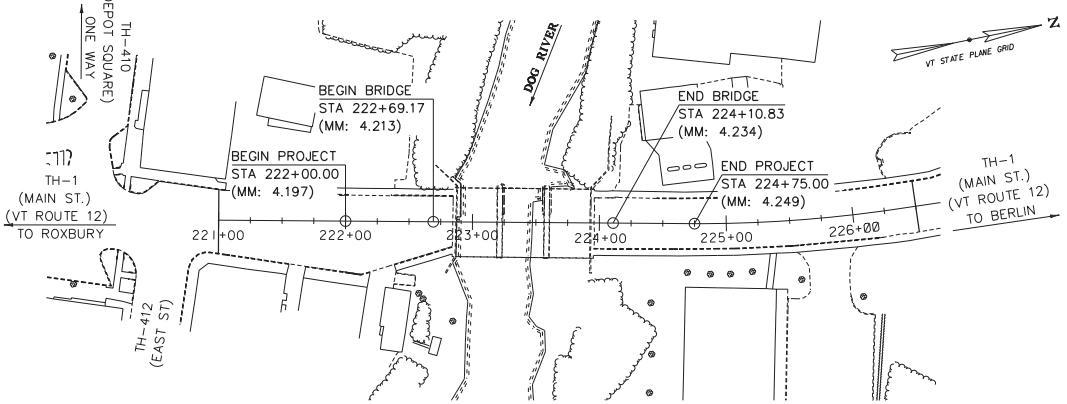
TOWN OF NORTHFIELD
COUNTY OF WASHINGTON

ROUTE NO : VT ROUTE 12, TH-1 NORTH MAIN ST. (CLASS 1), MAJOR COLLECTOR, BRIDGE NO: 60

PROJECT LOCATION: LOCATED IN THE TOWN OF NORTHFIELD ON VT ROUTE 12, BRIDGE 60 OVER DOG RIVER, APPROXIMATELY 1.1 MILES NORTH OF THE JUNCTION WITH VT ROUTE 12A SOUTH.

PROJECT DESCRIPTION: REMOVAL AND REPLACEMENT OF BRIDGE NO. 60 WITH RELATED APPROACH ROADWAY AND CHANNEL WORK.

LENGTH OF STRUCTURE:	141.66	FEET
LENGTH OF ROADWAY:	133.34	FEET
LENGTH OF PROJECT:	275.00	FEET



CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2018, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON APRIL 13, 2018 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

QUALITY ASSURANCE PROGRAM : LEVEL	2
SURVEYED BY :	DUBOIS & KING
SURVEYED DATE :	2019
DATUM	
VERTICAL	NAVD88
HORIZONTAL	NAD 83 (2011)

PRELIMINARY PLANS
2-MARCH-2023

Hardesty & Hanover

HIGHWAY DIVISION, CHIEF ENGINEER	
APPROVED _____ DATE _____	
PROJECT MANAGER :	GARY LAROCHE, P.E.
PROJECT NAME :	NORTHFIELD
PROJECT NUMBER :	BF 0241(58)
SHEET 1 OF 52 SHEETS	

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PRELIMINARY INFORMATION SHEET (BRIDGE)

Version

LRFD

INDEX OF SHEETS

PLAN SHEETS

1	TITLE SHEET
2	PRELIMINARY INFORMATION SHEET
3	TYPICAL SECTIONS - ROADWAY AND BRIDGE
4	EARTHWORK TYPICAL SECTION
5	CONVENTIONAL SYMBOLOGY LEGEND
6	SURVEY TIE SHEET
7	LAYOUT SHEET
8	PROFILE AND BANKING DIAGRAM
9	SIDEWALK LAYOUT SHEET
10	TRUCK DETOUR ROUTE
11	LOCAL DETOUR ROUTE
12	LOCAL DETOUR ROUTE DETAILS
13	DRAINAGE LAYOUT SHEET
14	DRAINAGE PROFILE
15	UTILITY LAYOUT SHEET
16	SIGN AND LINE LAYOUT SHEET
17	CROSSWALK DETAILS
18	SIGN AND LINE TABLE SHEET
19	RAIL LAYOUT SHEET
20	BORING LAYOUT SHEET
21 - 26	BORING LOG SHEETS
27 - 33	ROADWAY CROSS SECTIONS
34	MATERIAL TRANSITION DIAGRAM
35 - 44	CHANNEL CROSS SECTIONS
45 - 46	EPSC NARRATIVE
47	EPSC EXISTING SITE PLAN
48	EPSC CONSTRUCTION SITE PLAN
49	EPSC FINAL SITE PLAN
50	EPSC DETAILS - 1
51	EPSC DETAILS - 2
52	LANDSCAPE PLAN

DETAIL SHEETS

STANDARDS LIST

C-2A	PORTLAND CEMENT CONCRETE SIDEWALK DRIVE ENTRANCES	10-14-2005
C-3B	SIDEWALK RAMPS AND MEDIAN ISLANDS	02-17-2002
E-10	ROLLED EROSION CONTROL PRODUCT, TYPE I	04-07-2020
E-12	STABILIZED CONSTRUCTION ENTRANCE	04-07-2020
E-13	INLET PROTECTION DEVICE, TYPE 1	04-07-2020
E-15	SILT FENCE	04-07-2020
E-121	STANDARD SIGN PLACEMENT - CONVENTIONAL ROAD	08-08-1995
G-1	STEEL BEAM GUARDRAIL DETAILS (POST, DELINEATOR, TYPICALS)	03-10-2017
G-1D	STEEL BEAM GUARDRAIL DETAILS (END TERMINAL, ANCHOR, MEDI	03-10-2017
G-19	GENERIC GRADING PLANS FOR GUARDRAIL END TERMINALS	10-02-2018
S-400	BRIDGE JOINT ASPHALTIC PLUG	04-07-2020
S-500	CONCRETE DETAILS AND NOTES	04-07-2020
S-501	CONCRETE DETAILS AND NOTES	04-07-2020
S-600	STRUCTURAL DETAILS AND NOTES	04-07-2020
S-601	STRUCTURAL STEEL PLATE GIRDER DETAILS AND NOTES	04-07-2020
T-1	TRAFFIC CONTROL GENERAL NOTES	04-25-2016
T-2	TRAFFIC SIGN GENERAL NOTES	04-25-2016
T-10	CONVENTIONAL ROADS CONSTRUCTION APPROACH SIGNING	08-06-2012
T-42	BRIDGE NUMBER PLAQUE	04-09-2014

FINAL HYDRAULIC REPORT

HYDROLOGIC DATA

Date: 4/20/2022

DRAINAGE AREA : 59.6 sq. mi.
CHARACTER OF TERRAIN : Hilly to mountainous rural watershed
STREAM CHARACTERISTICS : Sinuous with wide floodplain
NATURE OF STREAMBED : Cobble

PEAK FLOW DATA - ANNUAL EXCEEDANCE PROBABILITY (AEP)

43% =	2,200 cfs	2% =	6,000 cfs
10% =	3,800 cfs	1% =	7,100 cfs
4% =	5,000 cfs	0.2% =	8,300 cfs

DATE OF FLOOD OF RECORD 8/28/2011
ESTIMATED DISCHARGE: Unknown
WATER SURFACE ELEV.: 721.7 ft.
NATURAL STREAM VELOCITY : @ 2% AEP = 10.1 fps*
ICE CONDITIONS : Mocerate
DEBRIS: Mocerate to Heavy
DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? Unknown
IS ORDINARY RISE RAPID? Unknown
IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? Yes
IF YES, DESCRIBE: The stage is controlled by an uncontrolled dam directly downstream of the structure

WATERSHED STORAGE: 1.0%
HEADWATERS:
UNIFORM: X
IMMEDIATELY ABOVE SITE:

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: 3-Span Concrete T-Beam Bridge
YEAR BUILT: 1926, Reconstructed in 1958
CLEAR SPAN(NORMAL TO STREAM): 105.0 ft.
VERTICAL CLEARANCE ABOVE STREAMBED: 20.3 ft.
WATERWAY OF FULL OPENING: 1,661.2 sq. ft.
DISPOSITION OF STRUCTURE: Full Replacement
TYPE OF MATERIAL UNDER SUBSTRUCTURE: See Borings

WATER SURFACE ELEVATIONS AT:

43% AEP =	713.6 ft.	VELOCITY =	6.9 fps
10% AEP =	715.1 ft.	"	8.4 fps
4% AEP =	716.1 ft.	"	9.4 fps
2% AEP =	717.0 ft.	"	9.8 fps
1% AEP =	717.7 ft.	"	10.2 fps

LONG TERM STREAMBED CHANGES: Unknown

IS THE ROADWAY OVERTOPPED BELOW 1% AEP: No
FREQUENCY: N/A
RELIEF ELEVATION: N/A
DISCHARGE OVER ROAD @ 1% AEP: N/A

UPSTREAM STRUCTURE

TOWN: Northfield — DISTANCE: 350.0 ft
HIGHWAY # : NE Central Railroad Roxbury — STRUCTURE #: Unknown
CLEAR SPAN: Unknown — CLEAR HEIGHT: Unknown
YEAR BUILT: Unknown — FULL WATERWAY: Unknown
STRUCTURE TYPE: Simple Span

DOWNSTREAM STRUCTURE

TOWN: Northfield — DISTANCE: 1.1 mi.
HIGHWAY # : VT-12 — STRUCTURE #: BR 61
CLEAR SPAN: 170. ft. — CLEAR HEIGHT: Unknown
YEAR BUILT: 1977 — FULL WATERWAY: Unknown
STRUCTURE TYPE: 2 Span Continuous Rolled Beam

LRFD LOAD RATING FACTORS

LOADING LEVELS	TRUCK						
	H-20	HL-93	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
TONNAGE	20	36	36	66	30	34.5	38
INVENTORY							
POSTING							
OPERATING							
COMMENTS:							

PROPOSED STRUCTURE

STRUCTURE TYPE: Single Span

CLEAR SPAN(NORMAL TO STREAM): 137.0 ft.
VERTICAL CLEARANCE ABOVE STREAMBED: 16.1 ft.
WATERWAY OF FULL OPENING: 1,384.0 sq. ft.

WATER SURFACE ELEVATIONS AT:

43% AEP =	713.4 ft.	VELOCITY=	7.5 fps
10% AEP =	714.7 ft.	"	9.1 fps
4% AEP =	715.7 ft.	"	9.9 fps
2% AEP =	716.5 ft.	"	10.6 fps
1% AEP =	717.2 ft.	"	11.1 fps

IS THE ROADWAY OVERTOPPED BELOW 1% AEP: No
FREQUENCY: N/A
RELIEF ELEVATION: N/A
DISCHARGE OVER ROAD @ 1% AEP: N/A

BRIDGE LOW CHORD ELEVATION: 723.0 ft.
FREEBOARD: @ 2% AEP = 06.49 ft.

SCOUR: 7.0 ft.**

REQUIRED CHANNEL PROTECTION: Stone Fill Type IV***

PERMIT INFORMATION

AVERAGE DAILY FLOW:	-	DEPTH OR ELEVATION:
ORDINARY LOW WATER:	-	-
ORDINARY HIGH WATER:	-	-

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: N/A
CLEAR SPAN (NORMAL TO STREAM): N/A
VERTICAL CLEARANCE ABOVE STREAMBED: N/A
WATERWAY AREA OF FULL OPENING: N/A

ADDITIONAL INFORMATION

* Natural velocity is slightly larger because deceleration occurs near bridge opening
** Assumes that existing abutmens are fully exposed and scours similar to pier at abutments
***E-Stone Type IV is to be used for all in channel work

TRAFFIC MAINTENANCE NOTES

1. MAINTAIN TRAFFIC ON AN OFF SITE DETOUR.
2. TRAFFIC SIGNALS ARE NOT NECESSARY.
3. SIDEWALKS ARE NECESSARY
4. BICYCLES AND PEDESTRIANS WILL BE ACCOMMODATED

DESIGN VALUES

1. DESIGN LIVE LOAD		HL-93
2. FUTURE PAVEMENT	d_p:	2.5 INCH
3. DESIGN SPAN	L:	140 FT
4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS)	Δ:	---
5. PRESTRESSING STRAND	f_y:	---
6. PRESTRESSED CONCRETE STRENGTH	f'_c:	---
7. PRESTRESSED CONCRETE RELEASE STRENGTH	f'_{ci}:	---
8. S.P. (PERFORMANCE-BASED CONCRETE, CLASS PCD)	f'_c:	4.0 KSI
9. S.P. (PERFORMANCE-BASED CONCRETE, CLASS PCS)	f'_c:	3.5 KSI
10. S.P. (PERFORMANCE-BASED CONCRETE, CLASS PSS)	f'_c:	4.0 KSI
11. CONCRETE, CLASS C	f'_c:	3.0 KSI
12. REINFORCING STEEL	f_y:	60 KSI
13. STRUCTURAL STEEL AASHTO M270, GR50W	f_y:	50 KSI
14. NOMINAL BEARING RESISTANCE OF SOIL	q_n:	
15. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	ϕ:	
16. NOMINAL BEARING RESISTANCE OF ROCK	q_n:	
17. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	ϕ:	
18. PILE RESISTANCE FACTOR	ϕ:	0.65
19. LATERAL PILE DEFLECTION	Δ:	---
20. BASIC WND SPEED	V_{3s}:	---
21. MINIMUM GROUND SNOW LOAD	p_g:	---
22. SEISMIC DATA PGA: ---	S_s:	---
	S_1:	---
23.		---
24.		---
25.		---
26.		---

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT
2024	4300	530	52	5.5	280
2044	4800	580	52	8.2	470

20 year ESAL for flexible pavement from 2024 to 2044 : 571480
40 year ESAL for flexible pavement from 2024 to 2064 : 1361360
Design Speed: 30 mph

AS BUILT "REBAR" DETAIL

LEVEL I	LEVEL II	LEVEL III
TYPE:	TYPE:	TYPE:
GRADE:	GRADE:	GRADE:

PROJECT NAME	NORTHFIELD
PROJECT NUMBER	BF 0241(58)
FILE NAME	z19j233forms.dgn
PROJECT LEADER	C. BAKER
DESIGNED BY	S.BROWN
PLOT DATE	03/06/2023
DRAWN BY	S.BROWN
CHECKED BY	K. SMITH

PRELIMINARY INFORMATION SHEET — SHEET 2 OF 52

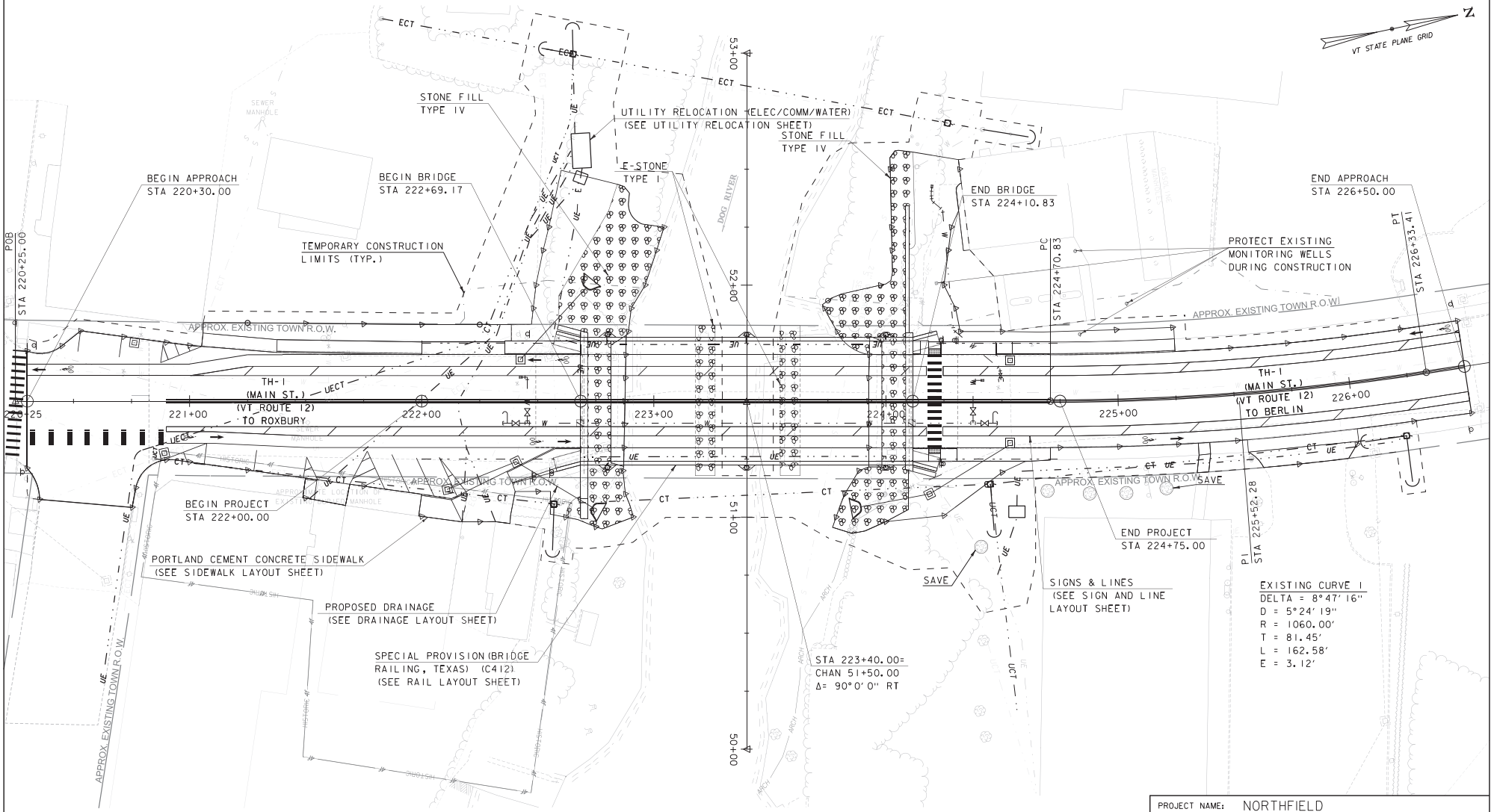
E-STONE, TYPE I
STA 223+17.9 - STA 223+26.4
STA 223+54.5 - STA 223+63.0

REMOVING AND RESETTING FENCE
STA 222+40.3 - STA 222+55.0 RT

COARSE MILLING, BITUMINOUS CONCRETE
STA 220+30.0 - STA 221+07.0
STA 226+25.0 - STA 226+50.0

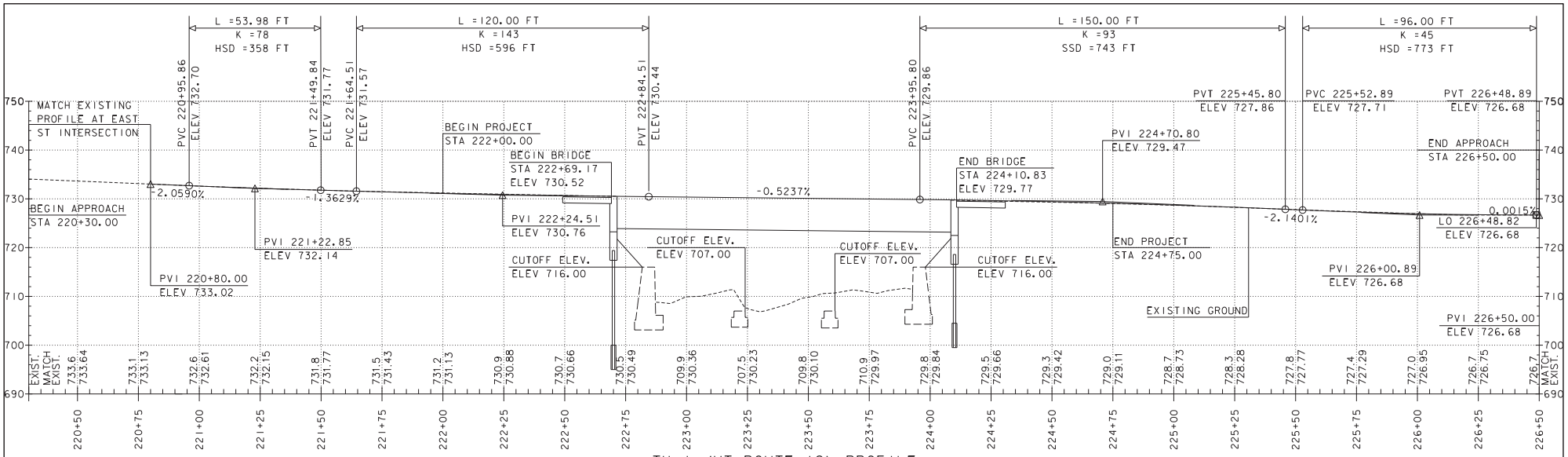
STONE FILL, TYPE IV
STA 222+59.1 - STA 223+4.4
STA 223+72.6 - STA 224+12.5

SPECIAL PROVISION (PRECAST CONCRETE RETAINING WALL)
STA 222+58.7 - STA 222+ 68.5 LT
STA 224+09.3 LT - 29.5' TO 84.3'
STA 224+11.5 - STA 224+21.3 RT



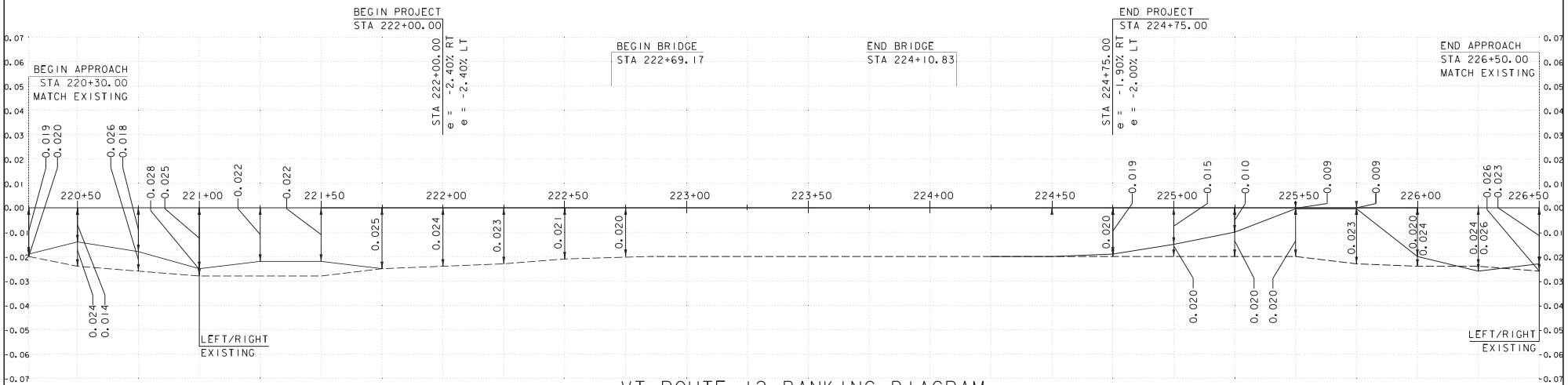
Hardesty & Hanover

PROJECT NAME: NORTHFIELD	
PROJECT NUMBER: BF 0241(58)	
FILE NAME: z19j223bdr.dgn	PLOT DATE: 3/6/2023
PROJECT LEADER: C. BAKER	DRAWN BY: T. MARQUETTE
DESIGNED BY: K. HO	CHECKED BY: C. JENNE
LAYOUT SHEET	SHEET 7 OF 52



TH-1 (VT ROUTE 12) PROFILE

SCALE: HORIZONTAL 1"=20'-0"
VERTICAL 1"=10'-0"



RIGHT LANE/SHLDR

LEFT LANE/SHLDR

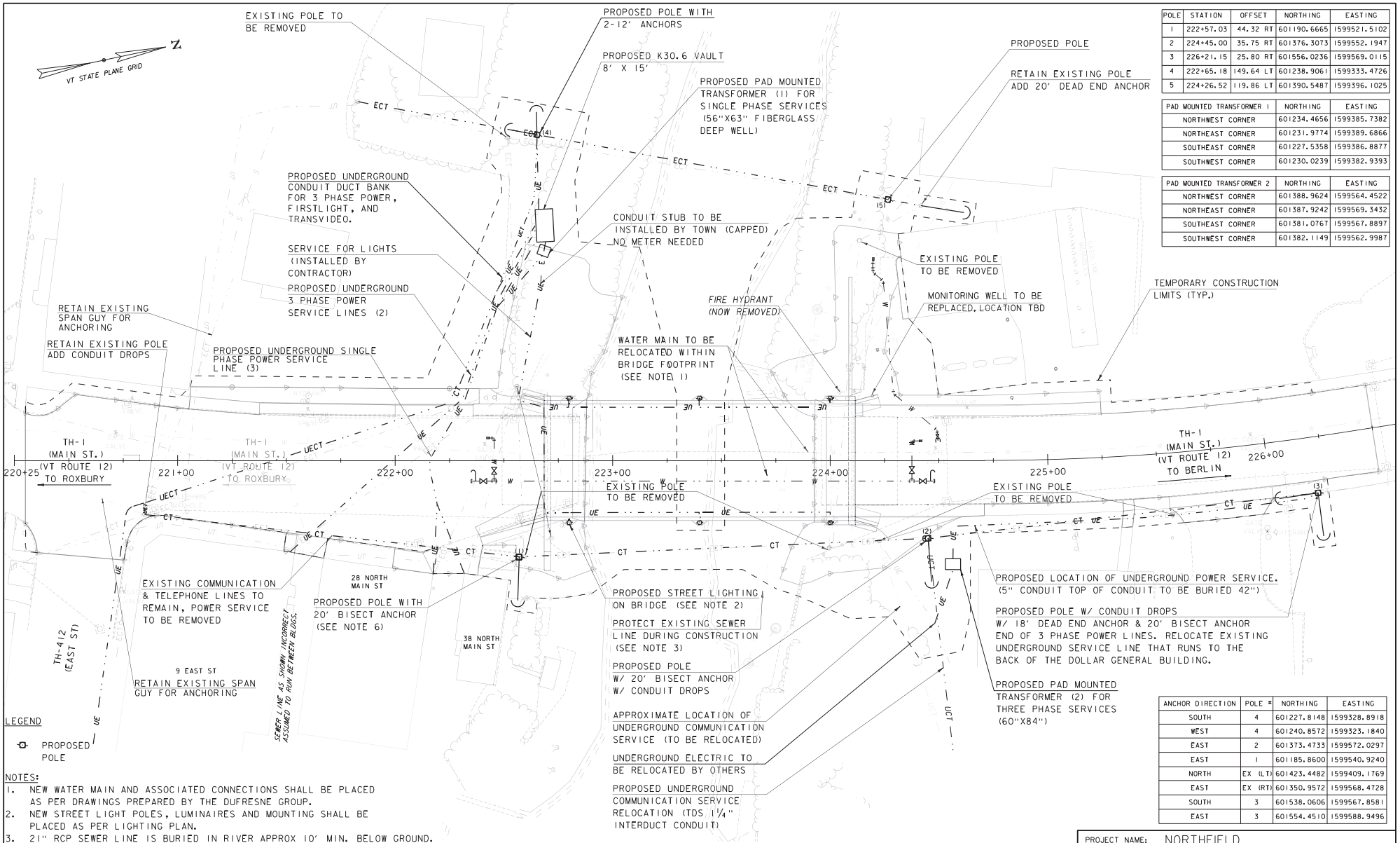
VT ROUTE 12 BANKING DIAGRAM

HORIZONTAL SCALE: 1" = 20'-0"
NO VERTICAL SCALE

NOTE:
GRADES SHOWN TO THE NEAREST TENTH ARE EXISTING GROUND ALONG ℄
GRADES SHOWN TO THE NEAREST HUNDREDTH ARE FINISH GRADE ALONG ℄

Hardesty & Hanover

PROJECT NAME: NORTHFIELD	
PROJECT NUMBER: BF 0241(58)	
FILE NAME: z19j223profile.dgn	PLOT DATE: 3/6/2023
PROJECT LEADER: C. BAKER	DRAWN BY: T. MARQUETTE
DESIGNED BY: K. HO	CHECKED BY: C. JENNE
PROFILE AND BANKING DIAGRAM	SHEET 8 OF 52



POLE	STATION	OFFSET	NORTHING	EASTING
1	222+57.03	44.32 RT	601190.6665	1599521.5102
2	224+45.00	35.75 RT	601376.3073	1599552.1947
3	226+21.15	25.80 RT	601556.0236	1599569.0115
4	222+65.18	149.64 LT	601238.9061	1599333.4726
5	224+26.52	119.86 LT	601390.5487	1599396.1025

PAD MOUNTED TRANSFORMER 1	NORTHING	EASTING
NORTHWEST CORNER	601234.4656	1599385.7382
NORTHEAST CORNER	601231.9774	1599389.6866
SOUTHEAST CORNER	601227.5358	1599386.8877
SOUTHWEST CORNER	601230.0239	1599382.9393

PAD MOUNTED TRANSFORMER 2	NORTHING	EASTING
NORTHWEST CORNER	601388.9624	1599564.4522
NORTHEAST CORNER	601387.9242	1599569.3432
SOUTHEAST CORNER	601381.0767	1599567.8897
SOUTHWEST CORNER	601382.1149	1599562.9987

ANCHOR DIRECTION	POLE #	NORTHING	EASTING
SOUTH	4	601227.8148	1599328.8918
WEST	4	601240.8572	1599323.1840
EAST	2	601373.4733	1599572.0297
EAST	1	601185.8600	1599540.9240
NORTH	EX (LT)	601423.4482	1599409.1769
EAST	EX (RT)	601350.9572	1599568.4728
SOUTH	3	601538.0606	1599567.8581
EAST	3	601554.4510	1599588.9496

NOTES:
1. NEW WATER MAIN AND ASSOCIATED CONNECTIONS SHALL BE PLACED AS PER DRAWINGS PREPARED BY THE DUFRESNE GROUP.
2. NEW STREET LIGHT POLES, LUMINAIRES AND MOUNTING SHALL BE PLACED AS PER LIGHTING PLAN.
3. 21" RCP SEWER LINE IS BURIED IN RIVER APPROX 10' MIN. BELOW GROUND.
4. ASSUME 3' WIDE UTILITY DUCTBANK FOR BURIED UTILITIES RELOCATION.
5. CONTRACTOR SHALL AVOID IMPACTS TO EXISTING DRAINAGE FACILITIES. MIN. COVER REQUIREMENTS SHALL BE MET FOR ALL UNDERGROUND UTILITY CROSSINGS.
6. THIS UTILITY POLE REQUIRES A DEEP EXCAVATION SET (APPROXIMATELY 10'-12') TO COUNTERACT STABILITY CONCERNS DURING CONSTRUCTION.
7. REPLACE TREES DISTURBED BY UNDERGROUND UTILITY INSTALLATION.

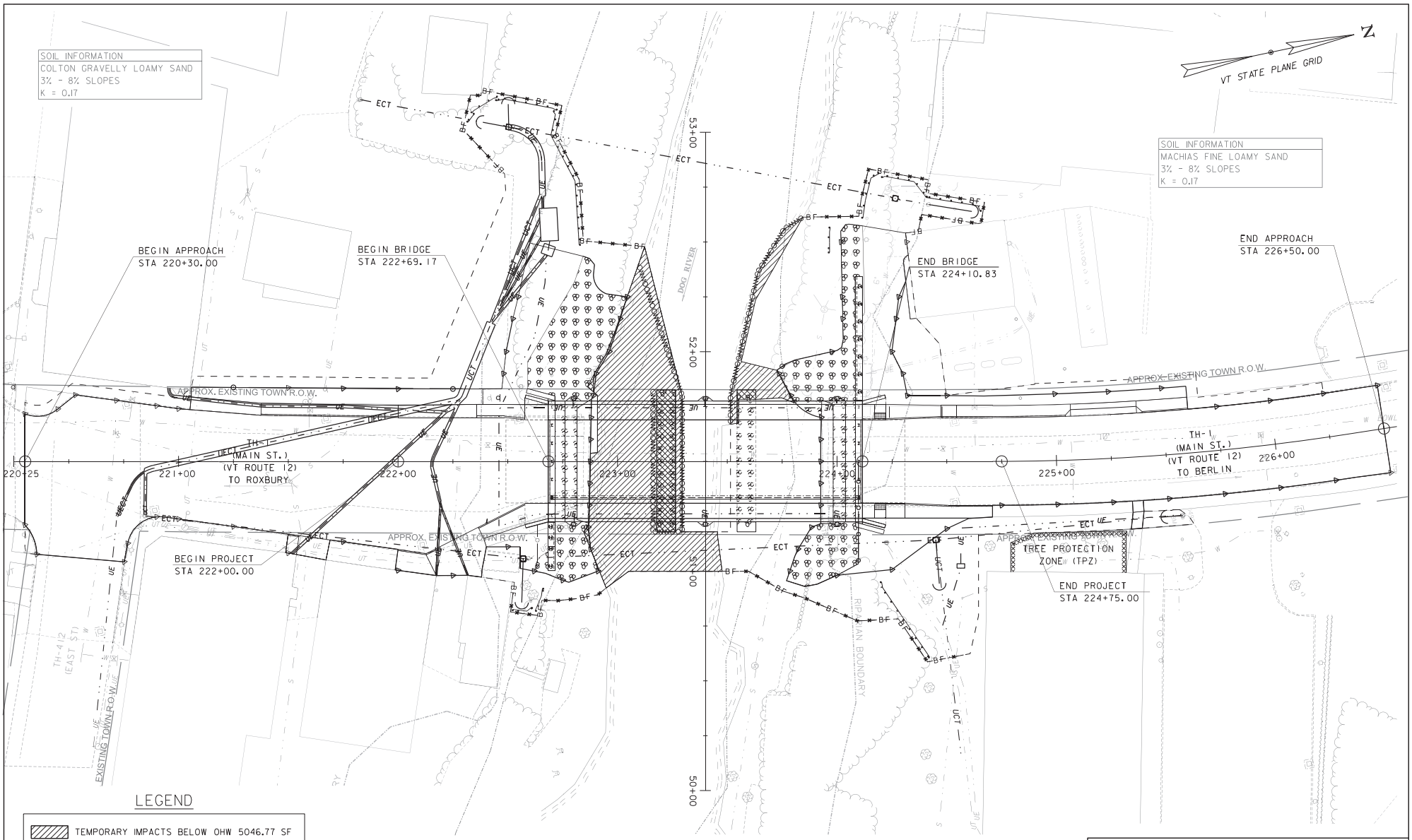
SCALE 1" = 20'-0"
20 0 20

Hardesty & Hanover

PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 024I(58)

FILE NAME: zl9j223bdr_utl.dgn
PROJECT LEADER: C. BAKER
DESIGNED BY: K. HO
UTILITY LAYOUT SHEET

PLOT DATE: 3/6/2023
DRAWN BY: S. BROWN
CHECKED BY: K.SMITH
SHEET 15 OF 52



LEGEND

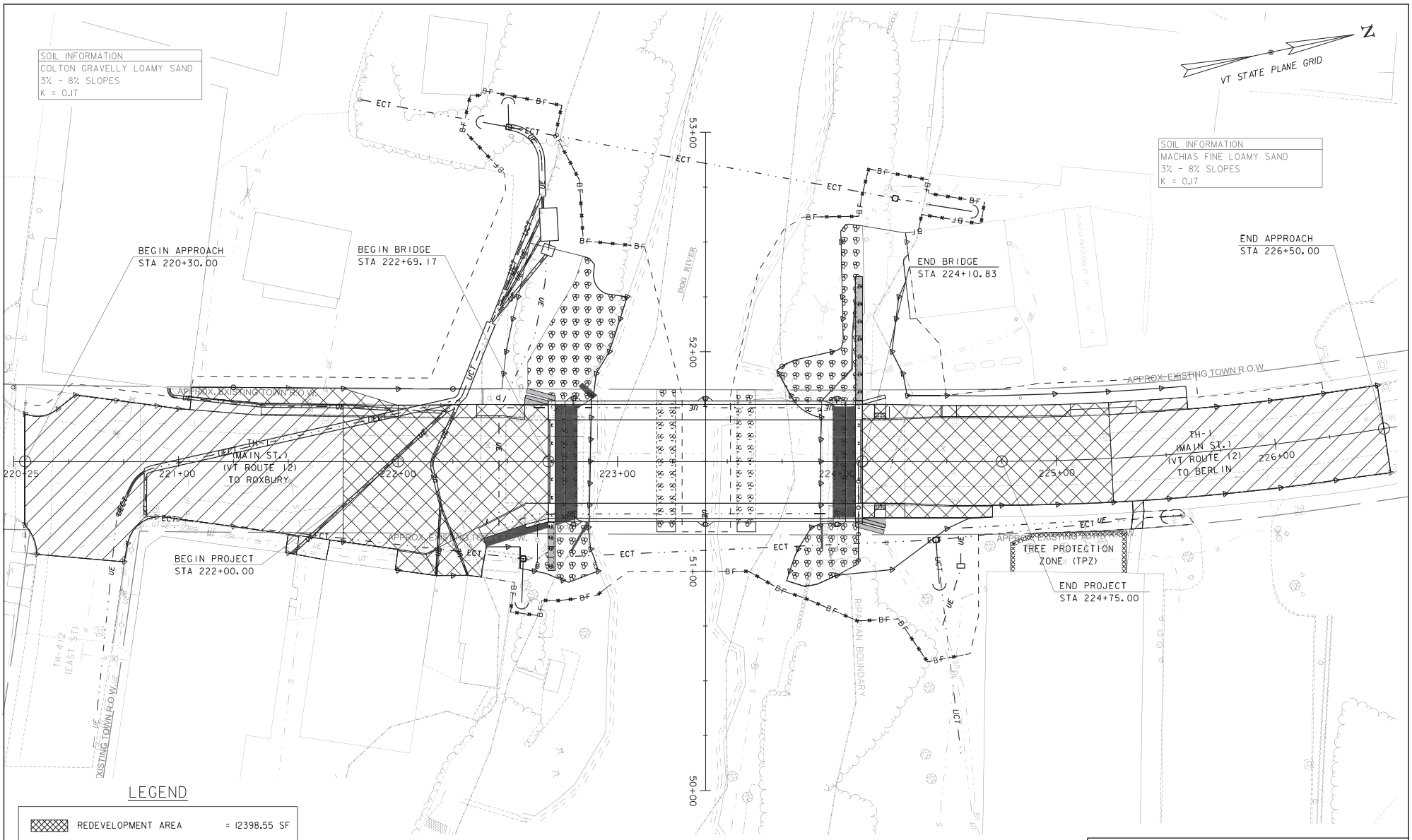
- TEMPORARY IMPACTS BELOW OHW 5046.77 SF
- PERMANENT IMPACTS BELOW OHW = 599.43 SF
- SECONDARY IMPACTS BELOW OHW = 0.00 SF

IMPACTS BELOW OHW

SCALE 1" = 20'-0"
20 0 20

H&H

PROJECT NAME:	NORTHFIELD
PROJECT NUMBER:	BF 024I(58)
FILE NAME: z19J223layout.dgn	PLOT DATE: 4/29/2025
PROJECT LEADER: KIM SMITH	DRAWN BY: C. JAMISON
DESIGNED BY: S. BROWN	CHECKED BY: K. SMITH
IMPACTS BELOW OHW	SHEET 2 OF 3



LEGEND

REDEVELOPMENT AREA	= 12398.55 SF
OTHER AREA	= 14114.83 SF
EXPANSION AREA	= 400.92 SF
RESTORED PERVIOUS AREA	= 1250.00 SF

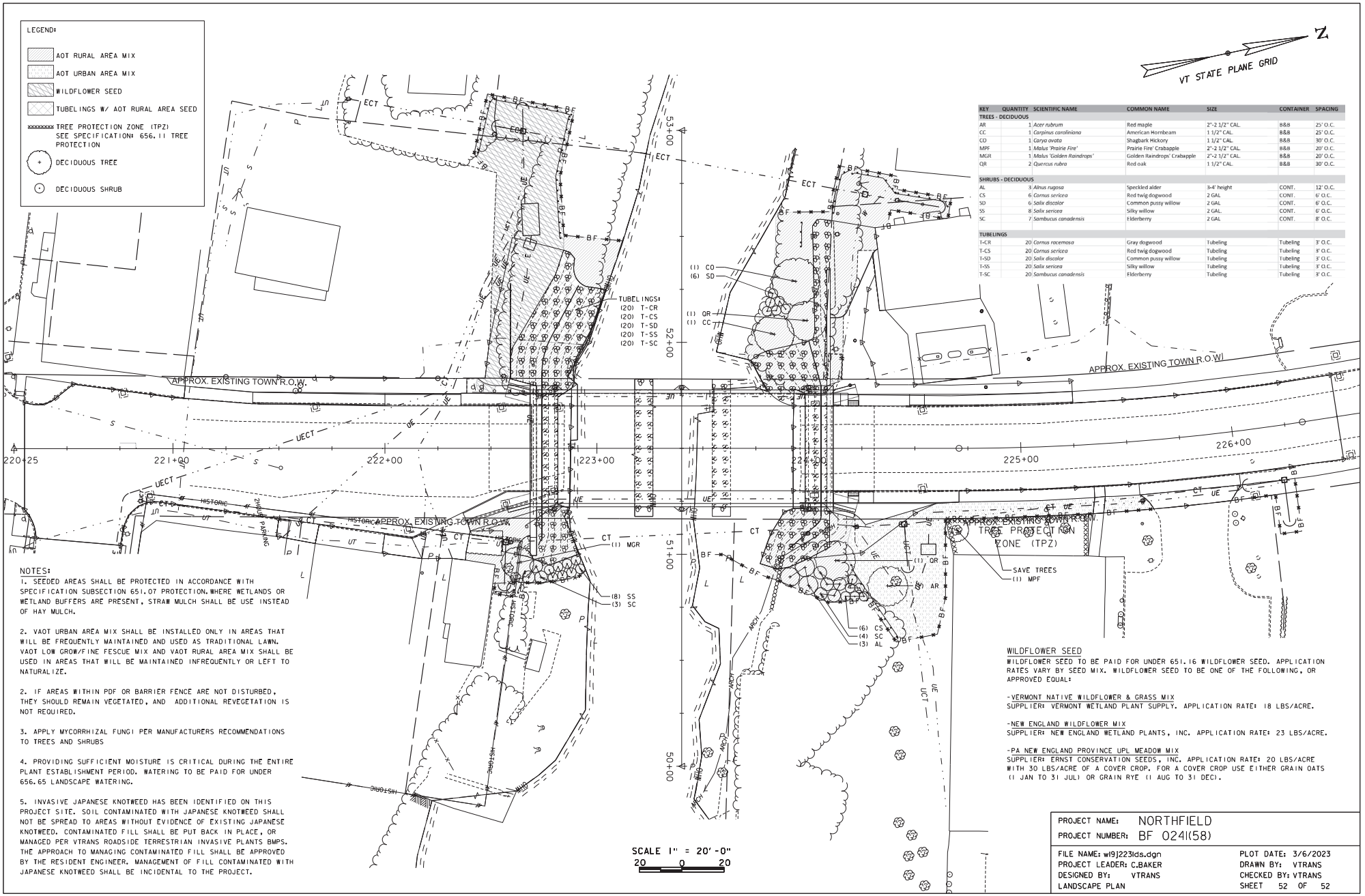
IMPERVIOUS SURFACES

SCALE 1" = 20'-0"

20 0 20

H&H

PROJECT NAME:	NORTHFIELD
PROJECT NUMBER:	BF 0241(58)
FILE NAME: z19J223layout.dgn	PLOT DATE: 4/29/2025
PROJECT LEADER: KIM SMITH	DRAWN BY: C. JAMISON
DESIGNED BY: S. BROWN	CHECKED BY: K. SMITH
IMPERVIOUS SURFACES	SHEET 3 OF 3



KEY	QUANTITY	SCIENTIFIC NAME	COMMON NAME	SIZE	CONTAINER	SPACING
TREES - DECIDUOUS						
AR	1	*Acer rubrum*	Red maple	2"-2 1/2" CAL.	B&B	25' O.C.
CC	1	*Carpinus caroliniana*	American Hornbeam	1 1/2" CAL.	B&B	25' O.C.
CO	1	*Carya ovata*	Shagbark Hickory	1 1/2" CAL.	B&B	30' O.C.
MPF	1	*Malus 'Prairie Fire'*	Prairie Fire' Crabapple	2"-2 1/2" CAL.	B&B	20' O.C.
MGR	1	*Malus 'Golden Raindrops'*	Golden Raindrops' Crabapple	2"-2 1/2" CAL.	B&B	20' O.C.
QR	2	*Quercus rubra*	Red oak	1 1/2" CAL.	B&B	30' O.C.
SHRUBS - DECIDUOUS						
AL	3	*Alnus rugosa*	Speckled alder	3-4' height	CONT.	12' O.C.
CS	6	*Cornus sericea*	Red twig dogwood	2 GAL	CONT.	6' O.C.
SD	6	*Salix discolor*	Common pussy willow	2 GAL	CONT.	6' O.C.
SS	8	*Salix sericea*	Silky willow	2 GAL.	CONT.	6' O.C.
SC	7	*Sambucus canadensis*	Elderberry	2 GAL	CONT.	8' O.C.
TUBELINGS						
T-CR	20	*Cornus racemosa*	Gray dogwood	Tubeling	Tubeling	3' O.C.
T-CS	20	*Cornus sericea*	Red twig dogwood	Tubeling	Tubeling	3' O.C.
T-SD	20	*Salix discolor*	Common pussy willow	Tubeling	Tubeling	3' O.C.
T-SS	20	*Salix sericea*	Silky willow	Tubeling	Tubeling	3' O.C.
T-SC	20	*Sambucus canadensis*	Elderberry	Tubeling	Tubeling	3' O.C.

NOTES:

1. SEEDED AREAS SHALL BE PROTECTED IN ACCORDANCE WITH SPECIFICATION SUBSECTION 651.07 PROTECTION. WHERE WETLANDS OR WETLAND BUFFERS ARE PRESENT, STRAW MULCH SHALL BE USE INSTEAD OF HAY MULCH.

2. VAOT URBAN AREA MIX SHALL BE INSTALLED ONLY IN AREAS THAT WILL BE FREQUENTLY MAINTAINED AND USED AS TRADITIONAL LAWN. VAOT LOW GROW/FINE FESCUE MIX AND VAOT RURAL AREA MIX SHALL BE USED IN AREAS THAT WILL BE MAINTAINED INFREQUENTLY OR LEFT TO NATURALIZE.

2. IF AREAS WITHIN PDF OR BARRIER FENCE ARE NOT DISTURBED, THEY SHOULD REMAIN VEGETATED, AND ADDITIONAL REVEGETATION IS NOT REQUIRED.

3. APPLY MYCORRHIZAL FUNGI PER MANUFACTURERS RECOMMENDATIONS TO TREES AND SHRUBS

4. PROVIDING SUFFICIENT MOISTURE IS CRITICAL DURING THE ENTIRE PLANT ESTABLISHMENT PERIOD. WATERING TO BE PAID FOR UNDER 656.65 LANDSCAPE WATERING.

5. INVASIVE JAPANESE KNOTWEED HAS BEEN IDENTIFIED ON THIS PROJECT SITE. SOIL CONTAMINATED WITH JAPANESE KNOTWEED SHALL NOT BE SPREAD TO AREAS WITHOUT EVIDENCE OF EXISTING JAPANESE KNOTWEED. CONTAMINATED FILL SHALL BE PUT BACK IN PLACE, OR MANAGED PER VTRANS ROADSIDE TERRESTRIAN INVASIVE PLANTS BMPS. THE APPROACH TO MANAGING CONTAMINATED FILL SHALL BE APPROVED BY THE RESIDENT ENGINEER. MANAGEMENT OF FILL CONTAMINATED WITH JAPANESE KNOTWEED SHALL BE INCIDENTAL TO THE PROJECT.

WILDFLOWER SEED

WILDFLOWER SEED TO BE PAID FOR UNDER 651.16 WILDFLOWER SEED. APPLICATION RATES VARY BY SEED MIX. WILDFLOWER SEED TO BE ONE OF THE FOLLOWING, OR APPROVED EQUAL:

-VERMONT NATIVE WILDFLOWER & GRASS MIX
SUPPLIER: VERMONT WETLAND PLANT SUPPLY. APPLICATION RATE: 18 LBS/ACRE.

-NEW ENGLAND WILDFLOWER MIX
SUPPLIER: NEW ENGLAND WETLAND PLANTS, INC. APPLICATION RATE: 23 LBS/ACRE.

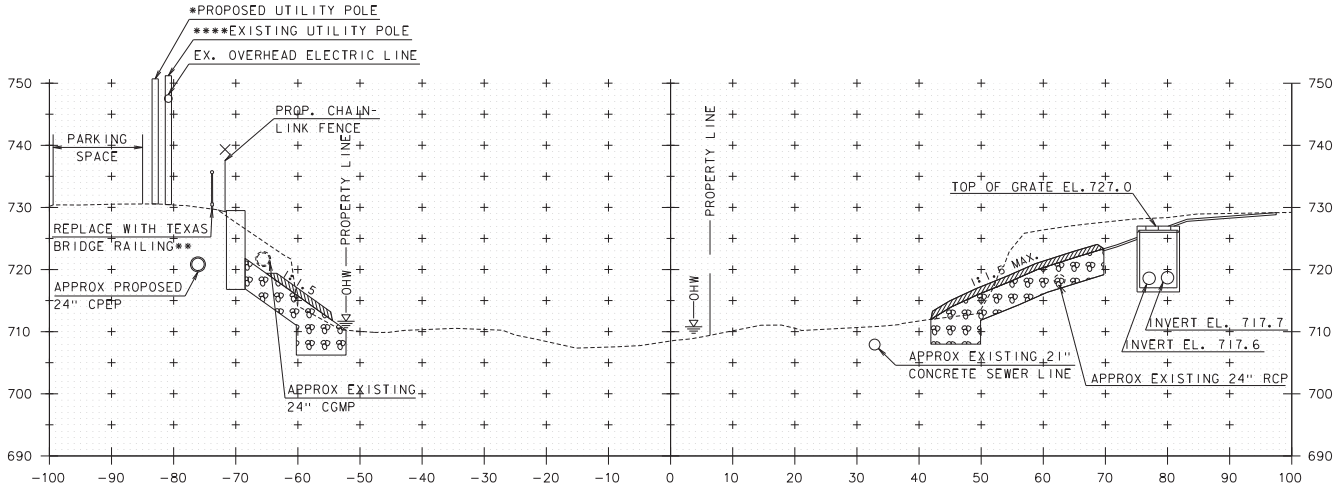
-PA NEW ENGLAND PROVINCE UPL MEADOW MIX
SUPPLIER: ERNST CONSERVATION SEEDS, INC. APPLICATION RATE: 20 LBS/ACRE WITH 30 LBS/ACRE OF A COVER CROP. FOR A COVER CROP USE EITHER GRAIN OATS (1 JAN TO 31 JUL) OR GRAIN RYE (1 AUG TO 31 DEC).

PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 0241(58)

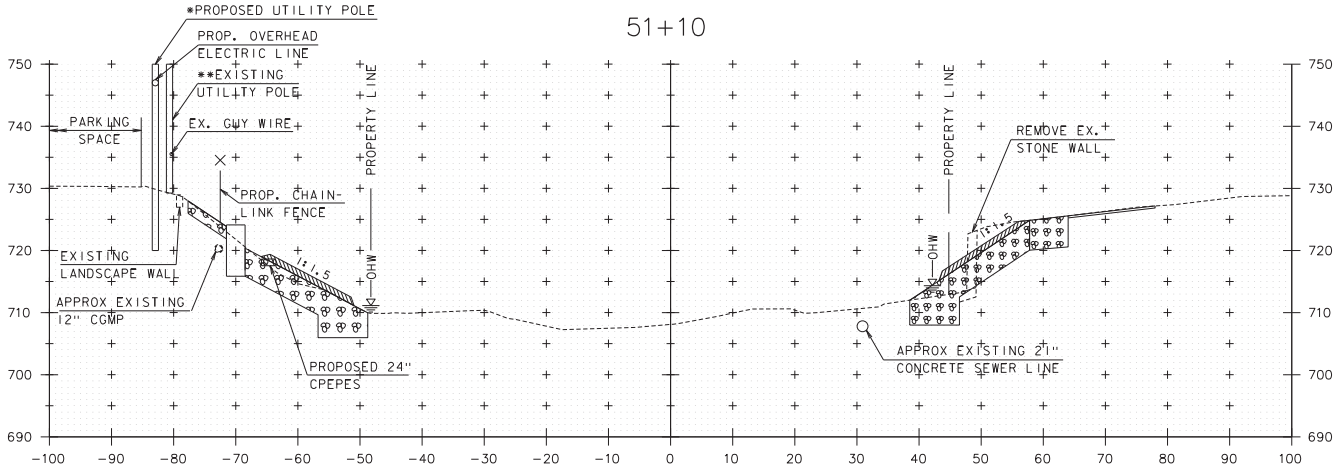
FILE NAME: wl9J223lds.dgn
PROJECT LEADER: C.BAKER
DESIGNED BY: VTRANS
LANDSCAPE PLAN

PLOT DATE: 3/6/2023
DRAWN BY: VTRANS
CHECKED BY: VTRANS
SHEET 52 OF 52

* PROJECTED (ACTUAL STA. 51.05.68)
** PROJECTED (ACTUAL STA. 51+13.04)
****PROJECTED (ACTUAL STA. 51+05.75)



51+10



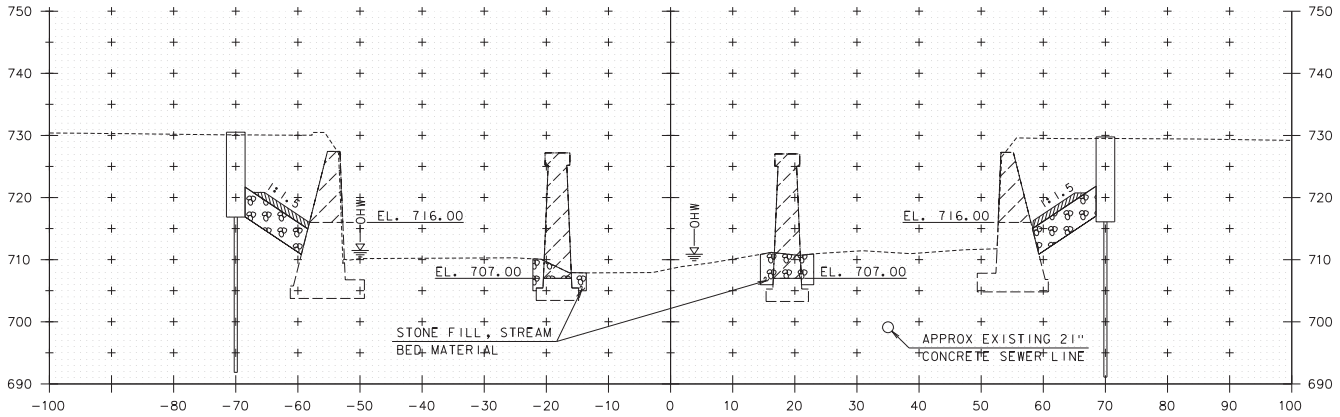
* PROJECTED (ACTUAL STA. 51+05.68)
** PROJECTED (ACTUAL STA. 51+05.75)

51+00

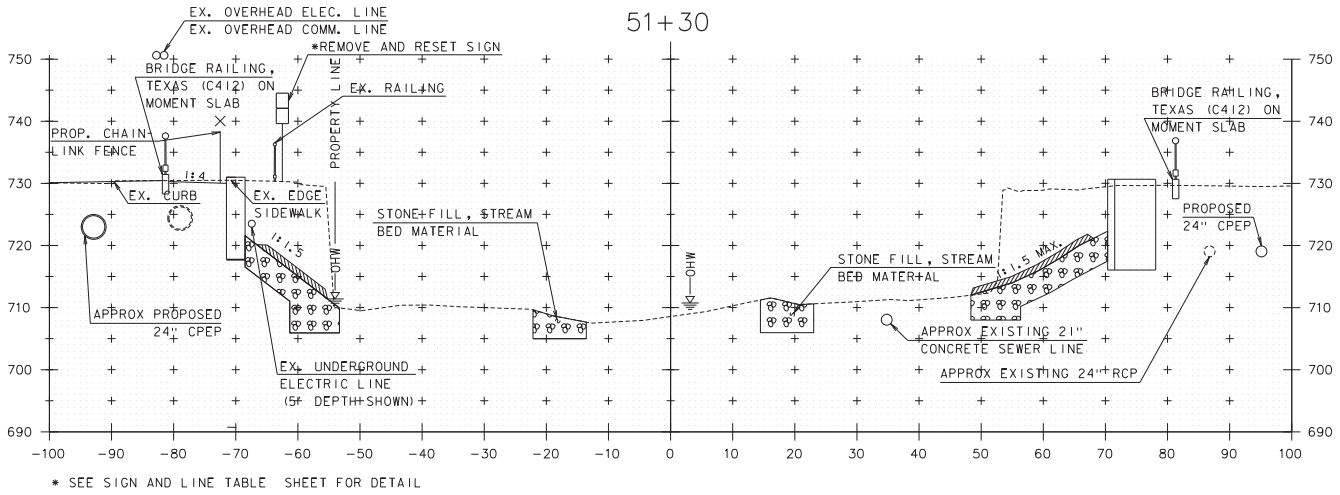
STA 51+00.0000 TO STA 51+10.0000

Hardesty & Hanover

PROJECT NAME: NORTHFIELD	
PROJECT NUMBER: BF 024I(58)	
FILE NAME: z19j223xs_channel.dgn	PLOT DATE: 3/6/2023
PROJECT LEADER: C. BAKER	DRAWN BY: T. MARQUETTE
DESIGNED BY: K. HO	CHECKED BY: C. JENNE
CHANNEL CROSS SECTIONS - 3	SHEET 37 OF 52



51+30



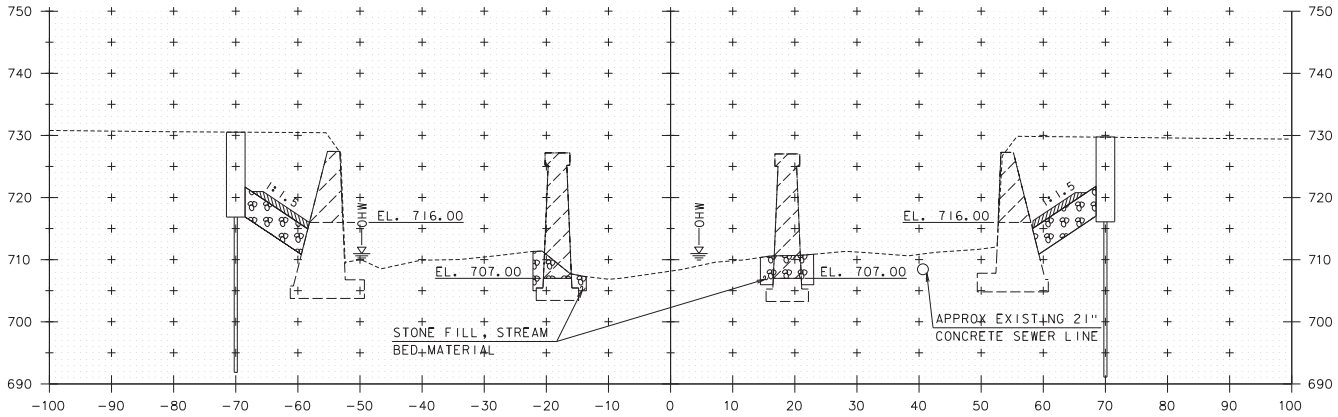
* SEE SIGN AND LINE TABLE SHEET FOR DETAIL

51+20

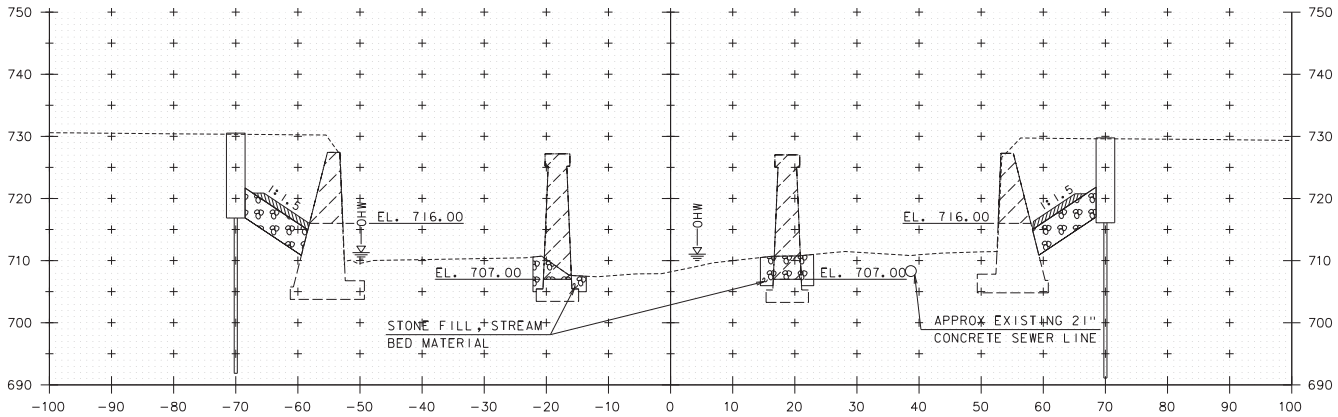
STA 51+20.0000 TO STA 51+30.0000

Hardesty & Hanover

PROJECT NAME: NORTHFIELD	
PROJECT NUMBER: BF 024I(58)	
FILE NAME: z19j223xs_channel.dgn	PLOT DATE: 3/6/2023
PROJECT LEADER: C. BAKER	DRAWN BY: T. MARQUETTE
DESIGNED BY: K. HO	CHECKED BY: C. JENNE
CHANNEL CROSS SECTIONS - 4	SHEET 38 OF 52



51+50

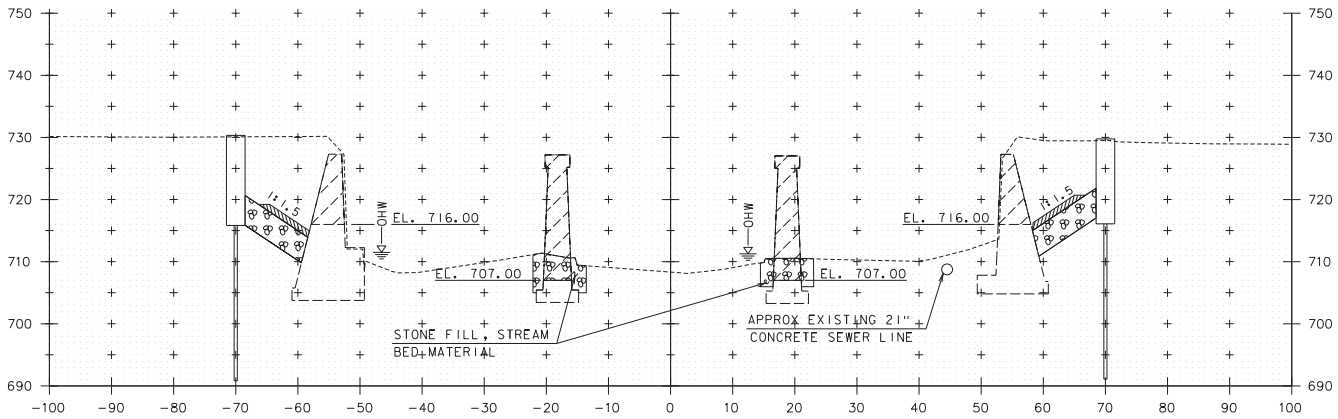


51+40

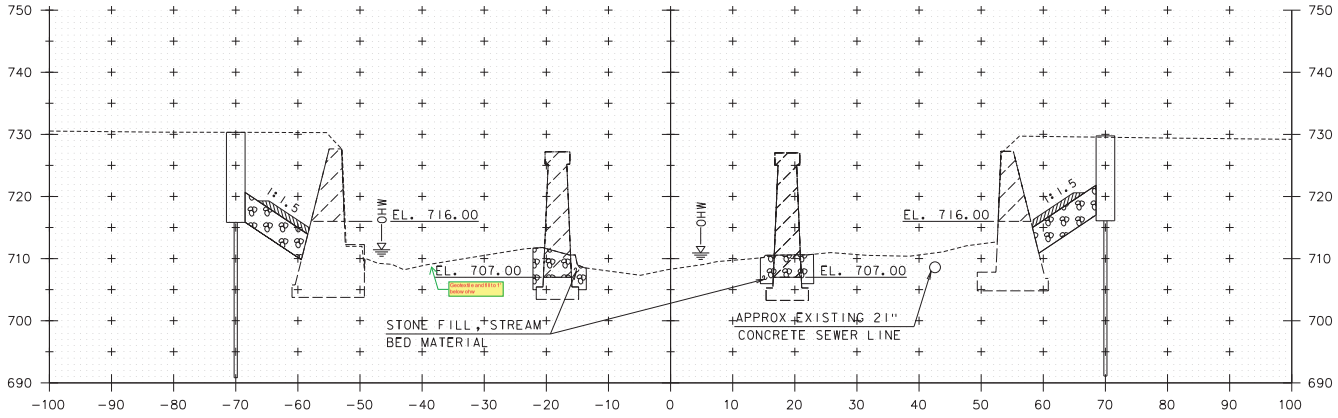
STA 51+40.0000 TO STA 51+50.0000

Hardesty & Hanover

PROJECT NAME: NORTHFIELD	
PROJECT NUMBER: BF 024I(58)	
FILE NAME: z19j223xs_channel.dgn	PLOT DATE: 3/6/2023
PROJECT LEADER: C. BAKER	DRAWN BY: T. MARQUETTE
DESIGNED BY: K. HO	CHECKED BY: C. JENNE
CHANNEL CROSS SECTIONS - 5	SHEET 39 OF 52



51+70

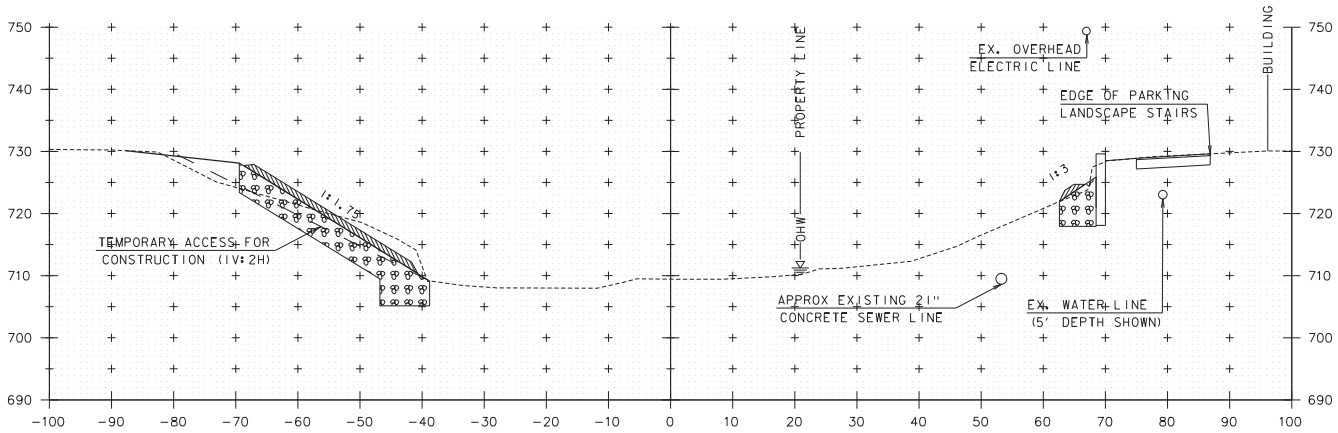


51+60

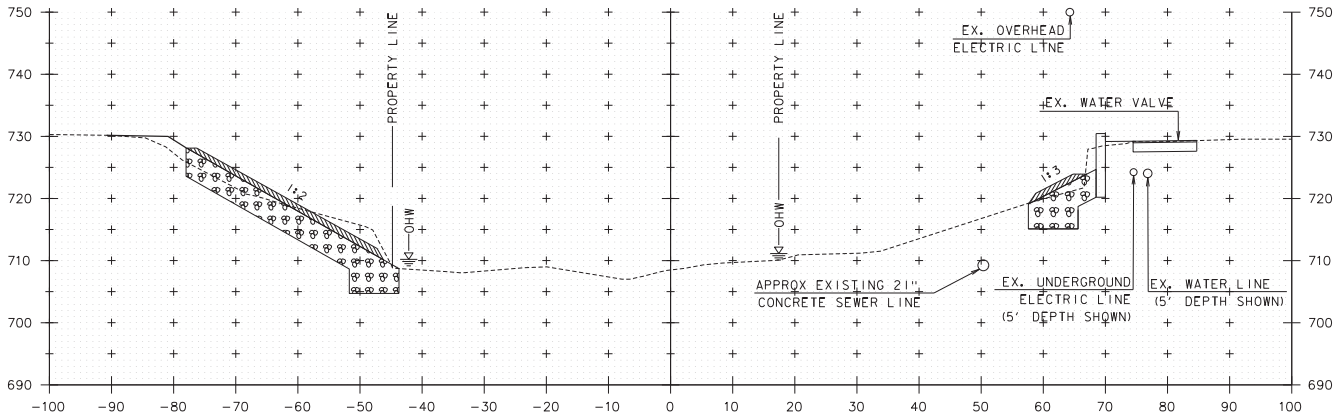
STA 51+60.0000 TO STA 51+70.0000

Hardesty & Hanover

PROJECT NAME: NORTHFIELD	
PROJECT NUMBER: BF 024I(58)	
FILE NAME: zI9J223xs_channel.dgn	PLOT DATE: 3/6/2023
PROJECT LEADER: C. BAKER	DRAWN BY: T. MARQUETTE
DESIGNED BY: K. HO	CHECKED BY: C. JENNE
CHANNEL CROSS SECTIONS - 6	SHEET 40 OF 52



52+15



STA 52+05.5 LT
END UNCLASSIFIED CHANNEL EXCAVATION
END STONE FILL, TYPE IV
END GEOTEXTILE UNDER STONE FILL
END GRUBBING MATERIAL

52+00

STA 52+00.00 TO STA 52+15.00

Hardesty & Hanover

PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 024I(58)

FILE NAME: zI9J223xs_channel.dgn
PROJECT LEADER: C. BAKER
DESIGNED BY: K. HO
CHANNEL CROSS SECTIONS - 8

PLOT DATE: 3/6/2023
DRAWN BY: T. MARQUETTE
CHECKED BY: C. JENNE
SHEET 42 OF 52

US Army Corps of Engineers ®
New England District

WORK START NOTIFICATION FORM

****

* EMAIL TO: michael.s.adams@usace.army.mil *
* or *
* MAIL TO: U.S. Army Corps of Engineers, New England District *
* Vermont Project Office *
* 11 Lincoln Street, Room 210 *
* Essex Junction, Vermont 05452 *

****

Corps of Engineers File No. NAE-2023-02108 was issued to Vermont Agency of Transportation. The permit authorized the permittee to place fill in a total of about 3,089 sq. ft. (0.07 acre) of the Dog River in conjunction with the replacement of a deficient structure, on the same alignment, Bridge No. 60 with a new single span bridge on VT Route 12 in Northfield, Vermont.

The people (e.g., contractor) listed below will do the work, and they understand the permit's conditions and limitations.

PLEASE PRINT OR TYPE

Name of Contractor/Firm: _____

Business Address: _____

_____

_____

Telephone Numbers: (____) _____ (____) _____

Proposed Work Dates: **Start** _____ **Finish** _____

Permittee's Signature: _____

Date: _____

Printed Name: _____ **Title:** _____

****

FOR USE BY THE CORPS OF ENGINEERS

PM: Michael Adams **Submittals Required:** __No__

Inspection Recommendation: _____

_____

US Army Corps of Engineers ®
New England District

(Minimum Notice: Permittee must sign and return notification within one month of the completion of work.)

COMPLIANCE CERTIFICATION FORM

USACE File Number: NAE-2023-02108

Name of Permittee: Vermont Agency of Transportation/Northfield

Verification Date: January 17, 2024

Please sign this certification and return it to the following address upon completion of the activity and any mitigation required by the permit. You must submit this after the mitigation is complete, but not the mitigation monitoring, which requires separate submittals.

EMAIL TO: michael.s.adams@usace.army.mil
or
MAIL TO: U.S. Army Corps of Engineers, New England District
Vermont Project Office
11 Lincoln Street, Room 210
Essex Junction, Vermont 05452

Please note that your permitted activity is subject to a compliance inspection by an U.S. Army Corps of Engineers representative. If you fail to comply with this permit you are subject to permit suspension, modification, or revocation.

I hereby certify that the work authorized by the above referenced permit was completed in accordance with the terms and conditions of the above referenced permit, and any required mitigation was completed in accordance with the permit conditions.

Signature of Permittee _____ Date _____

Printed Name _____ Date of Work Completion _____

Telephone Number _____

General Permit No.: NAE-2022-00024 Effective Date: December 6, 2022
Applicant: General Public in the State of Vermont Expiration Date: December 6, 2027

DEPARTMENT OF THE ARMY GENERAL PERMITS FOR THE STATE OF VERMONT

The New England District of the U.S. Army Corps of Engineers (USACE) hereby issues twenty-one (21) regional general permits (GPs) for activities subject to USACE jurisdiction in waters of the United States (WOTUS), including navigable waters, within the boundaries of the state of Vermont. These GPs are issued in accordance with USACE regulations at 33 CFR 320–332 (see 33 CFR 325.2(c)(1)). These GPs will provide protection to the aquatic environment and the public interest while effectively authorizing activities that have no more than minimal individual and cumulative adverse environmental effects.

This document contains the following sections: **Page**

SECTION I.	JURISDICTION/AUTHORITY TO ISSUE PERMITS	2
SECTION II.	REVIEW CATEGORIES AND APPLICATION PROCEDURES	2-4
SECTION III.	GENERAL PERMITS	4-26
SECTION IV.	GENERAL CONDITIONS	27-38
SECTION V.	CONTACTS	39
SECTION VI.	DEFINITIONS	40-44

In issuing these GPs, the Federal Government does not assume any liability for the following: (a) damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes; (b) damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the U.S. in the public interest; (c) damages to persons, property or to other permitted or unpermitted activities or structures caused by the activity authorized by any of the GPs; (d) design or construction deficiencies associated with the permitted work; or (e) damage claims associated with any future modification, suspension or revocation of these permits.

Tammy R. Turley
Tammy R. Turley
Chief, Regulatory Division

December 6, 2022
Date

SECTION I. JURISDICTION/AUTHORITY TO ISSUE PERMITS

1. A Department of the Army Permit is required from USACE for the following regulated activities:

a. The construction of any structure in, over, or under any navigable water of the U.S. (see 33 CFR 328), the excavating or dredging from or depositing of material in such waters, or the accomplishment of any other work affecting the course, location, condition, or capacity of such waters. The USACE regulates these activities under Section 10 of the Rivers and Harbors Act of 1899 (see 33 CFR 322); and

b. The discharge of dredged or fill material and certain discharges associated with excavation into WOTUS including wetlands. The USACE regulates these activities under Section 404 of the Clean Water Act (see 33 CFR 323).

2. Related laws: 33 CFR 320.3 includes a list of related laws including, but not limited to, Section 14 of the Rivers and Harbors Act of 1899 (33 USC 408, "Section 408"), Section 401 of the Clean Water Act, Section 402 of the Clean Water Act, Section 307(c) of the Coastal Zone Management Act of 1972, Section 106 of the National Historic Preservation Act of 1966, Section 7 of the Endangered Species Act, the Fish and Wildlife Coordination Act of 1956, the Magnuson-Stevens Fishery Conservation and Management Act, Section 302 of the Marine Protection, Research and Sanctuaries Act of 1972, and Section 7(a) of the Wild and Scenic Rivers Act.

3. In order for an authorization under these GPs to be valid, a Water Quality Certification (WQC) under Section 401 of the CWA (33 USC 1341) or waiver thereof must be obtained from the Vermont Agency of Natural Resources (VT ANR), Watershed Management Division prior to the commencement of work in USACE jurisdiction. The VT ANR has granted an Individual WQC for all activities authorized under these GPs provided those activities meet the criteria as contained in these GPs and USACE notifies VT ANR of projects obtaining written verification under these GPs. The VT ANR will respond within the same response times required of the Federal resource agencies.

SECTION II. REVIEW CATEGORIES AND APPLICATION PROCEDURES

1. In order for activities to qualify for these GPs, they shall meet the terms and conditions of this document, including the eligibility criteria listed in Section III and the general conditions (GCs) listed in Section IV. The USACE will consider any activity requiring USACE authorization to be unauthorized if that activity is under construction or completed and does not comply with all of the terms and conditions of the GPs. The USACE will evaluate unauthorized activities for enforcement action under 33 CFR part 326. Any activity not specifically listed may still be eligible for authorization under these GPs; prospective permittees are advised to contact USACE for specific eligibility determinations.

2. Project proponents are encouraged to contact the USACE Vermont Project Office (VPO) with questions at any time (mailing address: 11 Lincoln Street, Room 210, Essex Junction, Vermont 05452; email: cenae-r-vt@usace.army.mil; phone: (802) 872-2893). Pre-application meetings (see 33 CFR 325.1(b)), whether arranged by USACE or requested by applicants, are encouraged to facilitate the review of projects. Pre-application meetings and/or site visits can help streamline the permit process by alerting the applicant to potentially time-consuming concerns that may arise during the evaluation

of a project (e.g., avoidance, minimization and compensatory mitigation requirements, historic properties, and endangered species).

3. Federal and state jurisdiction may differ in some instances. Applicants are responsible for applying for and obtaining all required federal, state or local approvals (see GC 1). A permit from USACE may be required for specific activities regardless of state of Vermont jurisdiction.

These GPs may also be used to authorize projects that are not regulated by the state of Vermont.

4. How to Obtain/Apply for Authorization:

Project proponents must read each GP and the GCs to see if an activity is eligible for authorization.

a. Self-Verification (SV):

May proceed without application or notification to USACE provided the project proponent verifies that the activity will meet the terms and conditions of applicable GPs. Project proponents shall comply with other federal laws such as the National Historic Preservation Act (NHPA), the Endangered Species Act (ESA) and the Wild and Scenic Rivers Act (WSRA). Consultation with outside experts, such as the State Historic Preservation Officer (SHPO), federally-recognized tribes in the state of Vermont (Tribal Historic Preservation Officers, or THPOs), National Park Service (NPS), and the U.S. Fish and Wildlife Service (USFWS) listed in Appendix V may also be necessary. The USACE relies on the VT ANR Environmental Notice Bulletin (ENB) for notification of SV projects, as applicable.

b. Pre-Construction Notification (PCN):

i. For activities that do not qualify for SV, the applicant must submit a PCN to obtain written verification from USACE before starting work in USACE jurisdiction. Digital submissions are encouraged and preferred and can be submitted directly to USACE staff by email, or at cenae-r-vt@usace.army.mil. Applicants must submit at least the following information:

- A completed USACE application form (ENG Form 4345[1]).
- Plans that illustrate the proposed work in reference to the limits of USACE jurisdiction as applicable. Plans should show existing and proposed conditions and contain all other appropriate information.
- Federal wetland delineation documentation (i.e., Wetland Determination Data Forms).
- Any information on federally listed endangered and threatened species and critical habitat that occur or may occur in the project area (See GC 12).
- Any correspondence with the SHPO and THPOs indicating coordination with these entities to ensure compliance with GC 11. Applicants are encouraged to submit a copy of their application materials to the SHPO and the THPOs, at the

[1] Located at www.nae.usace.army.mil/regulatory under "Useful Documents, Forms and Publications."

same time, or before, they apply to USACE to be reviewed for the presence of historic, archaeological or tribal resources in the permit area that the proposed work may affect.

The USACE will coordinate review of all PCN activities with the interagency review team (IRT) comprised of federal and state agencies and federally recognized tribes to ensure that the proposed activity results in no more than a minimal impact to the aquatic environment. This may require project modifications involving avoidance, minimization, and/or compensatory mitigation for unavoidable impacts to ensure the net effects of a project are minimal.

ii. Emergency Situations: Contact USACE immediately in the event of an emergency to obtain information on the verification process and coordination requirements. The USACE regulation at 33 CFR 325.2(e)(4) states that "an "emergency" is a situation which would result in an unacceptable hazard to life, a significant loss of property, or an immediate, unforeseen and significant economic hardship if corrective action requiring a permit is not undertaken within a time period less than the normal time needed to process the application under standard procedures." Emergency work is subject to the same terms and conditions of these GPs as non-emergency work, and similarly, must qualify for authorization under these GPs; otherwise, an individual permit (IP) shall be required. Upon notification, USACE will determine if a project qualifies for emergency procedures under the GPs and whether work may proceed prior to submittal of an application. Where an application is required, USACE staff will work with all applicable agencies to expedite verification according to established procedures in emergency situations.

5. Projects that are not authorized by these GPs require an IP (33 CFR 325.5(b)) and project proponents must submit an application directly to USACE. These GPs do not affect the USACE IP review process or activities exempt from USACE permit requirements. The USACE retains discretionary authority on a case-by-case basis to elevate an SV to PCN or an IP, or a PCN to an IP based on concerns for the aquatic environment or for any other factor of the public interest (33 CFR 320.4(a)). Whenever USACE notifies an applicant that a PCN or IP is required, no work in USACE jurisdiction may be conducted until USACE issues the required authorization in writing indicating that work may proceed. For IPs, an individual 401 WQC or waiver is required from the VT ANR. Contact the VT ANR for procedures on how to apply for a WQC.

SECTION III. GENERAL PERMITS

An activity listed below may be authorized by these GPs only if that activity and the permittee satisfy all of the GP's terms and conditions. Any activity not specifically listed below may still be eligible for the GPs; prospective permittees are advised to contact USACE for specific eligibility determinations.

"Permanent impacts" means WOTUS that are permanently affected by filling, flooding, excavation, drainage or clearing because of the regulated activity. Permanent impacts include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. Temporary impacts include, but are not limited to, WOTUS that are temporarily filled, flooded, excavated, drained or cleared because of the regulated activity. Temporary

impacts are usually associated with construction activities and often involve the placement of cofferdams and construction mats. These fills are removed when construction is completed. Pilings and associated structures do not ordinarily constitute a discharge of fill material. Impacts resulting from activities eligible for exemptions under §404(f) of the CWA are not considered when calculating the impact area.

Vermont General Permits

1. Aids to navigation
2. Repair or maintenance of existing currently serviceable, authorized or grandfathered structures/fills and removal of structures and fills
3. Moorings
4. Pile-supported structures and floats, including boat lifts/hoists and other miscellaneous structures, temporary recreational structures and work
5. Boat ramps and marine railways
6. Utility line activities
7. Dredging, beach nourishment, rock and debris removal and rock relocation
8. U.S. Coast Guard Approved Bridges
9. Shoreline and bank stabilization projects
10. Aquatic habitat restoration, establishment and enhancement activities
11. Fish and wildlife harvesting activities
12. Oil spill and hazardous material cleanup
13. Cleanup of hazardous and toxic waste
14. Scientific measurement devices
15. Survey activities
16. Energy generation and renewable energy generation facilities and hydropower projects
17. New/expanded developments and recreational facilities
18. Linear transportation projects and stream/wetland crossings
19. Mining activities
20. Temporary fill not associated with any other GP activities
21. Agricultural activities

GP 1. AIDS TO NAVIGATION (Section 10): The placement of aids to navigation and regulatory markers that are approved by and installed in accordance with the requirements of the U.S. Coast Guard (USCG). See 33 CFR 66, Chapter I, subchapter C.	
Self-Verification Eligible	**Pre-Construction Notification Required**
Aids to navigation and regulatory markers approved by and installed in accordance with the requirements of the USCG. Not located within a USACE Federal Navigation Project (FNP).	1. Work not eligible for SV. 2. Aids to navigation and regulatory markers or temporary buoys, markers, floats, and similar structures that are located within a USACE FNP.

GP 2. REPAIR OR MAINTENANCE OF EXISTING CURRENTLY SERVICEABLE, AUTHORIZED OR GRANDFATHERED STRUCTURES/FILLS AND REMOVAL OF STRUCTURES AND FILLS (Sections 10 & 404): (a) Repair, rehabilitation, or replacement of any previously authorized, currently serviceable structure or fill, or of any currently serviceable structure or fill authorized by 33 CFR 330.3 (activities occurring before certain dates), provided that the structure or fill is not to be put to uses differing from those uses specified or contemplated for it in the original permit or the most recently authorized modification. Minor deviations in the structure's configuration or filled area, including those due to changes in materials, construction techniques, requirements of other regulatory agencies, or current construction codes or safety standards that are necessary to make the repair, rehabilitation, or replacement are authorized. Includes removal of structures and fill.

Not authorized under GP 2: Permanent impacts > 5,000 SF in Lake Champlain, Lake Memphremagog, Wallace Pond and adjacent wetlands, and > 1 acre in all other WOTUS.

Self-Verification Eligible	**Pre-Construction Notification Required**
1. Repair, replacement in-kind, or maintenance of existing, currently serviceable, authorized structures or fills with no substantial expansion or change in use: - Conditions of the original authorization apply. - Minor deviations in fill design allowed. - The repair, rehabilitation, or replacement of those structures or fills destroyed or damaged by storms, floods, fire or other discrete events is authorized, provided the repair, rehabilitation, or replacement is commenced, or is under contract to commence, within two years of the date of their destruction or damage. In cases of catastrophic events, such as hurricanes or tornadoes, USACE may waive the two-year limit in writing provided the permittee can demonstrate funding, contract, or other similar delays. - Maintenance includes, but it is not limited to, the removal of accumulated sediments and debris in the vicinity of existing structures (such as bridges, culverted road crossings, water intake structures, dams, etc.), provided: (a) removal is the minimum necessary to restore the waterway in the vicinity of the structure to the approximate dimensions that existed when the structure was built; and (b) all dredged or excavated materials are deposited and retained in an upland area. 2. Bulkhead replacement via installation of new bulkhead within 18” of existing bulkhead and backfill. 3. Construction mats of any area necessary to conduct activities that were previously authorized, authorized under SV, or not subject to regulation in all WOTUS. 4. Removal of previously authorized structures or fills and the restoration to pre-construction conditions.	1. Work not eligible for SV. 2. Dam and flood control or levee repair, rehabilitation, or replacement which involves a permanent change in the flood elevation or permanent water surface elevation of the impoundment. 3. The discharge of more than *de minimis* (i.e., inconsequential) quantities of accumulated bottom sediment occurring from or through a dam into downstream waters. **NOTE 1**: Grandfather dates include structures or work completed before December 18, 1968 and fill placed before July 25, 1975 for USACE purposes only. **NOTE 2**: This GP authorizes the repair, rehabilitation, or replacement of any previously authorized structure or fill that does not qualify for the CWA §404(f) exemption for maintenance. See 33 CFR 323.4(a)(2).

GP 3. MOORINGS (Section 10): (a) New private, non-commercial, non-rental, single-boat moorings; (b) Minor relocation of previously authorized moorings; (c) Mooring field expansions, boundary reconfigurations, or modifications of previously authorized mooring fields; and (d) Maintenance and replacement of moorings. **Not authorized under GP 3:** Moorings or moored vessels that extend within the horizontal limits of FNPs and moorings associated with a new boating facility.	
Self-Verification Eligible	**Pre-Construction Notification Required**
1. Private, non-commercial, non-rental, single-boat moorings. 2. Minor relocation of previously authorized moorings.	1. Work not eligible for SV. 2. New moorings associated with an existing boating facility.

GP 4. PILE-SUPPORTED STRUCTURES AND FLOATS, INCLUDING BOAT LIFTS/HOISTS AND OTHER MISCELLANEOUS STRUCTURES, TEMPORARY RECREATIONAL STRUCTURES AND WORK (Section 10): (a) New, expansions, reconfigurations, or modifications of structures for navigation access including docks, decks, floats, stairs, and boat/float lifts; and (b) Temporary buoys, markers, and similar structures placed for recreational use during specific events such as water skiing competitions and boat races or seasonal use.

Not authorized under GP 4: (a) Fill or excavation; (b) Structures within FNPs; or (c) Structures associated with a new boating facility.

Self-Verification Eligible	**Pre-Construction Notification Required**
1. Reconfiguration of existing authorized docks with no additional slips and no expansion, provided those structures do not extend beyond the existing perimeter of the facility. 2. Seasonal private, residential pile-supported or float-supported structures for navigational access extending no further waterward than 50 feet beyond mean high water (MHW), not >6 feet wide, and a cumulative dock deck area <500 SF, and not located within 25 feet of the property line. 3. Private, bottom-anchored seasonal swim floats that are <400 SF in size. 4. Private boat and float lifts. 5. Temporary buoys, markers, and similar structures: (a) placed for recreational use during specific events, provided that such structures are removed within 30 days after use has been discontinued and/or; (b) placed during winter events on ice and removed before spring thaw. Provided the above do not extend across >25% of the waterway width at mean low water (MLW).	1. Work not eligible for SV. 2. Piers, docks, decks, floats, and similar structures that provide public, community or government recreational uses such as boating, fishing, swimming, access, etc. 3. Structures or work in or affecting navigable WOTUS that are not defined under any other GP activity. 4. New structures within an existing boating facility, provided those structures do not extend beyond the existing perimeter of the boating facility. 5. Temporary buoys, markers, and similar structures that will not be removed within 30 days after use has been discontinued. 6. Cordoning off portions of public waters (e.g., swim areas). **NOTE:** The USACE may require a letter of no objection from the abutter if a structure is to be located within 25 feet of the property line.

GP 5. BOAT RAMPS AND MARINE RAILWAYS (Sections 10 and 404): Activities required for the construction of boat ramps and marine railways including excavation and fill. **Not authorized under GP 5:** (a) Permanent impacts ≥ 5,000 SF in Lake Champlain, Lake Memphremagog and Wallace Pond and adjacent wetlands, and > 1 acre in all other WOTUS; (b) Temporary impacts > 1 acre in WOTUS; or (c) dredging in navigable WOTUS. (see GP 7).	
Self-Verification Eligible	**Pre-Construction Notification Required**
1. < 5,000 SF of permanent and temporary impacts in waterways and/or wetlands other than Lake Champlain, Lake Memphremagog, Wallace Pond and adjacent wetlands.	1. Work not eligible for SV. 2. < 5000 SF permanent impact and < 1 acre of temporary impact and excavation in Lake Champlain, Lake Memphremagog and Wallace Pond and adjacent wetlands. 3. Permanent and temporary impacts ≥ 5,000 SF and < 1 acre in waterways and/or wetlands, other than Lake Champlain, Lake Memphremagog, Wallace Pond and adjacent wetlands. **NOTE**: The USACE may require a letter of no objection from the abutter if a structure is to be located within 25 feet of the property line.

GP 6. UTILITY LINE ACTIVITIES (Sections 10 & 404): Activities required for (a) The construction, maintenance, relocation, repair, and removal of utility lines, including outfall and intake structures, and the associated excavation, backfill, or bedding for utility lines; (b) The construction, maintenance or expansion of utility line substation facilities associated with a power/utility line in WOTUS; and (c) The construction and maintenance of foundations for overhead utility line towers, poles, and anchors, provided the foundations are the minimum size necessary, and separate footings for each tower leg (rather than a larger single pad) are used where feasible. This GP authorizes the construction of access roads to facilitate construction of the above activities, provided the activity, in combination with all other activities included in one single and complete project, does not cause the permanent loss of greater than 1 acre of WOTUS. Impacts resulting from mechanized pushing, dragging or other similar activities that redeposit excavated soil material shall be figured into the area limit determination.

Not authorized under GP 6: Permanent and temporary impacts ≥ 5,000 SF in Lake Champlain, Lake Memphremagog, Wallace Pond and adjacent wetlands, and > 1 acre in all other WOTUS.

Self-Verification Eligible	**Pre-Construction Notification Required**
1. < 5,000 SF of permanent and temporary impacts in waterways and/or wetlands other than Lake Champlain, Lake Memphremagog, Wallace Pond and adjacent wetlands. 2. Intake structures that are dry hydrants used exclusively for firefighting activities with no stream impoundments. 3. Seasonal waterlines installed on the lake or river bottom that are ≤ 2 inches in diameter.	1. Work not eligible for SV. 2. Overhead utility lines constructed over navigable WOTUS and submarine utility lines that are routed in or under such waters. 3. Permanent and temporary impacts are: a. < 5,000 SF in Lake Champlain, Lake Memphremagog, Wallace Pond and adjacent wetlands. b. ≥ 5,000 SF and < 1 acre in waterways and/or wetlands other than Lake Champlain, Lake Memphremagog, Wallace Pond and adjacent wetlands. 4. Work involves stream channelization, relocation or loss of streambed including impoundments. **NOTE**: Utility lines consisting of aerial electric power transmission lines crossing navigable WOTUS must comply with the applicable minimum clearances specified in 33 CFR 322.5(i).

NOTE: A utility line is defined as any pipe or pipeline for the transportation of any gaseous, liquid, liquescent, or slurry substance, for any purpose, and any cable, line, or wire for the transmission for any purpose of electrical energy, telephone, data, and telegraph messages, and radio and television communication. The term utility line does not include activities that drain a water of the U.S., such as drainage tile or French drains, but it does apply to pipes conveying drainage from another area.
NOTE: Construction mats of any area necessary to conduct activities do not count towards the SV and PCN thresholds and should be removed as soon as work is completed.

GP 7. DREDGING (Section 10), BEACH NOURISHMENT, (Sections 10 & 404); ROCK AND DEBRIS REMOVAL (Section 10) AND ROCK RELOCATION (Sections 10 & 404): (a) New and maintenance dredging, including disposal of dredged material for beach nourishment, provided USACE finds the dredged material to be suitable for such disposal; (b) Beach nourishment not associated with dredging; and (c) Rock removal and relocation for navigation.

Not authorized under GP 7: (a) New and maintenance dredging ≥ 5,000 CY; (b) Permanent fill ≥ 5,000 SF in Lake Champlain, Lake Memphremagog, Wallace Pond and adjacent wetlands, and > 1 acre in all other WOTUS; (c) Regulated discharges associated with excavation, and disposal > 1/2 acre; and (d) Temporary fill > 1 acre in all WOTUS.

Self-Verification Eligible	**Pre-Construction Notification Required**
1. No new or maintenance dredging in navigable WOTUS. 2. < 5,000 SF of temporary impact associated with dredging in waterways and/or wetlands. 3. ≤ 200 SF of impact associated with rock removal and relocation. 4. Removal of debris (e.g. woody and plant material deposited after a storm event) in navigable WOTUS.	1. Work not eligible for SV. 2. New and maintenance dredging up to 5,000 CY with upland disposal or beach nourishment in navigable WOTUS. 3. ≥ 5,000 SF and < 1 acre of temporary impact associated with dredging in all waterways and/or wetlands. 4. Disposal of dredged material for beach nourishment: a. < 5,000 SF in Lake Champlain, Lake Memphremagog, Wallace Pond and adjacent wetlands. b. ≥ 5,000 SF and < 1 acre in waterways and/or wetlands other than Lake Champlain, Lake Memphremagog, Wallace Pond and adjacent wetlands.

GP 8. U.S. COAST GUARD APPROVED BRIDGES (Section 10 & 404; navigable WOTUS): Discharges of dredged or fill material incidental to the construction and modification of bridges across navigable WOTUS, including cofferdams, abutments, foundation seals, piers, and temporary construction and access fills provided that the USCG authorizes the construction of the bridge structure under Section 9 of the Rivers and Harbors Act of 1899 or other applicable laws. A USCG Authorization Act Exemption or a STURRA (144h) exemption do not constitute USCG authorization (see GP 18). **Not authorized under GP 8:** Causeways and approach fills (see GP 18)	
Self-Verification Eligible	**Pre-Construction Notification Required**
Discharges of dredged or fill material incidental to the construction and modification of bridges.	

GP 9. SHORELINE AND BANK STABILIZATION PROJECTS (Sections 10 & 404): Bank stabilization activities necessary for erosion protection along the banks of lakes, ponds, streams, and any other open waters. Includes bulkheads, seawalls, riprap, revetments or slope protection and similar structures, as well as vegetative planting, soil bioengineering, or alternative techniques that are a combination of the two (e.g. living shorelines), specifically for the purpose of shoreline protection.

Not authorized under GP 9: (a) Bank stabilization ≥ 500 LF in total length and/or involving more than an average of 1 CY of fill per linear foot placed below the plane of the ordinary high water mark (OHWM) in Lake Champlain, Lake Memphremagog and Wallace Pond and adjacent wetlands; (b) Stream channelization or relocation activities; or (c) breakwaters, groins and jetties.

Self-Verification Eligible	**Pre-Construction Notification Required**
1. No fill in Lake Champlain, Lake Memphremagog, Wallace Pond and adjacent wetlands. 2. Bank stabilization < 200 linear feet long and does not exceed an average of 1 CY of fill per linear foot placed below the plane of OHWM in WOTUS other than Lake Champlain, Lake Memphremagog, Wallace Pond and adjacent wetlands. 3. < 5,000 SF of temporary fill associated with bank stabilization in waterways and/or wetlands, other than Lake Champlain, Lake Memphremagog, Wallace Pond and adjacent wetlands.	1. Work not eligible for SV. 2. Bank stabilization <500 linear feet and an average of < 1 CY of fill per linear foot placed below the plane of OHWM in Lake Champlain, Lake Memphremagog, Wallace Pond and adjacent wetlands.

GP 10. AQUATIC HABITAT RESTORATION, ESTABLISHMENT AND ENHANCEMENT ACTIVITIES (Sections 10 and 404): Activities in waters of the United States associated with the restoration, enhancement, and establishment of wetlands and riparian areas; the restoration and enhancement of streams and other open waters; the relocation of non-navigable WOTUS, including streams and associated wetlands for reestablishment of a natural stream morphology and reconnection of the floodplain; and the restoration and enhancement of shellfish, finfish and wildlife, provided those activities result in net increases in aquatic resource functions and services.

Not authorized under GP 10: Stream channelization activities.

Self-Verification Eligible	**Pre-Construction Notification Required**
1. No fill in Lake Champlain, Lake Memphremagog, Wallace Pond and adjacent wetlands. 2. Permanent and temporary impacts are < 5,000 SF in waterways and/or wetlands. 3. The activity does not convert a stream to wetland or vice versa, or wetland to a pond or uplands. 4. Temporary structures in navigable WOTUS not exceeding 30 days.	1. Work not eligible for SV. 2. Permanent or temporary impacts are: a. In Lake Champlain, Lake Memphremagog, Wallace Pond, adjacent wetlands; or b. ≥ 5,000 SF in all other waterways and/or wetlands. 3. Permanent structures in navigable WOTUS. 4. Sea Lamprey control projects. 5. Water impoundments. 6. Dam removals. 7. Restoration, establishment and/or enhancement activities approved for use by a USACE-approved in-lieu fee program or USACE-approved mitigation bank, with impacts of any size.

GP 11. FISH AND WILDLIFE HARVESTING ACTIVITIES (Sections 10 and 404): Activities in waters of the United States associated with fish and wildlife harvesting devices, such as duck blinds, fish shanties, and small fish aggregating and attraction devices. **Not authorized by GP 11:** (a) Artificial reefs; and (b) Permanent and temporary fill > 5,000 SF in all waterways and/or wetlands.	
Self-Verification Eligible	**Pre-Construction Notification Required**
Non-fill activities associated with fish and wildlife harvesting devices including duck blinds, fish shanties and small fish aggregating and attraction devices in navigable waters.	1. Work not eligible for SV. 2. Permanent and temporary impacts < 5,000 SF in all waterways and/or wetlands.

GP 12. OIL SPILL AND HAZARDOUS MATERIAL CLEANUP (Sections 10 and 404): (a) Activities conducted in response to a discharge or release of oil and hazardous substances that are subject to the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR 300) including containment, cleanup, and mitigation efforts, provided activities are done under either (i) The Spill Prevent, Control and Countermeasure Plan required by 40 CFR 112.3; (ii) The direction or oversight of the Federal on-site coordinator designated by 40 CFR 300; or (iii) Any approved existing state, regional or local contingency plan, provided that the Regional Response Team concurs with the proposed response efforts or does not object to the response effort; (b) Activities required for the cleanup of oil releases in WOTUS from electrical equipment that are governed by EPA's polychlorinated biphenyl (PCB) spill response regulations at 40 CFR 761; (c) Booms placed in navigable WOTUS; and (d) Use of structures and fills for spill response training exercises. Special Aquatic Sites (SAS) must be restored to their original condition and elevation	
Self-Verification Eligible	**Pre-Construction Notification Required**
1. Activities that are conducted in accordance with (a) or (b) above. 2. Booms placed in navigable WOTUS for hazardous and toxic waste containment, absorption and prevention, provided they are removed upon completion of the cleanup. 3. Temporary impacts for spill response training exercises < 1000 SF in navigable WOTUS and < 5000 SF in all other WOTUS, and in place ≤ 30 days.	1. Work not eligible for SV. 2. Permanent structures or impacts for spill response training exercises.

GP 13. CLEANUP OF HAZARDOUS AND TOXIC WASTE (Sections 10 and 404): Specific activities to effect the containment, stabilization or removal of hazardous or toxic waste materials, including court ordered remedial action plans or related settlements which are performed, ordered or sponsored by a government agency with established legal or regulatory authority. SAS must be restored to their original condition and elevation.

Not authorized under GP 13: (a) the establishment of new disposal sites; or (b) the expansion of existing sites used for the disposal of hazardous or toxic waste.

Self-Verification (SV) Eligible	**Pre-Construction Notification Required**
1. Permanent and temporary impacts are < 5,000 SF in WOTUS. 2. No fill in navigable WOTUS. 3. Booms placed in navigable WOTUS for oil and hazardous substance containment, absorption and prevention, provided they are removed upon completion of the cleanup.	1. Work not eligible for SV. 2. Permanent and temporary impacts: a. ≥ 5,000 SF in all WOTUS; or b. Located in navigable WOTUS. 3. Work involves stream channelization, relocation, impoundments or loss of streambed.

GP 14. SCIENTIFIC MEASUREMENT DEVICES (Sections 10 and 404): Scientific devices for measuring and recording scientific data, such as staff gauges, tide and current gauges, meteorological stations, water recording and biological observation devices, water quality testing and improvement devices, and similar structures. Also eligible are small temporary weirs and flumes constructed primarily to record water quantity and velocity, provided the discharge is < 25 CY.

Not authorized under GP 14: (a) Permanent and temporary impacts > 1/2 acre in navigable WOTUS; and (b) Permanent and temporary impacts > 1 acre in all other WOTUS.

Self-Verification Eligible	**Pre-Construction Notification Required**
1. Permanent and temporary impacts are ≤ 1,000 SF in WOTUS. 2. Temporary structures in navigable WOTUS. Provided the activity does not: • Restrict or concentrate movement of aquatic organisms; • Result in a hazard to navigation.	1. Work not eligible for SV. 2. Permanent and temporary impacts > 1000 SF in WOTUS. 3. Permanent structures in navigable WOTUS. 4. The activity involves permanent biological sampling devices in non-navigable WOTUS, temporary or permanent biological sampling devices in navigable WOTUS, or weirs and flumes.

NOTE: Upon completion of the use of the device to measure and record scientific data, the measuring device, and any other structures or fills associated with that device (e.g., foundations, anchors, buoys, lines, etc.), must be removed to the maximum extent practicable.

GP 15. SURVEY ACTIVITIES (Sections 10 and 404): Survey activities such as soil borings, core sampling, seismic exploratory operations, plugging of seismic shot holes, and other exploratory-type bore holes, exploratory trenching and historic resources surveys.

Not authorized under GP 15: (a) Permanent impacts > 5,000 SF in Lake Champlain, Lake Memphremagog and Wallace Pond, and > 1 acre in all other waterways and/or wetlands, (b) Temporary impacts > 1 acre in all WOTUS, excluding temporary mats.

Self-Verification Eligible	**Pre-Construction Notification Required**
1. No fill in Lake Champlain, Lake Memphremagog and Wallace Pond. 2. < 5,000 SF of permanent and temporary impacts in waterways and/or wetlands other than Lake Champlain, Lake Memphremagog and Wallace Pond. 3. No impacts, other than soil borings or core sampling, in navigable WOTUS. 4. No permanent structures or drilling and discharge of excavated material from test wells for oil and gas exploration allowed.	1. Work not eligible for SV. 2. < 5000 SF permanent impact and < 1 acre of temporary impact in Lake Champlain, Lake Memphremagog and Wallace Pond and adjacent wetlands. 3. Permanent and temporary impacts are ≥ 5,000 SF and < 1 acre of impact in waterways and/or wetlands, other than Lake Champlain, Lake Memphremagog, Wallace Pond and adjacent wetlands.

NOTE: The area in which the exploratory trench is dug must be restored to its preconstruction elevation upon completion of the work and must not drain a water of the United States. In wetlands, the top 6 to 12 inches of the trench should normally be backfilled with topsoil from the trench.
NOTE: Construction mats of any area necessary to conduct activities do not count towards the SV and PCN thresholds and should be removed as soon as work is completed.

GP 16. ENERGY GENERATION AND RENEWABLE ENERGY GENERATION FACILITIES AND HYDROPOWER PROJECTS (Sections 10 and 404): Structures and work in navigable WOTUS and discharges of dredged or fill material into WOTUS for the construction, expansion, modification or removal of: (a) land-based renewable energy production facilities, including attendant features; (b) water-based wind production facilities or hydrokinetic renewable energy generation projects and their attendant features; and (c) discharges of dredged or fill material associated with hydropower projects.

Attendant features may include, but are not limited to, land-based collection and distribution facilities, control facilities, and parking lots. For each single and complete project in (b) above, no more than 10 generation units (e.g., wind turbines or hydrokinetic devices) are authorized in navigable WOTUS.

Not authorized under GP 16: Permanent and temporary impacts that are (a) > 1 acre in non-navigable WOTUS; (b) > 5,000 SF in navigable WOTUS; and (c) > 5,000 SF in wetlands adjacent to Lake Champlain, Lake Memphremagog, and Wallace Pond.

Self-Verification Eligible	**Pre-Construction Notification Required**
For land-based facilities: 1. < 5,000 SF of permanent and temporary impacts in non-navigable WOTUS.	1. Work not eligible for SV. 2. Permanent and temporary impacts are: a. ≥ 5000 SF and < 1 acre in non-navigable WOTUS, and b. < 5000 SF in navigable WOTUS. 3. Work involves stream channelization, relocation or loss of streambed including impoundments.

NOTE: Utility lines constructed to transfer the energy from the land-based renewable generation or collection facility to a distribution system, regional grid, or other facility may be authorized by GP 6.

NOTE: Construction mats of any area necessary to conduct activities do not count towards the SV and PCN thresholds and should be removed as soon as work is completed.

GP 17. NEW/EXPANDED DEVELOPMENT AND RECREATIONAL FACILITIES (Sections 10 and 404): Discharges of dredged or fill material for the construction or expansion of developments and/or recreational facilities. This GP authorizes attendant features that are necessary for the use of the development. Attendant features may include but are not limited to roads, parking lots, garages, yards, utility lines, storm water management facilities, and septic fields. Fill area includes all temporary and permanent fill, and regulated discharges associated with excavation.

Not authorized under GP 17: Permanent and temporary impacts > 5,000 SF in Lake Champlain, Lake Memphremagog, Wallace Pond and adjacent wetlands, and > 1 acre in all other waterways and/or wetlands.

Self-Verification Eligible	**Pre-Construction Notification Required**
1. < 5,000 SF of permanent and temporary impacts in waterways and/or wetlands other than Lake Champlain, Lake Memphremagog and Wallace Pond and adjacent wetlands.	1. Work not eligible for SV. 2. Permanent and temporary impacts are: a. < 5,000 SF in Lake Champlain, Lake Memphremagog, Wallace Pond and adjacent wetlands. b. ≥ 5,000 SF and < 1 acre in waterways and/or wetlands other than Lake Champlain, Lake Memphremagog, Wallace Pond and adjacent wetlands. 3. Work involves stream channelization, relocation, or loss of streambed, including impoundments.

NOTE: Construction mats of any area necessary to conduct activities do not count towards the SV and PCN thresholds and should be removed as soon as work is completed.

GP 18. LINEAR TRANSPORTATION PROJECTS AND STREAM/WETLAND CROSSINGS (Sections 10 & 404): Activities required for the construction, expansion, modification, or improvement of linear transportation projects (e.g., driveways, roads, highways, railways, trails, airport runways, and taxiways), and attendant features. Any stream channel modification is limited to the minimum necessary to construct or protect the linear transportation project; such modifications must be in the immediate vicinity of the project.

Not authorized under GP 18: Permanent and temporary impacts > 5,000 SF in Lake Champlain, Lake Memphremagog, Wallace Pond and adjacent wetlands, and > 1 acre in all other waterways and/or wetlands.

Self-Verification Eligible	**Pre-Construction Notification Required**
1. < 5,000 SF of permanent and temporary impacts in waterways and/or wetlands other than Lake Champlain, Lake Memphremagog and Wallace Pond and adjacent wetlands. 2. Permanent and temporary stream crossings that comply with GC 20. 3. Existing crossings (e.g., culverts, elliptical or arch pipes, etc.) are not modified by (a) decreasing the diameter of the crossing or (b) changing the friction coefficient, such as through sliplining (retrofitting an existing culvert by inserting a smaller diameter pipe), culvert relining or invert lining.	1. Work not eligible for SV. 2. Permanent and temporary impacts are: a. < 5,000 SF in Lake Champlain, Lake Memphremagog, Wallace Pond and adjacent wetlands. b. ≥ 5,000 SF and < 1 acre in waterways and/or wetlands other than Lake Champlain, Lake Memphremagog, Wallace Pond and adjacent wetlands. 3. Work involves stream channelization, relocation or loss of streambed including impoundments. **NOTE:** Time of year for instream work is not limited for PCN authorizations unless specifically required by special conditions.

NOTE: Non-linear features commonly associated with transportation projects, such as vehicle maintenance or storage buildings, parking lots, train stations, or aircraft hangars may be authorized by GP 17.
NOTE: Construction mats of any area necessary to conduct activities do not count towards the SV and PCN thresholds and should be removed as soon as work is completed.

GP 19. MINING ACTIVITIES (Sections 10 and 404): Discharges of dredged or fill material into WOTUS for mining activities.

Not authorized under GP 16: Permanent and temporary impacts > 5,000 SF in Lake Champlain, Lake Memphremagog, Wallace Pond and adjacent wetlands, and > 1 acre in all other waterways and/or wetlands.

Self-Verification Eligible	**Pre-Construction Notification Required**
1. The activity does not occur in, over, or under navigable WOTUS. 2. < 5,000 SF of permanent and temporary impacts in waterways and/or wetlands other than Lake Champlain, Lake Memphremagog, Wallace Pond and adjacent wetlands.	1. Work not eligible for SV. 2. Permanent and temporary impacts are: a. < 5,000 SF in Lake Champlain, Lake Memphremagog, Wallace Pond and adjacent wetlands. b. ≥ 5,000 SF and < 1 acre in waterways and/or wetlands other than Lake Champlain, Lake Memphremagog, Wallace Pond and adjacent wetlands. 3. Work occurs in a navigable WOTUS. 4. Work involves stream channelization, relocation, impoundment, loss of streambed, or discharge of tailings into streams.

<table>
<tr><td colspan="2">GP 20. TEMPORARY FILL NOT ASSOCIATED WITH ANY OTHER GP ACTIVITIES (Sections 10 and 404): Temporary structures, work, and discharges, including cofferdams, necessary for construction activities or access fills or dewatering of construction sites that are not authorized under another GP activity.

Not authorized under GP 20: (a) Permanent structures or impacts; (b) Temporary impacts > 1 acre in WOTUS; (c) use of cofferdams to dewater wetlands or other aquatic areas to change their use; or (d) Structures or fill left in place after construction is completed.</td></tr>
<tr><td>Self-Verification Eligible</td><td>Pre-Construction Notification Required</td></tr>
<tr><td>1. Temporary impacts including land clearing in WOTUS are ≤ 5000 SF.</td><td>1. Work not eligible for SV.</td></tr>
<tr><td colspan="2">NOTE: Temporary stream crossings may be authorized under GP 18.
NOTE: Construction mats of any area necessary to conduct activities do not count towards the SV and PCN thresholds and should be removed as soon as work is completed.</td></tr>
</table>

GP 21. AGRICULTURAL ACTIVITIES (Section 404): Discharges of dredged or fill material into WOTUS for agricultural activities, including the construction of building pads for farm buildings. Authorized activities include: (a) installation, placement, or construction of drainage tiles, ditches, or levees; mechanized land clearing; land leveling; the relocation of existing serviceable drainage ditches; and similar activities; (b) discharges of dredged or fill material to relocate existing serviceable drainage ditches constructed in streams. **Not authorized under GP 21:** (a) Permanent impacts > 1 acre in non-navigable WOTUS; (b) Work in navigable WOTUS; or (c) Construction of farm ponds in perennial streams.	
Self-Verification Eligible	**Pre-Construction Notification Required**
1. For those activities subject to USACE jurisdiction, < 5,000 SF of permanent and temporary impacts.	1. ≥ 5,000 SF to < 1 acre of permanent and temporary impacts. 2. Work involves stream channelization, relocation or loss of streambed including impoundments.

SECTION IV. GENERAL CONDITIONS

1. Other Permits. Permittees shall obtain other federal, state, or local authorizations as required by law. Permittees are responsible for applying for and obtaining all required state or local approvals. Work that is not regulated by the state of Vermont, but is subject to USACE jurisdiction, may be eligible for these General Permits (GPs).

2. Federal Jurisdictional Boundaries.

a. Applicability of these GPs shall be evaluated with reference to federal jurisdictional boundaries. Activities shall be evaluated with reference to "WOTUS" under the Clean Water Act (33 CFR 328) and "navigable WOTUS" under §10 of the Rivers and Harbors Act of 1899 (33 CFR 329). Applicants are responsible for ensuring that the boundaries used satisfy the federal criteria defined at 33 CFR 328-329. These sections prescribe the policy, practice and procedures to be used in determining the extent of USACE jurisdiction. Note: WOTUS includes all waters pursuant to 33 CFR 328.3(a), and adjacent wetlands as that term is defined in 33 CFR 328.3(c).

b. Applicants shall identify all aquatic resources on the project site. All aquatic resources are presumed to be WOTUS unless an approved jurisdictional determination has been obtained from USACE that determines otherwise. Wetlands shall be delineated in accordance with the Corps of Engineers Wetlands Delineation Manual and the most recent Northcentral/Northeast Regional Supplement.

3. Mitigation (Avoidance, Minimization, and Compensatory Mitigation).

a. Activities shall be designed and constructed to avoid and minimize direct, indirect, secondary, and cumulative adverse effects, both temporary and permanent, to WOTUS to the maximum extent practicable at the project site (i.e., on site). Consideration of mitigation (avoiding, minimizing, rectifying, reducing, or compensating) is required to the extent necessary to ensure that the adverse effects to the aquatic environment are no more than minimal.

b. Applicants should consider riparian/forested buffers for stormwater management and low impact development (LID) best management practices (BMPs) to reduce impervious cover and manage stormwater to minimize impacts to the maximum extent practicable.

c. Compensatory mitigation[1] for effects to WOTUS, including direct, secondary and temporal[2], may be required for projects with permanent and temporary impacts that exceed the SV area limits to offset unavoidable impacts, which remain after all appropriate and practicable avoidance and minimization has been achieved, and to ensure that the adverse effects to the aquatic environment are no more than minimal. Proactive restoration projects or temporary impact work with no secondary effects may generally be excluded from this requirement.

d. Mitigation proposals shall follow the guidelines found in the Compensatory Mitigation for Losses of Aquatic Resources; Final Rule April 10, 2008; 33 CFR 332. Permittees considering the use of a monetary payment in-lieu of permittee-responsible mitigation as compensation for unavoidable impacts to WOTUS in the state of Vermont may utilize the Vermont In-Lieu Fee Program.

---

[1] Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR 332. Also reference the New England District Compensatory Mitigation Guidance at http://www.nae.usace.army.mil/Missions/Regulatory/Mitigation.aspx.

[2] Temporal loss: The time lag between the losses of aquatic resource functions caused by the permitted impacts and the replacement of aquatic resource functions at the compensatory mitigation site(s) (33 CFR 332.2).

e. Mitigation will likely be required for fills >5,000 SF. Information is provided at https://www.nae.usace.army.mil/Missions/Regulatory/Mitigation/.

4. Discretionary Authority. Notwithstanding compliance with the terms and conditions of this permit, USACE retains discretionary authority to require an IP review based on concerns for the aquatic environment or for any other factor of the public interest (33 CFR 320.4(a)). This authority is invoked on a case-by-case basis whenever USACE determines that the potential consequences of the proposal warrant IP review based on the concerns stated above. This authority may be invoked for projects with cumulative adverse environmental effects that are more than minimal, or if there is a special resource or concern associated with a particular project. Whenever USACE notifies an applicant that an IP may be required, authorization under these GPs is voided and no work may be conducted until a USACE IP is obtained or until USACE notifies the applicant that further review has demonstrated that the work may be reviewed under these GPs.

5. Fills Within 100-Year Floodplains. The activity shall comply with applicable Federal Emergency Management Agency (FEMA)-approved state of Vermont or municipal floodplain management requirements. Permittees should contact FEMA and/or the state of Vermont Floodplain Management Program regarding floodplain management requirements (see Section V for Federal and state-specific contact info).

6. Single and Complete Project. The term “single and complete project” is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. The GPs shall not be used for piecemeal work and shall be applied to single and complete projects.

a. For non-linear projects, a single and complete project must have independent utility. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

b. Unless USACE determines the activity has independent utility, all components of a single project and/or all planned phases of a multi-phased project (e.g., subdivisions should include all work such as roads, utilities, and lot development) shall be treated together as constituting one single and complete project.

c. For linear projects such as power lines or pipelines with multiple crossings, a “single and complete project” is all crossings of a single water of the U.S. (i.e. single waterbody) at a specific location. For linear projects crossing a single waterbody several times at separate and distant locations, each crossing is considered a single and complete project. However, individual channels in a braided stream or river, or individual arms of a large, irregularly-shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately. If any crossing requires a PCN review or an IP review, then the entire linear project shall be reviewed as one project under PCN or the IP procedures.

7. Use of Multiple General Permits. The use of more than one GP for a single and complete project is prohibited, except when the acreage loss of WOTUS authorized by the GPs does not exceed the acreage limit of the GPs with the highest specified acreage limit. For example, if a road crossing over waters is constructed under GP 18, with an associated utility line crossing authorized by GP 6, if the maximum acreage loss of WOTUS for the total project is ≥1 acre it shall be evaluated as an IP.

8. USACE Property and Federal Projects.

a. Corps projects and property can be found at:*www.nae.usace.army.mil/Missions/Civil-Works and www.nan.usace.army.mil/missions/civil-works*

b. In addition to any authorization under these GPs, proponents must contact the USACE Real Estate Division at (978) 318-8585 for work occurring on or potentially affecting USACE properties and/or USACE-controlled easements to initiate reviews and determine what real estate instruments are necessary to perform work. Permittees may not commence work on USACE properties and/or USACE-controlled easements until they have received any required USACE real estate documents evidencing site-specific permission to work.

c. Any proposed temporary or permanent modification or use of a Federal project (including but not limited to a levee, dike, floodwall, channel, anchorage, seawall, bulkhead, jetty, wharf, pier or other work built but not necessarily owned by the United States), or any use which would obstruct or impair the usefulness of the Federal project in any manner, and/or would involve changes to the authorized Federal project's scope, purpose, and/or functioning, is not eligible for SV and will also require review and approval by USACE pursuant to Section 14 of the Rivers and Harbors Act of 1899 (33 USC 408) (Section 408).

d. A PCN is required for all work in, over, under, or within a distance of three times the authorized depth of a USACE FNP and may also require permission under Section 408.

e. Any structure or work that extends closer than a distance of three times the project's authorized depth to the horizontal limits of any FNP shall be subject to removal at the owner's expense prior to any future USACE dredging or the performance of periodic hydrographic surveys.

f. Where a Section 408 permission is required, written verification for the PCN will not be issued prior to the decision on the Section 408 permission request.

9. National Lands. Activities that impinge upon the value of any National Wildlife Refuge, National Forest, or any area administered by the NPS, USFWS or U.S. Forest Service (USFS) are not eligible for SV and require either a PCN or IP.

10. Wild and Scenic Rivers.

a. The following activities in designated rivers of the National Wild and Scenic River (WSR System, or in a river designated by Congress as a "study river" for possible inclusion in the system, require a PCN unless the NPS has determined in writing to the proponent that the proposed work will not adversely affect the WSR designation or study status:

i. Activities that occur in WSR segments, in and 0.25 miles up or downstream of WSR segments, or in tributaries within 0.25 miles of WSR segments;

ii. Activities that occur in wetlands within 0.25 miles of WSR segments;

iii. Activities that have the potential to alter free-flowing characteristics in WSR segments.

b. As of December 19, 2014, affected rivers in Vermont include: the Missisquoi River, from its headwaters at the Lowell/Westfield town line to the Canadian border in Troy (20.5 miles) and from the Canadian border in East Richford to Enosburgh Falls (14.6 miles); and the Trout River.

11. Historic Properties.

a. No undertaking shall cause effects (defined at 33 CFR 325 Appendix C and 36 CFR 800) on properties listed on, determined to be eligible for listing on, or potentially eligible for listing on

the National Register of Historic Places[3], including previously unknown historic properties within the permit area, unless USACE or another Federal action agency has satisfied the consultation requirements of Section 106 of the National Historic Preservation Act (NHPA). The SHPO, THPO and the National Register of Historic Places can assist with locating information on: i) previously identified historic properties; and ii) areas with potential for the presence of historic resources, which may require identification and evaluation by qualified historic preservation and/or archaeological consultants in consultation with USACE and the SHPO and/or THPO(s).

b. For activities eligible for SV, proponents must ensure and document that the activity will not cause effects as stated in 11(a).

c. Permittees must submit a PCN to USACE as soon as possible if the authorized activity may cause effects as stated in 11(a) to ensure that USACE is aware of any potential effects of the permitted activity on any historic property or cultural resource so that the consultation requirements of Section 106 of NHPA can be satisfied.

d. If a project proponent discovers any previously unknown historic, cultural, or archeological remains or artifacts while accomplishing the activity authorized by this permit, they must immediately notify the District Engineer of what they have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The District Engineer will initiate the Federal, Tribal and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

e. Federal agencies should follow their own procedures for complying with the requirements of Section 106 NHPA. Along with the application, Federal applicants shall provide USACE with the appropriate documentation to demonstrate compliance with those requirements.

f. Federal and non-federal applicants should coordinate with USACE before conducting any onsite archeological work (reconnaissance, surveys, recovery, etc.) requested by the SHPO or the THPO, as USACE will determine the permit area for the consideration of historic properties based on 33 CFR 325 Appendix C. This is to ensure that work done is in accordance with USACE requirements.

12. Federal Threatened and Endangered Species.

a. No activity is authorized under any GP which: i) is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species; or ii) “may affect” a listed species or critical habitat, unless ESA section 7 consultation addressing the effects of the proposed activity has been completed; or iii) is “likely to adversely affect” a listed species or critical habitat unless Section 7 consultation has been completed by USACE or another lead action agency in coordination with USACE; or iii) violates the ESA.

b. All prospective permittees shall obtain an Official Species List from the USFWS’s Information for Planning and Consultation (IPAC) found at: https://ecos.fws.gov/ipac/. This is applicable to SV eligible and PCN activities.

c. Non-federal permittees must submit a PCN if any listed species or designated critical habitat might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized.

[3] The majority of historic properties are not listed on the National Register of Historic Places and may require identification and evaluation by qualified historic preservation and/or archaeological consultants in consultation with USACE and the SHPO and/or THPO.

An activity may remain eligible for SV if the only listed species affected is the northern long-eared bat (*Myotis septrionalis*), and

(i) the activity: 1) will not remove trees ≥3 inches dbh at any time of the year; or ≤10 trees ≥ 3 inches dbh between November 1 – March 31; and 2) is not within the "buffer" of a NLEB hibernacula or maternity roost tree; and 3) does not involve work on bridges or existing riprap associated with dams; or

(ii) only after Section 7 consultation has been completed by USACE under the 4(d) Rule Streamlined Consultation.

d. Federal agencies shall follow their own procedures for complying with the requirements of the ESA while ensuring that USACE and any other federal action agencies are included in the consultation process.

e. Non-federal representatives designated by USACE to conduct informal consultation or prepare a biological assessment shall follow the requirements in the designation document(s) and the ESA. Non-federal representatives shall also provide USACE with the appropriate documentation to demonstrate compliance with those requirements. USACE will review the documentation and determine whether it is sufficient to address ESA compliance for the GP activity, or whether additional ESA consultation is necessary.

f. The requirements to comply with Section 7 of the ESA may be satisfied by a programmatic agreement (PA) or programmatic consultation (PC) with USACE, the New England District, or another federal agency. New England District PAs and PCs are found at: *www.nae.usace.army.mil/Missions/Regulatory*

13. Navigation.

a. No activity may cause more than a minimal adverse effect on navigation.

b. Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations must be installed and maintained at the permittee's expense on authorized facilities in navigable WOTUS.

c. Any structure or work that extends closer to the horizontal limits of any USACE FNP than a distance of three times the project's authorized depth shall be subject to removal at the owner's expense prior to any future USACE dredging or the performance of periodic hydrographic surveys. This is applicable to SV eligible and PCN activities.

d. There shall be no unreasonable interference with navigation by the existence or use of the activity authorized herein, and no attempt shall be made by the permittee to prevent the full and free use by the public of all navigable waters at or adjacent to the activity authorized herein.

e. The permittee understands and agrees that if future U.S. operations require the removal, relocation, or other alteration of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from USACE, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the U.S. No claim shall be made against the U.S. on account of any such removal or alteration.

f. A PCN is required for all work in, over or under an FNP or its buffer zone unless otherwise indicated in Section III as the work may also require a Section 408 permit.

14. Heavy Equipment in Wetlands. Operating heavy equipment (drill rigs, fixed cranes, etc.) within wetlands shall be minimized, and such equipment shall not be stored, maintained or repaired in wetlands, to the maximum extent practicable. Where construction requires heavy equipment operation in wetlands, the equipment shall: a) have low ground pressure (typically <3

psi); b) be placed on swamp/construction/timber mats (herein referred to as “construction mats” or “mats”) that are adequate to support the equipment in such a way as to minimize disturbance of wetland soil and vegetation; or c) be operated on adequately dry or frozen wetlands such that shear pressure does not cause subsidence of the wetlands immediately beneath equipment and upheaval of adjacent wetlands. Construction mats are to be placed in the wetland from the upland or from equipment positioned on swamp mats if working within a wetland. Construction mats should be carried, and not dragged, into position, where feasible. Other support structures that are capable of safely supporting equipment may be used with written USACE authorization. Similarly, the permittee may request written authorization from USACE to waive use of mats during frozen or dry conditions. An adequate supply of spill containment equipment shall be maintained on site. Construction mats should be managed in accordance with the following construction mat best management practices:

• Mats should be in good condition to ensure proper installation, use and removal.
• Where feasible, mats should be carried and not dragged unless they are being used as a grading implement.
• Where feasible, place mats in a location that would minimize the amount needed for the wetland crossing.
• Minimize impacts to wetland areas during installation, use, and removal.
• Install adequate erosion and sediment controls at approaches to mats to promote a smooth transition to, and minimize sediment tracking onto, mats.
• In most cases, mats should be placed along the travel area so that the individual boards are resting perpendicular to the direction of traffic. No gaps should exist between mats. Mats should be placed far enough on either side of the resource area to rest on firm ground.
• Provide standard construction mat BMP details to work crews.
• Construction mats shall be thoroughly cleaned before re-use to minimize spread of invasive species.

15. Temporary Fill.

a. Temporary fill, construction mats and corduroy roads shall be entirely removed as soon as they are no longer needed to construct the authorized work. Temporary fill shall be placed in its original location or disposed of at an upland site and suitably contained to prevent its subsequent erosion into WOTUS.

b. All temporary fill and disturbed soils shall be stabilized to prevent its eroding into WOTUS where it is not authorized. Work shall include phased or staged development to ensure only areas under active development are exposed and to allow for stabilization practices as soon as practicable. Temporary fill must be placed in a manner that will prevent it from being eroded by expected high flows.

c. Unconfined temporary fill authorized for discharge into WOTUS shall consist of material that minimizes impacts to water quality (e.g. washed stone, stone, etc.).

d. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable when temporary structures, work, and discharges of dredged or fill material, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Materials shall be placed in a location and manner that does not adversely impact surface or subsurface water flow into or out of the wetland. Temporary fill authorized for discharge into wetlands shall be placed on geotextile fabric or other appropriate material laid on the pre-construction wetland grade where practicable to minimize impacts and to facilitate restoration to the original grade. Construction mats are excluded from this requirement.

e. Construction debris and/or deteriorated materials shall not be located in WOTUS.

16. Restoration of Wetland Areas.

a. Upon completion of construction, all disturbed wetland areas (the disturbance of these areas must be authorized) shall be stabilized with a wetland seed mix containing only plant species native to New England and shall not contain any species listed in the "Invasive and Other Unacceptable Plant Species" Appendix D in the "New England District Compensatory Mitigation Guidance" found at http://www.nae.usace.army.mil/Missions/Regulatory/Mitigation.aspx.

b. The introduction or spread of invasive plant species in disturbed areas shall be controlled. If construction mats are to be used, they shall be thoroughly cleaned before re-use.

c. In areas of authorized temporary disturbance, if trees are cut they shall be cut at or above ground level and not uprooted in order to prevent disruption to the wetland soil structure and to allow stump sprouts to revegetate the work area, unless otherwise authorized.

d. Wetland areas where permanent disturbance is not authorized shall be restored to their original condition and elevation, which under no circumstances shall be higher than the pre-construction elevation. Original condition means careful protection and/or removal of existing soil and vegetation, and replacement back to the original location such that the original soil layering and vegetation schemes are approximately the same, unless otherwise authorized.

17. Bank Stabilization. Projects involving construction or reconstruction/maintenance of bank stabilization structures within USACE jurisdiction should be designed to minimize environmental effects, effects to neighboring properties, scour, etc. to the maximum extent practicable. For example, vertical bulkheads should only be used in situations where reflected wave energy can be tolerated. This generally eliminates bodies of water where the reflected wave energy may interfere with or impact on harbors, marinas, or other developed shore areas. A revetment is sloped and is typically employed to absorb the direct impact of waves more effectively than a vertical seawall. It typically has a less adverse effect on the beach in front of it, abutting properties and wildlife.

18. Soil Erosion and Sediment Controls.

a. Appropriate soil erosion and sediment controls[4] (hereinafter referred to as "controls") must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the OHWM, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within WOTUS during periods of low-flow or no-flow. Areas of temporary fill and/or cofferdams must be included in total waterway/wetlands impacts to determine applicability of the GPs.

b. No dewatering shall occur with direct discharge to waters or wetlands. Excess water in isolated work areas shall be pumped or directed to a sedimentation basin, tank or other dewatering structures in an upland area adequately separated from waters or wetlands where suspended solids shall be removed prior to discharge back into waters or wetlands. All discharge points back into waters and wetlands shall use appropriate energy dissipaters and erosion and sedimentation control BMPs.

c. Temporary controls shall be removed upon completion of work, but not until all exposed soil and other fills, as well as any work waterward of the OHWM, are permanently stabilized at the

[4] Appropriate soil erosion, sediment and turbidity controls include cofferdams, bypass pumping around barriers immediately up and downstream of the work footprint (i.e., dam and pump), installation of sediment control barriers (i.e., silt fence, vegetated filter strips, geotextile silt fences, filter tubes, erosion control mixes, hay bales or other devices) downhill of all exposed areas, stream fords, retention of existing vegetated buffers, application of temporary mulching during construction, phased construction, and permanent seeding and stabilization, etc.

earliest practicable date. Sediment and debris collected by these devices shall be removed and placed at an upland location in a manner that will prevent its later erosion into a waterway or wetland. Controls may be left in place if they are biodegradable, and flows and aquatic life movements are not disrupted.

d. The material within sandbags shall not be released during their removal, and trenches must be backfilled as soon as practicable to reduce turbidity impact duration.

19. Aquatic Life Movements and Management of Water Flows.

a. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. Unless otherwise stated, activities permanently impounding water in a stream require a PCN to ensure impacts to aquatic life species are avoided and minimized. All permanent and temporary crossings of waterbodies and wetlands shall be:

i. Suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of aquatic species; and

ii. Properly aligned and constructed to prevent bank erosion or streambed scour both adjacent to and inside the crossing.

b. To avoid adverse impacts on aquatic organisms, the low flow channel/thalweg shall remain unobstructed during periods of low flow, except when it is necessary to perform the authorized work.

c. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities. The activity must be constructed to withstand expected high flows. The activity shall not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the preconstruction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

d. Activities that temporarily or permanently impact upstream or downstream flood conditions require a PCN.

20. Waterway/Wetland Work and Crossings.

a. All permanent crossings of rivers, streams, brooks, etc. (hereon referred to as "streams") shall meet the following performance standards in order to qualify for SV:

i. Design the structure to maintain a streambed composition and form throughout the culvert similar to and continuous with the adjacent reaches. To do this:
- Design and install streambed material and bedforms if not adequately supplied and developed naturally,
- Design profile and alignment through structure similar to those of adjacent stream reaches,
- Design culvert elevation to remain embedded for the life of the structure and in consideration of future channel conditions.

ii. Maintain velocities, turbulence and depths within the structure similar to those found in adjacent stream reaches across a range of desired flows.

b. The requirements to comply with the performance standards in GC 20a. above in order to proceed as a SV project do not apply to the following:

i. Temporary crossings in place for less than 90 days. Temporary culverts must be embedded unless they're installed during low flow (July 1 – October 1) and it's placed on geotextile fabric laid on the stream bed to ensure restoration to the original grade.

c. Applicants proposing new crossings, or maintenance or replacement of serviceable crossings should refer to the Guidelines for the Design of Stream/Road Crossings for Passage of Aquatic Organisms in Vermont.

d. Applicants shall use the least intrusive and environmentally damaging method to construct the stream crossing, following this sequential minimization process: bridge spans, open bottom arches or embedded culverts.

e. Permanent and temporary crossings of waterbodies and wetlands shall be installed in such a manner as to preserve hydraulic and ecological connectivity, on either side of the crossing. The permittee shall take necessary measures to correct wetland damage due to lack of hydraulic connectivity.

f. Projects using retrofit methods increasing flow velocity or slip lining (retrofitting an existing culvert by inserting a smaller diameter pipe) require a PCN, either as new or maintenance activities.

g. No projects involving open trench excavation in flowing waters, except riprap installation, are allowed under SV. Open trench excavation projects may qualify for SV provided (1) the work doesn't occur in flowing waters (requires using management techniques such as temporary flume pipes, culverts, cofferdams, etc.) and (2) normal flows are maintained upstream and downstream of the project area.

h. For projects that otherwise meet the terms of SV, in-stream construction work shall be conducted only during the low flow period of July 1 to October 1 in any year. Projects that are conducted outside that time period require a PCN, regardless of the waterway and/or wetland impact area.

21. Discharge of Pollutants. All activities involving any discharge of pollutants into WOTUS authorized under these GPs shall comply with applicable water quality standards, effluent limitations, standards of performance, prohibitions, and pretreatment standards and management practices established pursuant to the CWA (33 U.S.C. 1251), and applicable state and local laws. If applicable water quality standards, limitations, etc., are revised or modified during the term of this permit, the authorized work shall be modified to conform with these standards within 6 months of the effective date of such revision or modification, or within a longer period of time deemed reasonable by the District Engineer in consultation with the Regional Administrator of the EPA. Applicants may presume that State Water Quality Standards are met with the issuance of a 401 WQC or waiver (Applicable only to the Section 404 activity).

22. Spawning, Breeding, and Migratory Areas.

a. Jurisdictional activities and impacts such as excavations, discharges of dredged or fill material, and/or suspended sediment producing activities in jurisdictional waters that provide value as fish migratory areas, fish and shellfish spawning or nursery areas, or amphibian and migratory bird breeding areas, during spawning or breeding seasons shall be avoided and minimized to the maximum extent practicable.

b. Jurisdictional activities in WOTUS that provide value as breeding areas for migratory birds must be avoided to the maximum extent practicable. The permittee is responsible for obtaining any "take" permits required under the USFWS's regulations governing compliance with the Migratory Bird Treaty Act or the Bald and Golden Eagle Protection Act. The permittee should contact the appropriate local office of the USFWS to determine if such "take" permits are required for a particular activity.

23. Storage of Seasonal Structures. Seasonal or recreational structures such as pier sections, floats, etc., that are removed from the waterway for a portion of the year shall be stored in an upland location, located above the OHWM and not in wetlands.

24. Environmental Functions and Values. The permittee shall make every reasonable effort to carry out the construction or operation of the work authorized herein in a manner that minimizes any adverse impacts on existing fish, wildlife, and the environmental functions to the extent practicable. The permittee will discourage the establishment or spread of plant species identified as non-native invasive species by any federal or state agency.

25. Vernal Pools.

a. On projects requiring a PCN, vernal pools must be identified on the plan showing aquatic resource delineations.

b. A PCN is required if a discharge of dredged or fill material is proposed in a vernal pool located within WOTUS.

c. Adverse impacts to vernal pools, vernal pool envelopes, and critical terrestrial habitats should be avoided and minimized to the maximum extent practicable.

d. GC 25(b) and (c) do not apply to projects that are within a municipality that meets the provisions of a USACE-approved VP Special Area Management Plan (VP SAMP) and are otherwise eligible for SV, and the applicant meets the requirements to utilize the VP SAMP.

26. Invasive Species. The introduction, spread, or the increased risk of invasion of invasive plant or animal species on the project site, into new or disturbed areas, or areas adjacent to the project site caused by the site work shall be avoided. Hence, swamp and timber mats and construction equipment shall be thoroughly cleaned before reuse/relocation.

27. Permit/Authorization Letter On-Site. For PCN projects, the permittee shall ensure that a copy of these GPs and the accompanying authorization letter are at the work site (and the project office) whenever work is being performed, and that all personnel with operational control of the site ensure that all appropriate personnel performing work are fully aware of its terms and conditions. The entire permit authorization shall be made a part of any and all contracts and sub-contracts for work that affect areas of USACE jurisdiction at the site of the work authorized by these GPs. This shall be achieved by including the entire permit authorization in the specifications for work. The term “entire permit authorization” means these GPs, including general conditions and the authorization letter (including its drawings, plans, appendices and other attachments), and also includes permit modifications. If the authorization letter is issued after the construction specifications, but before receipt of bids or quotes, the entire permit authorization shall be included as an addendum to the specifications. If the authorization letter is issued after receipt of bids or quotes, the entire permit authorization shall be included in the contract or sub-contract as a change order. Although the permittee may assign various aspects of the work to different contractors or sub-contractors, all contractors and sub-contractors shall be obligated by contract to comply with all environmental protection provisions contained within the entire authorization letter, and no contract or sub-contract shall require or allow unauthorized work in areas of USACE jurisdiction.

28. Inspections. The permittee shall allow USACE to make periodic inspections at any time deemed necessary in order to ensure that the work is being or has been performed in accordance with the terms and conditions of this permit. To facilitate these inspections, the permittee shall complete and return the Work Start Notification Form and the Compliance Certification Form to

USACE when provided with a PCN verification letter. The USACE may also require post-construction engineering drawings for completed work or post-dredging survey drawings for any dredging work.

29. Maintenance. The permittee shall maintain the activity authorized by these GPs in good condition and in conformance with the terms and conditions of this permit. This does not include maintenance of dredging projects. Maintenance dredging is subject to the review thresholds in General Permit 7 in Appendix A, as well as any conditions included in a written USACE authorization. Maintenance dredging includes only those areas and depths previously authorized and dredged. Some maintenance activities may not be subject to regulation under Section 404 in accordance with 33 CFR 323.4(a)(2).

30. Property Rights. Per 33 CFR 320.4(g)(6), these GPs do not convey any property rights, either in real estate or material, or any exclusive privileges, nor does it authorize any injury to property or invasion of rights or any infringement of federal, state, or local laws or regulations.

31. Transfer of GP Verifications. If the permittee sells the property associated with a GP verification, the permittee may transfer the GP verification to the new owner by submitting a letter to USACE to validate the transfer. A copy of the GP verification shall be attached to the letter, the letter shall contain the name, address, phone number and email of the transferee (new owner), shall include the following statement and signature, and be emailed to cenae-r-vt@usace.army.mil or mailed to: U.S. Army Corps of Engineers, Vermont Project Office, 11 Lincoln Street, Room 210, Essex Junction, Vermont 05452.

When the structures or work authorized by this general permit are still in existence at the time the property is transferred, the terms and conditions of this general permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this general permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

_____*(Transferee Printed Name)*
_____(Transferee Signature)
_____(Date)

32. Modification, Suspension, and Revocation. These GPs and any individual authorizations issued thereof may be modified, suspended, or revoked in whole or in part pursuant to the policies and procedures of 33 CFR 325.7, and any such action shall not be the basis for any claim for damages against the United States.

33. Special Conditions. The USACE may impose other special conditions on a project authorized pursuant to these GPs that are determined necessary to minimize adverse navigational and/or environmental effects or based on any other factor of the public interest. These may be based on concerns from the VT ANR, SHPO, THPO or a Federal resource agency. Failure to comply with all conditions of the authorization, including special conditions, will constitute a permit violation and may subject the permittee to criminal, civil, or administrative penalties and/or restoration.

34. False or Incomplete Information. If USACE makes a determination regarding the eligibility of a project under this permit and subsequently discovers that it has relied on false, incomplete, or inaccurate information provided by the permittee, the authorization will not be valid, and the U.S. government may institute appropriate legal proceedings.

35. Abandonment. If the permittee decides to abandon the activity authorized under this GP, unless such abandonment is merely the transfer of property to a third party, he/she may be required to restore the area to the satisfaction of USACE.

36. Enforcement cases. These GPs do not apply to any existing or proposed activity in USACE jurisdiction associated with an ongoing USACE or EPA enforcement action, until such time as the enforcement action is resolved or USACE determines that the activity may proceed independently without compromising the enforcement action.

37. Water Quality. Applicants shall satisfy any conditions imposed by the State of Vermont and EPA, where applicable, in their Clean Water Act Section 401 WQC for these GPs, or in any Individual Section 401 WQC. See Section V. for state-specific contact information and to determine if any action is required to obtain a 401 WQC. USACE may require additional water quality management measures to ensure that the authorized activity does not cause or contribute to a violation of water quality standards. All projects authorized by these GPs shall be designed, constructed and operated to minimize or eliminate the discharge of pollutants.

38. Duration of Authorization.

a. These GPs expire five years from the date issued as listed at the top of the cover sheet. Activities authorized by these GPs that have either commenced (i.e., are under construction) or are under contract to commence in reliance upon this authorization will have an additional year from the expiration date to complete the work. The permittee must be able to document to USACE's satisfaction that the project was under construction or under contract by the expiration date of these GPs. If work is not completed within the one-year extended timeframe, the permittee must contact USACE. The USACE may issue a new authorization, provided the project meets the terms and conditions of the GPs in effect at the time.

b. Activities authorized under these GPs will remain authorized until the GPs expire, unless discretionary authority has been exercised on a case-by-case basis to modify, suspend, or revoke the authorization in accordance with 33 CFR 325.2(e)(2). Activities completed under the SV or PCN authorizations of these GPs will continue to be authorized after its expiration date.

V. CONTACTS FOR VERMONT GENERAL PERMITS

1. Federal

U.S. Army Corps of Engineers
New England District, Regulatory Division
Vermont Project Office
11 Lincoln Street, Room 210
Essex Junction, Vermont 05452
(802) 872-2893, (802) 879-7638 fax
www.nae.usace.army.mil/missions/regulatory
cenae-r-vt@usace.army.mil

U.S. Environmental Protection Agency
5 Post Office Square, Suite 100
Boston, Massachusetts 02109
(617) 918-1692

U.S. Fish and Wildlife Service
70 Commercial Street, Suite 300
Concord, New Hampshire 03301-5087
(603) 223-2541

National Park Service
North Atlantic Region
15 State Street
Boston, Massachusetts 02109
(617) 223-5203

2. Historic Resources

State Historic Preservation Officer
Division for Historic Preservation
National Life Building
Drawer 20
Montpelier, Vermont 05620-0501
(802) 828-3211

Tribal Historic Preservation Officer
c/o Stockbridge-Munsee Community
86 Spring Street
Williamstown, Massachusetts 01267
(413) 884-6048
Area of concern: Addison, Rutland and Bennington Counties
thpo@mohican-nsn.gov

Tribal Historic Preservation Officer
c/o Wampanoag Tribe of Gay Head (Aquinnah)
20 Black Brook Road
Aquinnah, Massachusetts 02535
(508) 645-9265 THPO@wampanoagtribe-nsn.gov
Area of Concern: All Vermont counties except Addison, Rutland and Bennington

3. Vermont Agency of Natural Resources

Department of Environmental Conservation
Wetlands Program
Watershed Management Division
1 National Life Drive, Main 2
Montpelier, VT 05620-3522

Department of Environmental Conservation
River Management Program
Watershed Management Division
1 National Life Drive, Main 2
Montpelier, VT 05620-3522

Department of Environmental Conservation
Lakes and Ponds Program
Watershed Management Division
1 National Life Drive, Main 2
Montpelier, VT 05620-3522

Department of Environmental Conservation
Dam Safety Program
Facilities Engineering Division
1 National Life Drive, Main 2
Montpelier, VT 05620-3522

Vermont Department of Fish & Wildlife
1 National Life Drive, Main 2
Montpelier, VT 05620-3522

State endangered species
Vermont Department of Fish & Wildlife
Nongame and Natural Heritage Program
1 National Life Drive, Main 2
Montpelier, VT 05620-3522

VI. DEFINITIONS

Action Area: The "Endangered Species Consultation Handbook – Procedures for Conducting Consultation and Conference Activities Under Section 7 of the ESA," defines action area as "all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action. [50 CFR 402.02]."
Artificial Reef: A structure which is constructed or placed in waters for the purpose of enhancing fishery resources and commercial and recreational fishing opportunities.
Attendant Features: Occurring with or as a result of; accompanying.
Biodegradable: A material that decomposes into elements found in nature within a reasonably short period of time and will not leave a residue of plastic or a petroleum derivative in the environment after degradation. In contrast, degradable plastics break down into plastic fragments that remain in the environment after degradation. Examples of biodegradable materials include jute, sisal, cotton, straw, burlap, coconut husk fiber (coir) or excelsior. In contrast, degradable plastics break down into plastic fragments that remain in the environment after degradation. Photodegradable, UV degradable or Oxo- (bio)degradable plastics are not considered biodegradable under this GP.
Boating facilities: These provide, rent, or sell mooring space, such as marinas, boat/yacht clubs, boat yards, dockominiums, town facilities, etc. Not classified as boating facilities are piers shared between two abutting properties or town mooring fields that charge an equitable user fee based on the actual costs incurred.
Compensatory mitigation: The restoration (reestablishment or rehabilitation), establishment (creation), enhancement, and/or, in certain circumstances, preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.
Construction mats: Construction, swamp and timber mats (herein referred to as "construction mats") are generic terms used to describe structures that distribute equipment weight to prevent wetland damage while facilitating passage and providing work platforms for workers and equipment. They are comprised of sheets or mats made from a variety of materials in various sizes. A timber mat consists of large timbers bolted or cabled together.
Currently serviceable: Useable as is or with some minor maintenance, but not so degraded as to essentially require reconstruction.
Direct effects: The loss of aquatic ecosystem within the footprint of the discharge of dredged or fill material. Direct effects are caused by the action and occur at the same time and place.
Dredged material and discharge of dredged material: These are defined at 33 CFR 323.2(c) and (d). The term "dredged material" means material that is excavated or dredged from waters of the United States.
Discharge: The term "discharge" means any discharge of dredged or fill material into waters of the United States.
Enhancement: The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.
Ephemeral stream: A stream with flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

Establishment (creation): The manipulation of the physical, chemical or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area.
Expansions: Work that increases the footprint of fill, depth of basin or drainage feature, structures or floats, or slip capacity.
Fill material & discharge of fill material: These are defined at 33 CFR 323.2(e) and (f). The term fill material is defined as material placed in WOTUS where the material has the effect of either replacing any portion of a water of the U.S. with dry land or changing the bottom elevation of any portion of a water of the U.S.
Federal navigation projects (FNPs): These areas are maintained by USACE, authorized, constructed and maintained on the premise that they will be accessible and available to all on equal terms. They are comprised of USACE Federal anchorages, Federal channels and Federal turning basins. The following are FNPs in VT, and more information, including the limits, is provided at www.nae.usace.army.mil/missions/navigation and www.nan.usace.army.mil/Missions/Civil-Works/:

Burlington Harbor
Channel Between the North and South Hero Islands
Gordons Landing
Narrows of Lake Champlain
Otter Creek
St. Albans Harbor
Swanton Harbor

Flume: An open artificial water channel, in the form of a gravity chute that leads water from a diversion dam or weir completely aside a natural flow. A flume can be used to measure the rate of flow.
Historic Property: Any prehistoric or historic district, site (including archaeological site), building, structure, or other object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria (36 CFR 60).
Independent utility: A test to determine what constitutes a single and complete non-linear project in the USACE regulatory program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.
Indirect effects: Effects that are caused by the activity and are later in time or farther removed in distance, but are still reasonably foreseeable.
Individual Permit: A Department of the Army authorization that is issued following a case-by-case evaluation of a specific structure or work in accordance with the procedures of 33 CFR 322, or a specific project involving the proposed discharge(s) in accordance with the procedures of 33 CFR 323, and in accordance with the procedures of 33 CFR 325 and a determination that the proposed discharge is in the public interest pursuant to 33 CFR 320.
Intermittent stream: A stream with flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.
Maintenance: Maintenance does not include any modification that changes the character, scope, or size of the original fill design.

Mechanized land clearing: Land clearing activities using mechanized equipment such as backhoes or bulldozers with sheer blades, rakes or discs constitute point source discharges and are subject to section 404 jurisdiction when they take place in wetlands are waters of the U.S (Regulatory Guidance Letter 90-05).
Minor deviations: Deviations in the structure's configuration or filled area, including those due to changes in materials, construction techniques, or current construction codes or safety standards, which are necessary to make repair, rehabilitation, or replacement are permitted, provided the adverse environ-mental effects resulting from such repair, rehabilitation, or replacement are minimal.
Navigable waters of the United States: These are a subset of WOTUS and are defined at 33 CFR 329. The jurisdictional limits (33 CFR 329.11) extend laterally to the entire water surface and bed of a navigable waterbody, which include all the land and waters below OHWM. Jurisdiction thus extends to the edge (as determined above) of all such waterbodies, even though portions of the waterbody may be extremely shallow or obstructed by shoals, vegetation or other barriers. Marshlands and similar areas are thus considered navigable in law, but only so far as the area is subject to inundation by the ordinary high waters. In Vermont these waters are: the Connecticut River, Lake Champlain, Lake Memphremagog, Wallace Pond, Ompompanoosuc River (to mile 3.8), Waits River (to mile 0.9), the Black River (mouth to mile 25 in Craftsbury), the Battenkill River (to mile 50 in Manchester), the Lamoille River (mouth to mile 79 in Greensboro), the Missisquoi River (including the North Branch, from the mouth to mile 88.5 in Lowell), Otter Creek (mouth to mile 63.8 in Procter), Winooski River (mouth to Marshfield), Moose River (from Passumpsic River to the Victory Town Line), Nulhegan River (mouth to its source including the East Branch, the Black Branch and the Yellow Branch), Paul Stream (mouth to the source), East Branch of the Passumpsic River (from the confluence with the Passumpsic River to East Haven), Passumpsic River (mouth to confluence with the East Branch), White River (mouth to its source), Wells River (mouth to Groton Pond).
Ordinary High Water Mark (OHWM): A line on the shore established by the fluctuations of water and indicated by physical characteristics, or by other appropriate means that consider the characteristics of the surrounding areas. See 33 CFR 328.3(e).
Perennial stream: A stream with flowing water year-round during a typical year. The water table is located above the stream bed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.
Practicable: Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.
Permanent impacts: Permanent impacts means WOTUS that are permanently affected by filling, flooding, excavation, or drainage because of the regulated activity. Permanent impacts include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody.
Preservation: The removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.
Re-establishment: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Reestablishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions.
Rehabilitation: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource.

Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

Restoration: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in an aquatic resource area, restoration is divided into two categories: reestablishment and rehabilitation.

Secondary effects: These are effects on an aquatic ecosystem that are associated with a discharge of dredged or fill materials, but do not result from the actual placement of the dredged or fill material. Information about secondary effects on aquatic ecosystems shall be considered prior to the time final Section 404 action is taken by permitting authorities. Some examples of secondary effects on an aquatic ecosystem are a) aquatic areas drained, flooded, fragmented, or mechanically cleared, b) fluctuating water levels in an impoundment and downstream associated with the operation of a dam, c) septic tank leaching and surface runoff from residential or commercial developments on fill, and d) leachate and runoff from a sanitary landfill located in WOTUS See 40 CFR 230.11(h).

Special aquatic sites (SAS): These include inland wetlands, mud flats, vegetated shallows (submerged aquatic vegetation), and riffle and pool complexes. These are defined at 40 CFR 230.3 and listed in 40 CFR 230 Subpart E.

Streambed: The substrate of the stream channel between the OHW marks. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. Wetlands contiguous to the streambed, but outside of the OHW marks, are not considered part of the streambed.

Stream channelization: The manipulation of a stream's course, condition, capacity, or location that causes more than minimal interruption of normal stream processes. A channelized stream remains a water of the United States.

Structure: An object that is arranged in a definite pattern of organization. Examples of structures include, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling, aid to navigation, or any other manmade obstacle or obstruction.

Temporary impacts: Temporary impacts include, but are not limited to, WOTUS that are temporarily filled, flooded, excavated, drained or mechanically cleared because of the regulated activity.

Utility Line: Any pipe or pipeline for the transportation of any gaseous, liquid, liquescent, or slurry substance, for any purpose, and any cable, line, or wire for the transmission for any purpose of electrical energy, telephone, data, and telegraph messages, and radio and television communication. The term "utility line" does not include activities that drain a water of the U.S., such as drainage tile or French drains, but it does apply to pipes conveying drainage from another area.

Vegetated shallows: Permanently inundated areas that under normal circumstances support communities of rooted aquatic vegetation in rivers and lakes. Note: These areas are also commonly referred to as submerged aquatic vegetation (SAV).

Vernal pools (VPs): For the purposes of these GPs, VPs are depressional wetland basins that typically go dry in most years and may contain inlets or outlets, typically of intermittent flow. Vernal pools range in both size and depth depending upon landscape position and parent material(s). In most years, VPs support one or more of the following obligate indicator species: wood frog, spotted salamander, blue-spotted salamander, marbled salamander, Jefferson's salamander and fairy shrimp. However, they should preclude sustainable populations of predatory fish.

Water diversions: Water diversions are activities such as bypass pumping (e.g., “dam and pump”) or water withdrawals. Temporary flume pipes, culverts or cofferdams where normal flows are maintained within the stream boundary’s confines aren’t water diversions. “Normal flows” are defined as no change in flow from pre-project conditions.
Weir: A barrier across a river designed to alter the flow characteristics. In most cases, weirs take the form of a barrier, smaller than most conventional dams, across a river that causes water to pool behind the structure (not unlike a dam) and allows water to flow over the top. Weirs are commonly used to alter the flow regime of the river, prevent flooding, measure discharge and help render a river navigable.
Waters of the United States (WOTUS): Waters of the United States are defined in 33 CFR 328.3. These waters include more than navigable WOTUS and are the waters where permits are required for the discharge of dredged or fill material pursuant to Section 404 of the Clean Water Act. WOTUS include jurisdictional wetlands.

From: Borg, Jaron
To: Ladago, Bret
Cc: Ramsey, Jeff; Goldstein, Lee; Laroche, Gary; Eldridge, William
Subject: RE: NorthfieldBF0241 (58)
Date: Thursday, March 5, 2026 3:09:48 PM
Attachments: image001.png
image002.png

Bret,

Thank you kindly for the follow up. Based on our conversation instream work for subject project will be allowed from June 1st, 2027, to October 1st, 2027. The receipt of an instream construction schedule and associated water control plan shall be submitted no less than 30-days prior to the start of construciton, for review and approval by the Regional River Management Engineer.

Sincerely,

Jaron Borg | River Management Engineer
Vermont Agency of Natural Resources | Watershed Management Division
1 National Life Drive, Davis 3, Montpelier VT 05620-3901
(802) 371-8342 | Jaron.Borg@vermont.gov

From: Ladago, Bret <Bret.Ladago@vermont.gov>
Sent: Thursday, March 5, 2026 9:41 AM
To: Borg, Jaron <Jaron.Borg@vermont.gov>
Cc: Ramsey, Jeff <Jeff.Ramsey@vermont.gov>; Goldstein, Lee <Lee.Goldstein@vermont.gov>; Laroche, Gary <Gary.Laroche@vermont.gov>; Eldridge, William <William.Eldridge@vermont.gov>
Subject: RE: NorthfieldBF0241 (58)

Hi Jaron,

Thank you for meeting yesterday to discuss this project. The Dog River supports wild, self-sustaining populations of brook, brown, and rainbow trout. Rainbow trout spawn in the spring, and newly emerged fry are particularly vulnerable to suspended sediment during June. In waterbodies that support wild rainbow trout populations, we typically recommend restricting in-stream work to the period between July 1 and October 1 to minimize potential impacts.

Given our discussion and site-specific considerations, I do not anticipate that extending the in-stream work window from June 1 to October 1, 2027, will adversely impact fish populations. This project is also being done in cooperation with the Cross Brothers dam removal downstream, and these projects together will provide long term aquatic habitat benefits.

Let me know if anything changes.

-Bret

Bret Ladago (he/him) | Fish Biologist
Fish Division
Vermont Fish & Wildlife Department
802-431-7550
bret.ladago@vermont.gov
Connect with us on our Website or on Facebook

From: Borg, Jaron <Jaron.Borg@vermont.gov>
Sent: Friday, February 27, 2026 1:03 PM
To: Ladago, Bret <Bret.Ladago@vermont.gov>; Eldridge, William <William.Eldridge@vermont.gov>
Subject: FW: NorthfieldBF0241 (58)

Bret and Will,

Our team is receiving questions regarding an instream start date, next year, for a bridge construction project in the town of Northfield. Early start was previously considered reasonable due to allow for the Cross Brothers Dam removal project to occur in the same season. Given the work appears less likely to occur during the same season our team is under the impression that a July 1 date would be appropriate given the impacted fishery. Please see correspondence below and let me know your thoughts.

Sincerely,

Jaron Borg | River Management Engineer
Vermont Agency of Natural Resources | Watershed Management Division
1 National Life Drive, Davis 3, Montpelier VT 05620-3901
(802) 371-8342 | Jaron.Borg@vermont.gov

VERMONT

Vermont Department of Environmental Conservation
Watershed Management Division
88 Merchants Row, Suite 430 Asa Bloomer Building
Rutland, VT 05701-5903
www.watershedmanagement.vt.gov

Agency of Natural Resources

[cell] 802-490-6163
[fax] 802-786-5915
[email] joshua.carvajal@vermont.gov

STATUTORY AUTHORITY:
This approval is issued under Title 19 V.S.A. Chapter 1§ 10(12)

Vermont Agency of Transportation
Program Development Division
National Life Building
Montpelier, Vermont 05633-5001
Phone: 802-828-3978

RE: NorthfieldBF0241 (58) **ANR Permit Database Number: 4226**

This is a consultation of the above referenced project consisting of the removal and replacement of bridge NO. 60 with related approach roadway and channel work.

The project is subject to the following Standard Conditions:

1) The project shall be constructed as defined in the documents linked in the Title 19 Share Point site.
    a. Any amendment to the plans which in anyway affects surface waters and/or riparian corridors shall be reviewed by this office and approval received by VTrans prior to construction.
    b. Any construction modifications that deviate from the approved plans which in any way affects surface waters and/or riparian corridors shall be reviewed by this office and approval received by VTrans prior to the construction activity.
2) That the contractor's schedule of accomplishment of water quality related work to be submitted prior to the start of construction, and as required under general specification #105.23(a) shall include site-specific methods of operation. Temporary construction fills, check dams, silt barriers and other erosion control works shall be described and shown on pertinent plans.
3) That the Vermont Agency of Transportation general specification #105.23 addressing erosion and sediment control be carefully adhered to in order to minimize turbidity and other adverse impacts to water quality.
4) That the Vermont Agency of Transportation general specification #105.24 addressing pollution control be carefully followed in order to limit, if not prevent altogether, the discharge of fuel, grease, oil, raw concrete, paint, chemicals, and debris to waters of the State.
5) An on-site pre-construction conference between the contractor, VTrans Resident Engineer and ANR River Management Engineer (RME) shall be held prior to commencement of applicable construction activities. Please contact the RME at (802) 498-4570 or Rachel.Czar@vermont.gov to schedule this conference.
6) Approved in-stream working dates on this project are limited from to July 1st to October 1st (unless otherwise specified by RME). Contractor proposals for any other construction activities in or adjacent to flowing water during the restricted period must be isolated from stream flow and must receive prior approval from the ANR River Management Engineer in consultation with the VT Department of Fish and Wildlife fisheries biologist.

The project is subject to the following Special Conditions:

7) A project specific flow control plan shall be submitted by the contactor to the VTrans Resident Engineer (RE) and ANR RME for review and approval prior to commencement of any in-stream channel work.

8) This project will be allowed to begin May 11th 2026 to construct river access. The project will be allowed to access the river June 2026 to limit river disturbance due to other projects in the area.

All provisions of this approval shall be made a part of the final construction contracts and documents.

Portions of this state-owned or operated transportation project may be located in a municipality that participates in the National Flood Insurance Program (NFIP) and the project involves development activity (i.e. placement of fill, structural improvements, grading, excavating, etc…) within the Special Flood Hazard Area (SFHA) as delineated on the Flood Insurance Rate Map (FIRM) and/or within the ANR River Corridor. Coverage under the Department of Environmental Conservation (DEC) Flood Hazard Area & River Corridor (FHA&RC) General Permit may be required, coordinate a project review with the ANR Regional Floodplain Manager.

Based on information provided in the application for approval under 19 V.S.A. Section 10(12), public notice of which is given by the posting of this permit by the town clerk, it is certified that there is reasonable assurance that the proposed work will be conducted in the manner consistent with applicable conditions of the Federal Pollution Control Act Amendment of 1972, Public Law 92-500.

Recent litigation involving the public trust doctrine raises concern that agency permits for stream alterations, dams or water quality certificates may be challenged for lack of jurisdiction or authority. We want to alert you to the possibility that litigation or legislative action may modify or retroactively affect the agency's decision.

If the project is constructed as described, as shown on the above referenced approved plans and according to the above conditions, there is no reason to expect any violation of the Vermont Water Quality Standards.

Signed this **11th** day of **July, 2025**

Julie S. Moore, Secretary
Agency of Natural Resources

by:
Rachel Czar. River Management Engineer

cc: Project e-file

VERMONT

Vermont Department of Environmental Conservation
Watershed Management Division
1 National Life Drive, Main 2
Montpelier VT 05620-3522
www.watershedmanagement.vt.gov

Agency of Natural Resources

[phone] 802-828-1535
[fax] 802-828-1544

Authorization under the Flood Hazard Area & River Corridor General Permit Reporting Activities - 10 V.S.A. § 754

PERMIT #: DRAFT FP-6-62 - REG
Date: 7/3/2025

Applicant: AOT/ Vtrans
Contact: Sophia A Seman
Phone: 802-498-8796
Email: Sophia.A.Seman@vermont.gov
Project Location: 15 North Main St, Northfield
Flooding Source: Dog River
Project Description: Rt 12 Bridge Replacement BF 0241(58)

Based upon the Findings contained in this authorization, the Secretary has determined that the proposed project complies with the requirements of the 2021 Flood Hazard Area & River Corridor General Permit and the Flood Hazard Area & River Corridor Rule (Environmental Protection Rule, Chapter 29) and is hereby approved subject to the conditions of the 2021 Flood Hazard Area & River Corridor General Permit and this authorization.

I. Findings

The Secretary of Natural Resources has determined that:

(a) The project is located within the special flood hazard area (Zone AE). The project is also located within the river corridor.

(b) This project is exempt from municipal regulation because it is a State-owned and operated institution or facility.

(c) This project authorization includes the bridge replacement and temporary fills. A second unrelated endeavor is anticipated to also use the temporary access point so as to remove the Cross Brothers dam below the bridge. If any fill, in association with the river access remains, VTrans needs to confirm that the subequent project (not VTrans) will assume the responsibility to remove any fill (under a municipal permit through the Town of Northfield).

(d) Based on the information provided by the applicant, the project is an eligible activity and will meet the standards in the above-referenced General Permit, if built as proposed.

II. General Conditions

(a) **Compliance with General Permit and this Authorization.** The permittee shall comply with this authorization and all the terms and conditions of the 2021 Flood Hazard Area & River Corridor General Permit.

(b) **Submission of As-Built Information.** The permittee shall submit as-built documentation prepared by a licensed land surveyor or professional engineer to the Floodplain Manager within 180 days of when the project is complete.

(c) **Access to property.** By conducting any activity under this authorization, the permittee agrees to allow Agency representatives access to the property covered by this authorization, at reasonable times and upon presentation of credentials, for the purpose of ascertaining compliance with the Vermont Flood Hazard Area & River Corridor Rule and the General Permit. This authorization does not grant the permittee the right to enter onto any property not owned by the permittee.

(d) **Authorization for Substantial Changes.** All activity shall be completed and maintained in accordance with the terms and conditions of the General Permit and this authorization. The permittee shall notify the Secretary of any planned changes to the authorized activity. The Secretary may require the permittee to submit additional information on any proposed changes. The Secretary will notify the permittee if, based on the proposed changes to the authorized activity, a revised application for an individual permit must be submitted.

(e) **Remedial measures.** The Secretary maintains continuing jurisdiction over the activity authorized under this authorization and may at any time order remedial measures if it appears the activity is not in compliance with the General Permit or this authorization.

(f) **Compliance with other regulations.** This authorization does not relieve the permittee of the responsibility to comply with any other applicable federal, state, and local laws, regulations, and permits.

(g) **Legal responsibilities for damages.** The Secretary, by issuing this authorization, accepts no legal responsibility for any damage direct or indirect of whatever nature and by whomever suffered arising out of the approved activity.

(h) **Revocation.** The Secretary may, after notice and opportunity for a hearing, revoke or suspend, in whole or in part, this authorization for cause, including:

(1)Violation of the terms or conditions of the General Permit or this authorization;

(2)Obtaining authorization by misrepresentation or failure to fully disclose all relevant facts;

(3) A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized activity.

(i) **Duty to comply; enforcement.** The permittee shall comply with all terms and conditions of the General Permit and this authorization. Any noncompliance constitutes a violation of the Flood Hazard Area & River Corridor Rule and may be cause for an enforcement action and/or revocation and reissuance, modification, or termination of this authorization.

(j) **Transfer of Authorization.** This authorization may be transferred provided that a notice of transfer is submitted to the Secretary no later than five days prior to the transfer and the notice includes the following:

(1) The name, mailing address, and contact information of the present permittee;

(2) The name, mailing address, and contact information of the prospective permittee;

(3) The proposed date of transfer; and

(4) A statement signed by the prospective permittee, stating that the prospective permittee has read and is familiar with the terms and conditions of the permit and the authorization and agrees to comply with the permit and authorization.

(k) **Limitations.** This authorization conveys no vested rights or exclusive privileges. This authorization conveys no title to land nor authorizes any injury to public or private property.

(l) **Appeals.**

(1) **Renewable Energy Project.** If this decision relates to a renewable energy plant for which a certificate of public good is required under 30 V.S.A. § 248, any appeal of this decision must be filed with the Vermont Public Utility Commission pursuant to 10 V.S.A. § 8506. This section does not apply to a facility that is subject to 10 V.S.A. § 1004 (dams before the Federal Energy Regulatory Commission), 10 V.S.A. § 1006 (certification of hydroelectric projects), or 10 V.S.A. Chapter 43 (dams). Any appeal under this section must be filed with the Clerk of the Public Utility Commission within 30 days of the date of this decision; the appellant must file with the Clerk an original and six copies of its appeal. The appellant shall provide notice of the filing of an appeal in accordance with 10 V.S.A. § 8504(c)(2), and shall also serve a copy of the Notice of Appeal on the Vermont Department of Public Service. For further information, see the Rules and General Orders of the Public Utility Commission, available online at www.puc.vermont.gov. The address for the Public Utility Commission is 112 State Street, Montpelier, Vermont, 05620-2701 (Tel. # 802-828-2358).

(2) **All Other Projects.** Pursuant to 10 V.S.A. Chapter 220, any appeal of this decision must be filed with the clerk of the Environmental Division of the Superior Court within 30 days of the date of the decision. The Notice of Appeal must specify the parties taking the appeal and the statutory provision under which each party claims party status; must designate the act or decision appealed from; must name the Environmental Division; and must be signed by the appellant or the appellant's attorney. In addition, the appeal must give the address or location and description of the property, project, or facility with which the appeal is concerned and the name of the applicant or any permit involved in the appeal. The appellant must also serve a copy of the Notice of Appeal in accordance with Rule 5(b)(4)(B) of the Vermont Rules for Environmental Court Proceedings. For further information, see the Vermont Rules for Environmental Court Proceedings, available online at www.vermontjudiciary.org. The address for the Environmental Division is: 32 Cherry St.; 2nd Floor, Suite 303; Burlington, VT 05401. Telephone # 802-951-1740.

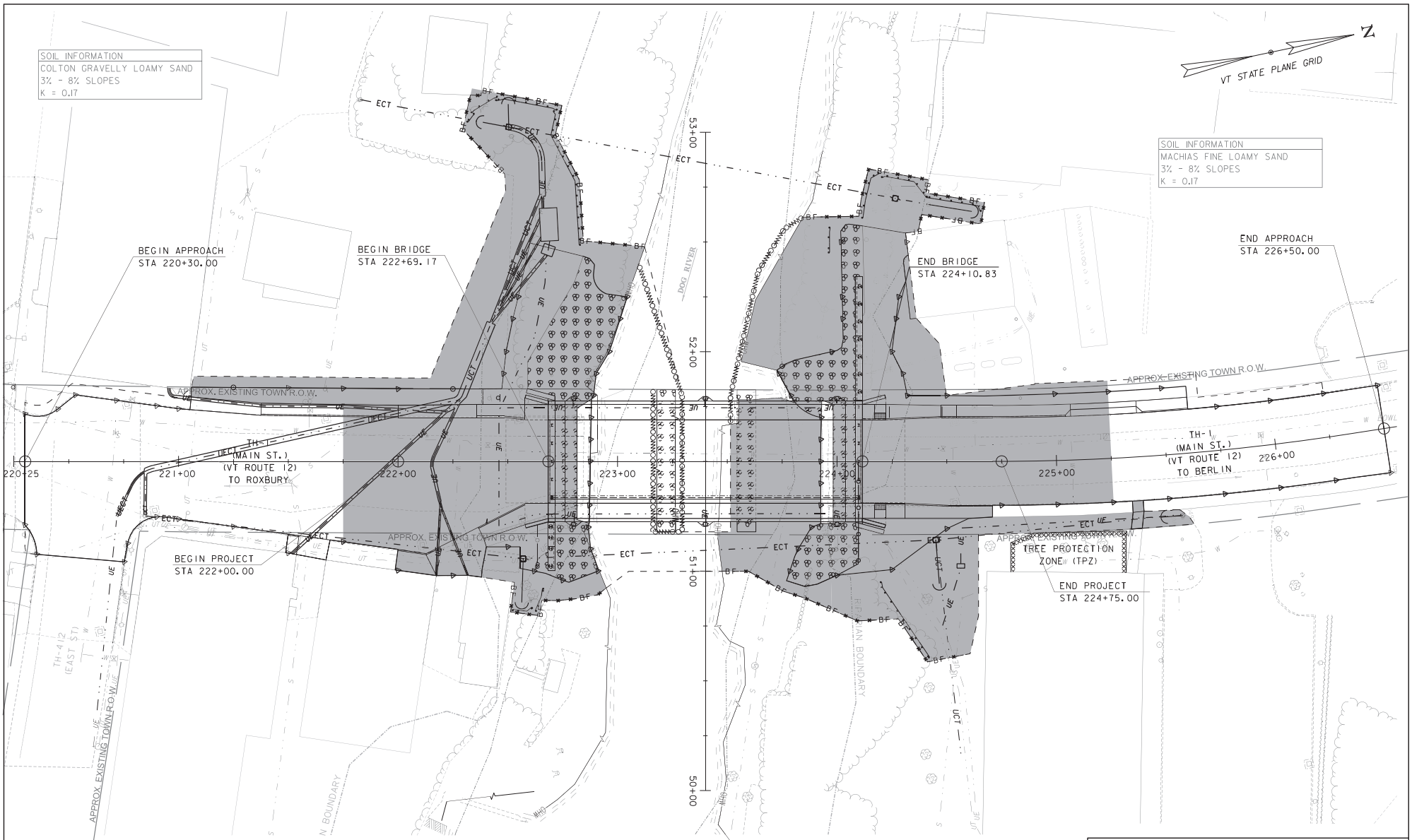
If the development is constructed as described and according to the above conditions, there is no reason to expect an adverse impact on either the river corridor or flood hazard area.

This permit shall be effective on the date of signing and shall be valid for a period of three years.

Julia S. Moore, Secretary
Vermont Agency of Natural Resources

By _____ dated 7/3/2025

Ned Swanberg, Floodplain Manager
Rivers Program
Watershed Management Division



LEGEND

TOTAL= 0.92 ACRES

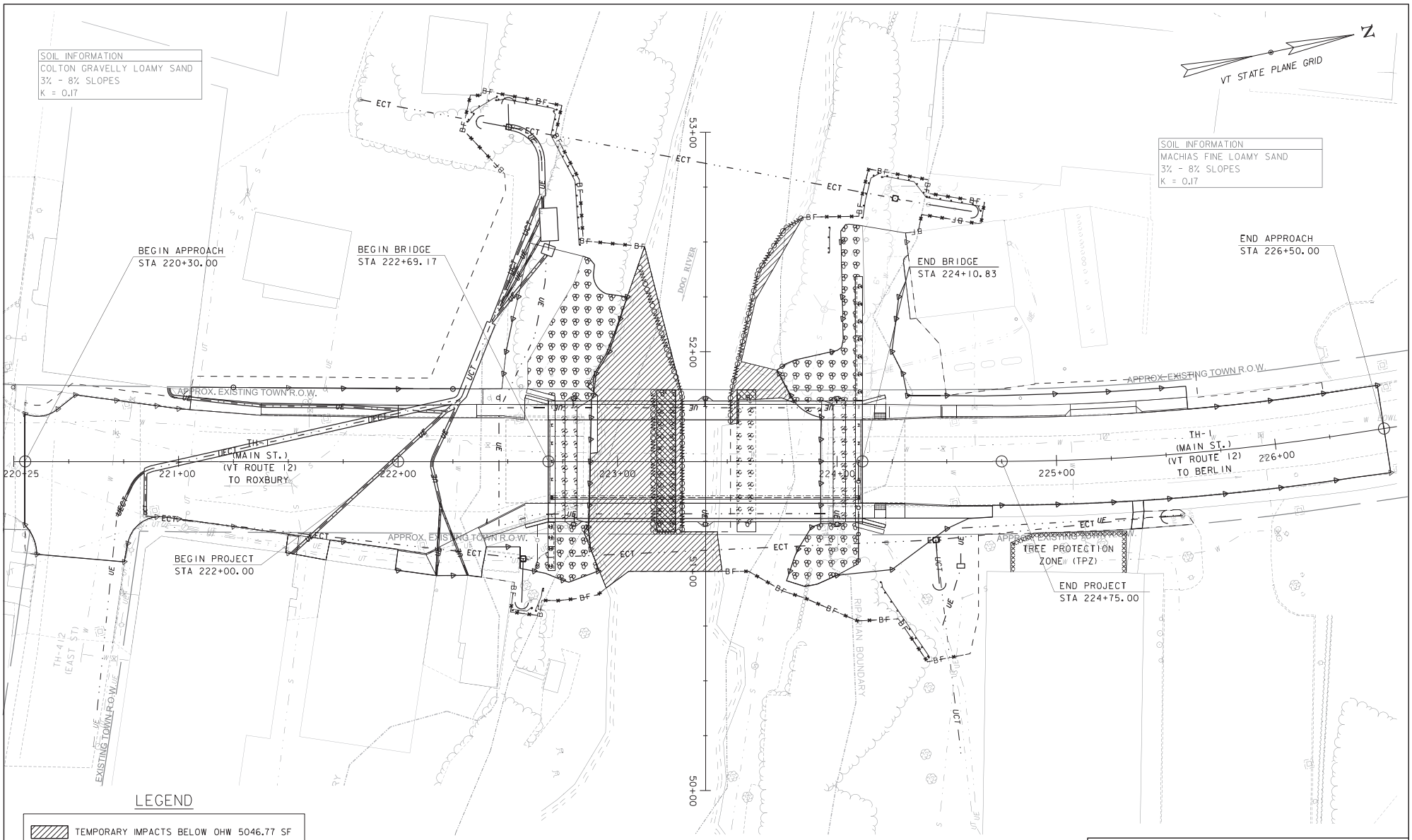
EARTH DISTURBANCE

SCALE 1" = 20'-0"

20 0 20

H&H

PROJECT NAME:	NORTHFIELD
PROJECT NUMBER:	BF 024I(58)
FILE NAME: z19J223layout.dgn	PLOT DATE: 4/29/2025
PROJECT LEADER: KIM SMITH	DRAWN BY: C.JAMISON
DESIGNED BY: S. BROWN	CHECKED BY: K.SMITH
EARTH DISTURBANCE	SHEET 1 OF 3



LEGEND

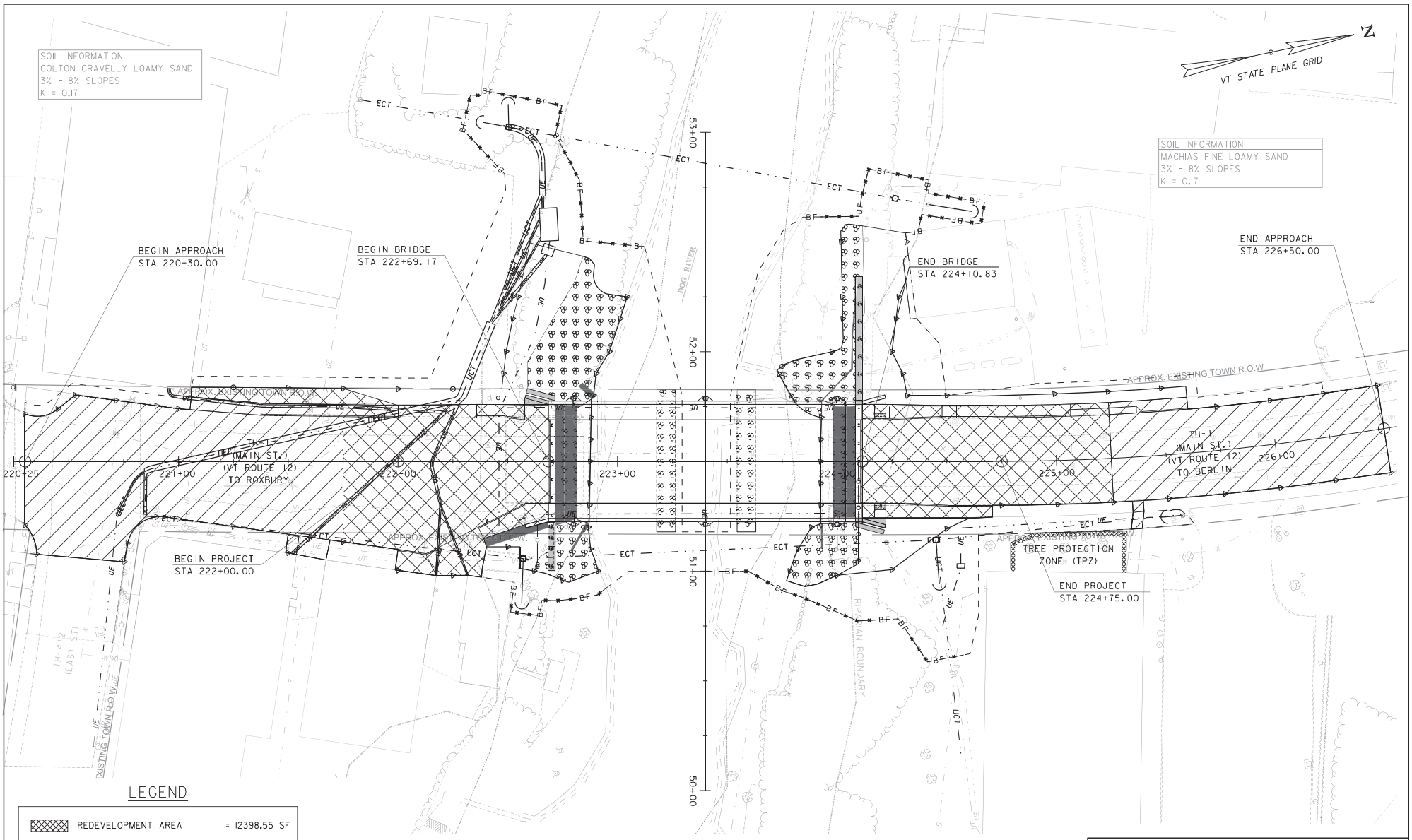
- TEMPORARY IMPACTS BELOW OHW 5046.77 SF
- PERMANENT IMPACTS BELOW OHW = 599.43 SF
- SECONDARY IMPACTS BELOW OHW = 0.00 SF

IMPACTS BELOW OHW

SCALE 1" = 20'-0"
20 0 20

H&H

PROJECT NAME:	NORTHFIELD
PROJECT NUMBER:	BF 024I(58)
FILE NAME: z19J223layout.dgn	PLOT DATE: 4/29/2025
PROJECT LEADER: KIM SMITH	DRAWN BY: C. JAMISON
DESIGNED BY: S. BROWN	CHECKED BY: K. SMITH
IMPACTS BELOW OHW	SHEET 2 OF 3



LEGEND

REDEVELOPMENT AREA	= 12398.55 SF
OTHER AREA	= 14114.83 SF
EXPANSION AREA	= 400.92 SF
RESTORED PERVIOUS AREA	= 1250.00 SF

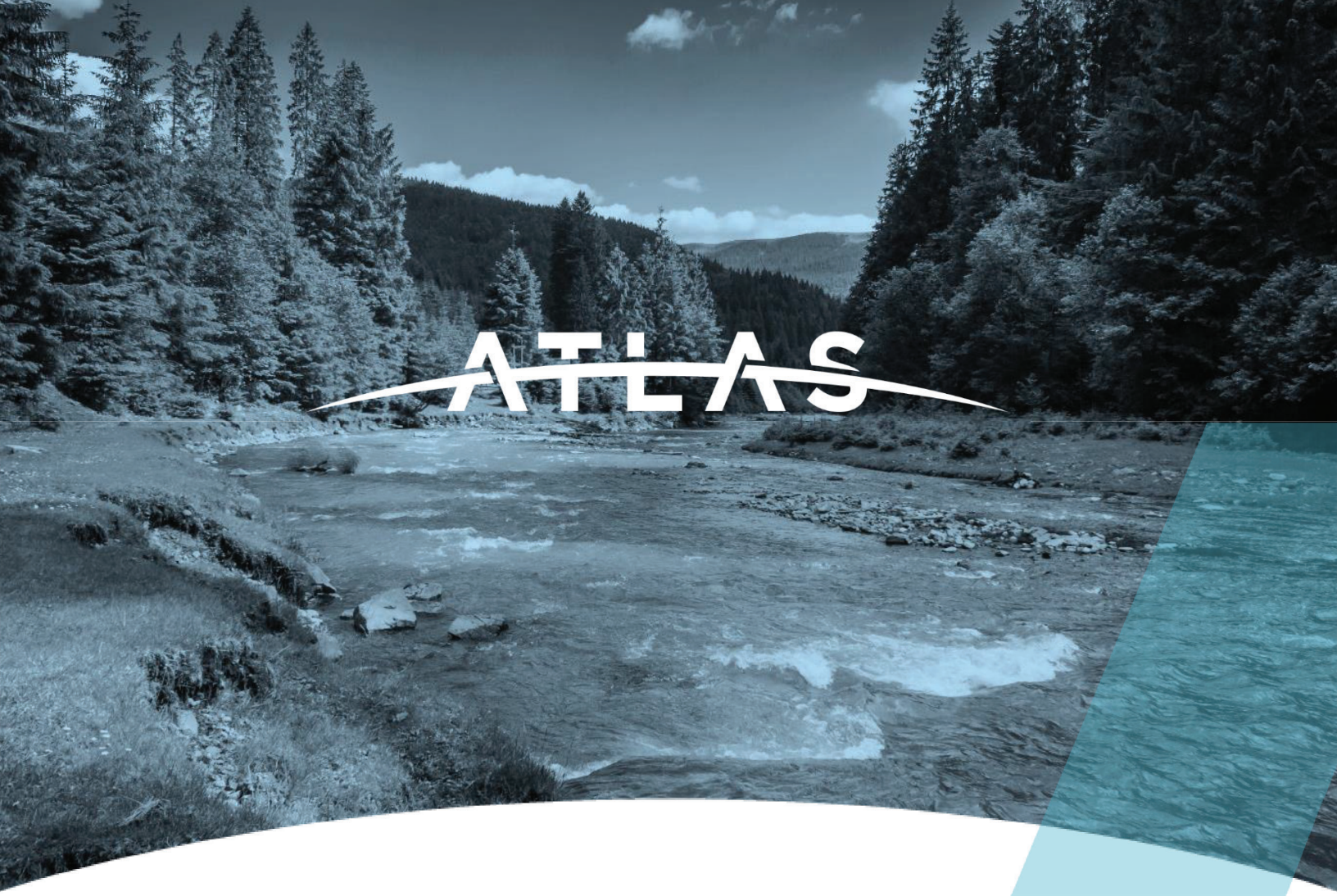
IMPERVIOUS SURFACES

SCALE 1" = 20'-0"

20 0 20

H&H

PROJECT NAME:	NORTHFIELD
PROJECT NUMBER:	BF 024I(58)
FILE NAME:	z19J223layout.dgn
PROJECT LEADER:	KIM SMITH
DESIGNED BY:	S. BROWN
IMPERVIOUS SURFACES	
PLOT DATE:	4/29/2025
DRAWN BY:	C. JAMISON
CHECKED BY:	K. SMITH
SHEET	3 OF 3



SOIL MANAGEMENT PLAN

TOWN OF NORTHFIELD BRIDGE REPLACEMENT PROJECT

Route 12/Main Street
Northfield, Vermont 05663
SMS Site #2021-5027
Atlas Project #280EM01420

PREPARED FOR:

Gary M Laroche, PE
Structures Project Manager
Vermont Agency of Transportation
Barre City Place
Barre, Vermont 05641
Gary.Laroche@vermont.gov

PREPARED BY:

Atlas Technical Consultants LLC
51 Knight Lane
Williston, VT 05495

August 18, 2025

TABLE OF CONTENTS

INTRODUCTION 2
1. BACKGROUND & CONCEPTUAL SITE MODEL 2
2. DESCRIPTION OF PROJECT 3
3. PROJECT TEAM 4
4. GOALS AND OBJECTIVES 4
5. DESCRIPTION OF CONTAMINATION 4
5.1 Investigation Procedures and Results 5
5.2 Development Soils 6
5.3 Petroleum-Contaminated Soils 7
5.4 Uncharacterized Soils 7
5.5 Petroleum-Contaminated Groundwater 7
6. WASTE MATERIAL 8
7. PLAN FOR MANAGING CONTAMINATED SOIL 8
8. EXCAVATION OVERSIGHT & OFFSITE STOCKPILING 9
8.1 Post-Characterization Soil Sampling 11
9. PROJECT SCHEDULE & REPORTING 11
10. UPDATED SET OF MAPS 12
11. SIGNATURES & CERTIFICATION 12

FIGURES

Figure 1 Vicinity Map
Figure 2 Contaminant Distribution Map – Petroleum Contaminated Soils
Figure 3 Decision Units with Petroleum Contaminated Soils
Figure 4 Longitudinal Section Along Centerline of Roadway
Figure 5 Cross Section – Decision Unit A at 222 + 00
Figure 6 Cross Section – Decision Unit A at 222 + 25
Figure 7 Cross Section – Decision Unit C at 224 + 50
Figure 8 Cross Section – Decision Units B & D
Figure 9 Offsite Soil Stockpiling Plan – 2027

APPENDICES

Appendix A Site Investigation Report
Appendix B Draft Notice of Intent for General Permit 3-9016
Appendix C Potentially Contaminated Soil Excavation Volumes
Appendix D Soil Stockpile Form
Appendix E Soil Management Flow Chart

1. INTRODUCTION

Atlas Technical Consultants, LLC (Atlas) presents this soil management plan (SMP) to the Vermont Agency of Transportation (VTrans) to detail proper soil management procedures during planned excavation activities during the Town of Northfield Bridge Replacement Project (Project) located on Route 12/Main Street in Northfield, Vermont (Site) at the intersection with the Dog River (SMS Site #2021-5027). The Project will include four separate activities, including construction activities associated with a Utility Pole installation, Duct Bank installation, and Water Main installation in 2025, and the larger Bridge Replacement in 2027. This SMP, which is formulated in accordance with 35-804(b) of the Vermont Department of Environmental Conservation (DEC) *Investigation and Remediation of Contaminated Properties Rule* (I-Rule, February 2024), is required due to the discovery of subsurface contamination during prior site investigations. Refer to **Figure 1** for a Vicinity Map and **Figure 2** for a Site Plan illustrating pertinent Site features.

2. BACKGROUND & CONCEPTUAL SITE MODEL

The Site includes a Town owned bridge (Bridge 60) and roadway approaches that require replacement due to existing deficiencies in deck, superstructure, and substructures. Construction activities to facilitate the rehabilitation will require the excavation and management of contaminated soils and potentially dewatering and discharge of contaminated groundwater. In 2021, Atlas completed a Site Investigation (SI) under subcontract with design engineer Hardesty & Hanover (H&H) which included the advancement of soil borings and installation of monitoring wells and sampling of soil and groundwater in tandem with geotechnical explorations. The investigation identified the presence of contaminants of concern (COC) above applicable standards, including polycyclic aromatic hydrocarbons (PAHs) and lead in shallow soils, petroleum contaminated soils (PCS) in deeper soils straddling the water table, and naphthalene in groundwater. The PAH exceedances are likely related to urban fills and/or atmospheric deposition of incompletely combusted material as the Site is within an urban soils background area (USBA) according to the Agency of Natural Resources (ANR) Natural Resources Atlas (NRA). The PCS and naphthalene exceedances are likely related to offsite impacts from two active hazardous sites to the northwest (Northfield Gulf Station, #2011-4199) and to the southwest (Merchants Bank, #96-2020), both which have documented petroleum releases from underground storage tanks (USTs).

According to NRA, surficial soils are mapped as postglacial fluvial sand and gravel deposits. Soil logging during the SI indicated that soils generally consisted of sand and gravel fill materials with varying amounts of silt, bricks, wood, and other debris over native silty fine sands atop bedrock, which was generally encountered at 20-35 feet below ground surface (fbgs). Groundwater was generally encountered at 18-20 fbgs. Bedrock is mapped as phyllite and metasiltstone of the Cram Hill Formation of middle to early Ordovician age and includes dark gray to grayish-green quartz-chlorite-biotite-muscovite, phyllite containing beds of dark-gray metasiltstone, quartzite, dark-bluish-gray vitreous quartzite, sericite phyllite (felsic tuffs), cobble to boulder conglomerate, and greenstone.

Sensitive receptors at the Site include groundwater, surface water, and underground utilities. Exposure to contaminated groundwater via the ingestion pathway is low as the Site and surrounding area are served by municipal potable water. Additionally, according to NRA, the Site is not located within a surface water or groundwater Source Protection Area (SPA). However, the nearest private well is located approximately 360 feet to the northeast (Well #51) which is a

bedrock well that is 281 feet deep with 21 feet of casing, six feet of which is keyed into bedrock which was encountered at 15 fbgs. PAHs identified at the Site likely present a low risk to this supply well since PAHs are generally hydrophobic and were identified in shallow soils well above the bedrock interface; however, testing of this well would be needed to verify. Petroleum compounds identified at the Site are from offsite impacts from adjacent existing hazardous sites, so any risk to the supply well from these source(s) should be managed under those listings. The risk of impact to surface water (Dog River) will be managed by the Project in accordance with the Erosion Prevention, Sedimentation, and Control (EPSC) Plan provided by the civil engineer.

Exposure risks to contaminated soils that may remain following construction are expected to be low during operational conditions following construction as the Site will be covered with impervious surfaces. However, the risk is higher during construction as workers may come in contact with these materials. These risks will be addressed under separate cover via proper adherence to the site-specific health and safety plan (HASP).

3. DESCRIPTION OF PROJECT

The Project will include four separate activities as described below:

1. Utility Pole: the installation of a new utility pole, guy wire, and anchor; for the installation of the pole the utility contractor will need to hand excavate at the surface, to locate an existing underground line, and then they will auger a hole into the ground approximately 10 to 12 feet deep to install the new pole in; additional excavation near the new pole will likely be needed to transfer the existing underground line to this pole; the contractor will also screw in a new anchor and install a guy wire from the new pole to the new anchor.

2. Duct Bank: the relocation of existing aerial three phase power, aerial power services, and aerial communication lines into an underground concrete encased utility duct bank; the duct bank will begin at the VT-12 / East Street intersection and run in a northwesterly direction under VT-12 to the northeast corner of the parking lot on the Fernandez property; from this location the duct bank will run in a westerly direction and end at a new utility pole on the west side of the Fernandez property; there will also be a utility vault (K30.6) and a pad mounted transformer installed on the north side of the Fernandez parking lot; service lines will run from the vault and pad mounted transformed back east under VT-12 and feed power to the buildings on the east side of VT-12.

3. Water Main: the relocation of the existing 10” watermain that is currently attached to the bottom of the bridge; a new 12” watermain will be installed (and attached to the new bridge) and it will tie into existing water valves located on the north and south side of the existing bridge; the relocation of an existing 6” water service line that feeds the building located on the D&D Kenyan Real Estate LLC property.

4. Bridge Replacement: the replacement of a Town owned bridge (Bridge 60) and roadway approaches due to existing deficiencies in deck, superstructure, and substructures.

It should be noted there will also be a river dredging and stabilization project for the Cross Brothers Dam downstream of the bridge. These activities are not covered under this SMP.

4. PROJECT TEAM

The Project team will include the following:

Role	Entity	Contact Name	Contact Title	Email
Project Owner	Town of Northfield	Jeff Schultz	Town Manager	jschulz@northfield.vt.us
Design and Management	VTrans	Gary Laroche	Project Manager	gary.laroche@vermont.gov
		Mike Keedy	Project Contamination Manager	mike.keedy@vermont.gov
		Alan Legacy	Utility Coordinator	alan.legacy@vermont.gov
Design Consultant	Hardesty & Hanover	Kim Smith	Project Manager	ksmith@hardestyhanover.com
General Contractor (GC)	J. Hutchins, Inc.	John Christian	Project Manager	john@jhutchinsinc.com
Agency Environmental Professional (EP)	Atlas Technical Consultants	Erik Urch	Project Manager	erik.urch@oneatlas.com
Environmental Regulator	VTDEC	Monica Ladago	Hazardous Site Manager	monica.ladago@vermont.gov

5. GOALS AND OBJECTIVES

The objective of this SMP is to ensure contaminated soils are properly managed, treated, and/or disposed of by the GC under the direction of the EP during construction in accordance with I-Rule requirements. This SMP is also designed to ensure that all workers performing earthwork and the public that may be in proximity to the work are protected from exposure to contaminants. The primary exposure pathway for workers and the public would be through dermal contact and/or inhalation of contaminated soil particles, most likely from fugitive dust generated during construction activities such as excavations, truck loading, etc. As such, engineering controls may be required to mitigate these potential exposure risks details of which are provided later.

6. DESCRIPTION OF CONTAMINATION

In September/October 2021, Atlas oversaw a site investigation to pre-characterize soil and groundwater conditions at a portion of the Site. This work was completed during initial concept planning which represented a limited area (~10,500 SF) within the overall Project area (~58,000 SF) in areas that included the final bridge approach and abutment areas on both sides of the river. The work was documented in Atlas' report entitled *Subsurface Investigation Report* dated November 1, 2021, procedures and results of which are summarized in the next sections. These data were supplemented with existing offsite data performed by others at the Northfield Gulf Station (#2011-4199) to the northwest (Wesco Realty, LLC) and Merchants Bank (#96-2020) to the southwest (Fernandez Living Trust) to formulate the best available representation of the existing contaminant conditions at the Site. Refer to **Appendix A** for the site investigation report. Refer to **Figures 2 and 3** for illustrations of existing contaminant conditions and proposed management strategies. Refer to **Figures 4 to 8** for cross sections.

6.1 Investigation Procedures and Results

From September 20-28, 2021, Atlas oversaw the advancement of 10 soil borings in tandem with a geotechnical evaluation conducted by Hardesty & Hanover (H&H), including H-101, H-102, H-103, H-104, B-101, B-102, B-103, B-104, B-105, and B-106. The H-series borings included locations sited for geotechnical evaluation and soil characterization while the B-series borings included locations sited for soil characterization only. The boring locations were selected by H&H and were advanced utilizing solid stem augers and mud rotary drilling methodologies with split spoon sampling by New England Boring Contractors (NEBC) of Derry, NH. During advancement, subsurface soils were logged and field-screened for total organic vapors (TOVs) utilizing a photoionization detector (PID) equipped with a 10.6 eV lamp. Any visual or olfactory indications of contamination (staining, odors) were also noted. Bedrock coring was also conducted in some of the borings which is outside the scope of this investigation. A summary of screening results is provided below:

- Soils generally consisted of sand and gravel fill materials with varying amounts of silt, bricks, wood, and other debris over native silty fine sands over bedrock.

- All PID readings were generally background (up to 0.0 parts per million volume or ppmv) with the following exceptions: B-102 had up to 4.2 ppmv at 10-12 feet below ground surface (fbgs), B-103 had up to 3.2 ppmv at 7-8 fbgs, B-105 had up to 0.6 ppmv at 22-24 fbgs, H-102 had up to 0.8 ppmv at 20-22 fbgs, and H-103 had up to 4.9 ppmv at 14 fbgs.

- No odors or staining was observed in any of the soils except for petroleum odors observed in B-102 from 6 to 11 fbgs.

One soil sample was collected from each boring generally between 0 and 4 fbgs to evaluate shallow soil conditions (A-series samples). The actual profile was dependent on soil recovery from the split spoons which was often limited due to coarse grained fill materials. A second soil sample was collected from each boring at a deeper depth interval (B-series samples) that exhibited the highest PID response. In cases where all PID readings were background, the deeper sample was collected at the soil/groundwater interface or the bottom of the boring, whichever came first. The shallow samples were analyzed for PAHs by EPA Method 8270 and 8 RCRA Metals by EPA Methods 6010/7471 and the deeper samples were analyzed for VOCs by EPA Method 8260, PAHs by EPA Method 8270, PCBs by EPA Method 8082 w/soxhlet extraction, and 8 RCRA Metals by EPA Methods 6010/7471. Two duplicate samples were collected from one shallow sample (H-104-A) and one deeper sample (H-104-B) for quality assurance/quality control (QA/QC) purposes. The results were compared to Vermont Soil Standards for Resident (VSS-R) and Non-Resident (VSS-NR) Uses and Urban Background (UB, where appropriate) for PAHs, metals, PCBs, and VOCs, respectively. A summary of the results is provided below:

- PAHs[1] were detected in all samples except H-102-B, B-103-B, B-104-A, B-104-B, B-105-B and B-106-B; all samples with detectable concentrations were below the applicable UB standard (0.58 mg/kg) with the following exceptions: H-101-A (0.5-1.5') had a concentration of 1.731 mg/kg exceeding VSS-NR (1.54 mg/kg), H-104-A (0.5-4') had a concentration of 2.076 mg/kg exceeding VSS-NR (1.54 mg/kg), B-102-B (8-11') had a concentration of 1.093 mg/kg exceeding UB (0.58 mg/kg), B-103-A (1-3') had a

[1] Normalized to benzo(a)pyrene (BaP) using toxicity equivalent quotient (TEQ) in accordance with I-Rule.

concentration of 0.765 µg/kg exceeding UB (0.58 mg/kg), and B-105-A (0.5-2') had a concentration of 4.262 mg/kg exceeding VSS-NR (1.54 mg/kg).

- Metals were detected above method detection limits (MDLs) in all soil samples; at the time, no concentrations were detected above VSS-R; however, due to rule change in 2024, B-102-B, which had a concentration of 319 mg/kg, exceeded the new lead standard (UB) of 111 mg/kg.

- No PCBs were detected above MDLs in any of the soil samples analyzed for PCBs.

- Several VOCs were detected in all samples analyzed for VOCs; however, no detections exceeded VSS-R.

On September 24 and 28, 2021, soil borings B-101 and B-104 were completed as groundwater monitoring wells B-101MW and B-104MW which includes one well on each side of the river. The wells were installed atop the bedrock surface and constructed with 2-inch polyvinyl chloride (PVC) materials with 10-foot long 0.010-inch factory slotted screen sections set to span the water table and surrounded by sand pack. A two-foot-thick bentonite seal was placed above the sandpack and the remaining annulus was backfilled with a combination of drilling spoils and sand. The wells were completed flush to grade with protective roadboxes and developed until clear with a peristaltic pump. Development water was deposited on the ground adjacent to the well since non-aqueous phase liquid (NAPL) was not observed.

On October 5, 2021, Atlas sampled the monitoring wells for groundwater quality in accordance with USEPA low flow sampling methodology. The samples were stored on ice and transported to SGS under chain of custody for analyses of VOCs by EPA Method 8260 and Total 8-RCRA Metals by EPA Methods 6010/7471. A trip blank and duplicate (B-104MW) were also collected for QA/QC purposes. Purge water was deposited on the ground surface adjacent to each well since no NAPL was observed in any purge water. The analytical data was compared to Vermont Groundwater Enforcement Standards (VGES); a summary of the results is provided below:

- No VOCs were detected above method detection limits (MDLs) in the trip blank.

- Relative percent differences (RPDs) ranged from 0 to 16% in the duplicate sample (B-104MW) which is within the EPA-recommended RPD of 30% for aqueous samples.

- No VOCs or metals were detected above method detection limits (MDLs) in MW-101MW.

- Several VOCs and arsenic were detected above MDLs in B-104MW; however, only naphthalene (8.7 µg/l) exceeded VGES (0.5 µg/l)[2].

6.2 Development Soils

As indicated above, four shallow soil samples and one deeper soil sample exceeded UB for PAHs and no other soil analytes exceeded applicable standards. These soils are defined as “development soils” in I-Rule. The exceedances were consistent with the CSM in that elevated PAHs in shallow soils are likely from urban fills and/or historic atmospheric deposition except for

[2] The MDL for naphthalene in B-101MW (2.5 µg/l) also exceeded VGES, which is considered an exceedance in accordance with I-Rule.

B-102-B, which was detected in deeper soils. Coupling the data with field-screening results, PAHs in B-102-B are more likely related to PCS. As referenced above, these data represent approximately 20% of the overall Project area and therefore the remaining 80% of the Project area is uncharacterized. Although some locations within the 20% investigation area were below UB for PAHs, no substantive patterns could be discerned in the limited dataset that would result in an appropriate delineation of the PAH impacts for soil management purposes. Therefore, this SMP assumes all shallow soils within the Project Area are contaminated with PAHs from 0-4 fbgs which is a reasonable and representative profile based on available sampling results and the CSM. As such, any excavations within this profile require proper management during construction which is outlined in Section 7.

6.3 Petroleum-Contaminated Soils

Although no soil samples exceeded VSS-R for target VOCs, field-screening from soil borings at the Site outlined above and at the abutting offsite hazardous sites, including the Northfield Gulf Station (#2011-4199) to the northwest (Wesco Realty, LLC) and Merchants Bank (#96-2020) to the southwest (Fernandez Living Trust), indicate the presence of residual petroleum contamination from these offsite releases within the Project area. This includes PID readings that exceed the action limit for thinspreading in accordance with I-Rule (1 ppmv), which is an appropriate guidance level in lieu of a soil standard for PID readings, and/or staining, and/or petroleum odors indicative of PCS. These data were utilized to generate a baseline understanding of the horizontal and vertical distribution of PCS within and adjacent to the Project area. Available data indicates that PCS is generally encountered at 14-20 fbgs at Fernandez Living Trust, at 4-12 fbgs within the Town of Northfield ROW south of the bridge, at 13-16 fbgs within the ROW to the north of the bridge, and at 15-20 fbgs at Wesco Realty, LLC. As such, any excavations within this profile require proper management during construction which is outlined in Section 7.

6.4 Uncharacterized Soils

Any remaining soil profiles outside the PAH and PCS profiles outlined above are generally uncharacterized. However, the Project impact to these areas is limited and generally include deep excavations to replace the abutments. Additionally, field-screening results and the CSM, including common fate and transport properties of the COCs, provide no evidence of impact to these soils in the areas represented by the prior investigations. However, as a conservative measure, any excavations within this profile will also require proper management during construction which is outlined in Section 7.

6.5 Petroleum-Contaminated Groundwater

The groundwater sampling results during the site investigation indicated a slight impact to groundwater at the Site, which appears to be related to the offsite Northfield Gulf Station (Site #2011-4199) or Wesco Realty, LLC. Any construction dewatering in this area may require treatment prior to discharge in accordance with permitting requirements. At this time, dewatering is not anticipated to support the 2025 Project activities outlined in Section 3. If it turns out that dewatering is necessary, the GC can mobilize an appropriately sized fractionation tank to containerize the discharge to allow construction to continue. The EP will then characterize the waste for appropriate profiling and disposal. A draft permit application (Notice of Intent) under General Permit #3-9016 is provided in **Appendix B** and can be initiated in the event longer term dewatering and higher discharge volumes are required which is likely for the 2027 Project activities.

In summer 2025, the EP on behalf of VTrans will perform another groundwater sampling event utilizing existing wells B-101MW and B-104MW to update our understanding of groundwater level and quality in preparation for the 2027 activities. The wells will be gauged for depth to water and total depth with a water level indicator and sampled in accordance with low flow procedures for analyses of VOCs and metals which is consistent with the previous investigation. The laboratory results and updated data tables will be forwarded to VTrans and VTDEC upon receipt of laboratory report. The wells will be decommissioned as part of the 2027 bridge replacement project whereas a project plan note detailing the monitoring closure requirements and associated pay items for completing this work will be provided to the Contractor. The Contractor will be informed of any deviation from the requirement for groundwater treatment pending the 2025 sampling results.

7. WASTE MATERIAL

At the time of the site investigation outlined above and prior to completion of the Project design, the project team indicated that the total proposed excavation volume was estimated at 6,600 cubic yards (CY) and that 2/3 of this volume would likely have been repurposed as backfill for the Project (4,400 CY). This left a balance of 2,200 CY that may have been required for offsite disposal. As disposal facilities typically require one sample per 200 CY for representative waste characterization sampling, it was estimated that 11 soil samples would have been required for full waste characterization for facility acceptance. As such, during the site investigation, Atlas collected two composite samples from one of the borings (H-104-C1 and H-104-C2) and one composite sample from the remaining nine borings (HW-101-C, H-102-C, H-103-C, B-101-C, B-103-C, B-102-C, B-104-C, B-105-C, and B-106-C for a total of 11 composite soil samples to meet the waste characterization sampling requirement for facility acceptance. The entire boring profile was composited for the waste characterization sample analyses. The samples were stored on ice and submitted to SGS under chain of custody.

The composite sampling results (C-series samples) are provided in **Appendix A** (SGS Report #JD32315, Sections 4.3, 4.6, 4.7, 4.12, 4.15, 4.18, 4.21, 4.24, and 4.27) and can be utilized by the GC for preliminary waste profiling of contaminated soils required for offsite facility acceptance. Additional samples may be required based on the final disposal volume (see Section 7). The EP can support additional sampling and review waste profiles as needed which is discussed in Section 8.1.

8. PLAN FOR MANAGING CONTAMINATED SOIL

As outlined in Section 5, all soils within the Project area require proper management in accordance with I-Rule during construction. As such, the Project area was divided into several decision units (DUs) to allow a framework for ex-situ characterization of soils during construction and to limit the offsite disposal of soils to the extent practicable. These include four DUs to address development soils and uncharacterized soils (DU-A, DU-B, DU-C, and DU-D) and three DUs to address PCS (DU-P1, DU-P2, and DU-P3). Refer to details below for soil management details required during construction:

1. Development Soils: The GC shall segregate any excavated soils within the 0-4 ft profile that cannot be returned to the ground into four separate piles from DU-A, DU-B, DU-C, and DU-D at the offsite soil stockpiling area (DU-A-DS, DU-B-DS, DU-C-DS, and DU-D-DS); under no circumstances shall soils be co-mingled; the EP shall log and PID screen soils during excavations and collect composite samples for ex-situ waste characterization of each unit at the offsite staging area.

2. Petroleum Contaminated Soils: The GC shall segregate any excavated soils of PCS into three separate piles from DU-P1, DP-P2, and DU-P3 at the offsite soil stockpiling area; the approximate lateral limits and profiles, subject to change based on screening results, are illustrated based on best available data; under no circumstances shall the soils be co-mingled; the EP shall log and PID screen soils during excavations and collect composite samples for ex-situ waste characterization of each unit at the offsite staging area; all DU-P1 soils must be reused onsite and capped with appropriate barrier, details of which are discussed at the end of this section.

3. Uncharacterized Soils: The GC shall segregate any excavated soils not within #1 and 2 into separate piles from DU-A, DU-B, DU-C, and DU-D at the offsite staging area (DU-A-US, DU-B-US, DU-C-US, and DU-D-US); under no circumstances shall soils be co-mingled; the EP shall log and PID screen soils during excavations and collect composite samples for ex-situ waste characterization of each unit at the offsite staging area.

The GC and their subcontractors performing earthwork will have OSHA 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) training in accordance with 29 CFR 1910.120, and the GC will be required to work under a *Site-Specific Health and Safety Plan*. Asphalt and other construction debris generated during the construction project will be managed separately as construction and demolition (C&D) waste. C&D waste will not be mixed with PAH-contaminated soils designated for off-site disposal in a landfill. Access to the construction site will be controlled by temporary construction fencing with signage. The construction site will be secured at the end of each day.

Excess soils generated during construction that cannot be re-used as fill material on the Site will be temporarily stockpiled at the DEC-approved location (see Section 8). The stockpiles will be sampled in accordance with the methodology outlined in Section 8 and if testing results indicate they are contaminated (exceed applicable standards), they will be disposed off-Site at Casella Waste Systems at their NEWSVT landfill in Coventry, Vermont or other approved facility following completion of a Special Waste Characterization Profile or other required documentation and facility acceptance. This will be completed under separate cover by the GC. The sample results outlined in Section 6 can be utilized to support the waste profiling process and the EP can collect additional samples as required by the facility as needed from the stockpiles.

Any excess soils that are not PCS and are below UB that cannot be put back in the ground at the Site will be wasted at the offsite storage area. This is a suitable location for this purpose as it is within an USBA.

Any contaminated soils that remain in or are returned to the ground at the Site will be covered with an indicator fabric and/or appropriate material change within the limit of disturbance and at least six inches of clean fill/surfacing materials within impervious areas and 18 inches of clean fill/surfacing materials within non-impervious areas. This will provide an appropriate cap to mitigate the direct contact exposure risk required by I-Rule. No post-excavation confirmatory soil samples are proposed for the excavations.

9. EXCAVATION OVERSIGHT & OFFSITE STOCKPILING

The EP will provide daily oversight during all soil management activities. The EP will take pictures, quantify excavation areas and truck loads, and provide daily work reports. The EP will also field-

screen soils within the PCS areas with a PID. Additional field-screening outside the PCS areas may be required should any evidence of unknown contamination be encountered (odors, staining, etc.). The EP will also ensure proper segregation of soils associated with PCS and DU areas outlined above for offsite stockpiling and collect ex-situ soil samples for post-characterization purposes (see Section 8).

All excavated soils that cannot be returned to the subsurface will be properly segregated under the direction of the EP and loaded into dump trucks for transport to the offsite soil stockpiling area. As outlined in Section 7, this includes up to 11 separate stockpiles for each of the four activities including four for development soils (DU-A-DS, DU-B-DS, DU-C-DS, and DU-D-DS), three for PCS (DU-P1, DP-P2, and DU-P3), and four for uncharacterized soils (DU-A-US, DU-B-US, DU-C-US, and DU-D-US). H&H and VTrans have calculated the estimated volumes, densities, and weights of contaminated soils in each of the DUs that will be excavated during the performance of the four different activities utilizing data from the geotechnical evaluation, which is provided in **Appendix C**. It is anticipated that much of these volumes will be returned the ground to the extent practicable. A summary is provided below:

	2025	2025	2025	2025	2027	
	Town	Vtrans	VTrans	VTrans	VTrans	
Stockpile	**Water Line (CY)**		**Duct Bank (CY)**	**Utility Pole (CY)**	**Bridge Replacement (CY)**	**Total (CY)**
DU-A-DS	163	230	325	2.5	1,065	1,786
DU-B-DS	0	0	255	0	315	570
DU-C-DS	152	245	0	0	900	1,297
DU-D-DS	0	55	0	0	195	250
DU-P1 (B)	0	0	30	0	20	50
DU-P2 (A)	12	40	45	0.8	490	588
DU-P3 (C)	100	110	0	0	160	370
DU-A-US	0	180	205	0.1	450	835
DU-B-US	0	0	120	0	135	255
DU-C-US	0	155	0	0	745	900
DU-D-US	0	60	0	0	65	125
Totals:	**427**	**1075**	**980**	**3.4**	**4,540**	**7,025**

All soils will be stockpiled on minimum 6-mil polyethylene sheeting, completely covered with minimum 6-mil polyethylene sheeting, and surrounded by erosion control barriers such as hay bales to filter stormwater runoff. All stockpiles will be temporary and removed from the offsite location as soon as possible and no stockpiles will remain between December and April. The stockpiling area will be gated and posted with a sign to restrict public access, and stockpiles will be segregated and clearly marked per the decision units. During soil handling activities, the area will be manually misted with water as needed to minimize the creation of airborne soil dust and to prevent inhalation of soil dust by construction workers. Dust control will be determined by visual observation and anticipated weather conditions. Refer to **Figure 9** for the proposed offsite stockpiling location for the 2027 project. The configuration meets setbacks required by I-Rule. Refer to **Appendix D** for a completed soil stockpile form required by VTDEC.

Temporary onsite storage of excavation spoils, if required to facilitate utility and other structure installations, shall remain close to the excavation area to the extent practicable and shall be polyencapsulated if left overnight. The contractor shall also restrict access to piles and any open trenches with metal plates, caution tape, and signage as appropriate.

9.1 Post-Characterization Soil Sampling

Once the generation of all excess soils in the 11 separate stockpiles is complete for each of the activities, the EP will collect ex-situ soil samples for post-characterization purposes. The EP will collect six discrete soil samples for each 200 CY of stockpile which is a reasonable sample density for ex-situ characterization. Any stockpiles that exceed 200 CY will be partitioned utilizing survey tape and signage to ensure sample results represent the segregated volumes. Based on the estimated volumes outlined in Section 8 it is not anticipated that any stockpiles will exceed 400 CY for 2025 activities; therefore, any piles requiring partitioning will be partitioned down the middle of the pile. The samples will be collected via test pit excavation to be performed by the Contractor and/or hand auger by the EP and will be distributed evenly across the footprint and vertical profile of the stockpile. If any soils exhibit visual and/or olfactory evidence of contamination, discrete samples will be targeted in these areas to represent potential "worse case" conditions.

The discrete samples for PCS stockpiles will be combined into a composite sample for waste characterization since it is known that these soils will not be reused onsite or elsewhere as they will be disposed offsite at the landfill or other applicable facility. The composite samples will be stored on ice and transported to a certified environmental laboratory under appropriate chain of custody procedures and analyzed for the full waste characterization analytical suite as required by Casella including RCRA 8 Metals, VOCs, SVOCs, Herbicides, Pesticides, Reactive Sulfide, Reactive Cyanide, PCBs, % Solids (Moisture Content), Free Liquids, Corrosivity, Ignitability (Flash Point), and TPH. The EP will forward the results to the Contractor for waste profiling purposes to allow offsite disposal at the selected facility as required as outlined in Section 6.

The discrete samples for non-PCS stockpiles will also be combined into a composite sample to determine if the soils can be reused onsite or elsewhere. The samples will be submitted as above and analyzed for targeted COCs, including SVOCs and RCRA 8 Metals. Additional sample volume for full waste characterization suite outlined above will be retained and held at the laboratory pending results of the target results. If all target results are below applicable standards, the soils will be evaluated for reuse. If any target results exceed applicable standards, the EP will notify the lab to release the hold on the corresponding waste analytical suite and the soils will be profiled for disposal at Casella or other facility as outlined in Section 7.

Refer to **Appendix E** for a flow chart that provides a summary of soil management decision making including definitions of applicable standards and reuse options based on sampling results. It should be noted that post-characterization sampling is not required for any stockpiled soils that will be returned to the site for reuse as fill assuming said soils will not be used for capping and that an appropriate cap (6”/18”) is installed in accordance with Section 7.

10. PROJECT SCHEDULE & REPORTING

As of this writing, it is Atlas’ understanding that Project activities associated with the Utility Pole, Duct Bank, and Water Main work will be performed in Spring/Summer 2025 and that Project activities associated with the Bridge Replacement will be performed in Summer/Fall 2027. VTrans will notify VTDEC of any potential deviations of this anticipated schedule as required. The EP will

submit two SMP Completion Reports, one within 90 days from the completion of the 2025 site activities and the other within 90 days from the completion of the 2027 site activities. The reports will include a summary of field activities and results, a compilation of daily field reports, sampling results, laboratory data, waste profiles and manifests, and updated site plans as required.

11. UPDATED SET OF MAPS

The final design drawings for the Project are provided in the Contract Documents under separate cover and can be provided by VTrans upon request.

12. SIGNATURES & CERTIFICATION

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

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

Prepared by:

Erik Urch
Senior Project Manager

Joseph J. Hayes, CPG, PG
Vermont Operations Manager

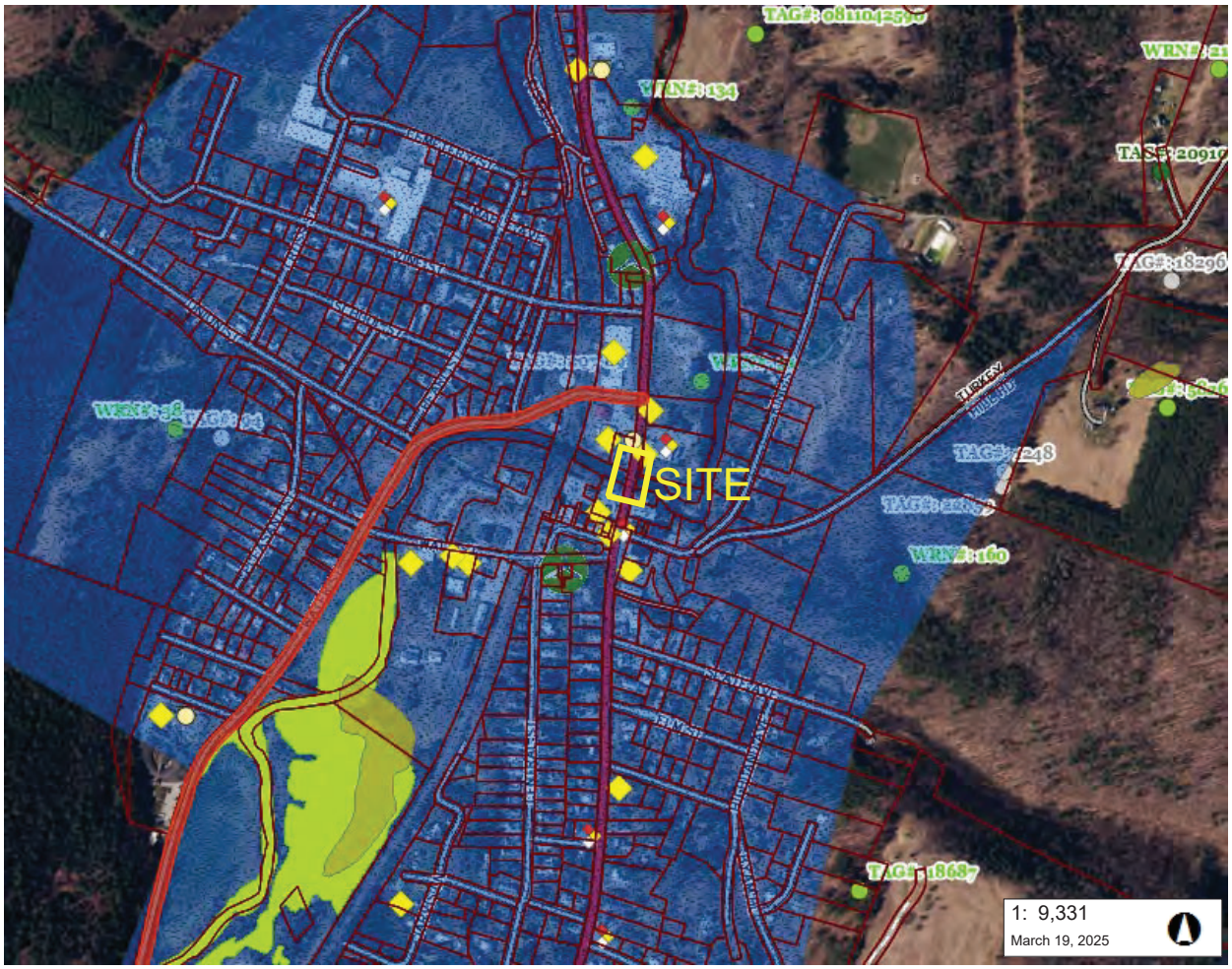
FIGURES

VERMONT

Figure 1 - Vicinity Map

Vermont Agency of Natural Resources

vermont.gov



LEGEND

- Rare Threatened and Endange
  - RTE Animal
  - RTE Plant
- Wetland - VSWI
  - Class 1 Wetland
  - Class 2 Wetland
  - Wetland Buffer
- Wetlands Advisory Layer
- Hazardous Site
- Hazardous Waste Generators
- Brownfields
- Salvage Yard
- Aboveground Storage Tank
- Underground Storage Tank (w
- Dry Cleaner
- Urban Soil Background Areas
- Private Wells
  - GPS Located
  - Screen Digitized
  - E911 Address Matched
  - Welldriller/Clarion
  - Unknown Location Method
  - Incorrectly Located
- Parcels (standardized)
- Roads
  - Interstate
  - US Highway; 1

NOTES

Northfield Bridge Replacement Project
Northfield, VT

474.0 0 237.00 474.0 Meters

WGS_1984_Web_Mercator_Auxiliary_Sphere 1" = 778 Ft. 1cm = 93 Meters

© Vermont Agency of Natural Resources

THIS MAP IS NOT TO BE USED FOR NAVIGATION

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

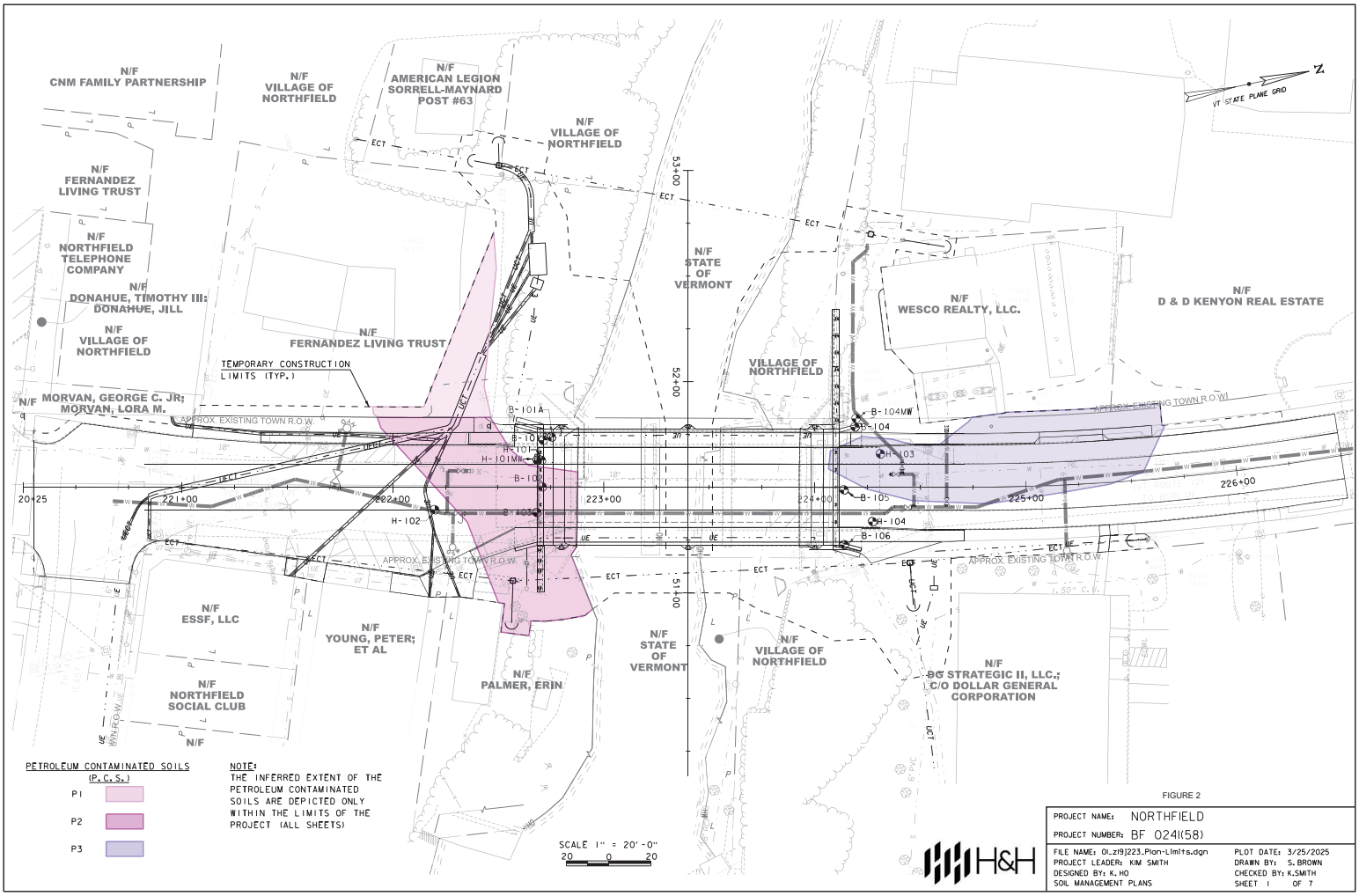


FIGURE 2

PROJECT NAME: NORTHFIELD	
PROJECT NUMBER: BF 024I(58)	
FILE NAME: 01_z19J223_Plan-Limits.dgn	PLOT DATE: 3/25/2025
PROJECT LEADER: KIM SMITH	DRAWN BY: S. BROWN
DESIGNED BY: K. HO	CHECKED BY: K.SMITH
SOIL MANAGEMENT PLANS	SHEET 1 OF 7

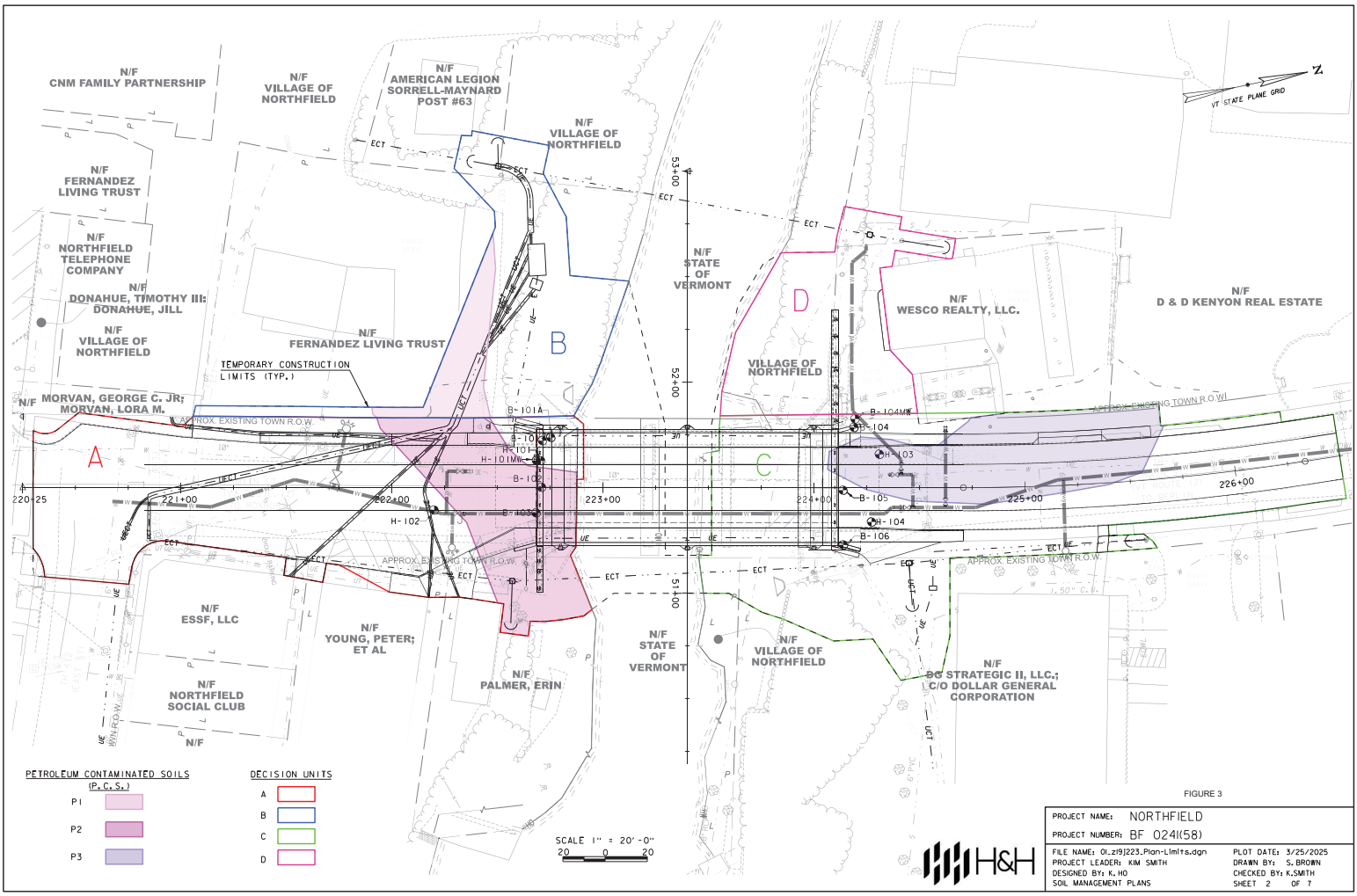
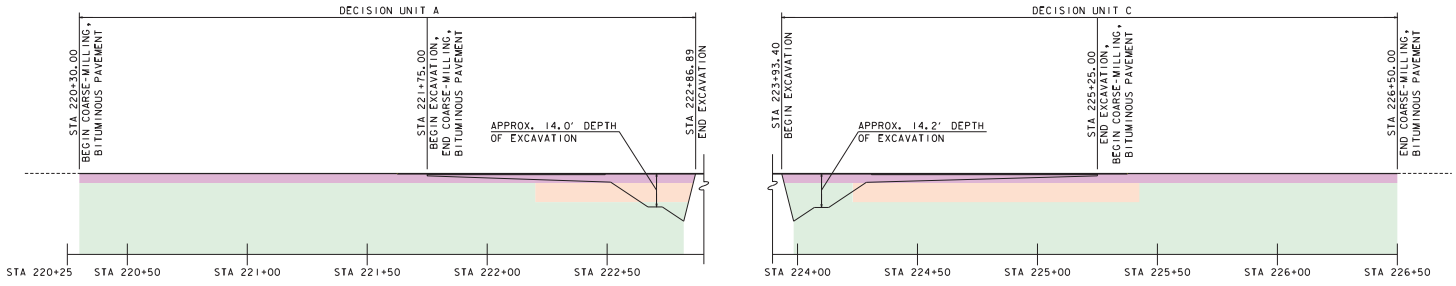


FIGURE 3

PROJECT NAME:	NORTHFIELD
PROJECT NUMBER:	BF 024I(58)
FILE NAME: 01_219223_Plan-Limits.dgn	PLOT DATE: 3/25/2025
PROJECT LEADER: KIM SMITH	DRAWN BY: S. BROWN
DESIGNED BY: K. HO	CHECKED BY: K.SMITH
SOIL MANAGEMENT PLANS	SHEET 2 OF 7

H&H



LONGITUDINAL SECTION ALONG CENTERLINE OF ROADWAY
DEPTHS OF EXCAVATION AND POTENTIALLY CONTAMINATED SOILS

SCALE: 1" = 20'-0"

EXCAVATION DEPTHS

- 0'-4' - DEVELOPMENT SOILS
- SEE NOTE 1 - PETROLEUM CONTAMINATED SOILS (P.C.S.)
- SEE NOTE 2 - UNCHARACTERIZED SOILS

NOTE:

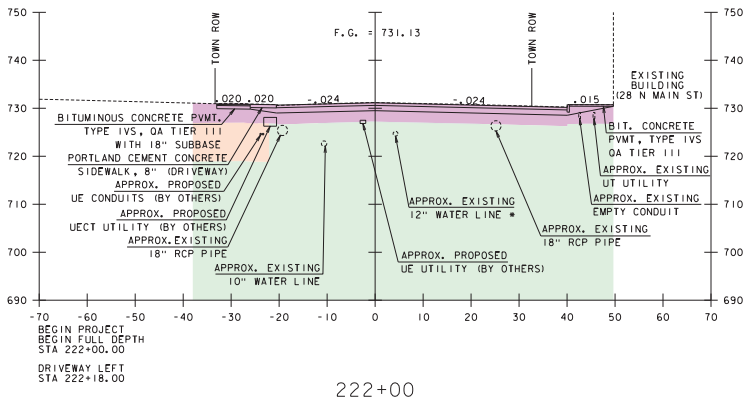
1) IN AREAS CONTAINING PETROLEUM CONTAMINATED SOILS (P.C.S.) THE DEPTHS OF P.C.S. ARE ASSUMED TO EXTEND FROM 4' TO 12' BELOW EXISTING GROUND.

2) IN AREAS CONTAINING P.C.S., UNCHARACTERIZED SOILS ARE ASSUMED TO EXTEND BELOW 12' FROM EXISTING GROUND. IN AREAS NOT CONTAINING P.C.S., UNCHARACTERIZED SOILS AREA ASUMMED TO EXTEND BELOW 4' FROM EXISTING GROUND.

FIGURE 4

H&H

PROJECT NAME: NORTHFIELD	
PROJECT NUMBER: BF 024I(58)	
FILE NAME: z19J223mtd.dgn	PLOT DATE: 3/25/2025
PROJECT LEADER: KIM SMITH	DRAWN BY: S. BROWN
DESIGNED BY: K. HO	CHECKED BY: K. SMITH
SOIL MANAGEMENT PLANS	SHEET 3 OF 7



222+00

CROSS SECTION - DECISION UNIT A
DEPTHS OF EXCAVATION AND POTENTIALLY CONTAMINATED SOILS

SCALE: 1" = 10'-0"

EXCAVATION DEPTHS

- 0'-4' - DEVELOPMENT SOILS
- SEE NOTE 1 - PETROLEUM CONTAMINATED SOILS (P.C.S.)
- SEE NOTE 2 - UNCHARACTERIZED SOILS

NOTE:

1) IN AREAS CONTAINING PETROLEUM CONTAMINATED SOILS (P.C.S.) THE DEPTHS OF P.C.S. ARE ASSUMED TO EXTEND FROM 4' TO 12' BELOW EXISTING GROUND.

2) IN AREAS CONTAINING P.C.S., UNCHARACTERIZED SOILS ARE ASSUMED TO EXTEND BELOW 12' FROM EXISTING GROUND. IN AREAS NOT CONTAINING P.C.S., UNCHARACTERIZED SOILS AREA ASUMMED TO EXTEND BELOW 4' FROM EXISTING GROUND.

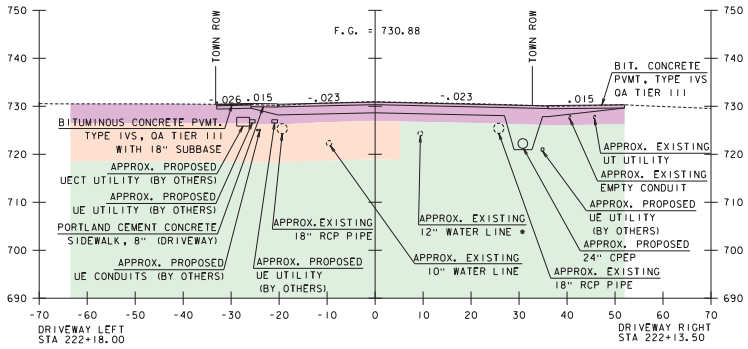
FIGURE 5

H&H

PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 024I(58)

FILE NAME: z19J223mtd.dgn
PROJECT LEADER: KIM SMITH
DESIGNED BY: K.HO
SOIL MANAGEMENT PLANS

PLOT DATE: 3/25/2025
DRAWN BY: S.BROWN
CHECKED BY: K.SMITH
SHEET 4 OF 7



CROSS SECTION - DECISION UNIT A
DEPTHS OF EXCAVATION AND POTENTIALLY CONTAMINATED SOILS

SCALE: 1" = 10'-0"

EXCAVATION DEPTHS

- 0'-4' - DEVELOPMENT SOILS
- SEE NOTE 1 - PETROLEUM CONTAMINATED SOILS (P.C.S.)
- SEE NOTE 2 - UNCHARACTERIZED SOILS

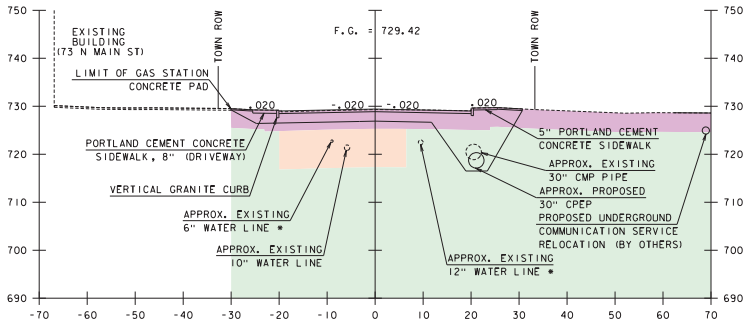
NOTE:

1) IN AREAS CONTAINING PETROLEUM CONTAMINATED SOILS (P.C.S.) THE DEPTHS OF P.C.S. ARE ASSUMED TO EXTEND FROM 4' TO 12' BELOW EXISTING GROUND.

2) IN AREAS CONTAINING P.C.S., UNCHARACTERIZED SOILS ARE ASSUMED TO EXTEND BELOW 12' FROM EXISTING GROUND. IN AREAS NOT CONTAINING P.C.S., UNCHARACTERIZED SOILS AREA ASUMMED TO EXTEND BELOW 4' FROM EXISTING GROUND.

FIGURE 6

PROJECT NAME: NORTHFIELD	
PROJECT NUMBER: BF 024I(58)	
FILE NAME: z19J223mtd.dgn	PLOT DATE: 3/25/2025
PROJECT LEADER: KIM SMITH	DRAWN BY: S. BROWN
DESIGNED BY: K. HO	CHECKED BY: K. SMITH
SOIL MANAGEMENT PLANS	SHEET 5 OF 7



224+50

CROSS SECTION - DECISION UNIT C
DEPTHS OF EXCAVATION AND POTENTIALLY CONTAMINATED SOILS

SCALE: 1" = 10'-0"

EXCAVATION DEPTHS

- 0'-4' - DEVELOPMENT SOILS
- SEE NOTE 1 - PETROLEUM CONTAMINATED SOILS (P.C.S.)
- SEE NOTE 2 - UNCHARACTERIZED SOILS

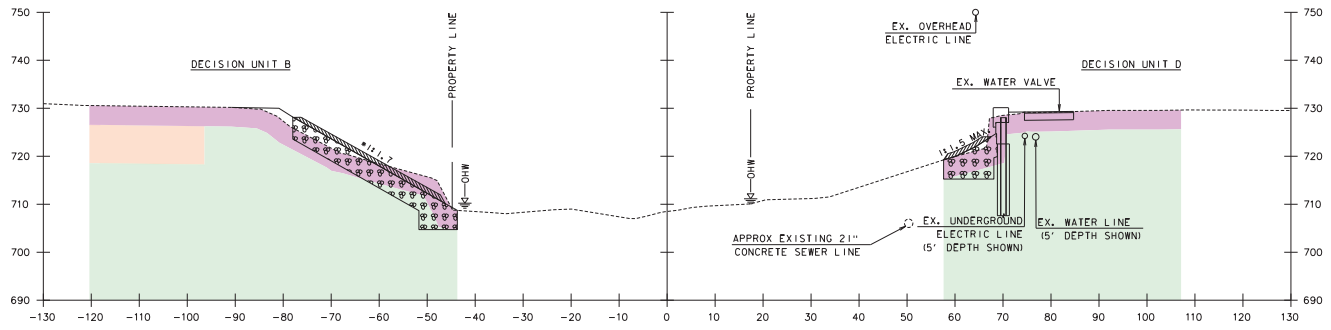
NOTE:

1) IN AREAS CONTAINING PETROLEUM CONTAMINATED SOILS (P.C.S.) THE DEPTHS OF P.C.S. ARE ASSUMED TO EXTEND FROM 4' TO 12' BELOW EXISTING GROUND.

2) IN AREAS CONTAINING P.C.S., UNCHARACTERIZED SOILS ARE ASSUMED TO EXTEND BELOW 12' FROM EXISTING GROUND. IN AREAS NOT CONTAINING P.C.S., UNCHARACTERIZED SOILS AREA ASUMMED TO EXTEND BELOW 4' FROM EXISTING GROUND.

FIGURE 7

PROJECT NAME: NORTHFIELD	
PROJECT NUMBER: BF 024I(58)	
FILE NAME: z19J223mtd.dgn	PLOT DATE: 3/25/2025
PROJECT LEADER: KIM SMITH	DRAWN BY: S. BROWN
DESIGNED BY: K. HO	CHECKED BY: K.SMITH
SOIL MANAGEMENT PLANS	SHEET 6 OF 7



52+00

CROSS SECTION - DECISION UNITS B & D
DEPTHS OF EXCAVATION AND POTENTIALLY CONTAMINATED SOILS

SCALE: 1" = 10'-0"

EXCAVATION DEPTHS

- 0'-4' - DEVELOPMENT SOILS
- SEE NOTE 1 - PETROLEUM CONTAMINATED SOILS (P.C.S.)
- SEE NOTE 2 - UNCHARACTERIZED SOILS

NOTE:

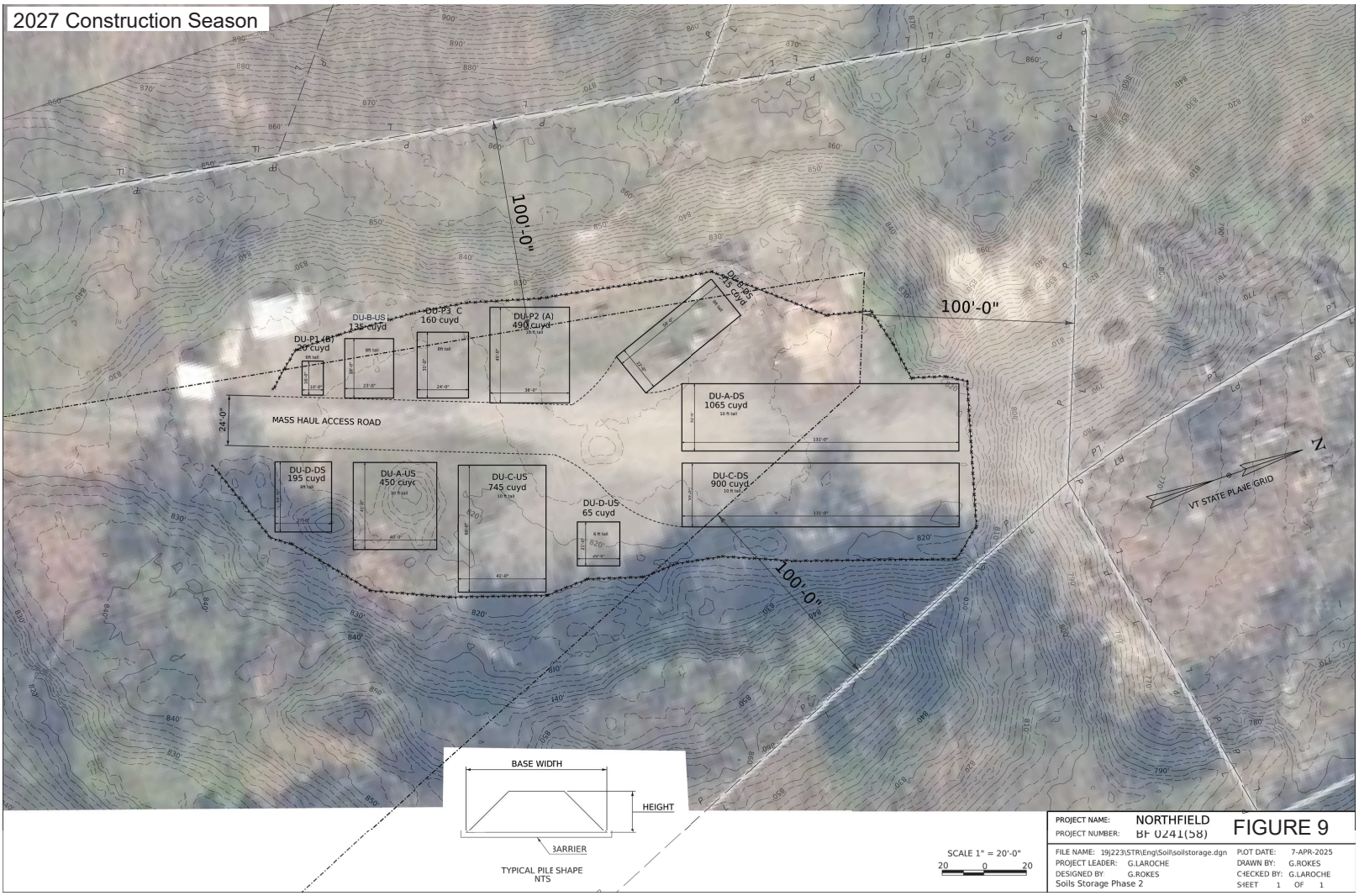
1) IN AREAS CONTAINING PETROLEUM CONTAMINATED SOILS (P.C.S.) THE DEPTHS OF P.C.S. ARE ASSUMED TO EXTEND FROM 4' TO 12' BELOW EXISTING GROUND.

2) IN AREAS CONTAINING P.C.S., UNCHARACTERIZED SOILS ARE ASSUMED TO EXTEND BELOW 12' FROM EXISTING GROUND. IN AREAS NOT CONTAINING P.C.S., UNCHARACTERIZED SOILS AREA ASUMMED TO EXTEND BELOW 4' FROM EXISTING GROUND.

FIGURE 8

H&H

PROJECT NAME: NORTHFIELD	
PROJECT NUMBER: BF 024I(58)	
FILE NAME: z19J223mtd.dgn	PLOT DATE: 3/25/2025
PROJECT LEADER: KIM SMITH	DRAWN BY: S. BROWN
DESIGNED BY: K. HO	CHECKED BY: K.SMITH
SOIL MANAGEMENT PLANS	SHEET 7 OF 7


2027 Construction Season
100'-0"
100'-0"
100'-0"
DU-B-DS
415 cuyd
DU-B-US
135 cuyd
DU-P3 C
160 cuyd
DU-P2 (A)
490 cuyd
DU-P1 (B)
30 cuyd
MASS HAUL ACCESS ROAD
24'-0"
DU-A-DS
1065 cuyd
DU-D-DS
195 cuyd
DU-A-US
450 cuyd
DU-C-US
745 cuyd
DU-D-US
65 cuyd
DU-C-DS
900 cuyd
VT STATE PLANE GRID
BASE WIDTH
HEIGHT
BARRIER
TYPICAL PILE SHAPE
NTS
SCALE 1" = 20'-0"
20 0 20
PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 0241(58)
FIGURE 9
FILE NAME: 19J223\STR\Eng\Soil\soilstorage.dgn
PROJECT LEADER: G.LAROCHE
DESIGNED BY: G.ROKES
Soils Storage Phase 2
PLOT DATE: 7-APR-2025
DRAWN BY: G.ROKES
CHECKED BY: G.LAROCHE
SHEET 1 OF 1

APPENDIX A

SITE INVESTIGATION REPORT

SUBSURFACE INVESTIGATION REPORT

VTRANS NORTHFIELD BRIDGE REPLACEMENT PROJECT

Route 12/Main Street
Northfield, Vermont

PREPARED FOR:

Christopher D. Baker, P.E.
Hardesty & Hanover
6 Bedford Farms Drive, Suite 111
Bedford, NH 03110

PREPARED BY:

Atlas Technical Consultants LLC
51 Knight Lane
Williston, VT 05495

November 1, 2021

51 Knight Lane
Williston, VT 05495
(802) 862-1980 | oneatlas.com

November 1, 2021

CHRISTOPHER D. BAKER, P.E.
HARDESTY & HANOVER
6 BEDFORD FARMS DRIVE, SUITE 111
BEDFORD, NH 03110

Subject: **Subsurface Investigation Report**
VTRANS Northfield Bridge Replacement Project
Route 12/Main Street
Northfield, Vermont

Dear Mr. Baker,

Atlas Technical Consultants, LLC (formerly ATC Group Services, LLC) is pleased to provide Hardesty & Hanover this *Subsurface Investigation Report* for the VTRANS Northfield Bridge Replacement Project on Route 12/Main Street in Northfield, Vermont

If you have any questions, please call us at (802) 862-1980.

Respectfully submitted,
Atlas Technical Consultants LLC

Erik Urch
Senior Project Manager

Joseph J. Hayes, CPG, PG
Vermont Operations Manager

Attachment: Subsurface Investigation Report

Distribution: James Donaldson, VTDEC (following client authorization), Andy Shively, VTrans (following client authorization), Gary Laroche, VTrans (following client authorization)

TABLE OF CONTENTS

1. INTRODUCTION 2
2. CONCEPTUAL SITE MODEL 3
3. INVESTIGATIVE PROCEDURES AND RESULTS 3
   - 3.1 Soil Borings & Soil Sampling 4
   - 3.2 Monitoring Wells & Groundwater Sampling 7
   - 3.3 Work Plan Deviations and Data Gaps 8
4. CONCLUSIONS & RECOMMENDATIONS 8
5. SIGNATURES & CERTIFICATION 9

FIGURES

Figure 1 Vicinity Map
Figure 2 Site Plan
Figure 3 Soil Contaminant Distribution Map

TABLES

Table 1 Soil Quality Results
Table 2 Groundwater Elevation Data
Table 3 Groundwater Quality Results

APPENDICES

Appendix A Boring Logs/Well Construction Details
Appendix B Soil Laboratory Analytical Report
Appendix C Groundwater Laboratory Analytical Report
Appendix D Field Notes

EXECUTIVE SUMMARY

On behalf of Hardesty & Hanover, Atlas Technical Consultants, LLC (Atlas) presents this report to document a subsurface investigation conducted in September/October 2021 in accordance with the approved work plan. Atlas oversaw the advancement of 10 soil borings, two of which were completed as monitoring wells, and the field-screening, sampling and analyses of soil and groundwater. Based on the results of the investigation, Atlas concludes the following:

- Soil quality results indicate two areas (Areas B and G) that will require management of shallow soils due to polycyclic aromatic hydrocarbon (PAH) exceedances of Vermont Soil Standards (VSS) and two areas (Areas D and F) that will require management of petroleum contaminated soils (PCS) during the construction project.

- Groundwater quality results indicate that naphthalene exceeded Vermont Groundwater Enforcement Standards (VGES) in B-104MW which may result in dewatering permitting and treatment during the construction project.

- The soil and groundwater exceedances outlined above constitute a release in accordance with the Vermont Department of Environmental Conservation (VTDEC) Investigation and Remediation of Contaminated Properties Rule (IRule, July 2019); as such, the owner is obligated to report the release to VTDEC.

Based on these conclusions, Atlas recommends the following:

1. Submit this report to James Donaldson at VTDEC.

2. Generate a Soil & Groundwater Management Plan in accordance with Task 4 of the approved Work Plan.

1. INTRODUCTION

Atlas Technical Consultants, LLC (formerly ATC Group Services, LLC) on behalf Hardesty & Hanover (Client), presents this Subsurface Investigation Report for the VTRANS Northfield Bridge Replacement Project on Route 12/Main Street in Northfield, Vermont (Site). This work was performed in accordance with ATC's Revised Work Plan/Cost Estimate (WPCE) dated June 9, 2021. The objective of the work was to evaluate soil and groundwater quality in areas that are proposed to be disturbed during the upcoming bridge project with the understanding that the Site is adjacent to existing and closed Vermont Department of Environmental Conservation (VTDEC)-listed hazardous sites. These data will be utilized to inform a Soil and Groundwater Management Plan (SGMP) for the construction project which will be submitted under separate cover. Refer to **Figure 1** for a Vicinity Map and **Figure 2** for a Site Plan.

2. CONCEPTUAL SITE MODEL

The Site includes a Town owned bridge (Bridge 60) and roadway approaches that require rehabilitation due to existing deficiencies in deck, superstructure and substructures. Based on the preliminary geotechnical report, soils include "sand, gravel, silt and rubbish" and site geology is mapped as postglacial fluvial alluvium underlain by phyllite and metasiltstone from the Cram Hill Formation. The preliminary geotechnical report also indicates that no water wells are located within an approximate 500-foot radius of the Site and that the closest well is located approximately 616 feet northeast of the Site. Bedrock is generally encountered at 20-35 feet below ground surface (fbgs) and groundwater is encountered at 18-19 fbgs at the Site.

Based on the Agency of Natural Resources (ANR) Natural Resource Atlas (NRA), the Site is located within an Urban Soils Background Area (USBA), which indicates polycyclic aromatic hydrocarbons (PAHs), arsenic and lead may have impacted the Site from urban fills and/or atmospheric deposition of incomplete combustion, commonly in shallow soils (0-1.5 fbgs). Two active hazardous sites are also located immediately adjacent to the Site to the northwest (Northfield Gulf Station, #2011-4199) and to the southwest (Merchants Bank, #96-2020), both with documented petroleum releases from underground storage tanks (USTs). This indicates volatile organic compounds (VOCs) may have impacted the Site, commonly in deeper soils that straddle the water table, although shallow soils can also be impacted by petroleum from subsurface infrastructure and/or surface spills. Other contaminants that are common to urban settings with historic commercial and industrial operations include polychlorinated biphenyls (PCBs) and metals. It should be noted the contaminants of concern (COC) outlined above were derived based on review of the project documents and other readily available resources (i.e. NRA) without completing a Phase I Environmental Site Assessment (ESA) which would provide a more comprehensive analysis of potential environmental concerns and COCs.

Sensitive receptors at the Site include soil, soil vapor, groundwater and underground utilities. Exposure risks are expected to be low during operational conditions following construction as the Site will be covered with impervious surfaces. However, the risk is higher during construction as workers may come in contact with these materials. These risks will be addressed under separate cover via proper adherence to the site specific health and safety plan (HASP). The Site does not/will not contain any occupied structures (buildings, etc.) and therefore exposure to soil vapors via the vapor intrusion pathway is not applicable for this project.

3. INVESTIGATIVE PROCEDURES AND RESULTS

Atlas completed a subsurface investigation in accordance with the VTDEC approved work plan.

The following sections outline investigative procedures and results.

3.1 Soil Borings & Soil Sampling

From September 20-28, 2021, Atlas oversaw the advancement of 10 soil borings in tandem with a geotechnical evaluation conducted by Hardesty & Hanover, including H-101, H-102, H-103, H-104, B-101, B-102, B-103, B-104, B-105, and B-106. The H-series borings included locations sited for geotechnical evaluation and soil characterization while the B-series borings included locations sited for soil characterization only. The boring locations were selected by Hardesty & Hanover and were advanced utilizing solid stem augers and mud rotary drilling methodologies with split spoon sampling by New England Boring Contractors (NEBC) of Derry, NH. Refer to **Figure 2** for the drilling locations and **Appendix A** for the boring logs.

During advancement, subsurface soils were logged and field-screened for total organic vapors (TOVs) utilizing a photoionization detector (PID) equipped with a 10.6 eV lamp. Any visual or olfactory indications of contamination (staining, odors) were also noted. Bedrock coring was also conducted in some of the borings which is outside the scope of this investigation. A summary of screening results is provided below:

- Soils generally consisted of sand and gravel fill materials with varying amounts of silt, bricks, wood and other debris over native silty fine sands over bedrock.

- All PID readings were generally background (up to 0.0 parts per million volume or ppmv) with the following exceptions:
    - B-102: up to 4.2 ppmv at 10-12 feet below ground surface (fbgs)
    - B-103: up to 3.2 ppmv at 7-8 fbgs
    - B-105: up to 0.6 ppmv at 22-24 fbgs
    - H-102: up to 0.8 ppmv at 20-22 fbgs
    - H-103: up to 4.9 ppmv at 14 fbgs

  All readings over 1 ppmv exceed the action limit for thinspreading in accordance with IRule, which is a guidance level in lieu of a soil standard for PID readings, and since petroleum compounds were detected in soils (discussed later), the 1 ppmv value is utilized for defining soils as petroleum contaminated soils (PCS) at the Site, which is discussed later.

- No odors or staining was observed in any of the soils with the exception of petroleum odors observed in B-102 from 6 to 11 fbgs.

One soil sample was collected from each boring generally between 0 and 4 fbgs to evaluate shallow soil conditions (A-series samples). The actual profile was dependent on soil recovery from the split spoons which was often limited due to coarse grained fill materials. A second soil sample was collected from each boring at a deeper depth interval (B-series samples) that exhibited the highest PID response. In cases where all PID readings were background, the deeper sample was collected at the soil/groundwater interface or the bottom of the boring, whichever came first.

The soil samples were stored on ice and submitted to SGS Accutest of Dayton, NJ (SGS) under chain of custody. The shallow samples were analyzed for PAHs by EPA Method 8270 and 8 RCRA Metals by EPA Methods 6010/7471 and the deeper samples were analyzed for VOCs by

EPA Method 8260, PAHs by EPA Method 8270, PCBs by EPA Method 8082 w/soxhlet extraction, and 8 RCRA Metals by EPA Methods 6010/7471. Two duplicate samples were collected from one shallow sample (H-104-A) and one deeper sample (H-104-B) for quality assurance/quality control (QA/QC) purposes.
Refer to **Appendix B** for laboratory analytical reports and **Tables 1, 2, 3, and 4** which compare the results to Vermont Soil Standards for Resident (VSS-R) and Non-Resident (VSS-NR) Uses and Urban Background (UB, where appropriate) for PAHs, metals, PCBs and VOCs, respectively. A summary of the results is provided below:

- PAHs[1] were detected in all samples except H-102-B, B-103-B, B-104-A, B-104-B, B-105-B and B-106-B; all samples with detectable concentrations were below the applicable UB standard (580 µg/kg) with the following exceptions:
    - H-101-A (0.5-1.5') which had a concentration of 1,713 µg/kg exceeding VSS-NR (1,540 µg/kg),
    - H-104-A (0.5-4') which had a concentration of 2,076 µg/kg exceeding VSS-NR (1,540 µg/kg),
    - B-102-B (8-11') which had a concentration of 1,093 µg/kg exceeding UB (580 µg/kg),
    - B-103-A (1-3') which had a concentration of 765 µg/kg exceeding UB (580 µg/kg), and
    - B-105-A (0.5-2') which had a concentration of 4,262 µg/kg exceeding VSS-NR (1,540 µg/kg).

  All of these PAHs exceedances are consistent with the CSM of elevated PAHs in shallow soils from urban fills and/or historic atmospheric deposition with the exception of B-102-B, which was detected in deeper soils and is an outlier. Coupling this data with field-screening results, these PAHs are likely related to petroleum contamination.

- Metals were detected above method detection limits (MDLs) in all soil samples; however no concentrations were detected above VSS-R.

- No PCBs were detected above MDLs in any of the soil samples analyzed for PCBs.

- Several VOCs were detected in all samples analyzed for VOCs; however, no detections exceeded VSS-R.

The project team indicated that the total proposed excavation volume was estimated at 6,600 cubic yards (CY) and that 2/3 of this volume would likely be repurposed as backfill for the project (4,400 CY). This leaves a balance of 2,200 CY that may require offsite disposal. Disposal facilities typically require one sample per 200 CY for representative waste characterization sampling. As such, 11 soil samples would be required for full waste characterization for facility acceptance. Therefore, Atlas collected two composite samples from one of the borings (H-104) and one composite sample from the remaining nine borings for a total of 11 composite soil samples to

[1] Normalized to benzo(a)pyrene (BaP) using toxicity equivalent quotient (TEQ) in accordance with IRule.

meet the waste characterization sampling requirement for facility acceptance (C-series samples). The entire boring profile was composited for the waste characterization sample analyses. The samples were stored on ice and submitted to SGS under chain of custody. Refer to **Appendix B** for the laboratory analytical reports. These results will be included as needed with the waste profile required for facility acceptance, which will be completed under separate cover.

3.2 Soil Management Considerations

Based on the data outlined in Section 3.1, soils within the proposed excavation areas were categorized for future soil management during the construction project. Refer to **Figure 3** for the soil classification areas which including the following:

- Area A (~550 SF) is unregulated (green polygon) so there is no restricted use for these soils.

- Area B (~1,300 square feet or SF) includes soils that contain PAHs above VSS-NR in shallow soils (red polygon). Assuming a conservative vertical profile of 0-5 fbgs to represent these sampling results, this equates to approximately 240 cubic yards (CY) of soil volume. Any soils within this volume slated for excavation should be removed for offsite disposal at a landfill or recycling facility and any soils within this volume that remain or are repurposed somewhere else within a regulated soil volume[2] should be covered with geotextile or other indicator fabric and at least six inches of clean fill/road materials.

- Area C (~1,300 SF) is unregulated (green polygon) so there is no restricted use for these soils.

- Area D (~630 SF) includes soils that contain PCS (purple polygon) and PAHs above UB (likely related to PCS) within the 5-12 fbgs profile[3], which equates to an approximate soil volume of 165 CY. In lieu of removing this entire soil volume for offsite disposal or treatment, soil screening by an environmental professional should be conducted during construction utilizing a PID during the excavations to segregate PCS (>1 ppmv and/or visual/olfactory indications of contamination) from non-PCS in an attempt to reduce disposal/treatment volumes.

- Area E (~1,750 SF) includes soils that contain both PAHs above UB within an assumed vertical profile of 0-5 fbgs and PCS within the 5-12 fbgs profile (hatched purple and orange polygon). This equates to approximately 325 CY of PAH soil volume and 450 CY of PCS soil volume. Any soils within the PAH soil volume (0-5 fbgs) slated for excavation should be removed for offsite disposal at a landfill or recycling facility and any soils within this volume that remain or are repurposed within this volume should be covered with geotextile or other indicator fabric and at least six inches of clean fill/road materials. Soil segregation should be considered for the PCS soil volume (5-12 fbgs) in the same fashion as Area D above.

[2] Any contaminated soils that are repurposed must remain in Areas B or H above the seasonal high water table; additional requirements such as leachibility tests may also be required, details of will be provided in the SGMP following consultation with VTDEC.
[3] This profile is based on PID readings outlined in the boring logs.

- Area F (430 SF) is unregulated (green polygon) so there is no restricted use for these soils.

- Area G (~1,050 SF) includes soils that contain PCS (purple polygon) within the 12-15 fbgs profile, which equates to an approximately volume of 120 CY. Soil segregation should be considered for this area in the same fashion as Area D above.

- Area H (~2,300 SF) includes soils that contain PAHs above VSS-NR in shallow soils (red polygon). Assuming a conservative vertical profile of 0-5 fbgs to represent these sampling results, this equates to approximately 430 CY of soil volume. Any soils within this volume slated for excavation should be removed for offsite disposal at a landfill or recycling facility and any soils within this volume that remain or are repurposed somewhere else within the a regulated soil volume should be covered with geotextile or other indicator fabric and at least six inches of clean fill/road materials.

- Area I (~500 SF) is unregulated (green polygon) so there is no restricted use for these soils.

3.3 Monitoring Wells & Groundwater Sampling

On September 24 and 28, 2021, soil borings B-101 and B-104 were completed as groundwater monitoring wells B-101MW and B-104MW, one well on each side of the river. The wells were installed atop the bedrock surface constructed with 2-inch polyvinyl chloride (PVC) materials with 10-foot long 0.010-inch factory slotted screen sections set to span the water table and surrounded by sand pack. A two-foot thick bentonite seal was placed above the sandpack and the remaining annulus was backfilled with a combination of drilling spoils and sand. The wells were completed flush to grade with protective roadboxes and developed until clear with a peristaltic pump. Development water was deposited on the ground adjacent to the well since non-aqueous phase liquid (NAPL) was not observed. Atlas understands the wells will be surveyed by others under separate cover. Refer to **Appendix A** for the well construction details.

On October 5, 2021, Atlas sampled the monitoring wells for groundwater quality in accordance with USEPA low flow sampling methodology. The samples were stored on ice and transported to SGS under chain of custody for analyses of VOCs by EPA Method 8260 and Total 8-RCRA Metals by EPA Methods 6010/7471. A trip blank and duplicate (B-104MW) were also collected for QA/QC purposes. Purge water was deposited on the ground surface adjacent to each well since no NAPL was observed in any purge water. The analytical data was compared to Vermont Groundwater Enforcement Standards (VGES) in **Table 3** (detected analytes) and the laboratory report is provided in **Appendix C**. A brief summary of the results is provided below:

- No VOCs were detected above method detection limits (MDLs) in the trip blank.

- Relative percent differences (RPDs) ranged from 0 to 16% in the duplicate sample (B-104MW) which is within the EPA-recommended RPD of 30% for aqueous samples.

- No VOCs or metals were detected above method detection limits (MDLs) in MW-101MW.

- Several VOCs and arsenic were detected above MDLs in B-104MW; however, only naphthalene (8.7 µg/l) exceeded VGES (0.5 µg/l)[4].

These results indicate a slight impact to groundwater at the Site, which may be related to the offsite Northfield Gulf Station, #2011-4199. Any construction dewatering in this area may require treatment prior to discharge in accordance with permitting requirements.

Refer to **Appendix D** for field notes.

3.4 Work Plan Deviations and Data Gaps

There were no work plan deviations or data gaps.

4. CONCLUSIONS & RECOMMENDATIONS

On behalf of Hardesty & Hanover, Atlas presents this report to document a subsurface investigation conducted in September/October 2021 in accordance with the approved work plan. Atlas oversaw the advancement of 10 soil borings, two of which were completed as monitoring wells, and the field-screening, sampling and analyses of soil and groundwater. Based on the results of the investigation, Atlas concludes the following:

- Soil quality results indicate two areas (Areas B and G) that will require management of shallow soils due to PAH exceedances and two areas (Areas D and F) that will require management of PCS during the construction project.

- Groundwater quality results indicate that naphthalene exceeded VGES in B-104MW which may result in dewatering permitting and treatment during the construction project.

- The soil and groundwater exceedances outlined above constitute a release in accordance with IRule; as such, the owner is obligated to report the release to VTDEC.

Based on these conclusions, Atlas recommends the following:

1. Submit this report to James Donaldson at VTDEC.

2. Generate a Soil & Groundwater Management Plan in accordance with Task 4 of the approved Work Plan.

[4] The MDL for naphthalene in B-101MW (2.5 µg/l) also exceeded VGES, which is considered an exceedance in accordance with IRule.

5. SIGNATURES & CERTIFICATION

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

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

Prepared by:

Erik Urch
Senior Project Manager

Joseph J. Hayes, CPG, PG
Vermont Operations Manager

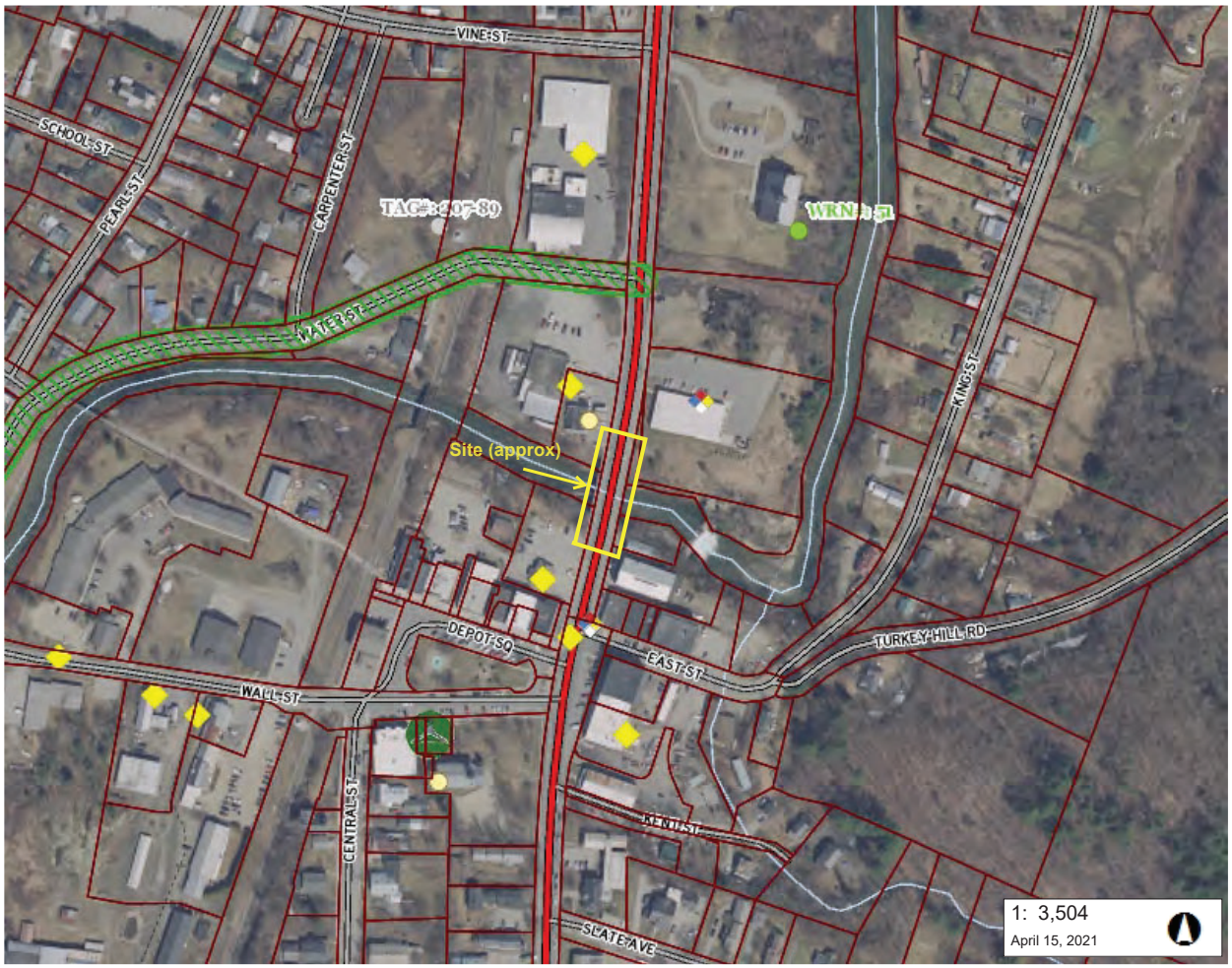
FIGURES

VERMONT

Figure 1 - Vicinity Map

Vermont Agency of Natural Resources

vermont.gov



LEGEND

- Rare Threatened Endangered
  - Threatened or Endangered
  - Rare
- Hazardous Site
- Hazardous Waste Generators
- Brownfields
- Salvage Yard
- Aboveground Storage Tank
- Underground Storage Tank (w
- Dry Cleaner
- Private Wells
  - Incorrectly Located
  - GPS Located
  - Screen Digitized
  - E911 Address Matched
  - Welldriller/Clarion
  - Unknown Location Method
- Ground Water SPA
  - Active
  - Proposed
  - Inactive
- Parcels (standardized)
- Roads
  - Interstate
  - US Highway; 1
  - State Highway
  - Town Highway (Class 1)

NOTES

VTRANS Northfield Bridge Replacement Project

178.0 0 89.00 178.0 Meters

WGS_1984_Web_Mercator_Auxiliary_Sphere 1" = 292 Ft. 1cm = 35 Meters

© Vermont Agency of Natural Resources

THIS MAP IS NOT TO BE USED FOR NAVIGATION

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

SOIL CLASSIFICATION

AASHTO

A1	Gravel and Sand
A3	Fine Sand
A2	Silty or Clayey Gravel and Sand
A4	Silty Soil - Low Compressibility
A5	Silty Soil - Highly Compressible
A6	Clayey Soil - Low Compressibility
A7	Clayey Soil - Highly Compressible

ROCK QUALITY DESIGNATION

R.Q.D. (%)	ROCK DESCRIPTION
<25	Very Poor
25 to 50	Poor
51 to 75	Fair
76 to 90	Good
>90	Excellent

SHEAR STRENGTH

UNDRAINED SHEAR STRENGTH IN P.S.F.	CONSISTENCY
<250	Very Soft
250-500	Soft
500-1000	Med. Stiff
1000-2000	Stiff
2000-4000	Very Stiff
>4000	Hard

CORRELATION GUIDE OF "N" TO DENSITY/CONSISTENCY

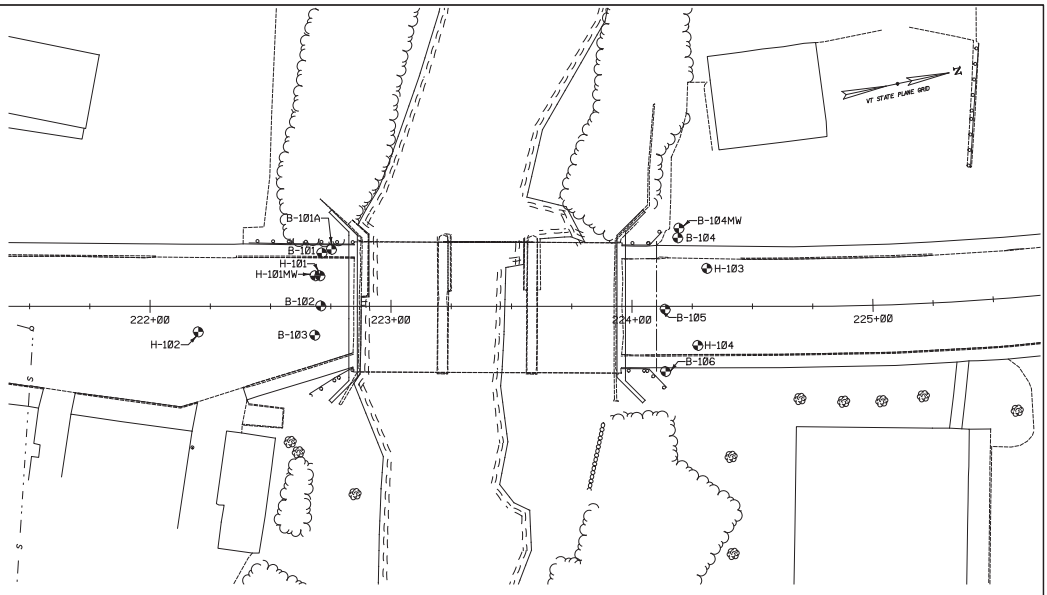
DENSITY (GRANULAR SOILS) N	DESCRIPTIVE TERM	CONSISTENCY (COHESIVE SOILS) N	DESCRIPTIVE TERM
<5	Very Loose	<2	Very Soft
5-10	Loose	2-4	Soft
11-24	Med. Dense	5-8	Med. Stiff
25-50	Dense	9-15	Stiff
>50	Very Dense	16-30	Very Stiff
		31-60	Hard
		>60	Very Hard

COMMONLY USED SYMBOLS

▼	Water Elevation
◇	Standard Penetration Boring
⊕	Auger Boring
⊙	Rod Sounding
S	Sample
N	Standard Penetration Test Blow Count Per Foot For: 2" O.D. Sampler 1 3/8" I.D. Sampler Hammer Weight Of 140 Lbs. Hammer Fall Of 30"
VS	Field Vane Shear Test
US	Undisturbed Soil Sample
B	Blast
DC	Diamond Core
MD	Mud Drill
WA	Wash Ahead
HSA	Hollow Stem Auger
AX	Core Size 1 1/8"
BX	Core Size 1 5/8"
NX	Core Size 2 1/8"
M	Double Tube Core Barrel Used
LL	Liquid Limit
PL	Plastic Limit
PI	Plasticity Index
NP	Non Plastic
w	Moisture Content (Dry Wgt. Basis)
D	Dry
M	Moist
MTW	Moist To Wet
W	Wet
Sat	Saturated
Bo	Boulder
Gr	Gravel
Sa	Sand
Si	Silt
Cl	Clay
HP	Hardpan
Le	Ledge
NLTD	No Ledge To Depth
CNPF	Can Not Penetrate Further
TLOB	Top of Ledge Or Boulder
NR	No Recovery
Rec.	Recovery
%Rec.	Percent Recovery
RQD	Rock Quality Designation
CBR	California Bearing Ratio
<	Less Than
>	Greater Than
R	Refusal (N > 100)
VTSPG	NAD83 - See Note 7

COLOR

blk	Black	pnk	Pink
bl	Blue	pu	Purple
brn	Brown	rd	Red
dk	Dark	tn	Tan
gry	Gray	wh	White
gn	Green	yel	Yellow
lt	Light	mltc	Multicolored
or	Orange		



BORING LAYOUT PLAN

SCALE: 1" = 20'-0"

20 0 20

BORING CHART

HOLE NO.	NORTHING	EASTING	STATION	OFFSET
B-101	601218.43	1599459.36	222+71.29	22.2' LT
B-101A	601222.65	1599458.73	222+75.29	23.7' LT
B-102	601213.45	1599480.83	222+70.87	0.2' LT
B-103	601208.44	1599492.27	222+68.35	12.8' RT
B-104	601364.21	1599483.86	224+18.98	28.5' LT
B-104MW	601365.53	1599480.86	224+19.48	32.5' LT
B-105	601352.94	1599511.91	224+13.78	1.2' RT
B-106	601347.71	1599537.30	224+13.93	27.2' RT
H-101	601215.68	1599468.47	222+70.49	12.8' LT
H-101MW	601213.73	1599468.86	222+68.49	12.8' LT
H-102	601161.44	1599480.88	222+20.01	10.6' RT
H-103	601373.36	1599498.83	224+31.03	15.8' LT
H-104	601363.07	1599529.46	224+27.33	16.3' RT

DEFINITIONS (AASHTO)

BEDROCK (LEDGE) Rock in its native location of indefinite thickness.

BOULDER - A rock fragment with an average dimension > 12 inches.

COBBLE - Rock fragments with an average dimension between 3 and 12 inches.

GRAVEL - Rounded particles of rock < 3" and > 0.0787" (#10 sieve).

SAND - Particles of rock < 0.0787" (#10 sieve) and > 0.0029" (#200 sieve).

SILT - Soil < 0.0029" (#200 sieve), non or slightly plastic and exhibits no strength when air-dried.

CLAY - Fine grained soil, exhibits plasticity when moist and considerable strength when air-dried.

VARVED - Alternate layers of silt and clay.

HARDPAN - Extremely dense soil, cemented layer, not softened when wet.

MUCK - Soft organic soil (containing > 10% organic material.

MOISTURE CONTENT - Weight of water divided by dry weight of soil.

FLOWING SAND - Granular soil so saturated (loose) that it flows into drill casing during extraction of wash rod.

STRIKE - Angle from magnetic north to line of intersection of bed with a horizontal plane.

DIP - Inclination of bed with a horizontal plane.

GENERAL NOTES

1. The subsurface explorations shown herein were made between 9/20/2021 and 9/28/2021 by New England Boring Contractors.
2. Soil and rock classifications, properties and descriptions are based on engineering interpretation from available subsurface information by the Agency and may not necessarily reflect actual variations in subsurface conditions that may be encountered between individual boring or sample locations.
3. Observed water levels and/or conditions indicated are as recorded at the time of exploration and may vary according to the prevailing rainfall, methods of exploration and other factors.
4. Engineering judgment was exercised in preparing the subsurface information presented herein. Analysis and interpretation of subsurface data was performed and interpreted for Agency design and estimating purposes. Presentation of the information in the Contract is intended to provide the Contractor access to the same data available to the Agency. The subsurface information is presented in good faith and is not intended as a substitute for personal investigation, independent interpretation, independent analysis or judgment by the Contractor.
5. Pictorial structure details shown on the boring plan layout or soils profile are for illustrative purposes only and may not accurately portray final contract details.
6. Terminology used on boring logs to describe the hardness, degree of weathering, and spacing of fractures, joints and other discontinuities in the bedrock is defined in the AASHTO Manual on Subsurface Investigations, 1988.
7. Northing and Easting coordinates are shown in Vermont State Plane Grid North American Datum 1983 in meters and survey feet.

FIGURE 2

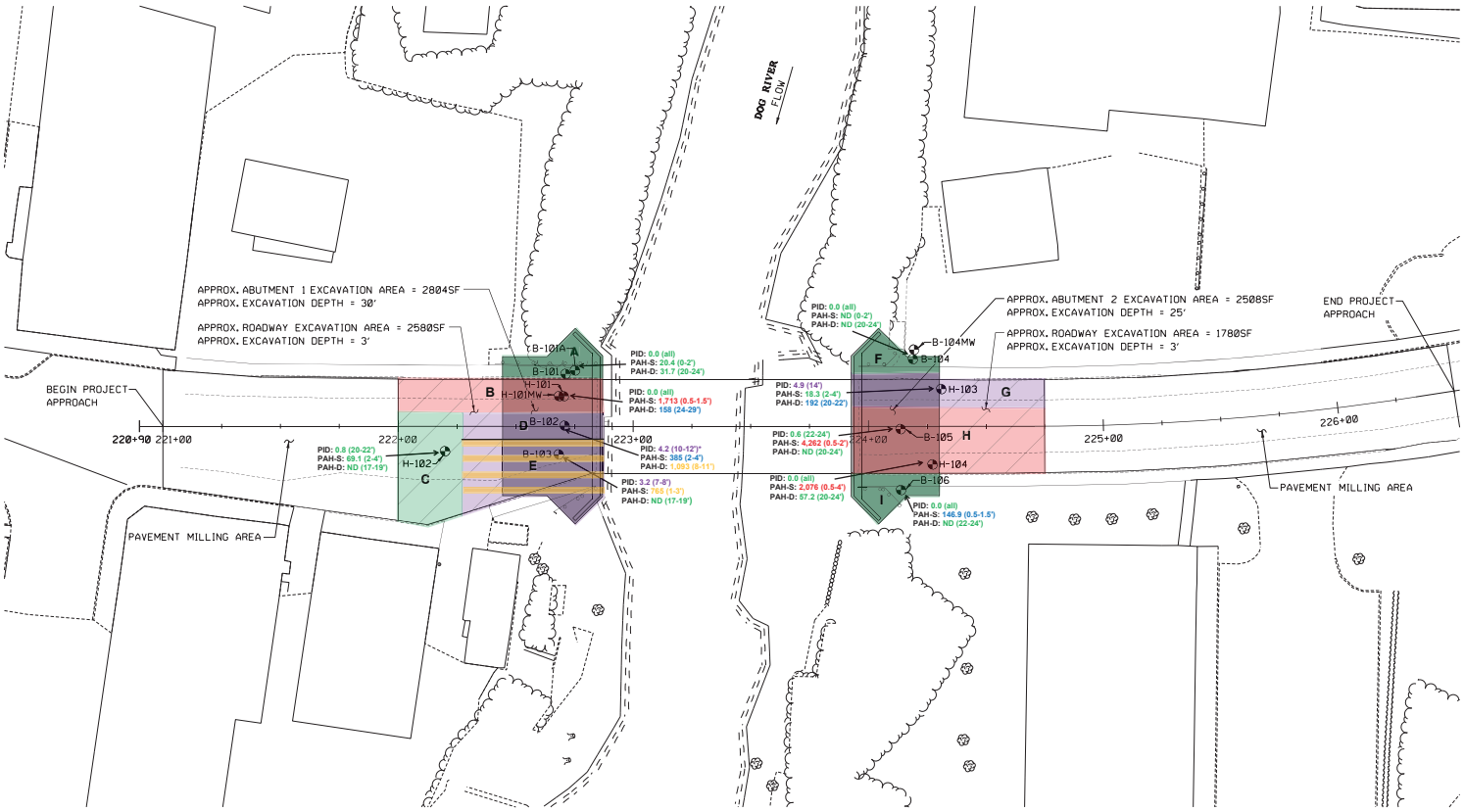
Hardesty & Hanover

PROJECT NAME: NORTHFIELD

PROJECT NUMBER: BF 0241(58)

FILE NAME: z19\223bor.dgn
PROJECT LEADER: C. BAKER
DESIGNED BY: S. BROWN
BORING LAYOUT SHEET

PLOT DATE: 10/25/2021
DRAWN BY: S. BROWN
CHECKED BY: K. SMITH
SHEET 10 OF 31



LEGEND:
PID = peak photoionization detector reading with screening depth
PAH-S = polycyclic aromatic hydrocarbon (BaP TEQ, ug/kg) in shallow soils with sample depth
PAH-D = PAH (BaP TEQ, ug/kg) in deeper soils with sample depth
Green results are below Vermont Soil Standards for Resident Soils (VSS-R, 70 ug/kg) or <1 ppmv by PID
Blue results are above VSS-R (70 ug/kg)
Orange results are above urban background (UB, 580 ug/kg)
Red results are above VSS-Non Resident Soils (VSS-NR, 1,540 ug/kg)
Purple results are above thinspreading criteria for petroleum contaminated soils (PCS, >1 ppmv by PID)
***indicates petroleum odor**
A = soil classification areas

FIGURE 3:
SOIL CONTAMINANT DISTRIBUTION MAP

This figure and contaminant data prepared by Atlas on 10/29/21

Hardesty & Hanover

PROJECT NAME: NORTHFIELD	
PROJECT NUMBER: BF 0241(58)	
FILE NAME: z19j223bor.dgn	PLOT DATE: 10/29/2021
PROJECT LEADER: C. BAKER	DRAWN BY: S. BROWN
DESIGNED BY: S. BROWN	CHECKED BY: C. BAKER
PROPOSED EXCAVATION SHEET	SHEET 1 OF 1

TABLES

TABLE 1
SOIL QUALITY RESULTS - POLYCYCLIC AROMATIC HYDROCARBONS
VTRANS NORTHFIELD BRIDGE REPLACEMENT PROJECT

Compound	BaP TEQ	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene (BaP)	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene
VSS Resident	70	NS	NS	NS	NS	TEQ	NS	NS	NS	NS	NS	2,301,000	2,301,000	NS	2,700	NS	NS
Urban Background	580	NS	NS	NS	NS	TEQ	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
VSS Non-Resident	1,540	NS	NS	NS	NS	TEQ	NS	NS	NS	NS	NS	26,371,000	26,371,000	NS	16,000	NS	NS
BaP TEF	--	--	--	--	0.1	1	0.1	--	0.01	0.01	1	--	--	0.1	--	--	--
Sample ID:	**Sample Depth (fbgs):**	**Sample Date:**																
H-101-A	0.5-1.5	09/21/21	1,713	**62.2 J**	**577**	**671**	**1,520**	**1,110**	**1,430**	**722**	**660**	**1,410**	**196**	**3,770**	**362**	**910**	**47.3 J**	**3,450**	**3,290**
H-101-B	24-29	09/21/21	158	ND<14	**35.9 J**	**35.9 J**	**119**	**112**	**148**	**70.6**	**56.0**	**140**	ND<19	**232**	ND<19	**82.0**	**17.4 J**	**125**	**259**
H-102-A	2-4	09/22/21	69.1	ND<12	ND<18	ND<22	**49.4**	**40.3**	**49.0**	**22.2 J**	**22.1 J**	**45.8**	ND<16	**92.8**	ND<16	**23.2 J**	ND<10	**76.3**	**95.7**
H-102-B	17-19	09/22/21	ND<19	ND<13	ND<19	ND<23	ND<11	ND<17	ND<17	ND<19	ND<18	ND<12	ND<17	ND<17	ND<17	ND<18	ND<11	ND<13	ND<12
H-103-A	2-4	09/27/21	18.3	ND<12	ND<17	ND<21	**11.6 J**	ND<16	ND<15	ND<17	ND<16	ND<11	ND<15	ND<15	ND<16	ND<16	ND<9.7	ND<12	ND<11
H-103-B	20-22	09/27/21	192	ND<17	ND<26	**54.8**	**167**	**137**	**164**	**74.6**	**70.9**	**175**	ND<22	**366**	**27.8 J**	**87.3**	**31.8 J**	**244**	**331**
H-104-A	0.5-4	09/20/21	2,076	**149**	**825**	**1,280**	**1,940**	**1,330**	**1,690**	**852**	**745**	**1,760**	**250**	**5,840**	**760**	**1,080**	**1,930**	**7,810**	**4,680**
		DUP-A	3,195	**275**	**1,490**	**2,190**	**2,980**	**2,030**	**2,620**	**1,290**	**975**	**2,580**	**401**	**9,860**	**1,280**	**1,680**	**3,100**	**13,400**	**6,040**
		RPD	--	59%	57%	52%	42%	42%	43%	41%	27%	38%	46%	51%	51%	43%	47%	53%	25%
H-104-B	20-24	09/20/21	57.2	ND<13	ND<20	**27.9 J**	**52.8**	**35.4 J**	**47.8**	**19.7 J**	**19.4 J**	**46.8**	ND<17	**135**	ND<18	**25.3 J**	**50.1**	**163**	**113**
		DUP-B	219	ND<16	**59.7**	**113**	**215**	**143**	**199**	**81.1**	**76.3**	**194**	**21.7 J**	**554**	**63.9**	**104**	**88.2**	**590**	**487**
		RPD	--	--	--	121%	121%	121%	123%	122%	119%	122%	24%	122%	112%	122%	55%	113%	125%
B-101-A	0-2	09/28/21	20.4	ND<12	ND<18	ND<22	**18.0 J**	ND<16	**16.2 J**	ND<18	ND<16	**14.2 J**	ND<16	**30.9 J**	ND<16	ND<16	ND<9.9	**12.3 J**	**29.9 J**
B-101-B	20-24	09/28/21	31.7	ND<20	ND<30	ND<36	**22.7 J**	ND<27	ND<26	ND<29	ND<27	ND<19	ND<26	**34.7 J**	ND<27	ND<28	ND<17	ND<20	**29.6 J**
B-102-A	2-4	09/22/21	385	ND<13	**93.0**	**34.7 J**	**198**	**264**	**320**	**168**	**141**	**200**	**45.2**	**212**	ND<17	**204**	**21.0 J**	**73.4**	**284**
B-102-B	8-11	09/22/21	1,093	**194**	**266**	**248**	**648**	**750**	**794**	**522**	**313**	**644**	**132**	**767**	**224**	**573**	**373**	**919**	**1,160**
B-103-A	1-3	09/21/21	765	**38.5**	**226**	**210**	**459**	**520**	**641**	**356**	**277**	**511**	**86.1**	**643**	**57.9**	**414**	**275**	**681**	**745**
B-103-B	17-19	09/21/21	ND<23	ND<16	ND<23	ND<28	ND<13	ND<21	ND<20	ND<23	ND<22	ND<15	ND<20	ND<21	ND<21	ND<22	ND<13	ND<15	ND<15
B-104-A	0-2	09/24/21	ND<17	ND<12	ND<17	ND<21	ND<9.5	ND<15	ND<15	ND<17	ND<16	ND<11	ND<15	ND<15	ND<15	ND<16	ND<9.5	ND<11	ND<11
B-104-B	20-24	09/24/21	ND<25	ND<17	ND<25	ND<30	ND<14	ND<22	ND<21	ND<24	ND<23	ND<15	ND<21	ND<22	ND<22	ND<23	**54.3**	**37.9 J**	**21.3 J**
B-105-A	0.5-2	09/23/21	4,262	**250**	**1,770**	**2,460**	**3,950**	**2,710**	**3,500**	**1,710**	**1,370**	**3,490**	**529**	**11,500**	**1,300**	**2,290**	**1,240**	**12,200**	**9,120**
B-105-B	20-24	09/23/21	ND<19	ND<12	ND<18	ND<22	ND<10	ND<16	ND<16	ND<18	ND<17	ND<11	ND<16	ND<16	ND<17	ND<17	ND<10	ND<12	ND<12
B-106-A	0.5-1.5	09/20/21	146.9	ND<12	**32.0 J**	ND<21	**88.2**	**96.8**	**117**	**72.4**	**52.2**	**90.7**	**19.7 J**	**129**	ND<16.0	**84.3**	ND<9.8	**29.4 J**	**147**
B-106-B	20-24	09/20/21	ND<22	ND<15	ND<22	ND<27	ND<12	ND<20	ND<19	ND<22	ND<20	ND<14	ND<19	ND<19	ND<20	ND<20	ND<12	ND<15	ND<14

NOTES:
All results provided in micrograms per kilogram (µg/kg) or parts per billion (ppb), analyzed by EPA Method 8270
Bold values indicate detections
NE = not encountered
VSS = Vermont Soil Standards (IRULE, July 2019)
TEF = Toxicity Equivalency Factor, TEQ = Toxicity Equivalency Quotient
BaP TEQ values were calculated from select PAH analyical concentrations as shown multiplied by the corresponding TEF and summed
TEF compounds that are non-detect were estimated based on half of the provided laboratory limit
BaP TEQ values are compared to VSS for Resident Soils, Non-Resident Soils and Urban Background Values
Green shaded values are below Resident Values
Blue shaded values indicate exceedance of Resident Values
Orange shaded values indicate exceedance of Urban Background Values
Red shaded values indicate exceedance of Non-Resident Values
ND = not detected above stated method detection limit (MDL)
NS = no standard available
NA = not analyzed
J = estimated value below laboratory reporting limit (RL)
fbgs = feet below ground surface
RPD = relative percent difference

TABLE 2
SOIL QUALITY RESULTS - METALS
VTRANS NORTHFIELD BRIDGE REPLACEMENT PROJECT

Analyte			Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
VSS Resident			16	11,247	6.9	40,223	400	3.1	366	237
VSS Non-Resident			16	127,382	87	360,223	800	3.1	4,900	2,483
Sample ID:	**Depth (fbgs):**	**Date:**								
H-101-A	0.5-1.5	09/21/21	**7.8**	**29.9**	ND<0.53	**37.9**	**12.7**	ND<0.034	ND<2.1	**0.65**
H-101-B	24-29	09/21/21	**8.0**	ND<16	ND<0.82	**16.7**	**10.9**	**0.072**	ND<3.3	**0.82**
H-102-A	2-4	09/22/21	**11.6**	**23.2**	ND<1.1	**13.9**	**36.5**	**0.14**	ND<4.5	ND<1.1
H-102-B	17-19	09/22/21	**6.5**	ND<15	ND<0.38	**36.2**	**12.6**	ND<0.017	ND<1.5	ND<0.38
H-103-A	2-4	09/27/21	**10.4**	ND<21	ND<0.52	**12.5**	**16.1**	ND<0.035	ND<2.1	ND<0.52
H-103-B	20-22	09/27/21	**12.6**	**37.0**	ND<0.78	**19.0**	**35.4**	**0.25**	ND<3.1	ND<0.78
H-104-A	0.5-4	09/20/21	**6.3**	**21.3**	ND<0.53	**16.7**	**88.6**	ND<0.034	ND<2.1	**0.98**
		DUP-A	**8.3**	**23.5**	ND<1.1	**19.1**	**16.3**	ND<0.031	ND<4.2	ND<1.1
		RPD	27%	10%	70%	13%	138%	9%	67%	12%
H-104-B	20-24	09/20/21	**7.2**	ND<16	ND<0.79	**10.1**	**7.2**	ND<0.015	ND<3.1	ND<0.79
		DUP-B	**5.9**	ND<18	ND<0.44	**26.5**	**8.5**	ND<0.039	ND<0.18	ND<0.44
		RPD	20%	--	--	90%	17%	--	--	--
B-101-A	0-2	09/28/21	**10**	**58.2**	ND<0.54	**22.7**	**10.6**	ND<0.032	ND<2.2	ND<0.54
B-101-B	20-24	09/28/21	**5.7**	ND<36	ND<0.89	**15.4**	**8.9**	ND<0.039	ND<3.6	ND<0.89
B-102-A	2-4	09/22/21	**5.9**	**35.7**	ND<0.55	**9.3**	**29.1**	**0.16**	ND<2.2	ND<0.55
B-102-B	8-11	09/22/21	**5.5**	**27.8**	ND<0.55	**14.3**	**319**	**0.036**	ND<2.2	ND<0.55
B-103-A	1-3	09/21/21	**10.1**	**47.2**	**1.7**	**18.4**	**44.4**	**0.056**	ND<2.3	ND<0.58
B-103-B	17-19	09/21/21	**4.9**	ND<27	ND<0.67	**15.3**	**8.5**	ND<0.041	ND<2.7	ND<0.67
B-104-A	0-2	09/24/21	**11.9**	ND<22	ND<0.55	**11.2**	**7.2**	ND<0.027	ND<2.2	ND<0.55
B-104-B	20-24	09/24/21	**6.6**	ND<29	ND<0.73	**15.7**	**9.3**	ND<0.046	ND<2.9	ND<0.73
B-105-A	0.5-2	09/23/21	**8.2**	**25.2**	ND<0.5	**13.2**	**13.6**	ND<0.032	ND<2.0	**0.61**
B-105-B	20-24	09/23/21	**4.6**	ND<22	ND<0.54	**8.8**	**4.3**	ND<0.016	ND<2.2	ND<0.54
B-106-A	0.5-1.5	09/20/21	**6.3**	**25.7**	ND<0.53	**19.4**	**18.0**	ND<0.035	ND<2.1	**0.61**
B-106-B	20-24	09/20/21	**5.3**	ND<17	ND<0.43	**7.9**	**4.9**	ND<0.041	ND<1.7	ND<0.43

NOTES:
All results provided in milligrams per kilogram (mg/kg) or parts per million (ppm)
All samples analyzed by EPA Methods 6010/7470
Bold values indicate detections
VSS = Vermont Soil Standards (IRULE, July 2019)
Orange shaded values indicate exceedance of Resident Values
Red shaded values indicate exceedance of Non-Resident Values
ND = not detected above provided detection limit
fbgs = feet below ground surface
RPD = relative percent difference
Lead exceeds RCRA "Rule of 20" (100 mg/kg) in B-102-B
Chromium results assume Chromium III

TABLE 3
SOIL QUALITY RESULTS - POLYCHLORINATED BIPHENYLS
VTRANS NORTHFIELD BRIDGE REPLACEMENT PROJECT

		Analyte	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1258	Arochlor 1260	Arochlor 1268	Arochlor 1262	Total PCBs
		VSS Resident	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	**114**
		VSS Non-Resident	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	**680**
Sample ID:	**Depth (fbgs):**	**Date:**										
H-101-B	24-29	09/21/21	ND<28	ND<38	ND<39	ND<25	ND<54	ND<33	ND<26	ND<26	ND<40	ND
H-102-B	17-19	09/22/21	ND<26	ND<34	ND<35	ND<23	ND<50	ND<30	ND<24	ND<23	ND<36	ND
H-103-B	20-22	09/27/21	ND<37	ND<49	ND<51	ND<32	ND<71	ND<43	ND<34	ND<33	ND<52	ND
H-104-B	20-24	09/20/21	ND<31	ND<41	ND<42	ND<27	ND<59	ND<36	ND<28	ND<28	ND<43	ND
		DUP-B	--	--	--	--	--	--	--	--	--	--
		RPD										
B-101-B	20-24	09/28/21	ND<40	ND<53	ND<54	ND<35	ND<76	ND<46	ND<36	ND<36	ND<55	ND
B-102-B	8-11	09/22/21	ND<22	ND<29	ND<29	ND<19	ND<41	ND<25	ND<20	ND<19	ND<30	ND
B-103-B	17-19	09/21/21	ND<28	ND<38	ND<39	ND<25	ND<54	ND<33	ND<26	ND<26	ND<40	ND
B-104-B	20-24	09/24/21	ND<27	ND<35	ND<36	ND<23	ND<51	ND<31	ND<24	ND<24	ND<37	ND
B-105-B	20-24	09/26/21	ND<22	ND<29	ND<30	ND<19	ND<41	ND<25	ND<20	ND<20	ND<30	ND
B-106-B	20-24	09/20/21	ND<29	ND<39	ND<40	ND<26	ND<56	ND<34	ND<27	ND<26	ND<41	ND

NOTES:
All results provided in micrograms per kilogram (µg/kg) or parts per billion (ppb)
All samples analyzed by EPA Method 8082 w/soxhlet extraction
Bold values indicate detections
VSS = Vermont Soil Standards (IRULE, July 2019)
Orange shaded values indicate exceedance of Resident Values
Red shaded values indicate exceedance of Non-Resident Values
ND = not detected above provided detection limit
fbgs = feet below ground surface
RPD = relative percent difference

TABLE 4
SOIL QUALITY RESULTS - VOLATILE ORGANIC COMPOUNDS
VTRANS NORTHFIELD BRIDGE REPLACEMENT PROJECT

	Analyte	Acetone	2-Butanone (MEK)	Carbon Disulfide	Chloro form	Ethyl benzene	p-Isopropyl toluene	Naph thalene	Styrene	1,2,4-TMB	1,3,5-TMB	m,p-Xylene	o-Xylene	Xylenes, total
	VSS Resident:	**40,609,000**	**16,952,000**	**608,000**	**NS**	**3,700**	**NS**	**2,700**	**NS**	**144,000**		**NS**	**NS**	**252,000**
	VSS Non-Resident:	**100,028,000**	**26,991,000**	**662,000**	**NS**	**22,000**	**NS**	**16,000**	**NS**	**177,000**		**NS**	**NS**	**257,000**
Sample ID:	**Depth (fbgs):**	**Date:**												
H-101-B	24-29	09/21/21	**44.2**	ND<2.5	**0.93 J**	ND<0.53	ND<0.46	ND<0.41	ND<2.6	ND<0.41	ND<0.51	ND<0.44	ND<0.92	ND<0.47	ND<0.47
H-102-B	17-19	09/22/21	**19.3**	ND<2.6	ND<0.57	ND<0.55	ND<0.48	ND<0.42	ND<2.7	ND<0.43	ND<0.53	ND<0.46	ND<0.95	ND<0.49	ND<0.49
H-103-B	20-22	09/27/21	**628**	**140**	**2.9 J**	ND<0.82	ND<0.72	ND<0.63	ND<4.0	ND<0.64	ND<0.79	ND<0.68	ND<1.4	ND<0.73	ND<0.73
H-104-B	20-24	09/20/21	**13.5**	ND<2.3	**2.3**	ND<0.49	ND<0.43	ND<0.37	ND<2.4	ND<0.38	**0.58 J**	ND<0.41	ND<0.85	ND<0.43	ND<0.43
		DUP-B	**18.7**	ND<2.6	**1.8 J**	ND<0.54	ND<0.48	ND<0.41	**10.1**	ND<0.42	**0.80 J**	ND<0.45	ND<0.94	ND<0.48	ND<0.48
		RPD	32%	--	24%	--	--	--	--	--	32%	--	--	--	--
B-101-B	20-24	09/28/21	**334**	**71.0**	**2.4 J**	ND<0.99	ND<0.87	ND<0.76	ND<4.8	ND<0.77	ND<0.96	ND<0.82	ND<1.7	ND<0.88	ND<0.88
B-102-B	8-11	09/22/21	**22.5**	ND<2.1	**0.60 J**	ND<0.44	**0.62 J**	ND<0.34	**156**	**0.40 J**	**4.4**	**2.0**	**1.2**	**2.5**	**3.7**
B-103-B	17-19	09/21/21	**69.4**	**17.5**	**0.80 J**	ND<0.62	ND<0.55	ND<0.48	ND<3.0	ND<0.48	ND<0.60	ND<0.52	ND<1.1	ND<0.55	ND<0.55
B-104-B	20-24	09/24/21	**153**	**29.5**	**1.8 J**	ND<0.68	ND<0.60	ND<0.52	ND<3.3	ND<0.53	ND<0.66	ND<0.57	ND<1.2	ND<0.60	ND<0.60
B-105-B	20-24	09/26/21	**10.5**	ND<0.99	**0.59 J**	ND<0.21	ND<0.19	ND<0.16	ND<1.0	ND<0.16	ND<0.20	ND<0.18	**0.40 J**	ND<0.19	**0.40 J**
B-106-B	20-24	09/20/21	**15.0**	ND<2.6	**0.95 J**	**4.9**	ND<0.48	**0.53 J**	ND<2.6	ND<0.43	ND<0.53	ND<0.46	ND<0.95	ND<0.48	ND<0.48

NOTES:
All results provided in micrograms per kilogram (µg/kg) or parts per billion (ppb)
All samples analyzed by EPA Method 8260
Bold values indicate detections
VSS = Vermont Soil Standards (IRULE, July 2019)
Orange shaded values indicate exceedance of Resident Values
Red shaded values indicate exceedance of Non-Resident Values
ND = not detected above provided detection limit
fbgs = feet below ground surface
RPD = relative percent difference

TABLE 5
GROUNDWATER QUALITY RESULTS
VTRANS NORTHFIELD BRIDGE REPLACEMENT PROJECT

	Analyte:	Benzene	Isopropyl benzene	Naph thalene	Toluene	1,2,4-TMB	1,3,5-TMB	m,p-Xylene	Xylene (total)	Arsenic
	VGES:	**5.0**	**NS**	**0.5**	**1,000**	**23**		**NS**	**10,000**	**10**
Sample ID	**Sample Date**									
B-101 MW	10/05/21	ND<0.43	ND<0.65	*ND<2.5*	ND<0.53	ND<1.0	ND<1.0	ND<0.78	ND<0.59	ND<3.0
B-104 MW	10/05/21	**0.56**	**1.3**	**8.7**	**0.57 J**	**29.4**	**6.5**	**62.5**	**62.5**	**4.4**
QA/QC Samples										
DUP-2 (B-104 MW)	10/05/21	**0.66**	**1.3**	**10.0**	**0.67 J**	**32.6**	**7.0**	**69.3**	**69.3**	**4.2**
RPD	--	*16%*	*0%*	*14%*	*16%*	*10%*	*7%*	*10%*	*10%*	*5%*
Trip Blank	10/05/21	ND<0.43	ND<0.65	ND<2.5	ND<0.53	ND<1.0	ND<1.0	ND<0.78	ND<0.59	--

NOTES:
All samples analyzed by SGS Accutest of Dayton, NJ via EPA Method 8260 (VOCs) and EPA Method 6010 (Metals)
Results provided in micrograms per liter (µg/l)
ND<# = not detected at or above method detection limit (MDL), specified.
VGES = Vermont Groundwater Enforcement Standards, updated July 2019
RPD = relative percent difference
Red shaded values exceed VGES or 30% RPD
Italicized ND value indicates that the MDL is exceeds the VGES.
J = analyte detected at or above MDL, but below reporting limit, and is therefore estimated.
TMB = trimethylbenzene

APPENDIX A

BORING LOGS / WELL CONSTRUCTION DETAILS

ATLAS

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

BORING / WELL IDENTIFICATION: B-101 MW

SITE NAME:	Northfield Bridge
SITE LOCATION:	Rt 12
INSTALLATION DATE:	9/28/21
JOB NUMBER:	280BS02090

WELL DEPTH:	24'	BORING DEPTH:	24'	ATLAS REPRESENTATIVE:	JP / AG
DEPTH TO WATER (DURING DRILLING):	~18'			DRILLING COMPANY:	NEBC
SCREEN DIAMETER:	2"	DEPTH:	24-14'		
SCREEN TYPE/SIZE:	0.010" slot			SAMPLING METHOD:	SPT
RISER DIAMETER:	2"	DEPTH:	14-0'	REFERENCE POINT (RP):	ground
RISER TYPE/SIZE:	PVC			ELEVATION OF RP:	

REMARKS: H+H doing geotechnical on all overburden plus 10' bedrock (did not core bedrock here)

DEPTH (IN FEET)	RECOVERY (FT)	SAMPLE DESCRIPTION AND NOTES	STRATA CHANGE	PID (PPM)	WELL PROFILE
0	1.0'	0.5" concrete 0.5-2' brown, dry,		0.0	
1	B-101-A @0845 0-2 1.0'	silty f. sand and f. gravel, some		-	
2		c. gravel 2-4' SAA. (FILL)		0.0	
3				-	
4	1.0'	4-6' SAA, more c. gravel (FILL)		0.0	
5				-	
6	NR	6-8' ——		-	
7				-	
8	0.5'	8-10' SAA (FILL) some reddish		0.0	
9		mottling, moist		-	
10	13"	10-12' SAA		0.0	
11				-	
12		~~#~~		-	
13				-	
14				-	
15	8"	15-17' sandy gravel (6"), silty		0.0	
16		sand w/ some sub-rounded gravel (2")		-	
17		broke casing; move hole ~3ft toward river		-	
18		boulder or similar 17-18' concrete?		-	
19				-	
20					

LEGEND: Concrete; Native; Bentonite; Filter Sand; Riser; Screen; Water level

screen: 24-14'
riser: 14-0'
sand: 24-13'
bent: 13-11'
native: 11-1'
road box flushmount

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

Notes:
PID used: IonScience Tiger #3

pg 1 of 2

ATLAS

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

BORING / WELL IDENTIFICATION: B-101MW

SITE NAME:	Northfield Bridge
SITE LOCATION:	Rt 12
INSTALLATION DATE:	9/20/21
JOB NUMBER:	280BS02090

WELL DEPTH:		BORING DEPTH:		ATLAS REPRESENTATIVE:	JP, AG
DEPTH TO WATER (DURING DRILLING):				DRILLING COMPANY:	NEBC
SCREEN DIAMETER:	2"	DEPTH:			
SCREEN TYPE/SIZE:	0.010" slot			SAMPLING METHOD:	SPT
RISER DIAMETER:	2"	DEPTH:		REFERENCE POINT (RP):	ground
RISER TYPE/SIZE:	PVC			ELEVATION OF RP:	
REMARKS:					

DEPTH (IN FEET)	RECOVERY (FT)	SAMPLE DESCRIPTION AND NOTES	STRATA CHANGE	PID (PPM)	WELL PROFILE
0	14"	20-22' Clayey silt & few sand, brown, some		0.0	
1		organics/wood debris		0.0	
2	1'	22-24' SAA			
3					
24					
25					
26					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

LEGEND: Concrete, Native, Bentonite, Filter Sand, Riser, Screen, Water level

2 of 2

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

Notes:
PID used: IonScience Tiger

ATLAS

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

BORING / WELL IDENTIFICATION: B-102

SITE NAME:	Northfield Bridge
SITE LOCATION:	Rt. 12
INSTALLATION DATE:	9/22/21
JOB NUMBER:	B502090

WELL DEPTH:	—	BORING DEPTH:	32'	ATLAS REPRESENTATIVE:	AS
DEPTH TO WATER (DURING DRILLING):	~20'			DRILLING COMPANY:	NEBC
SCREEN DIAMETER:	—	DEPTH:	—		
SCREEN TYPE/SIZE:	—			SAMPLING METHOD:	SPT
RISER DIAMETER:	—	DEPTH:	—	REFERENCE POINT (RP):	ground
RISER TYPE/SIZE:	—			ELEVATION OF RP:	

REMARKS: H+H doing geotechnical on all overburden plus 10' bedrock

DEPTH (IN FEET)	RECOVERY (FT)	SAMPLE DESCRIPTION AND NOTES	STRATA CHANGE	PID (PPM)	WELL PROFILE	LEGEND
0	B-102-A @ 1310 (2-4') 1.0	0-2 asphalt, maybe some soil between, then concrete		—		Concrete
1				—		Native
2		2-4' brown, dry f-c sand and f-c gravel (FILL)		0.0		
3				—		Bentonite
4	0.8'	4-6' lt. greyish brown, slight odor, c. sand and f gravel (FILL)		~~0.0~~ 1.6		Filter Sand
5				—		
6	0.8'	6-8' SAA		0.0		Riser
7				—		
8	1.4'	8-10' SAA	petrol odor	3.8		Screen
~~B-102-B @ 1400~~ 1330 (8-10')				0.9		Water level
10	1.0'	10-12' SAA; some black c. sand		4.2 (5.6 in bag)		
11		(switch to auger + SS every 5ft.)		—		
12				—		
13		lost water to formation ~14ft		—		25-27' SS (1.5' Rec) — grey silty gravel, little f. sand (0 ppm)
14				—		
15	0.5'	15-17 - SAA; some wood		0.0		
16		boulder @ ~18'		—		30-32' SS (1.5' Rec) — SAA; bottom 0.5' is grey clayey silt (0.0 ppm)
17		20-20.1 — bouncing on wood, little rec.		0.0		
18	0.5'	21-23' (0.0 ppm) c. sand, f. gravel		—		
19		+ wood pulp		—		TOR = 32'
20		begin rock coring (10') @ 33' - 9/23/21		0.0		

PROPORTIONS USED		BLOW COUNT (COHESIVE SOILS)		BLOW COUNT (GRANULAR SOILS)		Notes:
AND	33-50%	<2	VERY SOFT	0-4	VERY LOOSE	PID used: IonScience Tiger #3
SOME	20-33%	2-4	SOFT	4-10	LOOSE	
LITTLE	10-20%	4-8	MEDIUM STIFF	10-30	MEDIUM DENSE	
TRACE	0-10%	8-15	STIFF	30-50	DENSE	
		15-30	VERY STIFF	>50	VERY DENSE	
		>30	HARD			

ATLAS

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

BORING / WELL IDENTIFICATION: B-103

SITE NAME:	Northfield Bridge
SITE LOCATION:	Rt 12
INSTALLATION DATE:	9/21/21
JOB NUMBER:	BS02090

WELL DEPTH:	—	BORING DEPTH:	30'	ATLAS REPRESENTATIVE:	JP
DEPTH TO WATER (DURING DRILLING):	~20ft			DRILLING COMPANY:	NEBC
SCREEN DIAMETER:	—	DEPTH:	—		
SCREEN TYPE/SIZE:	—			SAMPLING METHOD:	SPT / SS + Mud rotary
RISER DIAMETER:	—	DEPTH:	—	REFERENCE POINT (RP):	ground
RISER TYPE/SIZE:	—			ELEVATION OF RP:	

REMARKS: H+H doing geotechnical on overburden + 10ft bedrock

DEPTH (IN FEET)	RECOVERY (FT)	SAMPLE DESCRIPTION AND NOTES	STRATA CHANGE	PID (PPM)	WELL PROFILE
0		0-2' - concrete		—	
1	B-103-A @1110 (2-4')			—	
2	1' Rec.	2-4' brown, dry, silty f. sand;		0.0	
3		some c. sand and f. gravel		—	
4	1.0 Rec.	4-6' brown, dry, silty f. sand and		0.4	
5		gravel road base		0.0	
6	1.2'	6-8' SAA		3.8	
7				3.2	
8	1.0'	8-10' SAA		0.9	
9				—	
10	1.2'	10-12' SAA, less gravel		0.7	
11				0.1	
12		switch to mud rotary		—	
13				—	
14				—	
15	1.1'	15-17' wet from drilling; brown, f-c sand		0.0	
16		and f. gravel, trace c. gravel		0.0	
17				—	
18	B-103-B @1320 (20-22')	20-22' brown, wet, silty f. sand			
19		25-27' (0.8' Rec) brown, wet, silty f. sand and f. gravel (all 0.0)		—	
20	2.0'	TOR = 30' bgs		0.0 (20-22)	

▽

not enough recovery for sample after geotech sample was collected

LEGEND: Concrete; Native; Bentonite; Filter Sand; Riser; Screen; Water level

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

Notes:
PID used: IonScience Tiger 713

ATLAS

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

BORING / WELL IDENTIFICATION: B-104/MW

SITE NAME:	Northfield Bridge
SITE LOCATION:	Rt 12
INSTALLATION DATE:	9/24/21
JOB NUMBER:	BS02090

WELL DEPTH:	25'	BORING DEPTH:	28'	ATLAS REPRESENTATIVE:	JP
DEPTH TO WATER (DURING DRILLING):	N 20'			DRILLING COMPANY:	NEBC
SCREEN DIAMETER:	2"	DEPTH:	25-15'		
SCREEN TYPE/SIZE:	0.010" slot			SAMPLING METHOD:	SPT
RISER DIAMETER:	2"	DEPTH:	15-0'	REFERENCE POINT (RP):	ground
RISER TYPE/SIZE:	PVC			ELEVATION OF RP:	
REMARKS:	H+H done geotechnical on overburden plus 10' bedrock				

DEPTH (IN FEET)	RECOVERY (FT)	SAMPLE DESCRIPTION AND NOTES	STRATA CHANGE	PID (PPM)	WELL PROFILE
0	B-104-A @ 0840 (0-2') 0.4'	0-2' brown, f. sand and f. gravel dry (FILL)		0.0	
1				—	
2	0.9'	2-4' SAA (FILL)		0.0	
3				—	
4	0.9'	4-6' SAA, some grey silty f. sand (FILL)		0.0	
5				—	
6	0.8'	6-8' brown, dry, silty f. sand and c. sand and f-c gravel (FILL)		0.0	
7				—	
8	0.8'	8-10' SAA (FILL)		0.0	
9				—	
10	1.0'	10-12' SAA (FILL)		0.0	
11				—	
12				—	
13				—	
14				—	
15	1.0'	15-17' wet from rig; 0-0.7' - SAA;		0.0	
16	B-104-B @ 0950 (20-24')	0.7-1.0' - dark grey, soft, silty f.		—	
17		sand, some clay		—	
18	(1.5')	20-22' brown, wet, soft, silty f. sand, some f. gravel		—	
19	(1.0')	22-24' SAA, more gravel. some wood. 0.0-0.2ppm			
20	(1.0')	25-27' SAA; weathered rock @ 26.5' (0.1ppm)		0.0-0.2ppm @21'	

LEGEND: Concrete; Native; Bentonite; Filter Sand; Riser; Screen; Water level

screen - 25-15'
riser - 15-0'
bent. - 14-12'
sand - 25-14'
native to top
flush mount w/ road box

TOR = 28'

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

Notes:
PID used: IonScience Tiger #3

ATLAS

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

BORING / WELL IDENTIFICATION: B-105

SITE NAME:	Northfield Bridge
SITE LOCATION:	Rte 12
INSTALLATION DATE:	9/23/21
JOB NUMBER:	BS02090

WELL DEPTH:		BORING DEPTH:	25'	ATLAS REPRESENTATIVE:	EVan
DEPTH TO WATER (DURING DRILLING):				DRILLING COMPANY:	NEBC
SCREEN DIAMETER:	—	DEPTH:	—		
SCREEN TYPE/SIZE:	—			SAMPLING METHOD:	SPT/SS/Mud rotary
RISER DIAMETER:	—	DEPTH:	—	REFERENCE POINT (RP):	Ground surface
RISER TYPE/SIZE:	—			ELEVATION OF RP:	
REMARKS:					

DEPTH (IN FEET)	RECOVERY (FT)	SAMPLE DESCRIPTION AND NOTES	STRATA CHANGE	PID (PPM)	WELL PROFILE
		0.5-2' SS			
0	B105A (0.5-2') @ 1100	0-0.5 asphalt, 0.5-2' stgr fill, dry FILL		0.0	
1		—		—	
13" 2	2-4' SS	AA, gravel more fine FILL		0.0	
3	—	—		—	
4 7"	4-6' SS	m br sand over rock gravel pieces, angular FILL		0.0	
5	—	—		—	
6 5"	6-8' SS	rock gravel pieces, angular FILL		0.0	
7 6"	8-10' SS	dk br m sand fill, w/ gravel FILL		0.0	
8 14"	10-12' SS	rock gravel w/ some sand FILL		0.0	
9	—	switch to mud rotary		—	
10 8'	15-17' SS	pulverized rock, some sand		0.0	
11	20-22	grey f to m sand, trace gravel		—	
12	22-24	grey black f to m sand, little silt		0.6	
13	25'	refusal on rock, lost water into formation			
14					
15	1230 B105B (20-24')				
16					
17					
18					
19					
20					

LEGEND: Concrete; Native; Bentonite; Filter Sand; Riser; Screen; Water level

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

Notes:
PID used: IonScience Tiger 10.6 eV

ATLAS

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

BORING / WELL IDENTIFICATION: B-106

SITE NAME:	Northfield Bridge Project
SITE LOCATION:	Rt 12 Northfield
INSTALLATION DATE:	9/20/21
JOB NUMBER:	BS02090

WELL DEPTH:	—	BORING DEPTH:	23.8	ATLAS REPRESENTATIVE:	JP
DEPTH TO WATER (DURING DRILLING):	~20'			DRILLING COMPANY:	NEBC
SCREEN DIAMETER:	—	DEPTH:	—		
SCREEN TYPE/SIZE:	—			SAMPLING METHOD:	split spoon / SPT
RISER DIAMETER:	—	DEPTH:	—	REFERENCE POINT (RP):	ground
RISER TYPE/SIZE:	—			ELEVATION OF RP:	—
REMARKS:	Geotechnical performed by H+H				

DEPTH (IN FEET)	RECOVERY (FT) / Sample	SAMPLE DESCRIPTION AND NOTES	STRATA CHANGE	PID (PPM)	WELL PROFILE
0	B-106-A (0.5-1.5') @0950	0-2' - 0.8' Rec. brown, dry, silty fine sand, some rounded c. gravel		0.0	
1				—	
2		2-4' - 0.3' Rec. — SAA		0.0	
3				—	
4	1'	4-6' SAA		0.0	
5				—	
6	1.2'	6-8' 0-0.8' H. brown, dry, f.		0.0	
7		sand 0.8-1.2' SAA (4-6')		—	
8	0.5'	8-10' brown, dry, f-c sand, trace		0.0	
9		c. gravel, some silt		—	
10	1.4'	10-12' SAA		0.0	
11				0.0	
12				-	switch to mud rotary
13				—	
14				—	
15	1'	15-17' moist, brown, silty f-c		0.0	
16		sand, trace f+c rounded gravel		—	
17				—	
18		1' Rec. brown, wet f. sand, some silt, trace f. gravel + c. sand		—	collect spoon
19	B-106-B (20-24') @1115	need more sample volume from 22-24' Refusal @ 23.8'		—	
20		20-22'		0.0	

Concrete
Native
Bentonite
Filter Sand
Riser
Screen
Water level

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

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

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

Notes:
PID used: IonScience Tiger #3

ATLAS

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

BORING / WELL IDENTIFICATION: H-101

SITE NAME:	Northfield Bridge
SITE LOCATION:	Rt 12
INSTALLATION DATE:	9/21/21
JOB NUMBER:	BS02090

WELL DEPTH:	—	BORING DEPTH:	29'	ATLAS REPRESENTATIVE:	JP
DEPTH TO WATER (DURING DRILLING):		~20'		DRILLING COMPANY:	NEBC
SCREEN DIAMETER:	—	DEPTH:	—		
SCREEN TYPE/SIZE:	—			SAMPLING METHOD:	SPT/SS + mud rotary
RISER DIAMETER:	—	DEPTH:	—	REFERENCE POINT (RP):	ground
RISER TYPE/SIZE:	—			ELEVATION OF RP:	
REMARKS:					

DEPTH (IN FEET)	RECOVERY (FT)	SAMPLE DESCRIPTION AND NOTES	STRATA CHANGE	PID (PPM)	WELL PROFILE
0	H-101-A (0.5-1.5') @ 0915	0-2' - 1' Rec. grey-brown, dry road base f-c sand and c. gravel - boulder or similar @ 2 ft, auger through + auger to 20'		0.0	
1				—	
2				0.0	
3				—	
4		- collect samples from auger to 20'		0.0	
5				—	
6		2-20' - brown, dry, f-c sand and f+c gravel, trace silt		0.0	
7				—	
8				0.0	
9		auger to 20'		—	
10				0.0	
11				—	
12				0.0	
13				—	
14		SS 20-22' - 0.3' Rec. wet (all 0.0)		0.0	
15		c- angular gravel, very soft		—	
16	H-101-B (@ 1010) (24-29')	22-24' - NR		0.0	
17		24-26.7' - 0.8' Rec. (1.4 PID)		—	
18		wet, silty f. sand and c. angular		0.0	
19		gravel.		—	
20		27-29' - wet brown f-m sand, trace gravel, trace silt. Top of Rock @ 29 ft	TOR @ 29'	0.0	

LEGEND: Concrete, Native, Bentonite, Filter Sand, Riser, Screen, Water level

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

Notes: — 0.0 PID

PID used: IonScience Tiger

ATLAS

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

BORING / WELL IDENTIFICATION: H-102

SITE NAME:	Northfield Bridge
SITE LOCATION:	Rt 12
INSTALLATION DATE:	9/22/21
JOB NUMBER:	BS02090

WELL DEPTH:	—	BORING DEPTH:	25'	ATLAS REPRESENTATIVE:	JP
DEPTH TO WATER (DURING DRILLING):	~17			DRILLING COMPANY:	NEBC
SCREEN DIAMETER:	—	DEPTH:	—		
SCREEN TYPE/SIZE:	—			SAMPLING METHOD:	SPT / SS + mud
RISER DIAMETER:	—	DEPTH:	—	REFERENCE POINT (RP):	ground
RISER TYPE/SIZE:	—			ELEVATION OF RP:	—
REMARKS:					

DEPTH (IN FEET)	RECOVERY (FT)	SAMPLE DESCRIPTION AND NOTES	STRATA CHANGE	PID (PPM)	WELL PROFILE
0		0-2' concrete (old road?)		—	
1	H-102-1 @ 0930 (2-4')			—	
2		2-4' H.1 dk. brown, dry, f-c sand		0.0	
3	1.4'	and broken rock/gravel (fill)		0.0	
4	1.5'	4-6' brown, dry, silty f. sand and		0.0	
5		f. gravel - looks potentially		0.0	
6		native		0.0	
7		Switch to augers		0.0	
8		SAA		-	
9				0.0	
10				0.0	
11				—	
12				0.0	
13		hitting some cobbles @ ~14'		—	
14		SAA, more f+c gravel, rounded		0.0	
15					
16	H-102-B @ 1120 (17-19')	brown f. sand, wet @ ~17'		0.0	
17		SS 20-22' (1.5' rec.) brown, wet f. sand		0.8	
18		22-25' (2' rec.) SAA		0.0	
19		20-25' = 0.0 ppm		0.0	
20				0.0	

LEGEND: Concrete; Native; Bentonite; Filter Sand; Riser; Screen; Water level

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

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

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

Notes:

PID used: IonScience Tiger #3

ATLAS

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

BORING / WELL IDENTIFICATION: H-103

SITE NAME:	Northfield Bridge
SITE LOCATION:	Rt 12
INSTALLATION DATE:	9/27/21
JOB NUMBER:	BS02090

WELL DEPTH:	—	BORING DEPTH:	25'	ATLAS REPRESENTATIVE:	JB
DEPTH TO WATER (DURING DRILLING):	21'			DRILLING COMPANY:	NEBC
SCREEN DIAMETER:	—	DEPTH:	—		
SCREEN TYPE/SIZE:	—			SAMPLING METHOD:	SPT
RISER DIAMETER:	—	DEPTH:	—	REFERENCE POINT (RP):	ground
RISER TYPE/SIZE:	—			ELEVATION OF RP:	
REMARKS:					

DEPTH (IN FEET)	RECOVERY (FT)	SAMPLE DESCRIPTION AND NOTES	STRATA CHANGE	PID (PPM)	WELL PROFILE
0	H-103-A @1240 (1.3')	0-1 asphalt + concrete		—	
1	1.5'	1-3' crushed road base / greyish brown, dry, sand and c. gravel		0.0	
2				0.0	
3	0.5'	3-5' SAA		0.0	
4				—	
5		auger to 20' then SS		—	
6				0.0	
7		brown, dry, silty f. sand and f. rounded gravel,		—	
8				—	
9				—	
10				0.0	
11				—	
12	H-103-B @1500 (17-19')			—	
13				3.8	(off auger spoils)
14				4.9	
15	1.0'	15-17' brown, dry, silty f. Sand		0.3	
16		cobble at bottom		—	
17	1.5'	17-19' 0-0.4' - SAA. 0.4-1.5' black,		0.1	
18		dry, f. sandy silt		0.2	
19	2.0'	19-21' top 0.5' - silty sand + cobble from above;		0.0	
20		0.5-2.0' - dark brown, wet @ 21', silty f. sand		0.0	

LEGEND: Concrete, Native, Bentonite, Filter Sand, Riser, Screen, Water level

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

Notes:
PID used: IonScience Tiger #3
10.6 Lamp

21-23' (1.8' Rec.) SAA (0.0 ppm) wet
23-25' (Rec.) f. sand, brown, wet (0.2 ppm)

ATLAS

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

BORING / WELL IDENTIFICATION: H-104

SITE NAME:	Northfield Bridge
SITE LOCATION:	Rt 12
INSTALLATION DATE:	9/20/21
JOB NUMBER:	BS02090

WELL DEPTH:	—	BORING DEPTH:	24'	ATLAS REPRESENTATIVE:	JP
DEPTH TO WATER (DURING DRILLING):	~20'			DRILLING COMPANY:	NEBC
SCREEN DIAMETER:	—	DEPTH:	—		
SCREEN TYPE/SIZE:	—			SAMPLING METHOD:	SPT / split spoon + mud rotary
RISER DIAMETER:	—	DEPTH:	—	REFERENCE POINT (RP):	ground
RISER TYPE/SIZE:	—			ELEVATION OF RP:	—

REMARKS: H+H performed geotechnical on overburden ~~+ to bedrock~~ next to H-borings

DEPTH (IN FEET)	RECOVERY (FT)	SAMPLE DESCRIPTION AND NOTES	STRATA CHANGE	PID (PPM)	WELL PROFILE
0	H-104-A @ 1420 + DUP(A)	(0.5'-4') 0-2' - 0.8' Rec' brown matrix, f.		0.0	
1		silty sand, broken cobbles / FILL		—	
2		2-4' - 1.5' Rec' SAA		0.0	
3				0.0	
4	Auger	4 – 10' Sample from auger		—	
5	to	brown, dry, f-c sand, some silt		0.0	
6		+ f-c gravel		—	
7				0.0	
8		moist from augers		—	
9				0.0	
10		silty f. sand (all fill)		—	
11				0.0	
12				—	
13				0.0	
14		SS @ 20-22' wet, brown, (all 0.0)		—	
15	20-24'	f-c sand and f+c-gravel		0.0	
16	H-104-B @ 1520 + DUP(B)	SS @ 22-24' - SAA (all 0.0)		—	
17				0.0	
18		both recoveries ~1.5-1.8'		—	
19		end of boring 24'		0.0	
20				0.0	

LEGEND: Concrete, Native, Bentonite, Filter Sand, Riser, Screen, Water level

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

Notes:
PID used: IonScience Tiger #3

APPENDIX B

SOIL LABORATORY ANALYTICAL REPORT

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Atlas Technical Consultants, LLC

Northfield Bridge, Route 12, VT

280BS02090

SGS Job Number: JD32315

Sampling Dates: 09/20/21 - 09/24/21

Report to:

Atlas Technical Consultants, LLC
51 Knight Lane
Williston, VT 05495
erik.urch@oneatlas.com

ATTN: Erik Urch

Total number of pages in report: 350

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Mike Earp
General Manager

Client Service contact: Marie Meidhof 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (ANAB L2248)

This report shall not be reproduced, except in its entirety, without the written approval of SGS.
Test results relate only to samples analyzed.

SGS is the sole authority for authorizing edits or modifications to this document.
Unauthorized modification of this report is strictly prohibited.
Review standard terms at: http://www.sgs.com/en/terms-and-conditions

Please share your ideas about how we can serve you better at:
EHS.US.CustomerCare@sgs.com

Table of Contents

Sections: 1 2 3 4 5 6 7 8 9 10 11

Section 1: Sample Summary 4
Section 2: Case Narrative/Conformance Summary 7
Section 3: Summary of Hits 17
Section 4: Sample Results 27
4.1: JD32315-1: B-106-A 28
4.2: JD32315-2: B-106-B 30
4.3: JD32315-3: B-106-C 36
4.4: JD32315-4: H-104-A 45
4.5: JD32315-5: H-104-B 47
4.6: JD32315-6: H-104-C1 53
4.7: JD32315-7: H-104-C2 62
4.8: JD32315-8: DUP-A 71
4.9: JD32315-9: DUP-B 73
4.10: JD32315-10: H-101-A 79
4.11: JD32315-11: H-101-B 81
4.12: JD32315-12: H-101-C 87
4.13: JD32315-13: B-103-A 96
4.14: JD32315-14: B-103-B 98
4.15: JD32315-15: B-103-C 104
4.16: JD32315-16: H-102-A 113
4.17: JD32315-17: H-102-B 115
4.18: JD32315-18: H-102-C 121
4.19: JD32315-19: B-102-A 130
4.20: JD32315-20: B-102-B 132
4.21: JD32315-21: B-102-C 138
4.22: JD32315-22: B-105-A(0.5-2') 147
4.23: JD32315-23: B-105-B(20-24') 149
4.24: JD32315-24: B-105-C(0.5-24') 155
4.25: JD32315-25: B-104-A 164
4.26: JD32315-26: B-104-B 166
4.27: JD32315-27: B-104-C 172
Section 5: Misc. Forms 181
5.1: Certification Exceptions 182
5.2: Chain of Custody 183
Section 6: MS Volatiles - QC Data Summaries 189
6.1: Method Blank Summary 190
6.2: Leachate Blank Summary 195
6.3: Blank Spike Summary 197
6.4: Matrix Spike/Matrix Spike Duplicate Summary 201
6.5: Leachate Spike Summary 205
6.6: Instrument Performance Checks (BFB) 206
6.7: Surrogate Recovery Summaries 215

Sections: 1 2 3 4 5 6 7 8 9 10 11

Table of Contents

Section 7: MS Semi-volatiles - QC Data Summaries 217
7.1: Method Blank Summary 218
7.2: Leachate Blank Summary 223
7.3: Blank Spike Summary 226
7.4: Matrix Spike/Matrix Spike Duplicate Summary 229
7.5: Leachate Spike Summary 232
7.6: Instrument Performance Checks (DFTPP) 233
7.7: Surrogate Recovery Summaries 252
Section 8: GC Volatiles - QC Data Summaries 255
8.1: Method Blank Summary 256
8.2: Blank Spike Summary 258
8.3: Matrix Spike/Matrix Spike Duplicate Summary 259
8.4: Surrogate Recovery Summaries 260
Section 9: GC/LC Semi-volatiles - QC Data Summaries 261
9.1: Method Blank Summary 262
9.2: Leachate Blank Summary 272
9.3: Blank Spike Summary 278
9.4: Blank Spike/Blank Spike Duplicate Summary 282
9.5: Matrix Spike/Matrix Spike Duplicate Summary 286
9.6: Leachate Spike Summary 293
9.7: Surrogate Recovery Summaries 295
Section 10: Metals Analysis - QC Data Summaries 300
10.1: Prep QC MP28913: As,Ba,Cd,Cr,Pb,Se,Ag 301
10.2: Prep QC MP28930: Hg 311
10.3: Prep QC MP28967: Hg 315
10.4: Prep QC MP29010: As,Ba,Cd,Cr,Pb,Se,Ag 319
10.5: Prep QC MP29028: As,Ba,Cd,Cr,Pb,Se,Ag 329
10.6: Prep QC MP29030: Hg 339
10.7: Prep QC MP29059: Hg 343
Section 11: General Chemistry - QC Data Summaries 347
11.1: Method Blank and Spike Results Summary 348
11.2: Duplicate Results Summary 349
11.3: Matrix Spike Results Summary 350

SGS North America Inc.

Sample Summary

Atlas Technical Consultants, LLC

Job No: JD32315

Northfield Bridge, Route 12, VT
Project No: 280BS02090

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
This report contains results reported as ND = Not detected. The following applies:							
Organics ND = Not detected above the MDL							
JD32315-1	09/20/21	09:50		09/28/21	SO	Soil	B-106-A
JD32315-2	09/20/21	11:15		09/28/21	SO	Soil	B-106-B
JD32315-3	09/20/21	11:30		09/28/21	SO	Soil	B-106-C
JD32315-4	09/20/21	14:20		09/28/21	SO	Soil	H-104-A
JD32315-5	09/20/21	15:20		09/28/21	SO	Soil	H-104-B
JD32315-6	09/20/21	15:40		09/28/21	SO	Soil	H-104-C1
JD32315-7	09/20/21	15:42		09/28/21	SO	Soil	H-104-C2
JD32315-8	09/20/21	00:01		09/28/21	SO	Soil	DUP-A
JD32315-9	09/20/21	00:02		09/28/21	SO	Soil	DUP-B
JD32315-10	09/21/21	09:15		09/28/21	SO	Soil	H-101-A
JD32315-11	09/21/21	10:10		09/28/21	SO	Soil	H-101-B
JD32315-12	09/21/21	10:30		09/28/21	SO	Soil	H-101-C

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary
(continued)

Atlas Technical Consultants, LLC

Job No: JD32315

Northfield Bridge, Route 12, VT
Project No: 280BS02090

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
JD32315-13	09/21/21	11:10		09/28/21	SO	Soil	B-103-A
JD32315-14	09/21/21	13:20		09/28/21	SO	Soil	B-103-B
JD32315-15	09/21/21	13:40		09/28/21	SO	Soil	B-103-C
JD32315-16	09/22/21	09:30		09/28/21	SO	Soil	H-102-A
JD32315-17	09/22/21	11:20		09/28/21	SO	Soil	H-102-B
JD32315-18	09/22/21	11:40		09/28/21	SO	Soil	H-102-C
JD32315-19	09/22/21	13:10		09/28/21	SO	Soil	B-102-A
JD32315-20	09/22/21	13:30		09/28/21	SO	Soil	B-102-B
JD32315-21	09/22/21	14:20		09/28/21	SO	Soil	B-102-C
JD32315-22	09/23/21	11:00		09/28/21	SO	Soil	B-105-A(0.5-2')
JD32315-23	09/23/21	13:30		09/28/21	SO	Soil	B-105-B(20-24')
JD32315-24	09/23/21	14:00		09/28/21	SO	Soil	B-105-C(0.5-24')
JD32315-25	09/24/21	08:40		09/28/21	SO	Soil	B-104-A

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary
(continued)

Atlas Technical Consultants, LLC

Job No: JD32315

Northfield Bridge, Route 12, VT
Project No: 280BS02090

Sample Number	Collected Date	Time By	Received	Matrix Code	Matrix Type	Client Sample ID
JD32315-26	09/24/21	09:50	09/28/21	SO	Soil	B-104-B
JD32315-27	09/24/21	10:00	09/28/21	SO	Soil	B-104-C

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	Atlas Technical Consultants, LLC	**Job No:**	JD32315
Site:	Northfield Bridge, Route 12, VT	**Report Date**	10/20/2021 11:35:20 A

On 09/28/2021, 27 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc. at a maximum corrected temperature of 2.5 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. Job Number of JD32315 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Compounds qualified as out of range in the continuing calibration summary report are acceptable as per method requirements when there is a high bias but the sample result is non-detect.

MS Volatiles By Method SW846 8260D

Matrix: LEACHATE **Batch ID:** V2V3357

- Sample(s) JD32528-16AMS, JD32528-16AMSD were used as the QC samples indicated.
- Sample(s) JD32315-12, JD32315-15, JD32315-18, JD32315-21, JD32315-24, JD32315-27, JD32315-3, JD32315-6, JD32315-7 have compound(s) reported with a "B" qualifier, indicating analyte is found in the associated method blank. Indicates analyte found in associated leachate blank.
- JD32315-6 for 2-Butanone (MEK): Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.
- JD32315-18 for 2-Butanone (MEK): Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.
- JD32315-21 for 2-Butanone (MEK): Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.
- JD32315-15 for 2-Butanone (MEK): Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.
- JD32315-7 for 2-Butanone (MEK): Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.
- JD32315-3 for 2-Butanone (MEK): Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.
- JD32315-24 for 2-Butanone (MEK): Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.
- JD32315-27 for 2-Butanone (MEK): Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.
- V2V3357-BS for 2-Butanone (MEK): High percent recovery and no associated positive reported in the QC batch.
- JD32315-12 for 2-Butanone (MEK): Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.

Matrix: SO **Batch ID:** V1C7900

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD32428-1MS, JD32428-1MSD were used as the QC samples indicated.
- Blank Spike Recovery(s) for 1,3-Dichlorobenzene, Trichlorofluoromethane are outside control limits.
- RPD(s) for MSD for Bromobenzene, Chlorobenzene, Chloromethane, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Isopropylbenzene, o-Xylene, Toluene, Xylene (total), 1,2,3-Trichlorobenzene, 1,2,4-Trichlorobenzene, 1,2,4-Trimethylbenzene, 1,2-Dibromo-3-chloropropane, 1,2-Dichlorobenzene, 1,3,5-Trimethylbenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Hexachlorobutadiene, m,p-Xylene, n-Butylbenzene, n-Propylbenzene, Naphthalene, o-Chlorotoluene, p-Chlorotoluene, p-Isopropyltoluene, sec-Butylbenzene, tert-Butylbenzene are outside control limits for sample JD32428-1MSD. Probable cause due to sample homogeneity.
- JD32428-1MSD for 1,3,5-Trimethylbenzene: Outside control limits due to matrix interference.
- JD32428-1MSD for 1,2-Dichlorobenzene: Outside control limits due to matrix interference.

MS Volatiles By Method SW846 8260D

Matrix: SO **Batch ID:** V1C7900

- JD32428-1MSD for p-Isopropyltoluene: Outside control limits due to matrix interference.
- JD32428-1MSD for p-Chlorotoluene: Outside control limits due to matrix interference.
- JD32428-1MSD for Naphthalene: Outside control limits due to matrix interference.
- JD32315-20 for Dichlorodifluoromethane: Associated CCV outside of control limits high, sample was ND.
- JD32428-1MSD for n-Propylbenzene: Outside control limits due to matrix interference.
- JD32428-1MSD for n-Butylbenzene: Outside control limits due to matrix interference.
- JD32428-1MSD for m,p-Xylene: Outside control limits due to matrix interference.
- JD32315-23 for Hexachlorobutadiene: Associated CCV outside of control limits high, sample was ND.
- JD32428-1MSD for 1,4-Dichlorobenzene: Outside control limits due to matrix interference.
- JD32315-5 for Dibromochloromethane: Associated CCV outside of control limits high, sample was ND.
- JD32428-1MSD for o-Chlorotoluene: Outside control limits due to matrix interference.
- JD32428-1MSD for sec-Butylbenzene: Outside control limits due to matrix interference.
- JD32315-17 for Trichlorofluoromethane: Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.
- JD32315-2 for Trichlorofluoromethane: Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.
- JD32315-23 for Trichlorofluoromethane: Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.
- JD32315-5 for 1,3-Dichlorobenzene: This compound in blank spike is outside in house QC limits bias high.
- JD32315-5 for Trichlorofluoromethane: Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.
- JD32315-11 for Dibromochloromethane: Associated CCV outside of control limits high, sample was ND.
- JD32315-2 for Dichlorodifluoromethane: Associated CCV outside of control limits high, sample was ND.
- JD32315-2 for 1,3-Dichlorobenzene: This compound in blank spike is outside in house QC limits bias high.
- JD32315-2 for Dibromochloromethane: Associated CCV outside of control limits high, sample was ND.
- JD32428-1MSD for tert-Butylbenzene: Outside control limits due to matrix interference.
- JD32428-1MSD for 1,3-Dichlorobenzene: Outside control limits due to matrix interference.
- JD32315-17 for 1,3-Dichlorobenzene: This compound in blank spike is outside in house QC limits bias high.
- JD32315-23 for 1,3-Dichlorobenzene: This compound in blank spike is outside in house QC limits bias high.
- V1C7900-BS for 1,3-Dichlorobenzene: High percent recovery and no associated positive reported in the QC batch.
- JD32315-17 for Hexachlorobutadiene: Associated CCV outside of control limits high, sample was ND.
- JD32315-5 for Dichlorodifluoromethane: Associated CCV outside of control limits high, sample was ND.
- JD32315-14 for Hexachlorobutadiene: Associated CCV outside of control limits high, sample was ND.
- JD32315-11 for 1,3-Dichlorobenzene: This compound in blank spike is outside in house QC limits bias high.
- JD32315-26 for Dibromochloromethane: Associated CCV outside of control limits high, sample was ND.
- JD32315-14 for Dichlorodifluoromethane: Associated CCV outside of control limits high, sample was ND.
- JD32315-5 for Hexachlorobutadiene: Associated CCV outside of control limits high, sample was ND.
- JD32315-14 for Trichlorofluoromethane: Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.
- JD32315-17 for Dichlorodifluoromethane: Associated CCV outside of control limits high, sample was ND.
- JD32315-11 for Trichlorofluoromethane: Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.
- JD32315-26 for 1,3-Dichlorobenzene: This compound in blank spike is outside in house QC limits bias high.
- JD32315-14 for 1,3-Dichlorobenzene: This compound in blank spike is outside in house QC limits bias high.

MS Volatiles By Method SW846 8260D

Matrix: SO **Batch ID:** V1C7900

- JD32315-26 for Dichlorodifluoromethane: Associated CCV outside of control limits high, sample was ND.
- JD32428-1MSD for 1,2-Dibromo-3-chloropropane: Outside control limits due to matrix interference.
- JD32315-17 for Dibromochloromethane: Associated CCV outside of control limits high, sample was ND.
- JD32315-2 for Hexachlorobutadiene: Associated CCV outside of control limits high, sample was ND.
- JD32315-26 for Trichlorofluoromethane: Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.
- JD32315-26 for Hexachlorobutadiene: Associated CCV outside of control limits high, sample was ND.
- JD32315-20 for Hexachlorobutadiene: Associated CCV outside of control limits high, sample was ND.
- JD32315-20 for Trichlorofluoromethane: Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.
- JD32315-20 for Dibromochloromethane: Associated CCV outside of control limits high, sample was ND.
- JD32315-14 for Dibromochloromethane: Associated CCV outside of control limits high, sample was ND.
- JD32428-1MSD for 1,2,4-Trimethylbenzene: Outside control limits due to matrix interference.
- JD32428-1MSD for 1,2,4-Trichlorobenzene: Outside control limits due to matrix interference.
- JD32428-1MSD for 1,2,3-Trichlorobenzene: Outside control limits due to matrix interference.
- V1C7900-BS for Trichlorofluoromethane: High percent recovery and no associated positive reported in the QC batch.
- JD32428-1MSD for Hexachlorobutadiene: Outside control limits due to matrix interference.
- JD32315-23 for Dichlorodifluoromethane: Associated CCV outside of control limits high, sample was ND.
- JD32315-23 for Dibromochloromethane: Associated CCV outside of control limits high, sample was ND.
- JD32315-9 for Dibromochloromethane: Associated CCV outside of control limits high, sample was ND.
- JD32315-11 for Hexachlorobutadiene: Associated CCV outside of control limits high, sample was ND.
- JD32315-11 for Dichlorodifluoromethane: Associated CCV outside of control limits high, sample was ND.
- JD32315-9 for Hexachlorobutadiene: Associated CCV outside of control limits high, sample was ND.
- JD32315-20 for 1,3-Dichlorobenzene: This compound in blank spike is outside in house QC limits bias high.
- JD32315-9 for Trichlorofluoromethane: Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.
- JD32315-9 for 1,3-Dichlorobenzene: This compound in blank spike is outside in house QC limits bias high.
- JD32315-9 for Dichlorodifluoromethane: Associated CCV outside of control limits high, sample was ND.

MS Semi-volatiles By Method SW846 8270E

Matrix: LEACHATE **Batch ID:** OP35940

- All samples were extracted within the recommended method holding time.
- Sample(s) JD32315-3LS, JD32315-3MS, JD32315-3MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- JD32315-27 for 2,4,6-Tribromophenol: Outside of in house control limits.

Matrix: SO **Batch ID:** OP35710

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD32315-1MS, JD32315-1MSD were used as the QC samples indicated.
- Matrix Spike Duplicate Recovery(s) for Fluoranthene, Benzo(b)fluoranthene are outside control limits. Probable cause due to matrix interference.
- RPD(s) for MSD for Acenaphthene, Acenaphthylene, Anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(g,h,i)perylene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluorene, Indeno(1,2,3-cd)pyrene, Naphthalene are outside control limits for sample OP35710-MSD.
- JD32315-8: Confirmation run.
- JD32315-10: Dilution required due to matrix interference.
- JD32315-22: Confirmation run.
- JD32315-20: Dilution required due to matrix interference.
- JD32315-8 for 2-Fluorobiphenyl: Outside of in house control limits. Refer to re-extract.
- JD32315-22 for 2-Fluorobiphenyl: Outside of in house control limits. Refer to re-extract.
- JD32315-10 for Benzo(g,h,i)perylene: Associated CCV outside of control limits high. Estimated value, due to corresponding failure in the batch associated CCV.
- JD32315-20 for Benzo(g,h,i)perylene: Associated CCV outside of control limits high. Estimated value, due to corresponding failure in the batch associated CCV.
- JD32315-1 for Benzo(g,h,i)perylene: Associated CCV outside of control limits high. Estimated value, due to corresponding failure in the batch associated CCV.
- JD32315-1 for Dibenzo(a,h)anthracene: Associated CCV outside of control limits high. Estimated value, due to corresponding failure in the batch associated CCV.
- JD32315-1 for Indeno(1,2,3-cd)pyrene: Associated CCV outside of control limits high. Estimated value, due to corresponding failure in the batch associated CCV.

Matrix: SO **Batch ID:** OP35857

- Sample(s) JD31890-2MS, JD31890-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- The following samples were extracted outside of holding time for method SW846 8270E: JD32315-22, JD32315-8 Reextract due to surrogate outside QC limits. Original prep date within holding time.Dilution required due to viscosity of the extract matrix.
- JD32315-22: Sample extracted outside the holding time.
- JD32315-22: Reextract due to surrogate outside QC limits. Original prep date within holding time.Dilution required due to viscosity of the extract matrix.
- JD32315-8: Sample extracted outside the holding time.
- JD32315-8: Sample extracted outside the holding time.Reextract due to surrogate outside QC limits. Original prep date within holding time.

GC Volatiles By Method SW846 8015D

Matrix: SO **Batch ID:** GLM4714

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD32192-3AMS, JD32192-3AMSD were used as the QC samples indicated.

GC/LC Semi-volatiles By Method SW846 8015D

Matrix:	SO	Batch ID:	OP35757

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD32459-1MS, JD32459-1MSD were used as the QC samples indicated.

GC/LC Semi-volatiles By Method SW846 8081B

Matrix:	LEACHATE	Batch ID:	OP35939

- All samples were extracted within the recommended method holding time.
- Sample(s) JD32315-3LS, JD32315-3MS, JD32315-3MSD, OP35939-MSMSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

GC/LC Semi-volatiles By Method SW846 8082A

Matrix: SO **Batch ID:** OP35562

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD31803-24MS, JD31803-24MSD, OP35562-MSMSD were used as the QC samples indicated.
- Matrix Spike / Matrix Spike Duplicate Recovery(s) for Aroclor 1260 are outside control limits.
- OP35562-BS1: Had TBA cleanup.
- OP35562-MB1: Had TBA cleanup.
- OP35562-BS1 for Aroclor 1260: Reported from the 1st signal. The %D of the CCV on the 2nd signal exceeds the method criteria of 20%, so it being used for confirmation only.
- OP35562-BS1 for Aroclor 1260: Reported from the 1st signal. The %D of the CCV on the 2nd signal exceeds the method criteria of 20%, so it being used for confirmation only.

Matrix: SO **Batch ID:** OP35567

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD31911-23MS, JD31911-23MSD, OP35567-MSMSD were used as the QC samples indicated.
- OP35567-MB1: Had TBA cleanup.
- OP35567-BS1: Had TBA cleanup.
- OP35567-BS1 for Aroclor 1260: Reported from the 1st signal. The %D of the CCV on the 2nd signal exceeds the method criteria of 20%, so it being used for confirmation only.
- OP35567-BS1 for Aroclor 1260: Reported from the 1st signal. The %D of the CCV on the 2nd signal exceeds the method criteria of 20%, so it being used for confirmation only.
- OP35567-BSD for Aroclor 1260: Reported from the 1st signal. The %D of the CCV on the 2nd signal exceeds the method criteria of 20%, so it being used for confirmation only.

Matrix: SO **Batch ID:** OP35714

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD32329-5MS, JD32329-5MSD, OP35714-MSMSD were used as the QC samples indicated.

Matrix: SO **Batch ID:** OP35760

- All samples were extracted within the recommended method holding time.
- Sample(s) JD32424-4MS, JD32424-4MSD, OP35760-MSMSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- JD32315-15: Had TBA cleanup.
- JD32315-27: Had TBA cleanup.

GC/LC Semi-volatiles By Method SW846 8151A

Matrix: LEACHATE **Batch ID:** OP35941

- All samples were extracted within the recommended method holding time.
- Sample(s) JD32315-3LS, JD32315-3MS, JD32315-3MSD, JD32315-3LS were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Matrix Spike / Matrix Spiek Duplicate Recovery(s) for 2,4-D are outside control limits.
- OP35941-BS1 for 2,4-D: Reported from 2nd signal. 1st signal used for confirmation.
- JD32315-21 for 2,4-D: Associated CCV outside of control limits high, sample was ND.
- JD32315-27 for 2,4-D: Associated CCV outside of control limits high, sample was ND.
- JD32315-24 for 2,4-D: Associated CCV outside of control limits high, sample was ND.
- JD32315-12 for 2,4-D: Associated CCV outside of control limits high, sample was ND.
- JD32315-18 for 2,4-D: Associated CCV outside of control limits high, sample was ND.
- JD32315-15 for 2,4-D: Associated CCV outside of control limits high, sample was ND.
- JD32315-3 for 2,4-D: Associated CCV outside of control limits high, sample was ND.
- JD32315-6 for 2,4-D: Associated CCV outside of control limits high, sample was ND.
- JD32315-7 for 2,4-D: Associated CCV outside of control limits high, sample was ND.
- OP35941-BS1 for 2,4,5-TP (Silvex): Reported from 1st signal. 2nd signal used for confirmation.

Metals Analysis By Method SW846 6010D

Matrix: LEACHATE **Batch ID:** MP29010

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD32226-1AMS, JD32226-1AMSD, JD32226-1ASDL were used as the QC samples for metals.
- RPD(s) for Serial Dilution for Cadmium, Selenium, Silver are outside control limits for sample MP29010-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Matrix: LEACHATE **Batch ID:** MP29028

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD32315-21MS, JD32315-21MSD, JD32315-21SDL were used as the QC samples for metals.
- RPD(s) for Serial Dilution for Arsenic, Cadmium, Silver are outside control limits for sample MP29028-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Matrix: SO **Batch ID:** MP28913

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD32315-1MS, JD32315-1MSD, JD32315-1SDL were used as the QC samples for metals.
- RPD(s) for Serial Dilution for Cadmium, Selenium, Silver are outside control limits for sample MP28913-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- JD32315-5 for Lead: Elevated detection limit due to dilution required for high interfering element.
- JD32315-16 for Cadmium: Elevated detection limit due to dilution required for high interfering element.
- JD32315-11 for Arsenic: Elevated detection limit due to dilution required for high interfering element.
- JD32315-5 for Arsenic: Elevated detection limit due to dilution required for high interfering element.
- JD32315-5 for Selenium: Elevated detection limit due to dilution required for high interfering element.
- JD32315-16 for Arsenic: Elevated detection limit due to dilution required for high interfering element.
- JD32315-11 for Silver: Elevated detection limit due to dilution required for high interfering element.
- MP28913-SD1 for Chromium: Serial dilution indicates possible matrix interference.
- JD32315-11 for Selenium: Elevated detection limit due to dilution required for high interfering element.
- JD32315-16 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JD32315-11 for Lead: Elevated detection limit due to dilution required for high interfering element.
- JD32315-8 for Arsenic: Elevated detection limit due to dilution required for high interfering element.
- JD32315-8 for Lead: Elevated detection limit due to dilution required for high interfering element.
- JD32315-5 for Cadmium: Elevated detection limit due to dilution required for high interfering element.
- JD32315-5 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JD32315-8 for Selenium: Elevated detection limit due to dilution required for high interfering element.
- JD32315-11 for Cadmium: Elevated detection limit due to dilution required for high interfering element.
- JD32315-8 for Silver: Elevated detection limit due to dilution required for high interfering element.
- JD32315-16 for Lead: Elevated detection limit due to dilution required for high interfering element.
- JD32315-16 for Selenium: Elevated detection limit due to dilution required for high interfering element.
- JD32315-8 for Cadmium: Elevated detection limit due to dilution required for high interfering element.

Metals Analysis By Method SW846 7470A

Matrix:	LEACHATE	Batch ID:	MP29030

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD32226-1AMS, JD32226-1AMSD were used as the QC samples for metals.

Matrix:	LEACHATE	Batch ID:	MP29059

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD32315-21MS, JD32315-21MSD were used as the QC samples for metals.

Metals Analysis By Method SW846 7471B

Matrix:	SO	Batch ID:	MP28930

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD32329-5MS, JD32329-5MSD were used as the QC samples for metals.

Matrix:	SO	Batch ID:	MP28967

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD32315-4MS, JD32315-4MSD were used as the QC samples for metals.

General Chemistry By Method SM2540 G 18TH ED MOD

Matrix:	SO	Batch ID:	GN22293

- Sample(s) JD32434-7DUP were used as the QC samples for Solids, Percent.

Matrix:	SO	Batch ID:	GN22296

- Sample(s) JD32337-1DUP were used as the QC samples for Solids, Percent.

Matrix:	SO	Batch ID:	GN22414

- Sample(s) JD32673-9DUP were used as the QC samples for Solids, Percent.

General Chemistry By Method SW846 1010A/ASTM D93

Matrix:	SO	Batch ID:	GN22455

- Sample(s) JD32315-3DUP were used as the QC samples for Ignitability (Flashpoint).

General Chemistry By Method SW846 9045D

Matrix:	SO	Batch ID:	GN22399

- Sample(s) JD32226-1ADUP were used as the QC samples for Corrosivity as pH.

General Chemistry By Method SW846 9095/9095B

Matrix: SO	Batch ID: GN22409

- Sample(s) JD32226-1DUP were used as the QC samples for Paint Filter Test.
- JD32315-27 for Paint Filter Test: No free liquids.
- JD32315-12 for Paint Filter Test: No free liquids.
- JD32315-18 for Paint Filter Test: No free liquids.
- JD32315-24 for Paint Filter Test: No free liquids.
- JD32315-3 for Paint Filter Test: No free liquids.
- JD32315-7 for Paint Filter Test: No free liquids.
- JD32315-21 for Paint Filter Test: No free liquids.
- JD32315-6 for Paint Filter Test: No free liquids.
- JD32315-15 for Paint Filter Test: No free liquids.

General Chemistry By Method SW846 CHAP7/9012 B

Matrix: SO	Batch ID: GP36268

- All method blanks for this batch meet method specific criteria.
- Sample(s) JD32315-3DUP were used as the QC samples for Cyanide Reactivity.
- The following samples were prepared outside of holding time for method SW846 CHAP7/9012 B: JD32315-12, JD32315-15, JD32315-18, JD32315-3, JD32315-6, JD32315-7 Analyzed outside the 14 day holding time applied by laboratory SOP. No regulatory holding time published for this method.

Matrix: SO	Batch ID: GP36379

- All method blanks for this batch meet method specific criteria.
- Sample(s) JD33148-3DUP were used as the QC samples for Cyanide Reactivity.
- The following samples were prepared outside of holding time for method SW846 CHAP7/9012 B: JD32315-21 Analyzed outside the 14 day holding time applied by laboratory SOP. No regulatory holding time published for this method.

General Chemistry By Method SW846 CHAP7/9034

Matrix: SO	Batch ID: GP36267

- All method blanks for this batch meet method specific criteria.
- Sample(s) JD32315-3DUP, JD32315-3MS were used as the QC samples for Sulfide Reactivity.
- The following samples were prepared outside of holding time for method SW846 CHAP7/9034: JD32315-12, JD32315-15, JD32315-18, JD32315-21, JD32315-3, JD32315-6, JD32315-7 Analyzed outside the 14 day holding time applied by laboratory SOP. No regulatory holding time published for this method.
- JD32315-27 for Sulfide Reactivity: Analyzed outside the 14 day holding time applied by laboratory SOP. No regulatory holding time published for this method.
- JD32315-24 for Sulfide Reactivity: Analyzed outside the 14 day holding time applied by laboratory SOP. No regulatory holding time published for this method.

SGS North America Inc. certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS North America Inc. is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS North America Inc indicated via signature on the report cover

Summary of Hits

Job Number: JD32315
Account: Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT
Collected: 09/20/21 thru 09/24/21

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JD32315-1	**B-106-A**					
Acenaphthylene		32.0 J	35	18	ug/kg	SW846 8270E
Benzo(a)anthracene		88.2	35	9.8	ug/kg	SW846 8270E
Benzo(a)pyrene		96.8	35	16	ug/kg	SW846 8270E
Benzo(b)fluoranthene		117	35	15	ug/kg	SW846 8270E
Benzo(g,h,i)perylene [a]		72.4	35	17	ug/kg	SW846 8270E
Benzo(k)fluoranthene		52.2	35	16	ug/kg	SW846 8270E
Chrysene		90.7	35	11	ug/kg	SW846 8270E
Dibenzo(a,h)anthracene [a]		19.7 J	35	15	ug/kg	SW846 8270E
Fluoranthene		129	35	15	ug/kg	SW846 8270E
Indeno(1,2,3-cd)pyrene [a]		84.3	35	16	ug/kg	SW846 8270E
Phenanthrene		29.4 J	35	12	ug/kg	SW846 8270E
Pyrene		147	35	11	ug/kg	SW846 8270E
Arsenic		6.3	2.1		mg/kg	SW846 6010D
Barium		25.7	21		mg/kg	SW846 6010D
Chromium		19.4	1.1		mg/kg	SW846 6010D
Lead		18.0	2.1		mg/kg	SW846 6010D
Silver		0.61	0.53		mg/kg	SW846 6010D
JD32315-2	**B-106-B**					
Acetone		15.0	11	4.4	ug/kg	SW846 8260D
Carbon disulfide		0.95 J	2.1	0.57	ug/kg	SW846 8260D
Chloroform		4.9	2.1	0.55	ug/kg	SW846 8260D
p-Isopropyltoluene		0.52 J	2.1	0.42	ug/kg	SW846 8260D
Arsenic		5.3	1.7		mg/kg	SW846 6010D
Chromium		7.9	0.86		mg/kg	SW846 6010D
Lead		4.9	1.7		mg/kg	SW846 6010D
JD32315-3	**B-106-C**					
TPH-DRO (C10-C28)		10.4	7.2	2.4	mg/kg	SW846 8015D
Corrosivity as pH		7.95 NC			su	SW846 9045D
Ignitability (Flashpoint)		> 200			Deg. F	SW846 1010A/ASTM D93
Chloroform [b]		0.0114 B	0.0050	0.0025	mg/l	SW846 8260D
JD32315-4	**H-104-A**					
Acenaphthene		149	34	12	ug/kg	SW846 8270E
Acenaphthylene		835	34	18	ug/kg	SW846 8270E
Anthracene		1280	34	21	ug/kg	SW846 8270E
Benzo(a)anthracene		1940	34	9.8	ug/kg	SW846 8270E
Benzo(a)pyrene		1330	34	16	ug/kg	SW846 8270E
Benzo(b)fluoranthene		1690	34	15	ug/kg	SW846 8270E

Summary of Hits

Job Number: JD32315
Account: Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT
Collected: 09/20/21 thru 09/24/21

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Benzo(g,h,i)perylene		852	34	17	ug/kg	SW846 8270E
Benzo(k)fluoranthene		745	34	16	ug/kg	SW846 8270E
Chrysene		1760	34	11	ug/kg	SW846 8270E
Dibenzo(a,h)anthracene		250	34	15	ug/kg	SW846 8270E
Fluoranthene		5840	170	77	ug/kg	SW846 8270E
Fluorene		760	34	16	ug/kg	SW846 8270E
Indeno(1,2,3-cd)pyrene		1080	34	16	ug/kg	SW846 8270E
Naphthalene		1930	34	9.7	ug/kg	SW846 8270E
Phenanthrene		7810	170	58	ug/kg	SW846 8270E
Pyrene		4680	170	55	ug/kg	SW846 8270E
Arsenic		6.3	2.1		mg/kg	SW846 6010D
Barium		21.3	21		mg/kg	SW846 6010D
Chromium		16.7	1.1		mg/kg	SW846 6010D
Lead		88.6	2.1		mg/kg	SW846 6010D
Silver		0.98	0.53		mg/kg	SW846 6010D
JD32315-5	**H-104-B**					
Acetone		13.5	9.5	3.9	ug/kg	SW846 8260D
Carbon disulfide		2.3	1.9	0.51	ug/kg	SW846 8260D
1,2,4-Trimethylbenzene		0.58 J	1.9	0.47	ug/kg	SW846 8260D
Anthracene		27.9 J	38	24	ug/kg	SW846 8270E
Benzo(a)anthracene		52.8	38	11	ug/kg	SW846 8270E
Benzo(a)pyrene		35.4 J	38	18	ug/kg	SW846 8270E
Benzo(b)fluoranthene		47.8	38	17	ug/kg	SW846 8270E
Benzo(g,h,i)perylene		19.7 J	38	19	ug/kg	SW846 8270E
Benzo(k)fluoranthene		19.4 J	38	18	ug/kg	SW846 8270E
Chrysene		46.8	38	12	ug/kg	SW846 8270E
Fluoranthene		135	38	17	ug/kg	SW846 8270E
Indeno(1,2,3-cd)pyrene		25.3 J	38	18	ug/kg	SW846 8270E
Naphthalene		50.1	38	11	ug/kg	SW846 8270E
Phenanthrene		163	38	13	ug/kg	SW846 8270E
Pyrene		113	38	12	ug/kg	SW846 8270E
Arsenic [c]		7.2	3.1		mg/kg	SW846 6010D
Chromium		10.1	0.79		mg/kg	SW846 6010D
Lead [c]		7.2	3.1		mg/kg	SW846 6010D
JD32315-6	**H-104-C1**					
TPH-DRO (C10-C28)		13.1	7.1	2.4	mg/kg	SW846 8015D
Corrosivity as pH		7.64 NC			su	SW846 9045D
Ignitability (Flashpoint)		> 200			Deg. F	SW846 1010A/ASTM D93
Chloroform [b]		0.0113 B	0.0050	0.0025	mg/l	SW846 8260D
Chromium		0.033	0.010		mg/l	SW846 6010D

Summary of Hits

Job Number: JD32315
Account: Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT
Collected: 09/20/21 thru 09/24/21

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JD32315-7	**H-104-C2**					
TPH-DRO (C10-C28)		7.08	6.8	2.3	mg/kg	SW846 8015D
Corrosivity as pH		7.62 NC			su	SW846 9045D
Ignitability (Flashpoint)		> 200			Deg. F	SW846 1010A/ASTM D93
Chloroform [b]		0.0116 B	0.0050	0.0025	mg/l	SW846 8260D
Chromium		0.034	0.010		mg/l	SW846 6010D
JD32315-8	**DUP-A**					
Acenaphthene [d]		275	68	23	ug/kg	SW846 8270E
Acenaphthylene [d]		1490	68	34	ug/kg	SW846 8270E
Anthracene [d]		2190	68	42	ug/kg	SW846 8270E
Benzo(a)anthracene [d]		2980	68	19	ug/kg	SW846 8270E
Benzo(a)pyrene [d]		2030	68	31	ug/kg	SW846 8270E
Benzo(b)fluoranthene [d]		2620	68	30	ug/kg	SW846 8270E
Benzo(g,h,i)perylene [d]		1290	68	34	ug/kg	SW846 8270E
Benzo(k)fluoranthene [d]		975	68	32	ug/kg	SW846 8270E
Chrysene [d]		2580	68	21	ug/kg	SW846 8270E
Dibenzo(a,h)anthracene [d]		401	68	30	ug/kg	SW846 8270E
Fluoranthene [e]		9860	680	300	ug/kg	SW846 8270E
Fluorene [d]		1280	68	31	ug/kg	SW846 8270E
Indeno(1,2,3-cd)pyrene [d]		1680	68	32	ug/kg	SW846 8270E
Naphthalene [d]		3100	68	19	ug/kg	SW846 8270E
Phenanthrene [e]		13400	680	230	ug/kg	SW846 8270E
Pyrene [d]		6040	68	22	ug/kg	SW846 8270E
Arsenic [c]		8.3	4.2		mg/kg	SW846 6010D
Barium		23.5	21		mg/kg	SW846 6010D
Chromium		19.1	1.1		mg/kg	SW846 6010D
Lead [c]		16.3	4.2		mg/kg	SW846 6010D
JD32315-9	**DUP-B**					
Acetone		18.7	10	4.3	ug/kg	SW846 8260D
Carbon disulfide		1.8 J	2.1	0.56	ug/kg	SW846 8260D
Naphthalene		10.1	5.2	2.6	ug/kg	SW846 8260D
1,2,4-Trimethylbenzene		0.80 J	2.1	0.52	ug/kg	SW846 8260D
Acenaphthylene		59.7	45	23	ug/kg	SW846 8270E
Anthracene		113	45	28	ug/kg	SW846 8270E
Benzo(a)anthracene		215	45	13	ug/kg	SW846 8270E
Benzo(a)pyrene		143	45	21	ug/kg	SW846 8270E
Benzo(b)fluoranthene		199	45	20	ug/kg	SW846 8270E
Benzo(g,h,i)perylene		81.1	45	23	ug/kg	SW846 8270E
Benzo(k)fluoranthene		76.3	45	21	ug/kg	SW846 8270E
Chrysene		194	45	14	ug/kg	SW846 8270E

Summary of Hits

Job Number: JD32315
Account: Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT
Collected: 09/20/21 thru 09/24/21

Lab Sample ID / Client Sample ID / Analyte	Result/ Qual	RL	MDL	Units	Method
Dibenzo(a,h)anthracene	21.7 J	45	20	ug/kg	SW846 8270E
Fluoranthene	554	45	20	ug/kg	SW846 8270E
Fluorene	63.9	45	21	ug/kg	SW846 8270E
Indeno(1,2,3-cd)pyrene	104	45	21	ug/kg	SW846 8270E
Naphthalene	88.2	45	13	ug/kg	SW846 8270E
Phenanthrene	590	45	15	ug/kg	SW846 8270E
Pyrene	487	45	14	ug/kg	SW846 8270E
Arsenic	5.9	1.8		mg/kg	SW846 6010D
Chromium	26.5	0.88		mg/kg	SW846 6010D
Lead	8.5	1.8		mg/kg	SW846 6010D
JD32315-10 H-101-A					
Acenaphthene [f]	62.2 J	68	24	ug/kg	SW846 8270E
Acenaphthylene [f]	577	68	35	ug/kg	SW846 8270E
Anthracene [f]	671	68	42	ug/kg	SW846 8270E
Benzo(a)anthracene [f]	1520	68	19	ug/kg	SW846 8270E
Benzo(a)pyrene [f]	1110	68	31	ug/kg	SW846 8270E
Benzo(b)fluoranthene [f]	1430	68	30	ug/kg	SW846 8270E
Benzo(g,h,i)perylene [g]	722	68	34	ug/kg	SW846 8270E
Benzo(k)fluoranthene [f]	660	68	32	ug/kg	SW846 8270E
Chrysene [f]	1410	68	22	ug/kg	SW846 8270E
Dibenzo(a,h)anthracene [g]	196	68	30	ug/kg	SW846 8270E
Fluoranthene [f]	3770	68	30	ug/kg	SW846 8270E
Fluorene [f]	362	68	31	ug/kg	SW846 8270E
Indeno(1,2,3-cd)pyrene [g]	910	68	32	ug/kg	SW846 8270E
Naphthalene [f]	47.3 J	68	19	ug/kg	SW846 8270E
Phenanthrene [f]	3450	68	23	ug/kg	SW846 8270E
Pyrene [f]	3290	68	22	ug/kg	SW846 8270E
Arsenic	7.8	2.1		mg/kg	SW846 6010D
Barium	29.9	21		mg/kg	SW846 6010D
Chromium	37.9	1.1		mg/kg	SW846 6010D
Lead	12.7	2.1		mg/kg	SW846 6010D
Silver	0.65	0.53		mg/kg	SW846 6010D
JD32315-11 H-101-B					
Acetone	44.2	10	4.2	ug/kg	SW846 8260D
Carbon disulfide	0.93 J	2.1	0.55	ug/kg	SW846 8260D
Acenaphthylene	35.9 J	42	21	ug/kg	SW846 8270E
Anthracene	35.9 J	42	25	ug/kg	SW846 8270E
Benzo(a)anthracene	119	42	12	ug/kg	SW846 8270E
Benzo(a)pyrene	112	42	19	ug/kg	SW846 8270E
Benzo(b)fluoranthene	148	42	18	ug/kg	SW846 8270E
Benzo(g,h,i)perylene	70.6	42	21	ug/kg	SW846 8270E

Summary of Hits

Job Number: JD32315
Account: Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT
Collected: 09/20/21 thru 09/24/21

Lab Sample ID / Client Sample ID / Analyte	Result/ Qual	RL	MDL	Units	Method
Benzo(k)fluoranthene	56.0	42	19	ug/kg	SW846 8270E
Chrysene	140	42	13	ug/kg	SW846 8270E
Fluoranthene	232	42	19	ug/kg	SW846 8270E
Indeno(1,2,3-cd)pyrene	82.0	42	20	ug/kg	SW846 8270E
Naphthalene	17.4 J	42	12	ug/kg	SW846 8270E
Phenanthrene	125	42	14	ug/kg	SW846 8270E
Pyrene	259	42	13	ug/kg	SW846 8270E
Arsenic [c]	8.0	3.3		mg/kg	SW846 6010D
Chromium	16.7	0.82		mg/kg	SW846 6010D
Lead [c]	10.9	3.3		mg/kg	SW846 6010D
Mercury	0.072	0.039		mg/kg	SW846 7471B
Silver [c]	0.82	0.82		mg/kg	SW846 6010D
JD32315-12 H-101-C					
TPH-DRO (C10-C28)	120	6.3	2.1	mg/kg	SW846 8015D
Corrosivity as pH	8.83 NC			su	SW846 9045D
Ignitability (Flashpoint)	> 200			Deg. F	SW846 1010A/ASTM D93
Chloroform [b]	0.0118 B	0.0050	0.0025	mg/l	SW846 8260D
Chromium	0.024	0.010		mg/l	SW846 6010D
JD32315-13 B-103-A					
Acenaphthene	38.5	37	13	ug/kg	SW846 8270E
Acenaphthylene	226	37	19	ug/kg	SW846 8270E
Anthracene	210	37	23	ug/kg	SW846 8270E
Benzo(a)anthracene	459	37	10	ug/kg	SW846 8270E
Benzo(a)pyrene	520	37	17	ug/kg	SW846 8270E
Benzo(b)fluoranthene	641	37	16	ug/kg	SW846 8270E
Benzo(g,h,i)perylene	356	37	18	ug/kg	SW846 8270E
Benzo(k)fluoranthene	277	37	17	ug/kg	SW846 8270E
Chrysene	511	37	12	ug/kg	SW846 8270E
Dibenzo(a,h)anthracene	86.1	37	16	ug/kg	SW846 8270E
Fluoranthene	643	37	16	ug/kg	SW846 8270E
Fluorene	57.9	37	17	ug/kg	SW846 8270E
Indeno(1,2,3-cd)pyrene	414	37	17	ug/kg	SW846 8270E
Naphthalene	275	37	10	ug/kg	SW846 8270E
Phenanthrene	681	37	12	ug/kg	SW846 8270E
Pyrene	745	37	12	ug/kg	SW846 8270E
Arsenic	10.1	2.3		mg/kg	SW846 6010D
Barium	47.2	23		mg/kg	SW846 6010D
Cadmium	1.7	0.58		mg/kg	SW846 6010D
Chromium	18.4	1.2		mg/kg	SW846 6010D
Lead	44.4	2.3		mg/kg	SW846 6010D
Mercury	0.056	0.036		mg/kg	SW846 7471B

Summary of Hits

Job Number: JD32315
Account: Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT
Collected: 09/20/21 thru 09/24/21

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JD32315-14	**B-103-B**					
Acetone		69.4	12	5.0	ug/kg	SW846 8260D
2-Butanone (MEK)		17.5	12	2.9	ug/kg	SW846 8260D
Carbon disulfide		0.80 J	2.4	0.64	ug/kg	SW846 8260D
Arsenic		4.9	2.7		mg/kg	SW846 6010D
Chromium		15.3	1.3		mg/kg	SW846 6010D
Lead		8.5	2.7		mg/kg	SW846 6010D
JD32315-15	**B-103-C**					
TPH-DRO (C10-C28)		68.7	7.1	2.4	mg/kg	SW846 8015D
Corrosivity as pH		10.32 NC			su	SW846 9045D
Ignitability (Flashpoint)		> 200			Deg. F	SW846 1010A/ASTM D93
Chloroform [b]		0.0114 B	0.0050	0.0025	mg/l	SW846 8260D
Cadmium		0.0067	0.0040		mg/l	SW846 6010D
JD32315-16	**H-102-A**					
Benzo(a)anthracene		49.4	36	10	ug/kg	SW846 8270E
Benzo(a)pyrene		40.3	36	16	ug/kg	SW846 8270E
Benzo(b)fluoranthene		49.0	36	16	ug/kg	SW846 8270E
Benzo(g,h,i)perylene		22.2 J	36	18	ug/kg	SW846 8270E
Benzo(k)fluoranthene		22.1 J	36	17	ug/kg	SW846 8270E
Chrysene		45.8	36	11	ug/kg	SW846 8270E
Fluoranthene		92.8	36	16	ug/kg	SW846 8270E
Indeno(1,2,3-cd)pyrene		23.2 J	36	17	ug/kg	SW846 8270E
Phenanthrene		76.3	36	12	ug/kg	SW846 8270E
Pyrene		95.7	36	11	ug/kg	SW846 8270E
Arsenic [c]		11.6	4.5		mg/kg	SW846 6010D
Barium		23.5	22		mg/kg	SW846 6010D
Chromium		13.9	1.1		mg/kg	SW846 6010D
Lead [c]		36.5	4.5		mg/kg	SW846 6010D
Mercury		0.14	0.034		mg/kg	SW846 7471B
JD32315-17	**H-102-B**					
Acetone		19.3	11	4.4	ug/kg	SW846 8260D
Arsenic		6.5	1.5		mg/kg	SW846 6010D
Chromium		36.2	0.76		mg/kg	SW846 6010D
Lead		12.6	1.5		mg/kg	SW846 6010D

Summary of Hits

Job Number: JD32315
Account: Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT
Collected: 09/20/21 thru 09/24/21

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JD32315-18	**H-102-C**					
TPH-DRO (C10-C28)		7.25	6.8	2.3	mg/kg	SW846 8015D
Corrosivity as pH		8.52 NC			su	SW846 9045D
Ignitability (Flashpoint)		> 200			Deg. F	SW846 1010A/ASTM D93
Chloroform [b]		0.0121 B	0.0050	0.0025	mg/l	SW846 8260D
Chromium		0.031	0.010		mg/l	SW846 6010D
JD32315-19	**B-102-A**					
Acenaphthylene		93.0	37	19	ug/kg	SW846 8270E
Anthracene		34.7 J	37	23	ug/kg	SW846 8270E
Benzo(a)anthracene		198	37	10	ug/kg	SW846 8270E
Benzo(a)pyrene		264	37	17	ug/kg	SW846 8270E
Benzo(b)fluoranthene		320	37	16	ug/kg	SW846 8270E
Benzo(g,h,i)perylene		168	37	18	ug/kg	SW846 8270E
Benzo(k)fluoranthene		141	37	17	ug/kg	SW846 8270E
Chrysene		200	37	12	ug/kg	SW846 8270E
Dibenzo(a,h)anthracene		45.2	37	16	ug/kg	SW846 8270E
Fluoranthene		212	37	16	ug/kg	SW846 8270E
Indeno(1,2,3-cd)pyrene		204	37	17	ug/kg	SW846 8270E
Naphthalene		21.0 J	37	10	ug/kg	SW846 8270E
Phenanthrene		73.4	37	12	ug/kg	SW846 8270E
Pyrene		284	37	12	ug/kg	SW846 8270E
Arsenic		5.9	2.2		mg/kg	SW846 6010D
Barium		35.7	22		mg/kg	SW846 6010D
Chromium		9.3	1.1		mg/kg	SW846 6010D
Lead		29.1	2.2		mg/kg	SW846 6010D
Mercury		0.16	0.034		mg/kg	SW846 7471B
JD32315-20	**B-102-B**					
Acetone		22.5	8.5	3.5	ug/kg	SW846 8260D
Carbon disulfide		0.60 J	1.7	0.45	ug/kg	SW846 8260D
Ethylbenzene		0.62 J	0.85	0.38	ug/kg	SW846 8260D
Naphthalene		156	4.2	2.1	ug/kg	SW846 8260D
Styrene		0.40 J	1.7	0.34	ug/kg	SW846 8260D
1,2,4-Trimethylbenzene		4.4	1.7	0.42	ug/kg	SW846 8260D
1,3,5-Trimethylbenzene		2.0	1.7	0.37	ug/kg	SW846 8260D
m,p-Xylene		1.2	0.85	0.76	ug/kg	SW846 8260D
o-Xylene		2.5	0.85	0.39	ug/kg	SW846 8260D
Xylene (total)		3.7	0.85	0.39	ug/kg	SW846 8260D
Acenaphthene [f]		194	71	24	ug/kg	SW846 8270E
Acenaphthylene [f]		266	71	36	ug/kg	SW846 8270E
Anthracene [f]		248	71	43	ug/kg	SW846 8270E

Summary of Hits

Job Number: JD32315
Account: Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT
Collected: 09/20/21 thru 09/24/21

Lab Sample ID / Client Sample ID / Analyte	Result/ Qual	RL	MDL	Units	Method
Benzo(a)anthracene [f]	648	71	20	ug/kg	SW846 8270E
Benzo(a)pyrene [f]	750	71	32	ug/kg	SW846 8270E
Benzo(b)fluoranthene [f]	794	71	31	ug/kg	SW846 8270E
Benzo(g,h,i)perylene [g]	522	71	35	ug/kg	SW846 8270E
Benzo(k)fluoranthene [f]	313	71	33	ug/kg	SW846 8270E
Chrysene [f]	644	71	22	ug/kg	SW846 8270E
Dibenzo(a,h)anthracene [g]	132	71	31	ug/kg	SW846 8270E
Fluoranthene [f]	767	71	32	ug/kg	SW846 8270E
Fluorene [f]	224	71	33	ug/kg	SW846 8270E
Indeno(1,2,3-cd)pyrene [g]	573	71	33	ug/kg	SW846 8270E
Naphthalene [f]	373	71	20	ug/kg	SW846 8270E
Phenanthrene [f]	919	71	24	ug/kg	SW846 8270E
Pyrene [f]	1160	71	23	ug/kg	SW846 8270E
Arsenic	5.5	2.2		mg/kg	SW846 6010D
Barium	27.8	22		mg/kg	SW846 6010D
Chromium	14.3	1.1		mg/kg	SW846 6010D
Lead	319	2.2		mg/kg	SW846 6010D
Mercury	0.036	0.030		mg/kg	SW846 7471B
JD32315-21 B-102-C					
TPH-DRO (C10-C28)	217	7.5	2.6	mg/kg	SW846 8015D
Corrosivity as pH	10.91 NC			su	SW846 9045D
Ignitability (Flashpoint)	> 200			Deg. F	SW846 1010A/ASTM D93
Chloroform [b]	0.0120 B	0.0050	0.0025	mg/l	SW846 8260D
Barium	0.22	0.20		mg/l	SW846 6010D
JD32315-22 B-105-A(0.5-2')					
Acenaphthene [h]	250	68	23	ug/kg	SW846 8270E
Acenaphthylene [h]	1770	68	34	ug/kg	SW846 8270E
Anthracene [h]	2460	68	41	ug/kg	SW846 8270E
Benzo(a)anthracene [h]	3950	68	19	ug/kg	SW846 8270E
Benzo(a)pyrene [h]	2710	68	31	ug/kg	SW846 8270E
Benzo(b)fluoranthene [h]	3500	68	30	ug/kg	SW846 8270E
Benzo(g,h,i)perylene [h]	1710	68	34	ug/kg	SW846 8270E
Benzo(k)fluoranthene [h]	1370	68	32	ug/kg	SW846 8270E
Chrysene [h]	3490	68	21	ug/kg	SW846 8270E
Dibenzo(a,h)anthracene [h]	529	68	30	ug/kg	SW846 8270E
Fluoranthene [e]	11500	680	300	ug/kg	SW846 8270E
Fluorene [h]	1300	68	31	ug/kg	SW846 8270E
Indeno(1,2,3-cd)pyrene [h]	2290	68	32	ug/kg	SW846 8270E
Naphthalene [h]	1240	68	19	ug/kg	SW846 8270E
Phenanthrene [e]	12200	680	230	ug/kg	SW846 8270E
Pyrene [e]	9120	680	220	ug/kg	SW846 8270E

Summary of Hits

Job Number: JD32315
Account: Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT
Collected: 09/20/21 thru 09/24/21

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Arsenic		8.2	2.0		mg/kg	SW846 6010D
Barium		25.2	20		mg/kg	SW846 6010D
Chromium		13.2	1.0		mg/kg	SW846 6010D
Lead		13.6	2.0		mg/kg	SW846 6010D
Silver		0.61	0.50		mg/kg	SW846 6010D
JD32315-23	**B-105-B(20-24')**					
Acetone		10.5	4.1	1.7	ug/kg	SW846 8260D
Carbon disulfide		0.59 J	0.82	0.22	ug/kg	SW846 8260D
m,p-Xylene		0.40 J	0.41	0.37	ug/kg	SW846 8260D
Xylene (total)		0.40 J	0.41	0.19	ug/kg	SW846 8260D
Arsenic		4.6	2.2		mg/kg	SW846 6010D
Chromium		8.8	1.1		mg/kg	SW846 6010D
Lead		4.3	2.2		mg/kg	SW846 6010D
JD32315-24	**B-105-C(0.5-24')**					
TPH-DRO (C10-C28)		9.56	7.2	2.4	mg/kg	SW846 8015D
Corrosivity as pH		7.68 NC			su	SW846 9045D
Ignitability (Flashpoint)		> 200			Deg. F	SW846 1010A/ASTM D93
Chloroform [b]		0.0117 B	0.0050	0.0025	mg/l	SW846 8260D
JD32315-25	**B-104-A**					
Arsenic		11.9	2.2		mg/kg	SW846 6010D
Chromium		11.2	1.1		mg/kg	SW846 6010D
Lead		7.2	2.2		mg/kg	SW846 6010D
JD32315-26	**B-104-B**					
Acetone		153	13	5.5	ug/kg	SW846 8260D
2-Butanone (MEK)		29.5	13	3.2	ug/kg	SW846 8260D
Carbon disulfide		1.8 J	2.6	0.70	ug/kg	SW846 8260D
Naphthalene		54.3	48	14	ug/kg	SW846 8270E
Phenanthrene		37.9 J	48	16	ug/kg	SW846 8270E
Pyrene		21.3 J	48	15	ug/kg	SW846 8270E
Arsenic		6.6	2.9		mg/kg	SW846 6010D
Chromium		15.7	1.5		mg/kg	SW846 6010D
Lead		9.3	2.9		mg/kg	SW846 6010D
JD32315-27	**B-104-C**					
TPH-DRO (C10-C28)		35.5	7.7	2.6	mg/kg	SW846 8015D
Corrosivity as pH		6.89 NC			su	SW846 9045D

Summary of Hits

Job Number: JD32315
Account: Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT
Collected: 09/20/21 thru 09/24/21

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Ignitability (Flashpoint)		> 200			Deg. F	SW846 1010A/ASTM D93
Chloroform [b]		0.0120 B	0.0050	0.0025	mg/l	SW846 8260D

(a) Associated CCV outside of control limits high. Estimated value, due to corresponding failure in the batch associated CCV.
(b) Indicates analyte found in associated leachate blank.
(c) Elevated detection limit due to dilution required for high interfering element.
(d) Sample extracted outside the holding time. Reextract due to surrogate outside QC limits. Original prep date within holding time.
(e) Sample extracted outside the holding time.
(f) Dilution required due to matrix interference.
(g) Dilution required due to matrix interference. Associated CCV outside of control limits high. Estimated value, due to corresponding failure in the batch associated CCV.
(h) Reextract due to surrogate outside QC limits. Original prep date within holding time. Dilution required due to viscosity of the extract matrix.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	B-106-A		
Lab Sample ID:	JD32315-1	**Date Sampled:**	09/20/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8270E SW846 3546	**Percent Solids:**	94.4
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2P103320.D	1	10/06/21 17:32	BL	10/04/21 10:00	OP35710	E2P4640
Run #2							

	Initial Weight	Final Volume
Run #1	30.5 g	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	35	12	ug/kg	
208-96-8	Acenaphthylene	32.0	35	18	ug/kg	J
120-12-7	Anthracene	ND	35	21	ug/kg	
56-55-3	Benzo(a)anthracene	88.2	35	9.8	ug/kg	
50-32-8	Benzo(a)pyrene	96.8	35	16	ug/kg	
205-99-2	Benzo(b)fluoranthene	117	35	15	ug/kg	
191-24-2	Benzo(g,h,i)perylene [a]	72.4	35	17	ug/kg	
207-08-9	Benzo(k)fluoranthene	52.2	35	16	ug/kg	
218-01-9	Chrysene	90.7	35	11	ug/kg	
53-70-3	Dibenzo(a,h)anthracene [a]	19.7	35	15	ug/kg	J
206-44-0	Fluoranthene	129	35	15	ug/kg	
86-73-7	Fluorene	ND	35	16	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene [a]	84.3	35	16	ug/kg	
91-20-3	Naphthalene	ND	35	9.8	ug/kg	
85-01-8	Phenanthrene	29.4	35	12	ug/kg	J
129-00-0	Pyrene	147	35	11	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	36%		15-114%
321-60-8	2-Fluorobiphenyl	41%		22-104%
1718-51-0	Terphenyl-d14	57%		23-121%

(a) Associated CCV outside of control limits high. Estimated value, due to corresponding failure in the batch associated CCV.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: B-106-A
Lab Sample ID: JD32315-1
Matrix: SO - Soil
Project: Northfield Bridge, Route 12, VT

Date Sampled: 09/20/21
Date Received: 09/28/21
Percent Solids: 94.4

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	6.3	2.1	mg/kg	1	09/30/21	09/30/21	ND	SW846 6010D [2]	SW846 3050B [3]
Barium	25.7	21	mg/kg	1	09/30/21	09/30/21	ND	SW846 6010D [2]	SW846 3050B [3]
Cadmium	< 0.53	0.53	mg/kg	1	09/30/21	09/30/21	ND	SW846 6010D [2]	SW846 3050B [3]
Chromium	19.4	1.1	mg/kg	1	09/30/21	09/30/21	ND	SW846 6010D [2]	SW846 3050B [3]
Lead	18.0	2.1	mg/kg	1	09/30/21	09/30/21	ND	SW846 6010D [2]	SW846 3050B [3]
Mercury	< 0.035	0.035	mg/kg	1	09/30/21	10/01/21	TM	SW846 7471B [1]	SW846 7471B [4]
Selenium	< 2.1	2.1	mg/kg	1	09/30/21	09/30/21	ND	SW846 6010D [2]	SW846 3050B [3]
Silver	0.61	0.53	mg/kg	1	09/30/21	09/30/21	ND	SW846 6010D [2]	SW846 3050B [3]

(1) Instrument QC Batch: MA51206
(2) Instrument QC Batch: MA51210
(3) Prep QC Batch: MP28913
(4) Prep QC Batch: MP28930

RL = Reporting Limit

Report of Analysis

Client Sample ID:	B-106-B		
Lab Sample ID:	JD32315-2	**Date Sampled:**	09/20/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8260D	**Percent Solids:**	75.0
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1C181467.D	1	10/02/21 19:34	PS	n/a	n/a	V1C7900
Run #2							

	Initial Weight
Run #1	6.3 g
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	15.0	11	4.4	ug/kg	
71-43-2	Benzene	ND	0.53	0.48	ug/kg	
108-86-1	Bromobenzene	ND	5.3	0.59	ug/kg	
74-97-5	Bromochloromethane	ND	5.3	0.59	ug/kg	
75-27-4	Bromodichloromethane	ND	2.1	0.45	ug/kg	
75-25-2	Bromoform	ND	5.3	1.4	ug/kg	
74-83-9	Bromomethane	ND	5.3	0.81	ug/kg	
78-93-3	2-Butanone (MEK)	ND	11	2.6	ug/kg	
104-51-8	n-Butylbenzene	ND	2.1	0.43	ug/kg	
135-98-8	sec-Butylbenzene	ND	2.1	0.45	ug/kg	
98-06-6	tert-Butylbenzene	ND	2.1	0.53	ug/kg	
75-15-0	Carbon disulfide	0.95	2.1	0.57	ug/kg	J
56-23-5	Carbon tetrachloride	ND	2.1	0.65	ug/kg	
108-90-7	Chlorobenzene	ND	2.1	0.49	ug/kg	
75-00-3	Chloroethane	ND	5.3	0.63	ug/kg	
67-66-3	Chloroform	4.9	2.1	0.55	ug/kg	
74-87-3	Chloromethane	ND	5.3	2.1	ug/kg	
95-49-8	o-Chlorotoluene	ND	2.1	0.57	ug/kg	
106-43-4	p-Chlorotoluene	ND	2.1	0.47	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.1	0.73	ug/kg	
124-48-1	Dibromochloromethane [a]	ND	2.1	0.59	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.1	0.45	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.1	0.58	ug/kg	
541-73-1	1,3-Dichlorobenzene [b]	ND	1.1	0.52	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.1	0.52	ug/kg	
75-71-8	Dichlorodifluoromethane [a]	ND	5.3	0.77	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.1	0.52	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.1	0.50	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.1	0.69	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.1	0.89	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.1	0.65	ug/kg	
78-87-5	1,2-Dichloropropane	ND	2.1	0.50	ug/kg	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-106-B		
Lab Sample ID:	JD32315-2	**Date Sampled:**	09/20/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8260D	**Percent Solids:**	75.0
Project:	Northfield Bridge, Route 12, VT		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	2.1	0.55	ug/kg	
594-20-7	2,2-Dichloropropane	ND	2.1	0.45	ug/kg	
563-58-6	1,1-Dichloropropene	ND	2.1	0.49	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	2.1	0.50	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	2.1	0.48	ug/kg	
100-41-4	Ethylbenzene	ND	1.1	0.48	ug/kg	
87-68-3	Hexachlorobutadiene [a]	ND	5.3	0.69	ug/kg	
591-78-6	2-Hexanone	ND	5.3	2.2	ug/kg	
74-88-4	Iodomethane	ND	5.3	2.5	ug/kg	
98-82-8	Isopropylbenzene	ND	2.1	1.5	ug/kg	
99-87-6	p-Isopropyltoluene	0.52	2.1	0.42	ug/kg	J
1634-04-4	Methyl Tert Butyl Ether	ND	1.1	0.50	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.3	2.4	ug/kg	
74-95-3	Methylene bromide	ND	5.3	0.56	ug/kg	
75-09-2	Methylene chloride	ND	5.3	2.8	ug/kg	
91-20-3	Naphthalene	ND	5.3	2.6	ug/kg	
103-65-1	n-Propylbenzene	ND	2.1	0.50	ug/kg	
100-42-5	Styrene	ND	2.1	0.43	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	2.1	0.45	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.1	0.63	ug/kg	
127-18-4	Tetrachloroethene	ND	2.1	0.61	ug/kg	
108-88-3	Toluene	ND	1.1	0.56	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	5.3	2.6	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	5.3	2.6	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.1	0.51	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.1	0.59	ug/kg	
79-01-6	Trichloroethene	ND	1.1	0.81	ug/kg	
75-69-4	Trichlorofluoromethane [c]	ND	5.3	0.72	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	5.3	0.59	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	2.1	0.53	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	2.1	0.46	ug/kg	
108-05-4	Vinyl Acetate	ND	11	2.1	ug/kg	
75-01-4	Vinyl chloride	ND	2.1	0.51	ug/kg	
	m,p-Xylene	ND	1.1	0.95	ug/kg	
95-47-6	o-Xylene	ND	1.1	0.48	ug/kg	
1330-20-7	Xylene (total)	ND	1.1	0.48	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		72-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-106-B		
Lab Sample ID:	JD32315-2	**Date Sampled:**	09/20/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8260D	**Percent Solids:**	75.0
Project:	Northfield Bridge, Route 12, VT		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	111%		75-131%
2037-26-5	Toluene-D8	108%		81-121%
460-00-4	4-Bromofluorobenzene	93%		60-141%

(a) Associated CCV outside of control limits high, sample was ND.
(b) This compound in blank spike is outside in house QC limits bias high.
(c) Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-106-B		
Lab Sample ID:	JD32315-2	**Date Sampled:**	09/20/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8270E SW846 3546	**Percent Solids:**	75.0
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2P103272.D	1	10/05/21 13:31	KLS	10/04/21 10:00	OP35710	E2P4638
Run #2							

	Initial Weight	Final Volume
Run #1	30.7 g	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	43	15	ug/kg	
208-96-8	Acenaphthylene	ND	43	22	ug/kg	
120-12-7	Anthracene	ND	43	27	ug/kg	
56-55-3	Benzo(a)anthracene	ND	43	12	ug/kg	
50-32-8	Benzo(a)pyrene	ND	43	20	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	43	19	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	43	22	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	43	20	ug/kg	
218-01-9	Chrysene	ND	43	14	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	43	19	ug/kg	
206-44-0	Fluoranthene	ND	43	19	ug/kg	
86-73-7	Fluorene	ND	43	20	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	43	20	ug/kg	
91-20-3	Naphthalene	ND	43	12	ug/kg	
85-01-8	Phenanthrene	ND	43	15	ug/kg	
129-00-0	Pyrene	ND	43	14	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	26%		15-114%
321-60-8	2-Fluorobiphenyl	27%		22-104%
1718-51-0	Terphenyl-d14	34%		23-121%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-106-B		
Lab Sample ID:	JD32315-2	**Date Sampled:**	09/20/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8082A SW846 3540C	**Percent Solids:**	75.0
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5G110669.D	1	10/04/21 04:24	TL	10/01/21 18:00	OP35562	G5G2805
Run #2							

	Initial Weight	Final Volume
Run #1	10.7 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	62	29	ug/kg	
11104-28-2	Aroclor 1221	ND	62	39	ug/kg	
11141-16-5	Aroclor 1232	ND	62	40	ug/kg	
53469-21-9	Aroclor 1242	ND	62	26	ug/kg	
12672-29-6	Aroclor 1248	ND	62	56	ug/kg	
11097-69-1	Aroclor 1254	ND	62	34	ug/kg	
11096-82-5	Aroclor 1260	ND	62	27	ug/kg	
11100-14-4	Aroclor 1268	ND	62	26	ug/kg	
37324-23-5	Aroclor 1262	ND	62	41	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	79%		24-152%
877-09-8	Tetrachloro-m-xylene	77%		24-152%
2051-24-3	Decachlorobiphenyl	70%		10-172%
2051-24-3	Decachlorobiphenyl	105%		10-172%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: B-106-B
Lab Sample ID: JD32315-2
Matrix: SO - Soil
Project: Northfield Bridge, Route 12, VT

Date Sampled: 09/20/21
Date Received: 09/28/21
Percent Solids: 75.0

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	5.3	1.7	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Barium	< 17	17	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Cadmium	< 0.43	0.43	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Chromium	7.9	0.86	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Lead	4.9	1.7	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Mercury	< 0.041	0.041	mg/kg	1	10/04/21	10/04/21	LM	SW846 7471B [2]	SW846 7471B [4]
Selenium	< 1.7	1.7	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Silver	< 0.43	0.43	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]

(1) Instrument QC Batch: MA51210
(2) Instrument QC Batch: MA51220
(3) Prep QC Batch: MP28913
(4) Prep QC Batch: MP28967

RL = Reporting Limit

Report of Analysis

Client Sample ID:	B-106-C		
Lab Sample ID:	JD32315-3	**Date Sampled:**	09/20/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8260D SW846 1311	**Percent Solids:**	92.6
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2V81426.D	5	10/07/21 04:30	JS	10/02/21 16:00	GP36195	V2V3357
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
71-43-2	Benzene	ND	D018	0.50	0.0025	0.0021	mg/l	
78-93-3	2-Butanone (MEK) [a]	ND	D035	200	0.10	0.034	mg/l	
56-23-5	Carbon tetrachloride	ND	D019	0.50	0.0050	0.0028	mg/l	
108-90-7	Chlorobenzene	ND	D021	100	0.0050	0.0028	mg/l	
67-66-3	Chloroform [b]	0.0114	D022	6.0	0.0050	0.0025	mg/l	B
106-46-7	1,4-Dichlorobenzene	ND	D027	7.5	0.0050	0.0025	mg/l	
107-06-2	1,2-Dichloroethane	ND	D028	0.50	0.0050	0.0030	mg/l	
75-35-4	1,1-Dichloroethene	ND	D029	0.70	0.0050	0.0030	mg/l	
127-18-4	Tetrachloroethene	ND	D039	0.70	0.0050	0.0045	mg/l	
79-01-6	Trichloroethene	ND	D040	0.50	0.0050	0.0026	mg/l	
75-01-4	Vinyl chloride	ND	D043	0.20	0.0050	0.0039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	93%		76-120%
17060-07-0	1,2-Dichloroethane-D4	110%		64-135%
2037-26-5	Toluene-D8	102%		76-117%
460-00-4	4-Bromofluorobenzene	102%		72-122%

(a) Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.
(b) Indicates analyte found in associated leachate blank.

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-106-C		
Lab Sample ID:	JD32315-3	**Date Sampled:**	09/20/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8270E SW846 3510C	**Percent Solids:**	92.6
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z152225.D	1	10/13/21 05:22	CS	10/12/21 18:20	OP35940	EZ7572
Run #2							

	Initial Volume	Final Volume
Run #1	100 ml	1.0 ml
Run #2		

ABN TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	D023	200	0.020	0.0089	mg/l	
	3&4-Methylphenol	ND	D024	200	0.020	0.0088	mg/l	
87-86-5	Pentachlorophenol	ND	D037	100	0.10	0.014	mg/l	
95-95-4	2,4,5-Trichlorophenol	ND	D041	400	0.050	0.013	mg/l	
88-06-2	2,4,6-Trichlorophenol	ND	D042	2.0	0.050	0.0092	mg/l	
106-46-7	1,4-Dichlorobenzene	ND	D027	7.5	0.020	0.0017	mg/l	
121-14-2	2,4-Dinitrotoluene	ND	D030	0.13	0.020	0.0055	mg/l	
118-74-1	Hexachlorobenzene	ND	D032	0.13	0.020	0.0033	mg/l	
87-68-3	Hexachlorobutadiene	ND	D033	0.50	0.010	0.0049	mg/l	
67-72-1	Hexachloroethane	ND	D034	3.0	0.050	0.0039	mg/l	
98-95-3	Nitrobenzene	ND	D036	2.0	0.020	0.0064	mg/l	
110-86-1	Pyridine	ND	D038	5.0	0.020	0.0039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	32%		10-73%
4165-62-2	Phenol-d5	23%		10-64%
118-79-6	2,4,6-Tribromophenol	90%		31-130%
4165-60-0	Nitrobenzene-d5	77%		28-126%
321-60-8	2-Fluorobiphenyl	74%		26-114%
1718-51-0	Terphenyl-d14	87%		16-122%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-106-C		
Lab Sample ID:	JD32315-3	**Date Sampled:**	09/20/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8015D	**Percent Solids:**	92.6
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	LM112324.D	1	10/01/21 21:39	DFT	n/a	n/a	GLM4714
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	10.5 g	10.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	11	5.5	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	74%		70-116%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-106-C		
Lab Sample ID:	JD32315-3	**Date Sampled:**	09/20/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8151A SW846 3510C	**Percent Solids:**	92.6
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G133448.D	1	10/17/21 13:43	TL	10/12/21 14:20	OP35941	G3G4866
Run #2							

	Initial Volume	Final Volume
Run #1	30.0 ml	2.0 ml
Run #2		

Herbicide TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
94-75-7	2,4-D [a]	ND	D016	10	0.0033	0.00098	mg/l	
93-72-1	2,4,5-TP (Silvex)	ND	D017	1.0	0.0010	0.00020	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	87%		13-169%
19719-28-9	2,4-DCAA	53%		13-169%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-106-C		
Lab Sample ID:	JD32315-3	**Date Sampled:**	09/20/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8081B SW846 3510C	**Percent Solids:**	92.6
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4G9721363.D	1	10/12/21 22:46	RK	10/12/21 14:15	OP35939	G4G3596
Run #2							

	Initial Volume	Final Volume
Run #1	30.0 ml	2.0 ml
Run #2		

Pesticide TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
58-89-9	gamma-BHC (Lindane)	ND	D013	0.40	0.000067	0.000040	mg/l	
12789-03-6	Chlordane	ND	D020	0.030	0.0033	0.0014	mg/l	
72-20-8	Endrin	ND	D012	0.020	0.000067	0.000040	mg/l	
76-44-8	Heptachlor	ND	D031	0.0080	0.000067	0.000030	mg/l	
1024-57-3	Heptachlor epoxide	ND	D031	0.0080	0.000067	0.000040	mg/l	
72-43-5	Methoxychlor	ND	D014	10	0.00013	0.000045	mg/l	
8001-35-2	Toxaphene	ND	D015	0.50	0.0017	0.0011	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	86%		30-137%
877-09-8	Tetrachloro-m-xylene	91%		30-137%
2051-24-3	Decachlorobiphenyl	85%		10-137%
2051-24-3	Decachlorobiphenyl	88%		10-137%

ND = Not detected MDL = Method Detection Limit
MCL = Maximum Contamination Level (40 CFR 261 7/1/11)
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-106-C		
Lab Sample ID:	JD32315-3	**Date Sampled:**	09/20/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8082A SW846 3546	**Percent Solids:**	92.6
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX2471765.D	1	10/05/21 13:20	RK	10/04/21 09:00	OP35760	GXX7601
Run #2							

	Initial Weight	Final Volume
Run #1	15.1 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	36	17	ug/kg	
11104-28-2	Aroclor 1221	ND	36	22	ug/kg	
11141-16-5	Aroclor 1232	ND	36	23	ug/kg	
53469-21-9	Aroclor 1242	ND	36	15	ug/kg	
12672-29-6	Aroclor 1248	ND	36	32	ug/kg	
11097-69-1	Aroclor 1254	ND	36	19	ug/kg	
11096-82-5	Aroclor 1260	ND	36	15	ug/kg	
11100-14-4	Aroclor 1268	ND	36	15	ug/kg	
37324-23-5	Aroclor 1262	ND	36	23	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	77%		24-152%
877-09-8	Tetrachloro-m-xylene	77%		24-152%
2051-24-3	Decachlorobiphenyl	71%		10-172%
2051-24-3	Decachlorobiphenyl	67%		10-172%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-106-C		
Lab Sample ID:	JD32315-3	**Date Sampled:**	09/20/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8015D SW846 3546	**Percent Solids:**	92.6
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	ZZ101078.D	1	10/05/21 06:10	TC	10/04/21 09:30	OP35757	GZZ3729
Run #2							

	Initial Weight	Final Volume
Run #1	15.0 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	10.4	7.2	2.4	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	69%		18-132%
438-22-2	5a-Androstane	67%		22-134%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: B-106-C
Lab Sample ID: JD32315-3
Matrix: SO - Soil
Project: Northfield Bridge, Route 12, VT

Date Sampled: 09/20/21
Date Received: 09/28/21
Percent Solids: 92.6

Metals Analysis, TCLP Leachate SW846 1311

Analyte	Result	HW#	MCL	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	< 0.10	D004	5.0	0.10	mg/l	1	10/05/21	10/06/21	ND	SW846 6010D [2]	SW846 3010A [3]
Barium	< 0.20	D005	100	0.20	mg/l	1	10/05/21	10/06/21	ND	SW846 6010D [2]	SW846 3010A [3]
Cadmium	< 0.0040	D006	1.0	0.0040	mg/l	1	10/05/21	10/06/21	ND	SW846 6010D [2]	SW846 3010A [3]
Chromium	< 0.010	D007	5.0	0.010	mg/l	1	10/05/21	10/06/21	ND	SW846 6010D [2]	SW846 3010A [3]
Lead	< 0.10	D008	5.0	0.10	mg/l	1	10/05/21	10/06/21	ND	SW846 6010D [2]	SW846 3010A [3]
Mercury	< 0.00020	D009	0.20	0.00020	mg/l	1	10/06/21	10/06/21	LM	SW846 7470A [1]	SW846 7470A [4]
Selenium	< 0.10	D010	1.0	0.10	mg/l	1	10/05/21	10/06/21	ND	SW846 6010D [2]	SW846 3010A [3]
Silver	< 0.010	D011	5.0	0.010	mg/l	1	10/05/21	10/06/21	ND	SW846 6010D [2]	SW846 3010A [3]

(1) Instrument QC Batch: MA51229
(2) Instrument QC Batch: MA51233
(3) Prep QC Batch: MP29010
(4) Prep QC Batch: MP29030

RL = Reporting Limit
MCL = Maximum Contamination Level (40 CFR 261 7/1/11)

Report of Analysis

Client Sample ID:	B-106-C		
Lab Sample ID:	JD32315-3	**Date Sampled:**	09/20/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
		Percent Solids:	92.6
Project:	Northfield Bridge, Route 12, VT		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Corrosivity as pH	7.95 NC		su	1	10/04/21 15:51	MM	SW846 9045D
Cyanide Reactivity [a]	< 10	10	mg/kg	1	10/07/21 21:31	JJ	SW846 CHAP7/9012 B
Ignitability (Flashpoint)	> 200		Deg. F	1	10/05/21 16:30	MM	SW846 1010A/ASTM D93
Paint Filter Test [b]	< 0.50	0.50	ml/100g	1	10/04/21 14:20	MM	SW846 9095/9095B
Solids, Percent	92.6		%	1	10/04/21 16:54	BG	SM2540 G 18TH ED MOD
Sulfide Reactivity [a]	< 100	100	mg/kg	1	10/10/21 12:35	MP	SW846 CHAP7/9034

(a) Analyzed outside the 14 day holding time applied by laboratory SOP. No regulatory holding time published for this method.
(b) No free liquids.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	H-104-A		
Lab Sample ID:	JD32315-4	**Date Sampled:**	09/20/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8270E SW846 3546	**Percent Solids:**	96.7
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2P103278.D	1	10/05/21 17:14	KLS	10/04/21 10:00	OP35710	E2P4638
Run #2	2P103323.D	5	10/06/21 18:53	BL	10/04/21 10:00	OP35710	E2P4640

	Initial Weight	Final Volume
Run #1	30.0 g	1.0 ml
Run #2	30.0 g	1.0 ml

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	149	34	12	ug/kg	
208-96-8	Acenaphthylene	835	34	18	ug/kg	
120-12-7	Anthracene	1280	34	21	ug/kg	
56-55-3	Benzo(a)anthracene	1940	34	9.8	ug/kg	
50-32-8	Benzo(a)pyrene	1330	34	16	ug/kg	
205-99-2	Benzo(b)fluoranthene	1690	34	15	ug/kg	
191-24-2	Benzo(g,h,i)perylene	852	34	17	ug/kg	
207-08-9	Benzo(k)fluoranthene	745	34	16	ug/kg	
218-01-9	Chrysene	1760	34	11	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	250	34	15	ug/kg	
206-44-0	Fluoranthene	5840 [a]	170	77	ug/kg	
86-73-7	Fluorene	760	34	16	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	1080	34	16	ug/kg	
91-20-3	Naphthalene	1930	34	9.7	ug/kg	
85-01-8	Phenanthrene	7810 [a]	170	58	ug/kg	
129-00-0	Pyrene	4680 [a]	170	55	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	49%	52%	15-114%
321-60-8	2-Fluorobiphenyl	59%	68%	22-104%
1718-51-0	Terphenyl-d14	66%	78%	23-121%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: H-104-A
Lab Sample ID: JD32315-4
Matrix: SO - Soil
Project: Northfield Bridge, Route 12, VT

Date Sampled: 09/20/21
Date Received: 09/28/21
Percent Solids: 96.7

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	6.3	2.1	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Barium	21.3	21	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Cadmium	< 0.53	0.53	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Chromium	16.7	1.1	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Lead	88.6	2.1	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Mercury	< 0.034	0.034	mg/kg	1	10/04/21	10/04/21	LM	SW846 7471B [2]	SW846 7471B [4]
Selenium	< 2.1	2.1	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Silver	0.98	0.53	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]

(1) Instrument QC Batch: MA51210
(2) Instrument QC Batch: MA51220
(3) Prep QC Batch: MP28913
(4) Prep QC Batch: MP28967

RL = Reporting Limit

Report of Analysis

Client Sample ID:	H-104-B		
Lab Sample ID:	JD32315-5	**Date Sampled:**	09/20/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8260D	**Percent Solids:**	86.6
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1C181468.D	1	10/02/21 20:02	PS	n/a	n/a	V1C7900
Run #2							

	Initial Weight
Run #1	6.1 g
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	13.5	9.5	3.9	ug/kg	
71-43-2	Benzene	ND	0.47	0.43	ug/kg	
108-86-1	Bromobenzene	ND	4.7	0.52	ug/kg	
74-97-5	Bromochloromethane	ND	4.7	0.53	ug/kg	
75-27-4	Bromodichloromethane	ND	1.9	0.41	ug/kg	
75-25-2	Bromoform	ND	4.7	1.3	ug/kg	
74-83-9	Bromomethane	ND	4.7	0.72	ug/kg	
78-93-3	2-Butanone (MEK)	ND	9.5	2.3	ug/kg	
104-51-8	n-Butylbenzene	ND	1.9	0.39	ug/kg	
135-98-8	sec-Butylbenzene	ND	1.9	0.41	ug/kg	
98-06-6	tert-Butylbenzene	ND	1.9	0.47	ug/kg	
75-15-0	Carbon disulfide	2.3	1.9	0.51	ug/kg	
56-23-5	Carbon tetrachloride	ND	1.9	0.58	ug/kg	
108-90-7	Chlorobenzene	ND	1.9	0.43	ug/kg	
75-00-3	Chloroethane	ND	4.7	0.56	ug/kg	
67-66-3	Chloroform	ND	1.9	0.49	ug/kg	
74-87-3	Chloromethane	ND	4.7	1.9	ug/kg	
95-49-8	o-Chlorotoluene	ND	1.9	0.51	ug/kg	
106-43-4	p-Chlorotoluene	ND	1.9	0.42	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.9	0.66	ug/kg	
124-48-1	Dibromochloromethane [a]	ND	1.9	0.53	ug/kg	
106-93-4	1,2-Dibromoethane	ND	0.95	0.40	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	0.95	0.52	ug/kg	
541-73-1	1,3-Dichlorobenzene [b]	ND	0.95	0.47	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	0.95	0.47	ug/kg	
75-71-8	Dichlorodifluoromethane [a]	ND	4.7	0.69	ug/kg	
75-34-3	1,1-Dichloroethane	ND	0.95	0.47	ug/kg	
107-06-2	1,2-Dichloroethane	ND	0.95	0.44	ug/kg	
75-35-4	1,1-Dichloroethene	ND	0.95	0.62	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	0.95	0.80	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	0.95	0.58	ug/kg	
78-87-5	1,2-Dichloropropane	ND	1.9	0.45	ug/kg	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-104-B		
Lab Sample ID:	JD32315-5	**Date Sampled:**	09/20/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8260D	**Percent Solids:**	86.6
Project:	Northfield Bridge, Route 12, VT		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	1.9	0.49	ug/kg	
594-20-7	2,2-Dichloropropane	ND	1.9	0.41	ug/kg	
563-58-6	1,1-Dichloropropene	ND	1.9	0.44	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	1.9	0.45	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	1.9	0.43	ug/kg	
100-41-4	Ethylbenzene	ND	0.95	0.43	ug/kg	
87-68-3	Hexachlorobutadiene [a]	ND	4.7	0.62	ug/kg	
591-78-6	2-Hexanone	ND	4.7	2.0	ug/kg	
74-88-4	Iodomethane	ND	4.7	2.2	ug/kg	
98-82-8	Isopropylbenzene	ND	1.9	1.3	ug/kg	
99-87-6	p-Isopropyltoluene	ND	1.9	0.37	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	0.95	0.44	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	4.7	2.1	ug/kg	
74-95-3	Methylene bromide	ND	4.7	0.50	ug/kg	
75-09-2	Methylene chloride	ND	4.7	2.5	ug/kg	
91-20-3	Naphthalene	ND	4.7	2.4	ug/kg	
103-65-1	n-Propylbenzene	ND	1.9	0.44	ug/kg	
100-42-5	Styrene	ND	1.9	0.38	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.9	0.40	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.9	0.57	ug/kg	
127-18-4	Tetrachloroethene	ND	1.9	0.55	ug/kg	
108-88-3	Toluene	ND	0.95	0.50	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	4.7	2.4	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	4.7	2.4	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	1.9	0.46	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	1.9	0.52	ug/kg	
79-01-6	Trichloroethene	ND	0.95	0.72	ug/kg	
75-69-4	Trichlorofluoromethane [c]	ND	4.7	0.65	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	4.7	0.53	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	0.58	1.9	0.47	ug/kg	J
108-67-8	1,3,5-Trimethylbenzene	ND	1.9	0.41	ug/kg	
108-05-4	Vinyl Acetate	ND	9.5	1.9	ug/kg	
75-01-4	Vinyl chloride	ND	1.9	0.46	ug/kg	
	m,p-Xylene	ND	0.95	0.85	ug/kg	
95-47-6	o-Xylene	ND	0.95	0.43	ug/kg	
1330-20-7	Xylene (total)	ND	0.95	0.43	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		72-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-104-B		
Lab Sample ID:	JD32315-5	**Date Sampled:**	09/20/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8260D	**Percent Solids:**	86.6
Project:	Northfield Bridge, Route 12, VT		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	109%		75-131%
2037-26-5	Toluene-D8	106%		81-121%
460-00-4	4-Bromofluorobenzene	98%		60-141%

(a) Associated CCV outside of control limits high, sample was ND.
(b) This compound in blank spike is outside in house QC limits bias high.
(c) Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-104-B		
Lab Sample ID:	JD32315-5	**Date Sampled:**	09/20/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8270E SW846 3546	**Percent Solids:**	86.6
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2P103273.D	1	10/05/21 13:56	KLS	10/04/21 10:00	OP35710	E2P4638
Run #2							

	Initial Weight	Final Volume
Run #1	30.0 g	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	38	13	ug/kg	
208-96-8	Acenaphthylene	ND	38	20	ug/kg	
120-12-7	Anthracene	27.9	38	24	ug/kg	J
56-55-3	Benzo(a)anthracene	52.8	38	11	ug/kg	
50-32-8	Benzo(a)pyrene	35.4	38	18	ug/kg	J
205-99-2	Benzo(b)fluoranthene	47.8	38	17	ug/kg	
191-24-2	Benzo(g,h,i)perylene	19.7	38	19	ug/kg	J
207-08-9	Benzo(k)fluoranthene	19.4	38	18	ug/kg	J
218-01-9	Chrysene	46.8	38	12	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	38	17	ug/kg	
206-44-0	Fluoranthene	135	38	17	ug/kg	
86-73-7	Fluorene	ND	38	18	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	25.3	38	18	ug/kg	J
91-20-3	Naphthalene	50.1	38	11	ug/kg	
85-01-8	Phenanthrene	163	38	13	ug/kg	
129-00-0	Pyrene	113	38	12	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	52%		15-114%
321-60-8	2-Fluorobiphenyl	56%		22-104%
1718-51-0	Terphenyl-d14	69%		23-121%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-104-B		
Lab Sample ID:	JD32315-5	**Date Sampled:**	09/20/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8082A SW846 3540C	**Percent Solids:**	86.6
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5G110674.D	1	10/04/21 07:13	TL	10/01/21 18:00	OP35562	G5G2805
Run #2							

	Initial Weight	Final Volume
Run #1	10.1 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	57	27	ug/kg	
11104-28-2	Aroclor 1221	ND	57	35	ug/kg	
11141-16-5	Aroclor 1232	ND	57	36	ug/kg	
53469-21-9	Aroclor 1242	ND	57	23	ug/kg	
12672-29-6	Aroclor 1248	ND	57	51	ug/kg	
11097-69-1	Aroclor 1254	ND	57	31	ug/kg	
11096-82-5	Aroclor 1260	ND	57	24	ug/kg	
11100-14-4	Aroclor 1268	ND	57	24	ug/kg	
37324-23-5	Aroclor 1262	ND	57	37	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	78%		24-152%
877-09-8	Tetrachloro-m-xylene	78%		24-152%
2051-24-3	Decachlorobiphenyl	89%		10-172%
2051-24-3	Decachlorobiphenyl	106%		10-172%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-104-B		
Lab Sample ID:	JD32315-5	**Date Sampled:**	09/20/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
		Percent Solids:	86.6
Project:	Northfield Bridge, Route 12, VT		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic [a]	7.2	3.1	mg/kg	2	09/30/21	10/01/21	ND	SW846 6010D [2]	SW846 3050B [4]
Barium	< 16	16	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [4]
Cadmium [a]	< 0.79	0.79	mg/kg	2	09/30/21	10/01/21	ND	SW846 6010D [2]	SW846 3050B [4]
Chromium	10.1	0.79	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [4]
Lead [a]	7.2	3.1	mg/kg	2	09/30/21	10/01/21	ND	SW846 6010D [2]	SW846 3050B [4]
Mercury	< 0.015	0.015	mg/kg	1	10/04/21	10/04/21	LM	SW846 7471B [3]	SW846 7471B [5]
Selenium [a]	< 3.1	3.1	mg/kg	2	09/30/21	10/01/21	ND	SW846 6010D [2]	SW846 3050B [4]
Silver [a]	< 0.79	0.79	mg/kg	2	09/30/21	10/01/21	ND	SW846 6010D [2]	SW846 3050B [4]

(1) Instrument QC Batch: MA51210
(2) Instrument QC Batch: MA51216
(3) Instrument QC Batch: MA51220
(4) Prep QC Batch: MP28913
(5) Prep QC Batch: MP28967

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	H-104-C1		
Lab Sample ID:	JD32315-6	**Date Sampled:**	09/20/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8260D SW846 1311	**Percent Solids:**	89.5
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2V81427.D	5	10/07/21 04:56	JS	10/02/21 16:00	GP36195	V2V3357
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
71-43-2	Benzene	ND	D018	0.50	0.0025	0.0021	mg/l	
78-93-3	2-Butanone (MEK) [a]	ND	D035	200	0.10	0.034	mg/l	
56-23-5	Carbon tetrachloride	ND	D019	0.50	0.0050	0.0028	mg/l	
108-90-7	Chlorobenzene	ND	D021	100	0.0050	0.0028	mg/l	
67-66-3	Chloroform [b]	0.0113	D022	6.0	0.0050	0.0025	mg/l	B
106-46-7	1,4-Dichlorobenzene	ND	D027	7.5	0.0050	0.0025	mg/l	
107-06-2	1,2-Dichloroethane	ND	D028	0.50	0.0050	0.0030	mg/l	
75-35-4	1,1-Dichloroethene	ND	D029	0.70	0.0050	0.0030	mg/l	
127-18-4	Tetrachloroethene	ND	D039	0.70	0.0050	0.0045	mg/l	
79-01-6	Trichloroethene	ND	D040	0.50	0.0050	0.0026	mg/l	
75-01-4	Vinyl chloride	ND	D043	0.20	0.0050	0.0039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	94%		76-120%
17060-07-0	1,2-Dichloroethane-D4	109%		64-135%
2037-26-5	Toluene-D8	103%		76-117%
460-00-4	4-Bromofluorobenzene	102%		72-122%

(a) Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.
(b) Indicates analyte found in associated leachate blank.

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-104-C1		
Lab Sample ID:	JD32315-6	**Date Sampled:**	09/20/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8270E SW846 3510C	**Percent Solids:**	89.5
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z152226.D	1	10/13/21 05:47	CS	10/12/21 18:20	OP35940	EZ7572
Run #2							

	Initial Volume	Final Volume
Run #1	100 ml	1.0 ml
Run #2		

ABN TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	D023	200	0.020	0.0089	mg/l	
	3&4-Methylphenol	ND	D024	200	0.020	0.0088	mg/l	
87-86-5	Pentachlorophenol	ND	D037	100	0.10	0.014	mg/l	
95-95-4	2,4,5-Trichlorophenol	ND	D041	400	0.050	0.013	mg/l	
88-06-2	2,4,6-Trichlorophenol	ND	D042	2.0	0.050	0.0092	mg/l	
106-46-7	1,4-Dichlorobenzene	ND	D027	7.5	0.020	0.0017	mg/l	
121-14-2	2,4-Dinitrotoluene	ND	D030	0.13	0.020	0.0055	mg/l	
118-74-1	Hexachlorobenzene	ND	D032	0.13	0.020	0.0033	mg/l	
87-68-3	Hexachlorobutadiene	ND	D033	0.50	0.010	0.0049	mg/l	
67-72-1	Hexachloroethane	ND	D034	3.0	0.050	0.0039	mg/l	
98-95-3	Nitrobenzene	ND	D036	2.0	0.020	0.0064	mg/l	
110-86-1	Pyridine	ND	D038	5.0	0.020	0.0039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	34%		10-73%
4165-62-2	Phenol-d5	24%		10-64%
118-79-6	2,4,6-Tribromophenol	86%		31-130%
4165-60-0	Nitrobenzene-d5	76%		28-126%
321-60-8	2-Fluorobiphenyl	71%		26-114%
1718-51-0	Terphenyl-d14	95%		16-122%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-104-C1		
Lab Sample ID:	JD32315-6	**Date Sampled:**	09/20/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8015D	**Percent Solids:**	89.5
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	LM112325.D	1	10/01/21 22:03	DFT	n/a	n/a	GLM4714
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	11.2 g	10.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	11	5.6	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	74%		70-116%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-104-C1		
Lab Sample ID:	JD32315-6	**Date Sampled:**	09/20/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8151A SW846 3510C	**Percent Solids:**	89.5
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G133451.D	1	10/17/21 15:05	TL	10/12/21 14:20	OP35941	G3G4866
Run #2							

	Initial Volume	Final Volume
Run #1	30.0 ml	2.0 ml
Run #2		

Herbicide TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
94-75-7	2,4-D [a]	ND	D016	10	0.0033	0.00098	mg/l	
93-72-1	2,4,5-TP (Silvex)	ND	D017	1.0	0.0010	0.00020	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	47%		13-169%
19719-28-9	2,4-DCAA	32%		13-169%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit
MCL = Maximum Contamination Level (40 CFR 261 7/1/11)
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-104-C1		
Lab Sample ID:	JD32315-6	**Date Sampled:**	09/20/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8081B SW846 3510C	**Percent Solids:**	89.5
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4G9721366.D	1	10/12/21 23:31	RK	10/12/21 14:15	OP35939	G4G3596
Run #2							

	Initial Volume	Final Volume
Run #1	30.0 ml	2.0 ml
Run #2		

Pesticide TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
58-89-9	gamma-BHC (Lindane)	ND	D013	0.40	0.000067	0.000040	mg/l	
12789-03-6	Chlordane	ND	D020	0.030	0.0033	0.0014	mg/l	
72-20-8	Endrin	ND	D012	0.020	0.000067	0.000040	mg/l	
76-44-8	Heptachlor	ND	D031	0.0080	0.000067	0.000030	mg/l	
1024-57-3	Heptachlor epoxide	ND	D031	0.0080	0.000067	0.000040	mg/l	
72-43-5	Methoxychlor	ND	D014	10	0.00013	0.000045	mg/l	
8001-35-2	Toxaphene	ND	D015	0.50	0.0017	0.0011	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	91%		30-137%
877-09-8	Tetrachloro-m-xylene	95%		30-137%
2051-24-3	Decachlorobiphenyl	98%		10-137%
2051-24-3	Decachlorobiphenyl	93%		10-137%

ND = Not detected MDL = Method Detection Limit
MCL = Maximum Contamination Level (40 CFR 261 7/1/11)
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-104-C1		
Lab Sample ID:	JD32315-6	**Date Sampled:**	09/20/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8082A SW846 3546	**Percent Solids:**	89.5
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX2471766.D	1	10/05/21 13:37	RK	10/04/21 09:00	OP35760	GXX7601
Run #2							

	Initial Weight	Final Volume
Run #1	16.3 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	34	16	ug/kg	
11104-28-2	Aroclor 1221	ND	34	21	ug/kg	
11141-16-5	Aroclor 1232	ND	34	22	ug/kg	
53469-21-9	Aroclor 1242	ND	34	14	ug/kg	
12672-29-6	Aroclor 1248	ND	34	31	ug/kg	
11097-69-1	Aroclor 1254	ND	34	18	ug/kg	
11096-82-5	Aroclor 1260	ND	34	15	ug/kg	
11100-14-4	Aroclor 1268	ND	34	14	ug/kg	
37324-23-5	Aroclor 1262	ND	34	22	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	62%		24-152%
877-09-8	Tetrachloro-m-xylene	65%		24-152%
2051-24-3	Decachlorobiphenyl	51%		10-172%
2051-24-3	Decachlorobiphenyl	61%		10-172%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-104-C1		
Lab Sample ID:	JD32315-6	**Date Sampled:**	09/20/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8015D SW846 3546	**Percent Solids:**	89.5
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	ZZ101081.D	1	10/05/21 07:52	TC	10/04/21 09:30	OP35757	GZZ3729
Run #2							

	Initial Weight	Final Volume
Run #1	15.7 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	13.1	7.1	2.4	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	69%		18-132%
438-22-2	5a-Androstane	68%		22-134%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: H-104-C1
Lab Sample ID: JD32315-6
Matrix: SO - Soil
Project: Northfield Bridge, Route 12, VT

Date Sampled: 09/20/21
Date Received: 09/28/21
Percent Solids: 89.5

Metals Analysis, TCLP Leachate SW846 1311

Analyte	Result	HW#	MCL	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	< 0.10	D004	5.0	0.10	mg/l	1	10/05/21	10/06/21	ND	SW846 6010D [2]	SW846 3010A [3]
Barium	< 0.20	D005	100	0.20	mg/l	1	10/05/21	10/06/21	ND	SW846 6010D [2]	SW846 3010A [3]
Cadmium	< 0.0040	D006	1.0	0.0040	mg/l	1	10/05/21	10/06/21	ND	SW846 6010D [2]	SW846 3010A [3]
Chromium	0.033	D007	5.0	0.010	mg/l	1	10/05/21	10/06/21	ND	SW846 6010D [2]	SW846 3010A [3]
Lead	< 0.10	D008	5.0	0.10	mg/l	1	10/05/21	10/06/21	ND	SW846 6010D [2]	SW846 3010A [3]
Mercury	< 0.00020	D009	0.20	0.00020	mg/l	1	10/06/21	10/06/21	LM	SW846 7470A [1]	SW846 7470A [4]
Selenium	< 0.10	D010	1.0	0.10	mg/l	1	10/05/21	10/06/21	ND	SW846 6010D [2]	SW846 3010A [3]
Silver	< 0.010	D011	5.0	0.010	mg/l	1	10/05/21	10/06/21	ND	SW846 6010D [2]	SW846 3010A [3]

(1) Instrument QC Batch: MA51229
(2) Instrument QC Batch: MA51233
(3) Prep QC Batch: MP29010
(4) Prep QC Batch: MP29030

RL = Reporting Limit
MCL = Maximum Contamination Level (40 CFR 261 7/1/11)

Report of Analysis

Client Sample ID:	H-104-C1		
Lab Sample ID:	JD32315-6	**Date Sampled:**	09/20/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
		Percent Solids:	89.5
Project:	Northfield Bridge, Route 12, VT		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Corrosivity as pH	7.64 NC		su	1	10/04/21 15:52	MM	SW846 9045D
Cyanide Reactivity [a]	< 10	10	mg/kg	1	10/07/21 21:33	JJ	SW846 CHAP7/9012 B
Ignitability (Flashpoint)	> 200		Deg. F	1	10/05/21 16:30	MM	SW846 1010A/ASTM D93
Paint Filter Test [b]	< 0.50	0.50	ml/100g	1	10/04/21 14:20	MM	SW846 9095/9095B
Solids, Percent	89.5		%	1	10/04/21 16:54	BG	SM2540 G 18TH ED MOD
Sulfide Reactivity [a]	< 100	100	mg/kg	1	10/10/21 12:35	MP	SW846 CHAP7/9034

(a) Analyzed outside the 14 day holding time applied by laboratory SOP. No regulatory holding time published for this method.
(b) No free liquids.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	H-104-C2		
Lab Sample ID:	JD32315-7	**Date Sampled:**	09/20/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8260D SW846 1311	**Percent Solids:**	87.4
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2V81428.D	5	10/07/21 05:23	JS	10/02/21 16:00	GP36195	V2V3357
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
71-43-2	Benzene	ND	D018	0.50	0.0025	0.0021	mg/l	
78-93-3	2-Butanone (MEK) [a]	ND	D035	200	0.10	0.034	mg/l	
56-23-5	Carbon tetrachloride	ND	D019	0.50	0.0050	0.0028	mg/l	
108-90-7	Chlorobenzene	ND	D021	100	0.0050	0.0028	mg/l	
67-66-3	Chloroform [b]	0.0116	D022	6.0	0.0050	0.0025	mg/l	B
106-46-7	1,4-Dichlorobenzene	ND	D027	7.5	0.0050	0.0025	mg/l	
107-06-2	1,2-Dichloroethane	ND	D028	0.50	0.0050	0.0030	mg/l	
75-35-4	1,1-Dichloroethene	ND	D029	0.70	0.0050	0.0030	mg/l	
127-18-4	Tetrachloroethene	ND	D039	0.70	0.0050	0.0045	mg/l	
79-01-6	Trichloroethene	ND	D040	0.50	0.0050	0.0026	mg/l	
75-01-4	Vinyl chloride	ND	D043	0.20	0.0050	0.0039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%		76-120%
17060-07-0	1,2-Dichloroethane-D4	110%		64-135%
2037-26-5	Toluene-D8	103%		76-117%
460-00-4	4-Bromofluorobenzene	102%		72-122%

(a) Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.
(b) Indicates analyte found in associated leachate blank.

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-104-C2		
Lab Sample ID:	JD32315-7	**Date Sampled:**	09/20/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8270E SW846 3510C	**Percent Solids:**	87.4
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z152227.D	1	10/13/21 06:13	CS	10/12/21 18:20	OP35940	EZ7572
Run #2							

	Initial Volume	Final Volume
Run #1	100 ml	1.0 ml
Run #2		

ABN TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	D023	200	0.020	0.0089	mg/l	
	3&4-Methylphenol	ND	D024	200	0.020	0.0088	mg/l	
87-86-5	Pentachlorophenol	ND	D037	100	0.10	0.014	mg/l	
95-95-4	2,4,5-Trichlorophenol	ND	D041	400	0.050	0.013	mg/l	
88-06-2	2,4,6-Trichlorophenol	ND	D042	2.0	0.050	0.0092	mg/l	
106-46-7	1,4-Dichlorobenzene	ND	D027	7.5	0.020	0.0017	mg/l	
121-14-2	2,4-Dinitrotoluene	ND	D030	0.13	0.020	0.0055	mg/l	
118-74-1	Hexachlorobenzene	ND	D032	0.13	0.020	0.0033	mg/l	
87-68-3	Hexachlorobutadiene	ND	D033	0.50	0.010	0.0049	mg/l	
67-72-1	Hexachloroethane	ND	D034	3.0	0.050	0.0039	mg/l	
98-95-3	Nitrobenzene	ND	D036	2.0	0.020	0.0064	mg/l	
110-86-1	Pyridine	ND	D038	5.0	0.020	0.0039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	42%		10-73%
4165-62-2	Phenol-d5	29%		10-64%
118-79-6	2,4,6-Tribromophenol	90%		31-130%
4165-60-0	Nitrobenzene-d5	75%		28-126%
321-60-8	2-Fluorobiphenyl	71%		26-114%
1718-51-0	Terphenyl-d14	98%		16-122%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-104-C2		
Lab Sample ID:	JD32315-7	**Date Sampled:**	09/20/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8015D	**Percent Solids:**	87.4
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	LM112326.D	1	10/01/21 22:28	DFT	n/a	n/a	GLM4714
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	11.6 g	10.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	11	5.6	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	76%		70-116%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-104-C2		
Lab Sample ID:	JD32315-7	**Date Sampled:**	09/20/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8151A SW846 3510C	**Percent Solids:**	87.4
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G133454.D	1	10/17/21 16:27	TL	10/12/21 14:20	OP35941	G3G4866
Run #2							

	Initial Volume	Final Volume
Run #1	30.0 ml	2.0 ml
Run #2		

Herbicide TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
94-75-7	2,4-D [a]	ND	D016	10	0.0033	0.00098	mg/l	
93-72-1	2,4,5-TP (Silvex)	ND	D017	1.0	0.0010	0.00020	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	84%		13-169%
19719-28-9	2,4-DCAA	48%		13-169%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-104-C2		
Lab Sample ID:	JD32315-7	**Date Sampled:**	09/20/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8081B SW846 3510C	**Percent Solids:**	87.4
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4G9721367.D	1	10/12/21 23:46	RK	10/12/21 14:15	OP35939	G4G3596
Run #2							

	Initial Volume	Final Volume
Run #1	30.0 ml	2.0 ml
Run #2		

Pesticide TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
58-89-9	gamma-BHC (Lindane)	ND	D013	0.40	0.000067	0.000040	mg/l	
12789-03-6	Chlordane	ND	D020	0.030	0.0033	0.0014	mg/l	
72-20-8	Endrin	ND	D012	0.020	0.000067	0.000040	mg/l	
76-44-8	Heptachlor	ND	D031	0.0080	0.000067	0.000030	mg/l	
1024-57-3	Heptachlor epoxide	ND	D031	0.0080	0.000067	0.000040	mg/l	
72-43-5	Methoxychlor	ND	D014	10	0.00013	0.000045	mg/l	
8001-35-2	Toxaphene	ND	D015	0.50	0.0017	0.0011	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	87%		30-137%
877-09-8	Tetrachloro-m-xylene	92%		30-137%
2051-24-3	Decachlorobiphenyl	99%		10-137%
2051-24-3	Decachlorobiphenyl	95%		10-137%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-104-C2		
Lab Sample ID:	JD32315-7	**Date Sampled:**	09/20/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8082A SW846 3546	**Percent Solids:**	87.4
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX2471767.D	1	10/05/21 13:54	RK	10/04/21 09:00	OP35760	GXX7601
Run #2							

	Initial Weight	Final Volume
Run #1	15.1 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	38	18	ug/kg	
11104-28-2	Aroclor 1221	ND	38	23	ug/kg	
11141-16-5	Aroclor 1232	ND	38	24	ug/kg	
53469-21-9	Aroclor 1242	ND	38	16	ug/kg	
12672-29-6	Aroclor 1248	ND	38	34	ug/kg	
11097-69-1	Aroclor 1254	ND	38	20	ug/kg	
11096-82-5	Aroclor 1260	ND	38	16	ug/kg	
11100-14-4	Aroclor 1268	ND	38	16	ug/kg	
37324-23-5	Aroclor 1262	ND	38	25	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	90%		24-152%
877-09-8	Tetrachloro-m-xylene	90%		24-152%
2051-24-3	Decachlorobiphenyl	74%		10-172%
2051-24-3	Decachlorobiphenyl	83%		10-172%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-104-C2		
Lab Sample ID:	JD32315-7	**Date Sampled:**	09/20/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8015D SW846 3546	**Percent Solids:**	87.4
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	ZZ101082.D	1	10/05/21 08:26	TC	10/04/21 09:30	OP35757	GZZ3729
Run #2							

	Initial Weight	Final Volume
Run #1	16.8 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	7.08	6.8	2.3	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	34%		18-132%
438-22-2	5a-Androstane	33%		22-134%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: H-104-C2
Lab Sample ID: JD32315-7
Matrix: SO - Soil
Project: Northfield Bridge, Route 12, VT

Date Sampled: 09/20/21
Date Received: 09/28/21
Percent Solids: 87.4

Metals Analysis, TCLP Leachate SW846 1311

Analyte	Result	HW#	MCL	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	< 0.10	D004	5.0	0.10	mg/l	1	10/05/21	10/06/21	ND	SW846 6010D [2]	SW846 3010A [3]
Barium	< 0.20	D005	100	0.20	mg/l	1	10/05/21	10/06/21	ND	SW846 6010D [2]	SW846 3010A [3]
Cadmium	< 0.0040	D006	1.0	0.0040	mg/l	1	10/05/21	10/06/21	ND	SW846 6010D [2]	SW846 3010A [3]
Chromium	0.034	D007	5.0	0.010	mg/l	1	10/05/21	10/06/21	ND	SW846 6010D [2]	SW846 3010A [3]
Lead	< 0.10	D008	5.0	0.10	mg/l	1	10/05/21	10/06/21	ND	SW846 6010D [2]	SW846 3010A [3]
Mercury	< 0.00020	D009	0.20	0.00020	mg/l	1	10/06/21	10/06/21	LM	SW846 7470A [1]	SW846 7470A [4]
Selenium	< 0.10	D010	1.0	0.10	mg/l	1	10/05/21	10/06/21	ND	SW846 6010D [2]	SW846 3010A [3]
Silver	< 0.010	D011	5.0	0.010	mg/l	1	10/05/21	10/06/21	ND	SW846 6010D [2]	SW846 3010A [3]

(1) Instrument QC Batch: MA51229
(2) Instrument QC Batch: MA51233
(3) Prep QC Batch: MP29010
(4) Prep QC Batch: MP29030

RL = Reporting Limit
MCL = Maximum Contamination Level (40 CFR 261 7/1/11)

Report of Analysis

Client Sample ID:	H-104-C2		
Lab Sample ID:	JD32315-7	**Date Sampled:**	09/20/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
		Percent Solids:	87.4
Project:	Northfield Bridge, Route 12, VT		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Corrosivity as pH	7.62 NC		su	1	10/04/21 15:54	MM	SW846 9045D
Cyanide Reactivity [a]	< 11	11	mg/kg	1	10/07/21 21:34	JJ	SW846 CHAP7/9012 B
Ignitability (Flashpoint)	> 200		Deg. F	1	10/05/21 16:30	MM	SW846 1010A/ASTM D93
Paint Filter Test [b]	< 0.50	0.50	ml/100g	1	10/04/21 14:20	MM	SW846 9095/9095B
Solids, Percent	87.4		%	1	10/04/21 16:54	BG	SM2540 G 18TH ED MOD
Sulfide Reactivity [a]	< 110	110	mg/kg	1	10/10/21 12:35	MP	SW846 CHAP7/9034

(a) Analyzed outside the 14 day holding time applied by laboratory SOP. No regulatory holding time published for this method.
(b) No free liquids.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	DUP-A		
Lab Sample ID:	JD32315-8	**Date Sampled:**	09/20/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8270E SW846 3546	**Percent Solids:**	96.1
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	6P502024.D	2	10/11/21 01:07	CS	10/08/21 09:25	OP35857	E6P3522
Run #2 [b]	Z152181.D	20	10/11/21 15:22	BL	10/08/21 09:25	OP35857	EZ7569
Run #3 [c]	2P103276.D	1	10/05/21 15:35	KLS	10/04/21 10:00	OP35710	E2P4638

	Initial Weight	Final Volume
Run #1	30.7 g	1.0 ml
Run #2	30.7 g	1.0 ml
Run #3	30.3 g	1.0 ml

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	275	68	23	ug/kg	
208-96-8	Acenaphthylene	1490	68	34	ug/kg	
120-12-7	Anthracene	2190	68	42	ug/kg	
56-55-3	Benzo(a)anthracene	2980	68	19	ug/kg	
50-32-8	Benzo(a)pyrene	2030	68	31	ug/kg	
205-99-2	Benzo(b)fluoranthene	2620	68	30	ug/kg	
191-24-2	Benzo(g,h,i)perylene	1290	68	34	ug/kg	
207-08-9	Benzo(k)fluoranthene	975	68	32	ug/kg	
218-01-9	Chrysene	2580	68	21	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	401	68	30	ug/kg	
206-44-0	Fluoranthene	9860 [d]	680	300	ug/kg	
86-73-7	Fluorene	1280	68	31	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	1680	68	32	ug/kg	
91-20-3	Naphthalene	3100	68	19	ug/kg	
85-01-8	Phenanthrene	13400 [d]	680	230	ug/kg	
129-00-0	Pyrene	6040	68	22	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Run# 3	Limits
4165-60-0	Nitrobenzene-d5	59%	88%	11% [e]	15-114%
321-60-8	2-Fluorobiphenyl	67%	79%	12% [e]	22-104%
1718-51-0	Terphenyl-d14	69%	85%	15% [e]	23-121%

(a) Sample extracted outside the holding time. Reextract due to surrogate outside QC limits. Original prep date within holding time.
(b) Sample extracted outside the holding time.
(c) Confirmation run.
(d) Result is from Run# 2
(e) Outside of in house control limits. Refer to re-extract.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DUP-A		
Lab Sample ID:	JD32315-8	**Date Sampled:**	09/20/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
		Percent Solids:	96.1
Project:	Northfield Bridge, Route 12, VT		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic [a]	8.3	4.2	mg/kg	2	09/30/21	10/01/21	ND	SW846 6010D [2]	SW846 3050B [4]
Barium	23.5	21	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [4]
Cadmium [a]	< 1.1	1.1	mg/kg	2	09/30/21	10/01/21	ND	SW846 6010D [2]	SW846 3050B [4]
Chromium	19.1	1.1	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [4]
Lead [a]	16.3	4.2	mg/kg	2	09/30/21	10/01/21	ND	SW846 6010D [2]	SW846 3050B [4]
Mercury	< 0.031	0.031	mg/kg	1	10/04/21	10/04/21	LM	SW846 7471B [3]	SW846 7471B [5]
Selenium [a]	< 4.2	4.2	mg/kg	2	09/30/21	10/01/21	ND	SW846 6010D [2]	SW846 3050B [4]
Silver [a]	< 1.1	1.1	mg/kg	2	09/30/21	10/01/21	ND	SW846 6010D [2]	SW846 3050B [4]

(1) Instrument QC Batch: MA51210
(2) Instrument QC Batch: MA51216
(3) Instrument QC Batch: MA51220
(4) Prep QC Batch: MP28913
(5) Prep QC Batch: MP28967

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	DUP-B		
Lab Sample ID:	JD32315-9	**Date Sampled:**	09/20/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8260D	**Percent Solids:**	73.3
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1C181469.D	1	10/02/21 20:29	PS	n/a	n/a	V1C7900
Run #2							

	Initial Weight
Run #1	6.5 g
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	18.7	10	4.3	ug/kg	
71-43-2	Benzene	ND	0.52	0.48	ug/kg	
108-86-1	Bromobenzene	ND	5.2	0.58	ug/kg	
74-97-5	Bromochloromethane	ND	5.2	0.59	ug/kg	
75-27-4	Bromodichloromethane	ND	2.1	0.45	ug/kg	
75-25-2	Bromoform	ND	5.2	1.4	ug/kg	
74-83-9	Bromomethane	ND	5.2	0.80	ug/kg	
78-93-3	2-Butanone (MEK)	ND	10	2.6	ug/kg	
104-51-8	n-Butylbenzene	ND	2.1	0.43	ug/kg	
135-98-8	sec-Butylbenzene	ND	2.1	0.45	ug/kg	
98-06-6	tert-Butylbenzene	ND	2.1	0.52	ug/kg	
75-15-0	Carbon disulfide	1.8	2.1	0.56	ug/kg	J
56-23-5	Carbon tetrachloride	ND	2.1	0.65	ug/kg	
108-90-7	Chlorobenzene	ND	2.1	0.48	ug/kg	
75-00-3	Chloroethane	ND	5.2	0.62	ug/kg	
67-66-3	Chloroform	ND	2.1	0.54	ug/kg	
74-87-3	Chloromethane	ND	5.2	2.1	ug/kg	
95-49-8	o-Chlorotoluene	ND	2.1	0.57	ug/kg	
106-43-4	p-Chlorotoluene	ND	2.1	0.46	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.1	0.73	ug/kg	
124-48-1	Dibromochloromethane [a]	ND	2.1	0.59	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.0	0.44	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.57	ug/kg	
541-73-1	1,3-Dichlorobenzene [b]	ND	1.0	0.52	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.52	ug/kg	
75-71-8	Dichlorodifluoromethane [a]	ND	5.2	0.76	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.0	0.52	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.0	0.49	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.0	0.69	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.88	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.64	ug/kg	
78-87-5	1,2-Dichloropropane	ND	2.1	0.50	ug/kg	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DUP-B		
Lab Sample ID:	JD32315-9	**Date Sampled:**	09/20/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8260D	**Percent Solids:**	73.3
Project:	Northfield Bridge, Route 12, VT		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	2.1	0.55	ug/kg	
594-20-7	2,2-Dichloropropane	ND	2.1	0.45	ug/kg	
563-58-6	1,1-Dichloropropene	ND	2.1	0.49	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	2.1	0.50	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	2.1	0.48	ug/kg	
100-41-4	Ethylbenzene	ND	1.0	0.48	ug/kg	
87-68-3	Hexachlorobutadiene [a]	ND	5.2	0.69	ug/kg	
591-78-6	2-Hexanone	ND	5.2	2.2	ug/kg	
74-88-4	Iodomethane	ND	5.2	2.4	ug/kg	
98-82-8	Isopropylbenzene	ND	2.1	1.5	ug/kg	
99-87-6	p-Isopropyltoluene	ND	2.1	0.41	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.49	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.2	2.4	ug/kg	
74-95-3	Methylene bromide	ND	5.2	0.55	ug/kg	
75-09-2	Methylene chloride	ND	5.2	2.7	ug/kg	
91-20-3	Naphthalene	10.1	5.2	2.6	ug/kg	
103-65-1	n-Propylbenzene	ND	2.1	0.49	ug/kg	
100-42-5	Styrene	ND	2.1	0.42	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	2.1	0.44	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.1	0.63	ug/kg	
127-18-4	Tetrachloroethene	ND	2.1	0.61	ug/kg	
108-88-3	Toluene	ND	1.0	0.55	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	5.2	2.6	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	5.2	2.6	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.1	0.51	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.1	0.58	ug/kg	
79-01-6	Trichloroethene	ND	1.0	0.80	ug/kg	
75-69-4	Trichlorofluoromethane [c]	ND	5.2	0.72	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	5.2	0.58	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	0.80	2.1	0.52	ug/kg	J
108-67-8	1,3,5-Trimethylbenzene	ND	2.1	0.45	ug/kg	
108-05-4	Vinyl Acetate	ND	10	2.1	ug/kg	
75-01-4	Vinyl chloride	ND	2.1	0.50	ug/kg	
	m,p-Xylene	ND	1.0	0.94	ug/kg	
95-47-6	o-Xylene	ND	1.0	0.48	ug/kg	
1330-20-7	Xylene (total)	ND	1.0	0.48	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		72-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DUP-B		
Lab Sample ID:	JD32315-9	**Date Sampled:**	09/20/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8260D	**Percent Solids:**	73.3
Project:	Northfield Bridge, Route 12, VT		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	110%		75-131%
2037-26-5	Toluene-D8	103%		81-121%
460-00-4	4-Bromofluorobenzene	99%		60-141%

(a) Associated CCV outside of control limits high, sample was ND.
(b) This compound in blank spike is outside in house QC limits bias high.
(c) Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DUP-B		
Lab Sample ID:	JD32315-9	**Date Sampled:**	09/20/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8270E SW846 3546	**Percent Solids:**	73.3
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2P103274.D	1	10/05/21 14:21	KLS	10/04/21 10:00	OP35710	E2P4638
Run #2							

	Initial Weight	Final Volume
Run #1	30.2 g	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	45	16	ug/kg	
208-96-8	Acenaphthylene	59.7	45	23	ug/kg	
120-12-7	Anthracene	113	45	28	ug/kg	
56-55-3	Benzo(a)anthracene	215	45	13	ug/kg	
50-32-8	Benzo(a)pyrene	143	45	21	ug/kg	
205-99-2	Benzo(b)fluoranthene	199	45	20	ug/kg	
191-24-2	Benzo(g,h,i)perylene	81.1	45	23	ug/kg	
207-08-9	Benzo(k)fluoranthene	76.3	45	21	ug/kg	
218-01-9	Chrysene	194	45	14	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	21.7	45	20	ug/kg	J
206-44-0	Fluoranthene	554	45	20	ug/kg	
86-73-7	Fluorene	63.9	45	21	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	104	45	21	ug/kg	
91-20-3	Naphthalene	88.2	45	13	ug/kg	
85-01-8	Phenanthrene	590	45	15	ug/kg	
129-00-0	Pyrene	487	45	14	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	52%		15-114%
321-60-8	2-Fluorobiphenyl	59%		22-104%
1718-51-0	Terphenyl-d14	81%		23-121%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DUP-B		
Lab Sample ID:	JD32315-9	**Date Sampled:**	09/20/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8082A SW846 3540C	**Percent Solids:**	73.3
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5G110675.D	1	10/04/21 07:46	TL	10/01/21 18:00	OP35562	G5G2805
Run #2							

	Initial Weight	Final Volume
Run #1	10.3 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	66	31	ug/kg	
11104-28-2	Aroclor 1221	ND	66	41	ug/kg	
11141-16-5	Aroclor 1232	ND	66	42	ug/kg	
53469-21-9	Aroclor 1242	ND	66	27	ug/kg	
12672-29-6	Aroclor 1248	ND	66	59	ug/kg	
11097-69-1	Aroclor 1254	ND	66	36	ug/kg	
11096-82-5	Aroclor 1260	ND	66	28	ug/kg	
11100-14-4	Aroclor 1268	ND	66	28	ug/kg	
37324-23-5	Aroclor 1262	ND	66	43	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	84%		24-152%
877-09-8	Tetrachloro-m-xylene	87%		24-152%
2051-24-3	Decachlorobiphenyl	98%		10-172%
2051-24-3	Decachlorobiphenyl	123%		10-172%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DUP-B		
Lab Sample ID:	JD32315-9	**Date Sampled:**	09/20/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
		Percent Solids:	73.3
Project:	Northfield Bridge, Route 12, VT		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	5.9	1.8	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Barium	< 18	18	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Cadmium	< 0.44	0.44	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Chromium	26.5	0.88	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Lead	8.5	1.8	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Mercury	< 0.039	0.039	mg/kg	1	10/04/21	10/04/21	LM	SW846 7471B [2]	SW846 7471B [4]
Selenium	< 1.8	1.8	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Silver	< 0.44	0.44	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]

(1) Instrument QC Batch: MA51210
(2) Instrument QC Batch: MA51220
(3) Prep QC Batch: MP28913
(4) Prep QC Batch: MP28967

RL = Reporting Limit

Report of Analysis

Client Sample ID:	H-101-A		
Lab Sample ID:	JD32315-10	**Date Sampled:**	09/21/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8270E SW846 3546	**Percent Solids:**	96.6
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	2P103322.D	2	10/06/21 18:26	BL	10/04/21 10:00	OP35710	E2P4640
Run #2							

	Initial Weight	Final Volume
Run #1	30.3 g	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	62.2	68	24	ug/kg	J
208-96-8	Acenaphthylene	577	68	35	ug/kg	
120-12-7	Anthracene	671	68	42	ug/kg	
56-55-3	Benzo(a)anthracene	1520	68	19	ug/kg	
50-32-8	Benzo(a)pyrene	1110	68	31	ug/kg	
205-99-2	Benzo(b)fluoranthene	1430	68	30	ug/kg	
191-24-2	Benzo(g,h,i)perylene [b]	722	68	34	ug/kg	
207-08-9	Benzo(k)fluoranthene	660	68	32	ug/kg	
218-01-9	Chrysene	1410	68	22	ug/kg	
53-70-3	Dibenzo(a,h)anthracene [b]	196	68	30	ug/kg	
206-44-0	Fluoranthene	3770	68	30	ug/kg	
86-73-7	Fluorene	362	68	31	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene [b]	910	68	32	ug/kg	
91-20-3	Naphthalene	47.3	68	19	ug/kg	J
85-01-8	Phenanthrene	3450	68	23	ug/kg	
129-00-0	Pyrene	3290	68	22	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	22%		15-114%
321-60-8	2-Fluorobiphenyl	25%		22-104%
1718-51-0	Terphenyl-d14	29%		23-121%

(a) Dilution required due to matrix interference.
(b) Associated CCV outside of control limits high. Estimated value, due to corresponding failure in the batch associated CCV.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: H-101-A
Lab Sample ID: JD32315-10
Matrix: SO - Soil
Project: Northfield Bridge, Route 12, VT

Date Sampled: 09/21/21
Date Received: 09/28/21
Percent Solids: 96.6

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	7.8	2.1	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Barium	29.9	21	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Cadmium	< 0.53	0.53	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Chromium	37.9	1.1	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Lead	12.7	2.1	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Mercury	< 0.034	0.034	mg/kg	1	10/04/21	10/04/21	LM	SW846 7471B [2]	SW846 7471B [4]
Selenium	< 2.1	2.1	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Silver	0.65	0.53	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]

(1) Instrument QC Batch: MA51210
(2) Instrument QC Batch: MA51220
(3) Prep QC Batch: MP28913
(4) Prep QC Batch: MP28967

RL = Reporting Limit

Report of Analysis

Client Sample ID:	H-101-B		
Lab Sample ID:	JD32315-11	**Date Sampled:**	09/21/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8260D	**Percent Solids:**	79.9
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1C181470.D	1	10/02/21 20:56	PS	n/a	n/a	V1C7900
Run #2							

	Initial Weight
Run #1	6.1 g
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	44.2	10	4.2	ug/kg	
71-43-2	Benzene	ND	0.51	0.47	ug/kg	
108-86-1	Bromobenzene	ND	5.1	0.57	ug/kg	
74-97-5	Bromochloromethane	ND	5.1	0.57	ug/kg	
75-27-4	Bromodichloromethane	ND	2.1	0.44	ug/kg	
75-25-2	Bromoform	ND	5.1	1.4	ug/kg	
74-83-9	Bromomethane	ND	5.1	0.78	ug/kg	
78-93-3	2-Butanone (MEK)	ND	10	2.5	ug/kg	
104-51-8	n-Butylbenzene	ND	2.1	0.42	ug/kg	
135-98-8	sec-Butylbenzene	ND	2.1	0.44	ug/kg	
98-06-6	tert-Butylbenzene	ND	2.1	0.51	ug/kg	
75-15-0	Carbon disulfide	0.93	2.1	0.55	ug/kg	J
56-23-5	Carbon tetrachloride	ND	2.1	0.63	ug/kg	
108-90-7	Chlorobenzene	ND	2.1	0.47	ug/kg	
75-00-3	Chloroethane	ND	5.1	0.61	ug/kg	
67-66-3	Chloroform	ND	2.1	0.53	ug/kg	
74-87-3	Chloromethane	ND	5.1	2.0	ug/kg	
95-49-8	o-Chlorotoluene	ND	2.1	0.55	ug/kg	
106-43-4	p-Chlorotoluene	ND	2.1	0.45	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.1	0.71	ug/kg	
124-48-1	Dibromochloromethane [a]	ND	2.1	0.57	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.0	0.43	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.56	ug/kg	
541-73-1	1,3-Dichlorobenzene [b]	ND	1.0	0.51	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/kg	
75-71-8	Dichlorodifluoromethane [a]	ND	5.1	0.75	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.0	0.51	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.0	0.48	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.0	0.67	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.86	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.63	ug/kg	
78-87-5	1,2-Dichloropropane	ND	2.1	0.49	ug/kg	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-101-B		
Lab Sample ID:	JD32315-11	**Date Sampled:**	09/21/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8260D	**Percent Solids:**	79.9
Project:	Northfield Bridge, Route 12, VT		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	2.1	0.53	ug/kg	
594-20-7	2,2-Dichloropropane	ND	2.1	0.44	ug/kg	
563-58-6	1,1-Dichloropropene	ND	2.1	0.48	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	2.1	0.49	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	2.1	0.47	ug/kg	
100-41-4	Ethylbenzene	ND	1.0	0.46	ug/kg	
87-68-3	Hexachlorobutadiene [a]	ND	5.1	0.67	ug/kg	
591-78-6	2-Hexanone	ND	5.1	2.2	ug/kg	
74-88-4	Iodomethane	ND	5.1	2.4	ug/kg	
98-82-8	Isopropylbenzene	ND	2.1	1.5	ug/kg	
99-87-6	p-Isopropyltoluene	ND	2.1	0.41	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.48	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.1	2.3	ug/kg	
74-95-3	Methylene bromide	ND	5.1	0.54	ug/kg	
75-09-2	Methylene chloride	ND	5.1	2.7	ug/kg	
91-20-3	Naphthalene	ND	5.1	2.6	ug/kg	
103-65-1	n-Propylbenzene	ND	2.1	0.48	ug/kg	
100-42-5	Styrene	ND	2.1	0.41	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	2.1	0.43	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.1	0.61	ug/kg	
127-18-4	Tetrachloroethene	ND	2.1	0.60	ug/kg	
108-88-3	Toluene	ND	1.0	0.54	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	5.1	2.6	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	5.1	2.6	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.1	0.50	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.1	0.57	ug/kg	
79-01-6	Trichloroethene	ND	1.0	0.78	ug/kg	
75-69-4	Trichlorofluoromethane [c]	ND	5.1	0.70	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	5.1	0.57	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	2.1	0.51	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	2.1	0.44	ug/kg	
108-05-4	Vinyl Acetate	ND	10	2.0	ug/kg	
75-01-4	Vinyl chloride	ND	2.1	0.49	ug/kg	
	m,p-Xylene	ND	1.0	0.92	ug/kg	
95-47-6	o-Xylene	ND	1.0	0.47	ug/kg	
1330-20-7	Xylene (total)	ND	1.0	0.47	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		72-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-101-B		
Lab Sample ID:	JD32315-11	**Date Sampled:**	09/21/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8260D	**Percent Solids:**	79.9
Project:	Northfield Bridge, Route 12, VT		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	111%		75-131%
2037-26-5	Toluene-D8	101%		81-121%
460-00-4	4-Bromofluorobenzene	96%		60-141%

(a) Associated CCV outside of control limits high, sample was ND.
(b) This compound in blank spike is outside in house QC limits bias high.
(c) Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-101-B		
Lab Sample ID:	JD32315-11	**Date Sampled:**	09/21/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8270E SW846 3546	**Percent Solids:**	79.9
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2P103275.D	1	10/05/21 14:46	KLS	10/04/21 10:00	OP35710	E2P4638
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	42	14	ug/kg	
208-96-8	Acenaphthylene	35.9	42	21	ug/kg	J
120-12-7	Anthracene	35.9	42	25	ug/kg	J
56-55-3	Benzo(a)anthracene	119	42	12	ug/kg	
50-32-8	Benzo(a)pyrene	112	42	19	ug/kg	
205-99-2	Benzo(b)fluoranthene	148	42	18	ug/kg	
191-24-2	Benzo(g,h,i)perylene	70.6	42	21	ug/kg	
207-08-9	Benzo(k)fluoranthene	56.0	42	19	ug/kg	
218-01-9	Chrysene	140	42	13	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	42	18	ug/kg	
206-44-0	Fluoranthene	232	42	19	ug/kg	
86-73-7	Fluorene	ND	42	19	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	82.0	42	20	ug/kg	
91-20-3	Naphthalene	17.4	42	12	ug/kg	J
85-01-8	Phenanthrene	125	42	14	ug/kg	
129-00-0	Pyrene	259	42	13	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	56%		15-114%
321-60-8	2-Fluorobiphenyl	60%		22-104%
1718-51-0	Terphenyl-d14	79%		23-121%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-101-B		
Lab Sample ID:	JD32315-11	**Date Sampled:**	09/21/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8082A SW846 3540C	**Percent Solids:**	79.9
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5G110676.D	1	10/04/21 08:20	TL	10/01/21 18:00	OP35562	G5G2805
Run #2							

	Initial Weight	Final Volume
Run #1	10.3 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	61	28	ug/kg	
11104-28-2	Aroclor 1221	ND	61	38	ug/kg	
11141-16-5	Aroclor 1232	ND	61	39	ug/kg	
53469-21-9	Aroclor 1242	ND	61	25	ug/kg	
12672-29-6	Aroclor 1248	ND	61	54	ug/kg	
11097-69-1	Aroclor 1254	ND	61	33	ug/kg	
11096-82-5	Aroclor 1260	ND	61	26	ug/kg	
11100-14-4	Aroclor 1268	ND	61	26	ug/kg	
37324-23-5	Aroclor 1262	ND	61	40	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	76%		24-152%
877-09-8	Tetrachloro-m-xylene	77%		24-152%
2051-24-3	Decachlorobiphenyl	85%		10-172%
2051-24-3	Decachlorobiphenyl	101%		10-172%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-101-B		
Lab Sample ID:	JD32315-11	**Date Sampled:**	09/21/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
		Percent Solids:	79.9
Project:	Northfield Bridge, Route 12, VT		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic [a]	8.0	3.3	mg/kg	2	09/30/21	10/01/21	ND	SW846 6010D [2]	SW846 3050B [4]
Barium	< 16	16	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [4]
Cadmium [a]	< 0.82	0.82	mg/kg	2	09/30/21	10/01/21	ND	SW846 6010D [2]	SW846 3050B [4]
Chromium	16.7	0.82	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [4]
Lead [a]	10.9	3.3	mg/kg	2	09/30/21	10/01/21	ND	SW846 6010D [2]	SW846 3050B [4]
Mercury	0.072	0.039	mg/kg	1	10/04/21	10/04/21	LM	SW846 7471B [3]	SW846 7471B [5]
Selenium [a]	< 3.3	3.3	mg/kg	2	09/30/21	10/01/21	ND	SW846 6010D [2]	SW846 3050B [4]
Silver [a]	0.82	0.82	mg/kg	2	09/30/21	10/01/21	ND	SW846 6010D [2]	SW846 3050B [4]

(1) Instrument QC Batch: MA51210
(2) Instrument QC Batch: MA51216
(3) Instrument QC Batch: MA51220
(4) Prep QC Batch: MP28913
(5) Prep QC Batch: MP28967

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	H-101-C		
Lab Sample ID:	JD32315-12	**Date Sampled:**	09/21/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8260D SW846 1311	**Percent Solids:**	93.7
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2V81429.D	5	10/07/21 05:49	JS	10/02/21 16:00	GP36195	V2V3357
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
71-43-2	Benzene	ND	D018	0.50	0.0025	0.0021	mg/l	
78-93-3	2-Butanone (MEK) [a]	ND	D035	200	0.10	0.034	mg/l	
56-23-5	Carbon tetrachloride	ND	D019	0.50	0.0050	0.0028	mg/l	
108-90-7	Chlorobenzene	ND	D021	100	0.0050	0.0028	mg/l	
67-66-3	Chloroform [b]	0.0118	D022	6.0	0.0050	0.0025	mg/l	B
106-46-7	1,4-Dichlorobenzene	ND	D027	7.5	0.0050	0.0025	mg/l	
107-06-2	1,2-Dichloroethane	ND	D028	0.50	0.0050	0.0030	mg/l	
75-35-4	1,1-Dichloroethene	ND	D029	0.70	0.0050	0.0030	mg/l	
127-18-4	Tetrachloroethene	ND	D039	0.70	0.0050	0.0045	mg/l	
79-01-6	Trichloroethene	ND	D040	0.50	0.0050	0.0026	mg/l	
75-01-4	Vinyl chloride	ND	D043	0.20	0.0050	0.0039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		76-120%
17060-07-0	1,2-Dichloroethane-D4	112%		64-135%
2037-26-5	Toluene-D8	103%		76-117%
460-00-4	4-Bromofluorobenzene	104%		72-122%

(a) Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.
(b) Indicates analyte found in associated leachate blank.

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-101-C		
Lab Sample ID:	JD32315-12	**Date Sampled:**	09/21/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8270E SW846 3510C	**Percent Solids:**	93.7
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z152228.D	1	10/13/21 06:39	CS	10/12/21 18:20	OP35940	EZ7572
Run #2							

	Initial Volume	Final Volume
Run #1	100 ml	1.0 ml
Run #2		

ABN TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	D023	200	0.020	0.0089	mg/l	
	3&4-Methylphenol	ND	D024	200	0.020	0.0088	mg/l	
87-86-5	Pentachlorophenol	ND	D037	100	0.10	0.014	mg/l	
95-95-4	2,4,5-Trichlorophenol	ND	D041	400	0.050	0.013	mg/l	
88-06-2	2,4,6-Trichlorophenol	ND	D042	2.0	0.050	0.0092	mg/l	
106-46-7	1,4-Dichlorobenzene	ND	D027	7.5	0.020	0.0017	mg/l	
121-14-2	2,4-Dinitrotoluene	ND	D030	0.13	0.020	0.0055	mg/l	
118-74-1	Hexachlorobenzene	ND	D032	0.13	0.020	0.0033	mg/l	
87-68-3	Hexachlorobutadiene	ND	D033	0.50	0.010	0.0049	mg/l	
67-72-1	Hexachloroethane	ND	D034	3.0	0.050	0.0039	mg/l	
98-95-3	Nitrobenzene	ND	D036	2.0	0.020	0.0064	mg/l	
110-86-1	Pyridine	ND	D038	5.0	0.020	0.0039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	37%		10-73%
4165-62-2	Phenol-d5	26%		10-64%
118-79-6	2,4,6-Tribromophenol	86%		31-130%
4165-60-0	Nitrobenzene-d5	72%		28-126%
321-60-8	2-Fluorobiphenyl	67%		26-114%
1718-51-0	Terphenyl-d14	89%		16-122%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-101-C		
Lab Sample ID:	JD32315-12	**Date Sampled:**	09/21/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8015D	**Percent Solids:**	93.7
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	LM112327.D	1	10/01/21 22:53	DFT	n/a	n/a	GLM4714
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	10.6 g	10.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	11	5.4	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	75%		70-116%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-101-C		
Lab Sample ID:	JD32315-12	**Date Sampled:**	09/21/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8151A SW846 3510C	**Percent Solids:**	93.7
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G133455.D	1	10/17/21 16:54	TL	10/12/21 14:20	OP35941	G3G4866
Run #2							

	Initial Volume	Final Volume
Run #1	30.0 ml	2.0 ml
Run #2		

Herbicide TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
94-75-7	2,4-D [a]	ND	D016	10	0.0033	0.00098	mg/l	
93-72-1	2,4,5-TP (Silvex)	ND	D017	1.0	0.0010	0.00020	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	99%		13-169%
19719-28-9	2,4-DCAA	60%		13-169%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit
MCL = Maximum Contamination Level (40 CFR 261 7/1/11)
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-101-C		
Lab Sample ID:	JD32315-12	**Date Sampled:**	09/21/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8081B SW846 3510C	**Percent Solids:**	93.7
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4G9721368.D	1	10/13/21 00:01	RK	10/12/21 14:15	OP35939	G4G3596
Run #2							

	Initial Volume	Final Volume
Run #1	30.0 ml	2.0 ml
Run #2		

Pesticide TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
58-89-9	gamma-BHC (Lindane)	ND	D013	0.40	0.000067	0.000040	mg/l	
12789-03-6	Chlordane	ND	D020	0.030	0.0033	0.0014	mg/l	
72-20-8	Endrin	ND	D012	0.020	0.000067	0.000040	mg/l	
76-44-8	Heptachlor	ND	D031	0.0080	0.000067	0.000030	mg/l	
1024-57-3	Heptachlor epoxide	ND	D031	0.0080	0.000067	0.000040	mg/l	
72-43-5	Methoxychlor	ND	D014	10	0.00013	0.000045	mg/l	
8001-35-2	Toxaphene	ND	D015	0.50	0.0017	0.0011	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	101%		30-137%
877-09-8	Tetrachloro-m-xylene	102%		30-137%
2051-24-3	Decachlorobiphenyl	121%		10-137%
2051-24-3	Decachlorobiphenyl	115%		10-137%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-101-C		
Lab Sample ID:	JD32315-12	**Date Sampled:**	09/21/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8082A SW846 3546	**Percent Solids:**	93.7
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX2471768.D	1	10/05/21 14:12	RK	10/04/21 09:00	OP35760	GXX7601
Run #2							

	Initial Weight	Final Volume
Run #1	16.9 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	32	15	ug/kg	
11104-28-2	Aroclor 1221	ND	32	20	ug/kg	
11141-16-5	Aroclor 1232	ND	32	20	ug/kg	
53469-21-9	Aroclor 1242	ND	32	13	ug/kg	
12672-29-6	Aroclor 1248	ND	32	28	ug/kg	
11097-69-1	Aroclor 1254	ND	32	17	ug/kg	
11096-82-5	Aroclor 1260	ND	32	13	ug/kg	
11100-14-4	Aroclor 1268	ND	32	13	ug/kg	
37324-23-5	Aroclor 1262	ND	32	21	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	71%		24-152%
877-09-8	Tetrachloro-m-xylene	79%		24-152%
2051-24-3	Decachlorobiphenyl	60%		10-172%
2051-24-3	Decachlorobiphenyl	75%		10-172%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-101-C		
Lab Sample ID:	JD32315-12	**Date Sampled:**	09/21/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8015D SW846 3546	**Percent Solids:**	93.7
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	ZZ101083.D	1	10/05/21 09:00	TC	10/04/21 09:30	OP35757	GZZ3729
Run #2							

	Initial Weight	Final Volume
Run #1	17.0 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	120	6.3	2.1	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	51%		18-132%
438-22-2	5a-Androstane	51%		22-134%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: H-101-C
Lab Sample ID: JD32315-12
Matrix: SO - Soil
Project: Northfield Bridge, Route 12, VT

Date Sampled: 09/21/21
Date Received: 09/28/21
Percent Solids: 93.7

Metals Analysis, TCLP Leachate SW846 1311

Analyte	Result	HW#	MCL	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	< 0.10	D004	5.0	0.10	mg/l	1	10/05/21	10/06/21	ND	SW846 6010D [2]	SW846 3010A [3]
Barium	< 0.20	D005	100	0.20	mg/l	1	10/05/21	10/06/21	ND	SW846 6010D [2]	SW846 3010A [3]
Cadmium	< 0.0040	D006	1.0	0.0040	mg/l	1	10/05/21	10/06/21	ND	SW846 6010D [2]	SW846 3010A [3]
Chromium	0.024	D007	5.0	0.010	mg/l	1	10/05/21	10/06/21	ND	SW846 6010D [2]	SW846 3010A [3]
Lead	< 0.10	D008	5.0	0.10	mg/l	1	10/05/21	10/06/21	ND	SW846 6010D [2]	SW846 3010A [3]
Mercury	< 0.00020	D009	0.20	0.00020	mg/l	1	10/06/21	10/06/21	LM	SW846 7470A [1]	SW846 7470A [4]
Selenium	< 0.10	D010	1.0	0.10	mg/l	1	10/05/21	10/06/21	ND	SW846 6010D [2]	SW846 3010A [3]
Silver	< 0.010	D011	5.0	0.010	mg/l	1	10/05/21	10/06/21	ND	SW846 6010D [2]	SW846 3010A [3]

(1) Instrument QC Batch: MA51229
(2) Instrument QC Batch: MA51233
(3) Prep QC Batch: MP29010
(4) Prep QC Batch: MP29030

RL = Reporting Limit
MCL = Maximum Contamination Level (40 CFR 261 7/1/11)

Report of Analysis

Client Sample ID:	H-101-C		
Lab Sample ID:	JD32315-12	**Date Sampled:**	09/21/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
		Percent Solids:	93.7
Project:	Northfield Bridge, Route 12, VT		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Corrosivity as pH	8.83 NC		su	1	10/04/21 15:58	MM	SW846 9045D
Cyanide Reactivity [a]	< 9.9	9.9	mg/kg	1	10/07/21 21:35	JJ	SW846 CHAP7/9012 B
Ignitability (Flashpoint)	> 200		Deg. F	1	10/05/21 16:30	MM	SW846 1010A/ASTM D93
Paint Filter Test [b]	< 0.50	0.50	ml/100g	1	10/04/21 14:20	MM	SW846 9095/9095B
Solids, Percent	93.7		%	1	10/04/21 16:54	BG	SM2540 G 18TH ED MOD
Sulfide Reactivity [a]	< 99	99	mg/kg	1	10/10/21 12:35	MP	SW846 CHAP7/9034

(a) Analyzed outside the 14 day holding time applied by laboratory SOP. No regulatory holding time published for this method.
(b) No free liquids.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	B-103-A		
Lab Sample ID:	JD32315-13	**Date Sampled:**	09/21/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8270E SW846 3546	**Percent Solids:**	89.6
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M175468.D	1	10/05/21 18:41	KLS	10/04/21 10:00	OP35710	EM7542
Run #2							

	Initial Weight	Final Volume
Run #1	30.3 g	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	38.5	37	13	ug/kg	
208-96-8	Acenaphthylene	226	37	19	ug/kg	
120-12-7	Anthracene	210	37	23	ug/kg	
56-55-3	Benzo(a)anthracene	459	37	10	ug/kg	
50-32-8	Benzo(a)pyrene	520	37	17	ug/kg	
205-99-2	Benzo(b)fluoranthene	641	37	16	ug/kg	
191-24-2	Benzo(g,h,i)perylene	356	37	18	ug/kg	
207-08-9	Benzo(k)fluoranthene	277	37	17	ug/kg	
218-01-9	Chrysene	511	37	12	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	86.1	37	16	ug/kg	
206-44-0	Fluoranthene	643	37	16	ug/kg	
86-73-7	Fluorene	57.9	37	17	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	414	37	17	ug/kg	
91-20-3	Naphthalene	275	37	10	ug/kg	
85-01-8	Phenanthrene	681	37	12	ug/kg	
129-00-0	Pyrene	745	37	12	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	49%		15-114%
321-60-8	2-Fluorobiphenyl	57%		22-104%
1718-51-0	Terphenyl-d14	61%		23-121%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: B-103-A
Lab Sample ID: JD32315-13
Matrix: SO - Soil
Project: Northfield Bridge, Route 12, VT

Date Sampled: 09/21/21
Date Received: 09/28/21
Percent Solids: 89.6

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	10.1	2.3	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Barium	47.2	23	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Cadmium	1.7	0.58	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Chromium	18.4	1.2	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Lead	44.4	2.3	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Mercury	0.056	0.036	mg/kg	1	10/04/21	10/04/21	LM	SW846 7471B [2]	SW846 7471B [4]
Selenium	< 2.3	2.3	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Silver	< 0.58	0.58	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]

(1) Instrument QC Batch: MA51210
(2) Instrument QC Batch: MA51220
(3) Prep QC Batch: MP28913
(4) Prep QC Batch: MP28967

RL = Reporting Limit

Report of Analysis

Client Sample ID:	B-103-B		
Lab Sample ID:	JD32315-14	**Date Sampled:**	09/21/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8260D	**Percent Solids:**	71.6
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1C181471.D	1	10/02/21 21:24	PS	n/a	n/a	V1C7900
Run #2							

	Initial Weight
Run #1	5.8 g
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	69.4	12	5.0	ug/kg	
71-43-2	Benzene	ND	0.60	0.55	ug/kg	
108-86-1	Bromobenzene	ND	6.0	0.67	ug/kg	
74-97-5	Bromochloromethane	ND	6.0	0.67	ug/kg	
75-27-4	Bromodichloromethane	ND	2.4	0.52	ug/kg	
75-25-2	Bromoform	ND	6.0	1.6	ug/kg	
74-83-9	Bromomethane	ND	6.0	0.92	ug/kg	
78-93-3	2-Butanone (MEK)	17.5	12	2.9	ug/kg	
104-51-8	n-Butylbenzene	ND	2.4	0.49	ug/kg	
135-98-8	sec-Butylbenzene	ND	2.4	0.52	ug/kg	
98-06-6	tert-Butylbenzene	ND	2.4	0.60	ug/kg	
75-15-0	Carbon disulfide	0.80	2.4	0.64	ug/kg	J
56-23-5	Carbon tetrachloride	ND	2.4	0.74	ug/kg	
108-90-7	Chlorobenzene	ND	2.4	0.55	ug/kg	
75-00-3	Chloroethane	ND	6.0	0.71	ug/kg	
67-66-3	Chloroform	ND	2.4	0.62	ug/kg	
74-87-3	Chloromethane	ND	6.0	2.4	ug/kg	
95-49-8	o-Chlorotoluene	ND	2.4	0.65	ug/kg	
106-43-4	p-Chlorotoluene	ND	2.4	0.53	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.4	0.84	ug/kg	
124-48-1	Dibromochloromethane [a]	ND	2.4	0.67	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.2	0.51	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.2	0.66	ug/kg	
541-73-1	1,3-Dichlorobenzene [b]	ND	1.2	0.60	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.2	0.59	ug/kg	
75-71-8	Dichlorodifluoromethane [a]	ND	6.0	0.88	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.2	0.60	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.2	0.57	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.2	0.79	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.2	1.0	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.2	0.74	ug/kg	
78-87-5	1,2-Dichloropropane	ND	2.4	0.57	ug/kg	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-103-B		
Lab Sample ID:	JD32315-14	**Date Sampled:**	09/21/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8260D	**Percent Solids:**	71.6
Project:	Northfield Bridge, Route 12, VT		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	2.4	0.63	ug/kg	
594-20-7	2,2-Dichloropropane	ND	2.4	0.52	ug/kg	
563-58-6	1,1-Dichloropropene	ND	2.4	0.56	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	2.4	0.57	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	2.4	0.55	ug/kg	
100-41-4	Ethylbenzene	ND	1.2	0.55	ug/kg	
87-68-3	Hexachlorobutadiene [a]	ND	6.0	0.79	ug/kg	
591-78-6	2-Hexanone	ND	6.0	2.6	ug/kg	
74-88-4	Iodomethane	ND	6.0	2.8	ug/kg	
98-82-8	Isopropylbenzene	ND	2.4	1.7	ug/kg	
99-87-6	p-Isopropyltoluene	ND	2.4	0.48	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.2	0.56	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	6.0	2.7	ug/kg	
74-95-3	Methylene bromide	ND	6.0	0.63	ug/kg	
75-09-2	Methylene chloride	ND	6.0	3.1	ug/kg	
91-20-3	Naphthalene	ND	6.0	3.0	ug/kg	
103-65-1	n-Propylbenzene	ND	2.4	0.57	ug/kg	
100-42-5	Styrene	ND	2.4	0.48	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	2.4	0.51	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.4	0.72	ug/kg	
127-18-4	Tetrachloroethene	ND	2.4	0.70	ug/kg	
108-88-3	Toluene	ND	1.2	0.63	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	6.0	3.0	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	6.0	3.0	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.4	0.58	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.4	0.67	ug/kg	
79-01-6	Trichloroethene	ND	1.2	0.92	ug/kg	
75-69-4	Trichlorofluoromethane [c]	ND	6.0	0.82	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	6.0	0.67	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	2.4	0.60	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	2.4	0.52	ug/kg	
108-05-4	Vinyl Acetate	ND	12	2.4	ug/kg	
75-01-4	Vinyl chloride	ND	2.4	0.58	ug/kg	
	m,p-Xylene	ND	1.2	1.1	ug/kg	
95-47-6	o-Xylene	ND	1.2	0.55	ug/kg	
1330-20-7	Xylene (total)	ND	1.2	0.55	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		72-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-103-B		
Lab Sample ID:	JD32315-14	**Date Sampled:**	09/21/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8260D	**Percent Solids:**	71.6
Project:	Northfield Bridge, Route 12, VT		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	118%		75-131%
2037-26-5	Toluene-D8	101%		81-121%
460-00-4	4-Bromofluorobenzene	91%		60-141%

(a) Associated CCV outside of control limits high, sample was ND.
(b) This compound in blank spike is outside in house QC limits bias high.
(c) Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-103-B		
Lab Sample ID:	JD32315-14	**Date Sampled:**	09/21/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8270E SW846 3546	**Percent Solids:**	71.6
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M175458.D	1	10/05/21 13:52	KLS	10/04/21 10:00	OP35710	EM7542
Run #2							

	Initial Weight	Final Volume
Run #1	30.3 g	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	46	16	ug/kg	
208-96-8	Acenaphthylene	ND	46	23	ug/kg	
120-12-7	Anthracene	ND	46	28	ug/kg	
56-55-3	Benzo(a)anthracene	ND	46	13	ug/kg	
50-32-8	Benzo(a)pyrene	ND	46	21	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	46	20	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	46	23	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	46	22	ug/kg	
218-01-9	Chrysene	ND	46	15	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	46	20	ug/kg	
206-44-0	Fluoranthene	ND	46	21	ug/kg	
86-73-7	Fluorene	ND	46	21	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	46	22	ug/kg	
91-20-3	Naphthalene	ND	46	13	ug/kg	
85-01-8	Phenanthrene	ND	46	15	ug/kg	
129-00-0	Pyrene	ND	46	15	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	34%		15-114%
321-60-8	2-Fluorobiphenyl	37%		22-104%
1718-51-0	Terphenyl-d14	41%		23-121%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-103-B		
Lab Sample ID:	JD32315-14	**Date Sampled:**	09/21/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8082A SW846 3540C	**Percent Solids:**	71.6
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5G110654.D	1	10/03/21 19:59	TL	10/01/21 18:00	OP35562	G5G2805
Run #2							

	Initial Weight	Final Volume
Run #1	11.5 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	61	28	ug/kg	
11104-28-2	Aroclor 1221	ND	61	38	ug/kg	
11141-16-5	Aroclor 1232	ND	61	39	ug/kg	
53469-21-9	Aroclor 1242	ND	61	25	ug/kg	
12672-29-6	Aroclor 1248	ND	61	54	ug/kg	
11097-69-1	Aroclor 1254	ND	61	33	ug/kg	
11096-82-5	Aroclor 1260	ND	61	26	ug/kg	
11100-14-4	Aroclor 1268	ND	61	26	ug/kg	
37324-23-5	Aroclor 1262	ND	61	40	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	86%		24-152%
877-09-8	Tetrachloro-m-xylene	87%		24-152%
2051-24-3	Decachlorobiphenyl	83%		10-172%
2051-24-3	Decachlorobiphenyl	85%		10-172%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: B-103-B
Lab Sample ID: JD32315-14
Matrix: SO - Soil
Project: Northfield Bridge, Route 12, VT

Date Sampled: 09/21/21
Date Received: 09/28/21
Percent Solids: 71.6

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	4.9	2.7	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Barium	< 27	27	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Cadmium	< 0.67	0.67	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Chromium	15.3	1.3	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Lead	8.5	2.7	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Mercury	< 0.041	0.041	mg/kg	1	10/04/21	10/04/21	LM	SW846 7471B [2]	SW846 7471B [4]
Selenium	< 2.7	2.7	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Silver	< 0.67	0.67	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]

(1) Instrument QC Batch: MA51210
(2) Instrument QC Batch: MA51220
(3) Prep QC Batch: MP28913
(4) Prep QC Batch: MP28967

RL = Reporting Limit

Report of Analysis

Client Sample ID:	B-103-C		
Lab Sample ID:	JD32315-15	**Date Sampled:**	09/21/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8260D SW846 1311	**Percent Solids:**	90.8
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2V81430.D	5	10/07/21 06:15	JS	10/02/21 16:00	GP36195	V2V3357
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
71-43-2	Benzene	ND	D018	0.50	0.0025	0.0021	mg/l	
78-93-3	2-Butanone (MEK) [a]	ND	D035	200	0.10	0.034	mg/l	
56-23-5	Carbon tetrachloride	ND	D019	0.50	0.0050	0.0028	mg/l	
108-90-7	Chlorobenzene	ND	D021	100	0.0050	0.0028	mg/l	
67-66-3	Chloroform [b]	0.0114	D022	6.0	0.0050	0.0025	mg/l	B
106-46-7	1,4-Dichlorobenzene	ND	D027	7.5	0.0050	0.0025	mg/l	
107-06-2	1,2-Dichloroethane	ND	D028	0.50	0.0050	0.0030	mg/l	
75-35-4	1,1-Dichloroethene	ND	D029	0.70	0.0050	0.0030	mg/l	
127-18-4	Tetrachloroethene	ND	D039	0.70	0.0050	0.0045	mg/l	
79-01-6	Trichloroethene	ND	D040	0.50	0.0050	0.0026	mg/l	
75-01-4	Vinyl chloride	ND	D043	0.20	0.0050	0.0039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		76-120%
17060-07-0	1,2-Dichloroethane-D4	111%		64-135%
2037-26-5	Toluene-D8	104%		76-117%
460-00-4	4-Bromofluorobenzene	105%		72-122%

(a) Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.
(b) Indicates analyte found in associated leachate blank.

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-103-C		
Lab Sample ID:	JD32315-15	**Date Sampled:**	09/21/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8270E SW846 3510C	**Percent Solids:**	90.8
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z152229.D	1	10/13/21 07:05	CS	10/12/21 18:20	OP35940	EZ7572
Run #2							

	Initial Volume	Final Volume
Run #1	100 ml	1.0 ml
Run #2		

ABN TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	D023	200	0.020	0.0089	mg/l	
	3&4-Methylphenol	ND	D024	200	0.020	0.0088	mg/l	
87-86-5	Pentachlorophenol	ND	D037	100	0.10	0.014	mg/l	
95-95-4	2,4,5-Trichlorophenol	ND	D041	400	0.050	0.013	mg/l	
88-06-2	2,4,6-Trichlorophenol	ND	D042	2.0	0.050	0.0092	mg/l	
106-46-7	1,4-Dichlorobenzene	ND	D027	7.5	0.020	0.0017	mg/l	
121-14-2	2,4-Dinitrotoluene	ND	D030	0.13	0.020	0.0055	mg/l	
118-74-1	Hexachlorobenzene	ND	D032	0.13	0.020	0.0033	mg/l	
87-68-3	Hexachlorobutadiene	ND	D033	0.50	0.010	0.0049	mg/l	
67-72-1	Hexachloroethane	ND	D034	3.0	0.050	0.0039	mg/l	
98-95-3	Nitrobenzene	ND	D036	2.0	0.020	0.0064	mg/l	
110-86-1	Pyridine	ND	D038	5.0	0.020	0.0039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	27%		10-73%
4165-62-2	Phenol-d5	18%		10-64%
118-79-6	2,4,6-Tribromophenol	55%		31-130%
4165-60-0	Nitrobenzene-d5	49%		28-126%
321-60-8	2-Fluorobiphenyl	46%		26-114%
1718-51-0	Terphenyl-d14	54%		16-122%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-103-C		
Lab Sample ID:	JD32315-15	**Date Sampled:**	09/21/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8015D	**Percent Solids:**	90.8
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	LM112328.D	1	10/01/21 23:18	DFT	n/a	n/a	GLM4714
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	9.4 g	10.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	13	6.4	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	75%		70-116%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-103-C		
Lab Sample ID:	JD32315-15	**Date Sampled:**	09/21/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8151A SW846 3510C	**Percent Solids:**	90.8
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G133456.D	1	10/17/21 17:22	TL	10/12/21 14:20	OP35941	G3G4866
Run #2							

	Initial Volume	Final Volume
Run #1	30.0 ml	2.0 ml
Run #2		

Herbicide TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
94-75-7	2,4-D [a]	ND	D016	10	0.0033	0.00098	mg/l	
93-72-1	2,4,5-TP (Silvex)	ND	D017	1.0	0.0010	0.00020	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	91%		13-169%
19719-28-9	2,4-DCAA	53%		13-169%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-103-C		
Lab Sample ID:	JD32315-15	**Date Sampled:**	09/21/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8081B SW846 3510C	**Percent Solids:**	90.8
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4G9721369.D	1	10/13/21 00:16	RK	10/12/21 14:15	OP35939	G4G3596
Run #2							

	Initial Volume	Final Volume
Run #1	30.0 ml	2.0 ml
Run #2		

Pesticide TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
58-89-9	gamma-BHC (Lindane)	ND	D013	0.40	0.000067	0.000040	mg/l	
12789-03-6	Chlordane	ND	D020	0.030	0.0033	0.0014	mg/l	
72-20-8	Endrin	ND	D012	0.020	0.000067	0.000040	mg/l	
76-44-8	Heptachlor	ND	D031	0.0080	0.000067	0.000030	mg/l	
1024-57-3	Heptachlor epoxide	ND	D031	0.0080	0.000067	0.000040	mg/l	
72-43-5	Methoxychlor	ND	D014	10	0.00013	0.000045	mg/l	
8001-35-2	Toxaphene	ND	D015	0.50	0.0017	0.0011	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	104%		30-137%
877-09-8	Tetrachloro-m-xylene	111%		30-137%
2051-24-3	Decachlorobiphenyl	112%		10-137%
2051-24-3	Decachlorobiphenyl	110%		10-137%

ND = Not detected MDL = Method Detection Limit
MCL = Maximum Contamination Level (40 CFR 261 7/1/11)
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-103-C		
Lab Sample ID:	JD32315-15	**Date Sampled:**	09/21/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8082A SW846 3546	**Percent Solids:**	90.8
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	XX2471802.D	1	10/06/21 01:13	CP	10/04/21 09:00	OP35760	GXX7602
Run #2							

	Initial Weight	Final Volume
Run #1	15.6 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	35	16	ug/kg	
11104-28-2	Aroclor 1221	ND	35	22	ug/kg	
11141-16-5	Aroclor 1232	ND	35	23	ug/kg	
53469-21-9	Aroclor 1242	ND	35	14	ug/kg	
12672-29-6	Aroclor 1248	ND	35	31	ug/kg	
11097-69-1	Aroclor 1254	ND	35	19	ug/kg	
11096-82-5	Aroclor 1260	ND	35	15	ug/kg	
11100-14-4	Aroclor 1268	ND	35	15	ug/kg	
37324-23-5	Aroclor 1262	ND	35	23	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	47%		24-152%
877-09-8	Tetrachloro-m-xylene	49%		24-152%
2051-24-3	Decachlorobiphenyl	38%		10-172%
2051-24-3	Decachlorobiphenyl	21%		10-172%

(a) Had TBA cleanup.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-103-C		
Lab Sample ID:	JD32315-15	**Date Sampled:**	09/21/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8015D SW846 3546	**Percent Solids:**	90.8
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	ZZ101084.D	1	10/05/21 09:34	TC	10/04/21 09:30	OP35757	GZZ3729
Run #2							

	Initial Weight	Final Volume
Run #1	15.5 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	68.7	7.1	2.4	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	76%		18-132%
438-22-2	5a-Androstane	75%		22-134%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: B-103-C
Lab Sample ID: JD32315-15
Matrix: SO - Soil
Project: Northfield Bridge, Route 12, VT

Date Sampled: 09/21/21
Date Received: 09/28/21
Percent Solids: 90.8

Metals Analysis, TCLP Leachate SW846 1311

Analyte	Result	HW#	MCL	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	< 0.10	D004	5.0	0.10	mg/l	1	10/05/21	10/06/21	ND	SW846 6010D [2]	SW846 3010A [3]
Barium	< 0.20	D005	100	0.20	mg/l	1	10/05/21	10/06/21	ND	SW846 6010D [2]	SW846 3010A [3]
Cadmium	0.0067	D006	1.0	0.0040	mg/l	1	10/05/21	10/06/21	ND	SW846 6010D [2]	SW846 3010A [3]
Chromium	< 0.010	D007	5.0	0.010	mg/l	1	10/05/21	10/06/21	ND	SW846 6010D [2]	SW846 3010A [3]
Lead	< 0.10	D008	5.0	0.10	mg/l	1	10/05/21	10/06/21	ND	SW846 6010D [2]	SW846 3010A [3]
Mercury	< 0.00020	D009	0.20	0.00020	mg/l	1	10/06/21	10/06/21	LM	SW846 7470A [1]	SW846 7470A [4]
Selenium	< 0.10	D010	1.0	0.10	mg/l	1	10/05/21	10/06/21	ND	SW846 6010D [2]	SW846 3010A [3]
Silver	< 0.010	D011	5.0	0.010	mg/l	1	10/05/21	10/06/21	ND	SW846 6010D [2]	SW846 3010A [3]

(1) Instrument QC Batch: MA51229
(2) Instrument QC Batch: MA51233
(3) Prep QC Batch: MP29010
(4) Prep QC Batch: MP29030

RL = Reporting Limit
MCL = Maximum Contamination Level (40 CFR 261 7/1/11)

Report of Analysis

Client Sample ID:	B-103-C		
Lab Sample ID:	JD32315-15	**Date Sampled:**	09/21/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
		Percent Solids:	90.8
Project:	Northfield Bridge, Route 12, VT		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Corrosivity as pH	10.32 NC		su	1	10/04/21 16:01	MM	SW846 9045D
Cyanide Reactivity [a]	< 11	11	mg/kg	1	10/07/21 21:37	JJ	SW846 CHAP7/9012 B
Ignitability (Flashpoint)	> 200		Deg. F	1	10/05/21 16:30	MM	SW846 1010A/ASTM D93
Paint Filter Test [b]	< 0.50	0.50	ml/100g	1	10/04/21 14:20	MM	SW846 9095/9095B
Solids, Percent	90.8		%	1	10/04/21 16:54	BG	SM2540 G 18TH ED MOD
Sulfide Reactivity [a]	< 110	110	mg/kg	1	10/10/21 12:35	MP	SW846 CHAP7/9034

(a) Analyzed outside the 14 day holding time applied by laboratory SOP. No regulatory holding time published for this method.
(b) No free liquids.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	H-102-A		
Lab Sample ID:	JD32315-16	**Date Sampled:**	09/22/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8270E SW846 3546	**Percent Solids:**	90.1
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M175462.D	1	10/05/21 15:48	KLS	10/04/21 10:00	OP35710	EM7542
Run #2							

	Initial Weight	Final Volume
Run #1	31.1 g	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	36	12	ug/kg	
208-96-8	Acenaphthylene	ND	36	18	ug/kg	
120-12-7	Anthracene	ND	36	22	ug/kg	
56-55-3	Benzo(a)anthracene	49.4	36	10	ug/kg	
50-32-8	Benzo(a)pyrene	40.3	36	16	ug/kg	
205-99-2	Benzo(b)fluoranthene	49.0	36	16	ug/kg	
191-24-2	Benzo(g,h,i)perylene	22.2	36	18	ug/kg	J
207-08-9	Benzo(k)fluoranthene	22.1	36	17	ug/kg	J
218-01-9	Chrysene	45.8	36	11	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	36	16	ug/kg	
206-44-0	Fluoranthene	92.8	36	16	ug/kg	
86-73-7	Fluorene	ND	36	16	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	23.2	36	17	ug/kg	J
91-20-3	Naphthalene	ND	36	10	ug/kg	
85-01-8	Phenanthrene	76.3	36	12	ug/kg	
129-00-0	Pyrene	95.7	36	11	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	26%		15-114%
321-60-8	2-Fluorobiphenyl	27%		22-104%
1718-51-0	Terphenyl-d14	29%		23-121%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-102-A		
Lab Sample ID:	JD32315-16	**Date Sampled:**	09/22/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
		Percent Solids:	90.1
Project:	Northfield Bridge, Route 12, VT		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic [a]	11.6	4.5	mg/kg	2	09/30/21	10/01/21	ND	SW846 6010D [2]	SW846 3050B [4]
Barium	23.5	22	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [4]
Cadmium [a]	< 1.1	1.1	mg/kg	2	09/30/21	10/01/21	ND	SW846 6010D [2]	SW846 3050B [4]
Chromium	13.9	1.1	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [4]
Lead [a]	36.5	4.5	mg/kg	2	09/30/21	10/01/21	ND	SW846 6010D [2]	SW846 3050B [4]
Mercury	0.14	0.034	mg/kg	1	10/04/21	10/04/21	LM	SW846 7471B [3]	SW846 7471B [5]
Selenium [a]	< 4.5	4.5	mg/kg	2	09/30/21	10/01/21	ND	SW846 6010D [2]	SW846 3050B [4]
Silver [a]	< 1.1	1.1	mg/kg	2	09/30/21	10/01/21	ND	SW846 6010D [2]	SW846 3050B [4]

(1) Instrument QC Batch: MA51210
(2) Instrument QC Batch: MA51216
(3) Instrument QC Batch: MA51220
(4) Prep QC Batch: MP28913
(5) Prep QC Batch: MP28967

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	H-102-B		
Lab Sample ID:	JD32315-17	**Date Sampled:**	09/22/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8260D	**Percent Solids:**	85.7
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1C181472.D	1	10/02/21 21:51	PS	n/a	n/a	V1C7900
Run #2							

	Initial Weight
Run #1	5.5 g
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	19.3	11	4.4	ug/kg	
71-43-2	Benzene	ND	0.53	0.48	ug/kg	
108-86-1	Bromobenzene	ND	5.3	0.59	ug/kg	
74-97-5	Bromochloromethane	ND	5.3	0.59	ug/kg	
75-27-4	Bromodichloromethane	ND	2.1	0.46	ug/kg	
75-25-2	Bromoform	ND	5.3	1.4	ug/kg	
74-83-9	Bromomethane	ND	5.3	0.81	ug/kg	
78-93-3	2-Butanone (MEK)	ND	11	2.6	ug/kg	
104-51-8	n-Butylbenzene	ND	2.1	0.43	ug/kg	
135-98-8	sec-Butylbenzene	ND	2.1	0.45	ug/kg	
98-06-6	tert-Butylbenzene	ND	2.1	0.53	ug/kg	
75-15-0	Carbon disulfide	ND	2.1	0.57	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.1	0.66	ug/kg	
108-90-7	Chlorobenzene	ND	2.1	0.49	ug/kg	
75-00-3	Chloroethane	ND	5.3	0.63	ug/kg	
67-66-3	Chloroform	ND	2.1	0.55	ug/kg	
74-87-3	Chloromethane	ND	5.3	2.1	ug/kg	
95-49-8	o-Chlorotoluene	ND	2.1	0.57	ug/kg	
106-43-4	p-Chlorotoluene	ND	2.1	0.47	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.1	0.74	ug/kg	
124-48-1	Dibromochloromethane [a]	ND	2.1	0.59	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.1	0.45	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.1	0.58	ug/kg	
541-73-1	1,3-Dichlorobenzene [b]	ND	1.1	0.53	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.1	0.52	ug/kg	
75-71-8	Dichlorodifluoromethane [a]	ND	5.3	0.77	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.1	0.53	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.1	0.50	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.1	0.69	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.1	0.89	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.1	0.65	ug/kg	
78-87-5	1,2-Dichloropropane	ND	2.1	0.50	ug/kg	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-102-B		
Lab Sample ID:	JD32315-17	**Date Sampled:**	09/22/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8260D	**Percent Solids:**	85.7
Project:	Northfield Bridge, Route 12, VT		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	2.1	0.55	ug/kg	
594-20-7	2,2-Dichloropropane	ND	2.1	0.46	ug/kg	
563-58-6	1,1-Dichloropropene	ND	2.1	0.49	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	2.1	0.50	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	2.1	0.48	ug/kg	
100-41-4	Ethylbenzene	ND	1.1	0.48	ug/kg	
87-68-3	Hexachlorobutadiene [a]	ND	5.3	0.70	ug/kg	
591-78-6	2-Hexanone	ND	5.3	2.2	ug/kg	
74-88-4	Iodomethane	ND	5.3	2.5	ug/kg	
98-82-8	Isopropylbenzene	ND	2.1	1.5	ug/kg	
99-87-6	p-Isopropyltoluene	ND	2.1	0.42	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.1	0.50	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.3	2.4	ug/kg	
74-95-3	Methylene bromide	ND	5.3	0.56	ug/kg	
75-09-2	Methylene chloride	ND	5.3	2.8	ug/kg	
91-20-3	Naphthalene	ND	5.3	2.7	ug/kg	
103-65-1	n-Propylbenzene	ND	2.1	0.50	ug/kg	
100-42-5	Styrene	ND	2.1	0.43	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	2.1	0.45	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.1	0.64	ug/kg	
127-18-4	Tetrachloroethene	ND	2.1	0.62	ug/kg	
108-88-3	Toluene	ND	1.1	0.56	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	5.3	2.7	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	5.3	2.7	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.1	0.51	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.1	0.59	ug/kg	
79-01-6	Trichloroethene	ND	1.1	0.81	ug/kg	
75-69-4	Trichlorofluoromethane [c]	ND	5.3	0.73	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	5.3	0.59	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	2.1	0.53	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	2.1	0.46	ug/kg	
108-05-4	Vinyl Acetate	ND	11	2.1	ug/kg	
75-01-4	Vinyl chloride	ND	2.1	0.51	ug/kg	
	m,p-Xylene	ND	1.1	0.95	ug/kg	
95-47-6	o-Xylene	ND	1.1	0.49	ug/kg	
1330-20-7	Xylene (total)	ND	1.1	0.49	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		72-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-102-B		
Lab Sample ID:	JD32315-17	**Date Sampled:**	09/22/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8260D	**Percent Solids:**	85.7
Project:	Northfield Bridge, Route 12, VT		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	111%		75-131%
2037-26-5	Toluene-D8	99%		81-121%
460-00-4	4-Bromofluorobenzene	91%		60-141%

(a) Associated CCV outside of control limits high, sample was ND.
(b) This compound in blank spike is outside in house QC limits bias high.
(c) Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-102-B		
Lab Sample ID:	JD32315-17	**Date Sampled:**	09/22/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8270E SW846 3546	**Percent Solids:**	85.7
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M175459.D	1	10/05/21 14:21	KLS	10/04/21 10:00	OP35710	EM7542
Run #2							

	Initial Weight	Final Volume
Run #1	30.9 g	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	38	13	ug/kg	
208-96-8	Acenaphthylene	ND	38	19	ug/kg	
120-12-7	Anthracene	ND	38	23	ug/kg	
56-55-3	Benzo(a)anthracene	ND	38	11	ug/kg	
50-32-8	Benzo(a)pyrene	ND	38	17	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	38	17	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	38	19	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	38	18	ug/kg	
218-01-9	Chrysene	ND	38	12	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	38	17	ug/kg	
206-44-0	Fluoranthene	ND	38	17	ug/kg	
86-73-7	Fluorene	ND	38	17	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	38	18	ug/kg	
91-20-3	Naphthalene	ND	38	11	ug/kg	
85-01-8	Phenanthrene	ND	38	13	ug/kg	
129-00-0	Pyrene	ND	38	12	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	44%		15-114%
321-60-8	2-Fluorobiphenyl	46%		22-104%
1718-51-0	Terphenyl-d14	49%		23-121%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-102-B		
Lab Sample ID:	JD32315-17	**Date Sampled:**	09/22/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8082A SW846 3540C	**Percent Solids:**	85.7
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5G110734.D	1	10/05/21 17:30	CP	10/04/21 17:45	OP35567	G5G2806
Run #2							

	Initial Weight	Final Volume
Run #1	10.5 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	56	26	ug/kg	
11104-28-2	Aroclor 1221	ND	56	34	ug/kg	
11141-16-5	Aroclor 1232	ND	56	35	ug/kg	
53469-21-9	Aroclor 1242	ND	56	23	ug/kg	
12672-29-6	Aroclor 1248	ND	56	50	ug/kg	
11097-69-1	Aroclor 1254	ND	56	30	ug/kg	
11096-82-5	Aroclor 1260	ND	56	24	ug/kg	
11100-14-4	Aroclor 1268	ND	56	23	ug/kg	
37324-23-5	Aroclor 1262	ND	56	36	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	55%		24-152%
877-09-8	Tetrachloro-m-xylene	65%		24-152%
2051-24-3	Decachlorobiphenyl	107%		10-172%
2051-24-3	Decachlorobiphenyl	129%		10-172%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: H-102-B
Lab Sample ID: JD32315-17
Matrix: SO - Soil
Project: Northfield Bridge, Route 12, VT

Date Sampled: 09/22/21
Date Received: 09/28/21
Percent Solids: 85.7

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	6.5	1.5	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Barium	< 15	15	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Cadmium	< 0.38	0.38	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Chromium	36.2	0.76	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Lead	12.6	1.5	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Mercury	< 0.017	0.017	mg/kg	1	10/04/21	10/04/21	LM	SW846 7471B [2]	SW846 7471B [4]
Selenium	< 1.5	1.5	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Silver	< 0.38	0.38	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]

(1) Instrument QC Batch: MA51210
(2) Instrument QC Batch: MA51220
(3) Prep QC Batch: MP28913
(4) Prep QC Batch: MP28967

RL = Reporting Limit

Report of Analysis

Client Sample ID:	H-102-C		
Lab Sample ID:	JD32315-18	**Date Sampled:**	09/22/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8260D SW846 1311	**Percent Solids:**	88.2
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2V81431.D	5	10/07/21 06:41	JS	10/02/21 16:00	GP36195	V2V3357
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
71-43-2	Benzene	ND	D018	0.50	0.0025	0.0021	mg/l	
78-93-3	2-Butanone (MEK) [a]	ND	D035	200	0.10	0.034	mg/l	
56-23-5	Carbon tetrachloride	ND	D019	0.50	0.0050	0.0028	mg/l	
108-90-7	Chlorobenzene	ND	D021	100	0.0050	0.0028	mg/l	
67-66-3	Chloroform [b]	0.0121	D022	6.0	0.0050	0.0025	mg/l	B
106-46-7	1,4-Dichlorobenzene	ND	D027	7.5	0.0050	0.0025	mg/l	
107-06-2	1,2-Dichloroethane	ND	D028	0.50	0.0050	0.0030	mg/l	
75-35-4	1,1-Dichloroethene	ND	D029	0.70	0.0050	0.0030	mg/l	
127-18-4	Tetrachloroethene	ND	D039	0.70	0.0050	0.0045	mg/l	
79-01-6	Trichloroethene	ND	D040	0.50	0.0050	0.0026	mg/l	
75-01-4	Vinyl chloride	ND	D043	0.20	0.0050	0.0039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		76-120%
17060-07-0	1,2-Dichloroethane-D4	112%		64-135%
2037-26-5	Toluene-D8	102%		76-117%
460-00-4	4-Bromofluorobenzene	102%		72-122%

(a) Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.
(b) Indicates analyte found in associated leachate blank.

ND = Not detected MDL = Method Detection Limit
MCL = Maximum Contamination Level (40 CFR 261 7/1/11)
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-102-C		
Lab Sample ID:	JD32315-18	**Date Sampled:**	09/22/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8270E SW846 3510C	**Percent Solids:**	88.2
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z152230.D	1	10/13/21 07:30	CS	10/12/21 18:20	OP35940	EZ7572
Run #2							

	Initial Volume	Final Volume
Run #1	100 ml	1.0 ml
Run #2		

ABN TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	D023	200	0.020	0.0089	mg/l	
	3&4-Methylphenol	ND	D024	200	0.020	0.0088	mg/l	
87-86-5	Pentachlorophenol	ND	D037	100	0.10	0.014	mg/l	
95-95-4	2,4,5-Trichlorophenol	ND	D041	400	0.050	0.013	mg/l	
88-06-2	2,4,6-Trichlorophenol	ND	D042	2.0	0.050	0.0092	mg/l	
106-46-7	1,4-Dichlorobenzene	ND	D027	7.5	0.020	0.0017	mg/l	
121-14-2	2,4-Dinitrotoluene	ND	D030	0.13	0.020	0.0055	mg/l	
118-74-1	Hexachlorobenzene	ND	D032	0.13	0.020	0.0033	mg/l	
87-68-3	Hexachlorobutadiene	ND	D033	0.50	0.010	0.0049	mg/l	
67-72-1	Hexachloroethane	ND	D034	3.0	0.050	0.0039	mg/l	
98-95-3	Nitrobenzene	ND	D036	2.0	0.020	0.0064	mg/l	
110-86-1	Pyridine	ND	D038	5.0	0.020	0.0039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	34%		10-73%
4165-62-2	Phenol-d5	23%		10-64%
118-79-6	2,4,6-Tribromophenol	84%		31-130%
4165-60-0	Nitrobenzene-d5	73%		28-126%
321-60-8	2-Fluorobiphenyl	67%		26-114%
1718-51-0	Terphenyl-d14	94%		16-122%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-102-C		
Lab Sample ID:	JD32315-18	**Date Sampled:**	09/22/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8015D	**Percent Solids:**	88.2
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	LM112329.D	1	10/01/21 23:43	DFT	n/a	n/a	GLM4714
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	10.9 g	10.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	12	5.9	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	76%		70-116%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-102-C		
Lab Sample ID:	JD32315-18	**Date Sampled:**	09/22/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8151A SW846 3510C	**Percent Solids:**	88.2
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G133457.D	1	10/17/21 17:49	TL	10/12/21 14:20	OP35941	G3G4866
Run #2							

	Initial Volume	Final Volume
Run #1	30.0 ml	2.0 ml
Run #2		

Herbicide TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
94-75-7	2,4-D [a]	ND	D016	10	0.0033	0.00098	mg/l	
93-72-1	2,4,5-TP (Silvex)	ND	D017	1.0	0.0010	0.00020	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	45%		13-169%
19719-28-9	2,4-DCAA	30%		13-169%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-102-C		
Lab Sample ID:	JD32315-18	**Date Sampled:**	09/22/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8081B SW846 3510C	**Percent Solids:**	88.2
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4G9721370.D	1	10/13/21 00:31	RK	10/12/21 14:15	OP35939	G4G3596
Run #2							

	Initial Volume	Final Volume
Run #1	30.0 ml	2.0 ml
Run #2		

Pesticide TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
58-89-9	gamma-BHC (Lindane)	ND	D013	0.40	0.000067	0.000040	mg/l	
12789-03-6	Chlordane	ND	D020	0.030	0.0033	0.0014	mg/l	
72-20-8	Endrin	ND	D012	0.020	0.000067	0.000040	mg/l	
76-44-8	Heptachlor	ND	D031	0.0080	0.000067	0.000030	mg/l	
1024-57-3	Heptachlor epoxide	ND	D031	0.0080	0.000067	0.000040	mg/l	
72-43-5	Methoxychlor	ND	D014	10	0.00013	0.000045	mg/l	
8001-35-2	Toxaphene	ND	D015	0.50	0.0017	0.0011	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	86%		30-137%
877-09-8	Tetrachloro-m-xylene	91%		30-137%
2051-24-3	Decachlorobiphenyl	91%		10-137%
2051-24-3	Decachlorobiphenyl	94%		10-137%

ND = Not detected MDL = Method Detection Limit
MCL = Maximum Contamination Level (40 CFR 261 7/1/11)
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-102-C		
Lab Sample ID:	JD32315-18	**Date Sampled:**	09/22/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8082A SW846 3546	**Percent Solids:**	88.2
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX2471774.D	1	10/05/21 15:55	RK	10/04/21 09:00	OP35760	GXX7601
Run #2							

	Initial Weight	Final Volume
Run #1	16.4 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	35	16	ug/kg	
11104-28-2	Aroclor 1221	ND	35	21	ug/kg	
11141-16-5	Aroclor 1232	ND	35	22	ug/kg	
53469-21-9	Aroclor 1242	ND	35	14	ug/kg	
12672-29-6	Aroclor 1248	ND	35	31	ug/kg	
11097-69-1	Aroclor 1254	ND	35	19	ug/kg	
11096-82-5	Aroclor 1260	ND	35	15	ug/kg	
11100-14-4	Aroclor 1268	ND	35	15	ug/kg	
37324-23-5	Aroclor 1262	ND	35	23	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	94%		24-152%
877-09-8	Tetrachloro-m-xylene	93%		24-152%
2051-24-3	Decachlorobiphenyl	76%		10-172%
2051-24-3	Decachlorobiphenyl	85%		10-172%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-102-C		
Lab Sample ID:	JD32315-18	**Date Sampled:**	09/22/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8015D SW846 3546	**Percent Solids:**	88.2
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	ZZ101085.D	1	10/05/21 10:08	TC	10/04/21 09:30	OP35757	GZZ3729
Run #2							

	Initial Weight	Final Volume
Run #1	16.6 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	7.25	6.8	2.3	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	72%		18-132%
438-22-2	5a-Androstane	71%		22-134%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: H-102-C
Lab Sample ID: JD32315-18
Matrix: SO - Soil
Project: Northfield Bridge, Route 12, VT

Date Sampled: 09/22/21
Date Received: 09/28/21
Percent Solids: 88.2

Metals Analysis, TCLP Leachate SW846 1311

Analyte	Result	HW#	MCL	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	< 0.10	D004	5.0	0.10	mg/l	1	10/05/21	10/06/21	ND	SW846 6010D [2]	SW846 3010A [3]
Barium	< 0.20	D005	100	0.20	mg/l	1	10/05/21	10/06/21	ND	SW846 6010D [2]	SW846 3010A [3]
Cadmium	< 0.0040	D006	1.0	0.0040	mg/l	1	10/05/21	10/06/21	ND	SW846 6010D [2]	SW846 3010A [3]
Chromium	0.031	D007	5.0	0.010	mg/l	1	10/05/21	10/06/21	ND	SW846 6010D [2]	SW846 3010A [3]
Lead	< 0.10	D008	5.0	0.10	mg/l	1	10/05/21	10/06/21	ND	SW846 6010D [2]	SW846 3010A [3]
Mercury	< 0.00020	D009	0.20	0.00020	mg/l	1	10/06/21	10/06/21	LM	SW846 7470A [1]	SW846 7470A [4]
Selenium	< 0.10	D010	1.0	0.10	mg/l	1	10/05/21	10/06/21	ND	SW846 6010D [2]	SW846 3010A [3]
Silver	< 0.010	D011	5.0	0.010	mg/l	1	10/05/21	10/06/21	ND	SW846 6010D [2]	SW846 3010A [3]

(1) Instrument QC Batch: MA51229
(2) Instrument QC Batch: MA51233
(3) Prep QC Batch: MP29010
(4) Prep QC Batch: MP29030

RL = Reporting Limit
MCL = Maximum Contamination Level (40 CFR 261 7/1/11)

Report of Analysis

Client Sample ID:	H-102-C		
Lab Sample ID:	JD32315-18	**Date Sampled:**	09/22/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
		Percent Solids:	88.2
Project:	Northfield Bridge, Route 12, VT		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Corrosivity as pH	8.52 NC		su	1	10/04/21 16:10	MM	SW846 9045D
Cyanide Reactivity [a]	< 10	10	mg/kg	1	10/07/21 21:38	JJ	SW846 CHAP7/9012 B
Ignitability (Flashpoint)	> 200		Deg. F	1	10/05/21 16:30	MM	SW846 1010A/ASTM D93
Paint Filter Test [b]	< 0.50	0.50	ml/100g	1	10/04/21 14:20	MM	SW846 9095/9095B
Solids, Percent	88.2		%	1	10/04/21 16:54	BG	SM2540 G 18TH ED MOD
Sulfide Reactivity [a]	< 100	100	mg/kg	1	10/10/21 12:35	MP	SW846 CHAP7/9034

(a) Analyzed outside the 14 day holding time applied by laboratory SOP. No regulatory holding time published for this method.
(b) No free liquids.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	B-102-A		
Lab Sample ID:	JD32315-19	**Date Sampled:**	09/22/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8270E SW846 3546	**Percent Solids:**	90.6
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M175463.D	1	10/05/21 16:16	KLS	10/04/21 10:00	OP35710	EM7542
Run #2							

	Initial Weight	Final Volume
Run #1	30.0 g	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	37	13	ug/kg	
208-96-8	Acenaphthylene	93.0	37	19	ug/kg	
120-12-7	Anthracene	34.7	37	23	ug/kg	J
56-55-3	Benzo(a)anthracene	198	37	10	ug/kg	
50-32-8	Benzo(a)pyrene	264	37	17	ug/kg	
205-99-2	Benzo(b)fluoranthene	320	37	16	ug/kg	
191-24-2	Benzo(g,h,i)perylene	168	37	18	ug/kg	
207-08-9	Benzo(k)fluoranthene	141	37	17	ug/kg	
218-01-9	Chrysene	200	37	12	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	45.2	37	16	ug/kg	
206-44-0	Fluoranthene	212	37	16	ug/kg	
86-73-7	Fluorene	ND	37	17	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	204	37	17	ug/kg	
91-20-3	Naphthalene	21.0	37	10	ug/kg	J
85-01-8	Phenanthrene	73.4	37	12	ug/kg	
129-00-0	Pyrene	284	37	12	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	24%		15-114%
321-60-8	2-Fluorobiphenyl	26%		22-104%
1718-51-0	Terphenyl-d14	29%		23-121%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-102-A		
Lab Sample ID:	JD32315-19	**Date Sampled:**	09/22/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
		Percent Solids:	90.6
Project:	Northfield Bridge, Route 12, VT		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	5.9	2.2	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Barium	35.7	22	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Cadmium	< 0.55	0.55	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Chromium	9.3	1.1	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Lead	29.1	2.2	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Mercury	0.16	0.034	mg/kg	1	10/04/21	10/04/21	LM	SW846 7471B [2]	SW846 7471B [4]
Selenium	< 2.2	2.2	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Silver	< 0.55	0.55	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]

(1) Instrument QC Batch: MA51210
(2) Instrument QC Batch: MA51220
(3) Prep QC Batch: MP28913
(4) Prep QC Batch: MP28967

RL = Reporting Limit

Report of Analysis

Client Sample ID:	B-102-B		
Lab Sample ID:	JD32315-20	**Date Sampled:**	09/22/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8260D	**Percent Solids:**	93.4
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1C181475.D	1	10/02/21 23:13	PS	n/a	n/a	V1C7900
Run #2							

	Initial Weight
Run #1	6.3 g
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	22.5	8.5	3.5	ug/kg	
71-43-2	Benzene	ND	0.42	0.39	ug/kg	
108-86-1	Bromobenzene	ND	4.2	0.47	ug/kg	
74-97-5	Bromochloromethane	ND	4.2	0.48	ug/kg	
75-27-4	Bromodichloromethane	ND	1.7	0.36	ug/kg	
75-25-2	Bromoform	ND	4.2	1.2	ug/kg	
74-83-9	Bromomethane	ND	4.2	0.65	ug/kg	
78-93-3	2-Butanone (MEK)	ND	8.5	2.1	ug/kg	
104-51-8	n-Butylbenzene	ND	1.7	0.35	ug/kg	
135-98-8	sec-Butylbenzene	ND	1.7	0.36	ug/kg	
98-06-6	tert-Butylbenzene	ND	1.7	0.42	ug/kg	
75-15-0	Carbon disulfide	0.60	1.7	0.45	ug/kg	J
56-23-5	Carbon tetrachloride	ND	1.7	0.53	ug/kg	
108-90-7	Chlorobenzene	ND	1.7	0.39	ug/kg	
75-00-3	Chloroethane	ND	4.2	0.50	ug/kg	
67-66-3	Chloroform	ND	1.7	0.44	ug/kg	
74-87-3	Chloromethane	ND	4.2	1.7	ug/kg	
95-49-8	o-Chlorotoluene	ND	1.7	0.46	ug/kg	
106-43-4	p-Chlorotoluene	ND	1.7	0.38	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.7	0.59	ug/kg	
124-48-1	Dibromochloromethane [a]	ND	1.7	0.48	ug/kg	
106-93-4	1,2-Dibromoethane	ND	0.85	0.36	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	0.85	0.46	ug/kg	
541-73-1	1,3-Dichlorobenzene [b]	ND	0.85	0.42	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	0.85	0.42	ug/kg	
75-71-8	Dichlorodifluoromethane [a]	ND	4.2	0.62	ug/kg	
75-34-3	1,1-Dichloroethane	ND	0.85	0.42	ug/kg	
107-06-2	1,2-Dichloroethane	ND	0.85	0.40	ug/kg	
75-35-4	1,1-Dichloroethene	ND	0.85	0.56	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	0.85	0.71	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	0.85	0.52	ug/kg	
78-87-5	1,2-Dichloropropane	ND	1.7	0.40	ug/kg	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-102-B		
Lab Sample ID:	JD32315-20	**Date Sampled:**	09/22/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8260D	**Percent Solids:**	93.4
Project:	Northfield Bridge, Route 12, VT		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	1.7	0.44	ug/kg	
594-20-7	2,2-Dichloropropane	ND	1.7	0.36	ug/kg	
563-58-6	1,1-Dichloropropene	ND	1.7	0.40	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	1.7	0.40	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	1.7	0.39	ug/kg	
100-41-4	Ethylbenzene	0.62	0.85	0.38	ug/kg	J
87-68-3	Hexachlorobutadiene [a]	ND	4.2	0.56	ug/kg	
591-78-6	2-Hexanone	ND	4.2	1.8	ug/kg	
74-88-4	Iodomethane	ND	4.2	2.0	ug/kg	
98-82-8	Isopropylbenzene	ND	1.7	1.2	ug/kg	
99-87-6	p-Isopropyltoluene	ND	1.7	0.34	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	0.85	0.40	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	4.2	1.9	ug/kg	
74-95-3	Methylene bromide	ND	4.2	0.45	ug/kg	
75-09-2	Methylene chloride	ND	4.2	2.2	ug/kg	
91-20-3	Naphthalene	156	4.2	2.1	ug/kg	
103-65-1	n-Propylbenzene	ND	1.7	0.40	ug/kg	
100-42-5	Styrene	0.40	1.7	0.34	ug/kg	J
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.7	0.36	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.7	0.51	ug/kg	
127-18-4	Tetrachloroethene	ND	1.7	0.49	ug/kg	
108-88-3	Toluene	ND	0.85	0.45	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	4.2	2.1	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	4.2	2.1	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	1.7	0.41	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	1.7	0.47	ug/kg	
79-01-6	Trichloroethene	ND	0.85	0.65	ug/kg	
75-69-4	Trichlorofluoromethane [c]	ND	4.2	0.58	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	4.2	0.47	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	4.4	1.7	0.42	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	2.0	1.7	0.37	ug/kg	
108-05-4	Vinyl Acetate	ND	8.5	1.7	ug/kg	
75-01-4	Vinyl chloride	ND	1.7	0.41	ug/kg	
	m,p-Xylene	1.2	0.85	0.76	ug/kg	
95-47-6	o-Xylene	2.5	0.85	0.39	ug/kg	
1330-20-7	Xylene (total)	3.7	0.85	0.39	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		72-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-102-B		
Lab Sample ID:	JD32315-20	**Date Sampled:**	09/22/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8260D	**Percent Solids:**	93.4
Project:	Northfield Bridge, Route 12, VT		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	116%		75-131%
2037-26-5	Toluene-D8	103%		81-121%
460-00-4	4-Bromofluorobenzene	96%		60-141%

(a) Associated CCV outside of control limits high, sample was ND.
(b) This compound in blank spike is outside in house QC limits bias high.
(c) Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-102-B		
Lab Sample ID:	JD32315-20	**Date Sampled:**	09/22/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8270E SW846 3546	**Percent Solids:**	93.4
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	2P103321.D	2	10/06/21 17:59	BL	10/04/21 10:00	OP35710	E2P4640
Run #2							

	Initial Weight	Final Volume
Run #1	30.2 g	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	194	71	24	ug/kg	
208-96-8	Acenaphthylene	266	71	36	ug/kg	
120-12-7	Anthracene	248	71	43	ug/kg	
56-55-3	Benzo(a)anthracene	648	71	20	ug/kg	
50-32-8	Benzo(a)pyrene	750	71	32	ug/kg	
205-99-2	Benzo(b)fluoranthene	794	71	31	ug/kg	
191-24-2	Benzo(g,h,i)perylene [b]	522	71	35	ug/kg	
207-08-9	Benzo(k)fluoranthene	313	71	33	ug/kg	
218-01-9	Chrysene	644	71	22	ug/kg	
53-70-3	Dibenzo(a,h)anthracene [b]	132	71	31	ug/kg	
206-44-0	Fluoranthene	767	71	32	ug/kg	
86-73-7	Fluorene	224	71	33	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene [b]	573	71	33	ug/kg	
91-20-3	Naphthalene	373	71	20	ug/kg	
85-01-8	Phenanthrene	919	71	24	ug/kg	
129-00-0	Pyrene	1160	71	23	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	33%		15-114%
321-60-8	2-Fluorobiphenyl	38%		22-104%
1718-51-0	Terphenyl-d14	43%		23-121%

(a) Dilution required due to matrix interference.
(b) Associated CCV outside of control limits high. Estimated value, due to corresponding failure in the batch associated CCV.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-102-B		
Lab Sample ID:	JD32315-20	**Date Sampled:**	09/22/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8082A SW846 3540C	**Percent Solids:**	93.4
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5G110735.D	1	10/05/21 18:04	CP	10/04/21 17:45	OP35567	G5G2806
Run #2							

	Initial Weight	Final Volume
Run #1	11.6 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	46	22	ug/kg	
11104-28-2	Aroclor 1221	ND	46	29	ug/kg	
11141-16-5	Aroclor 1232	ND	46	29	ug/kg	
53469-21-9	Aroclor 1242	ND	46	19	ug/kg	
12672-29-6	Aroclor 1248	ND	46	41	ug/kg	
11097-69-1	Aroclor 1254	ND	46	25	ug/kg	
11096-82-5	Aroclor 1260	ND	46	20	ug/kg	
11100-14-4	Aroclor 1268	ND	46	19	ug/kg	
37324-23-5	Aroclor 1262	ND	46	30	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	77%		24-152%
877-09-8	Tetrachloro-m-xylene	48%		24-152%
2051-24-3	Decachlorobiphenyl	82%		10-172%
2051-24-3	Decachlorobiphenyl	65%		10-172%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: B-102-B
Lab Sample ID: JD32315-20
Matrix: SO - Soil
Project: Northfield Bridge, Route 12, VT

Date Sampled: 09/22/21
Date Received: 09/28/21
Percent Solids: 93.4

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	5.5	2.2	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Barium	27.8	22	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Cadmium	< 0.55	0.55	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Chromium	14.3	1.1	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Lead	319	2.2	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Mercury	0.036	0.030	mg/kg	1	10/04/21	10/04/21	LM	SW846 7471B [2]	SW846 7471B [4]
Selenium	< 2.2	2.2	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Silver	< 0.55	0.55	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]

(1) Instrument QC Batch: MA51210
(2) Instrument QC Batch: MA51220
(3) Prep QC Batch: MP28913
(4) Prep QC Batch: MP28967

RL = Reporting Limit

Report of Analysis

Client Sample ID:	B-102-C		
Lab Sample ID:	JD32315-21	**Date Sampled:**	09/22/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8260D SW846 1311	**Percent Solids:**	88.2
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2V81432.D	5	10/07/21 07:08	JS	10/02/21 16:00	GP36195	V2V3357
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
71-43-2	Benzene	ND	D018	0.50	0.0025	0.0021	mg/l	
78-93-3	2-Butanone (MEK) [a]	ND	D035	200	0.10	0.034	mg/l	
56-23-5	Carbon tetrachloride	ND	D019	0.50	0.0050	0.0028	mg/l	
108-90-7	Chlorobenzene	ND	D021	100	0.0050	0.0028	mg/l	
67-66-3	Chloroform [b]	0.0120	D022	6.0	0.0050	0.0025	mg/l	B
106-46-7	1,4-Dichlorobenzene	ND	D027	7.5	0.0050	0.0025	mg/l	
107-06-2	1,2-Dichloroethane	ND	D028	0.50	0.0050	0.0030	mg/l	
75-35-4	1,1-Dichloroethene	ND	D029	0.70	0.0050	0.0030	mg/l	
127-18-4	Tetrachloroethene	ND	D039	0.70	0.0050	0.0045	mg/l	
79-01-6	Trichloroethene	ND	D040	0.50	0.0050	0.0026	mg/l	
75-01-4	Vinyl chloride	ND	D043	0.20	0.0050	0.0039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		76-120%
17060-07-0	1,2-Dichloroethane-D4	112%		64-135%
2037-26-5	Toluene-D8	103%		76-117%
460-00-4	4-Bromofluorobenzene	103%		72-122%

(a) Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.
(b) Indicates analyte found in associated leachate blank.

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-102-C		
Lab Sample ID:	JD32315-21	**Date Sampled:**	09/22/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8270E SW846 3510C	**Percent Solids:**	88.2
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z152231.D	1	10/13/21 07:56	CS	10/12/21 18:20	OP35940	EZ7572
Run #2							

	Initial Volume	Final Volume
Run #1	100 ml	1.0 ml
Run #2		

ABN TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	D023	200	0.020	0.0089	mg/l	
	3&4-Methylphenol	ND	D024	200	0.020	0.0088	mg/l	
87-86-5	Pentachlorophenol	ND	D037	100	0.10	0.014	mg/l	
95-95-4	2,4,5-Trichlorophenol	ND	D041	400	0.050	0.013	mg/l	
88-06-2	2,4,6-Trichlorophenol	ND	D042	2.0	0.050	0.0092	mg/l	
106-46-7	1,4-Dichlorobenzene	ND	D027	7.5	0.020	0.0017	mg/l	
121-14-2	2,4-Dinitrotoluene	ND	D030	0.13	0.020	0.0055	mg/l	
118-74-1	Hexachlorobenzene	ND	D032	0.13	0.020	0.0033	mg/l	
87-68-3	Hexachlorobutadiene	ND	D033	0.50	0.010	0.0049	mg/l	
67-72-1	Hexachloroethane	ND	D034	3.0	0.050	0.0039	mg/l	
98-95-3	Nitrobenzene	ND	D036	2.0	0.020	0.0064	mg/l	
110-86-1	Pyridine	ND	D038	5.0	0.020	0.0039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	30%		10-73%
4165-62-2	Phenol-d5	21%		10-64%
118-79-6	2,4,6-Tribromophenol	95%		31-130%
4165-60-0	Nitrobenzene-d5	78%		28-126%
321-60-8	2-Fluorobiphenyl	76%		26-114%
1718-51-0	Terphenyl-d14	89%		16-122%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-102-C		
Lab Sample ID:	JD32315-21	**Date Sampled:**	09/22/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8015D	**Percent Solids:**	88.2
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	LM112330.D	1	10/02/21 00:08	DFT	n/a	n/a	GLM4714
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	10.7 g	10.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	12	6.0	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	75%		70-116%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-102-C		
Lab Sample ID:	JD32315-21	**Date Sampled:**	09/22/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8151A SW846 3510C	**Percent Solids:**	88.2
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G133458.D	1	10/17/21 18:16	TL	10/12/21 14:20	OP35941	G3G4866
Run #2							

	Initial Volume	Final Volume
Run #1	30.0 ml	2.0 ml
Run #2		

Herbicide TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
94-75-7	2,4-D [a]	ND	D016	10	0.0033	0.00098	mg/l	
93-72-1	2,4,5-TP (Silvex)	ND	D017	1.0	0.0010	0.00020	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	82%		13-169%
19719-28-9	2,4-DCAA	53%		13-169%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-102-C		
Lab Sample ID:	JD32315-21	**Date Sampled:**	09/22/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8081B SW846 3510C	**Percent Solids:**	88.2
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4G9721371.D	1	10/13/21 00:46	RK	10/12/21 14:15	OP35939	G4G3596
Run #2							

	Initial Volume	Final Volume
Run #1	30.0 ml	2.0 ml
Run #2		

Pesticide TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
58-89-9	gamma-BHC (Lindane)	ND	D013	0.40	0.000067	0.000040	mg/l	
12789-03-6	Chlordane	ND	D020	0.030	0.0033	0.0014	mg/l	
72-20-8	Endrin	ND	D012	0.020	0.000067	0.000040	mg/l	
76-44-8	Heptachlor	ND	D031	0.0080	0.000067	0.000030	mg/l	
1024-57-3	Heptachlor epoxide	ND	D031	0.0080	0.000067	0.000040	mg/l	
72-43-5	Methoxychlor	ND	D014	10	0.00013	0.000045	mg/l	
8001-35-2	Toxaphene	ND	D015	0.50	0.0017	0.0011	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	71%		30-137%
877-09-8	Tetrachloro-m-xylene	70%		30-137%
2051-24-3	Decachlorobiphenyl	85%		10-137%
2051-24-3	Decachlorobiphenyl	79%		10-137%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-102-C		
Lab Sample ID:	JD32315-21	**Date Sampled:**	09/22/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8082A SW846 3546	**Percent Solids:**	88.2
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX2471775.D	1	10/05/21 16:12	RK	10/04/21 09:00	OP35760	GXX7601
Run #2							

	Initial Weight	Final Volume
Run #1	16.3 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	35	16	ug/kg	
11104-28-2	Aroclor 1221	ND	35	22	ug/kg	
11141-16-5	Aroclor 1232	ND	35	22	ug/kg	
53469-21-9	Aroclor 1242	ND	35	14	ug/kg	
12672-29-6	Aroclor 1248	ND	35	31	ug/kg	
11097-69-1	Aroclor 1254	ND	35	19	ug/kg	
11096-82-5	Aroclor 1260	ND	35	15	ug/kg	
11100-14-4	Aroclor 1268	ND	35	15	ug/kg	
37324-23-5	Aroclor 1262	ND	35	23	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	77%		24-152%
877-09-8	Tetrachloro-m-xylene	83%		24-152%
2051-24-3	Decachlorobiphenyl	85%		10-172%
2051-24-3	Decachlorobiphenyl	102%		10-172%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-102-C		
Lab Sample ID:	JD32315-21	**Date Sampled:**	09/22/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8015D SW846 3546	**Percent Solids:**	88.2
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	ZZ101086.D	1	10/05/21 10:42	TC	10/04/21 09:30	OP35757	GZZ3729
Run #2							

	Initial Weight	Final Volume
Run #1	15.1 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	217	7.5	2.6	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	67%		18-132%
438-22-2	5a-Androstane	82%		22-134%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: B-102-C
Lab Sample ID: JD32315-21
Matrix: SO - Soil
Project: Northfield Bridge, Route 12, VT

Date Sampled: 09/22/21
Date Received: 09/28/21
Percent Solids: 88.2

Metals Analysis, TCLP Leachate SW846 1311

Analyte	Result	HW#	MCL	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	< 0.10	D004	5.0	0.10	mg/l	1	10/06/21	10/07/21	ND	SW846 6010D [2]	SW846 3010A [3]
Barium	0.22	D005	100	0.20	mg/l	1	10/06/21	10/07/21	ND	SW846 6010D [2]	SW846 3010A [3]
Cadmium	< 0.0040	D006	1.0	0.0040	mg/l	1	10/06/21	10/07/21	ND	SW846 6010D [2]	SW846 3010A [3]
Chromium	< 0.010	D007	5.0	0.010	mg/l	1	10/06/21	10/07/21	ND	SW846 6010D [2]	SW846 3010A [3]
Lead	< 0.10	D008	5.0	0.10	mg/l	1	10/06/21	10/07/21	ND	SW846 6010D [2]	SW846 3010A [3]
Mercury	< 0.00020	D009	0.20	0.00020	mg/l	1	10/07/21	10/07/21	LM	SW846 7470A [1]	SW846 7470A [4]
Selenium	< 0.10	D010	1.0	0.10	mg/l	1	10/06/21	10/07/21	ND	SW846 6010D [2]	SW846 3010A [3]
Silver	< 0.010	D011	5.0	0.010	mg/l	1	10/06/21	10/07/21	ND	SW846 6010D [2]	SW846 3010A [3]

(1) Instrument QC Batch: MA51237
(2) Instrument QC Batch: MA51242
(3) Prep QC Batch: MP29028
(4) Prep QC Batch: MP29059

RL = Reporting Limit
MCL = Maximum Contamination Level (40 CFR 261 7/1/11)

Report of Analysis

Client Sample ID:	B-102-C		
Lab Sample ID:	JD32315-21	**Date Sampled:**	09/22/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
		Percent Solids:	88.2
Project:	Northfield Bridge, Route 12, VT		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Corrosivity as pH	10.91 NC		su	1	10/04/21 16:13	MM	SW846 9045D
Cyanide Reactivity [a]	< 11	11	mg/kg	1	10/14/21 20:28	JJ	SW846 CHAP7/9012 B
Ignitability (Flashpoint)	> 200		Deg. F	1	10/05/21 16:30	MM	SW846 1010A/ASTM D93
Paint Filter Test [b]	< 0.50	0.50	ml/100g	1	10/04/21 14:20	MM	SW846 9095/9095B
Solids, Percent	88.2		%	1	10/04/21 16:54	BG	SM2540 G 18TH ED MOD
Sulfide Reactivity [a]	< 110	110	mg/kg	1	10/10/21 12:35	MP	SW846 CHAP7/9034

(a) Analyzed outside the 14 day holding time applied by laboratory SOP. No regulatory holding time published for this method.
(b) No free liquids.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	B-105-A(0.5-2')		
Lab Sample ID:	JD32315-22	**Date Sampled:**	09/23/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8270E SW846 3546	**Percent Solids:**	96.3
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	6P502025.D	2	10/11/21 01:29	CS	10/08/21 09:25	OP35857	E6P3522
Run #2 [b]	Z152182.D	20	10/11/21 15:48	BL	10/08/21 09:25	OP35857	EZ7569
Run #3 [c]	M175464.D	1	10/05/21 16:45	KLS	10/04/21 10:00	OP35710	EM7542

	Initial Weight	Final Volume
Run #1	30.7 g	1.0 ml
Run #2	30.7 g	1.0 ml
Run #3	30.4 g	1.0 ml

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	250	68	23	ug/kg	
208-96-8	Acenaphthylene	1770	68	34	ug/kg	
120-12-7	Anthracene	2460	68	41	ug/kg	
56-55-3	Benzo(a)anthracene	3950	68	19	ug/kg	
50-32-8	Benzo(a)pyrene	2710	68	31	ug/kg	
205-99-2	Benzo(b)fluoranthene	3500	68	30	ug/kg	
191-24-2	Benzo(g,h,i)perylene	1710	68	34	ug/kg	
207-08-9	Benzo(k)fluoranthene	1370	68	32	ug/kg	
218-01-9	Chrysene	3490	68	21	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	529	68	30	ug/kg	
206-44-0	Fluoranthene	11500 [d]	680	300	ug/kg	
86-73-7	Fluorene	1300	68	31	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	2290	68	32	ug/kg	
91-20-3	Naphthalene	1240	68	19	ug/kg	
85-01-8	Phenanthrene	12200 [d]	680	230	ug/kg	
129-00-0	Pyrene	9120 [d]	680	220	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Run# 3	Limits
4165-60-0	Nitrobenzene-d5	54%	70%	3% [e]	15-114%
321-60-8	2-Fluorobiphenyl	57%	66%	4% [e]	22-104%
1718-51-0	Terphenyl-d14	61%	70%	4% [e]	23-121%

(a) Reextract due to surrogate outside QC limits. Original prep date within holding time. Dilution required due to viscosity of the extract matrix.
(b) Sample extracted outside the holding time.
(c) Confirmation run.
(d) Result is from Run# 2
(e) Outside of in house control limits. Refer to re-extract.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: B-105-A(0.5-2')
Lab Sample ID: JD32315-22
Matrix: SO - Soil
Project: Northfield Bridge, Route 12, VT

Date Sampled: 09/23/21
Date Received: 09/28/21
Percent Solids: 96.3

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	8.2	2.0	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Barium	25.2	20	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Cadmium	< 0.50	0.50	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Chromium	13.2	1.0	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Lead	13.6	2.0	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Mercury	< 0.032	0.032	mg/kg	1	10/04/21	10/04/21	LM	SW846 7471B [2]	SW846 7471B [4]
Selenium	< 2.0	2.0	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Silver	0.61	0.50	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]

(1) Instrument QC Batch: MA51210
(2) Instrument QC Batch: MA51220
(3) Prep QC Batch: MP28913
(4) Prep QC Batch: MP28967

RL = Reporting Limit

Report of Analysis

Client Sample ID:	B-105-B(20-24')		
Lab Sample ID:	JD32315-23	**Date Sampled:**	09/23/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8260D	**Percent Solids:**	91.9
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1C181473.D	1	10/02/21 22:19	PS	n/a	n/a	V1C7900
Run #2							

	Initial Weight
Run #1	13.3 g
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	10.5	4.1	1.7	ug/kg	
71-43-2	Benzene	ND	0.20	0.19	ug/kg	
108-86-1	Bromobenzene	ND	2.0	0.23	ug/kg	
74-97-5	Bromochloromethane	ND	2.0	0.23	ug/kg	
75-27-4	Bromodichloromethane	ND	0.82	0.18	ug/kg	
75-25-2	Bromoform	ND	2.0	0.56	ug/kg	
74-83-9	Bromomethane	ND	2.0	0.31	ug/kg	
78-93-3	2-Butanone (MEK)	ND	4.1	0.99	ug/kg	
104-51-8	n-Butylbenzene	ND	0.82	0.17	ug/kg	
135-98-8	sec-Butylbenzene	ND	0.82	0.18	ug/kg	
98-06-6	tert-Butylbenzene	ND	0.82	0.20	ug/kg	
75-15-0	Carbon disulfide	0.59	0.82	0.22	ug/kg	J
56-23-5	Carbon tetrachloride	ND	0.82	0.25	ug/kg	
108-90-7	Chlorobenzene	ND	0.82	0.19	ug/kg	
75-00-3	Chloroethane	ND	2.0	0.24	ug/kg	
67-66-3	Chloroform	ND	0.82	0.21	ug/kg	
74-87-3	Chloromethane	ND	2.0	0.80	ug/kg	
95-49-8	o-Chlorotoluene	ND	0.82	0.22	ug/kg	
106-43-4	p-Chlorotoluene	ND	0.82	0.18	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.82	0.28	ug/kg	
124-48-1	Dibromochloromethane [a]	ND	0.82	0.23	ug/kg	
106-93-4	1,2-Dibromoethane	ND	0.41	0.17	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	0.41	0.22	ug/kg	
541-73-1	1,3-Dichlorobenzene [b]	ND	0.41	0.20	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	0.41	0.20	ug/kg	
75-71-8	Dichlorodifluoromethane [a]	ND	2.0	0.30	ug/kg	
75-34-3	1,1-Dichloroethane	ND	0.41	0.20	ug/kg	
107-06-2	1,2-Dichloroethane	ND	0.41	0.19	ug/kg	
75-35-4	1,1-Dichloroethene	ND	0.41	0.27	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	0.41	0.34	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	0.41	0.25	ug/kg	
78-87-5	1,2-Dichloropropane	ND	0.82	0.19	ug/kg	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-105-B(20-24')		
Lab Sample ID:	JD32315-23	**Date Sampled:**	09/23/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8260D	**Percent Solids:**	91.9
Project:	Northfield Bridge, Route 12, VT		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	0.82	0.21	ug/kg	
594-20-7	2,2-Dichloropropane	ND	0.82	0.18	ug/kg	
563-58-6	1,1-Dichloropropene	ND	0.82	0.19	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	0.82	0.19	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	0.82	0.19	ug/kg	
100-41-4	Ethylbenzene	ND	0.41	0.19	ug/kg	
87-68-3	Hexachlorobutadiene [a]	ND	2.0	0.27	ug/kg	
591-78-6	2-Hexanone	ND	2.0	0.87	ug/kg	
74-88-4	Iodomethane	ND	2.0	0.95	ug/kg	
98-82-8	Isopropylbenzene	ND	0.82	0.58	ug/kg	
99-87-6	p-Isopropyltoluene	ND	0.82	0.16	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	0.41	0.19	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	2.0	0.93	ug/kg	
74-95-3	Methylene bromide	ND	2.0	0.22	ug/kg	
75-09-2	Methylene chloride	ND	2.0	1.1	ug/kg	
91-20-3	Naphthalene	ND	2.0	1.0	ug/kg	
103-65-1	n-Propylbenzene	ND	0.82	0.19	ug/kg	
100-42-5	Styrene	ND	0.82	0.16	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.82	0.17	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.82	0.25	ug/kg	
127-18-4	Tetrachloroethene	ND	0.82	0.24	ug/kg	
108-88-3	Toluene	ND	0.41	0.21	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	1.0	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	1.0	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	0.82	0.20	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	0.82	0.23	ug/kg	
79-01-6	Trichloroethene	ND	0.41	0.31	ug/kg	
75-69-4	Trichlorofluoromethane [c]	ND	2.0	0.28	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	2.0	0.23	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	0.82	0.20	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	0.82	0.18	ug/kg	
108-05-4	Vinyl Acetate	ND	4.1	0.81	ug/kg	
75-01-4	Vinyl chloride	ND	0.82	0.20	ug/kg	
	m,p-Xylene	0.40	0.41	0.37	ug/kg	J
95-47-6	o-Xylene	ND	0.41	0.19	ug/kg	
1330-20-7	Xylene (total)	0.40	0.41	0.19	ug/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		72-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-105-B(20-24')		
Lab Sample ID:	JD32315-23	**Date Sampled:**	09/23/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8260D	**Percent Solids:**	91.9
Project:	Northfield Bridge, Route 12, VT		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	115%		75-131%
2037-26-5	Toluene-D8	103%		81-121%
460-00-4	4-Bromofluorobenzene	96%		60-141%

(a) Associated CCV outside of control limits high, sample was ND.
(b) This compound in blank spike is outside in house QC limits bias high.
(c) Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-105-B(20-24')		
Lab Sample ID:	JD32315-23	**Date Sampled:**	09/23/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8270E SW846 3546	**Percent Solids:**	91.9
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M175460.D	1	10/05/21 14:50	KLS	10/04/21 10:00	OP35710	EM7542
Run #2							

	Initial Weight	Final Volume
Run #1	30.2 g	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	36	12	ug/kg	
208-96-8	Acenaphthylene	ND	36	18	ug/kg	
120-12-7	Anthracene	ND	36	22	ug/kg	
56-55-3	Benzo(a)anthracene	ND	36	10	ug/kg	
50-32-8	Benzo(a)pyrene	ND	36	16	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	36	16	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	36	18	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	36	17	ug/kg	
218-01-9	Chrysene	ND	36	11	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	36	16	ug/kg	
206-44-0	Fluoranthene	ND	36	16	ug/kg	
86-73-7	Fluorene	ND	36	17	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	36	17	ug/kg	
91-20-3	Naphthalene	ND	36	10	ug/kg	
85-01-8	Phenanthrene	ND	36	12	ug/kg	
129-00-0	Pyrene	ND	36	12	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	53%		15-114%
321-60-8	2-Fluorobiphenyl	57%		22-104%
1718-51-0	Terphenyl-d14	62%		23-121%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-105-B(20-24')		
Lab Sample ID:	JD32315-23	**Date Sampled:**	09/23/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8082A SW846 3540C	**Percent Solids:**	91.9
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5G110736.D	1	10/05/21 18:37	CP	10/04/21 17:45	OP35567	G5G2806
Run #2							

	Initial Weight	Final Volume
Run #1	11.7 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	47	22	ug/kg	
11104-28-2	Aroclor 1221	ND	47	29	ug/kg	
11141-16-5	Aroclor 1232	ND	47	30	ug/kg	
53469-21-9	Aroclor 1242	ND	47	19	ug/kg	
12672-29-6	Aroclor 1248	ND	47	41	ug/kg	
11097-69-1	Aroclor 1254	ND	47	25	ug/kg	
11096-82-5	Aroclor 1260	ND	47	20	ug/kg	
11100-14-4	Aroclor 1268	ND	47	20	ug/kg	
37324-23-5	Aroclor 1262	ND	47	30	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	70%		24-152%
877-09-8	Tetrachloro-m-xylene	64%		24-152%
2051-24-3	Decachlorobiphenyl	63%		10-172%
2051-24-3	Decachlorobiphenyl	68%		10-172%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: B-105-B(20-24')
Lab Sample ID: JD32315-23
Matrix: SO - Soil
Project: Northfield Bridge, Route 12, VT

Date Sampled: 09/23/21
Date Received: 09/28/21
Percent Solids: 91.9

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	4.6	2.2	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Barium	< 22	22	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Cadmium	< 0.54	0.54	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Chromium	8.8	1.1	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Lead	4.3	2.2	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Mercury	< 0.016	0.016	mg/kg	1	10/04/21	10/04/21	LM	SW846 7471B [2]	SW846 7471B [4]
Selenium	< 2.2	2.2	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Silver	< 0.54	0.54	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]

(1) Instrument QC Batch: MA51210
(2) Instrument QC Batch: MA51220
(3) Prep QC Batch: MP28913
(4) Prep QC Batch: MP28967

RL = Reporting Limit

Report of Analysis

Client Sample ID:	B-105-C(0.5-24')		
Lab Sample ID:	JD32315-24	**Date Sampled:**	09/23/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8260D SW846 1311	**Percent Solids:**	93.2
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2V81433.D	5	10/07/21 07:34	JS	10/02/21 16:00	GP36195	V2V3357
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
71-43-2	Benzene	ND	D018	0.50	0.0025	0.0021	mg/l	
78-93-3	2-Butanone (MEK) [a]	ND	D035	200	0.10	0.034	mg/l	
56-23-5	Carbon tetrachloride	ND	D019	0.50	0.0050	0.0028	mg/l	
108-90-7	Chlorobenzene	ND	D021	100	0.0050	0.0028	mg/l	
67-66-3	Chloroform [b]	0.0117	D022	6.0	0.0050	0.0025	mg/l	B
106-46-7	1,4-Dichlorobenzene	ND	D027	7.5	0.0050	0.0025	mg/l	
107-06-2	1,2-Dichloroethane	ND	D028	0.50	0.0050	0.0030	mg/l	
75-35-4	1,1-Dichloroethene	ND	D029	0.70	0.0050	0.0030	mg/l	
127-18-4	Tetrachloroethene	ND	D039	0.70	0.0050	0.0045	mg/l	
79-01-6	Trichloroethene	ND	D040	0.50	0.0050	0.0026	mg/l	
75-01-4	Vinyl chloride	ND	D043	0.20	0.0050	0.0039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%		76-120%
17060-07-0	1,2-Dichloroethane-D4	110%		64-135%
2037-26-5	Toluene-D8	106%		76-117%
460-00-4	4-Bromofluorobenzene	105%		72-122%

(a) Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.
(b) Indicates analyte found in associated leachate blank.

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-105-C(0.5-24')		
Lab Sample ID:	JD32315-24	**Date Sampled:**	09/23/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8270E SW846 3510C	**Percent Solids:**	93.2
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z152232.D	1	10/13/21 08:22	CS	10/12/21 18:20	OP35940	EZ7572
Run #2							

	Initial Volume	Final Volume
Run #1	100 ml	1.0 ml
Run #2		

ABN TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	D023	200	0.020	0.0089	mg/l	
	3&4-Methylphenol	ND	D024	200	0.020	0.0088	mg/l	
87-86-5	Pentachlorophenol	ND	D037	100	0.10	0.014	mg/l	
95-95-4	2,4,5-Trichlorophenol	ND	D041	400	0.050	0.013	mg/l	
88-06-2	2,4,6-Trichlorophenol	ND	D042	2.0	0.050	0.0092	mg/l	
106-46-7	1,4-Dichlorobenzene	ND	D027	7.5	0.020	0.0017	mg/l	
121-14-2	2,4-Dinitrotoluene	ND	D030	0.13	0.020	0.0055	mg/l	
118-74-1	Hexachlorobenzene	ND	D032	0.13	0.020	0.0033	mg/l	
87-68-3	Hexachlorobutadiene	ND	D033	0.50	0.010	0.0049	mg/l	
67-72-1	Hexachloroethane	ND	D034	3.0	0.050	0.0039	mg/l	
98-95-3	Nitrobenzene	ND	D036	2.0	0.020	0.0064	mg/l	
110-86-1	Pyridine	ND	D038	5.0	0.020	0.0039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	29%		10-73%
4165-62-2	Phenol-d5	20%		10-64%
118-79-6	2,4,6-Tribromophenol	86%		31-130%
4165-60-0	Nitrobenzene-d5	75%		28-126%
321-60-8	2-Fluorobiphenyl	72%		26-114%
1718-51-0	Terphenyl-d14	88%		16-122%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-105-C(0.5-24')		
Lab Sample ID:	JD32315-24	**Date Sampled:**	09/23/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8015D	**Percent Solids:**	93.2
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	LM112331.D	1	10/02/21 00:33	DFT	n/a	n/a	GLM4714
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	9.2 g	10.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	12	6.2	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	74%		70-116%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-105-C(0.5-24')		
Lab Sample ID:	JD32315-24	**Date Sampled:**	09/23/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8151A SW846 3510C	**Percent Solids:**	93.2
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G133459.D	1	10/17/21 18:44	TL	10/12/21 14:20	OP35941	G3G4866
Run #2							

	Initial Volume	Final Volume
Run #1	30.0 ml	2.0 ml
Run #2		

Herbicide TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
94-75-7	2,4-D [a]	ND	D016	10	0.0033	0.00098	mg/l	
93-72-1	2,4,5-TP (Silvex)	ND	D017	1.0	0.0010	0.00020	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	88%		13-169%
19719-28-9	2,4-DCAA	56%		13-169%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit
MCL = Maximum Contamination Level (40 CFR 261 7/1/11)
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-105-C(0.5-24')		
Lab Sample ID:	JD32315-24	**Date Sampled:**	09/23/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8081B SW846 3510C	**Percent Solids:**	93.2
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4G9721372.D	1	10/13/21 01:01	RK	10/12/21 14:15	OP35939	G4G3596
Run #2							

	Initial Volume	Final Volume
Run #1	30.0 ml	2.0 ml
Run #2		

Pesticide TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
58-89-9	gamma-BHC (Lindane)	ND	D013	0.40	0.000067	0.000040	mg/l	
12789-03-6	Chlordane	ND	D020	0.030	0.0033	0.0014	mg/l	
72-20-8	Endrin	ND	D012	0.020	0.000067	0.000040	mg/l	
76-44-8	Heptachlor	ND	D031	0.0080	0.000067	0.000030	mg/l	
1024-57-3	Heptachlor epoxide	ND	D031	0.0080	0.000067	0.000040	mg/l	
72-43-5	Methoxychlor	ND	D014	10	0.00013	0.000045	mg/l	
8001-35-2	Toxaphene	ND	D015	0.50	0.0017	0.0011	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	79%		30-137%
877-09-8	Tetrachloro-m-xylene	84%		30-137%
2051-24-3	Decachlorobiphenyl	86%		10-137%
2051-24-3	Decachlorobiphenyl	85%		10-137%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-105-C(0.5-24')		
Lab Sample ID:	JD32315-24	**Date Sampled:**	09/23/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8082A SW846 3546	**Percent Solids:**	93.2
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX2471776.D	1	10/05/21 16:30	RK	10/04/21 09:00	OP35760	GXX7601
Run #2							

	Initial Weight	Final Volume
Run #1	15.6 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	34	16	ug/kg	
11104-28-2	Aroclor 1221	ND	34	21	ug/kg	
11141-16-5	Aroclor 1232	ND	34	22	ug/kg	
53469-21-9	Aroclor 1242	ND	34	14	ug/kg	
12672-29-6	Aroclor 1248	ND	34	31	ug/kg	
11097-69-1	Aroclor 1254	ND	34	19	ug/kg	
11096-82-5	Aroclor 1260	ND	34	15	ug/kg	
11100-14-4	Aroclor 1268	ND	34	15	ug/kg	
37324-23-5	Aroclor 1262	ND	34	22	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	37%		24-152%
877-09-8	Tetrachloro-m-xylene	36%		24-152%
2051-24-3	Decachlorobiphenyl	28%		10-172%
2051-24-3	Decachlorobiphenyl	141%		10-172%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-105-C(0.5-24')		
Lab Sample ID:	JD32315-24	**Date Sampled:**	09/23/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8015D SW846 3546	**Percent Solids:**	93.2
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	ZZ101087.D	1	10/05/21 11:16	TC	10/04/21 09:30	OP35757	GZZ3729
Run #2							

	Initial Weight	Final Volume
Run #1	15.0 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	9.56	7.2	2.4	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	57%		18-132%
438-22-2	5a-Androstane	55%		22-134%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: B-105-C(0.5-24')
Lab Sample ID: JD32315-24
Matrix: SO - Soil
Project: Northfield Bridge, Route 12, VT

Date Sampled: 09/23/21
Date Received: 09/28/21
Percent Solids: 93.2

Metals Analysis, TCLP Leachate SW846 1311

Analyte	Result	HW#	MCL	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	< 0.10	D004	5.0	0.10	mg/l	1	10/06/21	10/07/21	ND	SW846 6010D [2]	SW846 3010A [3]
Barium	< 0.20	D005	100	0.20	mg/l	1	10/06/21	10/07/21	ND	SW846 6010D [2]	SW846 3010A [3]
Cadmium	< 0.0040	D006	1.0	0.0040	mg/l	1	10/06/21	10/07/21	ND	SW846 6010D [2]	SW846 3010A [3]
Chromium	< 0.010	D007	5.0	0.010	mg/l	1	10/06/21	10/07/21	ND	SW846 6010D [2]	SW846 3010A [3]
Lead	< 0.10	D008	5.0	0.10	mg/l	1	10/06/21	10/07/21	ND	SW846 6010D [2]	SW846 3010A [3]
Mercury	< 0.00020	D009	0.20	0.00020	mg/l	1	10/07/21	10/07/21	LM	SW846 7470A [1]	SW846 7470A [4]
Selenium	< 0.10	D010	1.0	0.10	mg/l	1	10/06/21	10/07/21	ND	SW846 6010D [2]	SW846 3010A [3]
Silver	< 0.010	D011	5.0	0.010	mg/l	1	10/06/21	10/07/21	ND	SW846 6010D [2]	SW846 3010A [3]

(1) Instrument QC Batch: MA51237
(2) Instrument QC Batch: MA51242
(3) Prep QC Batch: MP29028
(4) Prep QC Batch: MP29059

RL = Reporting Limit
MCL = Maximum Contamination Level (40 CFR 261 7/1/11)

Report of Analysis

Client Sample ID:	B-105-C(0.5-24')		
Lab Sample ID:	JD32315-24	**Date Sampled:**	09/23/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
		Percent Solids:	93.2
Project:	Northfield Bridge, Route 12, VT		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Corrosivity as pH	7.68 NC		su	1	10/04/21 16:17	MM	SW846 9045D
Cyanide Reactivity	< 10	10	mg/kg	1	10/07/21 21:44	JJ	SW846 CHAP7/9012 B
Ignitability (Flashpoint)	> 200		Deg. F	1	10/05/21 16:30	MM	SW846 1010A/ASTM D93
Paint Filter Test [a]	< 0.50	0.50	ml/100g	1	10/04/21 14:20	MM	SW846 9095/9095B
Solids, Percent	93.2		%	1	10/04/21 16:54	BG	SM2540 G 18TH ED MOD
Sulfide Reactivity [b]	< 100	100	mg/kg	1	10/10/21 12:35	MP	SW846 CHAP7/9034

(a) No free liquids.
(b) Analyzed outside the 14 day holding time applied by laboratory SOP. No regulatory holding time published for this method.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	B-104-A		
Lab Sample ID:	JD32315-25	**Date Sampled:**	09/24/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8270E SW846 3546	**Percent Solids:**	94.3
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M175461.D	1	10/05/21 15:19	KLS	10/04/21 10:00	OP35710	EM7542
Run #2							

	Initial Weight	Final Volume
Run #1	31.5 g	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	34	12	ug/kg	
208-96-8	Acenaphthylene	ND	34	17	ug/kg	
120-12-7	Anthracene	ND	34	21	ug/kg	
56-55-3	Benzo(a)anthracene	ND	34	9.5	ug/kg	
50-32-8	Benzo(a)pyrene	ND	34	15	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	34	15	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	34	17	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	34	16	ug/kg	
218-01-9	Chrysene	ND	34	11	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	34	15	ug/kg	
206-44-0	Fluoranthene	ND	34	15	ug/kg	
86-73-7	Fluorene	ND	34	15	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	34	16	ug/kg	
91-20-3	Naphthalene	ND	34	9.5	ug/kg	
85-01-8	Phenanthrene	ND	34	11	ug/kg	
129-00-0	Pyrene	ND	34	11	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	23%		15-114%
321-60-8	2-Fluorobiphenyl	24%		22-104%
1718-51-0	Terphenyl-d14	26%		23-121%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: B-104-A
Lab Sample ID: JD32315-25
Matrix: SO - Soil
Project: Northfield Bridge, Route 12, VT

Date Sampled: 09/24/21
Date Received: 09/28/21
Percent Solids: 94.3

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	11.9	2.2	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Barium	< 22	22	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Cadmium	< 0.55	0.55	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Chromium	11.2	1.1	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Lead	7.2	2.2	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Mercury	< 0.027	0.027	mg/kg	1	10/04/21	10/04/21	LM	SW846 7471B [2]	SW846 7471B [4]
Selenium	< 2.2	2.2	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Silver	< 0.55	0.55	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]

(1) Instrument QC Batch: MA51210
(2) Instrument QC Batch: MA51220
(3) Prep QC Batch: MP28913
(4) Prep QC Batch: MP28967

RL = Reporting Limit

Report of Analysis

Client Sample ID:	B-104-B		
Lab Sample ID:	JD32315-26	**Date Sampled:**	09/24/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8260D	**Percent Solids:**	67.8
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1C181474.D	1	10/02/21 22:46	PS	n/a	n/a	V1C7900
Run #2							

	Initial Weight
Run #1	5.6 g
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	153	13	5.5	ug/kg	
71-43-2	Benzene	ND	0.66	0.60	ug/kg	
108-86-1	Bromobenzene	ND	6.6	0.73	ug/kg	
74-97-5	Bromochloromethane	ND	6.6	0.74	ug/kg	
75-27-4	Bromodichloromethane	ND	2.6	0.56	ug/kg	
75-25-2	Bromoform	ND	6.6	1.8	ug/kg	
74-83-9	Bromomethane	ND	6.6	1.0	ug/kg	
78-93-3	2-Butanone (MEK)	29.5	13	3.2	ug/kg	
104-51-8	n-Butylbenzene	ND	2.6	0.54	ug/kg	
135-98-8	sec-Butylbenzene	ND	2.6	0.56	ug/kg	
98-06-6	tert-Butylbenzene	ND	2.6	0.66	ug/kg	
75-15-0	Carbon disulfide	1.8	2.6	0.70	ug/kg	J
56-23-5	Carbon tetrachloride	ND	2.6	0.81	ug/kg	
108-90-7	Chlorobenzene	ND	2.6	0.60	ug/kg	
75-00-3	Chloroethane	ND	6.6	0.78	ug/kg	
67-66-3	Chloroform	ND	2.6	0.68	ug/kg	
74-87-3	Chloromethane	ND	6.6	2.6	ug/kg	
95-49-8	o-Chlorotoluene	ND	2.6	0.71	ug/kg	
106-43-4	p-Chlorotoluene	ND	2.6	0.58	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.6	0.91	ug/kg	
124-48-1	Dibromochloromethane [a]	ND	2.6	0.74	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.3	0.55	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.3	0.72	ug/kg	
541-73-1	1,3-Dichlorobenzene [b]	ND	1.3	0.65	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.3	0.65	ug/kg	
75-71-8	Dichlorodifluoromethane [a]	ND	6.6	0.96	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.3	0.65	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.3	0.62	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.3	0.86	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.3	1.1	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.3	0.80	ug/kg	
78-87-5	1,2-Dichloropropane	ND	2.6	0.62	ug/kg	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-104-B		
Lab Sample ID:	JD32315-26	**Date Sampled:**	09/24/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8260D	**Percent Solids:**	67.8
Project:	Northfield Bridge, Route 12, VT		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	2.6	0.69	ug/kg	
594-20-7	2,2-Dichloropropane	ND	2.6	0.56	ug/kg	
563-58-6	1,1-Dichloropropene	ND	2.6	0.61	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	2.6	0.63	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	2.6	0.60	ug/kg	
100-41-4	Ethylbenzene	ND	1.3	0.60	ug/kg	
87-68-3	Hexachlorobutadiene [a]	ND	6.6	0.86	ug/kg	
591-78-6	2-Hexanone	ND	6.6	2.8	ug/kg	
74-88-4	Iodomethane	ND	6.6	3.1	ug/kg	
98-82-8	Isopropylbenzene	ND	2.6	1.9	ug/kg	
99-87-6	p-Isopropyltoluene	ND	2.6	0.52	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.3	0.62	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	6.6	3.0	ug/kg	
74-95-3	Methylene bromide	ND	6.6	0.69	ug/kg	
75-09-2	Methylene chloride	ND	6.6	3.4	ug/kg	
91-20-3	Naphthalene	ND	6.6	3.3	ug/kg	
103-65-1	n-Propylbenzene	ND	2.6	0.62	ug/kg	
100-42-5	Styrene	ND	2.6	0.53	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	2.6	0.55	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.6	0.79	ug/kg	
127-18-4	Tetrachloroethene	ND	2.6	0.76	ug/kg	
108-88-3	Toluene	ND	1.3	0.69	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	6.6	3.3	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	6.6	3.3	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.6	0.64	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.6	0.73	ug/kg	
79-01-6	Trichloroethene	ND	1.3	1.0	ug/kg	
75-69-4	Trichlorofluoromethane [c]	ND	6.6	0.90	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	6.6	0.73	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	2.6	0.66	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	2.6	0.57	ug/kg	
108-05-4	Vinyl Acetate	ND	13	2.6	ug/kg	
75-01-4	Vinyl chloride	ND	2.6	0.63	ug/kg	
	m,p-Xylene	ND	1.3	1.2	ug/kg	
95-47-6	o-Xylene	ND	1.3	0.60	ug/kg	
1330-20-7	Xylene (total)	ND	1.3	0.60	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		72-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-104-B		
Lab Sample ID:	JD32315-26	**Date Sampled:**	09/24/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8260D	**Percent Solids:**	67.8
Project:	Northfield Bridge, Route 12, VT		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	115%		75-131%
2037-26-5	Toluene-D8	102%		81-121%
460-00-4	4-Bromofluorobenzene	100%		60-141%

(a) Associated CCV outside of control limits high, sample was ND.
(b) This compound in blank spike is outside in house QC limits bias high.
(c) Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-104-B		
Lab Sample ID:	JD32315-26	**Date Sampled:**	09/24/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8270E SW846 3546	**Percent Solids:**	67.8
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6P502015.D	1	10/10/21 21:50	CS	10/08/21 09:25	OP35857	E6P3522
Run #2							

	Initial Weight	Final Volume
Run #1	30.5 g	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	48	17	ug/kg	
208-96-8	Acenaphthylene	ND	48	25	ug/kg	
120-12-7	Anthracene	ND	48	30	ug/kg	
56-55-3	Benzo(a)anthracene	ND	48	14	ug/kg	
50-32-8	Benzo(a)pyrene	ND	48	22	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	48	21	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	48	24	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	48	23	ug/kg	
218-01-9	Chrysene	ND	48	15	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	48	21	ug/kg	
206-44-0	Fluoranthene	ND	48	22	ug/kg	
86-73-7	Fluorene	ND	48	22	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	48	23	ug/kg	
91-20-3	Naphthalene	54.3	48	14	ug/kg	
85-01-8	Phenanthrene	37.9	48	16	ug/kg	J
129-00-0	Pyrene	21.3	48	15	ug/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	56%		15-114%
321-60-8	2-Fluorobiphenyl	65%		22-104%
1718-51-0	Terphenyl-d14	80%		23-121%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-104-B		
Lab Sample ID:	JD32315-26	**Date Sampled:**	09/24/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8082A SW846 3540C	**Percent Solids:**	67.8
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX2472196.D	1	10/11/21 02:16	TL	10/08/21 17:50	OP35714	GXX7609
Run #2							

	Initial Weight	Final Volume
Run #1	11.9 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	62	29	ug/kg	
11104-28-2	Aroclor 1221	ND	62	38	ug/kg	
11141-16-5	Aroclor 1232	ND	62	40	ug/kg	
53469-21-9	Aroclor 1242	ND	62	25	ug/kg	
12672-29-6	Aroclor 1248	ND	62	55	ug/kg	
11097-69-1	Aroclor 1254	ND	62	33	ug/kg	
11096-82-5	Aroclor 1260	ND	62	26	ug/kg	
11100-14-4	Aroclor 1268	ND	62	26	ug/kg	
37324-23-5	Aroclor 1262	ND	62	41	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	46%		24-152%
877-09-8	Tetrachloro-m-xylene	50%		24-152%
2051-24-3	Decachlorobiphenyl	75%		10-172%
2051-24-3	Decachlorobiphenyl	74%		10-172%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-104-B		
Lab Sample ID:	JD32315-26	**Date Sampled:**	09/24/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
		Percent Solids:	67.8
Project:	Northfield Bridge, Route 12, VT		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	6.6	2.9	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Barium	< 29	29	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Cadmium	< 0.73	0.73	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Chromium	15.7	1.5	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Lead	9.3	2.9	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Mercury	< 0.046	0.046	mg/kg	1	10/04/21	10/04/21	LM	SW846 7471B [2]	SW846 7471B [4]
Selenium	< 2.9	2.9	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]
Silver	< 0.73	0.73	mg/kg	1	09/30/21	10/01/21	ND	SW846 6010D [1]	SW846 3050B [3]

(1) Instrument QC Batch: MA51210
(2) Instrument QC Batch: MA51220
(3) Prep QC Batch: MP28913
(4) Prep QC Batch: MP28967

RL = Reporting Limit

Report of Analysis

Client Sample ID:	B-104-C		
Lab Sample ID:	JD32315-27	**Date Sampled:**	09/24/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8260D SW846 1311	**Percent Solids:**	82.2
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2V81434.D	5	10/07/21 08:00	JS	10/02/21 16:00	GP36195	V2V3357
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
71-43-2	Benzene	ND	D018	0.50	0.0025	0.0021	mg/l	
78-93-3	2-Butanone (MEK) [a]	ND	D035	200	0.10	0.034	mg/l	
56-23-5	Carbon tetrachloride	ND	D019	0.50	0.0050	0.0028	mg/l	
108-90-7	Chlorobenzene	ND	D021	100	0.0050	0.0028	mg/l	
67-66-3	Chloroform [b]	0.0120	D022	6.0	0.0050	0.0025	mg/l	B
106-46-7	1,4-Dichlorobenzene	ND	D027	7.5	0.0050	0.0025	mg/l	
107-06-2	1,2-Dichloroethane	ND	D028	0.50	0.0050	0.0030	mg/l	
75-35-4	1,1-Dichloroethene	ND	D029	0.70	0.0050	0.0030	mg/l	
127-18-4	Tetrachloroethene	ND	D039	0.70	0.0050	0.0045	mg/l	
79-01-6	Trichloroethene	ND	D040	0.50	0.0050	0.0026	mg/l	
75-01-4	Vinyl chloride	ND	D043	0.20	0.0050	0.0039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		76-120%
17060-07-0	1,2-Dichloroethane-D4	112%		64-135%
2037-26-5	Toluene-D8	103%		76-117%
460-00-4	4-Bromofluorobenzene	106%		72-122%

(a) Associated CCV outside of control limits high, sample was ND. This compound in blank spike is outside in house QC limits bias high.
(b) Indicates analyte found in associated leachate blank.

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-104-C		
Lab Sample ID:	JD32315-27	**Date Sampled:**	09/24/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8270E SW846 3510C	**Percent Solids:**	82.2
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z152233.D	1	10/13/21 08:47	CS	10/12/21 18:20	OP35940	EZ7572
Run #2							

	Initial Volume	Final Volume
Run #1	100 ml	1.0 ml
Run #2		

ABN TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	D023	200	0.020	0.0089	mg/l	
	3&4-Methylphenol	ND	D024	200	0.020	0.0088	mg/l	
87-86-5	Pentachlorophenol	ND	D037	100	0.10	0.014	mg/l	
95-95-4	2,4,5-Trichlorophenol	ND	D041	400	0.050	0.013	mg/l	
88-06-2	2,4,6-Trichlorophenol	ND	D042	2.0	0.050	0.0092	mg/l	
106-46-7	1,4-Dichlorobenzene	ND	D027	7.5	0.020	0.0017	mg/l	
121-14-2	2,4-Dinitrotoluene	ND	D030	0.13	0.020	0.0055	mg/l	
118-74-1	Hexachlorobenzene	ND	D032	0.13	0.020	0.0033	mg/l	
87-68-3	Hexachlorobutadiene	ND	D033	0.50	0.010	0.0049	mg/l	
67-72-1	Hexachloroethane	ND	D034	3.0	0.050	0.0039	mg/l	
98-95-3	Nitrobenzene	ND	D036	2.0	0.020	0.0064	mg/l	
110-86-1	Pyridine	ND	D038	5.0	0.020	0.0039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	16%		10-73%
4165-62-2	Phenol-d5	14%		10-64%
118-79-6	2,4,6-Tribromophenol	26% [a]		31-130%
4165-60-0	Nitrobenzene-d5	82%		28-126%
321-60-8	2-Fluorobiphenyl	75%		26-114%
1718-51-0	Terphenyl-d14	70%		16-122%

(a) Outside of in house control limits.

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-104-C		
Lab Sample ID:	JD32315-27	**Date Sampled:**	09/24/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8015D	**Percent Solids:**	82.2
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	LM112332.D	1	10/02/21 00:58	DFT	n/a	n/a	GLM4714
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	11.7 g	10.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	13	6.3	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	75%		70-116%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-104-C		
Lab Sample ID:	JD32315-27	**Date Sampled:**	09/24/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8151A SW846 3510C	**Percent Solids:**	82.2
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G133460.D	1	10/17/21 19:11	TL	10/12/21 14:20	OP35941	G3G4866
Run #2							

	Initial Volume	Final Volume
Run #1	30.0 ml	2.0 ml
Run #2		

Herbicide TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
94-75-7	2,4-D [a]	ND	D016	10	0.0033	0.00098	mg/l	
93-72-1	2,4,5-TP (Silvex)	ND	D017	1.0	0.0010	0.00020	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	100%		13-169%
19719-28-9	2,4-DCAA	59%		13-169%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-104-C		
Lab Sample ID:	JD32315-27	**Date Sampled:**	09/24/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8081B SW846 3510C	**Percent Solids:**	82.2
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4G9721373.D	1	10/13/21 01:16	RK	10/12/21 14:15	OP35939	G4G3596
Run #2							

	Initial Volume	Final Volume
Run #1	30.0 ml	2.0 ml
Run #2		

Pesticide TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
58-89-9	gamma-BHC (Lindane)	ND	D013	0.40	0.000067	0.000040	mg/l	
12789-03-6	Chlordane	ND	D020	0.030	0.0033	0.0014	mg/l	
72-20-8	Endrin	ND	D012	0.020	0.000067	0.000040	mg/l	
76-44-8	Heptachlor	ND	D031	0.0080	0.000067	0.000030	mg/l	
1024-57-3	Heptachlor epoxide	ND	D031	0.0080	0.000067	0.000040	mg/l	
72-43-5	Methoxychlor	ND	D014	10	0.00013	0.000045	mg/l	
8001-35-2	Toxaphene	ND	D015	0.50	0.0017	0.0011	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	73%		30-137%
877-09-8	Tetrachloro-m-xylene	80%		30-137%
2051-24-3	Decachlorobiphenyl	84%		10-137%
2051-24-3	Decachlorobiphenyl	90%		10-137%

ND = Not detected MDL = Method Detection Limit
MCL = Maximum Contamination Level (40 CFR 261 7/1/11)
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-104-C		
Lab Sample ID:	JD32315-27	**Date Sampled:**	09/24/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8082A SW846 3546	**Percent Solids:**	82.2
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	XX2471803.D	1	10/06/21 01:31	CP	10/04/21 09:00	OP35760	GXX7602
Run #2							

	Initial Weight	Final Volume
Run #1	15.3 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	40	19	ug/kg	
11104-28-2	Aroclor 1221	ND	40	25	ug/kg	
11141-16-5	Aroclor 1232	ND	40	25	ug/kg	
53469-21-9	Aroclor 1242	ND	40	16	ug/kg	
12672-29-6	Aroclor 1248	ND	40	35	ug/kg	
11097-69-1	Aroclor 1254	ND	40	21	ug/kg	
11096-82-5	Aroclor 1260	ND	40	17	ug/kg	
11100-14-4	Aroclor 1268	ND	40	17	ug/kg	
37324-23-5	Aroclor 1262	ND	40	26	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	65%		24-152%
877-09-8	Tetrachloro-m-xylene	67%		24-152%
2051-24-3	Decachlorobiphenyl	53%		10-172%
2051-24-3	Decachlorobiphenyl	68%		10-172%

(a) Had TBA cleanup.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-104-C		
Lab Sample ID:	JD32315-27	**Date Sampled:**	09/24/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
Method:	SW846 8015D SW846 3546	**Percent Solids:**	82.2
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	ZZ101088.D	1	10/05/21 11:50	TC	10/04/21 09:30	OP35757	GZZ3729
Run #2							

	Initial Weight	Final Volume
Run #1	15.8 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	35.5	7.7	2.6	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	57%		18-132%
438-22-2	5a-Androstane	55%		22-134%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: B-104-C
Lab Sample ID: JD32315-27
Matrix: SO - Soil
Project: Northfield Bridge, Route 12, VT

Date Sampled: 09/24/21
Date Received: 09/28/21
Percent Solids: 82.2

Metals Analysis, TCLP Leachate SW846 1311

Analyte	Result	HW#	MCL	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	< 0.10	D004	5.0	0.10	mg/l	1	10/06/21	10/07/21	ND	SW846 6010D [2]	SW846 3010A [3]
Barium	< 0.20	D005	100	0.20	mg/l	1	10/06/21	10/07/21	ND	SW846 6010D [2]	SW846 3010A [3]
Cadmium	< 0.0040	D006	1.0	0.0040	mg/l	1	10/06/21	10/07/21	ND	SW846 6010D [2]	SW846 3010A [3]
Chromium	< 0.010	D007	5.0	0.010	mg/l	1	10/06/21	10/07/21	ND	SW846 6010D [2]	SW846 3010A [3]
Lead	< 0.10	D008	5.0	0.10	mg/l	1	10/06/21	10/07/21	ND	SW846 6010D [2]	SW846 3010A [3]
Mercury	< 0.00020	D009	0.20	0.00020	mg/l	1	10/07/21	10/07/21	LM	SW846 7470A [1]	SW846 7470A [4]
Selenium	< 0.10	D010	1.0	0.10	mg/l	1	10/06/21	10/07/21	ND	SW846 6010D [2]	SW846 3010A [3]
Silver	< 0.010	D011	5.0	0.010	mg/l	1	10/06/21	10/07/21	ND	SW846 6010D [2]	SW846 3010A [3]

(1) Instrument QC Batch: MA51237
(2) Instrument QC Batch: MA51242
(3) Prep QC Batch: MP29028
(4) Prep QC Batch: MP29059

RL = Reporting Limit
MCL = Maximum Contamination Level (40 CFR 261 7/1/11)

Report of Analysis

Client Sample ID:	B-104-C		
Lab Sample ID:	JD32315-27	**Date Sampled:**	09/24/21
Matrix:	SO - Soil	**Date Received:**	09/28/21
		Percent Solids:	82.2
Project:	Northfield Bridge, Route 12, VT		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Corrosivity as pH	6.89 NC		su	1	10/04/21 16:20	MM	SW846 9045D
Cyanide Reactivity	< 12	12	mg/kg	1	10/07/21 21:45	JJ	SW846 CHAP7/9012 B
Ignitability (Flashpoint)	> 200		Deg. F	1	10/05/21 16:30	MM	SW846 1010A/ASTM D93
Paint Filter Test [a]	< 0.50	0.50	ml/100g	1	10/04/21 14:20	MM	SW846 9095/9095B
Solids, Percent	82.2		%	1	10/04/21 16:54	BG	SM2540 G 18TH ED MOD
Sulfide Reactivity [b]	< 120	120	mg/kg	1	10/10/21 12:35	MP	SW846 CHAP7/9034

(a) No free liquids.
(b) Analyzed outside the 14 day holding time applied by laboratory SOP. No regulatory holding time published for this method.

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Certification Exceptions
- Chain of Custody

Parameter Certification Exceptions

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

The following parameters included in this report are exceptions to NELAC certification.
The certification status of each is indicated below.

Parameter	CAS#	Method	Mat	Certification Status
Cyanide Reactivity		**SW846 CHAP7/9012 B**	SO	SGS is not certified for this parameter.[a]
Sulfide Reactivity		**SW846 CHAP7/9034**	SO	SGS is not certified for this parameter.[a]

(a) Reactivity analyzed following SW846 Chapter 7 is no longer recognized by regulatory agencies. Use of results should be verified through the program to which the data is being submitted.

Certification exceptions shown are based on the New Jersey DEP certifications. Applicability in other states may vary. Please contact your laboratory representative if additional information is required for a specific regulatory program.

SO
SLL
SME

CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

EHSA-QAC-0023-04-FORM-Standard COC

9251 0902 9862

Page 1 of 3

FED-EX Tracking #

Bottle Order Control # PREM-212-09821-67

SGS Quote #

SGS Job # JD32315

Client / Reporting Information

Company Name: Atlas
Street Address: 51 Knight Lane
City: Williston State: VT Zip: 05495
Project Contact: Erik.Urch@eneatlas.com E-mail
Phone #: 802-862-4980
Sampler(s) Name(s): Jo Palmer Phone #
Client Purchase Order #

Project Information

Project Name: Northfield Bridge
Street: Rt 12
City: VT State
Project #: 280BS02090
Project Manager: E. Urch

Billing Information (if different from Report to)

Company Name
Street Address
City State Zip
Attention:

Requested Analysis

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Time	Sampled by	Grab (G) Comp (C)	Source Chlorinated (Y/N)	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO_3	H_2SO_4	NONE	DI Water	MEOH	ENCORE	None	8270 PAH	ACRA 8	8260 MASTD	8082 PCB Soxhlet	TCLP Full	RCRA Class	PNTFIL	8015 DRO	8015 GRO	8082 PCB 11	LAB USE ONLY
1	B-106-A		9/20	0950	JP	G	N	So	1					1					X	X									37
2	B-106-B			1115		G			6					2	2	1		1	X	X	X	X							165
3	B-106-C			1130		C			4							1		3					X	X	X	X	X	X	HOLD
4	H-104-A			1420		G			1					1					X	X									1425
5	H-104-B			1520		G			6					2	2	1		1	X	X	X	X							4106
6	H-104-C1			1540		C			4							1		3					X	X	X	X	X	X	HOLD
7	H-104-C2			1542		C			4							1		3					X	X	X	X	X	X	HOLD
8	DUP-A			0001		G			1					1					X	X									EDIT 3
9	DUP-B			0002		G			6					2	2	1		1	X	X	X	X							
10	H-101-A		9/21	0915		G			1					1					X	X									
11	H-101-B			1010		G			6					2	2	1		1	X	X	X	X							
12	H-101-C			1030		C			4							1		3					X	X	X	X	X	X	HOLD

Turn Around Time (Business Days)

- [ ] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [ ] Other

All data available via Lablink

Approved By (SGS PM): / Date: normal 9/28

Initial Assessment 38. SS

Label Verification

* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [x] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] MA MCP Criteria_____
- [ ] CT RCP Criteria_____
- [ ] State Forms
- [ ] EDD Format _____
- [ ] DOD-QSM5

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Hold all "C" Samples (Sample set # 3 on bottle config. sheet)
DI vocs frozen w/in 12hrs of sample collection

http://www.sgs.com/en/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by:	Date / Time:	Received By:	Relinquished By:	Date / Time:	Received By:
1	[signature]	9/24/21 1300	[signature]	2 [signature]	9/24/21 1630	2 Fedex
3	[signature]	9/27/21 1400	3 Fedex	4 Fedex	9/28/21 10:00	4 [signature]
5			5	Custody Seal #	Intact / Not intact / Absent	Therm ID: On Ice / See Sample Receipt Summary

Cooler Temp. °C: 3.4, 2.2

IR's

CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

EHSA-QAC-0023-04-FORM-Standard COC

FED-EX Tracking #: | Bottle Order Control #:
SGS Quote #: | SGS Job #: JD32315

Client / Reporting Information

Company Name: Atlas
Street Address: 51 Knight Lane
City: Williston State: VT Zip: 05495
Project Contact: Eric.Urch@oneatlas.com E-mail:
Phone #: 802-862-1980
Sampler(s) Name: JD Palmer Phone #:

Project Information

Project Name: Northfield Bridge
Street: Rt 12
City: — State: VT
Project #: 280BS02090
Client Purchase Order #:
Project Manager: E. Urch

Billing Information (if different from Report to)

Company Name:
Street Address:
City: State: Zip:
Attention:

Requested Analysis

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB - Field Blank; EB-Equipment Blank; RB - Rinse Blank; TB - Trip Blank

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Time	Sampled by	Grab (G) Comp (C)	Source Chlorinated (Y/N)	Matrix	# of bottles	Preserved: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	None	8270 PAH 1:2:4 (40mL)	RCRA 8	8260 MASTD	8082 PCB 5x10g	TCLP Full	RCRA Class	PNTFIL	8015 DRO	8015 GRO	8082 PCB11	LAB USE ONLY
13	B-103-A		9/21	1110	JP	G	N	So	1						1				X	X									
14	B-103-B			1320		G			6						2	2	1	1	X	X	X	X							
15	B-103-C			1340		C			4								1	3					X	X	X	X	X	X	HOLD
16	H-102-A		9/22	0930		G			1						1				X	X									
17	H-102-B			1120		G			6						2	2	1	1	X	X	X	X							
18	H-102-C			1140		C			4								1	3					X	X	X	X	X	X	HOLD
19	B-102-A			1310		G			1						1				X	X									
20	B-102-B			1330		G			6						2	2	1	1	X	X	X	X							
21	B-102-B					C			4								1	3					X	X	X	X	X	X	HOLD
22	B-105-A (0.5-2')		9/23	1100	EU	G			1						1				X	X									
23	B-105-B (20-24')		9/23	1330	EU	G			6						2	2	1	1	X	X	X	X							
24	B-105-C (0.5-24')		9/23	1400	EU	C			4								1	3					X	X	X	X	X	X	HOLD

Turn Around Time (Business Days)

Approved By (SGS PM): / Date: Normal Atlas

- [ ] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [ ] Other

All data available via Lablink

* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [x] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] MA MCP Criteria
- [ ] CT RCP Criteria
- [ ] State Forms
- [ ] EDD Format
- [ ] DOD-QSM5

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Hold all "C" samples

DI vocs frozen w/in 12hrs of sample collection

http://www.sgs.com/en/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by:	Date / Time:	Received By:
1		9/24/21 1300	
2			
3		9/27/21 1400	
4	Fedex	9/24/21 1636	
5			

Custody Seal # ☐ Intact ☐ Not Intact ☐ Absent

Therm ID: On Ice ☐ Cooler Temp. °C See Sample Receipt Summary ☐

5.2 5

CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

EHSA-QAC-0023-04-FORM-Standard COC

FED-EX Tracking #: | Bottle Order Control #:
SGS Quote #: | SGS Job #: JD32315

Client / Reporting Information

Company Name: Atlas
Street Address: 51 Knight Lane
City: Williston State: VT Zip: 05495
Project Contact: Erik.Urch@oneatlas.com E-mail:
Phone #: 802-862-1980
Sampler(s) Name(s): Jo Palmer Phone #:

Project Information

Project Name: Northfield Bridge
Street: Rt 12
City: State: VT
Project #: 22BS02090
Client Purchase Order #:
Project Manager: E. Urch

Billing Information (If different from Report to)

Company Name:
Street Address:
City: State: Zip:
Attention:

Requested Analysis

8270 PAH	RCRA 8	8260 MASTD	8082 PCB soil/wet	TCLP Full	RCRA Class	PNTFIL	8015 DRO	8015 GRO	8082 PCB 1L

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB - Field Blank; EB-Equipment Blank; RB - Rinse Blank; TB - Trip Blank

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Grab (G) Comp (C)	Source Chlorinated (Y/N)	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	8oz	4oz jar/60mL	pH Check (Lab Use Only)	LAB USE ONLY
25	B-104-A		0840	9/24	JP	G	N	SO	1					1					1	X X	
26	B-104-B		0950			G			6					2	2	1		1	1	X X X X	
27	B-104-C		1000			C			4							1		3		X X X X X X	HOLD

Turn Around Time (Business Days)

- [ ] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [ ] Other

Approved By (SGS PM) / Date: normal Atlas

All data available via Labiink * Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [x] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] MA MCP Criteria_____
- [ ] CT RCP Criteria_____
- [ ] State Forms
- [ ] EDD Format _____
- [ ] DOD-QSM5

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Hold all "C" samples

DI vials frozen w/in 12hrs of sample collection

http://www.sgs.com/en/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by: 1	Date / Time: 9/24/21 1300	Received By: 1 FedEx	Relinquished By: 2 FedEx	Date / Time: 9/24/21 1630	Received By: 2
Relinquished by: 3	Date / Time: 9/24/21 1400	Received By: 3 FedEx	Relinquished By: 4	Date / Time: 9/24/21 1800	Received By: 4
Relinquished by: 5	Date / Time:	Received By: 5	Custody Seal #	Intact / Not intact / Absent	Therm ID: On Ice Cooler Temp. °C See Sample Receipt Summary

SGS Sample Receipt Summary

Job Number: JD32315 **Client:** ATLAS TECHNICAL CONSULTANTS, LLC **Project:** NORTHFIELD BRIDGE PROJECT, VT

Date / Time Received: 9/28/2021 10:00:00 AM **Delivery Method:** **Airbill #'s:**

Cooler Temps (Raw Measured) °C: Cooler 1: (3.4); Cooler 2: (3.2);

Cooler Temps (Corrected) °C: Cooler 1: (2.5); Cooler 2: (2.3);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	2		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☐	☑
2. Trip Blank listed on COC:	☐		☐	☑
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☐		☐	☑

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Test Strip Lot #s: pH 1-12: 231619 pH 12+: 203117A Other: (Specify)

Comments: -21, Confirm ID, same as -20. Also confirm collection time, not noted on COC

SM089-02 Rev. Date 12/1/16

Responded to by: Michelle

Response Date: 9/30

-21, ID is B102-C @ 1420 per Johanna Palmer

Job Change Order: JD32315

Requested Date:	10/1/2021	**Received Date:**	9/28/2021
Account Name:	Atlas Technical Consultants, LLC	**Due Date:**	10/1/2021
Project Description:	Northfield Bridge Project, VT	**Deliverable:**	COMMBN
C/O Initiated By:	MARIE.MEID **PM:** KR	**TAT (Days):**	3

==========

Sample #: JD32315-3, 6, 7, 12, 15, 18, 21, 24, 27 **Change:**

Dept: All samples on HOLD have to be run, TCLPFULL, DRO, GRO, PNFIL, RCRACLAS, PCB's and DRO

TAT: 3

==========

Above Changes Per: Erik Urch **Date/Time:** 10/1/2021

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

Page 1 of 1

JD32315: Chain of Custody
Page 6 of 6

MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1C7900-MB	1C181457.D	1	10/02/21	PS	n/a	n/a	V1C7900

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD32315-2, JD32315-5, JD32315-9, JD32315-11, JD32315-14, JD32315-17, JD32315-20, JD32315-23, JD32315-26

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	4.1	ug/kg	
71-43-2	Benzene	ND	0.50	0.46	ug/kg	
108-86-1	Bromobenzene	ND	5.0	0.55	ug/kg	
74-97-5	Bromochloromethane	ND	5.0	0.56	ug/kg	
75-27-4	Bromodichloromethane	ND	2.0	0.43	ug/kg	
75-25-2	Bromoform	ND	5.0	1.4	ug/kg	
74-83-9	Bromomethane	ND	5.0	0.76	ug/kg	
78-93-3	2-Butanone (MEK)	ND	10	2.4	ug/kg	
104-51-8	n-Butylbenzene	ND	2.0	0.41	ug/kg	
135-98-8	sec-Butylbenzene	ND	2.0	0.43	ug/kg	
98-06-6	tert-Butylbenzene	ND	2.0	0.50	ug/kg	
75-15-0	Carbon disulfide	ND	2.0	0.54	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.0	0.62	ug/kg	
108-90-7	Chlorobenzene	ND	2.0	0.46	ug/kg	
75-00-3	Chloroethane	ND	5.0	0.59	ug/kg	
67-66-3	Chloroform	ND	2.0	0.52	ug/kg	
74-87-3	Chloromethane	ND	5.0	2.0	ug/kg	
95-49-8	o-Chlorotoluene	ND	2.0	0.54	ug/kg	
106-43-4	p-Chlorotoluene	ND	2.0	0.44	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.69	ug/kg	
124-48-1	Dibromochloromethane	ND	2.0	0.56	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.0	0.42	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.55	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.50	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.49	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	5.0	0.73	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.0	0.50	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.0	0.47	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.0	0.66	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.84	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.61	ug/kg	
78-87-5	1,2-Dichloropropane	ND	2.0	0.47	ug/kg	
142-28-9	1,3-Dichloropropane	ND	2.0	0.52	ug/kg	
594-20-7	2,2-Dichloropropane	ND	2.0	0.43	ug/kg	
563-58-6	1,1-Dichloropropene	ND	2.0	0.47	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.48	ug/kg	

Method Blank Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1C7900-MB	1C181457.D	1	10/02/21	PS	n/a	n/a	V1C7900

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD32315-2, JD32315-5, JD32315-9, JD32315-11, JD32315-14, JD32315-17, JD32315-20, JD32315-23, JD32315-26

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.46	ug/kg	
100-41-4	Ethylbenzene	ND	1.0	0.45	ug/kg	
87-68-3	Hexachlorobutadiene	ND	5.0	0.66	ug/kg	
591-78-6	2-Hexanone	ND	5.0	2.1	ug/kg	
74-88-4	Iodomethane	ND	5.0	2.3	ug/kg	
98-82-8	Isopropylbenzene	ND	2.0	1.4	ug/kg	
99-87-6	p-Isopropyltoluene	ND	2.0	0.40	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.47	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	2.3	ug/kg	
74-95-3	Methylene bromide	ND	5.0	0.53	ug/kg	
75-09-2	Methylene chloride	ND	5.0	2.6	ug/kg	
91-20-3	Naphthalene	ND	5.0	2.5	ug/kg	
103-65-1	n-Propylbenzene	ND	2.0	0.47	ug/kg	
100-42-5	Styrene	ND	2.0	0.40	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	2.0	0.42	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.60	ug/kg	
127-18-4	Tetrachloroethene	ND	2.0	0.58	ug/kg	
108-88-3	Toluene	ND	1.0	0.53	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	2.5	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	2.5	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.48	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.55	ug/kg	
79-01-6	Trichloroethene	ND	1.0	0.76	ug/kg	
75-69-4	Trichlorofluoromethane	ND	5.0	0.68	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.56	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	0.50	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	0.43	ug/kg	
108-05-4	Vinyl Acetate	ND	10	2.0	ug/kg	
75-01-4	Vinyl chloride	ND	2.0	0.48	ug/kg	
	m,p-Xylene	ND	1.0	0.90	ug/kg	
95-47-6	o-Xylene	ND	1.0	0.46	ug/kg	
1330-20-7	Xylene (total)	ND	1.0	0.46	ug/kg	

Method Blank Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1C7900-MB	1C181457.D	1	10/02/21	PS	n/a	n/a	V1C7900

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD32315-2, JD32315-5, JD32315-9, JD32315-11, JD32315-14, JD32315-17, JD32315-20, JD32315-23, JD32315-26

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	97%	72-130%
17060-07-0	1,2-Dichloroethane-D4	105%	75-131%
2037-26-5	Toluene-D8	103%	81-121%
460-00-4	4-Bromofluorobenzene	96%	60-141%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

Method Blank Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2V3357-MB	2V81416.D	1	10/07/21	JS	n/a	n/a	V2V3357

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18, JD32315-21, JD32315-24, JD32315-27

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.43	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	94%	76-120%
17060-07-0	1,2-Dichloroethane-D4	109%	64-135%
2037-26-5	Toluene-D8	103%	76-117%
460-00-4	4-Bromofluorobenzene	103%	72-122%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

Method Blank Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1A9274-MB	1A214848.D	1	10/05/21	ED	n/a	n/a	V1A9274

The QC reported here applies to the following samples: **Method:** SW846 8260D

GP36195-LS8

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.43	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	97%	76-120%
17060-07-0	1,2-Dichloroethane-D4	98%	64-135%
2037-26-5	Toluene-D8	103%	76-117%
460-00-4	4-Bromofluorobenzene	99%	72-122%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

Leachate Blank Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GP36195-LB9	2V81417.D	5	10/07/21	JS	10/02/21	GP36195	V2V3357

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18, JD32315-21, JD32315-24, JD32315-27

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	2.5	2.1	ug/l	
78-93-3	2-Butanone (MEK)	ND	50	34	ug/l	
56-23-5	Carbon tetrachloride	ND	5.0	2.8	ug/l	
108-90-7	Chlorobenzene	ND	5.0	2.8	ug/l	
67-66-3	Chloroform	11.8	5.0	2.5	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	5.0	2.5	ug/l	
107-06-2	1,2-Dichloroethane	ND	5.0	3.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	5.0	3.0	ug/l	
127-18-4	Tetrachloroethene	ND	5.0	4.5	ug/l	
79-01-6	Trichloroethene	ND	5.0	2.6	ug/l	
75-01-4	Vinyl chloride	ND	5.0	3.9	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	95%	76-120%
17060-07-0	1,2-Dichloroethane-D4	111%	64-135%
2037-26-5	Toluene-D8	102%	76-117%
460-00-4	4-Bromofluorobenzene	103%	72-122%

Leachate Blank Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GP36195-LB8	1A214852.D	5	10/05/21	ED	10/01/21	GP36195	V1A9274

The QC reported here applies to the following samples: **Method:** SW846 8260D

GP36195-LS8

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	2.5	2.1	ug/l	
78-93-3	2-Butanone (MEK)	ND	50	34	ug/l	
56-23-5	Carbon tetrachloride	ND	5.0	2.8	ug/l	
108-90-7	Chlorobenzene	ND	5.0	2.8	ug/l	
67-66-3	Chloroform	12.5	5.0	2.5	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	5.0	2.5	ug/l	
107-06-2	1,2-Dichloroethane	ND	5.0	3.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	5.0	3.0	ug/l	
127-18-4	Tetrachloroethene	ND	5.0	4.5	ug/l	
79-01-6	Trichloroethene	ND	5.0	2.6	ug/l	
75-01-4	Vinyl chloride	ND	5.0	3.9	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	96%	76-120%
17060-07-0	1,2-Dichloroethane-D4	101%	64-135%
2037-26-5	Toluene-D8	102%	76-117%
460-00-4	4-Bromofluorobenzene	103%	72-122%

Blank Spike Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1C7900-BS	1C181455.D	1	10/02/21	PS	n/a	n/a	V1C7900

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD32315-2, JD32315-5, JD32315-9, JD32315-11, JD32315-14, JD32315-17, JD32315-20, JD32315-23, JD32315-26

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
67-64-1	Acetone	200	220	110	67-130
71-43-2	Benzene	50	52.8	106	80-115
108-86-1	Bromobenzene	50	55.6	111	80-116
74-97-5	Bromochloromethane	50	54.3	109	82-121
75-27-4	Bromodichloromethane	50	57.5	115	83-121
75-25-2	Bromoform	50	61.5	123	80-141
74-83-9	Bromomethane	50	57.3	115	56-146
78-93-3	2-Butanone (MEK)	200	207	104	72-134
104-51-8	n-Butylbenzene	50	52.6	105	73-124
135-98-8	sec-Butylbenzene	50	53.3	107	73-121
98-06-6	tert-Butylbenzene	50	53.1	106	74-122
75-15-0	Carbon disulfide	50	52.2	104	65-125
56-23-5	Carbon tetrachloride	50	60.1	120	75-126
108-90-7	Chlorobenzene	50	56.6	113	81-115
75-00-3	Chloroethane	50	57.6	115	72-133
67-66-3	Chloroform	50	52.2	104	75-114
74-87-3	Chloromethane	50	54.7	109	57-135
95-49-8	o-Chlorotoluene	50	54.2	108	78-117
106-43-4	p-Chlorotoluene	50	50.8	102	77-114
96-12-8	1,2-Dibromo-3-chloropropane	50	60.8	122	72-129
124-48-1	Dibromochloromethane	50	61.4	123	82-133
106-93-4	1,2-Dibromoethane	50	60.6	121	81-126
95-50-1	1,2-Dichlorobenzene	50	55.9	112	83-114
541-73-1	1,3-Dichlorobenzene	50	56.5	113* [a]	81-112
106-46-7	1,4-Dichlorobenzene	50	54.5	109	79-113
75-71-8	Dichlorodifluoromethane	50	67.8	136	50-150
75-34-3	1,1-Dichloroethane	50	52.4	105	75-120
107-06-2	1,2-Dichloroethane	50	55.2	110	72-117
75-35-4	1,1-Dichloroethene	50	50.4	101	69-124
156-59-2	cis-1,2-Dichloroethene	50	50.6	101	73-119
156-60-5	trans-1,2-Dichloroethene	50	51.0	102	70-123
78-87-5	1,2-Dichloropropane	50	51.7	103	80-118
142-28-9	1,3-Dichloropropane	50	54.6	109	81-116
594-20-7	2,2-Dichloropropane	50	56.3	113	74-126
563-58-6	1,1-Dichloropropene	50	55.6	111	75-119
10061-01-5	cis-1,3-Dichloropropene	50	54.6	109	83-121

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1C7900-BS	1C181455.D	1	10/02/21	PS	n/a	n/a	V1C7900

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD32315-2, JD32315-5, JD32315-9, JD32315-11, JD32315-14, JD32315-17, JD32315-20, JD32315-23, JD32315-26

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
10061-02-6	trans-1,3-Dichloropropene	50	62.2	124	83-125
100-41-4	Ethylbenzene	50	53.8	108	80-114
87-68-3	Hexachlorobutadiene	50	61.3	123	71-125
591-78-6	2-Hexanone	200	209	105	77-126
74-88-4	Iodomethane	50	54.8	110	25-189
98-82-8	Isopropylbenzene	50	55.4	111	76-121
99-87-6	p-Isopropyltoluene	50	55.6	111	74-122
1634-04-4	Methyl Tert Butyl Ether	50	56.3	113	76-127
108-10-1	4-Methyl-2-pentanone(MIBK)	200	196	98	75-129
74-95-3	Methylene bromide	50	55.8	112	83-119
75-09-2	Methylene chloride	50	49.0	98	71-120
91-20-3	Naphthalene	50	55.8	112	73-131
103-65-1	n-Propylbenzene	50	51.1	102	74-116
100-42-5	Styrene	50	54.7	109	83-118
630-20-6	1,1,1,2-Tetrachloroethane	50	58.8	118	82-128
79-34-5	1,1,2,2-Tetrachloroethane	50	52.2	104	76-120
127-18-4	Tetrachloroethene	50	60.7	121	75-125
108-88-3	Toluene	50	54.6	109	79-115
87-61-6	1,2,3-Trichlorobenzene	50	58.8	118	75-131
120-82-1	1,2,4-Trichlorobenzene	50	58.1	116	76-130
71-55-6	1,1,1-Trichloroethane	50	58.5	117	77-122
79-00-5	1,1,2-Trichloroethane	50	56.9	114	82-119
79-01-6	Trichloroethene	50	57.1	114	82-119
75-69-4	Trichlorofluoromethane	50	68.2	136* [a]	70-134
96-18-4	1,2,3-Trichloropropane	50	57.3	115	80-118
95-63-6	1,2,4-Trimethylbenzene	50	55.8	112	77-116
108-67-8	1,3,5-Trimethylbenzene	50	55.0	110	76-118
108-05-4	Vinyl Acetate	50	59.6	119	75-124
75-01-4	Vinyl chloride	50	59.4	119	60-139
	m,p-Xylene	100	109	109	81-115
95-47-6	o-Xylene	50	55.9	112	82-117
1330-20-7	Xylene (total)	150	165	110	81-116

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1C7900-BS	1C181455.D	1	10/02/21	PS	n/a	n/a	V1C7900

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD32315-2, JD32315-5, JD32315-9, JD32315-11, JD32315-14, JD32315-17, JD32315-20, JD32315-23, JD32315-26

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	97%	72-130%
17060-07-0	1,2-Dichloroethane-D4	106%	75-131%
2037-26-5	Toluene-D8	103%	81-121%
460-00-4	4-Bromofluorobenzene	97%	60-141%

(a) High percent recovery and no associated positive reported in the QC batch.

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2V3357-BS	2V81414.D	1	10/06/21	JS	n/a	n/a	V2V3357

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18, JD32315-21, JD32315-24, JD32315-27

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	50	49.7	99	75-122
78-93-3	2-Butanone (MEK)	200	262	131* [a]	64-130
56-23-5	Carbon tetrachloride	50	41.7	83	75-148
108-90-7	Chlorobenzene	50	45.4	91	76-124
67-66-3	Chloroform	50	43.7	87	77-124
106-46-7	1,4-Dichlorobenzene	50	43.2	86	71-123
107-06-2	1,2-Dichloroethane	50	51.1	102	66-150
75-35-4	1,1-Dichloroethene	50	45.6	91	61-132
127-18-4	Tetrachloroethene	50	41.9	84	70-136
79-01-6	Trichloroethene	50	47.7	95	79-126
75-01-4	Vinyl chloride	50	53.6	107	56-146

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	95%	76-120%
17060-07-0	1,2-Dichloroethane-D4	113%	64-135%
2037-26-5	Toluene-D8	99%	76-117%
460-00-4	4-Bromofluorobenzene	99%	72-122%

(a) High percent recovery and no associated positive reported in the QC batch.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD32428-1MS	1C181463.D	1	10/02/21	PS	n/a	n/a	V1C7900
JD32428-1MSD	1C181464.D	1	10/02/21	PS	n/a	n/a	V1C7900
JD32428-1	1C181458.D	1	10/02/21	PS	n/a	n/a	V1C7900

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD32315-2, JD32315-5, JD32315-9, JD32315-11, JD32315-14, JD32315-17, JD32315-20, JD32315-23, JD32315-26

CAS No.	Compound	JD32428-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	11.7	J	324	242	71	324	239	70	1	31-142/24
71-43-2	Benzene	ND		81.1	82.0	101	81.1	72.6	90	12	62-126/15
108-86-1	Bromobenzene	ND		81.1	73.5	91	81.1	60.8	75	19* a	56-126/17
74-97-5	Bromochloromethane	ND		81.1	81.7	101	81.1	76.9	95	6	68-125/14
75-27-4	Bromodichloromethane	ND		81.1	83.9	103	81.1	76.3	94	9	63-132/15
75-25-2	Bromoform	ND		81.1	80.7	100	81.1	69.4	86	15	59-138/17
74-83-9	Bromomethane	ND		81.1	86.5	107	81.1	78.9	97	9	13-164/34
78-93-3	2-Butanone (MEK)	ND		324	241	74	324	262	81	8	51-135/20
104-51-8	n-Butylbenzene	ND		81.1	58.4	72	81.1	40.2	50	37* b	23-148/23
135-98-8	sec-Butylbenzene	ND		81.1	62.9	78	81.1	47.7	59	27* b	34-142/21
98-06-6	tert-Butylbenzene	ND		81.1	65.7	81	81.1	51.0	63	25* b	46-136/21
75-15-0	Carbon disulfide	ND		81.1	80.0	99	81.1	66.7	82	18	49-134/22
56-23-5	Carbon tetrachloride	ND		81.1	85.6	106	81.1	75.0	92	13	60-133/16
108-90-7	Chlorobenzene	ND		81.1	74.9	92	81.1	61.6	76	19* a	58-126/17
75-00-3	Chloroethane	ND		81.1	94.8	117	81.1	81.6	101	15	18-165/38
67-66-3	Chloroform	ND		81.1	81.3	100	81.1	73.6	91	10	60-125/14
74-87-3	Chloromethane	ND		81.1	92.9	115	81.1	78.0	96	17* a	43-145/16
95-49-8	o-Chlorotoluene	ND		81.1	69.1	85	81.1	55.5	68	22* b	53-128/18
106-43-4	p-Chlorotoluene	ND		81.1	64.2	79	81.1	52.3	64	20* b	49-126/19
96-12-8	1,2-Dibromo-3-chloropropane	ND		81.1	78.6	97	81.1	61.4	76	25* b	43-133/18
124-48-1	Dibromochloromethane	ND		81.1	87.7	108	81.1	74.7	92	16* a	68-131/14
106-93-4	1,2-Dibromoethane	ND		81.1	83.8	103	81.1	73.3	90	13	63-127/14
95-50-1	1,2-Dichlorobenzene	ND		81.1	68.7	85	81.1	50.7	63	30* b	46-130/18
541-73-1	1,3-Dichlorobenzene	ND		81.1	69.4	86	81.1	52.8	65	27* b	45-129/19
106-46-7	1,4-Dichlorobenzene	ND		81.1	66.6	82	81.1	50.4	62	28* b	43-129/19
75-71-8	Dichlorodifluoromethane	ND		81.1	100	123	81.1	94.4	116	6	35-157/16
75-34-3	1,1-Dichloroethane	ND		81.1	78.3	97	81.1	82.0	101	5	63-130/14
107-06-2	1,2-Dichloroethane	ND		81.1	83.1	102	81.1	79.2	98	5	61-118/14
75-35-4	1,1-Dichloroethene	ND		81.1	74.5	92	81.1	68.4	84	9	55-135/15
156-59-2	cis-1,2-Dichloroethene	ND		81.1	72.7	90	81.1	74.8	92	3	55-131/15
156-60-5	trans-1,2-Dichloroethene	ND		81.1	72.4	89	81.1	69.9	86	4	54-135/16
78-87-5	1,2-Dichloropropane	ND		81.1	74.9	92	81.1	71.9	89	4	68-123/14
142-28-9	1,3-Dichloropropane	ND		81.1	80.9	100	81.1	74.8	92	8	67-119/15
594-20-7	2,2-Dichloropropane	ND		81.1	73.8	91	81.1	74.2	91	1	50-131/15
563-58-6	1,1-Dichloropropene	ND		81.1	80.0	99	81.1	72.1	89	10	60-129/17
10061-01-5	cis-1,3-Dichloropropene	ND		81.1	83.4	103	81.1	69.4	86	18* a	65-123/16

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD32428-1MS	1C181463.D	1	10/02/21	PS	n/a	n/a	V1C7900
JD32428-1MSD	1C181464.D	1	10/02/21	PS	n/a	n/a	V1C7900
JD32428-1	1C181458.D	1	10/02/21	PS	n/a	n/a	V1C7900

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD32315-2, JD32315-5, JD32315-9, JD32315-11, JD32315-14, JD32315-17, JD32315-20, JD32315-23, JD32315-26

CAS No.	Compound	JD32428-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
10061-02-6	trans-1,3-Dichloropropene	ND		81.1	87.5	108	81.1	76.0	94	14	63-128/15
100-41-4	Ethylbenzene	ND		81.1	71.4	88	81.1	59.8	74	18* a	48-135/17
87-68-3	Hexachlorobutadiene	ND		81.1	57.0	70	81.1	32.0	39	56* b	10-151/30
591-78-6	2-Hexanone	ND		324	265	82	324	265	82	0	55-127/16
74-88-4	Iodomethane	ND		81.1	76.7	95	81.1	76.6	94	0	23-174/24
98-82-8	Isopropylbenzene	ND		81.1	70.9	87	81.1	58.3	72	20* a	46-139/19
99-87-6	p-Isopropyltoluene	ND		81.1	65.2	80	81.1	49.7	61	27* b	36-142/21
1634-04-4	Methyl Tert Butyl Ether	ND		81.1	79.6	98	81.1	79.9	99	0	62-128/13
108-10-1	4-Methyl-2-pentanone(MIBK)	ND		324	278	86	324	242	75	14	59-125/18
74-95-3	Methylene bromide	ND		81.1	81.5	100	81.1	71.7	88	13	68-120/15
75-09-2	Methylene chloride	ND		81.1	73.8	91	81.1	71.9	89	3	59-127/14
91-20-3	Naphthalene	ND		81.1	65.1	80	81.1	45.2	56	36* b	10-160/31
103-65-1	n-Propylbenzene	ND		81.1	64.2	79	81.1	52.2	64	21* b	35-140/19
100-42-5	Styrene	ND		81.1	72.0	89	81.1	60.2	74	18	52-136/18
630-20-6	1,1,1,2-Tetrachloroethane	ND		81.1	81.4	100	81.1	68.6	85	17	68-132/17
79-34-5	1,1,2,2-Tetrachloroethane	ND		81.1	64.6	80	81.1	61.6	76	5	53-127/20
127-18-4	Tetrachloroethene	ND		81.1	79.6	98	81.1	65.6	81	19	50-138/19
108-88-3	Toluene	ND		81.1	80.2	99	81.1	66.2	82	19* a	57-129/16
87-61-6	1,2,3-Trichlorobenzene	ND		81.1	64.3	79	81.1	36.4	45	55* b	13-152/29
120-82-1	1,2,4-Trichlorobenzene	ND		81.1	65.7	81	81.1	37.9	47	54* b	15-153/27
71-55-6	1,1,1-Trichloroethane	ND		81.1	88.0	109	81.1	77.8	96	12	60-134/15
79-00-5	1,1,2-Trichloroethane	ND		81.1	84.9	105	81.1	75.7	93	11	56-137/14
79-01-6	Trichloroethene	ND		81.1	81.3	100	81.1	71.5	88	13	52-144/19
75-69-4	Trichlorofluoromethane	ND		81.1	103	127	81.1	91.7	113	12	48-144/27
96-18-4	1,2,3-Trichloropropane	ND		81.1	73.3	90	81.1	69.3	85	6	57-126/18
95-63-6	1,2,4-Trimethylbenzene	ND		81.1	69.2	85	81.1	56.0	69	21* b	38-137/18
108-67-8	1,3,5-Trimethylbenzene	ND		81.1	69.3	85	81.1	55.5	68	22* b	39-139/18
108-05-4	Vinyl Acetate	ND		81.1	48.7	60	81.1	42.7	53	13	17-143/43
75-01-4	Vinyl chloride	ND		81.1	98.4	121	81.1	96.0	118	2	44-152/15
	m,p-Xylene	ND		162	144	89	162	116	72	22* b	53-130/17
95-47-6	o-Xylene	ND		81.1	75.7	93	81.1	63.9	79	17* a	52-135/16
1330-20-7	Xylene (total)	ND		243	220	90	243	180	74	20* a	54-131/16

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD32428-1MS	1C181463.D	1	10/02/21	PS	n/a	n/a	V1C7900
JD32428-1MSD	1C181464.D	1	10/02/21	PS	n/a	n/a	V1C7900
JD32428-1	1C181458.D	1	10/02/21	PS	n/a	n/a	V1C7900

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD32315-2, JD32315-5, JD32315-9, JD32315-11, JD32315-14, JD32315-17, JD32315-20, JD32315-23, JD32315-26

CAS No.	Surrogate Recoveries	MS	MSD	JD32428-1	Limits
1868-53-7	Dibromofluoromethane	103%	102%	96%	72-130%
17060-07-0	1,2-Dichloroethane-D4	113%	105%	102%	75-131%
2037-26-5	Toluene-D8	108%	105%	104%	81-121%
460-00-4	4-Bromofluorobenzene	96%	101%	96%	60-141%

(a) Analytical precision exceeds in-house control limits.
(b) Outside control limits due to matrix interference.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD32528-16AMS	2V81422.D	5	10/07/21	JS	n/a	n/a	V2V3357
JD32528-16AMSD	2V81423.D	5	10/07/21	JS	n/a	n/a	V2V3357
JD32528-16A	2V81418.D	5	10/07/21	JS	10/03/21	GP36203	V2V3357

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18, JD32315-21, JD32315-24, JD32315-27

CAS No.	Compound	JD32528-16A ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		250	256	102	250	253	101	1	38-139/13
78-93-3	2-Butanone (MEK)	ND		1000	987	99	1000	945	95	4	58-140/14
56-23-5	Carbon tetrachloride	ND		250	218	87	250	216	86	1	50-161/18
108-90-7	Chlorobenzene	ND		250	234	94	250	232	93	1	65-128/12
67-66-3	Chloroform	10.7	B	250	230	88	250	229	87	0	66-132/14
106-46-7	1,4-Dichlorobenzene	ND		250	220	88	250	222	89	1	63-126/13
107-06-2	1,2-Dichloroethane	ND		250	266	106	250	257	103	3	59-153/15
75-35-4	1,1-Dichloroethene	ND		250	236	94	250	238	95	1	41-144/17
127-18-4	Tetrachloroethene	ND		250	213	85	250	215	86	1	48-145/15
79-01-6	Trichloroethene	ND		250	238	95	250	240	96	1	53-141/15
75-01-4	Vinyl chloride	ND		250	274	110	250	270	108	1	34-151/20

CAS No.	Surrogate Recoveries	MS	MSD	JD32528-16A	Limits
1868-53-7	Dibromofluoromethane	95%	94%	97%	76-120%
17060-07-0	1,2-Dichloroethane-D4	112%	108%	111%	64-135%
2037-26-5	Toluene-D8	101%	100%	103%	76-117%
460-00-4	4-Bromofluorobenzene	97%	98%	105%	72-122%

* = Outside of Control Limits.

Leachate Spike Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GP36195-LS8	1A214865A.D	5	10/06/21	ED	10/01/21	GP36195	V1A9274
JD32442-64A	1A214861.D	5	10/06/21	ED	10/01/21	GP36195	V1A9274

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18, JD32315-21, JD32315-24, JD32315-27

CAS No.	Compound	JD32442-64A ug/l	Q	Spike ug/l	LS ug/l	LS %	Limits
71-43-2	Benzene	ND		250	245	98	38-139
78-93-3	2-Butanone (MEK)	ND		1000	904	90	58-140
56-23-5	Carbon tetrachloride	ND		250	237	95	50-161
108-90-7	Chlorobenzene	ND		250	245	98	65-128
67-66-3	Chloroform	14.4	B	250	229	86	66-132
106-46-7	1,4-Dichlorobenzene	ND		250	247	99	63-126
107-06-2	1,2-Dichloroethane	ND		250	221	88	59-153
75-35-4	1,1-Dichloroethene	ND		250	234	94	41-144
127-18-4	Tetrachloroethene	ND		250	230	92	48-145
79-01-6	Trichloroethene	ND		250	252	101	53-141
75-01-4	Vinyl chloride	ND		250	228	91	34-151

CAS No.	Surrogate Recoveries	LS	JD32442-64A	Limits
1868-53-7	Dibromofluoromethane	97%	99%	76-120%
17060-07-0	1,2-Dichloroethane-D4	96%	100%	64-135%
2037-26-5	Toluene-D8	97%	101%	76-117%
460-00-4	4-Bromofluorobenzene	101%	101%	72-122%

* = Outside of Control Limits.

Instrument Performance Check (BFB)

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample:	V1A9258-BFB	**Injection Date:**	09/26/21
Lab File ID:	1A214394.D	**Injection Time:**	23:53
Instrument ID:	GCMS1A		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	25210	21.0		Pass
75	30.0 - 60.0% of mass 95	58968	49.2		Pass
95	Base peak, 100% relative abundance	119837	100.0		Pass
96	5.0 - 9.0% of mass 95	8107	6.77		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	105720	88.2		Pass
175	5.0 - 9.0% of mass 174	8408	7.02	(7.95) [a]	Pass
176	95.0 - 101.0% of mass 174	103672	86.5	(98.1) [a]	Pass
177	5.0 - 9.0% of mass 176	6471	5.40	(6.24) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1A9258-IC9258	1A214395.D	09/27/21	00:12	00:19	Initial cal 0.2
V1A9258-IC9258	1A214396.D	09/27/21	00:32	00:39	Initial cal 0.5
V1A9258-IC9258	1A214397.D	09/27/21	00:51	00:58	Initial cal 1
V1A9258-IC9258	1A214398.D	09/27/21	01:10	01:17	Initial cal 2
V1A9258-IC9258	1A214399.D	09/27/21	01:29	01:36	Initial cal 4
V1A9258-IC9258	1A214400.D	09/27/21	01:48	01:55	Initial cal 8
V1A9258-IC9258	1A214401.D	09/27/21	02:08	02:15	Initial cal 20
V1A9258-ICC9258	1A214402.D	09/27/21	02:27	02:34	Initial cal 50
V1A9258-IC9258	1A214403.D	09/27/21	02:46	02:53	Initial cal 100
V1A9258-IC9258	1A214404.D	09/27/21	03:05	03:12	Initial cal 200
V1A9258-ICV9258	1A214407.D	09/27/21	04:03	04:10	Initial cal verification 50
V1A9258-ICV9258	1A214408.D	09/27/21	04:22	04:29	Initial cal verification 50

Instrument Performance Check (BFB)

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample:	V1A9274-BFB	**Injection Date:**	10/05/21
Lab File ID:	1A214844.D	**Injection Time:**	18:53
Instrument ID:	GCMS1A		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	28001	19.6		Pass
75	30.0 - 60.0% of mass 95	67387	47.1		Pass
95	Base peak, 100% relative abundance	143104	100.0		Pass
96	5.0 - 9.0% of mass 95	9032	6.31		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	130672	91.3		Pass
175	5.0 - 9.0% of mass 174	9811	6.86	(7.51) [a]	Pass
176	95.0 - 101.0% of mass 174	127413	89.0	(97.5) [a]	Pass
177	5.0 - 9.0% of mass 176	8638	6.04	(6.78) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1A9274-CC9258	1A214844.D	10/05/21	18:53	00:00	Continuing cal 50
V1A9274-BS	1A214846.D	10/05/21	19:32	00:39	Blank Spike
V1A9274-MB	1A214848.D	10/05/21	20:12	01:19	Method Blank
GP36130-LB2	1A214849.D	10/05/21	20:31	01:38	Leachate Blank
GP36123-LB3	1A214850.D	10/05/21	20:51	01:58	Leachate Blank
GP36123-LB4	1A214851.D	10/05/21	21:11	02:18	Leachate Blank
GP36195-LB8	1A214852.D	10/05/21	21:31	02:38	Leachate Blank
GP36203-LB10	1A214853.D	10/05/21	21:51	02:58	Leachate Blank
ZZZZZZ	1A214854.D	10/05/21	22:10	03:17	(unrelated sample)
ZZZZZZ	1A214855.D	10/05/21	22:30	03:37	(unrelated sample)
ZZZZZZ	1A214856.D	10/05/21	22:50	03:57	(unrelated sample)
ZZZZZZ	1A214857.D	10/05/21	23:10	04:17	(unrelated sample)
ZZZZZZ	1A214858.D	10/05/21	23:29	04:36	(unrelated sample)
ZZZZZZ	1A214859.D	10/05/21	23:49	04:56	(unrelated sample)
ZZZZZZ	1A214860.D	10/06/21	00:09	05:16	(unrelated sample)
JD32442-64A	1A214861.D	10/06/21	00:29	05:36	(used for QC only; not part of job JD32315)
ZZZZZZ	1A214862.D	10/06/21	00:48	05:55	(unrelated sample)
GP36130-LS2	1A214863.D	10/06/21	01:08	06:15	Leachate Spike
GP36123-LS3	1A214864.D	10/06/21	01:28	06:35	Leachate Spike
JD32442-64AMS	1A214865.D	10/06/21	01:47	06:54	Matrix Spike
GP36195-LS8	1A214865A.D	10/06/21	01:47	06:54	Leachate Spike
JD32442-64AMSD	1A214866.D	10/06/21	02:07	07:14	Matrix Spike Duplicate
ZZZZZZ	1A214868.D	10/06/21	02:46	07:53	(unrelated sample)
ZZZZZZ	1A214869.D	10/06/21	03:06	08:13	(unrelated sample)

Instrument Performance Check (BFB)

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample:	V1A9274-BFB	**Injection Date:**	10/05/21
Lab File ID:	1A214844.D	**Injection Time:**	18:53
Instrument ID:	GCMS1A		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	1A214870.D	10/06/21	03:26	08:33	(unrelated sample)
ZZZZZZ	1A214871.D	10/06/21	03:45	08:52	(unrelated sample)
ZZZZZZ	1A214872.D	10/06/21	04:05	09:12	(unrelated sample)
ZZZZZZ	1A214873.D	10/06/21	04:25	09:32	(unrelated sample)
V1A9275-BS100	1A214876.D	10/06/21	05:23	10:30	Blank Spike
V1A9275-BS100	1A214877.D	10/06/21	05:43	10:50	Blank Spike
V1A9275-BS100	1A214878.D	10/06/21	06:03	11:10	Blank Spike
V1A9275-BS100	1A214879.D	10/06/21	06:22	11:29	Blank Spike

Instrument Performance Check (BFB)

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample:	V1C7827-BFB	**Injection Date:**	07/15/21
Lab File ID:	1C179464.D	**Injection Time:**	19:04
Instrument ID:	GCMS1C		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	14.99 - 40.0% of mass 95	10860	16.2		Pass
75	30.0 - 60.0% of mass 95	29650	44.3		Pass
95	Base peak, 100% relative abundance	66877	100.0		Pass
96	5.0 - 9.0% of mass 95	4243	6.34		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	58986	88.2		Pass
175	5.0 - 9.0% of mass 174	4574	6.84	(7.75) [a]	Pass
176	95.0 - 101.0% of mass 174	57141	85.4	(96.9) [a]	Pass
177	5.0 - 9.0% of mass 176	3651	5.46	(6.39) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1C7827-IC7827	1C179465.D	07/15/21	19:34	00:30	Initial cal 0.2
V1C7827-IC7827	1C179466.D	07/15/21	20:01	00:57	Initial cal 0.5
V1C7827-IC7827	1C179467.D	07/15/21	20:28	01:24	Initial cal 1
V1C7827-IC7827	1C179468.D	07/15/21	20:56	01:52	Initial cal 2
V1C7827-IC7827	1C179469.D	07/15/21	21:23	02:19	Initial cal 4
V1C7827-IC7827	1C179470.D	07/15/21	21:50	02:46	Initial cal 8
V1C7827-IC7827	1C179471.D	07/15/21	22:17	03:13	Initial cal 20
V1C7827-ICC7827	1C179472.D	07/15/21	22:44	03:40	Initial cal 50
V1C7827-IC7827	1C179473.D	07/15/21	23:11	04:07	Initial cal 100
V1C7827-IC7827	1C179474.D	07/15/21	23:38	04:34	Initial cal 200
V1C7827-ICV7827	1C179477.D	07/16/21	01:00	05:56	Initial cal verification 50
V1C7827-ICV7827	1C179478.D	07/16/21	01:27	06:23	Initial cal verification 50

Instrument Performance Check (BFB)

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample:	V1C7827-BFB2	**Injection Date:**	07/16/21
Lab File ID:	1C179480.D	**Injection Time:**	11:04
Instrument ID:	GCMS1C		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	14.99 - 40.0% of mass 95	12305	16.4		Pass
75	30.0 - 60.0% of mass 95	33320	44.4		Pass
95	Base peak, 100% relative abundance	74986	100.0		Pass
96	5.0 - 9.0% of mass 95	5062	6.75		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	67389	89.9		Pass
175	5.0 - 9.0% of mass 174	5194	6.93	(7.71) [a]	Pass
176	95.0 - 101.0% of mass 174	65469	87.3	(97.2) [a]	Pass
177	5.0 - 9.0% of mass 176	4307	5.74	(6.58) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1C7827-ICV7827	1C179481.D	07/16/21	11:34	00:30	Initial cal verification 50

Instrument Performance Check (BFB)

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample:	V1C7900-BFB	**Injection Date:**	10/02/21
Lab File ID:	1C181454.D	**Injection Time:**	12:51
Instrument ID:	GCMS1C		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	14.99 - 40.0% of mass 95	11456	17.3		Pass
75	30.0 - 60.0% of mass 95	31360	47.4		Pass
95	Base peak, 100% relative abundance	66120	100.0		Pass
96	5.0 - 9.0% of mass 95	4334	6.55		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	60299	91.2		Pass
175	5.0 - 9.0% of mass 174	4620	6.99	(7.66) [a]	Pass
176	95.0 - 101.0% of mass 174	58667	88.7	(97.3) [a]	Pass
177	5.0 - 9.0% of mass 176	4027	6.09	(6.86) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1C7900-CC7827	1C181454.D	10/02/21	12:51	00:00	Continuing cal 50
V1C7900-BS	1C181455.D	10/02/21	13:28	00:37	Blank Spike
ZZZZZZ	1C181457A.D	10/02/21	14:38	01:47	(unrelated sample)
V1C7900-MB	1C181457.D	10/02/21	14:38	01:47	Method Blank
JD32428-1	1C181458.D	10/02/21	15:27	02:36	(used for QC only; not part of job JD32315)
ZZZZZZ	1C181459.D	10/02/21	15:54	03:03	(unrelated sample)
ZZZZZZ	1C181460.D	10/02/21	16:22	03:31	(unrelated sample)
ZZZZZZ	1C181461.D	10/02/21	16:49	03:58	(unrelated sample)
JD32428-1MS	1C181463.D	10/02/21	17:44	04:53	Matrix Spike
JD32428-1MSD	1C181464.D	10/02/21	18:11	05:20	Matrix Spike Duplicate
ZZZZZZ	1C181466.D	10/02/21	19:07	06:16	(unrelated sample)
JD32315-2	1C181467.D	10/02/21	19:34	06:43	B-106-B
JD32315-5	1C181468.D	10/02/21	20:02	07:11	H-104-B
JD32315-9	1C181469.D	10/02/21	20:29	07:38	DUP-B
JD32315-11	1C181470.D	10/02/21	20:56	08:05	H-101-B
JD32315-14	1C181471.D	10/02/21	21:24	08:33	B-103-B
JD32315-17	1C181472.D	10/02/21	21:51	09:00	H-102-B
JD32315-23	1C181473.D	10/02/21	22:19	09:28	B-105-B(20-24')
JD32315-26	1C181474.D	10/02/21	22:46	09:55	B-104-B
JD32315-20	1C181475.D	10/02/21	23:13	10:22	B-102-B
ZZZZZZ	1C181476.D	10/02/21	23:40	10:49	(unrelated sample)

Instrument Performance Check (BFB)

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample:	V2V3279-BFB	**Injection Date:**	08/07/21
Lab File ID:	2V79378.D	**Injection Time:**	13:22
Instrument ID:	GCMS2V		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	6527	18.2		Pass
75	30.0 - 60.0% of mass 95	17295	48.2		Pass
95	Base peak, 100% relative abundance	35917	100.0		Pass
96	5.0 - 9.0% of mass 95	2271	6.32		Pass
173	Less than 2.0% of mass 174	150	0.42	(0.46) [a]	Pass
174	50.0 - 120.0% of mass 95	32520	90.5		Pass
175	5.0 - 9.0% of mass 174	2423	6.75	(7.45) [a]	Pass
176	95.0 - 101.0% of mass 174	31784	88.5	(97.7) [a]	Pass
177	5.0 - 9.0% of mass 176	2114	5.89	(6.65) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V2V3279-IC3279	2V79379.D	08/07/21	13:55	00:33	Initial cal 0.2
V2V3279-IC3279	2V79380.D	08/07/21	14:20	00:58	Initial cal 0.5
V2V3279-IC3279	2V79381.D	08/07/21	14:46	01:24	Initial cal 1
V2V3279-IC3279	2V79382.D	08/07/21	15:12	01:50	Initial cal 2
V2V3279-IC3279	2V79383.D	08/07/21	15:37	02:15	Initial cal 4
V2V3279-IC3279	2V79384.D	08/07/21	16:03	02:41	Initial cal 8
V2V3279-IC3279	2V79385.D	08/07/21	16:29	03:07	Initial cal 20
V2V3279-ICC3279	2V79386.D	08/07/21	16:54	03:32	Initial cal 50
V2V3279-IC3279	2V79387.D	08/07/21	17:20	03:58	Initial cal 100
V2V3279-IC3279	2V79388.D	08/07/21	17:46	04:24	Initial cal 200
V2V3279-ICV3279	2V79391.D	08/07/21	19:03	05:41	Initial cal verification 50
V2V3279-ICV3279	2V79392.D	08/07/21	19:28	06:06	Initial cal verification 50

Instrument Performance Check (BFB)

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample:	V2V3279-BFB2	**Injection Date:**	08/10/21
Lab File ID:	2V79396.D	**Injection Time:**	12:34
Instrument ID:	GCMS2V		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	7214	18.3		Pass
75	30.0 - 60.0% of mass 95	18717	47.5		Pass
95	Base peak, 100% relative abundance	39395	100.0		Pass
96	5.0 - 9.0% of mass 95	2683	6.81		Pass
173	Less than 2.0% of mass 174	258	0.65	(0.72) [a]	Pass
174	50.0 - 120.0% of mass 95	35683	90.6		Pass
175	5.0 - 9.0% of mass 174	2736	6.95	(7.67) [a]	Pass
176	95.0 - 101.0% of mass 174	34363	87.2	(96.3) [a]	Pass
177	5.0 - 9.0% of mass 176	2336	5.93	(6.80) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V2V3279-ICV3279	2V79397.D	08/10/21	13:00	00:26	Initial cal verification 50

Instrument Performance Check (BFB)

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample:	V2V3357-BFB	**Injection Date:**	10/06/21
Lab File ID:	2V81412.D	**Injection Time:**	22:25
Instrument ID:	GCMS2V		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	7467	19.2		Pass
75	30.0 - 60.0% of mass 95	18808	48.5		Pass
95	Base peak, 100% relative abundance	38792	100.0		Pass
96	5.0 - 9.0% of mass 95	2506	6.46		Pass
173	Less than 2.0% of mass 174	152	0.39	(0.44) [a]	Pass
174	50.0 - 120.0% of mass 95	34224	88.2		Pass
175	5.0 - 9.0% of mass 174	2627	6.77	(7.68) [a]	Pass
176	95.0 - 101.0% of mass 174	33293	85.8	(97.3) [a]	Pass
177	5.0 - 9.0% of mass 176	2169	5.59	(6.51) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V2V3357-CC3279	2V81412.D	10/06/21	22:25	00:00	Continuing cal 50
V2V3357-BS	2V81414.D	10/06/21	23:17	00:52	Blank Spike
V2V3357-MB	2V81416.D	10/07/21	00:09	01:44	Method Blank
GP36195-LB9	2V81417.D	10/07/21	00:35	02:10	Leachate Blank
JD32528-16A	2V81418.D	10/07/21	01:01	02:36	(used for QC only; not part of job JD32315)
ZZZZZZ	2V81419.D	10/07/21	01:27	03:02	(unrelated sample)
ZZZZZZ	2V81420.D	10/07/21	01:54	03:29	(unrelated sample)
ZZZZZZ	2V81421.D	10/07/21	02:20	03:55	(unrelated sample)
GP36203-LS10	2V81422A.D	10/07/21	02:46	04:21	Leachate Spike
JD32528-16AMS	2V81422.D	10/07/21	02:46	04:21	Matrix Spike
JD32528-16AMSD	2V81423.D	10/07/21	03:12	04:47	Matrix Spike Duplicate
ZZZZZZ	2V81425.D	10/07/21	04:04	05:39	(unrelated sample)
JD32315-3	2V81426.D	10/07/21	04:30	06:05	B-106-C
JD32315-6	2V81427.D	10/07/21	04:56	06:31	H-104-C1
JD32315-7	2V81428.D	10/07/21	05:23	06:58	H-104-C2
JD32315-12	2V81429.D	10/07/21	05:49	07:24	H-101-C
JD32315-15	2V81430.D	10/07/21	06:15	07:50	B-103-C
JD32315-18	2V81431.D	10/07/21	06:41	08:16	H-102-C
JD32315-21	2V81432.D	10/07/21	07:08	08:43	B-102-C
JD32315-24	2V81433.D	10/07/21	07:34	09:09	B-105-C(0.5-24')
JD32315-27	2V81434.D	10/07/21	08:00	09:35	B-104-C
ZZZZZZ	2V81435.D	10/07/21	08:26	10:01	(unrelated sample)
ZZZZZZ	2V81436.D	10/07/21	08:53	10:28	(unrelated sample)

Surrogate Recovery Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Method: SW846 8260D **Matrix:** LEACHATE

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
JD32315-3	2V81426.D	93	110	102	102
JD32315-6	2V81427.D	94	109	103	102
JD32315-7	2V81428.D	95	110	103	102
JD32315-12	2V81429.D	96	112	103	104
JD32315-15	2V81430.D	97	111	104	105
JD32315-18	2V81431.D	98	112	102	102
JD32315-21	2V81432.D	96	112	103	103
JD32315-24	2V81433.D	95	110	106	105
JD32315-27	2V81434.D	97	112	103	106
GP36195-LB9	2V81417.D	95	111	102	103
GP36195-LS8	1A214865A.D	97	96	97	101
JD32528-16AMS	2V81422.D	95	112	101	97
JD32528-16AMSD	2V81423.D	94	108	100	98
V2V3357-BS	2V81414.D	95	113	99	99
V2V3357-MB	2V81416.D	94	109	103	103
GP36195-LB8	1A214852.D	96	101	102	103
V1A9274-MB	1A214848.D	97	98	103	99

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	76-120%
S2 = 1,2-Dichloroethane-D4	64-135%
S3 = Toluene-D8	76-117%
S4 = 4-Bromofluorobenzene	72-122%

Surrogate Recovery Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Method: SW846 8260D **Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
JD32315-2	1C181467.D	100	111	108	93
JD32315-5	1C181468.D	101	109	106	98
JD32315-9	1C181469.D	101	110	103	99
JD32315-11	1C181470.D	102	111	101	96
JD32315-14	1C181471.D	104	118	101	91
JD32315-17	1C181472.D	102	111	99	91
JD32315-20	1C181475.D	104	116	103	96
JD32315-23	1C181473.D	104	115	103	96
JD32315-26	1C181474.D	101	115	102	100
JD32428-1MS	1C181463.D	103	113	108	96
JD32428-1MSD	1C181464.D	102	105	105	101
V1C7900-BS	1C181455.D	97	106	103	97
V1C7900-MB	1C181457.D	97	105	103	96

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	72-130%
S2 = 1,2-Dichloroethane-D4	75-131%
S3 = Toluene-D8	81-121%
S4 = 4-Bromofluorobenzene	60-141%

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (DFTPP)
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35710-MB1	2P103267.D	1	10/05/21	KLS	10/04/21	OP35710	E2P4638

The QC reported here applies to the following samples: **Method:** SW846 8270E

JD32315-1, JD32315-2, JD32315-4, JD32315-5, JD32315-9, JD32315-10, JD32315-11, JD32315-13, JD32315-14, JD32315-16, JD32315-17, JD32315-19, JD32315-20, JD32315-23, JD32315-25

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	33	11	ug/kg	
208-96-8	Acenaphthylene	ND	33	17	ug/kg	
120-12-7	Anthracene	ND	33	20	ug/kg	
56-55-3	Benzo(a)anthracene	ND	33	9.4	ug/kg	
50-32-8	Benzo(a)pyrene	ND	33	15	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	33	15	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	33	17	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	33	16	ug/kg	
218-01-9	Chrysene	ND	33	10	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	33	15	ug/kg	
206-44-0	Fluoranthene	ND	33	15	ug/kg	
86-73-7	Fluorene	ND	33	15	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	33	16	ug/kg	
91-20-3	Naphthalene	ND	33	9.4	ug/kg	
85-01-8	Phenanthrene	ND	33	11	ug/kg	
129-00-0	Pyrene	ND	33	11	ug/kg	

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	53%	15-114%
321-60-8	2-Fluorobiphenyl	58%	22-104%
1718-51-0	Terphenyl-d14	69%	23-121%

Method Blank Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35710-MB1	M175457.D	1	10/05/21	KLS	10/04/21	OP35710	EM7542

The QC reported here applies to the following samples: **Method:** SW846 8270E

JD32315-1, JD32315-2, JD32315-4, JD32315-5, JD32315-9, JD32315-10, JD32315-11, JD32315-13, JD32315-14, JD32315-16, JD32315-17, JD32315-19, JD32315-20, JD32315-23, JD32315-25

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	33	11	ug/kg	
208-96-8	Acenaphthylene	ND	33	17	ug/kg	
120-12-7	Anthracene	ND	33	20	ug/kg	
56-55-3	Benzo(a)anthracene	ND	33	9.4	ug/kg	
50-32-8	Benzo(a)pyrene	ND	33	15	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	33	15	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	33	17	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	33	16	ug/kg	
218-01-9	Chrysene	ND	33	10	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	33	15	ug/kg	
206-44-0	Fluoranthene	ND	33	15	ug/kg	
86-73-7	Fluorene	ND	33	15	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	33	16	ug/kg	
91-20-3	Naphthalene	ND	33	9.4	ug/kg	
85-01-8	Phenanthrene	ND	33	11	ug/kg	
129-00-0	Pyrene	ND	33	11	ug/kg	

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	53%	15-114%
321-60-8	2-Fluorobiphenyl	55%	22-104%
1718-51-0	Terphenyl-d14	59%	23-121%

Method Blank Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35857-MB1	6P502004.D	1	10/10/21	CS	10/08/21	OP35857	E6P3522

The QC reported here applies to the following samples: **Method:** SW846 8270E

JD32315-8, JD32315-22, JD32315-26

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	33	11	ug/kg	
208-96-8	Acenaphthylene	ND	33	17	ug/kg	
120-12-7	Anthracene	ND	33	20	ug/kg	
56-55-3	Benzo(a)anthracene	ND	33	9.4	ug/kg	
50-32-8	Benzo(a)pyrene	ND	33	15	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	33	15	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	33	17	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	33	16	ug/kg	
218-01-9	Chrysene	ND	33	10	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	33	15	ug/kg	
206-44-0	Fluoranthene	ND	33	15	ug/kg	
86-73-7	Fluorene	ND	33	15	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	33	16	ug/kg	
91-20-3	Naphthalene	ND	33	9.4	ug/kg	
85-01-8	Phenanthrene	ND	33	11	ug/kg	
129-00-0	Pyrene	ND	33	11	ug/kg	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	57%	7-101%
4165-62-2	Phenol-d5	55%	12-101%
118-79-6	2,4,6-Tribromophenol	67%	10-127%
4165-60-0	Nitrobenzene-d5	55%	15-114%
321-60-8	2-Fluorobiphenyl	59%	22-104%
1718-51-0	Terphenyl-d14	78%	23-121%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	2.07	370	ug/kg	J
	system artifact	3.27	230	ug/kg	J
	system artifact/aldol-condensation	3.32	350	ug/kg	J
	system artifact	3.45	170	ug/kg	J
	Total TIC, Semi-Volatile		0	ug/kg	

Method Blank Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35857-MB1	Z152175.D	1	10/11/21	BL	10/08/21	OP35857	EZ7569

The QC reported here applies to the following samples: **Method:** SW846 8270E

JD32315-8, JD32315-22, JD32315-26

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	33	11	ug/kg	
208-96-8	Acenaphthylene	ND	33	17	ug/kg	
120-12-7	Anthracene	ND	33	20	ug/kg	
56-55-3	Benzo(a)anthracene	ND	33	9.4	ug/kg	
50-32-8	Benzo(a)pyrene	ND	33	15	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	33	15	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	33	17	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	33	16	ug/kg	
218-01-9	Chrysene	ND	33	10	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	33	15	ug/kg	
206-44-0	Fluoranthene	ND	33	15	ug/kg	
86-73-7	Fluorene	ND	33	15	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	33	16	ug/kg	
91-20-3	Naphthalene	ND	33	9.4	ug/kg	
85-01-8	Phenanthrene	ND	33	11	ug/kg	
129-00-0	Pyrene	ND	33	11	ug/kg	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	56%	7-101%
4165-62-2	Phenol-d5	55%	12-101%
118-79-6	2,4,6-Tribromophenol	68%	10-127%
4165-60-0	Nitrobenzene-d5	62%	15-114%
321-60-8	2-Fluorobiphenyl	60%	22-104%
1718-51-0	Terphenyl-d14	68%	23-121%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	System artifact	2.71	280	ug/kg	J
	System artifact/aldol-condensation	2.78	470	ug/kg	J
	System artifact	2.91	200	ug/kg	J
	Total TIC, Semi-Volatile		0	ug/kg	

Method Blank Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35940-MB1	Z152218.D	1	10/13/21	CS	10/12/21	OP35940	EZ7572

The QC reported here applies to the following samples: **Method:** SW846 8270E

JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18, JD32315-21, JD32315-24, JD32315-27

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	2.0	0.89	ug/l	
	3&4-Methylphenol	ND	2.0	0.88	ug/l	
87-86-5	Pentachlorophenol	ND	10	1.4	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	5.0	1.3	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	5.0	0.92	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	2.0	0.17	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	2.0	0.55	ug/l	
118-74-1	Hexachlorobenzene	ND	2.0	0.33	ug/l	
87-68-3	Hexachlorobutadiene	ND	1.0	0.49	ug/l	
67-72-1	Hexachloroethane	ND	5.0	0.39	ug/l	
98-95-3	Nitrobenzene	ND	2.0	0.64	ug/l	
110-86-1	Pyridine	ND	2.0	0.39	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	34%	10-73%
4165-62-2	Phenol-d5	23%	10-64%
118-79-6	2,4,6-Tribromophenol	84%	31-130%
4165-60-0	Nitrobenzene-d5	82%	28-126%
321-60-8	2-Fluorobiphenyl	78%	26-114%
1718-51-0	Terphenyl-d14	93%	16-122%

Leachate Blank Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35940-LB13	Z152219.D	1	10/13/21	CS	10/12/21	OP35940	EZ7572

The QC reported here applies to the following samples: **Method:** SW846 8270E

JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18, JD32315-21, JD32315-24, JD32315-27

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	20	8.9	ug/l	
	3&4-Methylphenol	ND	20	8.8	ug/l	
87-86-5	Pentachlorophenol	ND	100	14	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	50	13	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	50	9.2	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	20	1.7	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	20	5.5	ug/l	
118-74-1	Hexachlorobenzene	ND	20	3.3	ug/l	
87-68-3	Hexachlorobutadiene	ND	10	4.9	ug/l	
67-72-1	Hexachloroethane	ND	50	3.9	ug/l	
98-95-3	Nitrobenzene	ND	20	6.4	ug/l	
110-86-1	Pyridine	ND	20	3.9	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	29%	10-73%
4165-62-2	Phenol-d5	20%	10-64%
118-79-6	2,4,6-Tribromophenol	81%	31-130%
4165-60-0	Nitrobenzene-d5	72%	28-126%
321-60-8	2-Fluorobiphenyl	67%	26-114%
1718-51-0	Terphenyl-d14	96%	16-122%

Leachate Blank Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35940-LB15	Z152220.D	1	10/13/21	CS	10/12/21	OP35940	EZ7572

The QC reported here applies to the following samples: **Method:** SW846 8270E

JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18, JD32315-21, JD32315-24, JD32315-27

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	20	8.9	ug/l	
	3&4-Methylphenol	ND	20	8.8	ug/l	
87-86-5	Pentachlorophenol	ND	100	14	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	50	13	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	50	9.2	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	20	1.7	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	20	5.5	ug/l	
118-74-1	Hexachlorobenzene	ND	20	3.3	ug/l	
87-68-3	Hexachlorobutadiene	ND	10	4.9	ug/l	
67-72-1	Hexachloroethane	ND	50	3.9	ug/l	
98-95-3	Nitrobenzene	ND	20	6.4	ug/l	
110-86-1	Pyridine	ND	20	3.9	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	29%	10-73%
4165-62-2	Phenol-d5	21%	10-64%
118-79-6	2,4,6-Tribromophenol	87%	31-130%
4165-60-0	Nitrobenzene-d5	80%	28-126%
321-60-8	2-Fluorobiphenyl	75%	26-114%
1718-51-0	Terphenyl-d14	94%	16-122%

Leachate Blank Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35940-LB16	Z152221.D	1	10/13/21	CS	10/12/21	OP35940	EZ7572

The QC reported here applies to the following samples: **Method:** SW846 8270E

JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18, JD32315-21, JD32315-24, JD32315-27

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	20	8.9	ug/l	
	3&4-Methylphenol	ND	20	8.8	ug/l	
87-86-5	Pentachlorophenol	ND	100	14	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	50	13	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	50	9.2	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	20	1.7	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	20	5.5	ug/l	
118-74-1	Hexachlorobenzene	ND	20	3.3	ug/l	
87-68-3	Hexachlorobutadiene	ND	10	4.9	ug/l	
67-72-1	Hexachloroethane	ND	50	3.9	ug/l	
98-95-3	Nitrobenzene	ND	20	6.4	ug/l	
110-86-1	Pyridine	ND	20	3.9	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	35%	10-73%
4165-62-2	Phenol-d5	25%	10-64%
118-79-6	2,4,6-Tribromophenol	90%	31-130%
4165-60-0	Nitrobenzene-d5	75%	28-126%
321-60-8	2-Fluorobiphenyl	71%	26-114%
1718-51-0	Terphenyl-d14	96%	16-122%

Blank Spike Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35710-BS1	2P103268.D	1	10/05/21	KLS	10/04/21	OP35710	E2P4638

The QC reported here applies to the following samples: **Method:** SW846 8270E

JD32315-1, JD32315-2, JD32315-4, JD32315-5, JD32315-9, JD32315-10, JD32315-11, JD32315-13, JD32315-14, JD32315-16, JD32315-17, JD32315-19, JD32315-20, JD32315-23, JD32315-25

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	1670	950	57	24-129
208-96-8	Acenaphthylene	1670	906	54	25-130
120-12-7	Anthracene	1670	1020	61	28-131
56-55-3	Benzo(a)anthracene	1670	1050	63	30-130
50-32-8	Benzo(a)pyrene	1670	1060	64	27-139
205-99-2	Benzo(b)fluoranthene	1670	1050	63	32-133
191-24-2	Benzo(g,h,i)perylene	1670	988	59	24-141
207-08-9	Benzo(k)fluoranthene	1670	1090	65	26-135
218-01-9	Chrysene	1670	1070	64	29-127
53-70-3	Dibenzo(a,h)anthracene	1670	1050	63	24-135
206-44-0	Fluoranthene	1670	1020	61	31-134
86-73-7	Fluorene	1670	982	59	26-136
193-39-5	Indeno(1,2,3-cd)pyrene	1670	1040	62	26-137
91-20-3	Naphthalene	1670	925	56	26-127
85-01-8	Phenanthrene	1670	995	60	26-131
129-00-0	Pyrene	1670	1090	65	30-131

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	51%	15-114%
321-60-8	2-Fluorobiphenyl	54%	22-104%
1718-51-0	Terphenyl-d14	69%	23-121%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35857-BS1	6P502005.D	1	10/10/21	CS	10/08/21	OP35857	E6P3522

The QC reported here applies to the following samples: **Method:** SW846 8270E

JD32315-8, JD32315-22, JD32315-26

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	1670	1180	71	24-129
208-96-8	Acenaphthylene	1670	1110	67	25-130
120-12-7	Anthracene	1670	1270	76	28-131
56-55-3	Benzo(a)anthracene	1670	1310	79	30-130
50-32-8	Benzo(a)pyrene	1670	1350	81	27-139
205-99-2	Benzo(b)fluoranthene	1670	1340	80	32-133
191-24-2	Benzo(g,h,i)perylene	1670	1340	80	24-141
207-08-9	Benzo(k)fluoranthene	1670	1330	80	26-135
218-01-9	Chrysene	1670	1320	79	29-127
53-70-3	Dibenzo(a,h)anthracene	1670	1370	82	24-135
206-44-0	Fluoranthene	1670	1270	76	31-134
86-73-7	Fluorene	1670	1190	71	26-136
193-39-5	Indeno(1,2,3-cd)pyrene	1670	1400	84	26-137
91-20-3	Naphthalene	1670	1120	67	26-127
85-01-8	Phenanthrene	1670	1270	76	26-131
129-00-0	Pyrene	1670	1300	78	30-131

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	67%	7-101%
4165-62-2	Phenol-d5	65%	12-101%
118-79-6	2,4,6-Tribromophenol	83%	10-127%
4165-60-0	Nitrobenzene-d5	65%	15-114%
321-60-8	2-Fluorobiphenyl	71%	22-104%
1718-51-0	Terphenyl-d14	86%	23-121%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35940-BS1	Z152222.D	1	10/13/21	CS	10/12/21	OP35940	EZ7572

The QC reported here applies to the following samples: **Method:** SW846 8270E

JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18, JD32315-21, JD32315-24, JD32315-27

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
95-48-7	2-Methylphenol	50	28.4	57	26-101
	3&4-Methylphenol	100	57.3	57	23-98
87-86-5	Pentachlorophenol	100	93.3	93	37-147
95-95-4	2,4,5-Trichlorophenol	50	43.4	87	39-125
88-06-2	2,4,6-Trichlorophenol	50	43.8	88	40-127
106-46-7	1,4-Dichlorobenzene	50	30.8	62	25-101
121-14-2	2,4-Dinitrotoluene	50	49.3	99	47-128
118-74-1	Hexachlorobenzene	50	47.2	94	46-113
87-68-3	Hexachlorobutadiene	50	32.8	66	17-111
67-72-1	Hexachloroethane	50	29.2	58	18-101
98-95-3	Nitrobenzene	50	40.6	81	36-120
110-86-1	Pyridine	50	16.4	33	10-78

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	45%	10-73%
4165-62-2	Phenol-d5	33%	10-64%
118-79-6	2,4,6-Tribromophenol	99%	31-130%
4165-60-0	Nitrobenzene-d5	83%	28-126%
321-60-8	2-Fluorobiphenyl	83%	26-114%
1718-51-0	Terphenyl-d14	91%	16-122%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35710-MS	2P103280.D	1	10/05/21	KLS	10/04/21	OP35710	E2P4638
OP35710-MSD	2P103281.D	1	10/05/21	KLS	10/04/21	OP35710	E2P4638
JD32315-1	2P103320.D	1	10/06/21	BL	10/04/21	OP35710	E2P4640

The QC reported here applies to the following samples: **Method:** SW846 8270E

JD32315-1, JD32315-2, JD32315-4, JD32315-5, JD32315-9, JD32315-10, JD32315-11, JD32315-13, JD32315-14, JD32315-16, JD32315-17, JD32315-19, JD32315-20, JD32315-23, JD32315-25

CAS No.	Compound	JD32315-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		1740	537	31	1740	234	13	79* [a]	10-145/63
208-96-8	Acenaphthylene	32.0	J	1740	533	28	1740	241	12	75* [a]	10-144/59
120-12-7	Anthracene	ND		1740	570	33	1740	262	15	74* [a]	10-153/66
56-55-3	Benzo(a)anthracene	88.2		1740	610	30	1740	295	12	70	10-157/71
50-32-8	Benzo(a)pyrene	96.8		1740	623	30	1740	300	12	70* [a]	10-164/67
205-99-2	Benzo(b)fluoranthene	117		1740	600	28	1740	281	9* [b]	72* [a]	10-154/69
191-24-2	Benzo(g,h,i)perylene	72.4		1740	667	34	1740	322	14	70* [a]	10-156/64
207-08-9	Benzo(k)fluoranthene	52.2		1740	603	32	1740	294	14	69* [a]	10-156/62
218-01-9	Chrysene	90.7		1740	633	31	1740	305	13	70	10-148/70
53-70-3	Dibenzo(a,h)anthracene	19.7	J	1740	664	37	1740	307	16	74* [a]	10-146/63
206-44-0	Fluoranthene	129		1740	535	24	1740	274	9* [b]	65	10-171/80
86-73-7	Fluorene	ND		1740	544	31	1740	240	14	78* [a]	10-148/65
193-39-5	Indeno(1,2,3-cd)pyrene	84.3		1740	691	35	1740	323	13	73* [a]	10-152/65
91-20-3	Naphthalene	ND		1740	517	30	1740	215	12	83* [a]	10-147/64
85-01-8	Phenanthrene	29.4	J	1740	571	31	1740	265	14	73	10-162/81
129-00-0	Pyrene	147		1740	710	32	1740	351	11	68	10-166/77

CAS No.	Surrogate Recoveries	MS	MSD	JD32315-1	Limits
4165-60-0	Nitrobenzene-d5	26%	11%* [a]	36%	15-114%
321-60-8	2-Fluorobiphenyl	29%	13%* [a]	41%	22-104%
1718-51-0	Terphenyl-d14	38%	19%* [a]	57%	23-121%

(a) Outside of in house control limits.
(b) Outside control limits due to matrix interference.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35857-MS	6P502020.D	1	10/10/21	CS	10/08/21	OP35857	E6P3522
OP35857-MSD	6P502021.D	1	10/11/21	CS	10/08/21	OP35857	E6P3522
JD31890-2 [a]	6P502022.D	1	10/11/21	CS	10/08/21	OP35857	E6P3522

The QC reported here applies to the following samples: **Method:** SW846 8270E

JD32315-8, JD32315-22, JD32315-26

CAS No.	Compound	JD31890-2 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	30.2	J	1950	1360	68	1910	1360	69	0	10-145/63
208-96-8	Acenaphthylene	34.0	J	1950	1370	68	1910	1310	67	4	10-144/59
120-12-7	Anthracene	ND		1950	1430	73	1910	1440	75	1	10-153/66
56-55-3	Benzo(a)anthracene	79.1		1950	1530	74	1910	1560	77	2	10-157/71
50-32-8	Benzo(a)pyrene	41.7		1950	1510	75	1910	1520	77	1	10-164/67
205-99-2	Benzo(b)fluoranthene	87.6		1950	1480	71	1910	1520	75	3	10-154/69
191-24-2	Benzo(g,h,i)perylene	53.0		1950	1610	80	1910	1660	84	3	10-156/64
207-08-9	Benzo(k)fluoranthene	35.7	J	1950	1440	72	1910	1450	74	1	10-156/62
218-01-9	Chrysene	75.1		1950	1500	73	1910	1510	75	1	10-148/70
53-70-3	Dibenzo(a,h)anthracene	ND		1950	1650	85	1910	1700	89	3	10-146/63
206-44-0	Fluoranthene	153		1950	1620	75	1910	1580	75	3	10-171/80
86-73-7	Fluorene	25.7	J	1950	1450	73	1910	1410	72	3	10-148/65
193-39-5	Indeno(1,2,3-cd)pyrene	68.7		1950	1710	84	1910	1740	87	2	10-152/65
91-20-3	Naphthalene	154		1950	1590	74	1910	1470	69	8	10-147/64
85-01-8	Phenanthrene	122		1950	1570	74	1910	1540	74	2	10-162/81
129-00-0	Pyrene	141		1950	1600	75	1910	1620	77	1	10-166/77

CAS No.	Surrogate Recoveries	MS	MSD	JD31890-2	Limits
367-12-4	2-Fluorophenol	41%	41%		7-101%
4165-62-2	Phenol-d5	52%	55%		12-101%
118-79-6	2,4,6-Tribromophenol	79%	86%		10-127%
4165-60-0	Nitrobenzene-d5	142%* [c]	137%* [c]	219%* [b]	15-114%
321-60-8	2-Fluorobiphenyl	71%	74%	76%	22-104%
1718-51-0	Terphenyl-d14	82%	88%	94%	23-121%

(a) Sample extracted outside the holding time. Confirmation run.
(b) Outside of in house control limits.
(c) Outside control limits due to matrix interference.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35940-MS	Z152223.D	1	10/13/21	CS	10/12/21	OP35940	EZ7572
OP35940-MSD	Z152224.D	1	10/13/21	CS	10/12/21	OP35940	EZ7572
JD32315-3	Z152225.D	1	10/13/21	CS	10/12/21	OP35940	EZ7572

The QC reported here applies to the following samples: **Method:** SW846 8270E

JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18, JD32315-21, JD32315-24, JD32315-27

CAS No.	Compound	JD32315-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
95-48-7	2-Methylphenol	ND		500	292	58	500	219	44	29	10-130/32
	3&4-Methylphenol	ND		1000	587	59	1000	432	43	30	10-128/36
87-86-5	Pentachlorophenol	ND		1000	891	89	1000	899	90	1	29-154/32
95-95-4	2,4,5-Trichlorophenol	ND		500	427	85	500	419	84	2	33-130/22
88-06-2	2,4,6-Trichlorophenol	ND		500	430	86	500	421	84	2	35-129/26
106-46-7	1,4-Dichlorobenzene	ND		500	305	61	500	297	59	3	10-155/26
121-14-2	2,4-Dinitrotoluene	ND		500	465	93	500	473	95	2	21-160/23
118-74-1	Hexachlorobenzene	ND		500	443	89	500	459	92	4	40-120/21
87-68-3	Hexachlorobutadiene	ND		500	320	64	500	315	63	2	10-129/24
67-72-1	Hexachloroethane	ND		500	297	59	500	289	58	3	10-120/26
98-95-3	Nitrobenzene	ND		500	400	80	500	383	77	4	26-138/26
110-86-1	Pyridine	ND		500	185	37	500	197	39	6	10-94/49

CAS No.	Surrogate Recoveries	MS	MSD	JD32315-3	Limits
367-12-4	2-Fluorophenol	45%	32%	32%	10-73%
4165-62-2	Phenol-d5	33%	23%	23%	10-64%
118-79-6	2,4,6-Tribromophenol	97%	95%	90%	31-130%
4165-60-0	Nitrobenzene-d5	84%	77%	77%	28-126%
321-60-8	2-Fluorobiphenyl	82%	80%	74%	26-114%
1718-51-0	Terphenyl-d14	92%	90%	87%	16-122%

* = Outside of Control Limits.

Leachate Spike Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35940-LS13	Z152223.D	1	10/13/21	CS	10/12/21	OP35940	EZ7572
JD32315-3	Z152225.D	1	10/13/21	CS	10/12/21	OP35940	EZ7572

The QC reported here applies to the following samples: **Method:** SW846 8270E

JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18, JD32315-21, JD32315-24, JD32315-27

CAS No.	Compound	JD32315-3 ug/l	Q	Spike ug/l	LS ug/l	LS %	Limits
95-48-7	2-Methylphenol	ND		500	292	58	10-130
	3&4-Methylphenol	ND		1000	587	59	10-128
87-86-5	Pentachlorophenol	ND		1000	891	89	29-154
95-95-4	2,4,5-Trichlorophenol	ND		500	427	85	33-130
88-06-2	2,4,6-Trichlorophenol	ND		500	430	86	35-129
106-46-7	1,4-Dichlorobenzene	ND		500	305	61	10-155
121-14-2	2,4-Dinitrotoluene	ND		500	465	93	21-160
118-74-1	Hexachlorobenzene	ND		500	443	89	40-120
87-68-3	Hexachlorobutadiene	ND		500	320	64	10-129
67-72-1	Hexachloroethane	ND		500	297	59	10-120
98-95-3	Nitrobenzene	ND		500	400	80	26-138
110-86-1	Pyridine	ND		500	185	37	10-94

CAS No.	Surrogate Recoveries	LS	JD32315-3	Limits
367-12-4	2-Fluorophenol	45%	32%	10-73%
4165-62-2	Phenol-d5	33%	23%	10-64%
118-79-6	2,4,6-Tribromophenol	97%	90%	31-130%
4165-60-0	Nitrobenzene-d5	84%	77%	28-126%
321-60-8	2-Fluorobiphenyl	82%	74%	26-114%
1718-51-0	Terphenyl-d14	92%	87%	16-122%

* = Outside of Control Limits.

Instrument Performance Check (DFTPP)

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample: E2P4598-DFTPP
Lab File ID: 2P102516.D
Instrument ID: GCMS2P
Injection Date: 08/31/21
Injection Time: 18:08

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	350151	35.5		Pass
68	Less than 2.0% of mass 69	6079	0.62	(1.39) [a]	Pass
69	Mass 69 relative abundance	437796	44.4		Pass
70	Less than 2.0% of mass 69	2369	0.24	(0.54) [a]	Pass
127	40.0 - 60.0% of mass 198	455147	46.1		Pass
197	Less than 1.0% of mass 198	5525	0.56		Pass
198	Base peak, 100% relative abundance	986347	100.0		Pass
199	5.0 - 9.0% of mass 198	66784	6.77		Pass
275	10.0 - 30.0% of mass 198	282965	28.7		Pass
365	1.0 - 100.0% of mass 198	40851	4.14		Pass
441	Present, but less than mass 443	151187	15.3	(84.5) [b]	Pass
442	40.0 - 100.0% of mass 198	972629	98.6		Pass
443	17.0 - 23.0% of mass 442	178829	18.1	(18.4) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E2P4598-IC4598	2P102517.D	08/31/21	18:37	00:29	Initial cal 1
E2P4598-IC4598	2P102518.D	08/31/21	19:02	00:54	Initial cal 2
E2P4598-IC4598	2P102519.D	08/31/21	19:27	01:19	Initial cal 5
E2P4598-IC4598	2P102520.D	08/31/21	19:52	01:44	Initial cal 10
E2P4598-IC4598	2P102523.D	08/31/21	21:07	02:59	Initial cal 80
E2P4598-IC4598	2P102524.D	08/31/21	21:32	03:24	Initial cal 100
E2P4598-IC4598	2P102526.D	08/31/21	21:56	03:48	Initial cal 25
E2P4598-ICC4598	2P102527.D	08/31/21	22:22	04:14	Initial cal 50
E2P4598-ICV4598	2P102525.D	08/31/21	22:46	04:38	Initial cal verification 50

Instrument Performance Check (DFTPP)

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample: E2P4610-DFTPP
Lab File ID: 2P102721.D
Instrument ID: GCMS2P
Injection Date: 09/08/21
Injection Time: 15:01

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	130093	37.9		Pass
68	Less than 2.0% of mass 69	1430	0.42	(0.77) [a]	Pass
69	Mass 69 relative abundance	186139	54.2		Pass
70	Less than 2.0% of mass 69	635	0.18	(0.34) [a]	Pass
127	40.0 - 60.0% of mass 198	197104	57.4		Pass
197	Less than 1.0% of mass 198	643	0.19		Pass
198	Base peak, 100% relative abundance	343424	100.0		Pass
199	5.0 - 9.0% of mass 198	22832	6.65		Pass
275	10.0 - 30.0% of mass 198	80533	23.5		Pass
365	1.0 - 100.0% of mass 198	9764	2.84		Pass
441	Present, but less than mass 443	37216	10.8	(79.7) [b]	Pass
442	40.0 - 100.0% of mass 198	242699	70.7		Pass
443	17.0 - 23.0% of mass 442	46696	13.6	(19.2) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E2P4610-IC4610	2P102722.D	09/08/21	15:20	00:19	Initial cal 100
E2P4610-IC4610	2P102723.D	09/08/21	15:47	00:46	Initial cal 1
E2P4610-IC4610	2P102724.D	09/08/21	16:12	01:11	Initial cal 80
E2P4610-IC4610	2P102725.D	09/08/21	16:39	01:38	Initial cal 2
E2P4610-ICC4610	2P102726.D	09/08/21	17:05	02:04	Initial cal 50
E2P4610-IC4610	2P102727.D	09/08/21	17:31	02:30	Initial cal 5
E2P4610-IC4610	2P102728.D	09/08/21	17:57	02:56	Initial cal 25
E2P4610-IC4610	2P102729.D	09/08/21	18:23	03:22	Initial cal 10
E2P4610-ICV4610	2P102730.D	09/08/21	18:49	03:48	Initial cal verification 50
E2P4610-ICV4610	2P102731.D	09/08/21	19:15	04:14	Initial cal verification 50
E2P4610-ICV4610	2P102732.D	09/08/21	19:42	04:41	Initial cal verification 50

Instrument Performance Check (DFTPP)

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample:	E2P4611-DFTPP	**Injection Date:**	09/09/21
Lab File ID:	2P102735.D	**Injection Time:**	14:20
Instrument ID:	GCMS2P		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	128961	38.6		Pass
68	Less than 2.0% of mass 69	1675	0.50	(0.92) [a]	Pass
69	Mass 69 relative abundance	182027	54.5		Pass
70	Less than 2.0% of mass 69	806	0.24	(0.44) [a]	Pass
127	40.0 - 60.0% of mass 198	191773	57.4		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	333915	100.0		Pass
199	5.0 - 9.0% of mass 198	21832	6.54		Pass
275	10.0 - 30.0% of mass 198	73363	22.0		Pass
365	1.0 - 100.0% of mass 198	8958	2.68		Pass
441	Present, but less than mass 443	32952	9.87	(73.6) [b]	Pass
442	40.0 - 100.0% of mass 198	222136	66.5		Pass
443	17.0 - 23.0% of mass 442	44764	13.4	(20.2) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E2P4611-ICV4610	2P102736.D	09/09/21	14:42	00:22	Initial cal verification 50

Instrument Performance Check (DFTPP)

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample:	E2P4638-DFTPP	**Injection Date:**	10/05/21
Lab File ID:	2P103264.D	**Injection Time:**	10:24
Instrument ID:	GCMS2P		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	248417	33.1		Pass
68	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
69	Mass 69 relative abundance	342903	45.7		Pass
70	Less than 2.0% of mass 69	1509	0.20	(0.44) [a]	Pass
127	40.0 - 60.0% of mass 198	382140	50.9		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	750464	100.0		Pass
199	5.0 - 9.0% of mass 198	49760	6.63		Pass
275	10.0 - 30.0% of mass 198	177621	23.7		Pass
365	1.0 - 100.0% of mass 198	19863	2.65		Pass
441	Present, but less than mass 443	90933	12.1	(79.4) [b]	Pass
442	40.0 - 100.0% of mass 198	605547	80.7		Pass
443	17.0 - 23.0% of mass 442	114539	15.3	(18.9) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E2P4638-CC4610	2P103265.D	10/05/21	10:35	00:11	Continuing cal 50
E2P4638-CC4598	2P103266.D	10/05/21	10:59	00:35	Continuing cal 50
OP35710-MB1	2P103267.D	10/05/21	11:24	01:00	Method Blank
OP35710-BS1	2P103268.D	10/05/21	11:49	01:25	Blank Spike
ZZZZZZ	2P103269.D	10/05/21	12:14	01:50	(unrelated sample)
ZZZZZZ	2P103270.D	10/05/21	12:42	02:18	(unrelated sample)
JD32286-5A	2P103271.D	10/05/21	13:07	02:43	(used for QC only; not part of job JD32315)
JD32315-2	2P103272.D	10/05/21	13:31	03:07	B-106-B
JD32315-5	2P103273.D	10/05/21	13:56	03:32	H-104-B
JD32315-9	2P103274.D	10/05/21	14:21	03:57	DUP-B
JD32315-11	2P103275.D	10/05/21	14:46	04:22	H-101-B
ZZZZZZ	2P103282.D	10/05/21	15:10	04:46	(unrelated sample)
JD32315-8	2P103276.D	10/05/21	15:35	05:11	DUP-A
JD32315-4	2P103278.D	10/05/21	17:14	06:50	H-104-A
OP35710-MS	2P103280.D	10/05/21	18:04	07:40	Matrix Spike
OP35710-MSD	2P103281.D	10/05/21	18:28	08:04	Matrix Spike Duplicate
ZZZZZZ	2P103285.D	10/05/21	18:53	08:29	(unrelated sample)

Instrument Performance Check (DFTPP)

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample:	E2P4640-DFTPP	**Injection Date:**	10/06/21
Lab File ID:	2P103315.D	**Injection Time:**	15:13
Instrument ID:	GCMS2P		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	55204	34.6		Pass
68	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
69	Mass 69 relative abundance	79247	49.7		Pass
70	Less than 2.0% of mass 69	361	0.23	(0.46) [a]	Pass
127	40.0 - 60.0% of mass 198	83265	52.2		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	159493	100.0		Pass
199	5.0 - 9.0% of mass 198	10408	6.53		Pass
275	10.0 - 30.0% of mass 198	36563	22.9		Pass
365	1.0 - 100.0% of mass 198	4074	2.55		Pass
441	Present, but less than mass 443	17505	11.0	(83.2) [b]	Pass
442	40.0 - 100.0% of mass 198	110339	69.2		Pass
443	17.0 - 23.0% of mass 442	21050	13.2	(19.1) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E2P4640-CC4610	2P103316.D	10/06/21	15:33	00:20	Continuing cal 50
E2P4640-CC4598	2P103317.D	10/06/21	16:00	00:47	Continuing cal 50
JD32315-1	2P103320.D	10/06/21	17:32	02:19	B-106-A
JD32315-20	2P103321.D	10/06/21	17:59	02:46	B-102-B
JD32315-10	2P103322.D	10/06/21	18:26	03:13	H-101-A
JD32315-4	2P103323.D	10/06/21	18:53	03:40	H-104-A

Instrument Performance Check (DFTPP)

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample: E6P3504-DFTPP
Lab File ID: 6P501599.D
Instrument ID: GCMS6P
Injection Date: 09/29/21
Injection Time: 13:43

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	259029	44.7		Pass
68	Less than 2.0% of mass 69	1354	0.23	(0.38) [a]	Pass
69	Mass 69 relative abundance	353085	61.0		Pass
70	Less than 2.0% of mass 69	2293	0.40	(0.65) [a]	Pass
127	40.0 - 60.0% of mass 198	335087	57.9		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	579136	100.0		Pass
199	5.0 - 9.0% of mass 198	36184	6.25		Pass
275	10.0 - 30.0% of mass 198	164402	28.4		Pass
365	1.0 - 100.0% of mass 198	22673	3.91		Pass
441	Present, but less than mass 443	54549	9.42	(85.9) [b]	Pass
442	40.0 - 100.0% of mass 198	346410	59.8		Pass
443	17.0 - 23.0% of mass 442	63467	11.0	(18.3) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E6P3504-IC3504	6P501600.D	09/29/21	14:00	00:17	Initial cal 1
E6P3504-IC3504	6P501601.D	09/29/21	14:22	00:39	Initial cal 2
E6P3504-IC3504	6P501602.D	09/29/21	14:44	01:01	Initial cal 5
E6P3504-IC3504	6P501603.D	09/29/21	15:06	01:23	Initial cal 10
E6P3504-IC3504	6P501604.D	09/29/21	15:28	01:45	Initial cal 25
E6P3504-ICC3504	6P501605.D	09/29/21	15:49	02:06	Initial cal 50
E6P3504-IC3504	6P501606.D	09/29/21	16:11	02:28	Initial cal 80
E6P3504-IC3504	6P501607.D	09/29/21	16:33	02:50	Initial cal 100
E6P3504-ICV3504	6P501609.D	09/29/21	17:17	03:34	Initial cal verification 50
E6P3504-ICV3504	6P501610.D	09/29/21	17:39	03:56	Initial cal verification 50

Instrument Performance Check (DFTPP)

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample: E6P3505-DFTPP
Lab File ID: 6P501613.D
Instrument ID: GCMS6P
Injection Date: 09/29/21
Injection Time: 20:16

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	220472	43.2		Pass
68	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
69	Mass 69 relative abundance	288218	56.4		Pass
70	Less than 2.0% of mass 69	1549	0.30	(0.54) [a]	Pass
127	40.0 - 60.0% of mass 198	280674	55.0		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	510592	100.0		Pass
199	5.0 - 9.0% of mass 198	33288	6.52		Pass
275	10.0 - 30.0% of mass 198	146973	28.8		Pass
365	1.0 - 100.0% of mass 198	20256	3.97		Pass
441	Present, but less than mass 443	50272	9.85	(79.9) [b]	Pass
442	40.0 - 100.0% of mass 198	322026	63.1		Pass
443	17.0 - 23.0% of mass 442	62917	12.3	(19.5) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E6P3505-IC3505	6P501614.D	09/29/21	20:26	00:10	Initial cal 1
E6P3505-IC3505	6P501615.D	09/29/21	20:48	00:32	Initial cal 2
E6P3505-IC3505	6P501616.D	09/29/21	21:10	00:54	Initial cal 5
E6P3505-IC3505	6P501617.D	09/29/21	21:32	01:16	Initial cal 10
E6P3505-IC3505	6P501618.D	09/29/21	21:53	01:37	Initial cal 25
E6P3505-ICC3505	6P501619.D	09/29/21	22:15	01:59	Initial cal 50
E6P3505-IC3505	6P501620.D	09/29/21	22:37	02:21	Initial cal 80
E6P3505-IC3505	6P501621.D	09/29/21	22:59	02:43	Initial cal 100
E6P3505-ICV3505	6P501622.D	09/29/21	23:21	03:05	Initial cal verification 50

Instrument Performance Check (DFTPP)

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample:	E6P3506-DFTPP	**Injection Date:**	09/30/21
Lab File ID:	6P501623.D	**Injection Time:**	11:06
Instrument ID:	GCMS6P		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	259309	43.3		Pass
68	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
69	Mass 69 relative abundance	273800	45.7		Pass
70	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
127	40.0 - 60.0% of mass 198	341070	57.0		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	598592	100.0		Pass
199	5.0 - 9.0% of mass 198	35030	5.85		Pass
275	10.0 - 30.0% of mass 198	168085	28.1		Pass
365	1.0 - 100.0% of mass 198	22458	3.75		Pass
441	Present, but less than mass 443	51624	8.62	(78.4) [b]	Pass
442	40.0 - 100.0% of mass 198	364992	61.0		Pass
443	17.0 - 23.0% of mass 442	65872	11.0	(18.0) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E6P3506-ICV3504	6P501625.D	09/30/21	11:38	00:32	Initial cal verification 50

Instrument Performance Check (DFTPP)

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample: E6P3507-DFTPP
Lab File ID: 6P501626.D
Instrument ID: GCMS6P
Injection Date: 09/30/21
Injection Time: 13:41

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	228085	41.3		Pass
68	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
69	Mass 69 relative abundance	316429	57.3		Pass
70	Less than 2.0% of mass 69	1962	0.36	(0.62) [a]	Pass
127	40.0 - 60.0% of mass 198	302040	54.7		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	552000	100.0		Pass
199	5.0 - 9.0% of mass 198	35967	6.52		Pass
275	10.0 - 30.0% of mass 198	160352	29.0		Pass
365	1.0 - 100.0% of mass 198	22148	4.01		Pass
441	Present, but less than mass 443	59389	10.8	(88.4) [b]	Pass
442	40.0 - 100.0% of mass 198	374058	67.8		Pass
443	17.0 - 23.0% of mass 442	67160	12.2	(18.0) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E6P3507-ICV3504	6P501627.D	09/30/21	13:51	00:10	Initial cal verification 50
E6P3507-CC3504	6P501628.D	09/30/21	14:22	00:41	Continuing cal 25
E6P3507-CC3505	6P501629.D	09/30/21	15:07	01:26	Continuing cal 25
OP35623-MB1	6P501630C.D	09/30/21	19:42	06:01	Method Blank
OP35623-BS1	6P501631.D	09/30/21	20:03	06:22	Blank Spike
ZZZZZZ	6P501632.D	09/30/21	20:25	06:44	(unrelated sample)
ZZZZZZ	6P501633.D	09/30/21	20:47	07:06	(unrelated sample)
JD32216-1	6P501634A.D	09/30/21	21:48	08:07	(used for QC only; not part of job JD32315)
ZZZZZZ	6P501635.D	09/30/21	22:09	08:28	(unrelated sample)
ZZZZZZ	6P501636.D	09/30/21	22:31	08:50	(unrelated sample)
ZZZZZZ	6P501637.D	09/30/21	22:53	09:12	(unrelated sample)
ZZZZZZ	6P501638.D	09/30/21	23:15	09:34	(unrelated sample)
OP35623-MS	6P501639.D	09/30/21	23:36	09:55	Matrix Spike
OP35623-MSD	6P501640.D	09/30/21	23:58	10:17	Matrix Spike Duplicate
ZZZZZZ	6P501641.D	10/01/21	00:20	10:39	(unrelated sample)
ZZZZZZ	6P501642.D	10/01/21	00:42	11:01	(unrelated sample)
ZZZZZZ	6P501643.D	10/01/21	01:03	11:22	(unrelated sample)
ZZZZZZ	6P501644.D	10/01/21	01:25	11:44	(unrelated sample)

Instrument Performance Check (DFTPP)

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample: E6P3522-DFTPP
Lab File ID: 6P502001.D
Instrument ID: GCMS6P
Injection Date: 10/10/21
Injection Time: 16:27

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	144120	40.7		Pass
68	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
69	Mass 69 relative abundance	204630	57.7		Pass
70	Less than 2.0% of mass 69	1224	0.35	(0.60) [a]	Pass
127	40.0 - 60.0% of mass 198	194917	55.0		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	354475	100.0		Pass
199	5.0 - 9.0% of mass 198	23830	6.72		Pass
275	10.0 - 30.0% of mass 198	98027	27.7		Pass
365	1.0 - 100.0% of mass 198	14957	4.22		Pass
441	Present, but less than mass 443	36759	10.4	(80.3) [b]	Pass
442	40.0 - 100.0% of mass 198	240443	67.8		Pass
443	17.0 - 23.0% of mass 442	45755	12.9	(19.0) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E6P3522-CC3504	6P502002.D	10/10/21	16:58	00:31	Continuing cal 25
E6P3522-CC3505	6P502003.D	10/10/21	17:20	00:53	Continuing cal 25
OP35857-MB1	6P502004.D	10/10/21	17:49	01:22	Method Blank
OP35857-BS1	6P502005.D	10/10/21	18:11	01:44	Blank Spike
ZZZZZZ	6P502006.D	10/10/21	18:33	02:06	(unrelated sample)
ZZZZZZ	6P502007.D	10/10/21	18:55	02:28	(unrelated sample)
ZZZZZZ	6P502008.D	10/10/21	19:17	02:50	(unrelated sample)
ZZZZZZ	6P502009.D	10/10/21	19:39	03:12	(unrelated sample)
ZZZZZZ	6P502010.D	10/10/21	20:01	03:34	(unrelated sample)
ZZZZZZ	6P502011.D	10/10/21	20:22	03:55	(unrelated sample)
ZZZZZZ	6P502012.D	10/10/21	20:44	04:17	(unrelated sample)
ZZZZZZ	6P502013.D	10/10/21	21:06	04:39	(unrelated sample)
ZZZZZZ	6P502014.D	10/10/21	21:28	05:01	(unrelated sample)
JD32315-26	6P502015.D	10/10/21	21:50	05:23	B-104-B
ZZZZZZ	6P502016.D	10/10/21	22:12	05:45	(unrelated sample)
ZZZZZZ	6P502018.D	10/10/21	22:56	06:29	(unrelated sample)
ZZZZZZ	6P502019.D	10/10/21	23:18	06:51	(unrelated sample)
OP35857-MS	6P502020.D	10/10/21	23:40	07:13	Matrix Spike
OP35857-MSD	6P502021.D	10/11/21	00:01	07:34	Matrix Spike Duplicate

Instrument Performance Check (DFTPP)

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample:	E6P3522-DFTPP	**Injection Date:**	10/10/21
Lab File ID:	6P502001.D	**Injection Time:**	16:27
Instrument ID:	GCMS6P		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
JD31890-2	6P502022.D	10/11/21	00:23	07:56	(used for QC only; not part of job JD32315)
ZZZZZZ	6P502023.D	10/11/21	00:45	08:18	(unrelated sample)
JD32315-8	6P502024.D	10/11/21	01:07	08:40	DUP-A
JD32315-22	6P502025.D	10/11/21	01:29	09:02	B-105-A(0.5-2')
ZZZZZZ	6P502026.D	10/11/21	01:51	09:24	(unrelated sample)

Instrument Performance Check (DFTPP)

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample:	EM7525-DFTPP	**Injection Date:**	09/21/21
Lab File ID:	M175056.D	**Injection Time:**	18:37
Instrument ID:	GCMSM		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	55048	36.4		Pass
68	Less than 2.0% of mass 69	222	0.15	(0.31) [a]	Pass
69	Mass 69 relative abundance	72202	47.7		Pass
70	Less than 2.0% of mass 69	238	0.16	(0.33) [a]	Pass
127	40.0 - 60.0% of mass 198	90576	59.8		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	151381	100.0		Pass
199	5.0 - 9.0% of mass 198	10497	6.93		Pass
275	10.0 - 30.0% of mass 198	38794	25.6		Pass
365	1.0 - 100.0% of mass 198	5830	3.85		Pass
441	Present, but less than mass 443	18722	12.4	(72.2) [b]	Pass
442	40.0 - 100.0% of mass 198	133669	88.3		Pass
443	17.0 - 23.0% of mass 442	25917	17.1	(19.4) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
EM7525-IC7525	M175057.D	09/21/21	18:49	00:12	Initial cal 1
EM7525-IC7525	M175058.D	09/21/21	19:17	00:40	Initial cal 2
EM7525-IC7525	M175059.D	09/21/21	19:46	01:09	Initial cal 5
EM7525-IC7525	M175060.D	09/21/21	20:15	01:38	Initial cal 10
EM7525-IC7525	M175061.D	09/21/21	20:43	02:06	Initial cal 25
EM7525-ICC7525	M175062.D	09/21/21	21:12	02:35	Initial cal 50
EM7525-IC7525	M175063A.D	09/21/21	22:42	04:05	Initial cal 80
EM7525-IC7525	M175064.D	09/21/21	23:10	04:33	Initial cal 100
EM7525-ICV7525	M175065.D	09/21/21	23:39	05:02	Initial cal verification 50

Instrument Performance Check (DFTPP)

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample: EM7526-DFTPP
Lab File ID: M175070.D
Instrument ID: GCMSM
Injection Date: 09/22/21
Injection Time: 14:01

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	59523	33.7		Pass
68	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
69	Mass 69 relative abundance	82293	46.6		Pass
70	Less than 2.0% of mass 69	338	0.19	(0.41) [a]	Pass
127	40.0 - 60.0% of mass 198	103112	58.4		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	176544	100.0		Pass
199	5.0 - 9.0% of mass 198	12565	7.12		Pass
275	10.0 - 30.0% of mass 198	48477	27.5		Pass
365	1.0 - 100.0% of mass 198	7144	4.05		Pass
441	Present, but less than mass 443	23299	13.2	(75.9) [b]	Pass
442	40.0 - 100.0% of mass 198	157978	89.5		Pass
443	17.0 - 23.0% of mass 442	30685	17.4	(19.4) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
EM7526-IC7526	M175071.D	09/22/21	14:18	00:17	Initial cal 100
EM7526-IC7526	M175072.D	09/22/21	14:47	00:46	Initial cal 1
EM7526-IC7526	M175073.D	09/22/21	15:16	01:15	Initial cal 80
EM7526-IC7526	M175074.D	09/22/21	15:45	01:44	Initial cal 2
EM7526-ICC7526	M175075.D	09/22/21	16:14	02:13	Initial cal 50
EM7526-IC7526	M175076.D	09/22/21	16:43	02:42	Initial cal 5
EM7526-IC7526	M175077.D	09/22/21	17:12	03:11	Initial cal 25
EM7526-IC7526	M175078.D	09/22/21	17:41	03:40	Initial cal 10
EM7526-ICV7526	M175079.D	09/22/21	18:10	04:09	Initial cal verification 50
EM7526-ICV7526	M175080.D	09/22/21	18:39	04:38	Initial cal verification 50
EM7526-ICV7526	M175081.D	09/22/21	19:08	05:07	Initial cal verification 50
EM7526-ICV7526	M175082.D	09/22/21	19:37	05:36	Initial cal verification 50

Instrument Performance Check (DFTPP)

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample:	EM7542-DFTPP	**Injection Date:**	10/05/21
Lab File ID:	M175453.D	**Injection Time:**	11:45
Instrument ID:	GCMSM		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	26994	31.0		Pass
68	Less than 2.0% of mass 69	268	0.31	(0.68) [a]	Pass
69	Mass 69 relative abundance	39411	45.3		Pass
70	Less than 2.0% of mass 69	140	0.16	(0.36) [a]	Pass
127	40.0 - 60.0% of mass 198	51760	59.4		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	87096	100.0		Pass
199	5.0 - 9.0% of mass 198	5886	6.76		Pass
275	10.0 - 30.0% of mass 198	24224	27.8		Pass
365	1.0 - 100.0% of mass 198	3600	4.13		Pass
441	Present, but less than mass 443	12193	14.0	(70.3) [b]	Pass
442	40.0 - 100.0% of mass 198	85621	98.3		Pass
443	17.0 - 23.0% of mass 442	17338	19.9	(20.2) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
EM7542-CC7526	M175454.D	10/05/21	11:57	00:12	Continuing cal 50
EM7542-CC7525	M175455.D	10/05/21	12:26	00:41	Continuing cal 50
OP35710-MB1	M175457.D	10/05/21	13:24	01:39	Method Blank
JD32315-14	M175458.D	10/05/21	13:52	02:07	B-103-B
JD32315-17	M175459.D	10/05/21	14:21	02:36	H-102-B
JD32315-23	M175460.D	10/05/21	14:50	03:05	B-105-B(20-24')
JD32315-25	M175461.D	10/05/21	15:19	03:34	B-104-A
JD32315-16	M175462.D	10/05/21	15:48	04:03	H-102-A
JD32315-19	M175463.D	10/05/21	16:16	04:31	B-102-A
JD32315-22	M175464.D	10/05/21	16:45	05:00	B-105-A(0.5-2')
ZZZZZZ	M175465.D	10/05/21	17:14	05:29	(unrelated sample)
ZZZZZZ	M175466.D	10/05/21	17:43	05:58	(unrelated sample)
JD32315-13	M175468.D	10/05/21	18:41	06:56	B-103-A
JD32345-10	M175470A.D	10/05/21	20:06	08:21	(used for QC only; not part of job JD32315)
JD32345-10	M175471.D	10/05/21	20:35	08:50	(used for QC only; not part of job JD32315)
ZZZZZZ	M175472.D	10/05/21	21:04	09:19	(unrelated sample)
ZZZZZZ	M175473.D	10/05/21	21:32	09:47	(unrelated sample)
ZZZZZZ	M175474.D	10/05/21	22:01	10:16	(unrelated sample)
ZZZZZZ	M175475.D	10/05/21	22:30	10:45	(unrelated sample)

Instrument Performance Check (DFTPP)

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample:	EZ7517-DFTPP	**Injection Date:**	09/02/21
Lab File ID:	Z151212.D	**Injection Time:**	11:16
Instrument ID:	GCMSZ		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	67019	39.8		Pass
68	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
69	Mass 69 relative abundance	81472	48.4		Pass
70	Less than 2.0% of mass 69	499	0.30	(0.61) [a]	Pass
127	40.0 - 60.0% of mass 198	84573	50.2		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	168347	100.0		Pass
199	5.0 - 9.0% of mass 198	11451	6.80		Pass
275	10.0 - 30.0% of mass 198	44512	26.4		Pass
365	1.0 - 100.0% of mass 198	7380	4.38		Pass
441	Present, but less than mass 443	23264	13.8	(82.0) [b]	Pass
442	40.0 - 100.0% of mass 198	149459	88.8		Pass
443	17.0 - 23.0% of mass 442	28381	16.9	(19.0) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
EZ7517-IC7517	Z151214.D	09/02/21	12:00	00:44	Initial cal 1
EZ7517-IC7517	Z151215.D	09/02/21	12:28	01:12	Initial cal 2
EZ7517-IC7517	Z151216.D	09/02/21	12:57	01:41	Initial cal 5
EZ7517-IC7517	Z151217.D	09/02/21	13:25	02:09	Initial cal 10
EZ7517-IC7517	Z151218.D	09/02/21	13:53	02:37	Initial cal 25
EZ7517-ICC7517	Z151219.D	09/02/21	14:21	03:05	Initial cal 50
EZ7517-IC7517	Z151220.D	09/02/21	14:50	03:34	Initial cal 80
EZ7517-IC7517	Z151221.D	09/02/21	15:19	04:03	Initial cal 100
EZ7517-ICV7517	Z151222.D	09/02/21	15:49	04:33	Initial cal verification 50
EZ7517-ICV7513	Z151224.D	09/02/21	16:45	05:29	Initial cal verification 50

Instrument Performance Check (DFTPP)

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample:	EZ7524-DFTPP	**Injection Date:**	09/09/21
Lab File ID:	Z151331.D	**Injection Time:**	11:00
Instrument ID:	GCMSZ		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	62163	35.9		Pass
68	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
69	Mass 69 relative abundance	78023	45.1		Pass
70	Less than 2.0% of mass 69	516	0.30	(0.66) [a]	Pass
127	40.0 - 60.0% of mass 198	82981	47.9		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	173171	100.0		Pass
199	5.0 - 9.0% of mass 198	11633	6.72		Pass
275	10.0 - 30.0% of mass 198	48896	28.2		Pass
365	1.0 - 100.0% of mass 198	7616	4.40		Pass
441	Present, but less than mass 443	21822	12.6	(82.7) [b]	Pass
442	40.0 - 100.0% of mass 198	139160	80.4		Pass
443	17.0 - 23.0% of mass 442	26391	15.2	(19.0) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
EZ7524-IC7524	Z151332.D	09/09/21	11:19	00:19	Initial cal 1
EZ7524-IC7524	Z151333.D	09/09/21	11:45	00:45	Initial cal 2
EZ7524-IC7524	Z151334.D	09/09/21	12:11	01:11	Initial cal 5
EZ7524-IC7524	Z151335.D	09/09/21	12:37	01:37	Initial cal 10
EZ7524-IC7524	Z151336.D	09/09/21	13:03	02:03	Initial cal 25
EZ7524-ICC7524	Z151337.D	09/09/21	13:29	02:29	Initial cal 50
EZ7524-IC7524	Z151338.D	09/09/21	13:55	02:55	Initial cal 80
EZ7524-IC7524	Z151339.D	09/09/21	14:21	03:21	Initial cal 100
EZ7524-ICV7524	Z151340.D	09/09/21	14:47	03:47	Initial cal verification 50
EZ7524-ICV7524	Z151341.D	09/09/21	15:13	04:13	Initial cal verification 50
EZ7524-ICV7524	Z151342.D	09/09/21	15:39	04:39	Initial cal verification 50
EZ7524-ICV7524	Z151343.D	09/09/21	16:05	05:05	Initial cal verification 50

Instrument Performance Check (DFTPP)

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample:	EZ7569-DFTPP	**Injection Date:**	10/11/21
Lab File ID:	Z152171.D	**Injection Time:**	10:46
Instrument ID:	GCMSZ		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	56404	34.6		Pass
68	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
69	Mass 69 relative abundance	70933	43.5		Pass
70	Less than 2.0% of mass 69	496	0.30	(0.70) [a]	Pass
127	40.0 - 60.0% of mass 198	84774	52.0		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	163024	100.0		Pass
199	5.0 - 9.0% of mass 198	10480	6.43		Pass
275	10.0 - 30.0% of mass 198	40891	25.1		Pass
365	1.0 - 100.0% of mass 198	6713	4.12		Pass
441	Present, but less than mass 443	14021	8.60	(90.3) [b]	Pass
442	40.0 - 100.0% of mass 198	84069	51.6		Pass
443	17.0 - 23.0% of mass 442	15530	9.53	(18.5) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
EZ7569-CC7524	Z152172.D	10/11/21	11:00	00:14	Continuing cal 25
EZ7569-CC7517	Z152173.D	10/11/21	11:26	00:40	Continuing cal 25
OP35857-MB1	Z152175.D	10/11/21	12:47	02:01	Method Blank
ZZZZZZ	Z152176A.D	10/11/21	13:13	02:27	(unrelated sample)
ZZZZZZ	Z152177.D	10/11/21	13:39	02:53	(unrelated sample)
ZZZZZZ	Z152178.D	10/11/21	14:04	03:18	(unrelated sample)
ZZZZZZ	Z152180.D	10/11/21	14:56	04:10	(unrelated sample)
JD32315-8	Z152181.D	10/11/21	15:22	04:36	DUP-A
JD32315-22	Z152182.D	10/11/21	15:48	05:02	B-105-A(0.5-2')
ZZZZZZ	Z152183.D	10/11/21	16:13	05:27	(unrelated sample)
ZZZZZZ	Z152184.D	10/11/21	16:39	05:53	(unrelated sample)
OP35642A-MB1	Z152189.D	10/11/21	18:49	08:03	Method Blank
OP35642A-BS1	Z152190.D	10/11/21	19:15	08:29	Blank Spike
OP35642A-BSD	Z152191.D	10/11/21	19:40	08:54	Blank Spike Duplicate
ZZZZZZ	Z152192.D	10/11/21	20:06	09:20	(unrelated sample)

Instrument Performance Check (DFTPP)

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample: EZ7572-DFTPP
Lab File ID: Z152216.D
Instrument ID: GCMSZ
Injection Date: 10/13/21
Injection Time: 01:25

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	60255	32.6		Pass
68	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
69	Mass 69 relative abundance	77167	41.7		Pass
70	Less than 2.0% of mass 69	314	0.17	(0.41) [a]	Pass
127	40.0 - 60.0% of mass 198	93243	50.4		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	185069	100.0		Pass
199	5.0 - 9.0% of mass 198	11892	6.43		Pass
275	10.0 - 30.0% of mass 198	42733	23.1		Pass
365	1.0 - 100.0% of mass 198	6733	3.64		Pass
441	Present, but less than mass 443	14582	7.88	(84.3) [b]	Pass
442	40.0 - 100.0% of mass 198	88488	47.8		Pass
443	17.0 - 23.0% of mass 442	17288	9.34	(19.5) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
EZ7572-CC7524	Z152217.D	10/13/21	01:39	00:14	Continuing cal 50
OP35940-MB1	Z152218.D	10/13/21	02:21	00:56	Method Blank
OP35940-LB13	Z152219.D	10/13/21	02:47	01:22	Leachate Blank
OP35940-LB15	Z152220.D	10/13/21	03:12	01:47	Leachate Blank
OP35940-LB16	Z152221.D	10/13/21	03:38	02:13	Leachate Blank
OP35940-BS1	Z152222.D	10/13/21	04:04	02:39	Blank Spike
OP35940-MS	Z152223.D	10/13/21	04:30	03:05	Matrix Spike
OP35940-LS13	Z152223.D	10/13/21	04:30	03:05	Leachate Spike
OP35940-MSD	Z152224.D	10/13/21	04:55	03:30	Matrix Spike Duplicate
JD32315-3	Z152225.D	10/13/21	05:22	03:57	B-106-C
JD32315-6	Z152226.D	10/13/21	05:47	04:22	H-104-C1
JD32315-7	Z152227.D	10/13/21	06:13	04:48	H-104-C2
JD32315-12	Z152228.D	10/13/21	06:39	05:14	H-101-C
JD32315-15	Z152229.D	10/13/21	07:05	05:40	B-103-C
JD32315-18	Z152230.D	10/13/21	07:30	06:05	H-102-C
JD32315-21	Z152231.D	10/13/21	07:56	06:31	B-102-C
JD32315-24	Z152232.D	10/13/21	08:22	06:57	B-105-C(0.5-24')
JD32315-27	Z152233.D	10/13/21	08:47	07:22	B-104-C
ZZZZZZ	Z152234.D	10/13/21	09:13	07:48	(unrelated sample)

Instrument Performance Check (DFTPP)

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample:	EZ7572-DFTPP	**Injection Date:**	10/13/21
Lab File ID:	Z152216.D	**Injection Time:**	01:25
Instrument ID:	GCMSZ		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	Z152235.D	10/13/21	09:39	08:14	(unrelated sample)
ZZZZZZ	Z152236.D	10/13/21	10:05	08:40	(unrelated sample)
ZZZZZZ	Z152237.D	10/13/21	10:30	09:05	(unrelated sample)
ZZZZZZ	Z152238.D	10/13/21	10:56	09:31	(unrelated sample)
ZZZZZZ	Z152239.D	10/13/21	11:22	09:57	(unrelated sample)
ZZZZZZ	Z152240.D	10/13/21	11:48	10:23	(unrelated sample)
ZZZZZZ	Z152241.D	10/13/21	12:13	10:48	(unrelated sample)
ZZZZZZ	Z152242.D	10/13/21	12:39	11:14	(unrelated sample)
ZZZZZZ	Z152243.D	10/13/21	13:05	11:40	(unrelated sample)

Surrogate Recovery Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Method: SW846 8270E **Matrix:** LEACHATE

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6
JD32315-3	Z152225.D	32	23	90	77	74	87
JD32315-6	Z152226.D	34	24	86	76	71	95
JD32315-7	Z152227.D	42	29	90	75	71	98
JD32315-12	Z152228.D	37	26	86	72	67	89
JD32315-15	Z152229.D	27	18	55	49	46	54
JD32315-18	Z152230.D	34	23	84	73	67	94
JD32315-21	Z152231.D	30	21	95	78	76	89
JD32315-24	Z152232.D	29	20	86	75	72	88
JD32315-27	Z152233.D	16	14	26* [a]	82	75	70
OP35940-BS1	Z152222.D	45	33	99	83	83	91
OP35940-LB13	Z152219.D	29	20	81	72	67	96
OP35940-LB15	Z152220.D	29	21	87	80	75	94
OP35940-LB16	Z152221.D	35	25	90	75	71	96
OP35940-LS13	Z152223.D	45	33	97	84	82	92
OP35940-MB1	Z152218.D	34	23	84	82	78	93
OP35940-MS	Z152223.D	45	33	97	84	82	92
OP35940-MSD	Z152224.D	32	23	95	77	80	90

Surrogate Compounds	Recovery Limits
S1 = 2-Fluorophenol	10-73%
S2 = Phenol-d5	10-64%
S3 = 2,4,6-Tribromophenol	31-130%
S4 = Nitrobenzene-d5	28-126%
S5 = 2-Fluorobiphenyl	26-114%
S6 = Terphenyl-d14	16-122%

(a) Outside of in house control limits.

Surrogate Recovery Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Method: SW846 8270E **Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3
JD32315-1	2P103320.D	36	41	57
JD32315-2	2P103272.D	26	27	34
JD32315-4	2P103323.D	52	68	78
JD32315-4	2P103278.D	49	59	66
JD32315-5	2P103273.D	52	56	69
JD32315-8	6P502024.D	59	67	69
JD32315-8	2P103276.D	11* [a]	12* [a]	15* [a]
JD32315-8	Z152181.D	88	79	85
JD32315-9	2P103274.D	52	59	81
JD32315-10	2P103322.D	22	25	29
JD32315-11	2P103275.D	56	60	79
JD32315-13	M175468.D	49	57	61
JD32315-14	M175458.D	34	37	41
JD32315-16	M175462.D	26	27	29
JD32315-17	M175459.D	44	46	49
JD32315-19	M175463.D	24	26	29
JD32315-20	2P103321.D	33	38	43
JD32315-22	6P502025.D	54	57	61
JD32315-22	M175464.D	3* [a]	4* [a]	4* [a]
JD32315-22	Z152182.D	70	66	70
JD32315-23	M175460.D	53	57	62
JD32315-25	M175461.D	23	24	26
JD32315-26	6P502015.D	56	65	80
OP35710-BS1	2P103268.D	51	54	69
OP35710-MB1	2P103267.D	53	58	69
OP35710-MB1	M175457.D	53	55	59
OP35710-MS	2P103280.D	26	29	38
OP35710-MSD	2P103281.D	11* [b]	13* [b]	19* [b]
OP35857-BS1	6P502005.D	65	71	86
OP35857-MB1	6P502004.D	55	59	78
OP35857-MB1	Z152175.D	62	60	68
OP35857-MS	6P502020.D	142* [c]	71	82
OP35857-MSD	6P502021.D	137* [c]	74	88

Surrogate Compounds	Recovery Limits
S1 = Nitrobenzene-d5	15-114%
S2 = 2-Fluorobiphenyl	22-104%
S3 = Terphenyl-d14	23-121%

Surrogate Recovery Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Method: SW846 8270E **Matrix:** SO

Samples and QC shown here apply to the above method

Surrogate Compounds	Recovery Limits

(a) Outside of in house control limits. Refer to re-extract.
(b) Outside of in house control limits.
(c) Outside control limits due to matrix interference.

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GLM4714-MB3	LM112323.D	1	10/01/21	DFT	n/a	n/a	GLM4714

The QC reported here applies to the following samples: **Method:** SW846 8015D

JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18, JD32315-21, JD32315-24, JD32315-27

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	10	5.0	mg/kg	

CAS No.	Surrogate Recoveries		Limits
98-08-8	aaa-Trifluorotoluene	75%	70-116%

Method Blank Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GLM4714-MB	LM112305.D	1	10/01/21	DFT	n/a	n/a	GLM4714

The QC reported here applies to the following samples: **Method:** SW846 8015D

GLM4714-BS, JD32192-3AMS, JD32192-3AMSD

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	10	5.0	mg/kg	

CAS No.	Surrogate Recoveries		Limits
98-08-8	aaa-Trifluorotoluene	74%	70-116%

Blank Spike Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GLM4714-BS	LM112306.D	1	10/01/21	DFT	n/a	n/a	GLM4714

The QC reported here applies to the following samples: **Method:** SW846 8015D

JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18, JD32315-21, JD32315-24, JD32315-27

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	400	344	86	75-126

CAS No.	Surrogate Recoveries	BSP	Limits
98-08-8	aaa-Trifluorotoluene	85%	70-116%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD32192-3AMS	LM112310.D	1	10/01/21	DFT	n/a	n/a	GLM4714
JD32192-3AMSD	LM112311.D	1	10/01/21	DFT	n/a	n/a	GLM4714
JD32192-3A	LM112309.D	1	10/01/21	DFT	n/a	n/a	GLM4714

The QC reported here applies to the following samples: **Method:** SW846 8015D

JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18, JD32315-21, JD32315-24, JD32315-27

CAS No.	Compound	JD32192-3A mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	Spike mg/kg	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND		393	311	79	393	301	77	3	68-128/11

CAS No.	Surrogate Recoveries	MS	MSD	JD32192-3A	Limits
98-08-8	aaa-Trifluorotoluene	83%	86%	76%	70-116%

* = Outside of Control Limits.

Surrogate Recovery Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Method: SW846 8015D **Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]
JD32315-3	LM112324.D	74
JD32315-6	LM112325.D	74
JD32315-7	LM112326.D	76
JD32315-12	LM112327.D	75
JD32315-15	LM112328.D	75
JD32315-18	LM112329.D	76
JD32315-21	LM112330.D	75
JD32315-24	LM112331.D	74
JD32315-27	LM112332.D	75
GLM4714-BS	LM112306.D	85
GLM4714-MB3	LM112323.D	75
JD32192-3AMS	LM112310.D	83
JD32192-3AMSD	LM112311.D	86
GLM4714-MB	LM112305.D	74

Surrogate Compounds	Recovery Limits
S1 = aaa-Trifluorotoluene	70-116%

(a) Recovery from GC signal #1

GC/LC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35941-MB1	3G133443.D	1	10/17/21	TL	10/12/21	OP35941	G3G4866

The QC reported here applies to the following samples: **Method:** SW846 8151A

JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18, JD32315-21, JD32315-24, JD32315-27

CAS No.	Compound	Result	RL	MDL	Units	Q
94-75-7	2,4-D	ND	0.33	0.098	ug/l	
93-72-1	2,4,5-TP (Silvex)	ND	0.10	0.020	ug/l	

CAS No.	Surrogate Recoveries		Limits
19719-28-9	2,4-DCAA	66%	13-169%
19719-28-9	2,4-DCAA	33%	13-169%

Method Blank Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35939-MB1	4G9721358.D	1	10/12/21	RK	10/12/21	OP35939	G4G3596

The QC reported here applies to the following samples: **Method:** SW846 8081B

JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18, JD32315-21, JD32315-24, JD32315-27

CAS No.	Compound	Result	RL	MDL	Units	Q
58-89-9	gamma-BHC (Lindane)	ND	0.020	0.012	ug/l	
12789-03-6	Chlordane	ND	1.0	0.43	ug/l	
72-20-8	Endrin	ND	0.020	0.012	ug/l	
76-44-8	Heptachlor	ND	0.020	0.0090	ug/l	
1024-57-3	Heptachlor epoxide	ND	0.020	0.012	ug/l	
72-43-5	Methoxychlor	ND	0.040	0.013	ug/l	
8001-35-2	Toxaphene	ND	0.50	0.32	ug/l	

CAS No.	Surrogate Recoveries		Limits
877-09-8	Tetrachloro-m-xylene	91%	30-137%
877-09-8	Tetrachloro-m-xylene	85%	30-137%
2051-24-3	Decachlorobiphenyl	65%	10-137%
2051-24-3	Decachlorobiphenyl	65%	10-137%

Method Blank Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35939-MB1	6G79597.D	1	10/12/21	RK	10/12/21	OP35939	G6G2807

The QC reported here applies to the following samples: **Method:** SW846 8081B

JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18, JD32315-21, JD32315-24, JD32315-27

CAS No.	Compound	Result	RL	MDL	Units	Q
58-89-9	gamma-BHC (Lindane)	ND	0.020	0.012	ug/l	
12789-03-6	Chlordane	ND	1.0	0.43	ug/l	
72-20-8	Endrin	ND	0.020	0.012	ug/l	
76-44-8	Heptachlor	ND	0.020	0.0090	ug/l	
1024-57-3	Heptachlor epoxide	ND	0.020	0.012	ug/l	
72-43-5	Methoxychlor	ND	0.040	0.013	ug/l	
8001-35-2	Toxaphene	ND	0.50	0.32	ug/l	

CAS No.	Surrogate Recoveries		Limits
877-09-8	Tetrachloro-m-xylene	104%	30-137%
877-09-8	Tetrachloro-m-xylene	98%	30-137%
2051-24-3	Decachlorobiphenyl	70%	10-137%
2051-24-3	Decachlorobiphenyl	79%	10-137%

Method Blank Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35562-MB1	5G110642.D	1	10/03/21	TL	10/01/21	OP35562	G5G2805

The QC reported here applies to the following samples: **Method:** SW846 8082A

JD32315-2, JD32315-5, JD32315-9, JD32315-11, JD32315-14

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	50	23	ug/kg	
11104-28-2	Aroclor 1221	ND	50	31	ug/kg	
11141-16-5	Aroclor 1232	ND	50	32	ug/kg	
53469-21-9	Aroclor 1242	ND	50	21	ug/kg	
12672-29-6	Aroclor 1248	ND	50	45	ug/kg	
11097-69-1	Aroclor 1254	ND	50	27	ug/kg	
11096-82-5	Aroclor 1260	ND	50	21	ug/kg	
11100-14-4	Aroclor 1268	ND	50	21	ug/kg	
37324-23-5	Aroclor 1262	ND	50	33	ug/kg	

CAS No.	Surrogate Recoveries		Limits
877-09-8	Tetrachloro-m-xylene	78%	24-152%
877-09-8	Tetrachloro-m-xylene	77%	24-152%
2051-24-3	Decachlorobiphenyl	87%	10-172%
2051-24-3	Decachlorobiphenyl	113%	10-172%

Method Blank Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35562-MB1 [a]	5G110681.D	1	10/04/21	TL	10/01/21	OP35562	G5G2805

The QC reported here applies to the following samples: **Method:** SW846 8082A

JD32315-2, JD32315-5, JD32315-9, JD32315-11, JD32315-14

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	50	23	ug/kg	
11104-28-2	Aroclor 1221	ND	50	31	ug/kg	
11141-16-5	Aroclor 1232	ND	50	32	ug/kg	
53469-21-9	Aroclor 1242	ND	50	21	ug/kg	
12672-29-6	Aroclor 1248	ND	50	45	ug/kg	
11097-69-1	Aroclor 1254	ND	50	27	ug/kg	
11096-82-5	Aroclor 1260	ND	50	21	ug/kg	
11100-14-4	Aroclor 1268	ND	50	21	ug/kg	
37324-23-5	Aroclor 1262	ND	50	33	ug/kg	

CAS No.	Surrogate Recoveries		Limits
877-09-8	Tetrachloro-m-xylene	82%	24-152%
877-09-8	Tetrachloro-m-xylene	86%	24-152%
2051-24-3	Decachlorobiphenyl	91%	10-172%
2051-24-3	Decachlorobiphenyl	117%	10-172%

(a) Had TBA cleanup.

Method Blank Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35760-MB1	XX2471762.D	1	10/05/21	RK	10/04/21	OP35760	GXX7601

The QC reported here applies to the following samples: **Method:** SW846 8082A

JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18, JD32315-21, JD32315-24, JD32315-27

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	33	16	ug/kg	
11104-28-2	Aroclor 1221	ND	33	21	ug/kg	
11141-16-5	Aroclor 1232	ND	33	21	ug/kg	
53469-21-9	Aroclor 1242	ND	33	14	ug/kg	
12672-29-6	Aroclor 1248	ND	33	30	ug/kg	
11097-69-1	Aroclor 1254	ND	33	18	ug/kg	
11096-82-5	Aroclor 1260	ND	33	14	ug/kg	
11100-14-4	Aroclor 1268	ND	33	14	ug/kg	
37324-23-5	Aroclor 1262	ND	33	22	ug/kg	

CAS No.	Surrogate Recoveries		Limits
877-09-8	Tetrachloro-m-xylene	94%	24-152%
877-09-8	Tetrachloro-m-xylene	95%	24-152%
2051-24-3	Decachlorobiphenyl	83%	10-172%
2051-24-3	Decachlorobiphenyl	98%	10-172%

Method Blank Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35567-MB1	5G110700.D	1	10/04/21	CP	10/04/21	OP35567	G5G2806

The QC reported here applies to the following samples: **Method:** SW846 8082A

JD32315-17, JD32315-20, JD32315-23

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	50	23	ug/kg	
11104-28-2	Aroclor 1221	ND	50	31	ug/kg	
11141-16-5	Aroclor 1232	ND	50	32	ug/kg	
53469-21-9	Aroclor 1242	ND	50	21	ug/kg	
12672-29-6	Aroclor 1248	ND	50	45	ug/kg	
11097-69-1	Aroclor 1254	ND	50	27	ug/kg	
11096-82-5	Aroclor 1260	ND	50	21	ug/kg	
11100-14-4	Aroclor 1268	ND	50	21	ug/kg	
37324-23-5	Aroclor 1262	ND	50	33	ug/kg	

CAS No.	Surrogate Recoveries		Limits
877-09-8	Tetrachloro-m-xylene	80%	24-152%
877-09-8	Tetrachloro-m-xylene	98%	24-152%
2051-24-3	Decachlorobiphenyl	89%	10-172%
2051-24-3	Decachlorobiphenyl	118%	10-172%

Method Blank Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35567-MB1 [a]	5G110810.D	1	10/07/21	RK	10/04/21	OP35567	G5G2808

The QC reported here applies to the following samples: **Method:** SW846 8082A

JD32315-17, JD32315-20, JD32315-23

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	50	23	ug/kg	
11104-28-2	Aroclor 1221	ND	50	31	ug/kg	
11141-16-5	Aroclor 1232	ND	50	32	ug/kg	
53469-21-9	Aroclor 1242	ND	50	21	ug/kg	
12672-29-6	Aroclor 1248	ND	50	45	ug/kg	
11097-69-1	Aroclor 1254	ND	50	27	ug/kg	
11096-82-5	Aroclor 1260	ND	50	21	ug/kg	
11100-14-4	Aroclor 1268	ND	50	21	ug/kg	
37324-23-5	Aroclor 1262	ND	50	33	ug/kg	

CAS No.	Surrogate Recoveries		Limits
877-09-8	Tetrachloro-m-xylene	89%	24-152%
877-09-8	Tetrachloro-m-xylene	106%	24-152%
2051-24-3	Decachlorobiphenyl	105%	10-172%
2051-24-3	Decachlorobiphenyl	138%	10-172%

(a) Had TBA cleanup.

Method Blank Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35714-MB1	XX2472180.D	1	10/10/21	TL	10/08/21	OP35714	GXX7609

The QC reported here applies to the following samples: **Method:** SW846 8082A

JD32315-26

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	50	23	ug/kg	
11104-28-2	Aroclor 1221	ND	50	31	ug/kg	
11141-16-5	Aroclor 1232	ND	50	32	ug/kg	
53469-21-9	Aroclor 1242	ND	50	21	ug/kg	
12672-29-6	Aroclor 1248	ND	50	45	ug/kg	
11097-69-1	Aroclor 1254	ND	50	27	ug/kg	
11096-82-5	Aroclor 1260	ND	50	21	ug/kg	
11100-14-4	Aroclor 1268	ND	50	21	ug/kg	
37324-23-5	Aroclor 1262	ND	50	33	ug/kg	

CAS No.	Surrogate Recoveries		Limits
877-09-8	Tetrachloro-m-xylene	99%	24-152%
877-09-8	Tetrachloro-m-xylene	103%	24-152%
2051-24-3	Decachlorobiphenyl	105%	10-172%
2051-24-3	Decachlorobiphenyl	104%	10-172%

Method Blank Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35757-MB1	ZZ101060.D	1	10/04/21	TC	10/04/21	OP35757	GZZ3729

The QC reported here applies to the following samples: **Method:** SW846 8015D

JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18, JD32315-21, JD32315-24, JD32315-27

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	10	3.4	mg/kg	

CAS No.	Surrogate Recoveries		Limits
84-15-1	o-Terphenyl	68%	18-132%
438-22-2	5a-Androstane	67%	22-134%

Leachate Blank Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35941-LB13	3G133445.D	1	10/17/21	TL	10/12/21	OP35941	G3G4866

The QC reported here applies to the following samples: **Method:** SW846 8151A

JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18, JD32315-21, JD32315-24, JD32315-27

CAS No.	Compound	Result	RL	MDL	Units	Q
94-75-7	2,4-D	ND	3.3	0.98	ug/l	
93-72-1	2,4,5-TP (Silvex)	ND	1.0	0.20	ug/l	

CAS No.	Surrogate Recoveries		Limits
19719-28-9	2,4-DCAA	77%	13-169%
19719-28-9	2,4-DCAA	48%	13-169%

Leachate Blank Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35941-LB15	3G133446.D	1	10/17/21	TL	10/12/21	OP35941	G3G4866

The QC reported here applies to the following samples: **Method:** SW846 8151A

JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18, JD32315-21, JD32315-24, JD32315-27

CAS No.	Compound	Result	RL	MDL	Units	Q
94-75-7	2,4-D	ND	3.3	0.98	ug/l	
93-72-1	2,4,5-TP (Silvex)	ND	1.0	0.20	ug/l	

CAS No.	Surrogate Recoveries		Limits
19719-28-9	2,4-DCAA	85%	13-169%
19719-28-9	2,4-DCAA	60%	13-169%

Leachate Blank Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35941-LB16	3G133447.D	1	10/17/21	TL	10/12/21	OP35941	G3G4866

The QC reported here applies to the following samples: **Method:** SW846 8151A

JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18, JD32315-21, JD32315-24, JD32315-27

CAS No.	Compound	Result	RL	MDL	Units	Q
94-75-7	2,4-D	ND	3.3	0.98	ug/l	
93-72-1	2,4,5-TP (Silvex)	ND	1.0	0.20	ug/l	

CAS No.	Surrogate Recoveries		Limits
19719-28-9	2,4-DCAA	71%	13-169%
19719-28-9	2,4-DCAA	39%	13-169%

Leachate Blank Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35939-LB13	4G9721360.D	1	10/12/21	RK	10/12/21	OP35939	G4G3596

The QC reported here applies to the following samples: **Method:** SW846 8081B

JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18, JD32315-21, JD32315-24, JD32315-27

CAS No.	Compound	Result	RL	MDL	Units	Q
58-89-9	gamma-BHC (Lindane)	ND	0.067	0.040	ug/l	
12789-03-6	Chlordane	ND	3.3	1.4	ug/l	
72-20-8	Endrin	ND	0.067	0.040	ug/l	
76-44-8	Heptachlor	ND	0.067	0.030	ug/l	
1024-57-3	Heptachlor epoxide	ND	0.067	0.040	ug/l	
72-43-5	Methoxychlor	ND	0.13	0.045	ug/l	
8001-35-2	Toxaphene	ND	1.7	1.1	ug/l	

CAS No.	Surrogate Recoveries		Limits
877-09-8	Tetrachloro-m-xylene	84%	30-137%
877-09-8	Tetrachloro-m-xylene	87%	30-137%
2051-24-3	Decachlorobiphenyl	87%	10-137%
2051-24-3	Decachlorobiphenyl	86%	10-137%

Leachate Blank Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35939-LB15	4G9721361.D	1	10/12/21	RK	10/12/21	OP35939	G4G3596

The QC reported here applies to the following samples: **Method:** SW846 8081B

JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18, JD32315-21, JD32315-24, JD32315-27

CAS No.	Compound	Result	RL	MDL	Units	Q
58-89-9	gamma-BHC (Lindane)	ND	0.067	0.040	ug/l	
12789-03-6	Chlordane	ND	3.3	1.4	ug/l	
72-20-8	Endrin	ND	0.067	0.040	ug/l	
76-44-8	Heptachlor	ND	0.067	0.030	ug/l	
1024-57-3	Heptachlor epoxide	ND	0.067	0.040	ug/l	
72-43-5	Methoxychlor	ND	0.13	0.045	ug/l	
8001-35-2	Toxaphene	ND	1.7	1.1	ug/l	

CAS No.	Surrogate Recoveries		Limits
877-09-8	Tetrachloro-m-xylene	75%	30-137%
877-09-8	Tetrachloro-m-xylene	77%	30-137%
2051-24-3	Decachlorobiphenyl	91%	10-137%
2051-24-3	Decachlorobiphenyl	86%	10-137%

Leachate Blank Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35939-LB16	4G9721362.D	1	10/12/21	RK	10/12/21	OP35939	G4G3596

The QC reported here applies to the following samples: **Method:** SW846 8081B

JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18, JD32315-21, JD32315-24, JD32315-27

CAS No.	Compound	Result	RL	MDL	Units	Q
58-89-9	gamma-BHC (Lindane)	ND	0.067	0.040	ug/l	
12789-03-6	Chlordane	ND	3.3	1.4	ug/l	
72-20-8	Endrin	ND	0.067	0.040	ug/l	
76-44-8	Heptachlor	ND	0.067	0.030	ug/l	
1024-57-3	Heptachlor epoxide	ND	0.067	0.040	ug/l	
72-43-5	Methoxychlor	ND	0.13	0.045	ug/l	
8001-35-2	Toxaphene	ND	1.7	1.1	ug/l	

CAS No.	Surrogate Recoveries		Limits
877-09-8	Tetrachloro-m-xylene	110%	30-137%
877-09-8	Tetrachloro-m-xylene	107%	30-137%
2051-24-3	Decachlorobiphenyl	113%	10-137%
2051-24-3	Decachlorobiphenyl	106%	10-137%

Blank Spike Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35941-BS1	3G133530.D	1	10/19/21	RK	10/12/21	OP35941	G3G4869

The QC reported here applies to the following samples: **Method:** SW846 8151A

JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18, JD32315-21, JD32315-24, JD32315-27

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
94-75-7	2,4-D	1.33	1.4	105 [a]	36-158
93-72-1	2,4,5-TP (Silvex)	0.267	0.17	64 [b]	44-158

CAS No.	Surrogate Recoveries	BSP	Limits
19719-28-9	2,4-DCAA	114%	13-169%
19719-28-9	2,4-DCAA	76%	13-169%

(a) Reported from 2nd signal. 1st signal used for confirmation.
(b) Reported from 1st signal. 2nd signal used for confirmation.

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35939-BS1	4G9721359.D	1	10/12/21	RK	10/12/21	OP35939	G4G3596

The QC reported here applies to the following samples: **Method:** SW846 8081B

JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18, JD32315-21, JD32315-24, JD32315-27

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
58-89-9	gamma-BHC (Lindane)	0.5	0.48	96	37-178
72-20-8	Endrin	0.5	0.48	96	45-182
76-44-8	Heptachlor	0.5	0.47	94	26-172
1024-57-3	Heptachlor epoxide	0.5	0.49	98	43-173
72-43-5	Methoxychlor	0.5	0.52	104	40-192

CAS No.	Surrogate Recoveries	BSP	Limits
877-09-8	Tetrachloro-m-xylene	86%	30-137%
877-09-8	Tetrachloro-m-xylene	83%	30-137%
2051-24-3	Decachlorobiphenyl	49%	10-137%
2051-24-3	Decachlorobiphenyl	45%	10-137%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35562-BS1	5G110643.D	1	10/03/21	TL	10/01/21	OP35562	G5G2805

The QC reported here applies to the following samples: **Method:** SW846 8082A

JD32315-2, JD32315-5, JD32315-9, JD32315-11, JD32315-14

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
12674-11-2	Aroclor 1016	200	247	124	39-169
11104-28-2	Aroclor 1221		ND		50-150
11141-16-5	Aroclor 1232		ND		50-150
53469-21-9	Aroclor 1242		ND		50-150
12672-29-6	Aroclor 1248		ND		50-150
11097-69-1	Aroclor 1254		ND		50-150
11096-82-5	Aroclor 1260	200	212	106 [a]	41-171
11100-14-4	Aroclor 1268		ND		50-150
37324-23-5	Aroclor 1262		ND		50-150

CAS No.	Surrogate Recoveries	BSP	Limits
877-09-8	Tetrachloro-m-xylene	75%	24-152%
877-09-8	Tetrachloro-m-xylene	88%	24-152%
2051-24-3	Decachlorobiphenyl	99%	10-172%
2051-24-3	Decachlorobiphenyl	114%	10-172%

(a) Reported from the 1st signal. The %D of the CCV on the 2nd signal exceeds the method criteria of 20%, so it being used for confirmation only.

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35562-BS1 [a]	5G110682.D	1	10/04/21	TL	10/01/21	OP35562	G5G2805

The QC reported here applies to the following samples: **Method:** SW846 8082A

JD32315-2, JD32315-5, JD32315-9, JD32315-11, JD32315-14

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
12674-11-2	Aroclor 1016	200	238	119	39-169
11104-28-2	Aroclor 1221		ND		50-150
11141-16-5	Aroclor 1232		ND		50-150
53469-21-9	Aroclor 1242		ND		50-150
12672-29-6	Aroclor 1248		ND		50-150
11097-69-1	Aroclor 1254		ND		50-150
11096-82-5	Aroclor 1260	200	218	109 [b]	41-171
11100-14-4	Aroclor 1268		ND		50-150
37324-23-5	Aroclor 1262		ND		50-150

CAS No.	Surrogate Recoveries	BSP	Limits
877-09-8	Tetrachloro-m-xylene	76%	24-152%
877-09-8	Tetrachloro-m-xylene	100%	24-152%
2051-24-3	Decachlorobiphenyl	92%	10-172%
2051-24-3	Decachlorobiphenyl	118%	10-172%

(a) Had TBA cleanup.
(b) Reported from the 1st signal. The %D of the CCV on the 2nd signal exceeds the method criteria of 20%, so it being used for confirmation only.

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35760-BS1	XX2471763.D	1	10/05/21	RK	10/04/21	OP35760	GXX7601
OP35760-BSD	XX2471764.D	1	10/05/21	RK	10/04/21	OP35760	GXX7601

The QC reported here applies to the following samples: **Method:** SW846 8082A

JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18, JD32315-21, JD32315-24, JD32315-27

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
12674-11-2	Aroclor 1016	133	155	116	155	116	0	39-169/28
11104-28-2	Aroclor 1221		ND		ND		nc	50-150/30
11141-16-5	Aroclor 1232		ND		ND		nc	50-150/30
53469-21-9	Aroclor 1242		ND		ND		nc	50-150/30
12672-29-6	Aroclor 1248		ND		ND		nc	50-150/30
11097-69-1	Aroclor 1254		ND		ND		nc	50-150/30
11096-82-5	Aroclor 1260	133	143	107	143	107	0	41-171/29
11100-14-4	Aroclor 1268		ND		ND		nc	50-150/30
37324-23-5	Aroclor 1262		ND		ND		nc	50-150/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
877-09-8	Tetrachloro-m-xylene	117%	121%	24-152%
877-09-8	Tetrachloro-m-xylene	118%	121%	24-152%
2051-24-3	Decachlorobiphenyl	112%	113%	10-172%
2051-24-3	Decachlorobiphenyl	108%	106%	10-172%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35567-BS1	5G110701.D	1	10/04/21	CP	10/04/21	OP35567	G5G2806
OP35567-BSD	5G110702.D	1	10/04/21	CP	10/04/21	OP35567	G5G2806

The QC reported here applies to the following samples: **Method:** SW846 8082A

JD32315-17, JD32315-20, JD32315-23

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
12674-11-2	Aroclor 1016	200	237	119	234	117	1	39-169/28
11104-28-2	Aroclor 1221		ND		ND		nc	50-150/30
11141-16-5	Aroclor 1232		ND		ND		nc	50-150/30
53469-21-9	Aroclor 1242		ND		ND		nc	50-150/30
12672-29-6	Aroclor 1248		ND		ND		nc	50-150/30
11097-69-1	Aroclor 1254		ND		ND		nc	50-150/30
11096-82-5	Aroclor 1260	200	235	118 [a]	221	111 [a]	6 [a]	41-171/29
11100-14-4	Aroclor 1268		ND		ND		nc	50-150/30
37324-23-5	Aroclor 1262		ND		ND		nc	50-150/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
877-09-8	Tetrachloro-m-xylene	81%	81%	24-152%
877-09-8	Tetrachloro-m-xylene	84%	86%	24-152%
2051-24-3	Decachlorobiphenyl	97%	98%	10-172%
2051-24-3	Decachlorobiphenyl	115%	119%	10-172%

(a) Reported from the 1st signal. The %D of the CCV on the 2nd signal exceeds the method criteria of 20%, so it being used for confirmation only.

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35714-BS1	XX2472181.D	1	10/10/21	TL	10/08/21	OP35714	GXX7609
OP35714-BSD	XX2472182.D	1	10/10/21	TL	10/08/21	OP35714	GXX7609

The QC reported here applies to the following samples: **Method:** SW846 8082A

JD32315-26

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
12674-11-2	Aroclor 1016	200	209	105	198	99	5	39-169/28
11104-28-2	Aroclor 1221		ND		ND		nc	50-150/30
11141-16-5	Aroclor 1232		ND		ND		nc	50-150/30
53469-21-9	Aroclor 1242		ND		ND		nc	50-150/30
12672-29-6	Aroclor 1248		ND		ND		nc	50-150/30
11097-69-1	Aroclor 1254		ND		ND		nc	50-150/30
11096-82-5	Aroclor 1260	200	202	101	208	104	3	41-171/29
11100-14-4	Aroclor 1268		ND		ND		nc	50-150/30
37324-23-5	Aroclor 1262		ND		ND		nc	50-150/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
877-09-8	Tetrachloro-m-xylene	93%	94%	24-152%
877-09-8	Tetrachloro-m-xylene	98%	97%	24-152%
2051-24-3	Decachlorobiphenyl	98%	104%	10-172%
2051-24-3	Decachlorobiphenyl	99%	101%	10-172%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35757-BS1	ZZ101061.D	1	10/04/21	TC	10/04/21	OP35757	GZZ3729
OP35757-BSD	ZZ101062.D	1	10/04/21	TC	10/04/21	OP35757	GZZ3729

The QC reported here applies to the following samples: **Method:** SW846 8015D

JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18, JD32315-21, JD32315-24, JD32315-27

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	BSD mg/kg	BSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	66.7	50.1	75	43.4	65	14	44-120/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
84-15-1	o-Terphenyl	78%	71%	18-132%
438-22-2	5a-Androstane	75%	69%	22-134%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35941-MS	3G133531.D	1	10/19/21	RK	10/12/21	OP35941	G3G4869
OP35941-MSD	3G133532.D	1	10/19/21	RK	10/12/21	OP35941	G3G4869
JD32315-3	3G133448.D	1	10/17/21	TL	10/12/21	OP35941	G3G4866

The QC reported here applies to the following samples: **Method:** SW846 8151A

JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18, JD32315-21, JD32315-24, JD32315-27

CAS No.	Compound	JD32315-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
94-75-7	2,4-D	ND		13.3	1.8	13* [a]	13.3	2.1	16* [a]	15	35-196/60
93-72-1	2,4,5-TP (Silvex)	ND		2.67	1.8	67	2.67	2.0	75	11	10-226/52

CAS No.	Surrogate Recoveries	MS	MSD	JD32315-3	Limits
19719-28-9	2,4-DCAA	114%	133%	87%	13-169%
19719-28-9	2,4-DCAA	78%	95%	53%	13-169%

(a) Outside of in house control limits.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35939-MS	4G9721364.D	1	10/12/21	RK	10/12/21	OP35939	G4G3596
OP35939-MSD	4G9721365.D	1	10/12/21	RK	10/12/21	OP35939	G4G3596
JD32315-3	4G9721363.D	1	10/12/21	RK	10/12/21	OP35939	G4G3596

The QC reported here applies to the following samples: **Method:** SW846 8081B

JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18, JD32315-21, JD32315-24, JD32315-27

CAS No.	Compound	JD32315-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
58-89-9	gamma-BHC (Lindane)	ND		1.67	2.0	120	1.67	1.8	108	11	39-160/97
12789-03-6	Chlordane	ND			ND			ND		nc	81-123/10
72-20-8	Endrin	ND		1.67	2.0	120	1.67	1.9	114	5	43-169/95
76-44-8	Heptachlor	ND		1.67	2.0	120	1.67	1.8	108	11	35-152/102
1024-57-3	Heptachlor epoxide	ND		1.67	2.0	120	1.67	1.9	114	5	42-159/96
72-43-5	Methoxychlor	ND		1.67	2.2	132	1.67	2.1	126	5	47-170/99
8001-35-2	Toxaphene	ND			ND			ND		nc	50-150/8

CAS No.	Surrogate Recoveries	MS	MSD	JD32315-3	Limits
877-09-8	Tetrachloro-m-xylene	100%	96%	86%	30-137%
877-09-8	Tetrachloro-m-xylene	102%	96%	91%	30-137%
2051-24-3	Decachlorobiphenyl	101%	106%	85%	10-137%
2051-24-3	Decachlorobiphenyl	108%	104%	88%	10-137%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35562-MS	5G110645.D	1	10/03/21	TL	10/01/21	OP35562	G5G2805
OP35562-MSD	5G110646.D	1	10/03/21	TL	10/01/21	OP35562	G5G2805
JD31803-24	5G110644.D	1	10/03/21	TL	10/01/21	OP35562	G5G2805

The QC reported here applies to the following samples: **Method:** SW846 8082A

JD32315-2, JD32315-5, JD32315-9, JD32315-11, JD32315-14

CAS No.	Compound	JD31803-24 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
12674-11-2	Aroclor 1016	ND		196	117	60	193	196	102	50	14-200/59
11104-28-2	Aroclor 1221	ND			ND			ND		nc	50-150/30
11141-16-5	Aroclor 1232	ND			ND			ND		nc	50-150/30
53469-21-9	Aroclor 1242	ND			ND			ND		nc	50-150/11
12672-29-6	Aroclor 1248	ND			ND			ND		nc	50-150/25
11097-69-1	Aroclor 1254	1740			2500			2520		1	50-150/37
11096-82-5	Aroclor 1260	ND		196	410	209* [a]	193	527	273* [a]	25	10-200/59
11100-14-4	Aroclor 1268	ND			ND			ND		nc	50-150/30
37324-23-5	Aroclor 1262	ND			ND			ND		nc	50-150/10

CAS No.	Surrogate Recoveries	MS	MSD	JD31803-24	Limits
877-09-8	Tetrachloro-m-xylene	44%	83%	81%	24-152%
877-09-8	Tetrachloro-m-xylene	45%	82%	83%	24-152%
2051-24-3	Decachlorobiphenyl	44%	71%	73%	10-172%
2051-24-3	Decachlorobiphenyl	53%	84%	95%	10-172%

(a) Outside control limits due to presence of other Aroclor pattern.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35760-MS	XX2471784.D	1	10/05/21	RK	10/04/21	OP35760	GXX7601
OP35760-MSD	XX2471785.D	1	10/05/21	RK	10/04/21	OP35760	GXX7601
JD32424-4	XX2471779.D	1	10/05/21	RK	10/04/21	OP35760	GXX7601

The QC reported here applies to the following samples: **Method:** SW846 8082A

JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18, JD32315-21, JD32315-24, JD32315-27

CAS No.	Compound	JD32424-4 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
12674-11-2	Aroclor 1016	ND		159	132	83	152	158	104	18	14-200/59
11104-28-2	Aroclor 1221	ND			ND			ND		nc	50-150/30
11141-16-5	Aroclor 1232	ND			ND			ND		nc	50-150/30
53469-21-9	Aroclor 1242	ND			ND			ND		nc	50-150/11
12672-29-6	Aroclor 1248	ND			ND			ND		nc	50-150/25
11097-69-1	Aroclor 1254	ND			ND			ND		nc	50-150/37
11096-82-5	Aroclor 1260	ND		159	137	86	152	171	113	22	10-200/59
11100-14-4	Aroclor 1268	ND			ND			ND		nc	50-150/30
37324-23-5	Aroclor 1262	ND			ND			ND		nc	50-150/10

CAS No.	Surrogate Recoveries	MS	MSD	JD32424-4	Limits
877-09-8	Tetrachloro-m-xylene	69%	90%	83%	24-152%
877-09-8	Tetrachloro-m-xylene	91%	115%	108%	24-152%
2051-24-3	Decachlorobiphenyl	71%	98%	77%	10-172%
2051-24-3	Decachlorobiphenyl	72%	119%	104%	10-172%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35567-MS	5G110704.D	1	10/05/21	CP	10/04/21	OP35567	G5G2806
OP35567-MSD	5G110705.D	1	10/05/21	CP	10/04/21	OP35567	G5G2806
JD31911-23	5G110703.D	1	10/05/21	CP	10/04/21	OP35567	G5G2806

The QC reported here applies to the following samples: **Method:** SW846 8082A

JD32315-17, JD32315-20, JD32315-23

CAS No.	Compound	JD31911-23 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
12674-11-2	Aroclor 1016	ND		179	201	112	185	224	121	11	14-200/59
11104-28-2	Aroclor 1221	ND			ND			ND		nc	50-150/30
11141-16-5	Aroclor 1232	ND			ND			ND		nc	50-150/30
53469-21-9	Aroclor 1242	ND			ND			ND		nc	50-150/11
12672-29-6	Aroclor 1248	ND			ND			ND		nc	50-150/25
11097-69-1	Aroclor 1254	383			587			751		25	50-150/37
11096-82-5	Aroclor 1260	ND		179	301	168 [a]	185	348	188 [a]	14	10-200/59
11100-14-4	Aroclor 1268	ND			ND			ND		nc	50-150/30
37324-23-5	Aroclor 1262	ND			ND			ND		nc	50-150/10

CAS No.	Surrogate Recoveries	MS	MSD	JD31911-23	Limits
877-09-8	Tetrachloro-m-xylene	79%	81%	85%	24-152%
877-09-8	Tetrachloro-m-xylene	75%	96%	104%	24-152%
2051-24-3	Decachlorobiphenyl	82%	89%	91%	10-172%
2051-24-3	Decachlorobiphenyl	101%	113%	118%	10-172%

(a) Outside program requirements.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35714-MS	XX2472184.D	1	10/10/21	TL	10/08/21	OP35714	GXX7609
OP35714-MSD	XX2472185.D	1	10/10/21	TL	10/08/21	OP35714	GXX7609
JD32329-5	XX2472183.D	1	10/10/21	TL	10/08/21	OP35714	GXX7609

The QC reported here applies to the following samples: **Method:** SW846 8082A

JD32315-26

CAS No.	Compound	JD32329-5 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
12674-11-2	Aroclor 1016	ND		188	181	96	212	176	83	3	14-200/59
11104-28-2	Aroclor 1221	ND			ND			ND		nc	50-150/30
11141-16-5	Aroclor 1232	ND			ND			ND		nc	50-150/30
53469-21-9	Aroclor 1242	ND			ND			ND		nc	50-150/11
12672-29-6	Aroclor 1248	ND			ND			ND		nc	50-150/25
11097-69-1	Aroclor 1254	ND			ND			ND		nc	50-150/37
11096-82-5	Aroclor 1260	ND		188	192	102	212	195	92	2	10-200/59
11100-14-4	Aroclor 1268	ND			ND			ND		nc	50-150/30
37324-23-5	Aroclor 1262	ND			ND			ND		nc	50-150/10

CAS No.	Surrogate Recoveries	MS	MSD	JD32329-5	Limits
877-09-8	Tetrachloro-m-xylene	81%	74%	94%	24-152%
877-09-8	Tetrachloro-m-xylene	88%	77%	99%	24-152%
2051-24-3	Decachlorobiphenyl	77%	77%	92%	10-172%
2051-24-3	Decachlorobiphenyl	89%	89%	101%	10-172%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35757-MS	ZZ101065.D	1	10/04/21	TC	10/04/21	OP35757	GZZ3729
OP35757-MSD	ZZ101066.D	1	10/04/21	TC	10/04/21	OP35757	GZZ3729
JD32459-1	ZZ101064.D	1	10/04/21	TC	10/04/21	OP35757	GZZ3729

The QC reported here applies to the following samples: **Method:** SW846 8015D

JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18, JD32315-21, JD32315-24, JD32315-27

CAS No.	Compound	JD32459-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	Spike mg/kg	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	ND		71.6	48.2	67	71.1	51.3	72	6	10-145/50

CAS No.	Surrogate Recoveries	MS	MSD	JD32459-1	Limits
84-15-1	o-Terphenyl	72%	79%	66%	18-132%
438-22-2	5a-Androstane	70%	76%	65%	22-134%

* = Outside of Control Limits.

Leachate Spike Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35941-LS13	3G133531.D	1	10/19/21	RK	10/12/21	OP35941	G3G4869
JD32315-3	3G133448.D	1	10/17/21	TL	10/12/21	OP35941	G3G4866

The QC reported here applies to the following samples: **Method:** SW846 8151A

JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18, JD32315-21, JD32315-24, JD32315-27

CAS No.	Compound	JD32315-3 ug/l	Q	Spike ug/l	LS ug/l	LS %	Limits
94-75-7	2,4-D	ND		13.3	1.8	13* [a]	35-196
93-72-1	2,4,5-TP (Silvex)	ND		2.67	1.8	67	10-226

CAS No.	Surrogate Recoveries	LS	JD32315-3	Limits
19719-28-9	2,4-DCAA	114%	87%	13-169%
19719-28-9	2,4-DCAA	78%	53%	13-169%

(a) Outside of in house control limits.

* = Outside of Control Limits.

Leachate Spike Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35939-LS13	4G9721364.D	1	10/12/21	RK	10/12/21	OP35939	G4G3596
JD32315-3	4G9721363.D	1	10/12/21	RK	10/12/21	OP35939	G4G3596

The QC reported here applies to the following samples: **Method:** SW846 8081B

JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18, JD32315-21, JD32315-24, JD32315-27

CAS No.	Compound	JD32315-3 ug/l	Q	Spike ug/l	LS ug/l	LS %	Limits
58-89-9	gamma-BHC (Lindane)	ND		1.67	2.0	120	39-160
12789-03-6	Chlordane	ND			ND		81-123
72-20-8	Endrin	ND		1.67	2.0	120	43-169
76-44-8	Heptachlor	ND		1.67	2.0	120	35-152
1024-57-3	Heptachlor epoxide	ND		1.67	2.0	120	42-159
72-43-5	Methoxychlor	ND		1.67	2.2	132	47-170
8001-35-2	Toxaphene	ND			ND		50-150

CAS No.	Surrogate Recoveries	LS	JD32315-3	Limits
877-09-8	Tetrachloro-m-xylene	100%	86%	30-137%
877-09-8	Tetrachloro-m-xylene	102%	91%	30-137%
2051-24-3	Decachlorobiphenyl	101%	85%	10-137%
2051-24-3	Decachlorobiphenyl	108%	88%	10-137%

* = Outside of Control Limits.

Surrogate Recovery Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Method: SW846 8151A **Matrix:** LEACHATE

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]	S1 [b]
JD32315-3	3G133448.D	87	53
JD32315-6	3G133451.D	47	32
JD32315-7	3G133454.D	84	48
JD32315-12	3G133455.D	99	60
JD32315-15	3G133456.D	91	53
JD32315-18	3G133457.D	45	30
JD32315-21	3G133458.D	82	53
JD32315-24	3G133459.D	88	56
JD32315-27	3G133460.D	100	59
OP35941-BS1	3G133530.D	114	76
OP35941-LB13	3G133445.D	77	48
OP35941-LB15	3G133446.D	85	60
OP35941-LB16	3G133447.D	71	39
OP35941-LS13	3G133531.D	114	78
OP35941-MB1	3G133443.D	66	33
OP35941-MS	3G133531.D	114	78
OP35941-MSD	3G133532.D	133	95

Surrogate Compounds	Recovery Limits
S1 = 2,4-DCAA	13-169%

(a) Recovery from GC signal #2
(b) Recovery from GC signal #1

Surrogate Recovery Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Method: SW846 8081B **Matrix:** LEACHATE

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]	S1 [b]	S2 [a]	S2 [b]
JD32315-3	4G9721363.D	86	91	85	88
JD32315-6	4G9721366.D	91	95	98	93
JD32315-7	4G9721367.D	87	92	99	95
JD32315-12	4G9721368.D	101	102	121	115
JD32315-15	4G9721369.D	104	111	112	110
JD32315-18	4G9721370.D	86	91	91	94
JD32315-21	4G9721371.D	71	70	85	79
JD32315-24	4G9721372.D	79	84	86	85
JD32315-27	4G9721373.D	73	80	84	90
OP35939-BS1	4G9721359.D	86	83	49	45
OP35939-LB13	4G9721360.D	84	87	87	86
OP35939-LB15	4G9721361.D	75	77	91	86
OP35939-LB16	4G9721362.D	110	107	113	106
OP35939-LS13	4G9721364.D	100	102	101	108
OP35939-MB1	4G9721358.D	91	85	65	65
OP35939-MB1	6G79597.D	104	98	70	79
OP35939-MS	4G9721364.D	100	102	101	108
OP35939-MSD	4G9721365.D	96	96	106	104

Surrogate Compounds	Recovery Limits
S1 = Tetrachloro-m-xylene	30-137%
S2 = Decachlorobiphenyl	10-137%

(a) Recovery from GC signal #1
(b) Recovery from GC signal #2

Surrogate Recovery Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Method: SW846 8082A **Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]	S1 [b]	S2 [a]	S2 [b]
JD32315-2	5G110669.D	79	77	70	105
JD32315-3	XX2471765.D	77	77	71	67
JD32315-5	5G110674.D	78	78	89	106
JD32315-6	XX2471766.D	62	65	51	61
JD32315-7	XX2471767.D	90	90	74	83
JD32315-9	5G110675.D	84	87	98	123
JD32315-11	5G110676.D	76	77	85	101
JD32315-12	XX2471768.D	71	79	60	75
JD32315-14	5G110654.D	86	87	83	85
JD32315-15	XX2471802.D	47	49	38	21
JD32315-17	5G110734.D	55	65	107	129
JD32315-18	XX2471774.D	94	93	76	85
JD32315-20	5G110735.D	77	48	82	65
JD32315-21	XX2471775.D	77	83	85	102
JD32315-23	5G110736.D	70	64	63	68
JD32315-24	XX2471776.D	37	36	28	141
JD32315-26	XX2472196.D	46	50	75	74
JD32315-27	XX2471803.D	65	67	53	68
OP35562-BS1	5G110643.D	75	88	99	114
OP35562-BS1	5G110682.D	76	100	92	118
OP35562-MB1	5G110642.D	78	77	87	113
OP35562-MB1	5G110681.D	82	86	91	117
OP35562-MS	5G110645.D	44	45	44	53
OP35562-MSD	5G110646.D	83	82	71	84
OP35567-BS1	5G110701.D	81	84	97	115
OP35567-BS1	5G110811.D	87	87	100	132
OP35567-BSD	5G110702.D	81	86	98	119
OP35567-MB1	5G110700.D	80	98	89	118
OP35567-MB1	5G110810.D	89	106	105	138
OP35567-MS	5G110704.D	79	75	82	101
OP35567-MSD	5G110705.D	81	96	89	113
OP35714-BS1	XX2472181.D	93	98	98	99
OP35714-BSD	XX2472182.D	94	97	104	101
OP35714-MB1	XX2472180.D	99	103	105	104
OP35714-MS	XX2472184.D	81	88	77	89
OP35714-MSD	XX2472185.D	74	77	77	89
OP35760-BS1	XX2471763.D	117	118	112	108
OP35760-BSD	XX2471764.D	121	121	113	106
OP35760-MB1	XX2471762.D	94	95	83	98
OP35760-MS	XX2471784.D	69	91	71	72

Surrogate Recovery Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Method: SW846 8082A **Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]	S1 [b]	S2 [a]	S2 [b]
OP35760-MSD	XX2471785.D	90	115	98	119

Surrogate Compounds	Recovery Limits
S1 = Tetrachloro-m-xylene	24-152%
S2 = Decachlorobiphenyl	10-172%

(a) Recovery from GC signal #1
(b) Recovery from GC signal #2

Surrogate Recovery Summary

Job Number: JD32315
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Method: SW846 8015D **Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]	S2 [a]
JD32315-3	ZZ101078.D	69	67
JD32315-6	ZZ101081.D	69	68
JD32315-7	ZZ101082.D	34	33
JD32315-12	ZZ101083.D	51	51
JD32315-15	ZZ101084.D	76	75
JD32315-18	ZZ101085.D	72	71
JD32315-21	ZZ101086.D	67	82
JD32315-24	ZZ101087.D	57	55
JD32315-27	ZZ101088.D	57	55
OP35757-BS1	ZZ101061.D	78	75
OP35757-BSD	ZZ101062.D	71	69
OP35757-MB1	ZZ101060.D	68	67
OP35757-MS	ZZ101065.D	72	70
OP35757-MSD	ZZ101066.D	79	76

Surrogate Compounds	Recovery Limits
S1 = o-Terphenyl	18-132%
S2 = 5a-Androstane	22-134%

(a) Recovery from GC signal #1

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP28913
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 09/30/21

Metal	RL	IDL	MDL	MB raw	final
Aluminum	50	1.6	8.1		
Antimony	2.0	.25	.41		
Arsenic	2.0	.2	.28	0.010	<2.0
Barium	20	.04	1.9	0.10	<20
Beryllium	0.20	.01	.08		
Bismuth	2.0	.36	.52		
Boron	10	.19	3.7		
Cadmium	0.50	.04	.07	0.060	<0.50
Calcium	500	.56	21		
Chromium	1.0	.05	.37	0.10	<1.0
Cobalt	5.0	.05	.28		
Copper	2.5	.1	.84		
Iron	50	1.1	19		
Lead	2.0	.12	.41	0.15	<2.0
Lithium	5.0	.23	.92		
Magnesium	500	6.5	14		
Manganese	1.5	.02	.41		
Molybdenum	2.0	.04	.32		
Nickel	4.0	.03	.35		
Phosphorus	20	.41	3.3		
Potassium	1000	5.5	32		
Selenium	2.0	.35	.65	0.040	<2.0
Silicon	20	.16	11		
Silver	0.50	.11	.17	0.020	<0.50
Sodium	1000	1.1	78		
Strontium	5.0	.01	.18		
Sulfur	10	.44	3.9		
Thallium	1.0	.25	.58		
Tin	20	.1	3.8		
Titanium	1.0	.04	.34		
Tungsten	5.0	.28	1.8		
Vanadium	5.0	.06	.19		
Zinc	5.0	.01	2.3		

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP28913 Methods: SW846 6010D
Matrix Type: SOLID Units: mg/kg

Prep Date: 09/30/21

Metal	RL	IDL	MDL	MB raw	final
Zirconium	2.0	.04	.54		

Associated samples MP28913: JD32315-1, JD32315-2, JD32315-4, JD32315-5, JD32315-8, JD32315-9, JD32315-10, JD32315-11, JD32315-13, JD32315-14, JD32315-16, JD32315-17, JD32315-19, JD32315-20, JD32315-22, JD32315-23, JD32315-25, JD32315-26

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP28913
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 09/30/21

Metal	JD32315-1 Original	MS	Spikelot MPSPK2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic	6.3	202	214	91.4	75-125
Barium	25.7	222	214	91.7	75-125
Beryllium	anr				
Bismuth					
Boron					
Cadmium	0.48	195	214	90.9	75-125
Calcium					
Chromium	19.4	210	214	89.1	75-125
Cobalt					
Copper	anr				
Lead	18.0	209	214	89.3	75-125
Lithium					
Magnesium					
Manganese					
Molybdenum					
Nickel	anr				
Phosphorus					
Potassium					
Selenium	1.2	190	214	88.2	75-125
Silicon					
Silver	0.61	26.5	26.8	96.8	75-125
Sodium					
Strontium					
Sulfur					
Thallium					
Tin					
Titanium					
Tungsten					
Vanadium					
Zinc	anr				
Zirconium					

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP28913
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 09/30/21

Metal	JD32315-1 Original MS	Spikelot MPSPK2	% Rec	QC Limits

Associated samples MP28913: JD32315-1, JD32315-2, JD32315-4, JD32315-5, JD32315-8, JD32315-9, JD32315-10, JD32315-11, JD32315-13, JD32315-14, JD32315-16, JD32315-17, JD32315-19, JD32315-20, JD32315-22, JD32315-23, JD32315-25, JD32315-26

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP28913
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 09/30/21

Metal	JD32315-1 Original	MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	6.3	200	212	91.4	1.0	20
Barium	25.7	222	212	92.7	0.0	20
Beryllium	anr					
Bismuth						
Boron						
Cadmium	0.48	195	212	91.8	0.0	20
Calcium						
Chromium	19.4	207	212	88.5	1.4	20
Cobalt						
Copper	anr					
Lead	18.0	207	212	89.2	1.0	20
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium						
Selenium	1.2	190	212	89.1	0.0	20
Silicon						
Silver	0.61	26.2	26.5	96.6	1.1	20
Sodium						
Strontium						
Sulfur						
Thallium						
Tin						
Titanium						
Tungsten						
Vanadium						
Zinc	anr					
Zirconium						

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP28913 Methods: SW846 6010D
Matrix Type: SOLID Units: mg/kg

Prep Date: 09/30/21

Metal	JD32315-1 Original MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit

Associated samples MP28913: JD32315-1, JD32315-2, JD32315-4, JD32315-5, JD32315-8, JD32315-9, JD32315-10, JD32315-11, JD32315-13, JD32315-14, JD32315-16, JD32315-17, JD32315-19, JD32315-20, JD32315-22, JD32315-23, JD32315-25, JD32315-26

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP28913
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 09/30/21

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	192	198	97.0	80-120
Barium	193	198	97.5	80-120
Beryllium	anr			
Bismuth				
Boron				
Cadmium	192	198	97.0	80-120
Calcium				
Chromium	195	198	98.5	80-120
Cobalt				
Copper	anr			
Iron				
Lead	193	198	97.5	80-120
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium				
Selenium	189	198	95.4	80-120
Silicon				
Silver	25.1	24.8	101.4	80-120
Sodium				
Strontium				
Sulfur				
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium				
Zinc	anr			

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP28913
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 09/30/21

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Zirconium				

Associated samples MP28913: JD32315-1, JD32315-2, JD32315-4, JD32315-5, JD32315-8, JD32315-9, JD32315-10, JD32315-11, JD32315-13, JD32315-14, JD32315-16, JD32315-17, JD32315-19, JD32315-20, JD32315-22, JD32315-23, JD32315-25, JD32315-26

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP28913
Matrix Type: SOLID

Methods: SW846 6010D
Units: ug/l

Prep Date: 09/30/21

Metal	JD32315-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	59.1	65.0	10.0	0-10
Barium	243	262	7.9	0-10
Beryllium	anr			
Bismuth				
Boron				
Cadmium	4.50	5.40	20.0 (a)	0-10
Calcium				
Chromium	183	203	10.8*(b)	0-10
Cobalt				
Copper	anr			
Iron				
Lead	170	181	6.4	0-10
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium				
Selenium	11.6	0.00	100.0(a)	0-10
Silicon				
Silver	5.80	7.10	22.4 (a)	0-10
Sodium				
Strontium				
Sulfur				
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium				
Zinc	anr			

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP28913 Methods: SW846 6010D
Matrix Type: SOLID Units: ug/l

Prep Date: 09/30/21

Metal	JD32315-1 Original SDL 1:5	%DIF	QC Limits
Zirconium			

Associated samples MP28913: JD32315-1, JD32315-2, JD32315-4, JD32315-5, JD32315-8, JD32315-9, JD32315-10, JD32315-11, JD32315-13, JD32315-14, JD32315-16, JD32315-17, JD32315-19, JD32315-20, JD32315-22, JD32315-23, JD32315-25, JD32315-26

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
(b) Serial dilution indicates possible matrix interference.

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP28930 Methods: SW846 7471B
Matrix Type: SOLID Units: mg/kg

Prep Date: 09/30/21

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.033	.0057	.015	-0.0084	<0.033

Associated samples MP28930: JD32315-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP28930
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 09/30/21

Metal	JD32329-5 Original	MS	Spikelot HGPWS1	% Rec	QC Limits
Mercury	0.050	0.42	0.357	103.6	80-120

Associated samples MP28930: JD32315-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP28930
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 09/30/21

Metal	JD32329-5 Original	MSD	Spikelot HGPWS1	% Rec	MSD RPD	QC Limit
Mercury	0.050	0.44	0.36	108.5	4.7	20

Associated samples MP28930: JD32315-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP28930
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 09/30/21

Metal	BSP Result	Spikelot HGPWS1	% Rec	QC Limits
Mercury	0.28	0.333	84.0	80-120

Associated samples MP28930: JD32315-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP28967 Methods: SW846 7471B
Matrix Type: SOLID Units: mg/kg

Prep Date: 10/04/21

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.033	.0057	.015	0.011	<0.033

Associated samples MP28967: JD32315-2, JD32315-4, JD32315-5, JD32315-8, JD32315-9, JD32315-10, JD32315-11, JD32315-13, JD32315-14, JD32315-16, JD32315-17, JD32315-19, JD32315-20, JD32315-22, JD32315-23, JD32315-25, JD32315-26

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP28967
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 10/04/21

Metal	JD32315-4 Original	MS	Spikelot HGPWS1	% Rec	QC Limits
Mercury	0.017	0.38	0.342	106.0	80-120

Associated samples MP28967: JD32315-2, JD32315-4, JD32315-5, JD32315-8, JD32315-9, JD32315-10, JD32315-11, JD32315-13, JD32315-14, JD32315-16, JD32315-17, JD32315-19, JD32315-20, JD32315-22, JD32315-23, JD32315-25, JD32315-26

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP28967 Methods: SW846 7471B
Matrix Type: SOLID Units: mg/kg

Prep Date: 10/04/21

Metal	JD32315-4 Original	MSD	Spikelot HGPWS1	% Rec	MSD RPD	QC Limit
Mercury	0.017	0.38	0.342	106.1	0.0	20

Associated samples MP28967: JD32315-2, JD32315-4, JD32315-5, JD32315-8, JD32315-9, JD32315-10, JD32315-11, JD32315-13, JD32315-14, JD32315-16, JD32315-17, JD32315-19, JD32315-20, JD32315-22, JD32315-23, JD32315-25, JD32315-26

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP28967
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 10/04/21

Metal	BSP Result	Spikelot HGPWS1	% Rec	QC Limits
Mercury	0.30	0.333	90.0	80-120

Associated samples MP28967: JD32315-2, JD32315-4, JD32315-5, JD32315-8, JD32315-9, JD32315-10, JD32315-11, JD32315-13, JD32315-14, JD32315-16, JD32315-17, JD32315-19, JD32315-20, JD32315-22, JD32315-23, JD32315-25, JD32315-26

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29010
Matrix Type: LEACHATE

Methods: SW846 6010D
Units: mg/l

Prep Date: 10/05/21

Metal	RL	IDL	MDL	MB raw	final
Aluminum	0.20	.017	.046		
Antimony	0.10	.0017	.0047		
Arsenic	0.10	.0021	.0028	0.0016	<0.10
Barium	0.20	.0008	.013	0.0062	<0.20
Beryllium	0.0020	.0003	.0005		
Bismuth	0.020	.0023	.004		
Boron	0.10	.0023	.063		
Cadmium	0.0040	.0003	.001	0.0	<0.0040
Calcium	5.0	.0066	.099		
Chromium	0.010	.0003	.002	0.0016	<0.010
Cobalt	0.050	.0004	.0026		
Copper	0.010	.0008	.0059		
Iron	0.10	.0053	.032		
Lead	0.10	.0011	.0018	0.0091	<0.10
Lithium	0.050	.0048	.0073		
Magnesium	5.0	.032	.14		
Manganese	0.015	.0001	.0014		
Molybdenum	0.020	.0006	.0036		
Nickel	0.010	.0004	.0017		
Phosphorus	0.050	.0012	.018		
Potassium	10	.077	.2		
Selenium	0.10	.0032	.0049	0.0030	<0.10
Silicon	0.20	.0017	.1		
Silver	0.010	.001	.0019	-0.00010	<0.010
Strontium	0.010	.0003	.001		
Sulfur	0.050	.003	.045		
Thallium	0.10	.0018	.0018		
Tin	0.010	.0008	.0037		
Titanium	0.010	.0005	.0025		
Tungsten	0.050	.0026	.04		
Vanadium	0.050	.0006	.0018		
Zinc	0.020	.0001	.0069		
Zirconium	0.010	.0003	.0041		

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29010 Methods: SW846 6010D
Matrix Type: LEACHATE Units: mg/l

Prep Date: 10/05/21

Metal	RL	IDL	MDL	MB raw	final

Associated samples MP29010: JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29010
Matrix Type: LEACHATE

Methods: SW846 6010D
Units: mg/l

Prep Date: 10/05/21

Metal	JD32226-1A Original	MS	Spikelot MPSPK2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic	0.0	1.8	2.0	90.0	75-125
Barium	0.032	1.9	2.0	93.4	75-125
Beryllium	anr				
Bismuth					
Boron					
Cadmium	0.00090	1.9	2.0	95.0	75-125
Chromium	2.8	4.5	2.0	85.0	75-125
Cobalt					
Copper	anr				
Iron					
Lead	0.0	1.8	2.0	90.0	75-125
Lithium					
Magnesium					
Manganese					
Molybdenum					
Nickel	anr				
Phosphorus					
Potassium					
Selenium	0.0033	2.0	2.0	99.8	75-125
Silicon					
Silver	0.0011	0.23	0.25	91.6	75-125
Strontium					
Sulfur					
Thallium					
Tin					
Titanium					
Tungsten					
Vanadium					
Zinc	anr				
Zirconium					

Associated samples MP29010: JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29010 Methods: SW846 6010D
Matrix Type: LEACHATE Units: mg/l

Prep Date: 10/05/21

Metal	JD32226-1A Original MS	Spikelot MPSPK2	% Rec	QC Limits

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29010
Matrix Type: LEACHATE

Methods: SW846 6010D
Units: mg/l

Prep Date: 10/05/21

Metal	JD32226-1A Original	MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	0.0	1.8	2.0	90.0	0.0	20
Barium	0.032	1.9	2.0	93.4	0.0	20
Beryllium	anr					
Bismuth						
Boron						
Cadmium	0.00090	1.9	2.0	95.0	0.0	20
Chromium	2.8	4.5	2.0	85.0	0.0	20
Cobalt						
Copper	anr					
Iron						
Lead	0.0	1.8	2.0	90.0	0.0	20
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium						
Selenium	0.0033	2.0	2.0	99.8	0.0	20
Silicon						
Silver	0.0011	0.23	0.25	91.6	0.0	20
Strontium						
Sulfur						
Thallium						
Tin						
Titanium						
Tungsten						
Vanadium						
Zinc	anr					
Zirconium						

Associated samples MP29010: JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29010 Methods: SW846 6010D
Matrix Type: LEACHATE Units: mg/l

Prep Date: 10/05/21

Metal	JD32226-1A Original MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29010
Matrix Type: LEACHATE

Methods: SW846 6010D
Units: mg/l

Prep Date: 10/05/21

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	1.8	2.0	90.0	80-120
Barium	1.8	2.0	90.0	80-120
Beryllium	anr			
Bismuth				
Boron				
Cadmium	1.8	2.0	90.0	80-120
Calcium				
Chromium	1.8	2.0	90.0	80-120
Cobalt				
Copper	anr			
Iron				
Lead	1.9	2.0	95.0	80-120
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium				
Selenium	2.0	2.0	100.0	80-120
Silicon				
Silver	0.23	0.25	92.0	80-120
Strontium				
Sulfur				
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium				
Zinc	anr			
Zirconium				

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29010 Methods: SW846 6010D
Matrix Type: LEACHATE Units: mg/l

Prep Date: 10/05/21

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits

Associated samples MP29010: JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29010
Matrix Type: LEACHATE

Methods: SW846 6010D
Units: ug/l

Prep Date: 10/05/21

Metal	JD32226-1A Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	0.00	0.00	NC	0-10
Barium	32.0	30.5	4.7	0-10
Beryllium	anr			
Bismuth				
Boron				
Cadmium	0.900	1.60	77.8 (a)	0-10
Calcium				
Chromium	2770	3030	9.5	0-10
Cobalt				
Copper	anr			
Iron				
Lead	0.00	0.00	NC	0-10
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium				
Selenium	3.30	0.00	100.0(a)	0-10
Silicon				
Silver	1.10	0.00	100.0(a)	0-10
Strontium				
Sulfur				
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium				
Zinc	anr			
Zirconium				

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29010
Matrix Type: LEACHATE

Methods: SW846 6010D
Units: ug/l

Prep Date: 10/05/21

Metal	JD32226-1A Original SDL 1:5	%DIF	QC Limits

Associated samples MP29010: JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29028
Matrix Type: LEACHATE

Methods: SW846 6010D
Units: mg/l

Prep Date: 10/06/21

Metal	RL	IDL	MDL	MB raw	final
Aluminum	0.20	.017	.046		
Antimony	0.10	.0017	.0047		
Arsenic	0.10	.0021	.0028	0.0012	<0.10
Barium	0.20	.0008	.013	0.014	<0.20
Beryllium	0.0020	.0003	.0005		
Bismuth	0.020	.0023	.004		
Boron	0.10	.0023	.063		
Cadmium	0.0040	.0003	.001	-0.00020	<0.0040
Calcium	5.0	.0066	.099		
Chromium	0.010	.0003	.002	0.0016	<0.010
Cobalt	0.050	.0004	.0026		
Copper	0.010	.0008	.0059		
Iron	0.10	.0053	.032		
Lead	0.10	.0011	.0018	0.0045	<0.10
Lithium	0.050	.0048	.0073		
Magnesium	5.0	.032	.14		
Manganese	0.015	.0001	.0014		
Molybdenum	0.020	.0006	.0036		
Nickel	0.010	.0004	.0017		
Phosphorus	0.050	.0012	.018		
Potassium	10	.077	.2		
Selenium	0.10	.0032	.0049	0.00010	<0.10
Silicon	0.20	.0017	.1		
Silver	0.010	.001	.0019	-0.0010	<0.010
Strontium	0.010	.0003	.001		
Sulfur	0.050	.003	.045		
Thallium	0.10	.0018	.0018		
Tin	0.010	.0008	.0037		
Titanium	0.010	.0005	.0025		
Tungsten	0.050	.0026	.04		
Vanadium	0.050	.0006	.0018		
Zinc	0.020	.0001	.0069		
Zirconium	0.010	.0003	.0041		

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29028 Methods: SW846 6010D
Matrix Type: LEACHATE Units: mg/l

Prep Date: 10/06/21

Metal	RL	IDL	MDL	MB raw	final

Associated samples MP29028: JD32315-21, JD32315-24, JD32315-27

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29028
Matrix Type: LEACHATE

Methods: SW846 6010D
Units: mg/l

Prep Date: 10/06/21

Metal	JD32315-21 Original	MS	Spikelot MPSPK2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic	0.0029	1.8	2.0	89.9	75-125
Barium	0.22	2.1	2.0	94.0	75-125
Beryllium					
Bismuth					
Boron					
Cadmium	0.0033	1.9	2.0	94.8	75-125
Chromium	0.0091	1.8	2.0	89.5	75-125
Cobalt					
Copper					
Iron					
Lead	0.034	2.0	2.0	98.3	75-125
Lithium					
Magnesium					
Manganese					
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium	0.0	2.0	2.0	100.0	75-125
Silicon					
Silver	0.0032	0.24	0.25	94.7	75-125
Strontium					
Sulfur					
Thallium					
Tin					
Titanium					
Tungsten					
Vanadium					
Zinc					
Zirconium					

Associated samples MP29028: JD32315-21, JD32315-24, JD32315-27

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29028 Methods: SW846 6010D
Matrix Type: LEACHATE Units: mg/l

Prep Date: 10/06/21

Metal	JD32315-21 Original MS	Spikelot MPSPK2	% Rec	QC Limits

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29028
Matrix Type: LEACHATE

Methods: SW846 6010D
Units: mg/l

Prep Date: 10/06/21

Metal	JD32315-21 Original	MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	0.0029	1.8	2.0	89.9	0.0	20
Barium	0.22	2.1	2.0	94.0	0.0	20
Beryllium						
Bismuth						
Boron						
Cadmium	0.0033	2.0	2.0	99.8	5.1	20
Chromium	0.0091	1.9	2.0	94.5	5.4	20
Cobalt						
Copper						
Iron						
Lead	0.034	2.0	2.0	98.3	0.0	20
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium	0.0	2.1	2.0	105.0	4.9	20
Silicon						
Silver	0.0032	0.25	0.25	98.7	4.1	20
Strontium						
Sulfur						
Thallium						
Tin						
Titanium						
Tungsten						
Vanadium						
Zinc						
Zirconium						

Associated samples MP29028: JD32315-21, JD32315-24, JD32315-27

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29028
Matrix Type: LEACHATE

Methods: SW846 6010D
Units: mg/l

Prep Date: 10/06/21

Metal	JD32315-21 Original MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29028
Matrix Type: LEACHATE

Methods: SW846 6010D
Units: mg/l

Prep Date: 10/06/21

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	1.8	2.0	90.0	80-120
Barium	1.9	2.0	95.0	80-120
Beryllium				
Bismuth				
Boron				
Cadmium	1.9	2.0	95.0	80-120
Calcium				
Chromium	1.9	2.0	95.0	80-120
Cobalt				
Copper				
Iron				
Lead	2.0	2.0	100.0	80-120
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium	2.1	2.0	105.0	80-120
Silicon				
Silver	0.24	0.25	96.0	80-120
Strontium				
Sulfur				
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium				
Zinc				
Zirconium				

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29028
Matrix Type: LEACHATE

Methods: SW846 6010D
Units: mg/l

Prep Date: 10/06/21

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits

Associated samples MP29028: JD32315-21, JD32315-24, JD32315-27

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29028
Matrix Type: LEACHATE

Methods: SW846 6010D
Units: ug/l

Prep Date: 10/06/21

Metal	JD32315-21 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	2.90	0.00	100.0(a)	0-10
Barium	219	227	3.6	0-10
Beryllium				
Bismuth				
Boron				
Cadmium	3.30	2.70	18.2 (a)	0-10
Calcium				
Chromium	9.10	9.50	4.4	0-10
Cobalt				
Copper				
Iron				
Lead	33.8	36.4	7.7	0-10
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium	0.00	0.00	NC	0-10
Silicon				
Silver	3.20	0.00	100.0(a)	0-10
Strontium				
Sulfur				
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium				
Zinc				
Zirconium				

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29028 Methods: SW846 6010D
Matrix Type: LEACHATE Units: ug/l

Prep Date: 10/06/21

Metal	JD32315-21 Original SDL 1:5	%DIF	QC Limits

Associated samples MP29028: JD32315-21, JD32315-24, JD32315-27

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29030 Methods: SW846 7470A
Matrix Type: LEACHATE Units: mg/l

Prep Date: 10/06/21

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.00020	.000034	.000095	-0.000037	<0.00020

Associated samples MP29030: JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29030 Methods: SW846 7470A
Matrix Type: LEACHATE Units: mg/l

Prep Date: 10/06/21

Metal	JD32226-1A Original	MS	Spikelot HGPW3	% Rec	QC Limits
Mercury	0.0	0.0024	0.0020	120.0	75-125

Associated samples MP29030: JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29030 Methods: SW846 7470A
Matrix Type: LEACHATE Units: mg/l

Prep Date: 10/06/21

Metal	JD32226-1A Original	MSD	Spikelot HGPW3	% Rec	MSD RPD	QC Limit
Mercury	0.0	0.0023	0.0020	115.0	4.3	20

Associated samples MP29030: JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29030
Matrix Type: LEACHATE

Methods: SW846 7470A
Units: mg/l

Prep Date: 10/06/21

Metal	BSP Result	Spikelot HGPW3	% Rec	QC Limits
Mercury	0.0019	0.0020	95.0	80-120

Associated samples MP29030: JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29059 Methods: SW846 7470A
Matrix Type: LEACHATE Units: mg/l

Prep Date: 10/07/21

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.00020	.000034	.000095	0.0000068	<0.00020

Associated samples MP29059: JD32315-21, JD32315-24, JD32315-27

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29059
Matrix Type: LEACHATE

Methods: SW846 7470A
Units: mg/l

Prep Date: 10/07/21

Metal	JD32315-21 Original	MS	Spikelot HGPW3	% Rec	QC Limits
Mercury	0.0	0.0024	0.0020	120.0	75-125

Associated samples MP29059: JD32315-21, JD32315-24, JD32315-27

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29059
Matrix Type: LEACHATE

Methods: SW846 7470A
Units: mg/l

Prep Date: 10/07/21

Metal	JD32315-21 Original	MSD	Spikelot HGPW3	% Rec	MSD RPD	QC Limit
Mercury	0.0	0.0024	0.0020	120.0	0.0	20

Associated samples MP29059: JD32315-21, JD32315-24, JD32315-27

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29059
Matrix Type: LEACHATE

Methods: SW846 7470A
Units: mg/l

Prep Date: 10/07/21

Metal	BSP Result	Spikelot HGPW3	% Rec	QC Limits
Mercury	0.0022	0.0020	110.0	80-120

Associated samples MP29059: JD32315-21, JD32315-24, JD32315-27

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Cyanide Reactivity	GP36268/GN22654	10	0.0	mg/kg	100	1.29	1.3	.25-27%
Cyanide Reactivity	GP36379/GN22833	10	0.0	mg/kg	100	4.93	4.9	.25-27%
Sulfide Reactivity	GP36267/GN22640	100	0.0	mg/kg	504	403	80.0	42-107%

Associated Samples:
Batch GP36267: JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18, JD32315-21, JD32315-24, JD32315-27
Batch GP36268: JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18, JD32315-24, JD32315-27
Batch GP36379: JD32315-21
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Corrosivity as pH	GN22399	JD32226-1A	su	11.21	11.43	1.9	0-5%
Cyanide Reactivity	GP36268/GN22654	JD32315-3	mg/kg	0.0	0.0	0.0	0-20%
Cyanide Reactivity	GP36379/GN22833	JD33148-3	mg/kg	0.0	0.0	0.0	0-20%
Ignitability (Flashpoint)	GN22455	JD32315-3	Deg. F	>200	>200	0.0	0-10%
Paint Filter Test	GN22409	JD32226-1	ml/100g	0.0	0.0	0.0	0-10%
Solids, Percent	GN22293	JD32434-7	%	83.8	84.8	1.2	0-5%
Solids, Percent	GN22296	JD32337-1	%	77.7	80.3	3.3	0-5%
Solids, Percent	GN22414	JD32673-9	%	82.6	84.9	2.7	0-5%
Sulfide Reactivity	GP36267/GN22640	JD32315-3	mg/kg	0.00	0.00	0.0	0-20%

Associated Samples:
Batch GN22293: JD32315-1, JD32315-2, JD32315-4, JD32315-5, JD32315-8, JD32315-9
Batch GN22296: JD32315-10, JD32315-11, JD32315-13, JD32315-14, JD32315-16, JD32315-17, JD32315-19, JD32315-20, JD32315-22, JD32315-23, JD32315-25, JD32315-26
Batch GN22399: JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18, JD32315-21, JD32315-24, JD32315-27
Batch GN22409: JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18, JD32315-21, JD32315-24, JD32315-27
Batch GN22414: JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18, JD32315-21, JD32315-24, JD32315-27
Batch GN22455: JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18, JD32315-21, JD32315-24, JD32315-27
Batch GP36267: JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18, JD32315-21, JD32315-24, JD32315-27
Batch GP36268: JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18, JD32315-24, JD32315-27
Batch GP36379: JD32315-21
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JD32315
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Sulfide Reactivity	GP36267/GN22640	JD32315-3	mg/kg	0.00	544	156	28.7	20-82%

Associated Samples:
Batch GP36267: JD32315-3, JD32315-6, JD32315-7, JD32315-12, JD32315-15, JD32315-18, JD32315-21, JD32315-24, JD32315-27
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Atlas Technical Consultants, LLC

Northfield Bridge, Route 12, VT

280BS02090

SGS Job Number: JD32749

Sampling Dates: 09/27/21 - 09/28/21

Report to:

Atlas Technical Consultants, LLC
51 Knight Lane
Williston, VT 05495
erik.urch@oneatlas.com

ATTN: Erik Urch

Total number of pages in report: 177

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Mike Earp
General Manager

Client Service contact: Marie Meidhof 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (ANAB L2248)

This report shall not be reproduced, except in its entirety, without the written approval of SGS.
Test results relate only to samples analyzed.

SGS is the sole authority for authorizing edits or modifications to this document.
Unauthorized modification of this report is strictly prohibited.
Review standard terms at: http://www.sgs.com/en/terms-and-conditions

Please share your ideas about how we can serve you better at:
EHS.US.CustomerCare@sgs.com

Table of Contents

Sections: 1 2 3 4 5 6 7 8 9 10 11

Section 1: Sample Summary **4**
Section 2: Case Narrative/Conformance Summary **5**
Section 3: Summary of Hits **9**
Section 4: Sample Results **11**
4.1: JD32749-1: H-103-A 12
4.2: JD32749-2: H-103-B 14
4.3: JD32749-3: H-103-C 20
4.4: JD32749-3A: H-103-C 24
4.5: JD32749-4: B-101-A 29
4.6: JD32749-5: B-101-B 31
4.7: JD32749-6: B-101-C 37
4.8: JD32749-6A: B-101-C 41
Section 5: Misc. Forms **46**
5.1: Certification Exceptions 47
5.2: Chain of Custody 48
Section 6: MS Volatiles - QC Data Summaries **51**
6.1: Method Blank Summary 52
6.2: Leachate Blank Summary 56
6.3: Blank Spike Summary 58
6.4: Matrix Spike Summary 62
6.5: Matrix Spike/Matrix Spike Duplicate Summary 65
6.6: Leachate Spike Summary 66
6.7: Duplicate Summary 67
6.8: Instrument Performance Checks (BFB) 70
6.9: Surrogate Recovery Summaries 76
Section 7: MS Semi-volatiles - QC Data Summaries **78**
7.1: Method Blank Summary 79
7.2: Leachate Blank Summary 82
7.3: Blank Spike Summary 83
7.4: Blank Spike/Blank Spike Duplicate Summary 85
7.5: Matrix Spike/Matrix Spike Duplicate Summary 86
7.6: Leachate Spike Summary 89
7.7: Instrument Performance Checks (DFTPP) 90
7.8: Surrogate Recovery Summaries 104
Section 8: GC Volatiles - QC Data Summaries **106**
8.1: Method Blank Summary 107
8.2: Blank Spike Summary 108
8.3: Matrix Spike/Matrix Spike Duplicate Summary 109
8.4: Surrogate Recovery Summaries 110
Section 9: GC/LC Semi-volatiles - QC Data Summaries **111**
9.1: Method Blank Summary 112
9.2: Leachate Blank Summary 119

Table of Contents

9.3: Blank Spike Summary 121
9.4: Blank Spike/Blank Spike Duplicate Summary 125
9.5: Matrix Spike/Matrix Spike Duplicate Summary 127
9.6: Leachate Spike Summary 132
9.7: Surrogate Recovery Summaries 134
Section 10: Metals Analysis - QC Data Summaries 138
10.1: Prep QC MP29085: Hg 139
10.2: Prep QC MP29086: Hg 143
10.3: Prep QC MP29112: As,Ba,Cd,Cr,Pb,Se,Ag 148
10.4: Prep QC MP29118: As,Ba,Cd,Cr,Pb,Se,Ag 160
10.5: Prep QC MP29158: Hg 170
Section 11: General Chemistry - QC Data Summaries 174
11.1: Method Blank and Spike Results Summary 175
11.2: Duplicate Results Summary 176
11.3: Matrix Spike Results Summary 177

Sample Summary

Atlas Technical Consultants, LLC

Job No: JD32749

Northfield Bridge, Route 12, VT
Project No: 280BS02090

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
This report contains results reported as ND = Not detected. The following applies:							
Organics ND = Not detected above the MDL							
JD32749-1	09/27/21	12:40	JP	10/01/21	SO	Soil	H-103-A
JD32749-2	09/27/21	15:00	JP	10/01/21	SO	Soil	H-103-B
JD32749-3	09/27/21	15:30	JP	10/01/21	SO	Soil	H-103-C
JD32749-3A	09/27/21	15:30	JP	10/01/21	SO	Soil	H-103-C
JD32749-4	09/28/21	08:45	JP	10/01/21	SO	Soil	B-101-A
JD32749-5	09/28/21	14:50	JP	10/01/21	SO	Soil	B-101-B
JD32749-6	09/28/21	14:55	JP	10/01/21	SO	Soil	B-101-C
JD32749-6A	09/28/21	14:55	JP	10/01/21	SO	Soil	B-101-C

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	Atlas Technical Consultants, LLC	**Job No:**	JD32749
Site:	Northfield Bridge, Route 12, VT	**Report Date**	10/26/2021 3:59:48 P

On 10/01/2021, 6 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc. at a maximum corrected temperature of 3.5 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. Job Number of JD32749 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Compounds qualified as out of range in the continuing calibration summary report are acceptable as per method requirements when there is a high bias but the sample result is non-detect.

MS Volatiles By Method SW846 8260D

Matrix: LEACHATE **Batch ID:** V1A9288

- Sample(s) JD32749-3ALS, JD32749-3AMS, JD32749-3AMSD were used as the QC samples indicated.
- The following samples were run outside of holding time for method SW846 8260D: JD32749-3A, JD32749-6A
- Sample(s) JD32749-3A, JD32749-6A have compound(s) reported with a "B" qualifier, indicating analyte is found in the associated method blank. Indicates analyte found in associated leachate blank.

Matrix: SO **Batch ID:** V3C7511

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD32675-1MS, JD32675-7DUP were used as the QC samples indicated.

MS Semi-volatiles By Method SW846 8270E

Matrix: LEACHATE **Batch ID:** OP35997

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD32818-1ALS, JD32818-1AMS, JD32818-1AMSD were used as the QC samples indicated.
- RPD(s) for MSD for Pyridine are outside control limits for sample OP35997-MSD. Probable cause due to sample homogeneity.

Matrix: SO **Batch ID:** OP35863

- All samples were extracted within the recommended method holding time.
- Sample(s) JD32716-2MS, JD32716-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- JD32749-5 for Acenaphthylene: Associated CCV outside of control limits high, sample was ND.
- JD32749-1 for Acenaphthylene: Associated CCV outside of control limits high, sample was ND.
- JD32749-2 for Acenaphthylene: Associated CCV outside of control limits high, sample was ND.

Matrix: SO **Batch ID:** OP35916

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD32593-45MS, JD32593-45MSD were used as the QC samples indicated.

GC Volatiles By Method SW846 8015D

Matrix: SO **Batch ID:** GLM4720

- All samples were analyzed within the recommended method holding time.
- Sample(s) JD32749-3MS, JD32749-3MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- RPD(s) for MSD for TPH-GRO (C6-C10) are outside control limits for sample JD32749-3MSD. Probable cause due to sample homogeneity.
- JD32749-3MS for aaa-Trifluorotoluene: Outside of in house control limits, but within reasonable method recovery limits.

GC/LC Semi-volatiles By Method SW846 8015D

Matrix: SO **Batch ID:** OP35889

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD32867-1MS, JD32867-1MSD were used as the QC samples indicated.

GC/LC Semi-volatiles By Method SW846 8081B

Matrix: LEACHATE **Batch ID:** OP35998

- All samples were extracted within the recommended method holding time.
- Sample(s) JD32818-1ALS, JD32818-1AMS, JD32818-1AMSD, OP35998-MSMSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- OP35998-BS1 for Heptachlor epoxide: Reported from the 2nd signal. The %D of the CCV on the 1st signal exceeds the method criteria of 20%, so it being used for confirmation only.

GC/LC Semi-volatiles By Method SW846 8082A

Matrix: SO **Batch ID:** OP35560

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) FA88588-60MS, FA88588-60MSD, OP35560-MSMSD were used as the QC samples indicated.
- OP35560-MB1 for Tetrachloro-m-xylene: Outside program requirements.
- OP35560-BS1 for Aroclor 1260: Reported from the 2nd signal. The %D of the CCV on the 1st signal exceeds the method criteria of 20%, so it being used for confirmation only.

Matrix: SO **Batch ID:** OP35840

- All samples were extracted within the recommended method holding time.
- Sample(s) JD32716-1MS, JD32716-1MSD, OP35840-MSMSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- OP35840-MB1: Had TBA cleanup.
- JD32749-6 for Aroclor 1248: More than 40 % RPD for detected concentrations between the two GC columns.
- OP35840-BS1 for Aroclor 1016: Reported from the 2nd signal. The %D of the CCV on the 1st signal exceeds the method criteria of 20%, so it being used for confirmation only.

GC/LC Semi-volatiles By Method SW846 8151A

Matrix: LEACHATE **Batch ID:** OP35999

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD32818-1ALS, JD32818-1AMS, JD32818-1AMSD were used as the QC samples indicated.
- OP35999-BS1 for 2,4,5-TP (Silvex): Reported from 1st signal. 2nd signal used for confirmation.
- OP35999-BS1 for 2,4-DCAA: Outside of in house control limits.
- OP35999-MB1 for 2,4-DCAA: Outside of in house control limits.

Metals Analysis By Method SW846 6010D

Matrix: LEACHATE **Batch ID:** MP29118

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD32818-1AMS, JD32818-1AMSD, JD32818-1ASDL were used as the QC samples for metals.
- RPD(s) for Serial Dilution for Arsenic, Cadmium, Lead, Silver are outside control limits for sample MP29118-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Matrix: SO **Batch ID:** MP29112

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD32675-7SDL, JD32675-7MS, JD32675-7MSD, JD32675-7SDL were used as the QC samples for metals.
- RPD(s) for Serial Dilution for Selenium, Silver are outside control limits for sample MP29112-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Metals Analysis By Method SW846 7470A

Matrix: LEACHATE **Batch ID:** MP29158

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD32818-1AMS, JD32818-1AMSD were used as the QC samples for metals.

Metals Analysis By Method SW846 7471B

Matrix: SO **Batch ID:** MP29085

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD32675-31MS, JD32675-31MSD were used as the QC samples for metals.
- Matrix Spike Duplicate Recovery(s) for Mercury are outside control limits. Probable cause due to matrix interference.

Matrix: SO **Batch ID:** MP29086

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD32691-5MS, JD32691-5MSD were used as the QC samples for metals.

General Chemistry By Method SM2540 G 18TH ED MOD

Matrix: SO **Batch ID:** GN22504

- Sample(s) JD32749-1DUP were used as the QC samples for Solids, Percent.

General Chemistry By Method SW846 1010A/ASTM D93

Matrix:	SO	Batch ID:	GN22715

- Sample(s) JD32749-3DUP were used as the QC samples for Ignitability (Flashpoint).

General Chemistry By Method SW846 9045D

Matrix:	SO	Batch ID:	GN22716

- Sample(s) JD32987-1ADUP were used as the QC samples for Corrosivity as pH.

General Chemistry By Method SW846 9095/9095B

Matrix:	SO	Batch ID:	GN22713

- Sample(s) JD32749-3DUP were used as the QC samples for Paint Filter Test.
- JD32749-3 for Paint Filter Test: No free liquids.
- JD32749-6 for Paint Filter Test: Free liquids present.

General Chemistry By Method SW846 CHAP7/9012 B

Matrix:	SO	Batch ID:	GP36382

- All method blanks for this batch meet method specific criteria.
- Sample(s) JD32997-1DUP were used as the QC samples for Cyanide Reactivity.
- The following samples were prepared outside of holding time for method SW846 CHAP7/9012 B: JD32749-3, JD32749-6 Analyzed outside the 14 day holding time applied by laboratory SOP. No regulatory holding time published for this method.

General Chemistry By Method SW846 CHAP7/9034

Matrix:	SO	Batch ID:	GP36380

- All method blanks for this batch meet method specific criteria.
- Sample(s) JD32997-1DUP, JD32997-1MS were used as the QC samples for Sulfide Reactivity.
- The following samples were prepared outside of holding time for method SW846 CHAP7/9034: JD32749-3, JD32749-6 Analyzed outside the 14 day holding time applied by laboratory SOP. No regulatory holding time published for this method.

SGS North America Inc. certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS North America Inc. is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS North America Inc indicated via signature on the report cover

Summary of Hits

Job Number: JD32749
Account: Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT
Collected: 09/27/21 thru 09/28/21

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JD32749-1	**H-103-A**					
Benzo(a)anthracene		11.6 J	34	9.7	ug/kg	SW846 8270E
Arsenic		10.4	2.1		mg/kg	SW846 6010D
Chromium		12.5	1.0		mg/kg	SW846 6010D
Lead		16.1	2.1		mg/kg	SW846 6010D
JD32749-2	**H-103-B**					
Acetone		628	16	6.6	ug/kg	SW846 8260D
2-Butanone (MEK)		140	16	3.8	ug/kg	SW846 8260D
Carbon disulfide		2.9 J	3.2	0.85	ug/kg	SW846 8260D
Anthracene		54.8	51	31	ug/kg	SW846 8270E
Benzo(a)anthracene		167	51	14	ug/kg	SW846 8270E
Benzo(a)pyrene		137	51	23	ug/kg	SW846 8270E
Benzo(b)fluoranthene		164	51	22	ug/kg	SW846 8270E
Benzo(g,h,i)perylene		74.6	51	25	ug/kg	SW846 8270E
Benzo(k)fluoranthene		70.9	51	24	ug/kg	SW846 8270E
Chrysene		175	51	16	ug/kg	SW846 8270E
Fluoranthene		366	51	23	ug/kg	SW846 8270E
Fluorene		27.8 J	51	23	ug/kg	SW846 8270E
Indeno(1,2,3-cd)pyrene		87.3	51	24	ug/kg	SW846 8270E
Naphthalene		31.8 J	51	14	ug/kg	SW846 8270E
Phenanthrene		244	51	17	ug/kg	SW846 8270E
Pyrene		331	51	16	ug/kg	SW846 8270E
Arsenic		12.6	3.1		mg/kg	SW846 6010D
Barium		37.0	31		mg/kg	SW846 6010D
Chromium		19.0	1.6		mg/kg	SW846 6010D
Lead		35.4	3.1		mg/kg	SW846 6010D
Mercury		0.25	0.048		mg/kg	SW846 7471B
JD32749-3	**H-103-C**					
TPH-DRO (C10-C28)		103	11	3.8	mg/kg	SW846 8015D
Corrosivity as pH		8.60 NC			su	SW846 9045D
Ignitability (Flashpoint)		> 200			Deg. F	SW846 1010A/ASTM D93
JD32749-3A	**H-103-C**					
Chloroform [a]		0.0108 B	0.0050	0.0025	mg/l	SW846 8260D
Barium		0.26	0.20		mg/l	SW846 6010D
Chromium		0.021	0.010		mg/l	SW846 6010D

Summary of Hits

Job Number: JD32749
Account: Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT
Collected: 09/27/21 thru 09/28/21

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JD32749-4	**B-101-A**					
Benzo(a)anthracene		18.0 J	35	9.9	ug/kg	SW846 8270E
Benzo(b)fluoranthene		16.2 J	35	16	ug/kg	SW846 8270E
Chrysene		14.2 J	35	11	ug/kg	SW846 8270E
Fluoranthene		30.9 J	35	16	ug/kg	SW846 8270E
Phenanthrene		12.3 J	35	12	ug/kg	SW846 8270E
Pyrene		29.9 J	35	11	ug/kg	SW846 8270E
Arsenic		10	2.2		mg/kg	SW846 6010D
Barium		58.2	22		mg/kg	SW846 6010D
Chromium		22.7	1.1		mg/kg	SW846 6010D
Lead		10.6	2.2		mg/kg	SW846 6010D
JD32749-5	**B-101-B**					
Acetone		334	19	7.9	ug/kg	SW846 8260D
2-Butanone (MEK)		71.0	19	4.6	ug/kg	SW846 8260D
Carbon disulfide		2.4 J	3.8	1.0	ug/kg	SW846 8260D
Benzo(a)anthracene		22.7 J	59	17	ug/kg	SW846 8270E
Fluoranthene		34.7 J	59	26	ug/kg	SW846 8270E
Pyrene		29.6 J	59	19	ug/kg	SW846 8270E
Arsenic		5.7	3.6		mg/kg	SW846 6010D
Chromium		15.4	1.8		mg/kg	SW846 6010D
Lead		8.9	3.6		mg/kg	SW846 6010D
JD32749-6	**B-101-C**					
TPH-DRO (C10-C28)		79.9	11	3.9	mg/kg	SW846 8015D
Aroclor 1248 [b]		123	41	37	ug/kg	SW846 8082A
Corrosivity as pH		11.75 NC			su	SW846 9045D
Ignitability (Flashpoint)		> 200			Deg. F	SW846 1010A/ASTM D93
Paint Filter Test [c]		1.0	0.50		ml/100g	SW846 9095/9095B
JD32749-6A	**B-101-C**					
Chloroform [a]		0.010 B	0.0050	0.0025	mg/l	SW846 8260D
Barium		0.39	0.20		mg/l	SW846 6010D

(a) Indicates analyte found in associated leachate blank.
(b) More than 40 % RPD for detected concentrations between the two GC columns.
(c) Free liquids present.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	H-103-A		
Lab Sample ID:	JD32749-1	**Date Sampled:**	09/27/21
Matrix:	SO - Soil	**Date Received:**	10/01/21
Method:	SW846 8270E SW846 3546	**Percent Solids:**	94.9
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z152149.D	1	10/10/21 19:17	CS	10/09/21 11:15	OP35863	EZ7568
Run #2							

	Initial Weight	Final Volume
Run #1	30.6 g	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	34	12	ug/kg	
208-96-8	Acenaphthylene [a]	ND	34	17	ug/kg	
120-12-7	Anthracene	ND	34	21	ug/kg	
56-55-3	Benzo(a)anthracene	11.6	34	9.7	ug/kg	J
50-32-8	Benzo(a)pyrene	ND	34	16	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	34	15	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	34	17	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	34	16	ug/kg	
218-01-9	Chrysene	ND	34	11	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	34	15	ug/kg	
206-44-0	Fluoranthene	ND	34	15	ug/kg	
86-73-7	Fluorene	ND	34	16	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	34	16	ug/kg	
91-20-3	Naphthalene	ND	34	9.7	ug/kg	
85-01-8	Phenanthrene	ND	34	12	ug/kg	
129-00-0	Pyrene	ND	34	11	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	28%		15-114%
321-60-8	2-Fluorobiphenyl	26%		22-104%
1718-51-0	Terphenyl-d14	27%		23-121%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-103-A		
Lab Sample ID:	JD32749-1	**Date Sampled:**	09/27/21
Matrix:	SO - Soil	**Date Received:**	10/01/21
		Percent Solids:	94.9
Project:	Northfield Bridge, Route 12, VT		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	10.4	2.1	mg/kg	1	10/09/21	10/11/21	ND	SW846 6010D [2]	SW846 3050B [4]
Barium	< 21	21	mg/kg	1	10/09/21	10/11/21	ND	SW846 6010D [2]	SW846 3050B [4]
Cadmium	< 0.52	0.52	mg/kg	1	10/09/21	10/11/21	ND	SW846 6010D [2]	SW846 3050B [4]
Chromium	12.5	1.0	mg/kg	1	10/09/21	10/11/21	ND	SW846 6010D [2]	SW846 3050B [4]
Lead	16.1	2.1	mg/kg	1	10/09/21	10/11/21	ND	SW846 6010D [2]	SW846 3050B [4]
Mercury	< 0.035	0.035	mg/kg	1	10/08/21	10/08/21	LM	SW846 7471B [1]	SW846 7471B [3]
Selenium	< 2.1	2.1	mg/kg	1	10/09/21	10/11/21	ND	SW846 6010D [2]	SW846 3050B [4]
Silver	< 0.52	0.52	mg/kg	1	10/09/21	10/11/21	ND	SW846 6010D [2]	SW846 3050B [4]

(1) Instrument QC Batch: MA51244
(2) Instrument QC Batch: MA51260
(3) Prep QC Batch: MP29085
(4) Prep QC Batch: MP29112

RL = Reporting Limit

Report of Analysis

Client Sample ID:	H-103-B		
Lab Sample ID:	JD32749-2	**Date Sampled:**	09/27/21
Matrix:	SO - Soil	**Date Received:**	10/01/21
Method:	SW846 8260D	**Percent Solids:**	61.9
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3C170055.D	1	10/11/21 17:49	PS	n/a	n/a	V3C7511
Run #2							

	Initial Weight
Run #1	5.1 g
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	628	16	6.6	ug/kg	
71-43-2	Benzene	ND	0.79	0.72	ug/kg	
108-86-1	Bromobenzene	ND	7.9	0.88	ug/kg	
74-97-5	Bromochloromethane	ND	7.9	0.89	ug/kg	
75-27-4	Bromodichloromethane	ND	3.2	0.68	ug/kg	
75-25-2	Bromoform	ND	7.9	2.2	ug/kg	
74-83-9	Bromomethane	ND	7.9	1.2	ug/kg	
78-93-3	2-Butanone (MEK)	140	16	3.8	ug/kg	
104-51-8	n-Butylbenzene	ND	3.2	0.64	ug/kg	
135-98-8	sec-Butylbenzene	ND	3.2	0.68	ug/kg	
98-06-6	tert-Butylbenzene	ND	3.2	0.79	ug/kg	
75-15-0	Carbon disulfide	2.9	3.2	0.85	ug/kg	J
56-23-5	Carbon tetrachloride	ND	3.2	0.98	ug/kg	
108-90-7	Chlorobenzene	ND	3.2	0.73	ug/kg	
75-00-3	Chloroethane	ND	7.9	0.94	ug/kg	
67-66-3	Chloroform	ND	3.2	0.82	ug/kg	
74-87-3	Chloromethane	ND	7.9	3.1	ug/kg	
95-49-8	o-Chlorotoluene	ND	3.2	0.86	ug/kg	
106-43-4	p-Chlorotoluene	ND	3.2	0.70	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	3.2	1.1	ug/kg	
124-48-1	Dibromochloromethane	ND	3.2	0.89	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.6	0.67	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.6	0.86	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1.6	0.79	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.6	0.78	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	7.9	1.2	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.6	0.78	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.6	0.74	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.6	1.0	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.6	1.3	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.6	0.97	ug/kg	
78-87-5	1,2-Dichloropropane	ND	3.2	0.75	ug/kg	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-103-B		
Lab Sample ID:	JD32749-2	**Date Sampled:**	09/27/21
Matrix:	SO - Soil	**Date Received:**	10/01/21
Method:	SW846 8260D	**Percent Solids:**	61.9
Project:	Northfield Bridge, Route 12, VT		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	3.2	0.83	ug/kg	
594-20-7	2,2-Dichloropropane	ND	3.2	0.68	ug/kg	
563-58-6	1,1-Dichloropropene	ND	3.2	0.74	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	3.2	0.75	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	3.2	0.72	ug/kg	
100-41-4	Ethylbenzene	ND	1.6	0.72	ug/kg	
87-68-3	Hexachlorobutadiene	ND	7.9	1.0	ug/kg	
591-78-6	2-Hexanone	ND	7.9	3.4	ug/kg	
74-88-4	Iodomethane	ND	7.9	3.7	ug/kg	
98-82-8	Isopropylbenzene	ND	3.2	2.2	ug/kg	
99-87-6	p-Isopropyltoluene	ND	3.2	0.63	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.6	0.74	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	7.9	3.6	ug/kg	
74-95-3	Methylene bromide	ND	7.9	0.83	ug/kg	
75-09-2	Methylene chloride	ND	7.9	4.1	ug/kg	
91-20-3	Naphthalene	ND	7.9	4.0	ug/kg	
103-65-1	n-Propylbenzene	ND	3.2	0.74	ug/kg	
100-42-5	Styrene	ND	3.2	0.64	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	3.2	0.67	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	3.2	0.95	ug/kg	
127-18-4	Tetrachloroethene	ND	3.2	0.92	ug/kg	
108-88-3	Toluene	ND	1.6	0.83	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	7.9	4.0	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	7.9	4.0	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	3.2	0.76	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	3.2	0.88	ug/kg	
79-01-6	Trichloroethene	ND	1.6	1.2	ug/kg	
75-69-4	Trichlorofluoromethane	ND	7.9	1.1	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	7.9	0.88	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	3.2	0.79	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	3.2	0.68	ug/kg	
108-05-4	Vinyl Acetate	ND	16	3.2	ug/kg	
75-01-4	Vinyl chloride	ND	3.2	0.76	ug/kg	
	m,p-Xylene	ND	1.6	1.4	ug/kg	
95-47-6	o-Xylene	ND	1.6	0.73	ug/kg	
1330-20-7	Xylene (total)	ND	1.6	0.73	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		72-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-103-B		
Lab Sample ID:	JD32749-2	**Date Sampled:**	09/27/21
Matrix:	SO - Soil	**Date Received:**	10/01/21
Method:	SW846 8260D	**Percent Solids:**	61.9
Project:	Northfield Bridge, Route 12, VT		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	112%		75-131%
2037-26-5	Toluene-D8	98%		81-121%
460-00-4	4-Bromofluorobenzene	103%		60-141%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-103-B		
Lab Sample ID:	JD32749-2	**Date Sampled:**	09/27/21
Matrix:	SO - Soil	**Date Received:**	10/01/21
Method:	SW846 8270E SW846 3546	**Percent Solids:**	61.9
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z152161.D	1	10/11/21 00:26	CS	10/09/21 11:15	OP35863	EZ7568
Run #2							

	Initial Weight	Final Volume
Run #1	31.9 g	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	51	17	ug/kg	
208-96-8	Acenaphthylene [a]	ND	51	26	ug/kg	
120-12-7	Anthracene	54.8	51	31	ug/kg	
56-55-3	Benzo(a)anthracene	167	51	14	ug/kg	
50-32-8	Benzo(a)pyrene	137	51	23	ug/kg	
205-99-2	Benzo(b)fluoranthene	164	51	22	ug/kg	
191-24-2	Benzo(g,h,i)perylene	74.6	51	25	ug/kg	
207-08-9	Benzo(k)fluoranthene	70.9	51	24	ug/kg	
218-01-9	Chrysene	175	51	16	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	51	22	ug/kg	
206-44-0	Fluoranthene	366	51	23	ug/kg	
86-73-7	Fluorene	27.8	51	23	ug/kg	J
193-39-5	Indeno(1,2,3-cd)pyrene	87.3	51	24	ug/kg	
91-20-3	Naphthalene	31.8	51	14	ug/kg	J
85-01-8	Phenanthrene	244	51	17	ug/kg	
129-00-0	Pyrene	331	51	16	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	44%		15-114%
321-60-8	2-Fluorobiphenyl	47%		22-104%
1718-51-0	Terphenyl-d14	48%		23-121%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-103-B		
Lab Sample ID:	JD32749-2	**Date Sampled:**	09/27/21
Matrix:	SO - Soil	**Date Received:**	10/01/21
Method:	SW846 8082A SW846 3540C	**Percent Solids:**	61.9
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX2472515A.D	1	10/17/21 20:24	TL	10/15/21 16:30	OP35560	GXX7617
Run #2							

	Initial Weight	Final Volume
Run #1	10.2 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	79	37	ug/kg	
11104-28-2	Aroclor 1221	ND	79	49	ug/kg	
11141-16-5	Aroclor 1232	ND	79	51	ug/kg	
53469-21-9	Aroclor 1242	ND	79	32	ug/kg	
12672-29-6	Aroclor 1248	ND	79	71	ug/kg	
11097-69-1	Aroclor 1254	ND	79	43	ug/kg	
11096-82-5	Aroclor 1260	ND	79	34	ug/kg	
11100-14-4	Aroclor 1268	ND	79	33	ug/kg	
37324-23-5	Aroclor 1262	ND	79	52	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	100%		24-152%
877-09-8	Tetrachloro-m-xylene	104%		24-152%
2051-24-3	Decachlorobiphenyl	103%		10-172%
2051-24-3	Decachlorobiphenyl	114%		10-172%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: H-103-B
Lab Sample ID: JD32749-2
Matrix: SO - Soil
Project: Northfield Bridge, Route 12, VT

Date Sampled: 09/27/21
Date Received: 10/01/21
Percent Solids: 61.9

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	12.6	3.1	mg/kg	1	10/09/21	10/11/21	ND	SW846 6010D [2]	SW846 3050B [4]
Barium	37.0	31	mg/kg	1	10/09/21	10/11/21	ND	SW846 6010D [2]	SW846 3050B [4]
Cadmium	< 0.78	0.78	mg/kg	1	10/09/21	10/11/21	ND	SW846 6010D [2]	SW846 3050B [4]
Chromium	19.0	1.6	mg/kg	1	10/09/21	10/11/21	ND	SW846 6010D [2]	SW846 3050B [4]
Lead	35.4	3.1	mg/kg	1	10/09/21	10/11/21	ND	SW846 6010D [2]	SW846 3050B [4]
Mercury	0.25	0.048	mg/kg	1	10/08/21	10/08/21	LM	SW846 7471B [1]	SW846 7471B [3]
Selenium	< 3.1	3.1	mg/kg	1	10/09/21	10/11/21	ND	SW846 6010D [2]	SW846 3050B [4]
Silver	< 0.78	0.78	mg/kg	1	10/09/21	10/11/21	ND	SW846 6010D [2]	SW846 3050B [4]

(1) Instrument QC Batch: MA51244
(2) Instrument QC Batch: MA51260
(3) Prep QC Batch: MP29085
(4) Prep QC Batch: MP29112

RL = Reporting Limit

Report of Analysis

Client Sample ID:	H-103-C		
Lab Sample ID:	JD32749-3	**Date Sampled:**	09/27/21
Matrix:	SO - Soil	**Date Received:**	10/01/21
Method:	SW846 8015D	**Percent Solids:**	87.7
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	LM112485.D	1	10/09/21 00:32	DFT	n/a	n/a	GLM4720
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	10.9 g	10.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	12	5.9	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	92%		70-116%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-103-C		
Lab Sample ID:	JD32749-3	**Date Sampled:**	09/27/21
Matrix:	SO - Soil	**Date Received:**	10/01/21
Method:	SW846 8082A SW846 3546	**Percent Solids:**	87.7
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	RK4936.D	1	10/23/21 15:44	TC	10/22/21 16:00	OP35840	GRK135
Run #2							

	Initial Weight	Final Volume
Run #1	16.1 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	35	17	ug/kg	
11104-28-2	Aroclor 1221	ND	35	22	ug/kg	
11141-16-5	Aroclor 1232	ND	35	23	ug/kg	
53469-21-9	Aroclor 1242	ND	35	15	ug/kg	
12672-29-6	Aroclor 1248	ND	35	32	ug/kg	
11097-69-1	Aroclor 1254	ND	35	19	ug/kg	
11096-82-5	Aroclor 1260	ND	35	15	ug/kg	
11100-14-4	Aroclor 1268	ND	35	15	ug/kg	
37324-23-5	Aroclor 1262	ND	35	23	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	76%		24-152%
877-09-8	Tetrachloro-m-xylene	81%		24-152%
2051-24-3	Decachlorobiphenyl	58%		10-172%
2051-24-3	Decachlorobiphenyl	147%		10-172%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-103-C		
Lab Sample ID:	JD32749-3	**Date Sampled:**	09/27/21
Matrix:	SO - Soil	**Date Received:**	10/01/21
Method:	SW846 8015D SW846 3546	**Percent Solids:**	87.7
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	ZZ101167.D	1	10/10/21 19:45	TL	10/09/21 10:18	OP35889	GZZ3733
Run #2							

	Initial Weight	Final Volume
Run #1	10.3 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	103	11	3.8	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	63%		18-132%
438-22-2	5a-Androstane	61%		22-134%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-103-C		
Lab Sample ID:	JD32749-3	**Date Sampled:**	09/27/21
Matrix:	SO - Soil	**Date Received:**	10/01/21
		Percent Solids:	87.7
Project:	Northfield Bridge, Route 12, VT		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Corrosivity as pH	8.60 NC		su	1	10/12/21 15:59	MM	SW846 9045D
Cyanide Reactivity [a]	< 11	11	mg/kg	1	10/14/21 20:36	JJ	SW846 CHAP7/9012 B
Ignitability (Flashpoint)	> 200		Deg. F	1	10/12/21 09:30	MM	SW846 1010A/ASTM D93
Paint Filter Test [b]	< 0.50	0.50	ml/100g	1	10/12/21 12:15	MM	SW846 9095/9095B
Solids, Percent	87.7		%	1	10/11/21 16:40	BG	SM2540 G 18TH ED MOD
Sulfide Reactivity [a]	< 110	110	mg/kg	1	10/15/21 10:43	JOO	SW846 CHAP7/9034

(a) Analyzed outside the 14 day holding time applied by laboratory SOP. No regulatory holding time published for this method.
(b) No free liquids.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	H-103-C		
Lab Sample ID:	JD32749-3A	**Date Sampled:**	09/27/21
Matrix:	SO - Soil	**Date Received:**	10/01/21
Method:	SW846 8260D SW846 1311	**Percent Solids:**	87.7
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1A215237.D	5	10/13/21 20:24	ED	10/11/21 16:00	GP36344	V1A9288
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
71-43-2	Benzene	ND	D018	0.50	0.0025	0.0021	mg/l	
78-93-3	2-Butanone (MEK)	ND	D035	200	0.10	0.034	mg/l	
56-23-5	Carbon tetrachloride	ND	D019	0.50	0.0050	0.0028	mg/l	
108-90-7	Chlorobenzene	ND	D021	100	0.0050	0.0028	mg/l	
67-66-3	Chloroform [a]	0.0108	D022	6.0	0.0050	0.0025	mg/l	B
106-46-7	1,4-Dichlorobenzene	ND	D027	7.5	0.0050	0.0025	mg/l	
107-06-2	1,2-Dichloroethane	ND	D028	0.50	0.0050	0.0030	mg/l	
75-35-4	1,1-Dichloroethene	ND	D029	0.70	0.0050	0.0030	mg/l	
127-18-4	Tetrachloroethene	ND	D039	0.70	0.0050	0.0045	mg/l	
79-01-6	Trichloroethene	ND	D040	0.50	0.0050	0.0026	mg/l	
75-01-4	Vinyl chloride	ND	D043	0.20	0.0050	0.0039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%		76-120%
17060-07-0	1,2-Dichloroethane-D4	103%		64-135%
2037-26-5	Toluene-D8	102%		76-117%
460-00-4	4-Bromofluorobenzene	98%		72-122%

(a) Indicates analyte found in associated leachate blank.

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-103-C		
Lab Sample ID:	JD32749-3A	**Date Sampled:**	09/27/21
Matrix:	SO - Soil	**Date Received:**	10/01/21
Method:	SW846 8270E SW846 3510C	**Percent Solids:**	87.7
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6P502271.D	1	10/17/21 02:14	CS	10/15/21 09:30	OP35997	E6P3533
Run #2							

	Initial Volume	Final Volume
Run #1	100 ml	1.0 ml
Run #2		

ABN TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	D023	200	0.020	0.0089	mg/l	
	3&4-Methylphenol	ND	D024	200	0.020	0.0088	mg/l	
87-86-5	Pentachlorophenol	ND	D037	100	0.10	0.014	mg/l	
95-95-4	2,4,5-Trichlorophenol	ND	D041	400	0.050	0.013	mg/l	
88-06-2	2,4,6-Trichlorophenol	ND	D042	2.0	0.050	0.0092	mg/l	
106-46-7	1,4-Dichlorobenzene	ND	D027	7.5	0.020	0.0017	mg/l	
121-14-2	2,4-Dinitrotoluene	ND	D030	0.13	0.020	0.0055	mg/l	
118-74-1	Hexachlorobenzene	ND	D032	0.13	0.020	0.0033	mg/l	
87-68-3	Hexachlorobutadiene	ND	D033	0.50	0.010	0.0049	mg/l	
67-72-1	Hexachloroethane	ND	D034	3.0	0.050	0.0039	mg/l	
98-95-3	Nitrobenzene	ND	D036	2.0	0.020	0.0064	mg/l	
110-86-1	Pyridine	ND	D038	5.0	0.020	0.0039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	41%		10-73%
4165-62-2	Phenol-d5	28%		10-64%
118-79-6	2,4,6-Tribromophenol	98%		31-130%
4165-60-0	Nitrobenzene-d5	69%		28-126%
321-60-8	2-Fluorobiphenyl	74%		26-114%
1718-51-0	Terphenyl-d14	95%		16-122%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-103-C		
Lab Sample ID:	JD32749-3A	**Date Sampled:**	09/27/21
Matrix:	SO - Soil	**Date Received:**	10/01/21
Method:	SW846 8151A SW846 3510C	**Percent Solids:**	87.7
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G133614.D	1	10/21/21 10:13	RK	10/15/21 15:10	OP35999	G3G4870
Run #2							

	Initial Volume	Final Volume
Run #1	30.0 ml	2.0 ml
Run #2		

Herbicide TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
94-75-7	2,4-D	ND	D016	10	0.0033	0.00098	mg/l	
93-72-1	2,4,5-TP (Silvex)	ND	D017	1.0	0.0010	0.00020	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	104%		13-169%
19719-28-9	2,4-DCAA	58%		13-169%

ND = Not detected MDL = Method Detection Limit
MCL = Maximum Contamination Level (40 CFR 261 7/1/11)
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	H-103-C		
Lab Sample ID:	JD32749-3A	**Date Sampled:**	09/27/21
Matrix:	SO - Soil	**Date Received:**	10/01/21
Method:	SW846 8081B SW846 3510C	**Percent Solids:**	87.7
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6G79694.D	1	10/18/21 06:04	CP	10/15/21 15:00	OP35998	G6G2810
Run #2							

	Initial Volume	Final Volume
Run #1	30.0 ml	2.0 ml
Run #2		

Pesticide TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
58-89-9	gamma-BHC (Lindane)	ND	D013	0.40	0.000067	0.000040	mg/l	
12789-03-6	Chlordane	ND	D020	0.030	0.0033	0.0014	mg/l	
72-20-8	Endrin	ND	D012	0.020	0.000067	0.000040	mg/l	
76-44-8	Heptachlor	ND	D031	0.0080	0.000067	0.000030	mg/l	
1024-57-3	Heptachlor epoxide	ND	D031	0.0080	0.000067	0.000040	mg/l	
72-43-5	Methoxychlor	ND	D014	10	0.00013	0.000045	mg/l	
8001-35-2	Toxaphene	ND	D015	0.50	0.0017	0.0011	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	94%		30-137%
877-09-8	Tetrachloro-m-xylene	89%		30-137%
2051-24-3	Decachlorobiphenyl	69%		10-137%
2051-24-3	Decachlorobiphenyl	99%		10-137%

ND = Not detected MDL = Method Detection Limit
MCL = Maximum Contamination Level (40 CFR 261 7/1/11)
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: H-103-C
Lab Sample ID: JD32749-3A
Matrix: SO - Soil
Project: Northfield Bridge, Route 12, VT

Date Sampled: 09/27/21
Date Received: 10/01/21
Percent Solids: 87.7

Metals Analysis, TCLP Leachate SW846 1311

Analyte	Result	HW#	MCL	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	< 0.10	D004	5.0	0.10	mg/l	1	10/10/21	10/12/21	ND	SW846 6010D [2]	SW846 3010A [3]
Barium	0.26	D005	100	0.20	mg/l	1	10/10/21	10/12/21	ND	SW846 6010D [2]	SW846 3010A [3]
Cadmium	< 0.0040	D006	1.0	0.0040	mg/l	1	10/10/21	10/12/21	ND	SW846 6010D [2]	SW846 3010A [3]
Chromium	0.021	D007	5.0	0.010	mg/l	1	10/10/21	10/12/21	ND	SW846 6010D [2]	SW846 3010A [3]
Lead	< 0.10	D008	5.0	0.10	mg/l	1	10/10/21	10/12/21	ND	SW846 6010D [2]	SW846 3010A [3]
Mercury	< 0.00020	D009	0.20	0.00020	mg/l	1	10/11/21	10/11/21	LM	SW846 7470A [1]	SW846 7470A [4]
Selenium	< 0.10	D010	1.0	0.10	mg/l	1	10/10/21	10/12/21	ND	SW846 6010D [2]	SW846 3010A [3]
Silver	< 0.010	D011	5.0	0.010	mg/l	1	10/10/21	10/12/21	ND	SW846 6010D [2]	SW846 3010A [3]

(1) Instrument QC Batch: MA51248
(2) Instrument QC Batch: MA51264
(3) Prep QC Batch: MP29118
(4) Prep QC Batch: MP29158

RL = Reporting Limit
MCL = Maximum Contamination Level (40 CFR 261 7/1/11)

Report of Analysis

Client Sample ID:	B-101-A		
Lab Sample ID:	JD32749-4	**Date Sampled:**	09/28/21
Matrix:	SO - Soil	**Date Received:**	10/01/21
Method:	SW846 8270E SW846 3546	**Percent Solids:**	94.4
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M175673.D	1	10/12/21 16:41	KLS	10/12/21 10:00	OP35916	EM7551
Run #2							

	Initial Weight	Final Volume
Run #1	30.2 g	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	35	12	ug/kg	
208-96-8	Acenaphthylene	ND	35	18	ug/kg	
120-12-7	Anthracene	ND	35	22	ug/kg	
56-55-3	Benzo(a)anthracene	18.0	35	9.9	ug/kg	J
50-32-8	Benzo(a)pyrene	ND	35	16	ug/kg	
205-99-2	Benzo(b)fluoranthene	16.2	35	16	ug/kg	J
191-24-2	Benzo(g,h,i)perylene	ND	35	18	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	35	16	ug/kg	
218-01-9	Chrysene	14.2	35	11	ug/kg	J
53-70-3	Dibenzo(a,h)anthracene	ND	35	16	ug/kg	
206-44-0	Fluoranthene	30.9	35	16	ug/kg	J
86-73-7	Fluorene	ND	35	16	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	35	16	ug/kg	
91-20-3	Naphthalene	ND	35	9.9	ug/kg	
85-01-8	Phenanthrene	12.3	35	12	ug/kg	J
129-00-0	Pyrene	29.9	35	11	ug/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	48%		15-114%
321-60-8	2-Fluorobiphenyl	54%		22-104%
1718-51-0	Terphenyl-d14	59%		23-121%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: B-101-A
Lab Sample ID: JD32749-4
Matrix: SO - Soil
Project: Northfield Bridge, Route 12, VT

Date Sampled: 09/28/21
Date Received: 10/01/21
Percent Solids: 94.4

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	10	2.2	mg/kg	1	10/09/21	10/11/21	ND	SW846 6010D [2]	SW846 3050B [4]
Barium	58.2	22	mg/kg	1	10/09/21	10/11/21	ND	SW846 6010D [2]	SW846 3050B [4]
Cadmium	< 0.54	0.54	mg/kg	1	10/09/21	10/11/21	ND	SW846 6010D [2]	SW846 3050B [4]
Chromium	22.7	1.1	mg/kg	1	10/09/21	10/11/21	ND	SW846 6010D [2]	SW846 3050B [4]
Lead	10.6	2.2	mg/kg	1	10/09/21	10/11/21	ND	SW846 6010D [2]	SW846 3050B [4]
Mercury	< 0.032	0.032	mg/kg	1	10/08/21	10/08/21	LM	SW846 7471B [1]	SW846 7471B [3]
Selenium	< 2.2	2.2	mg/kg	1	10/09/21	10/11/21	ND	SW846 6010D [2]	SW846 3050B [4]
Silver	< 0.54	0.54	mg/kg	1	10/09/21	10/11/21	ND	SW846 6010D [2]	SW846 3050B [4]

(1) Instrument QC Batch: MA51244
(2) Instrument QC Batch: MA51260
(3) Prep QC Batch: MP29086
(4) Prep QC Batch: MP29112

RL = Reporting Limit

Report of Analysis

Client Sample ID:	B-101-B		
Lab Sample ID:	JD32749-5	**Date Sampled:**	09/28/21
Matrix:	SO - Soil	**Date Received:**	10/01/21
Method:	SW846 8260D	**Percent Solids:**	55.6
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3C170056.D	1	10/11/21 18:15	PS	n/a	n/a	V3C7511
Run #2							

	Initial Weight
Run #1	4.7 g
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	334	19	7.9	ug/kg	
71-43-2	Benzene	ND	0.96	0.87	ug/kg	
108-86-1	Bromobenzene	ND	9.6	1.1	ug/kg	
74-97-5	Bromochloromethane	ND	9.6	1.1	ug/kg	
75-27-4	Bromodichloromethane	ND	3.8	0.82	ug/kg	
75-25-2	Bromoform	ND	9.6	2.6	ug/kg	
74-83-9	Bromomethane	ND	9.6	1.5	ug/kg	
78-93-3	2-Butanone (MEK)	71.0	19	4.6	ug/kg	
104-51-8	n-Butylbenzene	ND	3.8	0.78	ug/kg	
135-98-8	sec-Butylbenzene	ND	3.8	0.82	ug/kg	
98-06-6	tert-Butylbenzene	ND	3.8	0.96	ug/kg	
75-15-0	Carbon disulfide	2.4	3.8	1.0	ug/kg	J
56-23-5	Carbon tetrachloride	ND	3.8	1.2	ug/kg	
108-90-7	Chlorobenzene	ND	3.8	0.88	ug/kg	
75-00-3	Chloroethane	ND	9.6	1.1	ug/kg	
67-66-3	Chloroform	ND	3.8	0.99	ug/kg	
74-87-3	Chloromethane	ND	9.6	3.8	ug/kg	
95-49-8	o-Chlorotoluene	ND	3.8	1.0	ug/kg	
106-43-4	p-Chlorotoluene	ND	3.8	0.85	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	3.8	1.3	ug/kg	
124-48-1	Dibromochloromethane	ND	3.8	1.1	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.9	0.81	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.9	1.0	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1.9	0.95	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.9	0.95	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	9.6	1.4	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.9	0.95	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.9	0.90	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.9	1.3	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.9	1.6	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.9	1.2	ug/kg	
78-87-5	1,2-Dichloropropane	ND	3.8	0.91	ug/kg	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-101-B		
Lab Sample ID:	JD32749-5	**Date Sampled:**	09/28/21
Matrix:	SO - Soil	**Date Received:**	10/01/21
Method:	SW846 8260D	**Percent Solids:**	55.6
Project:	Northfield Bridge, Route 12, VT		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	3.8	1.0	ug/kg	
594-20-7	2,2-Dichloropropane	ND	3.8	0.82	ug/kg	
563-58-6	1,1-Dichloropropene	ND	3.8	0.89	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	3.8	0.91	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	3.8	0.87	ug/kg	
100-41-4	Ethylbenzene	ND	1.9	0.87	ug/kg	
87-68-3	Hexachlorobutadiene	ND	9.6	1.3	ug/kg	
591-78-6	2-Hexanone	ND	9.6	4.1	ug/kg	
74-88-4	Iodomethane	ND	9.6	4.5	ug/kg	
98-82-8	Isopropylbenzene	ND	3.8	2.7	ug/kg	
99-87-6	p-Isopropyltoluene	ND	3.8	0.76	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.9	0.90	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	9.6	4.3	ug/kg	
74-95-3	Methylene bromide	ND	9.6	1.0	ug/kg	
75-09-2	Methylene chloride	ND	9.6	5.0	ug/kg	
91-20-3	Naphthalene	ND	9.6	4.8	ug/kg	
103-65-1	n-Propylbenzene	ND	3.8	0.90	ug/kg	
100-42-5	Styrene	ND	3.8	0.77	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	3.8	0.81	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	3.8	1.1	ug/kg	
127-18-4	Tetrachloroethene	ND	3.8	1.1	ug/kg	
108-88-3	Toluene	ND	1.9	1.0	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	9.6	4.8	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	9.6	4.8	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	3.8	0.92	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	3.8	1.1	ug/kg	
79-01-6	Trichloroethene	ND	1.9	1.5	ug/kg	
75-69-4	Trichlorofluoromethane	ND	9.6	1.3	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	9.6	1.1	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	3.8	0.96	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	3.8	0.82	ug/kg	
108-05-4	Vinyl Acetate	ND	19	3.8	ug/kg	
75-01-4	Vinyl chloride	ND	3.8	0.92	ug/kg	
	m,p-Xylene	ND	1.9	1.7	ug/kg	
95-47-6	o-Xylene	ND	1.9	0.88	ug/kg	
1330-20-7	Xylene (total)	ND	1.9	0.88	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		72-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-101-B		
Lab Sample ID:	JD32749-5	**Date Sampled:**	09/28/21
Matrix:	SO - Soil	**Date Received:**	10/01/21
Method:	SW846 8260D	**Percent Solids:**	55.6
Project:	Northfield Bridge, Route 12, VT		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	115%		75-131%
2037-26-5	Toluene-D8	98%		81-121%
460-00-4	4-Bromofluorobenzene	104%		60-141%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-101-B		
Lab Sample ID:	JD32749-5	**Date Sampled:**	09/28/21
Matrix:	SO - Soil	**Date Received:**	10/01/21
Method:	SW846 8270E SW846 3546	**Percent Solids:**	55.6
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z152162.D	1	10/11/21 00:52	CS	10/09/21 11:15	OP35863	EZ7568
Run #2							

	Initial Weight	Final Volume
Run #1	30.6 g	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	59	20	ug/kg	
208-96-8	Acenaphthylene [a]	ND	59	30	ug/kg	
120-12-7	Anthracene	ND	59	36	ug/kg	
56-55-3	Benzo(a)anthracene	22.7	59	17	ug/kg	J
50-32-8	Benzo(a)pyrene	ND	59	27	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	59	26	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	59	29	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	59	27	ug/kg	
218-01-9	Chrysene	ND	59	19	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	59	26	ug/kg	
206-44-0	Fluoranthene	34.7	59	26	ug/kg	J
86-73-7	Fluorene	ND	59	27	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	59	28	ug/kg	
91-20-3	Naphthalene	ND	59	17	ug/kg	
85-01-8	Phenanthrene	ND	59	20	ug/kg	
129-00-0	Pyrene	29.6	59	19	ug/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	34%		15-114%
321-60-8	2-Fluorobiphenyl	28%		22-104%
1718-51-0	Terphenyl-d14	24%		23-121%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-101-B		
Lab Sample ID:	JD32749-5	**Date Sampled:**	09/28/21
Matrix:	SO - Soil	**Date Received:**	10/01/21
Method:	SW846 8082A SW846 3540C	**Percent Solids:**	55.6
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX2472515B.D	1	10/17/21 20:41	TL	10/15/21 16:30	OP35560	GXX7617
Run #2							

	Initial Weight	Final Volume
Run #1	10.6 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	85	40	ug/kg	
11104-28-2	Aroclor 1221	ND	85	53	ug/kg	
11141-16-5	Aroclor 1232	ND	85	54	ug/kg	
53469-21-9	Aroclor 1242	ND	85	35	ug/kg	
12672-29-6	Aroclor 1248	ND	85	76	ug/kg	
11097-69-1	Aroclor 1254	ND	85	46	ug/kg	
11096-82-5	Aroclor 1260	ND	85	36	ug/kg	
11100-14-4	Aroclor 1268	ND	85	36	ug/kg	
37324-23-5	Aroclor 1262	ND	85	55	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	99%		24-152%
877-09-8	Tetrachloro-m-xylene	107%		24-152%
2051-24-3	Decachlorobiphenyl	96%		10-172%
2051-24-3	Decachlorobiphenyl	108%		10-172%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-101-B		
Lab Sample ID:	JD32749-5	**Date Sampled:**	09/28/21
Matrix:	SO - Soil	**Date Received:**	10/01/21
		Percent Solids:	55.6
Project:	Northfield Bridge, Route 12, VT		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	5.7	3.6	mg/kg	1	10/09/21	10/11/21	ND	SW846 6010D [2]	SW846 3050B [4]
Barium	< 36	36	mg/kg	1	10/09/21	10/11/21	ND	SW846 6010D [2]	SW846 3050B [4]
Cadmium	< 0.89	0.89	mg/kg	1	10/09/21	10/11/21	ND	SW846 6010D [2]	SW846 3050B [4]
Chromium	15.4	1.8	mg/kg	1	10/09/21	10/11/21	ND	SW846 6010D [2]	SW846 3050B [4]
Lead	8.9	3.6	mg/kg	1	10/09/21	10/11/21	ND	SW846 6010D [2]	SW846 3050B [4]
Mercury	< 0.039	0.039	mg/kg	1	10/08/21	10/08/21	LM	SW846 7471B [1]	SW846 7471B [3]
Selenium	< 3.6	3.6	mg/kg	1	10/09/21	10/11/21	ND	SW846 6010D [2]	SW846 3050B [4]
Silver	< 0.89	0.89	mg/kg	1	10/09/21	10/11/21	ND	SW846 6010D [2]	SW846 3050B [4]

(1) Instrument QC Batch: MA51244
(2) Instrument QC Batch: MA51260
(3) Prep QC Batch: MP29086
(4) Prep QC Batch: MP29112

RL = Reporting Limit

Report of Analysis

Client Sample ID:	B-101-C		
Lab Sample ID:	JD32749-6	**Date Sampled:**	09/28/21
Matrix:	SO - Soil	**Date Received:**	10/01/21
Method:	SW846 8015D	**Percent Solids:**	78.5
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	LM112484.D	1	10/09/21 00:07	DFT	n/a	n/a	GLM4720
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	11.8 g	10.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	13	6.7	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
98-08-8	aaa-Trifluorotoluene	88%		70-116%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-101-C		
Lab Sample ID:	JD32749-6	**Date Sampled:**	09/28/21
Matrix:	SO - Soil	**Date Received:**	10/01/21
Method:	SW846 8082A SW846 3546	**Percent Solids:**	78.5
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	RK4997.D	1	10/25/21 01:58	TL	10/22/21 16:00	OP35840	GRK136
Run #2							

	Initial Weight	Final Volume
Run #1	15.5 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	41	19	ug/kg	
11104-28-2	Aroclor 1221	ND	41	25	ug/kg	
11141-16-5	Aroclor 1232	ND	41	26	ug/kg	
53469-21-9	Aroclor 1242	ND	41	17	ug/kg	
12672-29-6	Aroclor 1248 [a]	123	41	37	ug/kg	
11097-69-1	Aroclor 1254	ND	41	22	ug/kg	
11096-82-5	Aroclor 1260	ND	41	18	ug/kg	
11100-14-4	Aroclor 1268	ND	41	17	ug/kg	
37324-23-5	Aroclor 1262	ND	41	27	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	89%		24-152%
877-09-8	Tetrachloro-m-xylene	96%		24-152%
2051-24-3	Decachlorobiphenyl	79%		10-172%
2051-24-3	Decachlorobiphenyl	142%		10-172%

(a) More than 40 % RPD for detected concentrations between the two GC columns.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-101-C		
Lab Sample ID:	JD32749-6	**Date Sampled:**	09/28/21
Matrix:	SO - Soil	**Date Received:**	10/01/21
Method:	SW846 8015D SW846 3546	**Percent Solids:**	78.5
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	ZZ101166.D	1	10/10/21 19:11	TL	10/09/21 10:18	OP35889	GZZ3733
Run #2							

	Initial Weight	Final Volume
Run #1	11.1 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	79.9	11	3.9	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	78%		18-132%
438-22-2	5a-Androstane	76%		22-134%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-101-C		
Lab Sample ID:	JD32749-6	**Date Sampled:**	09/28/21
Matrix:	SO - Soil	**Date Received:**	10/01/21
		Percent Solids:	78.5
Project:	Northfield Bridge, Route 12, VT		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Corrosivity as pH	11.75 NC		su	1	10/12/21 16:02	MM	SW846 9045D
Cyanide Reactivity [a]	< 13	13	mg/kg	1	10/14/21 20:38	JJ	SW846 CHAP7/9012 B
Ignitability (Flashpoint)	> 200		Deg. F	1	10/12/21 09:30	MM	SW846 1010A/ASTM D93
Paint Filter Test [b]	1.0	0.50	ml/100g	1	10/12/21 12:15	MM	SW846 9095/9095B
Solids, Percent	78.5		%	1	10/11/21 16:40	BG	SM2540 G 18TH ED MOD
Sulfide Reactivity [a]	< 130	130	mg/kg	1	10/15/21 10:43	JOO	SW846 CHAP7/9034

(a) Analyzed outside the 14 day holding time applied by laboratory SOP. No regulatory holding time published for this method.
(b) Free liquids present.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	B-101-C		
Lab Sample ID:	JD32749-6A	**Date Sampled:**	09/28/21
Matrix:	SO - Soil	**Date Received:**	10/01/21
Method:	SW846 8260D SW846 1311	**Percent Solids:**	78.5
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1A215249.D	5	10/14/21 00:23	ED	10/11/21 16:00	GP36344	V1A9288
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
71-43-2	Benzene	ND	D018	0.50	0.0025	0.0021	mg/l	
78-93-3	2-Butanone (MEK)	ND	D035	200	0.10	0.034	mg/l	
56-23-5	Carbon tetrachloride	ND	D019	0.50	0.0050	0.0028	mg/l	
108-90-7	Chlorobenzene	ND	D021	100	0.0050	0.0028	mg/l	
67-66-3	Chloroform [a]	0.010	D022	6.0	0.0050	0.0025	mg/l	B
106-46-7	1,4-Dichlorobenzene	ND	D027	7.5	0.0050	0.0025	mg/l	
107-06-2	1,2-Dichloroethane	ND	D028	0.50	0.0050	0.0030	mg/l	
75-35-4	1,1-Dichloroethene	ND	D029	0.70	0.0050	0.0030	mg/l	
127-18-4	Tetrachloroethene	ND	D039	0.70	0.0050	0.0045	mg/l	
79-01-6	Trichloroethene	ND	D040	0.50	0.0050	0.0026	mg/l	
75-01-4	Vinyl chloride	ND	D043	0.20	0.0050	0.0039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		76-120%
17060-07-0	1,2-Dichloroethane-D4	100%		64-135%
2037-26-5	Toluene-D8	104%		76-117%
460-00-4	4-Bromofluorobenzene	100%		72-122%

(a) Indicates analyte found in associated leachate blank.

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-101-C		
Lab Sample ID:	JD32749-6A	**Date Sampled:**	09/28/21
Matrix:	SO - Soil	**Date Received:**	10/01/21
Method:	SW846 8270E SW846 3510C	**Percent Solids:**	78.5
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6P502272.D	1	10/17/21 02:36	CS	10/15/21 09:30	OP35997	E6P3533
Run #2							

	Initial Volume	Final Volume
Run #1	100 ml	1.0 ml
Run #2		

ABN TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	D023	200	0.020	0.0089	mg/l	
	3&4-Methylphenol	ND	D024	200	0.020	0.0088	mg/l	
87-86-5	Pentachlorophenol	ND	D037	100	0.10	0.014	mg/l	
95-95-4	2,4,5-Trichlorophenol	ND	D041	400	0.050	0.013	mg/l	
88-06-2	2,4,6-Trichlorophenol	ND	D042	2.0	0.050	0.0092	mg/l	
106-46-7	1,4-Dichlorobenzene	ND	D027	7.5	0.020	0.0017	mg/l	
121-14-2	2,4-Dinitrotoluene	ND	D030	0.13	0.020	0.0055	mg/l	
118-74-1	Hexachlorobenzene	ND	D032	0.13	0.020	0.0033	mg/l	
87-68-3	Hexachlorobutadiene	ND	D033	0.50	0.010	0.0049	mg/l	
67-72-1	Hexachloroethane	ND	D034	3.0	0.050	0.0039	mg/l	
98-95-3	Nitrobenzene	ND	D036	2.0	0.020	0.0064	mg/l	
110-86-1	Pyridine	ND	D038	5.0	0.020	0.0039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	42%		10-73%
4165-62-2	Phenol-d5	29%		10-64%
118-79-6	2,4,6-Tribromophenol	94%		31-130%
4165-60-0	Nitrobenzene-d5	65%		28-126%
321-60-8	2-Fluorobiphenyl	74%		26-114%
1718-51-0	Terphenyl-d14	92%		16-122%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-101-C		
Lab Sample ID:	JD32749-6A	**Date Sampled:**	09/28/21
Matrix:	SO - Soil	**Date Received:**	10/01/21
Method:	SW846 8151A SW846 3510C	**Percent Solids:**	78.5
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G133615.D	1	10/21/21 10:41	RK	10/15/21 15:10	OP35999	G3G4870
Run #2							

	Initial Volume	Final Volume
Run #1	30.0 ml	2.0 ml
Run #2		

Herbicide TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
94-75-7	2,4-D	ND	D016	10	0.0033	0.00098	mg/l	
93-72-1	2,4,5-TP (Silvex)	ND	D017	1.0	0.0010	0.00020	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	110%		13-169%
19719-28-9	2,4-DCAA	62%		13-169%

ND = Not detected MDL = Method Detection Limit
MCL = Maximum Contamination Level (40 CFR 261 7/1/11)
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-101-C		
Lab Sample ID:	JD32749-6A	**Date Sampled:**	09/28/21
Matrix:	SO - Soil	**Date Received:**	10/01/21
Method:	SW846 8081B SW846 3510C	**Percent Solids:**	78.5
Project:	Northfield Bridge, Route 12, VT		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6G79695.D	1	10/18/21 06:22	CP	10/15/21 15:00	OP35998	G6G2810
Run #2							

	Initial Volume	Final Volume
Run #1	30.0 ml	2.0 ml
Run #2		

Pesticide TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
58-89-9	gamma-BHC (Lindane)	ND	D013	0.40	0.000067	0.000040	mg/l	
12789-03-6	Chlordane	ND	D020	0.030	0.0033	0.0014	mg/l	
72-20-8	Endrin	ND	D012	0.020	0.000067	0.000040	mg/l	
76-44-8	Heptachlor	ND	D031	0.0080	0.000067	0.000030	mg/l	
1024-57-3	Heptachlor epoxide	ND	D031	0.0080	0.000067	0.000040	mg/l	
72-43-5	Methoxychlor	ND	D014	10	0.00013	0.000045	mg/l	
8001-35-2	Toxaphene	ND	D015	0.50	0.0017	0.0011	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	111%		30-137%
877-09-8	Tetrachloro-m-xylene	104%		30-137%
2051-24-3	Decachlorobiphenyl	94%		10-137%
2051-24-3	Decachlorobiphenyl	115%		10-137%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: B-101-C
Lab Sample ID: JD32749-6A
Matrix: SO - Soil
Project: Northfield Bridge, Route 12, VT

Date Sampled: 09/28/21
Date Received: 10/01/21
Percent Solids: 78.5

Metals Analysis, TCLP Leachate SW846 1311

Analyte	Result	HW#	MCL	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	< 0.10	D004	5.0	0.10	mg/l	1	10/10/21	10/12/21	ND	SW846 6010D [2]	SW846 3010A [3]
Barium	0.39	D005	100	0.20	mg/l	1	10/10/21	10/12/21	ND	SW846 6010D [2]	SW846 3010A [3]
Cadmium	< 0.0040	D006	1.0	0.0040	mg/l	1	10/10/21	10/12/21	ND	SW846 6010D [2]	SW846 3010A [3]
Chromium	< 0.010	D007	5.0	0.010	mg/l	1	10/10/21	10/12/21	ND	SW846 6010D [2]	SW846 3010A [3]
Lead	< 0.10	D008	5.0	0.10	mg/l	1	10/10/21	10/12/21	ND	SW846 6010D [2]	SW846 3010A [3]
Mercury	< 0.00020	D009	0.20	0.00020	mg/l	1	10/11/21	10/11/21	LM	SW846 7470A [1]	SW846 7470A [4]
Selenium	< 0.10	D010	1.0	0.10	mg/l	1	10/10/21	10/12/21	ND	SW846 6010D [2]	SW846 3010A [3]
Silver	< 0.010	D011	5.0	0.010	mg/l	1	10/10/21	10/12/21	ND	SW846 6010D [2]	SW846 3010A [3]

(1) Instrument QC Batch: MA51248
(2) Instrument QC Batch: MA51264
(3) Prep QC Batch: MP29118
(4) Prep QC Batch: MP29158

RL = Reporting Limit
MCL = Maximum Contamination Level (40 CFR 261 7/1/11)

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Certification Exceptions
- Chain of Custody

Parameter Certification Exceptions

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

The following parameters included in this report are exceptions to NELAC certification.
The certification status of each is indicated below.

Parameter	CAS#	Method	Mat	Certification Status
Cyanide Reactivity		**SW846 CHAP7/9012 B**	SO	SGS is not certified for this parameter.[a]
Sulfide Reactivity		**SW846 CHAP7/9034**	SO	SGS is not certified for this parameter.[a]

(a) Reactivity analyzed following SW846 Chapter 7 is no longer recognized by regulatory agencies. Use of results should be verified through the program to which the data is being submitted.

Certification exceptions shown are based on the New Jersey DEP certifications. Applicability in other states may vary. Please contact your laboratory representative if additional information is required for a specific regulatory program.

CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

EHSA-QAC-0023-04-FORM-Standard COC

5° SLL

JD32749 Page 1 of 1

FED-EX Tracking # 9251 0906 1880
Bottle Order Control # PREM-KR-09821-67
SGS Quote #
SGS Job # JD32749 10/4/12

Client / Reporting Information

Company Name: Atlas
Street Address: 51 Knight Lane
City: Williston State: VT Zip: 05495
Project Contact: Erik.Urch@aeratlas.com E-mail:
Phone #: 802-862-1980
Sampler(s) Name(s): Jo Palmer Phone #:

Project Information

Project Name: Northfield Bridge
Street: Rt 12
City: State: VT
Project #: 280BS02090
Client Purchase Order #:
Project Manager: E. Urch

Billing Information (if different from Report to)

Company Name:
Street Address:
City State Zip:
Attention:

Requested Analysis

Matrix Codes	8270 SIM	RCRA 8	8260 MBTD	8082 PCB soil/sed	TCLP Full	RCRA Chars	PMT FIL	8015 DRO	8015 GRO	8082 PCB II
DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge SED-Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank EB-Equipment Blank RB - Rinse Blank TB - Trip Blank										

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Time	Sampled by	Grab (G) Comp (C)	Source Chlorinated (Y/N)	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO_3	H_2SO_4	NONE	DI Water	MEOH	ENCORE	None	pH Check (Lab Use Only)	LAB USE ONLY
1	H-103-A		9/27/2021	1240	JP	G	N	So	1					1						D7
2	H-103-B			1500		G			6					2	2	1		1		pb7
3	H-103-C			1530		C			4							1		3		(Hold)
4	B-101-A		9/28/2021	0845		G			1					1						1411
5	B-101-B			1450		G			6					2	2	1		1		4080
6	B-101-C			1455		C			4							1		3		(Hold)

Turn Around Time (Business Days)

Approved By (SGS PM): / Date: Normal Atlas

- [ ] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [ ] Other

Initial Assessment 7328
Label Verification

All data available via Lablink * Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [x] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] MA MCP Criteria
- [ ] CT RCP Criteria
- [ ] State Forms
- [ ] EDD Format
- [ ] DOD-QSM5

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special instructions

Hold all "C" samples

DI vocs frozen w/in 12 hrs of sample collection

http://www.sgs.com/en/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by:	Date / Time:	Received By:	Relinquished By:	Date / Time:	Received By:
1	[signature]	9/30/21 1500	1 Fedex	2 Fedex	10/1/21 10:00	2 [signature]
3			3	4		4
5			5	Custody Seal #	Intact / Not Intact / Absent	Therm ID: / See Sample Receipt Summary / On Ice ✓ / Cooler Temp. °C 3.5 cp

SGS Sample Receipt Summary

Job Number: JD32749 **Client:** ATLAS TECHNICAL CONSULTANTS, LLC **Project:** NORTHFIELD BRIDGE PROJECT, VT

Date / Time Received: 10/1/2021 10:00:00 AM **Delivery Method:** **Airbill #'s:**

Cooler Temps (Raw Measured) °C: Cooler 1: (3.5);

Cooler Temps (Corrected) °C: Cooler 1: (3.5);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:			
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control _Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☑	☐
2. Trip Blank listed on COC:	☐		☑	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☐		☐	☑

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Test Strip Lot #s: pH 1-12: 231619 pH 12+: 203117A Other: (Specify)

Comments

SM089-03
Rev. Date 12/7/17

Job Change Order: JD32749

Requested Date:	10/7/2021	**Received Date:**	10/1/2021
Account Name:	Atlas Technical Consultants, LLC	**Due Date:**	10/7/2021
Project Description:	Northfield Bridge Project, VT	**Deliverable:**	COMMBN
C/O Initiated By:	KELLY.RAM **PM:** KR	**TAT (Days):**	7

Sample #: JD32749-3, -6

Dept:

TAT: 7

Change:
Please remove from hold and run for TCLPFULL, B8015DRO, V8015D PNTFIL, RCRACLAS, P8082PCB11

Above Changes Per: Erik Urch **Date/Time:** 10/7/2021

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

Page 1 of 1

5.2 5

JD32749: Chain of Custody
Page 3 of 3

MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3C7511-MB	3C170041.D	1	10/11/21	PS	n/a	n/a	V3C7511

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD32749-2, JD32749-5

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	4.1	ug/kg	
71-43-2	Benzene	ND	0.50	0.46	ug/kg	
108-86-1	Bromobenzene	ND	5.0	0.55	ug/kg	
74-97-5	Bromochloromethane	ND	5.0	0.56	ug/kg	
75-27-4	Bromodichloromethane	ND	2.0	0.43	ug/kg	
75-25-2	Bromoform	ND	5.0	1.4	ug/kg	
74-83-9	Bromomethane	ND	5.0	0.76	ug/kg	
78-93-3	2-Butanone (MEK)	ND	10	2.4	ug/kg	
104-51-8	n-Butylbenzene	ND	2.0	0.41	ug/kg	
135-98-8	sec-Butylbenzene	ND	2.0	0.43	ug/kg	
98-06-6	tert-Butylbenzene	ND	2.0	0.50	ug/kg	
75-15-0	Carbon disulfide	ND	2.0	0.54	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.0	0.62	ug/kg	
108-90-7	Chlorobenzene	ND	2.0	0.46	ug/kg	
75-00-3	Chloroethane	ND	5.0	0.59	ug/kg	
67-66-3	Chloroform	ND	2.0	0.52	ug/kg	
74-87-3	Chloromethane	ND	5.0	2.0	ug/kg	
95-49-8	o-Chlorotoluene	ND	2.0	0.54	ug/kg	
106-43-4	p-Chlorotoluene	ND	2.0	0.44	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.69	ug/kg	
124-48-1	Dibromochloromethane	ND	2.0	0.56	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.0	0.42	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.55	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.50	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.49	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	5.0	0.73	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.0	0.50	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.0	0.47	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.0	0.66	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.84	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.61	ug/kg	
78-87-5	1,2-Dichloropropane	ND	2.0	0.47	ug/kg	
142-28-9	1,3-Dichloropropane	ND	2.0	0.52	ug/kg	
594-20-7	2,2-Dichloropropane	ND	2.0	0.43	ug/kg	
563-58-6	1,1-Dichloropropene	ND	2.0	0.47	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.48	ug/kg	

Method Blank Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3C7511-MB	3C170041.D	1	10/11/21	PS	n/a	n/a	V3C7511

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD32749-2, JD32749-5

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.46	ug/kg	
100-41-4	Ethylbenzene	ND	1.0	0.45	ug/kg	
87-68-3	Hexachlorobutadiene	ND	5.0	0.66	ug/kg	
591-78-6	2-Hexanone	ND	5.0	2.1	ug/kg	
74-88-4	Iodomethane	ND	5.0	2.3	ug/kg	
98-82-8	Isopropylbenzene	ND	2.0	1.4	ug/kg	
99-87-6	p-Isopropyltoluene	ND	2.0	0.40	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.47	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	2.3	ug/kg	
74-95-3	Methylene bromide	ND	5.0	0.53	ug/kg	
75-09-2	Methylene chloride	ND	5.0	2.6	ug/kg	
91-20-3	Naphthalene	ND	5.0	2.5	ug/kg	
103-65-1	n-Propylbenzene	ND	2.0	0.47	ug/kg	
100-42-5	Styrene	ND	2.0	0.40	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	2.0	0.42	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.60	ug/kg	
127-18-4	Tetrachloroethene	ND	2.0	0.58	ug/kg	
108-88-3	Toluene	ND	1.0	0.53	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	2.5	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	2.5	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.48	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.55	ug/kg	
79-01-6	Trichloroethene	ND	1.0	0.76	ug/kg	
75-69-4	Trichlorofluoromethane	ND	5.0	0.68	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.56	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	0.50	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	0.43	ug/kg	
108-05-4	Vinyl Acetate	ND	10	2.0	ug/kg	
75-01-4	Vinyl chloride	ND	2.0	0.48	ug/kg	
	m,p-Xylene	ND	1.0	0.90	ug/kg	
95-47-6	o-Xylene	ND	1.0	0.46	ug/kg	
1330-20-7	Xylene (total)	ND	1.0	0.46	ug/kg	

Method Blank Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3C7511-MB	3C170041.D	1	10/11/21	PS	n/a	n/a	V3C7511

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD32749-2, JD32749-5

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	100%	72-130%
17060-07-0	1,2-Dichloroethane-D4	105%	75-131%
2037-26-5	Toluene-D8	99%	81-121%
460-00-4	4-Bromofluorobenzene	101%	60-141%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	1.49	6.6	ug/kg	J
	Total TIC, Volatile		0	ug/kg	

Method Blank Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1A9288-MB	1A215232.D	1	10/13/21	ED	n/a	n/a	V1A9288

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD32749-3A, JD32749-6A

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.43	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	96%	76-120%
17060-07-0	1,2-Dichloroethane-D4	100%	64-135%
2037-26-5	Toluene-D8	104%	76-117%
460-00-4	4-Bromofluorobenzene	103%	72-122%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

Leachate Blank Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GP36344-LB2	1A215233.D	5	10/13/21	ED	10/11/21	GP36344	V1A9288

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD32749-3A, JD32749-6A

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	2.5	2.1	ug/l	
78-93-3	2-Butanone (MEK)	ND	50	34	ug/l	
56-23-5	Carbon tetrachloride	ND	5.0	2.8	ug/l	
108-90-7	Chlorobenzene	ND	5.0	2.8	ug/l	
67-66-3	Chloroform	10.8	5.0	2.5	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	5.0	2.5	ug/l	
107-06-2	1,2-Dichloroethane	ND	5.0	3.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	5.0	3.0	ug/l	
127-18-4	Tetrachloroethene	ND	5.0	4.5	ug/l	
79-01-6	Trichloroethene	ND	5.0	2.6	ug/l	
75-01-4	Vinyl chloride	ND	5.0	3.9	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	96%	76-120%
17060-07-0	1,2-Dichloroethane-D4	101%	64-135%
2037-26-5	Toluene-D8	102%	76-117%
460-00-4	4-Bromofluorobenzene	99%	72-122%

Leachate Blank Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GP36344-LB3	1A215234.D	5	10/13/21	ED	10/11/21	GP36344	V1A9288

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD32749-3A, JD32749-6A

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	2.5	2.1	ug/l	
78-93-3	2-Butanone (MEK)	ND	50	34	ug/l	
56-23-5	Carbon tetrachloride	ND	5.0	2.8	ug/l	
108-90-7	Chlorobenzene	ND	5.0	2.8	ug/l	
67-66-3	Chloroform	12.1	5.0	2.5	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	5.0	2.5	ug/l	
107-06-2	1,2-Dichloroethane	ND	5.0	3.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	5.0	3.0	ug/l	
127-18-4	Tetrachloroethene	ND	5.0	4.5	ug/l	
79-01-6	Trichloroethene	ND	5.0	2.6	ug/l	
75-01-4	Vinyl chloride	ND	5.0	3.9	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	96%	76-120%
17060-07-0	1,2-Dichloroethane-D4	100%	64-135%
2037-26-5	Toluene-D8	103%	76-117%
460-00-4	4-Bromofluorobenzene	97%	72-122%

Blank Spike Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3C7511-BS	3C170039.D	1	10/11/21	PS	n/a	n/a	V3C7511

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD32749-2, JD32749-5

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
67-64-1	Acetone	200	204	102	67-130
71-43-2	Benzene	50	50.5	101	80-115
108-86-1	Bromobenzene	50	52.1	104	80-116
74-97-5	Bromochloromethane	50	52.2	104	82-121
75-27-4	Bromodichloromethane	50	50.9	102	83-121
75-25-2	Bromoform	50	51.0	102	80-141
74-83-9	Bromomethane	50	52.2	104	56-146
78-93-3	2-Butanone (MEK)	200	179	90	72-134
104-51-8	n-Butylbenzene	50	54.5	109	73-124
135-98-8	sec-Butylbenzene	50	53.2	106	73-121
98-06-6	tert-Butylbenzene	50	51.4	103	74-122
75-15-0	Carbon disulfide	50	47.2	94	65-125
56-23-5	Carbon tetrachloride	50	50.3	101	75-126
108-90-7	Chlorobenzene	50	51.4	103	81-115
75-00-3	Chloroethane	50	56.3	113	72-133
67-66-3	Chloroform	50	51.3	103	75-114
74-87-3	Chloromethane	50	54.0	108	57-135
95-49-8	o-Chlorotoluene	50	52.4	105	78-117
106-43-4	p-Chlorotoluene	50	52.4	105	77-114
96-12-8	1,2-Dibromo-3-chloropropane	50	52.2	104	72-129
124-48-1	Dibromochloromethane	50	51.0	102	82-133
106-93-4	1,2-Dibromoethane	50	52.4	105	81-126
95-50-1	1,2-Dichlorobenzene	50	53.5	107	83-114
541-73-1	1,3-Dichlorobenzene	50	52.8	106	81-112
106-46-7	1,4-Dichlorobenzene	50	53.2	106	79-113
75-71-8	Dichlorodifluoromethane	50	54.7	109	50-150
75-34-3	1,1-Dichloroethane	50	51.6	103	75-120
107-06-2	1,2-Dichloroethane	50	53.5	107	72-117
75-35-4	1,1-Dichloroethene	50	47.4	95	69-124
156-59-2	cis-1,2-Dichloroethene	50	51.3	103	73-119
156-60-5	trans-1,2-Dichloroethene	50	49.8	100	70-123
78-87-5	1,2-Dichloropropane	50	51.7	103	80-118
142-28-9	1,3-Dichloropropane	50	52.3	105	81-116
594-20-7	2,2-Dichloropropane	50	50.1	100	74-126
563-58-6	1,1-Dichloropropene	50	49.2	98	75-119
10061-01-5	cis-1,3-Dichloropropene	50	53.1	106	83-121

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3C7511-BS	3C170039.D	1	10/11/21	PS	n/a	n/a	V3C7511

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD32749-2, JD32749-5

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
10061-02-6	trans-1,3-Dichloropropene	50	55.4	111	83-125
100-41-4	Ethylbenzene	50	52.9	106	80-114
87-68-3	Hexachlorobutadiene	50	54.0	108	71-125
591-78-6	2-Hexanone	200	208	104	77-126
74-88-4	Iodomethane	50	46.8	94	25-189
98-82-8	Isopropylbenzene	50	54.1	108	76-121
99-87-6	p-Isopropyltoluene	50	54.2	108	74-122
1634-04-4	Methyl Tert Butyl Ether	50	51.8	104	76-127
108-10-1	4-Methyl-2-pentanone(MIBK)	200	198	99	75-129
74-95-3	Methylene bromide	50	51.8	104	83-119
75-09-2	Methylene chloride	50	46.9	94	71-120
91-20-3	Naphthalene	50	53.9	108	73-131
103-65-1	n-Propylbenzene	50	52.8	106	74-116
100-42-5	Styrene	50	53.2	106	83-118
630-20-6	1,1,1,2-Tetrachloroethane	50	51.9	104	82-128
79-34-5	1,1,2,2-Tetrachloroethane	50	50.8	102	76-120
127-18-4	Tetrachloroethene	50	51.8	104	75-125
108-88-3	Toluene	50	52.6	105	79-115
87-61-6	1,2,3-Trichlorobenzene	50	55.4	111	75-131
120-82-1	1,2,4-Trichlorobenzene	50	55.6	111	76-130
71-55-6	1,1,1-Trichloroethane	50	51.3	103	77-122
79-00-5	1,1,2-Trichloroethane	50	49.8	100	82-119
79-01-6	Trichloroethene	50	49.7	99	82-119
75-69-4	Trichlorofluoromethane	50	55.2	110	70-134
96-18-4	1,2,3-Trichloropropane	50	51.0	102	80-118
95-63-6	1,2,4-Trimethylbenzene	50	52.6	105	77-116
108-67-8	1,3,5-Trimethylbenzene	50	53.1	106	76-118
108-05-4	Vinyl Acetate	50	45.3	91	75-124
75-01-4	Vinyl chloride	50	54.5	109	60-139
	m,p-Xylene	100	106	106	81-115
95-47-6	o-Xylene	50	52.7	105	82-117
1330-20-7	Xylene (total)	150	158	105	81-116

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3C7511-BS	3C170039.D	1	10/11/21	PS	n/a	n/a	V3C7511

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD32749-2, JD32749-5

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	100%	72-130%
17060-07-0	1,2-Dichloroethane-D4	105%	75-131%
2037-26-5	Toluene-D8	100%	81-121%
460-00-4	4-Bromofluorobenzene	101%	60-141%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1A9288-BS	1A215230.D	1	10/13/21	ED	n/a	n/a	V1A9288

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD32749-3A, JD32749-6A

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	50	51.8	104	75-122
78-93-3	2-Butanone (MEK)	200	245	123	64-130
56-23-5	Carbon tetrachloride	50	48.7	97	75-148
108-90-7	Chlorobenzene	50	52.2	104	76-124
67-66-3	Chloroform	50	44.5	89	77-124
106-46-7	1,4-Dichlorobenzene	50	54.1	108	71-123
107-06-2	1,2-Dichloroethane	50	45.2	90	66-150
75-35-4	1,1-Dichloroethene	50	47.5	95	61-132
127-18-4	Tetrachloroethene	50	51.7	103	70-136
79-01-6	Trichloroethene	50	52.5	105	79-126
75-01-4	Vinyl chloride	50	45.7	91	56-146

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	96%	76-120%
17060-07-0	1,2-Dichloroethane-D4	97%	64-135%
2037-26-5	Toluene-D8	98%	76-117%
460-00-4	4-Bromofluorobenzene	100%	72-122%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD32675-1MS	3C170051.D	1	10/11/21	PS	n/a	n/a	V3C7511
JD32675-1	3C170045.D	1	10/11/21	PS	n/a	n/a	V3C7511

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD32749-2, JD32749-5

CAS No.	Compound	JD32675-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Limits
67-64-1	Acetone	ND		209	143	68	31-142
71-43-2	Benzene	ND		52.2	43.2	83	62-126
108-86-1	Bromobenzene	ND		52.2	36.6	70	56-126
74-97-5	Bromochloromethane	ND		52.2	44.1	84	68-125
75-27-4	Bromodichloromethane	ND		52.2	42.8	82	63-132
75-25-2	Bromoform	ND		52.2	38.3	73	59-138
74-83-9	Bromomethane	ND		52.2	42.4	81	13-164
78-93-3	2-Butanone (MEK)	ND		209	150	72	51-135
104-51-8	n-Butylbenzene	ND		52.2	24.4	47	23-148
135-98-8	sec-Butylbenzene	ND		52.2	29.4	56	34-142
98-06-6	tert-Butylbenzene	ND		52.2	32.1	62	46-136
75-15-0	Carbon disulfide	ND		52.2	34.4	66	49-134
56-23-5	Carbon tetrachloride	ND		52.2	42.2	81	60-133
108-90-7	Chlorobenzene	ND		52.2	36.8	71	58-126
75-00-3	Chloroethane	ND		52.2	45.7	88	18-165
67-66-3	Chloroform	ND		52.2	45.7	88	60-125
74-87-3	Chloromethane	ND		52.2	44.3	85	43-145
95-49-8	o-Chlorotoluene	ND		52.2	34.9	67	53-128
106-43-4	p-Chlorotoluene	ND		52.2	33.2	64	49-126
96-12-8	1,2-Dibromo-3-chloropropane	ND		52.2	36.9	71	43-133
124-48-1	Dibromochloromethane	ND		52.2	40.7	78	68-131
106-93-4	1,2-Dibromoethane	ND		52.2	40.5	78	63-127
95-50-1	1,2-Dichlorobenzene	ND		52.2	32.9	63	46-130
541-73-1	1,3-Dichlorobenzene	ND		52.2	30.9	59	45-129
106-46-7	1,4-Dichlorobenzene	ND		52.2	31.3	60	43-129
75-71-8	Dichlorodifluoromethane	ND		52.2	45.3	87	35-157
75-34-3	1,1-Dichloroethane	ND		52.2	46.3	89	63-130
107-06-2	1,2-Dichloroethane	ND		52.2	44.9	86	61-118
75-35-4	1,1-Dichloroethene	ND		52.2	40.8	78	55-135
156-59-2	cis-1,2-Dichloroethene	ND		52.2	42.0	80	55-131
156-60-5	trans-1,2-Dichloroethene	ND		52.2	39.3	75	54-135
78-87-5	1,2-Dichloropropane	ND		52.2	44.6	85	68-123
142-28-9	1,3-Dichloropropane	ND		52.2	41.9	80	67-119
594-20-7	2,2-Dichloropropane	ND		52.2	40.2	77	50-131
563-58-6	1,1-Dichloropropene	ND		52.2	38.7	74	60-129
10061-01-5	cis-1,3-Dichloropropene	ND		52.2	41.0	79	65-123

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD32675-1MS	3C170051.D	1	10/11/21	PS	n/a	n/a	V3C7511
JD32675-1	3C170045.D	1	10/11/21	PS	n/a	n/a	V3C7511

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD32749-2, JD32749-5

CAS No.	Compound	JD32675-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Limits
10061-02-6	trans-1,3-Dichloropropene	ND		52.2	39.3	75	63-128
100-41-4	Ethylbenzene	ND		52.2	38.9	75	48-135
87-68-3	Hexachlorobutadiene	ND		52.2	15.1	29	10-151
591-78-6	2-Hexanone	ND		209	168	80	55-127
74-88-4	Iodomethane	ND		52.2	38.7	74	23-174
98-82-8	Isopropylbenzene	ND		52.2	36.9	71	46-139
99-87-6	p-Isopropyltoluene	ND		52.2	30.0	57	36-142
1634-04-4	Methyl Tert Butyl Ether	ND		52.2	46.0	88	62-128
108-10-1	4-Methyl-2-pentanone(MIBK)	ND		209	167	80	59-125
74-95-3	Methylene bromide	ND		52.2	41.4	79	68-120
75-09-2	Methylene chloride	ND		52.2	40.2	77	59-127
91-20-3	Naphthalene	ND		52.2	27.0	52	10-160
103-65-1	n-Propylbenzene	ND		52.2	33.6	64	35-140
100-42-5	Styrene	ND		52.2	37.0	71	52-136
630-20-6	1,1,1,2-Tetrachloroethane	ND		52.2	41.4	79	68-132
79-34-5	1,1,2,2-Tetrachloroethane	ND		52.2	39.4	75	53-127
127-18-4	Tetrachloroethene	ND		52.2	35.6	68	50-138
108-88-3	Toluene	ND		52.2	41.0	79	57-129
87-61-6	1,2,3-Trichlorobenzene	ND		52.2	21.1	40	13-152
120-82-1	1,2,4-Trichlorobenzene	ND		52.2	21.5	41	15-153
71-55-6	1,1,1-Trichloroethane	ND		52.2	45.6	87	60-134
79-00-5	1,1,2-Trichloroethane	ND		52.2	40.0	77	56-137
79-01-6	Trichloroethene	ND		52.2	39.2	75	52-144
75-69-4	Trichlorofluoromethane	ND		52.2	44.1	84	48-144
96-18-4	1,2,3-Trichloropropane	ND		52.2	42.0	80	57-126
95-63-6	1,2,4-Trimethylbenzene	ND		52.2	33.7	65	38-137
108-67-8	1,3,5-Trimethylbenzene	ND		52.2	34.6	66	39-139
108-05-4	Vinyl Acetate	ND		52.2	19.6	38	17-143
75-01-4	Vinyl chloride	ND		52.2	42.4	81	44-152
	m,p-Xylene	ND		104	76.3	73	53-130
95-47-6	o-Xylene	ND		52.2	39.3	75	52-135
1330-20-7	Xylene (total)	ND		157	116	74	54-131

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD32675-1MS	3C170051.D	1	10/11/21	PS	n/a	n/a	V3C7511
JD32675-1	3C170045.D	1	10/11/21	PS	n/a	n/a	V3C7511

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD32749-2, JD32749-5

CAS No.	Surrogate Recoveries	MS	JD32675-1	Limits
1868-53-7	Dibromofluoromethane	104%	103%	72-130%
17060-07-0	1,2-Dichloroethane-D4	106%	111%	75-131%
2037-26-5	Toluene-D8	100%	98%	81-121%
460-00-4	4-Bromofluorobenzene	102%	101%	60-141%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD32749-3AMS	1A215238.D	5	10/13/21	ED	n/a	n/a	V1A9288
JD32749-3AMSD	1A215239.D	5	10/13/21	ED	n/a	n/a	V1A9288
JD32749-3A	1A215237.D	5	10/13/21	ED	10/11/21	GP36344	V1A9288

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD32749-3A, JD32749-6A

CAS No.	Compound	JD32749-3A ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		250	254	102	250	256	102	1	38-139/13
78-93-3	2-Butanone (MEK)	ND		1000	940	94	1000	940	94	0	58-140/14
56-23-5	Carbon tetrachloride	ND		250	241	96	250	243	97	1	50-161/18
108-90-7	Chlorobenzene	ND		250	256	102	250	257	103	0	65-128/12
67-66-3	Chloroform	10.8	B	250	226	86	250	228	87	1	66-132/14
106-46-7	1,4-Dichlorobenzene	ND		250	263	105	250	264	106	0	63-126/13
107-06-2	1,2-Dichloroethane	ND		250	226	90	250	222	89	2	59-153/15
75-35-4	1,1-Dichloroethene	ND		250	235	94	250	240	96	2	41-144/17
127-18-4	Tetrachloroethene	ND		250	245	98	250	254	102	4	48-145/15
79-01-6	Trichloroethene	ND		250	259	104	250	261	104	1	53-141/15
75-01-4	Vinyl chloride	ND		250	228	91	250	229	92	0	34-151/20

CAS No.	Surrogate Recoveries	MS	MSD	JD32749-3A	Limits
1868-53-7	Dibromofluoromethane	95%	96%	95%	76-120%
17060-07-0	1,2-Dichloroethane-D4	95%	95%	103%	64-135%
2037-26-5	Toluene-D8	97%	98%	102%	76-117%
460-00-4	4-Bromofluorobenzene	101%	101%	98%	72-122%

* = Outside of Control Limits.

Leachate Spike Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GP36344-LS2	1A215238A.D	5	10/13/21	ED	10/11/21	GP36344	V1A9288
JD32749-3A	1A215237.D	5	10/13/21	ED	10/11/21	GP36344	V1A9288

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD32749-3A, JD32749-6A

CAS No.	Compound	JD32749-3A ug/l	Q	Spike ug/l	LS ug/l	LS %	Limits
71-43-2	Benzene	ND		250	254	102	38-139
78-93-3	2-Butanone (MEK)	ND		1000	940	94	58-140
56-23-5	Carbon tetrachloride	ND		250	241	96	50-161
108-90-7	Chlorobenzene	ND		250	256	102	65-128
67-66-3	Chloroform	10.8	B	250	226	86	66-132
106-46-7	1,4-Dichlorobenzene	ND		250	263	105	63-126
107-06-2	1,2-Dichloroethane	ND		250	226	90	59-153
75-35-4	1,1-Dichloroethene	ND		250	235	94	41-144
127-18-4	Tetrachloroethene	ND		250	245	98	48-145
79-01-6	Trichloroethene	ND		250	259	104	53-141
75-01-4	Vinyl chloride	ND		250	228	91	34-151

CAS No.	Surrogate Recoveries	LS	JD32749-3A	Limits
1868-53-7	Dibromofluoromethane	95%	95%	76-120%
17060-07-0	1,2-Dichloroethane-D4	95%	103%	64-135%
2037-26-5	Toluene-D8	97%	102%	76-117%
460-00-4	4-Bromofluorobenzene	101%	98%	72-122%

* = Outside of Control Limits.

Duplicate Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD32675-7DUP	3C170053.D	1	10/11/21	PS	n/a	n/a	V3C7511
JD32675-7	3C170046.D	1	10/11/21	PS	n/a	n/a	V3C7511

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD32749-2, JD32749-5

CAS No.	Compound	JD32675-7 ug/kg	Q	DUP ug/kg	Q	RPD	Limits
67-64-1	Acetone	ND		ND		nc	108
71-43-2	Benzene	ND		ND		nc	27
108-86-1	Bromobenzene	ND		ND		nc	30
74-97-5	Bromochloromethane	ND		ND		nc	30
75-27-4	Bromodichloromethane	ND		ND		nc	22
75-25-2	Bromoform	ND		ND		nc	30
74-83-9	Bromomethane	ND		ND		nc	6
78-93-3	2-Butanone (MEK)	ND		ND		nc	32
104-51-8	n-Butylbenzene	ND		ND		nc	17
135-98-8	sec-Butylbenzene	ND		ND		nc	17
98-06-6	tert-Butylbenzene	ND		ND		nc	8
75-15-0	Carbon disulfide	ND		ND		nc	31
56-23-5	Carbon tetrachloride	ND		ND		nc	30
108-90-7	Chlorobenzene	ND		ND		nc	30
75-00-3	Chloroethane	ND		ND		nc	0
67-66-3	Chloroform	ND		ND		nc	30
74-87-3	Chloromethane	ND		ND		nc	30
95-49-8	o-Chlorotoluene	ND		ND		nc	30
106-43-4	p-Chlorotoluene	ND		ND		nc	30
96-12-8	1,2-Dibromo-3-chloropropane	ND		ND		nc	30
124-48-1	Dibromochloromethane	ND		ND		nc	1
106-93-4	1,2-Dibromoethane	ND		ND		nc	30
95-50-1	1,2-Dichlorobenzene	ND		ND		nc	30
541-73-1	1,3-Dichlorobenzene	ND		ND		nc	30
106-46-7	1,4-Dichlorobenzene	ND		ND		nc	2
75-71-8	Dichlorodifluoromethane	ND		ND		nc	30
75-34-3	1,1-Dichloroethane	ND		ND		nc	7
107-06-2	1,2-Dichloroethane	ND		ND		nc	7
75-35-4	1,1-Dichloroethene	ND		ND		nc	10
156-59-2	cis-1,2-Dichloroethene	ND		ND		nc	27
156-60-5	trans-1,2-Dichloroethene	ND		ND		nc	16
78-87-5	1,2-Dichloropropane	ND		ND		nc	30
142-28-9	1,3-Dichloropropane	ND		ND		nc	30
594-20-7	2,2-Dichloropropane	ND		ND		nc	30
563-58-6	1,1-Dichloropropene	ND		ND		nc	30
10061-01-5	cis-1,3-Dichloropropene	ND		ND		nc	30

* = Outside of Control Limits.

Duplicate Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD32675-7DUP	3C170053.D	1	10/11/21	PS	n/a	n/a	V3C7511
JD32675-7	3C170046.D	1	10/11/21	PS	n/a	n/a	V3C7511

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD32749-2, JD32749-5

CAS No.	Compound	JD32675-7 ug/kg	Q	DUP ug/kg	Q	RPD	Limits
10061-02-6	trans-1,3-Dichloropropene	ND		ND		nc	30
100-41-4	Ethylbenzene	ND		ND		nc	36
87-68-3	Hexachlorobutadiene	ND		ND		nc	30
591-78-6	2-Hexanone	ND		ND		nc	30
74-88-4	Iodomethane	ND		ND		nc	30
98-82-8	Isopropylbenzene	ND		ND		nc	13
99-87-6	p-Isopropyltoluene	ND		ND		nc	12
1634-04-4	Methyl Tert Butyl Ether	ND		ND		nc	11
108-10-1	4-Methyl-2-pentanone(MIBK)	ND		ND		nc	30
74-95-3	Methylene bromide	ND		ND		nc	30
75-09-2	Methylene chloride	ND		ND		nc	31
91-20-3	Naphthalene	ND		ND		nc	26
103-65-1	n-Propylbenzene	ND		ND		nc	25
100-42-5	Styrene	ND		ND		nc	30
630-20-6	1,1,1,2-Tetrachloroethane	ND		ND		nc	30
79-34-5	1,1,2,2-Tetrachloroethane	ND		ND		nc	30
127-18-4	Tetrachloroethene	ND		ND		nc	44
108-88-3	Toluene	ND		ND		nc	39
87-61-6	1,2,3-Trichlorobenzene	ND		ND		nc	30
120-82-1	1,2,4-Trichlorobenzene	ND		ND		nc	30
71-55-6	1,1,1-Trichloroethane	ND		ND		nc	9
79-00-5	1,1,2-Trichloroethane	ND		ND		nc	30
79-01-6	Trichloroethene	ND		ND		nc	29
75-69-4	Trichlorofluoromethane	ND		ND		nc	30
96-18-4	1,2,3-Trichloropropane	ND		ND		nc	30
95-63-6	1,2,4-Trimethylbenzene	ND		ND		nc	35
108-67-8	1,3,5-Trimethylbenzene	ND		ND		nc	31
108-05-4	Vinyl Acetate	ND		ND		nc	30
75-01-4	Vinyl chloride	ND		ND		nc	14
	m,p-Xylene	ND		ND		nc	39
95-47-6	o-Xylene	ND		ND		nc	36
1330-20-7	Xylene (total)	ND		ND		nc	44

* = Outside of Control Limits.

Duplicate Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD32675-7DUP	3C170053.D	1	10/11/21	PS	n/a	n/a	V3C7511
JD32675-7	3C170046.D	1	10/11/21	PS	n/a	n/a	V3C7511

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD32749-2, JD32749-5

CAS No.	Surrogate Recoveries	DUP	JD32675-7	Limits
1868-53-7	Dibromofluoromethane	102%	103%	72-130%
17060-07-0	1,2-Dichloroethane-D4	110%	110%	75-131%
2037-26-5	Toluene-D8	99%	98%	81-121%
460-00-4	4-Bromofluorobenzene	102%	103%	60-141%

* = Outside of Control Limits.

Instrument Performance Check (BFB)

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample:	V1A9258-BFB	**Injection Date:**	09/26/21
Lab File ID:	1A214394.D	**Injection Time:**	23:53
Instrument ID:	GCMS1A		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	25210	21.0		Pass
75	30.0 - 60.0% of mass 95	58968	49.2		Pass
95	Base peak, 100% relative abundance	119837	100.0		Pass
96	5.0 - 9.0% of mass 95	8107	6.77		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	105720	88.2		Pass
175	5.0 - 9.0% of mass 174	8408	7.02	(7.95) [a]	Pass
176	95.0 - 101.0% of mass 174	103672	86.5	(98.1) [a]	Pass
177	5.0 - 9.0% of mass 176	6471	5.40	(6.24) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1A9258-IC9258	1A214395.D	09/27/21	00:12	00:19	Initial cal 0.2
V1A9258-IC9258	1A214396.D	09/27/21	00:32	00:39	Initial cal 0.5
V1A9258-IC9258	1A214397.D	09/27/21	00:51	00:58	Initial cal 1
V1A9258-IC9258	1A214398.D	09/27/21	01:10	01:17	Initial cal 2
V1A9258-IC9258	1A214399.D	09/27/21	01:29	01:36	Initial cal 4
V1A9258-IC9258	1A214400.D	09/27/21	01:48	01:55	Initial cal 8
V1A9258-IC9258	1A214401.D	09/27/21	02:08	02:15	Initial cal 20
V1A9258-ICC9258	1A214402.D	09/27/21	02:27	02:34	Initial cal 50
V1A9258-IC9258	1A214403.D	09/27/21	02:46	02:53	Initial cal 100
V1A9258-IC9258	1A214404.D	09/27/21	03:05	03:12	Initial cal 200
V1A9258-ICV9258	1A214407.D	09/27/21	04:03	04:10	Initial cal verification 50
V1A9258-ICV9258	1A214408.D	09/27/21	04:22	04:29	Initial cal verification 50

Instrument Performance Check (BFB)

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample:	V1A9288-BFB	**Injection Date:**	10/13/21
Lab File ID:	1A215228.D	**Injection Time:**	17:24
Instrument ID:	GCMS1A		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	26818	20.1		Pass
75	30.0 - 60.0% of mass 95	64360	48.1		Pass
95	Base peak, 100% relative abundance	133725	100.0		Pass
96	5.0 - 9.0% of mass 95	9089	6.80		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	123874	92.6		Pass
175	5.0 - 9.0% of mass 174	7155	5.35	(5.78) [a]	Pass
176	95.0 - 101.0% of mass 174	120587	90.2	(97.3) [a]	Pass
177	5.0 - 9.0% of mass 176	8034	6.01	(6.66) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1A9288-CC9258	1A215228.D	10/13/21	17:24	00:00	Continuing cal 50
V1A9288-BS	1A215230.D	10/13/21	18:04	00:40	Blank Spike
V1A9288-MB	1A215232.D	10/13/21	18:44	01:20	Method Blank
GP36344-LB2	1A215233.D	10/13/21	19:04	01:40	Leachate Blank
GP36344-LB3	1A215234.D	10/13/21	19:24	02:00	Leachate Blank
GP36344-LB6	1A215235.D	10/13/21	19:44	02:20	Leachate Blank
ZZZZZZ	1A215236.D	10/13/21	20:04	02:40	(unrelated sample)
JD32749-3A	1A215237.D	10/13/21	20:24	03:00	H-103-C
JD32749-3AMS	1A215238.D	10/13/21	20:44	03:20	Matrix Spike
GP36344-LS2	1A215238A.D	10/13/21	20:44	03:20	Leachate Spike
JD32749-3AMSD	1A215239.D	10/13/21	21:04	03:40	Matrix Spike Duplicate
ZZZZZZ	1A215241.D	10/13/21	21:44	04:20	(unrelated sample)
ZZZZZZ	1A215242.D	10/13/21	22:04	04:40	(unrelated sample)
ZZZZZZ	1A215243.D	10/13/21	22:24	05:00	(unrelated sample)
ZZZZZZ	1A215244.D	10/13/21	22:43	05:19	(unrelated sample)
ZZZZZZ	1A215245.D	10/13/21	23:03	05:39	(unrelated sample)
ZZZZZZ	1A215246.D	10/13/21	23:23	05:59	(unrelated sample)
ZZZZZZ	1A215247.D	10/13/21	23:43	06:19	(unrelated sample)
ZZZZZZ	1A215248.D	10/14/21	00:03	06:39	(unrelated sample)
JD32749-6A	1A215249.D	10/14/21	00:23	06:59	B-101-C
ZZZZZZ	1A215250.D	10/14/21	00:43	07:19	(unrelated sample)
ZZZZZZ	1A215251.D	10/14/21	01:02	07:38	(unrelated sample)
ZZZZZZ	1A215252.D	10/14/21	01:22	07:58	(unrelated sample)
ZZZZZZ	1A215253.D	10/14/21	01:42	08:18	(unrelated sample)

Instrument Performance Check (BFB)

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample:	V1A9288-BFB	**Injection Date:**	10/13/21
Lab File ID:	1A215228.D	**Injection Time:**	17:24
Instrument ID:	GCMS1A		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	1A215254.D	10/14/21	02:02	08:38	(unrelated sample)
ZZZZZZ	1A215255.D	10/14/21	02:21	08:57	(unrelated sample)
ZZZZZZ	1A215256.D	10/14/21	02:41	09:17	(unrelated sample)
ZZZZZZ	1A215257.D	10/14/21	03:01	09:37	(unrelated sample)
ZZZZZZ	1A215258.D	10/14/21	03:20	09:56	(unrelated sample)
V1A9288-ECC9258	1A215259.D	10/14/21	03:40	10:16	Ending cal 50

Instrument Performance Check (BFB)

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample:	V3C7497-BFB	**Injection Date:**	09/26/21
Lab File ID:	3C169616.D	**Injection Time:**	17:44
Instrument ID:	GCMS3C		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	75930	20.1		Pass
75	30.0 - 60.0% of mass 95	182549	48.3		Pass
95	Base peak, 100% relative abundance	377856	100.0		Pass
96	5.0 - 9.0% of mass 95	26256	6.95		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	321365	85.0		Pass
175	5.0 - 9.0% of mass 174	25216	6.67	(7.85) [a]	Pass
176	95.0 - 101.0% of mass 174	313685	83.0	(97.6) [a]	Pass
177	5.0 - 9.0% of mass 176	21085	5.58	(6.72) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V3C7497-IC7497	3C169617.D	09/26/21	18:11	00:27	Initial cal 0.2
V3C7497-IC7497	3C169618.D	09/26/21	18:36	00:52	Initial cal 0.5
V3C7497-IC7497	3C169619.D	09/26/21	19:01	01:17	Initial cal 1
V3C7497-IC7497	3C169620.D	09/26/21	19:26	01:42	Initial cal 2
V3C7497-IC7497	3C169621.D	09/26/21	19:51	02:07	Initial cal 4
V3C7497-IC7497	3C169622.D	09/26/21	20:16	02:32	Initial cal 8
V3C7497-IC7497	3C169623.D	09/26/21	20:42	02:58	Initial cal 20
V3C7497-ICC7497	3C169624.D	09/26/21	21:07	03:23	Initial cal 50
V3C7497-IC7497	3C169625.D	09/26/21	21:32	03:48	Initial cal 100
V3C7497-IC7497	3C169626.D	09/26/21	21:57	04:13	Initial cal 200
V3C7497-ICV7497	3C169629.D	09/26/21	23:12	05:28	Initial cal verification 50
V3C7497-ICV7497	3C169630.D	09/26/21	23:37	05:53	Initial cal verification 50

Instrument Performance Check (BFB)

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample:	V3C7511-BFB	**Injection Date:**	10/11/21
Lab File ID:	3C170038.D	**Injection Time:**	10:13
Instrument ID:	GCMS3C		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	34232	15.9		Pass
75	30.0 - 60.0% of mass 95	66421	30.9		Pass
95	Base peak, 100% relative abundance	214720	100.0		Pass
96	5.0 - 9.0% of mass 95	14302	6.66		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	183296	85.4		Pass
175	5.0 - 9.0% of mass 174	13984	6.51	(7.63) [a]	Pass
176	95.0 - 101.0% of mass 174	179179	83.4	(97.8) [a]	Pass
177	5.0 - 9.0% of mass 176	11938	5.56	(6.66) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V3C7511-CC7497	3C170038.D	10/11/21	10:13	00:00	Continuing cal 50
V3C7511-BS	3C170039.D	10/11/21	10:42	00:29	Blank Spike
ZZZZZZ	3C170041A.D	10/11/21	11:51	01:38	(unrelated sample)
V3C7511-MB	3C170041.D	10/11/21	11:51	01:38	Method Blank
ZZZZZZ	3C170042.D	10/11/21	12:16	02:03	(unrelated sample)
ZZZZZZ	3C170043.D	10/11/21	12:42	02:29	(unrelated sample)
ZZZZZZ	3C170044.D	10/11/21	13:07	02:54	(unrelated sample)
JD32675-1	3C170045.D	10/11/21	13:33	03:20	(used for QC only; not part of job JD32749)
JD32675-7	3C170046.D	10/11/21	13:59	03:46	(used for QC only; not part of job JD32749)
ZZZZZZ	3C170047.D	10/11/21	14:24	04:11	(unrelated sample)
ZZZZZZ	3C170048.D	10/11/21	14:50	04:37	(unrelated sample)
ZZZZZZ	3C170049.D	10/11/21	15:15	05:02	(unrelated sample)
ZZZZZZ	3C170050.D	10/11/21	15:41	05:28	(unrelated sample)
JD32675-1MS	3C170051.D	10/11/21	16:07	05:54	Matrix Spike
JD32675-7DUP	3C170053.D	10/11/21	16:58	06:45	Duplicate
ZZZZZZ	3C170054.D	10/11/21	17:23	07:10	(unrelated sample)
JD32749-2	3C170055.D	10/11/21	17:49	07:36	H-103-B
JD32749-5	3C170056.D	10/11/21	18:15	08:02	B-101-B
ZZZZZZ	3C170057.D	10/11/21	18:40	08:27	(unrelated sample)
ZZZZZZ	3C170058.D	10/11/21	19:06	08:53	(unrelated sample)
ZZZZZZ	3C170059.D	10/11/21	19:32	09:19	(unrelated sample)
ZZZZZZ	3C170060.D	10/11/21	19:57	09:44	(unrelated sample)
ZZZZZZ	3C170061.D	10/11/21	20:23	10:10	(unrelated sample)
ZZZZZZ	3C170062.D	10/11/21	20:48	10:35	(unrelated sample)

Instrument Performance Check (BFB)

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample:	V3C7511-BFB	**Injection Date:**	10/11/21
Lab File ID:	3C170038.D	**Injection Time:**	10:13
Instrument ID:	GCMS3C		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	3C170063.D	10/11/21	21:14	11:01	(unrelated sample)
ZZZZZZ	3C170064.D	10/11/21	21:39	11:26	(unrelated sample)
ZZZZZZ	3C170065.D	10/11/21	22:05	11:52	(unrelated sample)

Surrogate Recovery Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Method: SW846 8260D **Matrix:** LEACHATE

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
JD32749-3A	1A215237.D	95	103	102	98
JD32749-6A	1A215249.D	98	100	104	100
GP36344-LB2	1A215233.D	96	101	102	99
GP36344-LB3	1A215234.D	96	100	103	97
GP36344-LS2	1A215238A.D	95	95	97	101
JD32749-3AMS	1A215238.D	95	95	97	101
JD32749-3AMSD	1A215239.D	96	95	98	101
V1A9288-BS	1A215230.D	96	97	98	100
V1A9288-MB	1A215232.D	96	100	104	103

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	76-120%
S2 = 1,2-Dichloroethane-D4	64-135%
S3 = Toluene-D8	76-117%
S4 = 4-Bromofluorobenzene	72-122%

Surrogate Recovery Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Method: SW846 8260D **Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
JD32749-2	3C170055.D	104	112	98	103
JD32749-5	3C170056.D	106	115	98	104
JD32675-1MS	3C170051.D	104	106	100	102
JD32675-7DUP	3C170053.D	102	110	99	102
V3C7511-BS	3C170039.D	100	105	100	101
V3C7511-MB	3C170041.D	100	105	99	101

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	72-130%
S2 = 1,2-Dichloroethane-D4	75-131%
S3 = Toluene-D8	81-121%
S4 = 4-Bromofluorobenzene	60-141%

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (DFTPP)
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35863-MB1	Z152147.D	1	10/10/21	CS	10/09/21	OP35863	EZ7568

The QC reported here applies to the following samples: **Method:** SW846 8270E

JD32749-1, JD32749-2, JD32749-5

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	33	11	ug/kg	
208-96-8	Acenaphthylene	ND	33	17	ug/kg	
120-12-7	Anthracene	ND	33	20	ug/kg	
56-55-3	Benzo(a)anthracene	ND	33	9.4	ug/kg	
50-32-8	Benzo(a)pyrene	ND	33	15	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	33	15	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	33	17	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	33	16	ug/kg	
218-01-9	Chrysene	ND	33	10	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	33	15	ug/kg	
206-44-0	Fluoranthene	ND	33	15	ug/kg	
86-73-7	Fluorene	ND	33	15	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	33	16	ug/kg	
91-20-3	Naphthalene	ND	33	9.4	ug/kg	
85-01-8	Phenanthrene	ND	33	11	ug/kg	
129-00-0	Pyrene	ND	33	11	ug/kg	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	80%	7-101%
4165-62-2	Phenol-d5	79%	12-101%
118-79-6	2,4,6-Tribromophenol	88%	10-127%
4165-60-0	Nitrobenzene-d5	85%	15-114%
321-60-8	2-Fluorobiphenyl	84%	22-104%
1718-51-0	Terphenyl-d14	87%	23-121%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	System artifact	1.47	690	ug/kg	J
	System artifact	2.72	430	ug/kg	J
	System artifact	2.92	290	ug/kg	J
	Total TIC, Semi-Volatile		0	ug/kg	

Method Blank Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35916-MB1	M175671.D	1	10/12/21	KLS	10/12/21	OP35916	EM7551

The QC reported here applies to the following samples: **Method:** SW846 8270E

JD32749-4

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	33	11	ug/kg	
208-96-8	Acenaphthylene	ND	33	17	ug/kg	
120-12-7	Anthracene	ND	33	20	ug/kg	
56-55-3	Benzo(a)anthracene	ND	33	9.4	ug/kg	
50-32-8	Benzo(a)pyrene	ND	33	15	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	33	15	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	33	17	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	33	16	ug/kg	
218-01-9	Chrysene	ND	33	10	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	33	15	ug/kg	
206-44-0	Fluoranthene	ND	33	15	ug/kg	
86-73-7	Fluorene	ND	33	15	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	33	16	ug/kg	
91-20-3	Naphthalene	ND	33	9.4	ug/kg	
85-01-8	Phenanthrene	ND	33	11	ug/kg	
129-00-0	Pyrene	ND	33	11	ug/kg	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	56%	7-101%
4165-62-2	Phenol-d5	54%	12-101%
118-79-6	2,4,6-Tribromophenol	105%	10-127%
4165-60-0	Nitrobenzene-d5	64%	15-114%
321-60-8	2-Fluorobiphenyl	69%	22-104%
1718-51-0	Terphenyl-d14	81%	23-121%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	System artifact	3.37	300	ug/kg	J
	System artifact/aldol-condensation	3.55	200	ug/kg	J
	Total TIC, Semi-Volatile		0	ug/kg	

Method Blank Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35997-MB1	6P502234.D	1	10/16/21	CS	10/15/21	OP35997	E6P3532

The QC reported here applies to the following samples: **Method:** SW846 8270E

JD32749-3A, JD32749-6A

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	2.0	0.89	ug/l	
	3&4-Methylphenol	ND	2.0	0.88	ug/l	
87-86-5	Pentachlorophenol	ND	10	1.4	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	5.0	1.3	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	5.0	0.92	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	2.0	0.17	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	2.0	0.55	ug/l	
118-74-1	Hexachlorobenzene	ND	2.0	0.33	ug/l	
87-68-3	Hexachlorobutadiene	ND	1.0	0.49	ug/l	
67-72-1	Hexachloroethane	ND	5.0	0.39	ug/l	
98-95-3	Nitrobenzene	ND	2.0	0.64	ug/l	
110-86-1	Pyridine	ND	2.0	0.39	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	41%	10-73%
4165-62-2	Phenol-d5	29%	10-64%
118-79-6	2,4,6-Tribromophenol	99%	31-130%
4165-60-0	Nitrobenzene-d5	65%	28-126%
321-60-8	2-Fluorobiphenyl	77%	26-114%
1718-51-0	Terphenyl-d14	103%	16-122%

Leachate Blank Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35997-LB23	6P502235.D	1	10/16/21	CS	10/15/21	OP35997	E6P3532

The QC reported here applies to the following samples: **Method:** SW846 8270E

JD32749-3A, JD32749-6A

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	20	8.9	ug/l	
	3&4-Methylphenol	ND	20	8.8	ug/l	
87-86-5	Pentachlorophenol	ND	100	14	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	50	13	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	50	9.2	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	20	1.7	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	20	5.5	ug/l	
118-74-1	Hexachlorobenzene	ND	20	3.3	ug/l	
87-68-3	Hexachlorobutadiene	ND	10	4.9	ug/l	
67-72-1	Hexachloroethane	ND	50	3.9	ug/l	
98-95-3	Nitrobenzene	ND	20	6.4	ug/l	
110-86-1	Pyridine	ND	20	3.9	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	41%	10-73%
4165-62-2	Phenol-d5	27%	10-64%
118-79-6	2,4,6-Tribromophenol	92%	31-130%
4165-60-0	Nitrobenzene-d5	66%	28-126%
321-60-8	2-Fluorobiphenyl	73%	26-114%
1718-51-0	Terphenyl-d14	99%	16-122%

Blank Spike Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35916-BS1	M175672.D	1	10/12/21	KLS	10/12/21	OP35916	EM7551

The QC reported here applies to the following samples: **Method:** SW846 8270E

JD32749-4

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	1670	1140	68	24-129
208-96-8	Acenaphthylene	1670	926	56	25-130
120-12-7	Anthracene	1670	1170	70	28-131
56-55-3	Benzo(a)anthracene	1670	1140	68	30-130
50-32-8	Benzo(a)pyrene	1670	1180	71	27-139
205-99-2	Benzo(b)fluoranthene	1670	1200	72	32-133
191-24-2	Benzo(g,h,i)perylene	1670	1160	70	24-141
207-08-9	Benzo(k)fluoranthene	1670	1140	68	26-135
218-01-9	Chrysene	1670	1140	68	29-127
53-70-3	Dibenzo(a,h)anthracene	1670	1140	68	24-135
206-44-0	Fluoranthene	1670	1220	73	31-134
86-73-7	Fluorene	1670	1130	68	26-136
193-39-5	Indeno(1,2,3-cd)pyrene	1670	1130	68	26-137
91-20-3	Naphthalene	1670	1030	62	26-127
85-01-8	Phenanthrene	1670	1140	68	26-131
129-00-0	Pyrene	1670	1190	71	30-131

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	62%	7-101%
4165-62-2	Phenol-d5	53%	12-101%
118-79-6	2,4,6-Tribromophenol	90%	10-127%
4165-60-0	Nitrobenzene-d5	56%	15-114%
321-60-8	2-Fluorobiphenyl	62%	22-104%
1718-51-0	Terphenyl-d14	74%	23-121%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35997-BS1	6P502236.D	1	10/16/21	CS	10/15/21	OP35997	E6P3532

The QC reported here applies to the following samples: **Method:** SW846 8270E

JD32749-3A, JD32749-6A

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
95-48-7	2-Methylphenol	50	30.6	61	26-101
	3&4-Methylphenol	100	52.5	53	23-98
87-86-5	Pentachlorophenol	100	80.8	81	37-147
95-95-4	2,4,5-Trichlorophenol	50	43.4	87	39-125
88-06-2	2,4,6-Trichlorophenol	50	40.4	81	40-127
106-46-7	1,4-Dichlorobenzene	50	32.0	64	25-101
121-14-2	2,4-Dinitrotoluene	50	47.4	95	47-128
118-74-1	Hexachlorobenzene	50	48.5	97	46-113
87-68-3	Hexachlorobutadiene	50	31.5	63	17-111
67-72-1	Hexachloroethane	50	30.9	62	18-101
98-95-3	Nitrobenzene	50	38.2	76	36-120
110-86-1	Pyridine	50	16.4	33	10-78

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	43%	10-73%
4165-62-2	Phenol-d5	31%	10-64%
118-79-6	2,4,6-Tribromophenol	98%	31-130%
4165-60-0	Nitrobenzene-d5	75%	28-126%
321-60-8	2-Fluorobiphenyl	87%	26-114%
1718-51-0	Terphenyl-d14	99%	16-122%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35863-BS1	Z152148.D	1	10/10/21	CS	10/09/21	OP35863	EZ7568
OP35863-BSD	Z152170.D	1	10/10/21	CS	10/09/21	OP35863	EZ7568

The QC reported here applies to the following samples: **Method:** SW846 8270E

JD32749-1, JD32749-2, JD32749-5

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	1670	1250	75	1160	70	7	24-129/16
208-96-8	Acenaphthylene	1670	1150	69	1060	64	8	25-130/17
120-12-7	Anthracene	1670	1320	79	1220	73	8	28-131/18
56-55-3	Benzo(a)anthracene	1670	1310	79	1230	74	6	30-130/20
50-32-8	Benzo(a)pyrene	1670	1320	79	1250	75	5	27-139/20
205-99-2	Benzo(b)fluoranthene	1670	1320	79	1240	74	6	32-133/21
191-24-2	Benzo(g,h,i)perylene	1670	1280	77	1180	71	8	24-141/23
207-08-9	Benzo(k)fluoranthene	1670	1320	79	1240	74	6	26-135/21
218-01-9	Chrysene	1670	1300	78	1240	74	5	29-127/20
53-70-3	Dibenzo(a,h)anthracene	1670	1280	77	1170	70	9	24-135/23
206-44-0	Fluoranthene	1670	1350	81	1280	77	5	31-134/23
86-73-7	Fluorene	1670	1250	75	1150	69	8	26-136/18
193-39-5	Indeno(1,2,3-cd)pyrene	1670	1270	76	1180	71	7	26-137/25
91-20-3	Naphthalene	1670	1240	74	1150	69	8	26-127/19
85-01-8	Phenanthrene	1670	1310	79	1200	72	9	26-131/19
129-00-0	Pyrene	1670	1260	76	1170	70	7	30-131/24

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
367-12-4	2-Fluorophenol	73%	67%	7-101%
4165-62-2	Phenol-d5	72%	65%	12-101%
118-79-6	2,4,6-Tribromophenol	83%	80%	10-127%
4165-60-0	Nitrobenzene-d5	79%	74%	15-114%
321-60-8	2-Fluorobiphenyl	73%	68%	22-104%
1718-51-0	Terphenyl-d14	76%	73%	23-121%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35863-MS	Z152165.D	1	10/11/21	CS	10/09/21	OP35863	EZ7568
OP35863-MSD	Z152166.D	1	10/11/21	CS	10/09/21	OP35863	EZ7568
JD32716-2	Z152167.D	1	10/11/21	CS	10/09/21	OP35863	EZ7568

The QC reported here applies to the following samples: **Method:** SW846 8270E

JD32749-1, JD32749-2, JD32749-5

CAS No.	Compound	JD32716-2 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	464		2120	1600	54	2120	1200	35	29	10-145/63
208-96-8	Acenaphthylene	62.1		2120	1440	65	2120	1080	48	29	10-144/59
120-12-7	Anthracene	154		2120	1690	73	2120	1260	52	29	10-153/66
56-55-3	Benzo(a)anthracene	78.4		2120	1720	78	2120	1310	58	27	10-157/71
50-32-8	Benzo(a)pyrene	93.3		2120	1710	76	2120	1310	57	26	10-164/67
205-99-2	Benzo(b)fluoranthene	82.3		2120	1760	79	2120	1340	59	27	10-154/69
191-24-2	Benzo(g,h,i)perylene	499		2120	803	14	2120	1040	26	26	10-156/64
207-08-9	Benzo(k)fluoranthene	35.8	J	2120	1930	89	2120	1470	68	27	10-156/62
218-01-9	Chrysene	85.3		2120	1720	77	2120	1330	59	26	10-148/70
53-70-3	Dibenzo(a,h)anthracene	411		2120	857	21	2120	1040	30	19	10-146/63
206-44-0	Fluoranthene	264		2120	1860	75	2120	1430	55	26	10-171/80
86-73-7	Fluorene	244		2120	1620	65	2120	1200	45	30	10-148/65
193-39-5	Indeno(1,2,3-cd)pyrene	419		2120	809	18	2120	986	27	20	10-152/65
91-20-3	Naphthalene	473		2120	1340	41	2120	1030	26	26	10-147/64
85-01-8	Phenanthrene	861		2120	1780	43	2120	1430	27	22	10-162/81
129-00-0	Pyrene	405		2120	1790	65	2120	1420	48	23	10-166/77

CAS No.	Surrogate Recoveries	MS	MSD	JD32716-2	Limits
367-12-4	2-Fluorophenol	64%	51%		7-101%
4165-62-2	Phenol-d5	65%	52%		12-101%
118-79-6	2,4,6-Tribromophenol	87%	69%		10-127%
4165-60-0	Nitrobenzene-d5	67%	55%	55%	15-114%
321-60-8	2-Fluorobiphenyl	72%	59%	58%	22-104%
1718-51-0	Terphenyl-d14	80%	66%	65%	23-121%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35916-MS	M175682.D	1	10/12/21	KLS	10/12/21	OP35916	EM7551
OP35916-MSD	M175683.D	1	10/12/21	KLS	10/12/21	OP35916	EM7551
JD32593-45	M175679.D	1	10/12/21	KLS	10/12/21	OP35916	EM7551

The QC reported here applies to the following samples: **Method:** SW846 8270E

JD32749-4

CAS No.	Compound	JD32593-45 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		15200	8900	59	15100	5850	39	41	10-145/63
208-96-8	Acenaphthylene	ND		15200	7400	49	15100	4940	33	40	10-144/59
120-12-7	Anthracene	ND		15200	9070	60	15100	6030	40	40	10-153/66
56-55-3	Benzo(a)anthracene	ND		15200	8460	56	15100	5480	36	43	10-157/71
50-32-8	Benzo(a)pyrene	ND		15200	8590	57	15100	5500	36	44	10-164/67
205-99-2	Benzo(b)fluoranthene	ND		15200	8530	56	15100	5470	36	44	10-154/69
191-24-2	Benzo(g,h,i)perylene	ND		15200	8080	53	15100	5060	33	46	10-156/64
207-08-9	Benzo(k)fluoranthene	ND		15200	8480	56	15100	5450	36	44	10-156/62
218-01-9	Chrysene	ND		15200	8740	58	15100	5670	38	43	10-148/70
53-70-3	Dibenzo(a,h)anthracene	ND		15200	8690	57	15100	5430	36	46	10-146/63
206-44-0	Fluoranthene	ND		15200	8740	58	15100	5840	39	40	10-171/80
86-73-7	Fluorene	ND		15200	8620	57	15100	5880	39	38	10-148/65
193-39-5	Indeno(1,2,3-cd)pyrene	ND		15200	8700	57	15100	5270	35	49	10-152/65
91-20-3	Naphthalene	ND		15200	8360	55	15100	5460	36	42	10-147/64
85-01-8	Phenanthrene	ND		15200	8780	58	15100	5890	39	39	10-162/81
129-00-0	Pyrene	ND		15200	9130	60	15100	5930	39	42	10-166/77

CAS No.	Surrogate Recoveries	MS	MSD	JD32593-45	Limits
367-12-4	2-Fluorophenol	49%	33%	37%	7-101%
4165-62-2	Phenol-d5	44%	31%	36%	12-101%
118-79-6	2,4,6-Tribromophenol	75%	53%	69%	10-127%
4165-60-0	Nitrobenzene-d5	49%	34%	45%	15-114%
321-60-8	2-Fluorobiphenyl	52%	36%	48%	22-104%
1718-51-0	Terphenyl-d14	59%	39%	51%	23-121%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35997-MS	6P502238.D	1	10/16/21	CS	10/15/21	OP35997	E6P3532
OP35997-MSD	6P502239.D	1	10/16/21	CS	10/15/21	OP35997	E6P3532
JD32818-1A	6P502240.D	1	10/16/21	CS	10/15/21	OP35997	E6P3532

The QC reported here applies to the following samples: **Method:** SW846 8270E

JD32749-3A, JD32749-6A

CAS No.	Compound	JD32818-1A ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
95-48-7	2-Methylphenol	ND		500	244	49	500	277	55	13	10-130/32
	3&4-Methylphenol	ND		1000	403	40	1000	472	47	16	10-128/36
87-86-5	Pentachlorophenol	ND		1000	723	72	1000	855	86	17	29-154/32
95-95-4	2,4,5-Trichlorophenol	ND		500	354	71	500	410	82	15	33-130/22
88-06-2	2,4,6-Trichlorophenol	ND		500	335	67	500	375	75	11	35-129/26
106-46-7	1,4-Dichlorobenzene	ND		500	285	57	500	283	57	1	10-155/26
121-14-2	2,4-Dinitrotoluene	ND		500	488	98	500	455	91	7	21-160/23
118-74-1	Hexachlorobenzene	ND		500	483	97	500	465	93	4	40-120/21
87-68-3	Hexachlorobutadiene	ND		500	268	54	500	283	57	5	10-129/24
67-72-1	Hexachloroethane	ND		500	267	53	500	270	54	1	10-120/26
98-95-3	Nitrobenzene	ND		500	354	71	500	330	66	7	26-138/26
110-86-1	Pyridine	ND		500	147	29	500	70.6	14	70* [a]	10-94/49

CAS No.	Surrogate Recoveries	MS	MSD	JD32818-1A	Limits
367-12-4	2-Fluorophenol	32%	38%	44%	10-73%
4165-62-2	Phenol-d5	25%	29%	29%	10-64%
118-79-6	2,4,6-Tribromophenol	81%	94%	100%	31-130%
4165-60-0	Nitrobenzene-d5	68%	64%	68%	28-126%
321-60-8	2-Fluorobiphenyl	81%	78%	72%	26-114%
1718-51-0	Terphenyl-d14	85%	70%	103%	16-122%

(a) Analytical precision exceeds in-house control limits.

* = Outside of Control Limits.

Leachate Spike Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35997-LS23	6P502238.D	1	10/16/21	CS	10/15/21	OP35997	E6P3532
JD32818-1A	6P502240.D	1	10/16/21	CS	10/15/21	OP35997	E6P3532

The QC reported here applies to the following samples: **Method:** SW846 8270E

JD32749-3A, JD32749-6A

CAS No.	Compound	JD32818-1A ug/l	Q	Spike ug/l	LS ug/l	LS %	Limits
95-48-7	2-Methylphenol	ND		500	244	49	10-130
	3&4-Methylphenol	ND		1000	403	40	10-128
87-86-5	Pentachlorophenol	ND		1000	723	72	29-154
95-95-4	2,4,5-Trichlorophenol	ND		500	354	71	33-130
88-06-2	2,4,6-Trichlorophenol	ND		500	335	67	35-129
106-46-7	1,4-Dichlorobenzene	ND		500	285	57	10-155
121-14-2	2,4-Dinitrotoluene	ND		500	488	98	21-160
118-74-1	Hexachlorobenzene	ND		500	483	97	40-120
87-68-3	Hexachlorobutadiene	ND		500	268	54	10-129
67-72-1	Hexachloroethane	ND		500	267	53	10-120
98-95-3	Nitrobenzene	ND		500	354	71	26-138
110-86-1	Pyridine	ND		500	147	29	10-94

CAS No.	Surrogate Recoveries	LS	JD32818-1A	Limits
367-12-4	2-Fluorophenol	32%	44%	10-73%
4165-62-2	Phenol-d5	25%	29%	10-64%
118-79-6	2,4,6-Tribromophenol	81%	100%	31-130%
4165-60-0	Nitrobenzene-d5	68%	68%	28-126%
321-60-8	2-Fluorobiphenyl	81%	72%	26-114%
1718-51-0	Terphenyl-d14	85%	103%	16-122%

* = Outside of Control Limits.

Instrument Performance Check (DFTPP)

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample: E6P3504-DFTPP
Lab File ID: 6P501599.D
Instrument ID: GCMS6P
Injection Date: 09/29/21
Injection Time: 13:43

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	259029	44.7		Pass
68	Less than 2.0% of mass 69	1354	0.23	(0.38) [a]	Pass
69	Mass 69 relative abundance	353085	61.0		Pass
70	Less than 2.0% of mass 69	2293	0.40	(0.65) [a]	Pass
127	40.0 - 60.0% of mass 198	335087	57.9		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	579136	100.0		Pass
199	5.0 - 9.0% of mass 198	36184	6.25		Pass
275	10.0 - 30.0% of mass 198	164402	28.4		Pass
365	1.0 - 100.0% of mass 198	22673	3.91		Pass
441	Present, but less than mass 443	54549	9.42	(85.9) [b]	Pass
442	40.0 - 100.0% of mass 198	346410	59.8		Pass
443	17.0 - 23.0% of mass 442	63467	11.0	(18.3) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E6P3504-IC3504	6P501600.D	09/29/21	14:00	00:17	Initial cal 1
E6P3504-IC3504	6P501601.D	09/29/21	14:22	00:39	Initial cal 2
E6P3504-IC3504	6P501602.D	09/29/21	14:44	01:01	Initial cal 5
E6P3504-IC3504	6P501603.D	09/29/21	15:06	01:23	Initial cal 10
E6P3504-IC3504	6P501604.D	09/29/21	15:28	01:45	Initial cal 25
E6P3504-ICC3504	6P501605.D	09/29/21	15:49	02:06	Initial cal 50
E6P3504-IC3504	6P501606.D	09/29/21	16:11	02:28	Initial cal 80
E6P3504-IC3504	6P501607.D	09/29/21	16:33	02:50	Initial cal 100
E6P3504-ICV3504	6P501609.D	09/29/21	17:17	03:34	Initial cal verification 50
E6P3504-ICV3504	6P501610.D	09/29/21	17:39	03:56	Initial cal verification 50

Instrument Performance Check (DFTPP)

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample:	E6P3505-DFTPP	**Injection Date:**	09/29/21
Lab File ID:	6P501613.D	**Injection Time:**	20:16
Instrument ID:	GCMS6P		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	220472	43.2		Pass
68	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
69	Mass 69 relative abundance	288218	56.4		Pass
70	Less than 2.0% of mass 69	1549	0.30	(0.54) [a]	Pass
127	40.0 - 60.0% of mass 198	280674	55.0		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	510592	100.0		Pass
199	5.0 - 9.0% of mass 198	33288	6.52		Pass
275	10.0 - 30.0% of mass 198	146973	28.8		Pass
365	1.0 - 100.0% of mass 198	20256	3.97		Pass
441	Present, but less than mass 443	50272	9.85	(79.9) [b]	Pass
442	40.0 - 100.0% of mass 198	322026	63.1		Pass
443	17.0 - 23.0% of mass 442	62917	12.3	(19.5) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E6P3505-IC3505	6P501614.D	09/29/21	20:26	00:10	Initial cal 1
E6P3505-IC3505	6P501615.D	09/29/21	20:48	00:32	Initial cal 2
E6P3505-IC3505	6P501616.D	09/29/21	21:10	00:54	Initial cal 5
E6P3505-IC3505	6P501617.D	09/29/21	21:32	01:16	Initial cal 10
E6P3505-IC3505	6P501618.D	09/29/21	21:53	01:37	Initial cal 25
E6P3505-ICC3505	6P501619.D	09/29/21	22:15	01:59	Initial cal 50
E6P3505-IC3505	6P501620.D	09/29/21	22:37	02:21	Initial cal 80
E6P3505-IC3505	6P501621.D	09/29/21	22:59	02:43	Initial cal 100
E6P3505-ICV3505	6P501622.D	09/29/21	23:21	03:05	Initial cal verification 50

Instrument Performance Check (DFTPP)

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample:	E6P3506-DFTPP	**Injection Date:**	09/30/21
Lab File ID:	6P501623.D	**Injection Time:**	11:06
Instrument ID:	GCMS6P		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	259309	43.3		Pass
68	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
69	Mass 69 relative abundance	273800	45.7		Pass
70	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
127	40.0 - 60.0% of mass 198	341070	57.0		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	598592	100.0		Pass
199	5.0 - 9.0% of mass 198	35030	5.85		Pass
275	10.0 - 30.0% of mass 198	168085	28.1		Pass
365	1.0 - 100.0% of mass 198	22458	3.75		Pass
441	Present, but less than mass 443	51624	8.62	(78.4) [b]	Pass
442	40.0 - 100.0% of mass 198	364992	61.0		Pass
443	17.0 - 23.0% of mass 442	65872	11.0	(18.0) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E6P3506-ICV3504	6P501625.D	09/30/21	11:38	00:32	Initial cal verification 50

Instrument Performance Check (DFTPP)

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample: E6P3507-DFTPP
Lab File ID: 6P501626.D
Instrument ID: GCMS6P
Injection Date: 09/30/21
Injection Time: 13:41

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	228085	41.3		Pass
68	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
69	Mass 69 relative abundance	316429	57.3		Pass
70	Less than 2.0% of mass 69	1962	0.36	(0.62) [a]	Pass
127	40.0 - 60.0% of mass 198	302040	54.7		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	552000	100.0		Pass
199	5.0 - 9.0% of mass 198	35967	6.52		Pass
275	10.0 - 30.0% of mass 198	160352	29.0		Pass
365	1.0 - 100.0% of mass 198	22148	4.01		Pass
441	Present, but less than mass 443	59389	10.8	(88.4) [b]	Pass
442	40.0 - 100.0% of mass 198	374058	67.8		Pass
443	17.0 - 23.0% of mass 442	67160	12.2	(18.0) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E6P3507-ICV3504	6P501627.D	09/30/21	13:51	00:10	Initial cal verification 50
E6P3507-CC3504	6P501628.D	09/30/21	14:22	00:41	Continuing cal 25
E6P3507-CC3505	6P501629.D	09/30/21	15:07	01:26	Continuing cal 25
OP35623-MB1	6P501630C.D	09/30/21	19:42	06:01	Method Blank
OP35623-BS1	6P501631.D	09/30/21	20:03	06:22	Blank Spike
ZZZZZZ	6P501632.D	09/30/21	20:25	06:44	(unrelated sample)
ZZZZZZ	6P501633.D	09/30/21	20:47	07:06	(unrelated sample)
JD32216-1	6P501634A.D	09/30/21	21:48	08:07	(used for QC only; not part of job JD32749)
ZZZZZZ	6P501635.D	09/30/21	22:09	08:28	(unrelated sample)
ZZZZZZ	6P501636.D	09/30/21	22:31	08:50	(unrelated sample)
ZZZZZZ	6P501637.D	09/30/21	22:53	09:12	(unrelated sample)
ZZZZZZ	6P501638.D	09/30/21	23:15	09:34	(unrelated sample)
OP35623-MS	6P501639.D	09/30/21	23:36	09:55	Matrix Spike
OP35623-MSD	6P501640.D	09/30/21	23:58	10:17	Matrix Spike Duplicate
ZZZZZZ	6P501641.D	10/01/21	00:20	10:39	(unrelated sample)
ZZZZZZ	6P501642.D	10/01/21	00:42	11:01	(unrelated sample)
ZZZZZZ	6P501643.D	10/01/21	01:03	11:22	(unrelated sample)
ZZZZZZ	6P501644.D	10/01/21	01:25	11:44	(unrelated sample)

Instrument Performance Check (DFTPP)

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample: E6P3532-DFTPP
Lab File ID: 6P502231.D
Instrument ID: GCMS6P
Injection Date: 10/16/21
Injection Time: 03:16

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	132208	38.4		Pass
68	Less than 2.0% of mass 69	2581	0.75	(1.44) [a]	Pass
69	Mass 69 relative abundance	179847	52.2		Pass
70	Less than 2.0% of mass 69	1274	0.37	(0.71) [a]	Pass
127	40.0 - 60.0% of mass 198	186344	54.1		Pass
197	Less than 1.0% of mass 198	1024	0.30		Pass
198	Base peak, 100% relative abundance	344704	100.0		Pass
199	5.0 - 9.0% of mass 198	22556	6.54		Pass
275	10.0 - 30.0% of mass 198	95576	27.7		Pass
365	1.0 - 100.0% of mass 198	13149	3.81		Pass
441	Present, but less than mass 443	32528	9.44	(73.5) [b]	Pass
442	40.0 - 100.0% of mass 198	231453	67.1		Pass
443	17.0 - 23.0% of mass 442	44272	12.8	(19.1) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E6P3532-CC3504	6P502232.D	10/16/21	03:32	00:16	Continuing cal 25
E6P3532-CC3505	6P502233.D	10/16/21	03:54	00:38	Continuing cal 25
OP35997-MB1	6P502234.D	10/16/21	04:21	01:05	Method Blank
OP35997-LB23	6P502235.D	10/16/21	04:43	01:27	Leachate Blank
OP35997-BS1	6P502236.D	10/16/21	05:06	01:50	Blank Spike
OP35997-LS23	6P502238.D	10/16/21	05:51	02:35	Leachate Spike
OP35997-MS	6P502238.D	10/16/21	05:51	02:35	Matrix Spike
OP35997-MSD	6P502239.D	10/16/21	06:13	02:57	Matrix Spike Duplicate
JD32818-1A	6P502240.D	10/16/21	06:35	03:19	(used for QC only; not part of job JD32749)
ZZZZZZ	6P502241.D	10/16/21	06:58	03:42	(unrelated sample)
ZZZZZZ	6P502242.D	10/16/21	07:20	04:04	(unrelated sample)
ZZZZZZ	6P502243.D	10/16/21	07:43	04:27	(unrelated sample)
ZZZZZZ	6P502244.D	10/16/21	08:05	04:49	(unrelated sample)
ZZZZZZ	6P502245.D	10/16/21	08:27	05:11	(unrelated sample)

Instrument Performance Check (DFTPP)

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample: E6P3533-DFTPP
Lab File ID: 6P502259.D
Instrument ID: GCMS6P
Injection Date: 10/16/21
Injection Time: 21:36

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	152711	38.2		Pass
68	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
69	Mass 69 relative abundance	204289	51.2		Pass
70	Less than 2.0% of mass 69	549	0.14	(0.27) [a]	Pass
127	40.0 - 60.0% of mass 198	213397	53.4		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	399317	100.0		Pass
199	5.0 - 9.0% of mass 198	25496	6.38		Pass
275	10.0 - 30.0% of mass 198	107707	27.0		Pass
365	1.0 - 100.0% of mass 198	12817	3.21		Pass
441	Present, but less than mass 443	39004	9.77	(75.6) [b]	Pass
442	40.0 - 100.0% of mass 198	273661	68.5		Pass
443	17.0 - 23.0% of mass 442	51607	12.9	(18.9) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E6P3533-CC3504	6P502260.D	10/16/21	21:53	00:17	Continuing cal 25
ZZZZZZ	6P502262.D	10/16/21	22:43	01:07	(unrelated sample)
ZZZZZZ	6P502263.D	10/16/21	23:05	01:29	(unrelated sample)
ZZZZZZ	6P502264.D	10/16/21	23:27	01:51	(unrelated sample)
ZZZZZZ	6P502265.D	10/17/21	00:03	02:27	(unrelated sample)
ZZZZZZ	6P502266.D	10/17/21	00:24	02:48	(unrelated sample)
ZZZZZZ	6P502267.D	10/17/21	00:46	03:10	(unrelated sample)
ZZZZZZ	6P502268.D	10/17/21	01:08	03:32	(unrelated sample)
ZZZZZZ	6P502269.D	10/17/21	01:30	03:54	(unrelated sample)
ZZZZZZ	6P502270.D	10/17/21	01:52	04:16	(unrelated sample)
JD32749-3A	6P502271.D	10/17/21	02:14	04:38	H-103-C
JD32749-6A	6P502272.D	10/17/21	02:36	05:00	B-101-C
ZZZZZZ	6P502273.D	10/17/21	03:00	05:24	(unrelated sample)
ZZZZZZ	6P502274.D	10/17/21	03:22	05:46	(unrelated sample)

Instrument Performance Check (DFTPP)

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample:	EM7525-DFTPP	**Injection Date:**	09/21/21
Lab File ID:	M175056.D	**Injection Time:**	18:37
Instrument ID:	GCMSM		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	55048	36.4		Pass
68	Less than 2.0% of mass 69	222	0.15	(0.31) [a]	Pass
69	Mass 69 relative abundance	72202	47.7		Pass
70	Less than 2.0% of mass 69	238	0.16	(0.33) [a]	Pass
127	40.0 - 60.0% of mass 198	90576	59.8		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	151381	100.0		Pass
199	5.0 - 9.0% of mass 198	10497	6.93		Pass
275	10.0 - 30.0% of mass 198	38794	25.6		Pass
365	1.0 - 100.0% of mass 198	5830	3.85		Pass
441	Present, but less than mass 443	18722	12.4	(72.2) [b]	Pass
442	40.0 - 100.0% of mass 198	133669	88.3		Pass
443	17.0 - 23.0% of mass 442	25917	17.1	(19.4) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
EM7525-IC7525	M175057.D	09/21/21	18:49	00:12	Initial cal 1
EM7525-IC7525	M175058.D	09/21/21	19:17	00:40	Initial cal 2
EM7525-IC7525	M175059.D	09/21/21	19:46	01:09	Initial cal 5
EM7525-IC7525	M175060.D	09/21/21	20:15	01:38	Initial cal 10
EM7525-IC7525	M175061.D	09/21/21	20:43	02:06	Initial cal 25
EM7525-ICC7525	M175062.D	09/21/21	21:12	02:35	Initial cal 50
EM7525-IC7525	M175063A.D	09/21/21	22:42	04:05	Initial cal 80
EM7525-IC7525	M175064.D	09/21/21	23:10	04:33	Initial cal 100
EM7525-ICV7525	M175065.D	09/21/21	23:39	05:02	Initial cal verification 50

Instrument Performance Check (DFTPP)

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample:	EM7526-DFTPP	**Injection Date:**	09/22/21
Lab File ID:	M175070.D	**Injection Time:**	14:01
Instrument ID:	GCMSM		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	59523	33.7		Pass
68	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
69	Mass 69 relative abundance	82293	46.6		Pass
70	Less than 2.0% of mass 69	338	0.19	(0.41) [a]	Pass
127	40.0 - 60.0% of mass 198	103112	58.4		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	176544	100.0		Pass
199	5.0 - 9.0% of mass 198	12565	7.12		Pass
275	10.0 - 30.0% of mass 198	48477	27.5		Pass
365	1.0 - 100.0% of mass 198	7144	4.05		Pass
441	Present, but less than mass 443	23299	13.2	(75.9) [b]	Pass
442	40.0 - 100.0% of mass 198	157978	89.5		Pass
443	17.0 - 23.0% of mass 442	30685	17.4	(19.4) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
EM7526-IC7526	M175071.D	09/22/21	14:18	00:17	Initial cal 100
EM7526-IC7526	M175072.D	09/22/21	14:47	00:46	Initial cal 1
EM7526-IC7526	M175073.D	09/22/21	15:16	01:15	Initial cal 80
EM7526-IC7526	M175074.D	09/22/21	15:45	01:44	Initial cal 2
EM7526-ICC7526	M175075.D	09/22/21	16:14	02:13	Initial cal 50
EM7526-IC7526	M175076.D	09/22/21	16:43	02:42	Initial cal 5
EM7526-IC7526	M175077.D	09/22/21	17:12	03:11	Initial cal 25
EM7526-IC7526	M175078.D	09/22/21	17:41	03:40	Initial cal 10
EM7526-ICV7526	M175079.D	09/22/21	18:10	04:09	Initial cal verification 50
EM7526-ICV7526	M175080.D	09/22/21	18:39	04:38	Initial cal verification 50
EM7526-ICV7526	M175081.D	09/22/21	19:08	05:07	Initial cal verification 50
EM7526-ICV7526	M175082.D	09/22/21	19:37	05:36	Initial cal verification 50

Instrument Performance Check (DFTPP)

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample:	EM7551-DFTPP	**Injection Date:**	10/12/21
Lab File ID:	M175663.D	**Injection Time:**	11:33
Instrument ID:	GCMSM		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	32528	33.1		Pass
68	Less than 2.0% of mass 69	295	0.30	(0.65) [a]	Pass
69	Mass 69 relative abundance	45536	46.3		Pass
70	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
127	40.0 - 60.0% of mass 198	57640	58.7		Pass
197	Less than 1.0% of mass 198	156	0.16		Pass
198	Base peak, 100% relative abundance	98248	100.0		Pass
199	5.0 - 9.0% of mass 198	6655	6.77		Pass
275	10.0 - 30.0% of mass 198	26449	26.9		Pass
365	1.0 - 100.0% of mass 198	3595	3.66		Pass
441	Present, but less than mass 443	12098	12.3	(74.2) [b]	Pass
442	40.0 - 100.0% of mass 198	84185	85.7		Pass
443	17.0 - 23.0% of mass 442	16305	16.6	(19.4) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
EM7551-CC7526	M175664.D	10/12/21	11:46	00:13	Continuing cal 25
EM7551-CC7525	M175665.D	10/12/21	12:15	00:42	Continuing cal 25
ZZZZZZ	M175666.D	10/12/21	12:44	01:11	(unrelated sample)
ZZZZZZ	M175667.D	10/12/21	13:25	01:52	(unrelated sample)
ZZZZZZ	M175668.D	10/12/21	13:54	02:21	(unrelated sample)
ZZZZZZ	M175669.D	10/12/21	14:23	02:50	(unrelated sample)
ZZZZZZ	M175670.D	10/12/21	14:52	03:19	(unrelated sample)
OP35916-MB1	M175671.D	10/12/21	15:43	04:10	Method Blank
OP35916-BS1	M175672.D	10/12/21	16:12	04:39	Blank Spike
JD32749-4	M175673.D	10/12/21	16:41	05:08	B-101-A
ZZZZZZ	M175674.D	10/12/21	17:09	05:36	(unrelated sample)
ZZZZZZ	M175675.D	10/12/21	17:38	06:05	(unrelated sample)
ZZZZZZ	M175676.D	10/12/21	18:07	06:34	(unrelated sample)
ZZZZZZ	M175677.D	10/12/21	18:36	07:03	(unrelated sample)
ZZZZZZ	M175678.D	10/12/21	19:05	07:32	(unrelated sample)
JD32593-45	M175679.D	10/12/21	19:34	08:01	(used for QC only; not part of job JD32749)
ZZZZZZ	M175680.D	10/12/21	20:03	08:30	(unrelated sample)
ZZZZZZ	M175681.D	10/12/21	20:32	08:59	(unrelated sample)
OP35916-MS	M175682.D	10/12/21	21:00	09:27	Matrix Spike

Instrument Performance Check (DFTPP)

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample:	EM7551-DFTPP	**Injection Date:**	10/12/21
Lab File ID:	M175663.D	**Injection Time:**	11:33
Instrument ID:	GCMSM		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
OP35916-MSD	M175683.D	10/12/21	21:30	09:57	Matrix Spike Duplicate

Instrument Performance Check (DFTPP)

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample:	EZ7517-DFTPP	**Injection Date:**	09/02/21
Lab File ID:	Z151212.D	**Injection Time:**	11:16
Instrument ID:	GCMSZ		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	67019	39.8		Pass
68	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
69	Mass 69 relative abundance	81472	48.4		Pass
70	Less than 2.0% of mass 69	499	0.30	(0.61) [a]	Pass
127	40.0 - 60.0% of mass 198	84573	50.2		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	168347	100.0		Pass
199	5.0 - 9.0% of mass 198	11451	6.80		Pass
275	10.0 - 30.0% of mass 198	44512	26.4		Pass
365	1.0 - 100.0% of mass 198	7380	4.38		Pass
441	Present, but less than mass 443	23264	13.8	(82.0) [b]	Pass
442	40.0 - 100.0% of mass 198	149459	88.8		Pass
443	17.0 - 23.0% of mass 442	28381	16.9	(19.0) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
EZ7517-IC7517	Z151214.D	09/02/21	12:00	00:44	Initial cal 1
EZ7517-IC7517	Z151215.D	09/02/21	12:28	01:12	Initial cal 2
EZ7517-IC7517	Z151216.D	09/02/21	12:57	01:41	Initial cal 5
EZ7517-IC7517	Z151217.D	09/02/21	13:25	02:09	Initial cal 10
EZ7517-IC7517	Z151218.D	09/02/21	13:53	02:37	Initial cal 25
EZ7517-ICC7517	Z151219.D	09/02/21	14:21	03:05	Initial cal 50
EZ7517-IC7517	Z151220.D	09/02/21	14:50	03:34	Initial cal 80
EZ7517-IC7517	Z151221.D	09/02/21	15:19	04:03	Initial cal 100
EZ7517-ICV7517	Z151222.D	09/02/21	15:49	04:33	Initial cal verification 50
EZ7517-ICV7513	Z151224.D	09/02/21	16:45	05:29	Initial cal verification 50

Instrument Performance Check (DFTPP)

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample:	EZ7524-DFTPP	**Injection Date:**	09/09/21
Lab File ID:	Z151331.D	**Injection Time:**	11:00
Instrument ID:	GCMSZ		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	62163	35.9		Pass
68	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
69	Mass 69 relative abundance	78023	45.1		Pass
70	Less than 2.0% of mass 69	516	0.30	(0.66) [a]	Pass
127	40.0 - 60.0% of mass 198	82981	47.9		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	173171	100.0		Pass
199	5.0 - 9.0% of mass 198	11633	6.72		Pass
275	10.0 - 30.0% of mass 198	48896	28.2		Pass
365	1.0 - 100.0% of mass 198	7616	4.40		Pass
441	Present, but less than mass 443	21822	12.6	(82.7) [b]	Pass
442	40.0 - 100.0% of mass 198	139160	80.4		Pass
443	17.0 - 23.0% of mass 442	26391	15.2	(19.0) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
EZ7524-IC7524	Z151332.D	09/09/21	11:19	00:19	Initial cal 1
EZ7524-IC7524	Z151333.D	09/09/21	11:45	00:45	Initial cal 2
EZ7524-IC7524	Z151334.D	09/09/21	12:11	01:11	Initial cal 5
EZ7524-IC7524	Z151335.D	09/09/21	12:37	01:37	Initial cal 10
EZ7524-IC7524	Z151336.D	09/09/21	13:03	02:03	Initial cal 25
EZ7524-ICC7524	Z151337.D	09/09/21	13:29	02:29	Initial cal 50
EZ7524-IC7524	Z151338.D	09/09/21	13:55	02:55	Initial cal 80
EZ7524-IC7524	Z151339.D	09/09/21	14:21	03:21	Initial cal 100
EZ7524-ICV7524	Z151340.D	09/09/21	14:47	03:47	Initial cal verification 50
EZ7524-ICV7524	Z151341.D	09/09/21	15:13	04:13	Initial cal verification 50
EZ7524-ICV7524	Z151342.D	09/09/21	15:39	04:39	Initial cal verification 50
EZ7524-ICV7524	Z151343.D	09/09/21	16:05	05:05	Initial cal verification 50

Instrument Performance Check (DFTPP)

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample:	EZ7568-DFTPP	**Injection Date:**	10/10/21
Lab File ID:	Z152144.D	**Injection Time:**	16:33
Instrument ID:	GCMSZ		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	63573	35.0		Pass
68	Less than 2.0% of mass 69	664	0.37	(0.81) [a]	Pass
69	Mass 69 relative abundance	81692	45.0		Pass
70	Less than 2.0% of mass 69	263	0.14	(0.32) [a]	Pass
127	40.0 - 60.0% of mass 198	94395	52.0		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	181485	100.0		Pass
199	5.0 - 9.0% of mass 198	13524	7.45		Pass
275	10.0 - 30.0% of mass 198	43347	23.9		Pass
365	1.0 - 100.0% of mass 198	7616	4.20		Pass
441	Present, but less than mass 443	16150	8.90	(91.7) [b]	Pass
442	40.0 - 100.0% of mass 198	89933	49.6		Pass
443	17.0 - 23.0% of mass 442	17612	9.70	(19.6) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
EZ7568-CC7524	Z152145.D	10/10/21	17:02	00:29	Continuing cal 50
EZ7568-CC7517	Z152146.D	10/10/21	17:28	00:55	Continuing cal 50
OP35863-MB1	Z152147.D	10/10/21	18:00	01:27	Method Blank
OP35863-BS1	Z152148.D	10/10/21	18:26	01:53	Blank Spike
OP35863-BSD	Z152170.D	10/10/21	18:51	02:18	Blank Spike Duplicate
JD32749-1	Z152149.D	10/10/21	19:17	02:44	H-103-A
ZZZZZZ	Z152150.D	10/10/21	19:43	03:10	(unrelated sample)
ZZZZZZ	Z152151.D	10/10/21	20:08	03:35	(unrelated sample)
ZZZZZZ	Z152152.D	10/10/21	20:34	04:01	(unrelated sample)
ZZZZZZ	Z152153.D	10/10/21	21:00	04:27	(unrelated sample)
ZZZZZZ	Z152154.D	10/10/21	21:25	04:52	(unrelated sample)
ZZZZZZ	Z152155.D	10/10/21	21:51	05:18	(unrelated sample)
ZZZZZZ	Z152156.D	10/10/21	22:17	05:44	(unrelated sample)
ZZZZZZ	Z152157.D	10/10/21	22:43	06:10	(unrelated sample)
ZZZZZZ	Z152158.D	10/10/21	23:08	06:35	(unrelated sample)
ZZZZZZ	Z152159.D	10/10/21	23:34	07:01	(unrelated sample)
ZZZZZZ	Z152160.D	10/11/21	00:00	07:27	(unrelated sample)
JD32749-2	Z152161.D	10/11/21	00:26	07:53	H-103-B
JD32749-5	Z152162.D	10/11/21	00:52	08:19	B-101-B

Instrument Performance Check (DFTPP)

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample:	EZ7568-DFTPP	**Injection Date:**	10/10/21
Lab File ID:	Z152144.D	**Injection Time:**	16:33
Instrument ID:	GCMSZ		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	Z152163.D	10/11/21	01:17	08:44	(unrelated sample)
ZZZZZZ	Z152164.D	10/11/21	01:43	09:10	(unrelated sample)
OP35863-MS	Z152165.D	10/11/21	02:09	09:36	Matrix Spike
OP35863-MSD	Z152166.D	10/11/21	02:35	10:02	Matrix Spike Duplicate
JD32716-2	Z152167.D	10/11/21	03:00	10:27	(used for QC only; not part of job JD32749)
ZZZZZZ	Z152168.D	10/11/21	03:26	10:53	(unrelated sample)
ZZZZZZ	Z152169.D	10/11/21	03:52	11:19	(unrelated sample)

Surrogate Recovery Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Method: SW846 8270E **Matrix:** LEACHATE

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6
JD32749-3A	6P502271.D	41	28	98	69	74	95
JD32749-6A	6P502272.D	42	29	94	65	74	92
OP35997-BS1	6P502236.D	43	31	98	75	87	99
OP35997-LB23	6P502235.D	41	27	92	66	73	99
OP35997-LS23	6P502238.D	32	25	81	68	81	85
OP35997-MB1	6P502234.D	41	29	99	65	77	103
OP35997-MS	6P502238.D	32	25	81	68	81	85
OP35997-MSD	6P502239.D	38	29	94	64	78	70

Surrogate Compounds	Recovery Limits
S1 = 2-Fluorophenol	10-73%
S2 = Phenol-d5	10-64%
S3 = 2,4,6-Tribromophenol	31-130%
S4 = Nitrobenzene-d5	28-126%
S5 = 2-Fluorobiphenyl	26-114%
S6 = Terphenyl-d14	16-122%

Surrogate Recovery Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Method: SW846 8270E **Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3
JD32749-1	Z152149.D	28	26	27
JD32749-2	Z152161.D	44	47	48
JD32749-4	M175673.D	48	54	59
JD32749-5	Z152162.D	34	28	24
OP35863-BS1	Z152148.D	79	73	76
OP35863-BSD	Z152170.D	74	68	73
OP35863-MB1	Z152147.D	85	84	87
OP35863-MS	Z152165.D	67	72	80
OP35863-MSD	Z152166.D	55	59	66
OP35916-BS1	M175672.D	56	62	74
OP35916-MB1	M175671.D	64	69	81
OP35916-MS	M175682.D	49	52	59
OP35916-MSD	M175683.D	34	36	39

Surrogate Compounds	Recovery Limits
S1 = Nitrobenzene-d5	15-114%
S2 = 2-Fluorobiphenyl	22-104%
S3 = Terphenyl-d14	23-121%

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GLM4720-MB	LM112479.D	1	10/08/21	DFT	n/a	n/a	GLM4720

The QC reported here applies to the following samples: **Method:** SW846 8015D

JD32749-3, JD32749-6

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	10	5.0	mg/kg	

CAS No.	Surrogate Recoveries		Limits
98-08-8	aaa-Trifluorotoluene	91%	70-116%

Blank Spike Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GLM4720-BS	LM112480.D	1	10/08/21	DFT	n/a	n/a	GLM4720

The QC reported here applies to the following samples: **Method:** SW846 8015D

JD32749-3, JD32749-6

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	400	338	85	75-126

CAS No.	Surrogate Recoveries	BSP	Limits
98-08-8	aaa-Trifluorotoluene	99%	70-116%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD32749-3MS	LM112486.D	1	10/09/21	DFT	n/a	n/a	GLM4720
JD32749-3MSD	LM112487.D	1	10/09/21	DFT	n/a	n/a	GLM4720
JD32749-3	LM112485.D	1	10/09/21	DFT	n/a	n/a	GLM4720

The QC reported here applies to the following samples: **Method:** SW846 8015D

JD32749-3, JD32749-6

CAS No.	Compound	JD32749-3 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	Spike mg/kg	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND		475	369	78	475	419	88	13* [a]	68-128/11

CAS No.	Surrogate Recoveries	MS	MSD	JD32749-3	Limits
98-08-8	aaa-Trifluorotoluene	118%* [b]	105%	92%	70-116%

(a) Outside of in house control limits, but within reasonable method limits.
(b) Outside of in house control limits, but within reasonable method recovery limits.

* = Outside of Control Limits.

Surrogate Recovery Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Method: SW846 8015D **Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]
JD32749-3	LM112485.D	92
JD32749-6	LM112484.D	88
GLM4720-BS	LM112480.D	99
GLM4720-MB	LM112479.D	91
JD32749-3MS	LM112486.D	118* [b]
JD32749-3MSD	LM112487.D	105

Surrogate Compounds	Recovery Limits
S1 = aaa-Trifluorotoluene	70-116%

(a) Recovery from GC signal #1
(b) Outside of in house control limits, but within reasonable method recovery limits.

GC/LC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35999-MB1	3G133572.D	1	10/20/21	RK	10/15/21	OP35999	G3G4869

The QC reported here applies to the following samples: **Method:** SW846 8151A

JD32749-3A, JD32749-6A

CAS No.	Compound	Result	RL	MDL	Units	Q
94-75-7	2,4-D	ND	0.33	0.098	ug/l	
93-72-1	2,4,5-TP (Silvex)	0.025	0.10	0.020	ug/l	J

CAS No.	Surrogate Recoveries		Limits
19719-28-9	2,4-DCAA	193%* [a]	13-169%
19719-28-9	2,4-DCAA	80%	13-169%

(a) Outside of in house control limits.

Method Blank Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35998-MB1	6G79672.D	1	10/17/21	CP	10/15/21	OP35998	G6G2810

The QC reported here applies to the following samples: **Method:** SW846 8081B

JD32749-3A, JD32749-6A

CAS No.	Compound	Result	RL	MDL	Units	Q
58-89-9	gamma-BHC (Lindane)	ND	0.020	0.012	ug/l	
12789-03-6	Chlordane	ND	1.0	0.43	ug/l	
72-20-8	Endrin	ND	0.020	0.012	ug/l	
76-44-8	Heptachlor	ND	0.020	0.0090	ug/l	
1024-57-3	Heptachlor epoxide	ND	0.020	0.012	ug/l	
72-43-5	Methoxychlor	ND	0.040	0.013	ug/l	
8001-35-2	Toxaphene	ND	0.50	0.32	ug/l	

CAS No.	Surrogate Recoveries		Limits
877-09-8	Tetrachloro-m-xylene	83%	30-137%
877-09-8	Tetrachloro-m-xylene	79%	30-137%
2051-24-3	Decachlorobiphenyl	55%	10-137%
2051-24-3	Decachlorobiphenyl	66%	10-137%

Method Blank Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35560-MB1	XX2472493.D	1	10/17/21	TL	10/15/21	OP35560	GXX7617

The QC reported here applies to the following samples: **Method:** SW846 8082A

JD32749-2, JD32749-5

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	50	23	ug/kg	
11104-28-2	Aroclor 1221	ND	50	31	ug/kg	
11141-16-5	Aroclor 1232	ND	50	32	ug/kg	
53469-21-9	Aroclor 1242	ND	50	21	ug/kg	
12672-29-6	Aroclor 1248	ND	50	45	ug/kg	
11097-69-1	Aroclor 1254	ND	50	27	ug/kg	
11096-82-5	Aroclor 1260	ND	50	21	ug/kg	
11100-14-4	Aroclor 1268	ND	50	21	ug/kg	
37324-23-5	Aroclor 1262	ND	50	33	ug/kg	

CAS No.	Surrogate Recoveries		Limits
877-09-8	Tetrachloro-m-xylene	138%	24-152%
877-09-8	Tetrachloro-m-xylene	139%	24-152%
2051-24-3	Decachlorobiphenyl	156%	10-172%
2051-24-3	Decachlorobiphenyl	137%	10-172%

Method Blank Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35560-MB1	XX2472626.D	1	10/19/21	RK	10/15/21	OP35560	GXX7620

The QC reported here applies to the following samples: **Method:** SW846 8082A

JD32749-2, JD32749-5

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	50	23	ug/kg	
11104-28-2	Aroclor 1221	ND	50	31	ug/kg	
11141-16-5	Aroclor 1232	ND	50	32	ug/kg	
53469-21-9	Aroclor 1242	ND	50	21	ug/kg	
12672-29-6	Aroclor 1248	ND	50	45	ug/kg	
11097-69-1	Aroclor 1254	ND	50	27	ug/kg	
11096-82-5	Aroclor 1260	ND	50	21	ug/kg	
11100-14-4	Aroclor 1268	ND	50	21	ug/kg	
37324-23-5	Aroclor 1262	ND	50	33	ug/kg	

CAS No.	Surrogate Recoveries		Limits
877-09-8	Tetrachloro-m-xylene	126%	24-152%
877-09-8	Tetrachloro-m-xylene	143% [a]	24-152%
2051-24-3	Decachlorobiphenyl	159%	10-172%
2051-24-3	Decachlorobiphenyl	153%	10-172%

(a) Outside program requirements.

Method Blank Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35840-MB1	RK4913.D	1	10/23/21	TC	10/22/21	OP35840	GRK135

The QC reported here applies to the following samples: **Method:** SW846 8082A

JD32749-3, JD32749-6

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	33	16	ug/kg	
11104-28-2	Aroclor 1221	ND	33	21	ug/kg	
11141-16-5	Aroclor 1232	ND	33	21	ug/kg	
53469-21-9	Aroclor 1242	ND	33	14	ug/kg	
12672-29-6	Aroclor 1248	ND	33	30	ug/kg	
11097-69-1	Aroclor 1254	ND	33	18	ug/kg	
11096-82-5	Aroclor 1260	ND	33	14	ug/kg	
11100-14-4	Aroclor 1268	ND	33	14	ug/kg	
37324-23-5	Aroclor 1262	ND	33	22	ug/kg	

CAS No.	Surrogate Recoveries		Limits
877-09-8	Tetrachloro-m-xylene	96%	24-152%
877-09-8	Tetrachloro-m-xylene	101%	24-152%
2051-24-3	Decachlorobiphenyl	90%	10-172%
2051-24-3	Decachlorobiphenyl	85%	10-172%

Method Blank Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35840-MB1 [a]	RK5020.D	1	10/25/21	TC	10/22/21	OP35840	GRK137

The QC reported here applies to the following samples: **Method:** SW846 8082A

JD32749-3, JD32749-6

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	33	16	ug/kg	
11104-28-2	Aroclor 1221	ND	33	21	ug/kg	
11141-16-5	Aroclor 1232	ND	33	21	ug/kg	
53469-21-9	Aroclor 1242	ND	33	14	ug/kg	
12672-29-6	Aroclor 1248	ND	33	30	ug/kg	
11097-69-1	Aroclor 1254	ND	33	18	ug/kg	
11096-82-5	Aroclor 1260	ND	33	14	ug/kg	
11100-14-4	Aroclor 1268	ND	33	14	ug/kg	
37324-23-5	Aroclor 1262	ND	33	22	ug/kg	

CAS No.	Surrogate Recoveries		Limits
877-09-8	Tetrachloro-m-xylene	98%	24-152%
877-09-8	Tetrachloro-m-xylene	106%	24-152%
2051-24-3	Decachlorobiphenyl	114%	10-172%
2051-24-3	Decachlorobiphenyl	116%	10-172%

(a) Had TBA cleanup.

Method Blank Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35889-MB1	ZZ101153.D	1	10/10/21	TL	10/09/21	OP35889	GZZ3733

The QC reported here applies to the following samples: **Method:** SW846 8015D

JD32749-3, JD32749-6

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	10	3.4	mg/kg	

CAS No.	Surrogate Recoveries		Limits
84-15-1	o-Terphenyl	73%	18-132%
438-22-2	5a-Androstane	74%	22-134%

Leachate Blank Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35999-LB23	3G133574.D	1	10/20/21	RK	10/15/21	OP35999	G3G4869

The QC reported here applies to the following samples: **Method:** SW846 8151A

JD32749-3A, JD32749-6A

CAS No.	Compound	Result	RL	MDL	Units	Q
94-75-7	2,4-D	ND	3.3	0.98	ug/l	
93-72-1	2,4,5-TP (Silvex)	ND	1.0	0.20	ug/l	

CAS No.	Surrogate Recoveries		Limits
19719-28-9	2,4-DCAA	116%	13-169%
19719-28-9	2,4-DCAA	64%	13-169%

Leachate Blank Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35998-LB23	6G79690.D	1	10/18/21	CP	10/15/21	OP35998	G6G2810

The QC reported here applies to the following samples: **Method:** SW846 8081B

JD32749-3A, JD32749-6A

CAS No.	Compound	Result	RL	MDL	Units	Q
58-89-9	gamma-BHC (Lindane)	ND	0.067	0.040	ug/l	
12789-03-6	Chlordane	ND	3.3	1.4	ug/l	
72-20-8	Endrin	ND	0.067	0.040	ug/l	
76-44-8	Heptachlor	ND	0.067	0.030	ug/l	
1024-57-3	Heptachlor epoxide	ND	0.067	0.040	ug/l	
72-43-5	Methoxychlor	ND	0.13	0.045	ug/l	
8001-35-2	Toxaphene	ND	1.7	1.1	ug/l	

CAS No.	Surrogate Recoveries		Limits
877-09-8	Tetrachloro-m-xylene	125%	30-137%
877-09-8	Tetrachloro-m-xylene	113%	30-137%
2051-24-3	Decachlorobiphenyl	104%	10-137%
2051-24-3	Decachlorobiphenyl	121%	10-137%

Blank Spike Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35999-BS1	3G133573.D	1	10/20/21	RK	10/15/21	OP35999	G3G4869

The QC reported here applies to the following samples: **Method:** SW846 8151A

JD32749-3A, JD32749-6A

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
94-75-7	2,4-D	1.33	1.3	97	36-158
93-72-1	2,4,5-TP (Silvex)	0.267	0.24	90 [a]	44-158

CAS No.	Surrogate Recoveries	BSP	Limits
19719-28-9	2,4-DCAA	195%* [b]	13-169%
19719-28-9	2,4-DCAA	88%	13-169%

(a) Reported from 1st signal. 2nd signal used for confirmation.
(b) Outside of in house control limits.

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35998-BS1	6G79673.D	1	10/17/21	CP	10/15/21	OP35998	G6G2810

The QC reported here applies to the following samples: **Method:** SW846 8081B

JD32749-3A, JD32749-6A

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
58-89-9	gamma-BHC (Lindane)	0.5	0.47	94	37-178
72-20-8	Endrin	0.5	0.48	96	45-182
76-44-8	Heptachlor	0.5	0.47	94	26-172
1024-57-3	Heptachlor epoxide	0.5	0.49	98 [a]	43-173
72-43-5	Methoxychlor	0.5	0.49	98	40-192

CAS No.	Surrogate Recoveries	BSP	Limits
877-09-8	Tetrachloro-m-xylene	100%	30-137%
877-09-8	Tetrachloro-m-xylene	90%	30-137%
2051-24-3	Decachlorobiphenyl	55%	10-137%
2051-24-3	Decachlorobiphenyl	63%	10-137%

(a) Reported from the 2nd signal. The %D of the CCV on the 1st signal exceeds the method criteria of 20%, so it being used for confirmation only.

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35560-BS1	XX2472494.D	1	10/17/21	TL	10/15/21	OP35560	GXX7617

The QC reported here applies to the following samples: **Method:** SW846 8082A

JD32749-2, JD32749-5

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
12674-11-2	Aroclor 1016	200	275	138	39-169
11104-28-2	Aroclor 1221		ND		50-150
11141-16-5	Aroclor 1232		ND		50-150
53469-21-9	Aroclor 1242		ND		50-150
12672-29-6	Aroclor 1248		ND		50-150
11097-69-1	Aroclor 1254		ND		50-150
11096-82-5	Aroclor 1260	200	241	121 [a]	41-171
11100-14-4	Aroclor 1268		ND		50-150
37324-23-5	Aroclor 1262		ND		50-150

CAS No.	Surrogate Recoveries	BSP	Limits
877-09-8	Tetrachloro-m-xylene	103%	24-152%
877-09-8	Tetrachloro-m-xylene	104%	24-152%
2051-24-3	Decachlorobiphenyl	108%	10-172%
2051-24-3	Decachlorobiphenyl	105%	10-172%

(a) Reported from the 2nd signal. The %D of the CCV on the 1st signal exceeds the method criteria of 20%, so it being used for confirmation only.

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35560-BS1	XX2472627.D	1	10/19/21	RK	10/15/21	OP35560	GXX7620

The QC reported here applies to the following samples: **Method:** SW846 8082A

JD32749-2, JD32749-5

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
12674-11-2	Aroclor 1016	200	172	86	39-169
11104-28-2	Aroclor 1221		ND		50-150
11141-16-5	Aroclor 1232		ND		50-150
53469-21-9	Aroclor 1242		ND		50-150
12672-29-6	Aroclor 1248		ND		50-150
11097-69-1	Aroclor 1254		ND		50-150
11096-82-5	Aroclor 1260	200	231	116	41-171
11100-14-4	Aroclor 1268		ND		50-150
37324-23-5	Aroclor 1262		ND		50-150

CAS No.	Surrogate Recoveries	BSP	Limits
877-09-8	Tetrachloro-m-xylene	96%	24-152%
877-09-8	Tetrachloro-m-xylene	107%	24-152%
2051-24-3	Decachlorobiphenyl	111%	10-172%
2051-24-3	Decachlorobiphenyl	108%	10-172%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35840-BS1	RK4914.D	1	10/23/21	TC	10/22/21	OP35840	GRK135
OP35840-BSD	RK5021.D	1	10/25/21	TC	10/22/21	OP35840	GRK137

The QC reported here applies to the following samples: **Method:** SW846 8082A

JD32749-3, JD32749-6

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
12674-11-2	Aroclor 1016	133	154	115 [a]	180	135	16	39-169/28
11104-28-2	Aroclor 1221		ND		ND		nc	50-150/30
11141-16-5	Aroclor 1232		ND		ND		nc	50-150/30
53469-21-9	Aroclor 1242		ND		ND		nc	50-150/30
12672-29-6	Aroclor 1248		ND		ND		nc	50-150/30
11097-69-1	Aroclor 1254		ND		ND		nc	50-150/30
11096-82-5	Aroclor 1260	133	179	134	185	139	21	41-171/29
11100-14-4	Aroclor 1268		ND		ND		nc	50-150/30
37324-23-5	Aroclor 1262		ND		ND		nc	50-150/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
877-09-8	Tetrachloro-m-xylene	94%	108%	24-152%
877-09-8	Tetrachloro-m-xylene	98%	118%	24-152%
2051-24-3	Decachlorobiphenyl	95%	125%	10-172%
2051-24-3	Decachlorobiphenyl	84%	122%	10-172%

(a) Reported from the 2nd signal. The %D of the CCV on the 1st signal exceeds the method criteria of 20%, so it being used for confirmation only.

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35889-BS1	ZZ101154.D	1	10/10/21	TL	10/09/21	OP35889	GZZ3733
OP35889-BSD	ZZ101155.D	1	10/10/21	TL	10/09/21	OP35889	GZZ3733

The QC reported here applies to the following samples: **Method:** SW846 8015D

JD32749-3, JD32749-6

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	BSD mg/kg	BSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	100	73.9	74	61.5	62	18	44-120/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
84-15-1	o-Terphenyl	80%	68%	18-132%
438-22-2	5a-Androstane	78%	67%	22-134%

9.4.2

9

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35999-MS	3G133602.D	1	10/21/21	RK	10/15/21	OP35999	G3G4870
OP35999-MSD	3G133603.D	1	10/21/21	RK	10/15/21	OP35999	G3G4870
JD32818-1A	3G133601.D	1	10/21/21	RK	10/15/21	OP35999	G3G4870

The QC reported here applies to the following samples: **Method:** SW846 8151A

JD32749-3A, JD32749-6A

CAS No.	Compound	JD32818-1A ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
94-75-7	2,4-D	ND		13.3	12.8	96	13.3	13.0	97	2	35-196/60
93-72-1	2,4,5-TP (Silvex)	ND		2.67	2.1	79	2.67	2.1	79	0	10-226/52

CAS No.	Surrogate Recoveries	MS	MSD	JD32818-1A	Limits
19719-28-9	2,4-DCAA	120%	127%	127%	13-169%
19719-28-9	2,4-DCAA	73%	74%	69%	13-169%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35998-MS	6G79675.D	1	10/18/21	CP	10/15/21	OP35998	G6G2810
OP35998-MSD	6G79676.D	1	10/18/21	CP	10/15/21	OP35998	G6G2810
JD32818-1A	6G79674.D	1	10/18/21	CP	10/15/21	OP35998	G6G2810

The QC reported here applies to the following samples: **Method:** SW846 8081B

JD32749-3A, JD32749-6A

CAS No.	Compound	JD32818-1A ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
58-89-9	gamma-BHC (Lindane)	ND		1.67	1.7	102	1.67	1.6	96	6	39-160/97
12789-03-6	Chlordane	ND			ND			ND		nc	81-123/10
72-20-8	Endrin	ND		1.67	1.8	108	1.67	1.7	102	6	43-169/95
76-44-8	Heptachlor	ND		1.67	1.6	96	1.67	1.7	102	6	35-152/102
1024-57-3	Heptachlor epoxide	ND		1.67	1.6	96	1.67	1.5	90	6	42-159/96
72-43-5	Methoxychlor	ND		1.67	1.8	108	1.67	1.7	102	6	47-170/99
8001-35-2	Toxaphene	ND			ND			ND		nc	50-150/8

CAS No.	Surrogate Recoveries	MS	MSD	JD32818-1A	Limits
877-09-8	Tetrachloro-m-xylene	99%	103%	112%	30-137%
877-09-8	Tetrachloro-m-xylene	89%	93%	107%	30-137%
2051-24-3	Decachlorobiphenyl	80%	73%	92%	10-137%
2051-24-3	Decachlorobiphenyl	91%	79%	115%	10-137%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35560-MS	XX2472629.D	1	10/19/21	RK	10/15/21	OP35560	GXX7620
OP35560-MSD	XX2472630.D	1	10/19/21	RK	10/15/21	OP35560	GXX7620
FA88588-60	XX2472628.D	1	10/19/21	RK	10/15/21	OP35560	GXX7620

The QC reported here applies to the following samples: **Method:** SW846 8082A

JD32749-2, JD32749-5

CAS No.	Compound	FA88588-60 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
12674-11-2	Aroclor 1016	64 U		247	464	188	259	410	158	12	14-200/59
11104-28-2	Aroclor 1221	64 U			ND			ND		nc	50-150/30
11141-16-5	Aroclor 1232	64 U			ND			ND		nc	50-150/30
53469-21-9	Aroclor 1242	64 U			ND			ND		nc	50-150/11
12672-29-6	Aroclor 1248	64 U			ND			ND		nc	50-150/25
11097-69-1	Aroclor 1254	89.3			156			120		26	50-150/37
11096-82-5	Aroclor 1260	64 U		247	363	147	259	329	127	10	10-200/59
11100-14-4	Aroclor 1268	64 U			ND			ND		nc	50-150/30
37324-23-5	Aroclor 1262	64 U			ND			ND		nc	50-150/10

CAS No.	Surrogate Recoveries	MS	MSD	FA88588-60	Limits
877-09-8	Tetrachloro-m-xylene	121%	106%	126%	24-152%
877-09-8	Tetrachloro-m-xylene	136%	118%	131% [a]	24-152%
2051-24-3	Decachlorobiphenyl	143%	123%	145%	10-172%
2051-24-3	Decachlorobiphenyl	136%	121%	146%	10-172%

(a) Outside program requirements due to matrix interference.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35840-MS	RK4916.D	1	10/23/21	TC	10/22/21	OP35840	GRK135
OP35840-MSD	RK4917.D	1	10/23/21	TC	10/22/21	OP35840	GRK135
JD32716-1	RK4915.D	1	10/23/21	TC	10/22/21	OP35840	GRK135

The QC reported here applies to the following samples: **Method:** SW846 8082A

JD32749-3, JD32749-6

CAS No.	Compound	JD32716-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
12674-11-2	Aroclor 1016	ND		161	194	121	146	143	98	30	14-200/59
11104-28-2	Aroclor 1221	ND			ND			ND		nc	50-150/30
11141-16-5	Aroclor 1232	ND			ND			ND		nc	50-150/30
53469-21-9	Aroclor 1242	ND			ND			ND		nc	50-150/11
12672-29-6	Aroclor 1248	ND			ND			ND		nc	50-150/25
11097-69-1	Aroclor 1254	ND			ND			ND		nc	50-150/37
11096-82-5	Aroclor 1260	ND		161	169	105	146	122	84	32	10-200/59
11100-14-4	Aroclor 1268	ND			ND			ND		nc	50-150/30
37324-23-5	Aroclor 1262	ND			ND			ND		nc	50-150/10

CAS No.	Surrogate Recoveries	MS	MSD	JD32716-1	Limits
877-09-8	Tetrachloro-m-xylene	115%	89%	58%	24-152%
877-09-8	Tetrachloro-m-xylene	119%	93%	59%	24-152%
2051-24-3	Decachlorobiphenyl	82%	66%	44%	10-172%
2051-24-3	Decachlorobiphenyl	100%	76%	50%	10-172%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35889-MS	ZZ101157.D	1	10/10/21	TL	10/09/21	OP35889	GZZ3733
OP35889-MSD	ZZ101158.D	1	10/10/21	TL	10/09/21	OP35889	GZZ3733
JD32867-1	ZZ101156.D	1	10/10/21	TL	10/09/21	OP35889	GZZ3733

The QC reported here applies to the following samples: **Method:** SW846 8015D

JD32749-3, JD32749-6

CAS No.	Compound	JD32867-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	Spike mg/kg	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	10.7		89.8	76.0	73	91.4	64.1	58	17	10-145/50

CAS No.	Surrogate Recoveries	MS	MSD	JD32867-1	Limits
84-15-1	o-Terphenyl	69%	64%	58%	18-132%
438-22-2	5a-Androstane	68%	63%	57%	22-134%

* = Outside of Control Limits.

Leachate Spike Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35999-LS23	3G133602.D	1	10/21/21	RK	10/15/21	OP35999	G3G4870
JD32818-1A	3G133601.D	1	10/21/21	RK	10/15/21	OP35999	G3G4870

The QC reported here applies to the following samples: **Method:** SW846 8151A

JD32749-3A, JD32749-6A

CAS No.	Compound	JD32818-1A ug/l	Q	Spike ug/l	LS ug/l	LS %	Limits
94-75-7	2,4-D	ND		13.3	12.8	96	35-196
93-72-1	2,4,5-TP (Silvex)	ND		2.67	2.1	79	10-226

CAS No.	Surrogate Recoveries	LS	JD32818-1A	Limits
19719-28-9	2,4-DCAA	120%	127%	13-169%
19719-28-9	2,4-DCAA	73%	69%	13-169%

* = Outside of Control Limits.

Leachate Spike Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP35998-LS23	6G79675.D	1	10/18/21	CP	10/15/21	OP35998	G6G2810
JD32818-1A	6G79674.D	1	10/18/21	CP	10/15/21	OP35998	G6G2810

The QC reported here applies to the following samples: **Method:** SW846 8081B

JD32749-3A, JD32749-6A

CAS No.	Compound	JD32818-1A ug/l	Q	Spike ug/l	LS ug/l	LS %	Limits
58-89-9	gamma-BHC (Lindane)	ND		1.67	1.7	102	39-160
12789-03-6	Chlordane	ND			ND		81-123
72-20-8	Endrin	ND		1.67	1.8	108	43-169
76-44-8	Heptachlor	ND		1.67	1.6	96	35-152
1024-57-3	Heptachlor epoxide	ND		1.67	1.6	96	42-159
72-43-5	Methoxychlor	ND		1.67	1.8	108	47-170
8001-35-2	Toxaphene	ND			ND		50-150

CAS No.	Surrogate Recoveries	LS	JD32818-1A	Limits
877-09-8	Tetrachloro-m-xylene	99%	112%	30-137%
877-09-8	Tetrachloro-m-xylene	89%	107%	30-137%
2051-24-3	Decachlorobiphenyl	80%	92%	10-137%
2051-24-3	Decachlorobiphenyl	91%	115%	10-137%

* = Outside of Control Limits.

Surrogate Recovery Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Method: SW846 8151A **Matrix:** LEACHATE

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]	S1 [b]
JD32749-3A	3G133614.D	104	58
JD32749-6A	3G133615.D	110	62
OP35999-BS1	3G133573.D	195* [c]	88
OP35999-LB23	3G133574.D	116	64
OP35999-LS23	3G133602.D	120	73
OP35999-MB1	3G133572.D	193* [c]	80
OP35999-MS	3G133602.D	120	73
OP35999-MSD	3G133603.D	127	74

Surrogate Compounds	Recovery Limits
S1 = 2,4-DCAA	13-169%

(a) Recovery from GC signal #2
(b) Recovery from GC signal #1
(c) Outside of in house control limits.

Surrogate Recovery Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Method: SW846 8081B **Matrix:** LEACHATE

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]	S1 [b]	S2 [a]	S2 [b]
JD32749-3A	6G79694.D	94	89	69	99
JD32749-6A	6G79695.D	111	104	94	115
OP35998-BS1	6G79673.D	100	90	55	63
OP35998-LB23	6G79690.D	125	113	104	121
OP35998-LS23	6G79675.D	99	89	80	91
OP35998-MB1	6G79672.D	83	79	55	66
OP35998-MS	6G79675.D	99	89	80	91
OP35998-MSD	6G79676.D	103	93	73	79

Surrogate Compounds	Recovery Limits
S1 = Tetrachloro-m-xylene	30-137%
S2 = Decachlorobiphenyl	10-137%

(a) Recovery from GC signal #1
(b) Recovery from GC signal #2

Surrogate Recovery Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Method: SW846 8082A **Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]	S1 [b]	S2 [a]	S2 [b]
JD32749-2	XX2472515A.D	100	104	103	114
JD32749-3	RK4936.D	76	81	58	147
JD32749-5	XX2472515B.D	99	107	96	108
JD32749-6	RK4997.D	89	96	79	142
OP35560-BS1	XX2472494.D	103	104	108	105
OP35560-BS1	XX2472627.D	96	107	111	108
OP35560-MB1	XX2472493.D	138	139	156	137
OP35560-MB1	XX2472626.D	126	143 [c]	159	153
OP35560-MS	XX2472629.D	121	136	143	136
OP35560-MSD	XX2472630.D	106	118	123	121
OP35840-BS1	RK4914.D	94	98	95	84
OP35840-BSD	RK5021.D	108	118	125	122
OP35840-MB1	RK4913.D	96	101	90	85
OP35840-MB1	RK5020.D	98	106	114	116
OP35840-MS	RK4916.D	115	119	82	100
OP35840-MSD	RK4917.D	89	93	66	76

Surrogate Compounds	Recovery Limits
S1 = Tetrachloro-m-xylene	24-152%
S2 = Decachlorobiphenyl	10-172%

(a) Recovery from GC signal #1
(b) Recovery from GC signal #2
(c) Outside program requirements.

Surrogate Recovery Summary

Job Number: JD32749
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Method: SW846 8015D **Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]	S2 [a]
JD32749-3	ZZ101167.D	63	61
JD32749-6	ZZ101166.D	78	76
OP35889-BS1	ZZ101154.D	80	78
OP35889-BSD	ZZ101155.D	68	67
OP35889-MB1	ZZ101153.D	73	74
OP35889-MS	ZZ101157.D	69	68
OP35889-MSD	ZZ101158.D	64	63

Surrogate Compounds	Recovery Limits
S1 = o-Terphenyl	18-132%
S2 = 5a-Androstane	22-134%

(a) Recovery from GC signal #1

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD32749
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29085 Methods: SW846 7471B
Matrix Type: SOLID Units: mg/kg

Prep Date: 10/08/21

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.033	.0057	.015	0.0049	<0.033

Associated samples MP29085: JD32749-1, JD32749-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD32749
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29085
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 10/08/21

Metal	JD32675-31 Original	MS	Spikelot HGPWS1	% Rec	QC Limits
Mercury	0.63	1.0	0.351	105.6	80-120

Associated samples MP29085: JD32749-1, JD32749-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD32749
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29085 Methods: SW846 7471B
Matrix Type: SOLID Units: mg/kg

Prep Date: 10/08/21

Metal	JD32675-31 Original	MSD	Spikelot HGPWS1	% Rec	MSD RPD	QC Limit
Mercury	0.63	0.90	0.35	77.1N(a)	10.5	20

Associated samples MP29085: JD32749-1, JD32749-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD32749
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29085
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 10/08/21

Metal	BSP Result	Spikelot HGPWS1	% Rec	QC Limits
Mercury	0.37	0.333	111.0	80-120

Associated samples MP29085: JD32749-1, JD32749-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD32749
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29086 Methods: SW846 7471B
Matrix Type: SOLID Units: mg/kg

Prep Date: 10/08/21

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.033	.0057	.015	0.0056	<0.033

Associated samples MP29086: JD32749-4, JD32749-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD32749
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29086
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 10/08/21

Metal	JD32691-5 Original	MS	Spikelot HGPWS1	% Rec	QC Limits
Mercury	0.0085	0.40	0.362	108.1	80-120

Associated samples MP29086: JD32749-4, JD32749-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD32749
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29086 Methods: SW846 7471B
Matrix Type: SOLID Units: mg/kg

Prep Date: 10/08/21

Metal	JD32691-5 Original	MSD	Spikelot HGPWS1	% Rec	MSD RPD	QC Limit
Mercury	0.0085	0.43	0.363	116.2	7.2	20

Associated samples MP29086: JD32749-4, JD32749-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD32749
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29086
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date:			10/08/21				10/08/21	
Metal	BSP Result	Spikelot HGPWS1	% Rec	QC Limits	LCS Result	Spikelot HGLC540108	% Rec	QC Limits
Mercury	0.39	0.333	117.0	80-120	27.1	27.9	97.1	71-124

Associated samples MP29086: JD32749-4, JD32749-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD32749
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29086
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 10/08/21

Metal	LCS Result	Spikelot HGLC540108	% Rec	QC Limits
Mercury	26.9	27.9	96.4	71-124

Associated samples MP29086: JD32749-4, JD32749-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD32749
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29112
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 10/09/21

Metal	RL	IDL	MDL	MB raw	final
Aluminum	50	.92	8.1		
Antimony	2.0	.28	.41		
Arsenic	2.0	.26	.28	-0.010	<2.0
Barium	20	.02	1.9	0.090	<20
Beryllium	0.20	.02	.08		
Bismuth	2.0	.25	.52		
Boron	10	.18	3.7		
Cadmium	0.50	.04	.07	0.040	<0.50
Calcium	500	1.3	21		
Chromium	1.0	.07	.37	0.12	<1.0
Cobalt	5.0	.06	.28		
Copper	2.5	.07	.84		
Iron	50	.33	19		
Lead	2.0	.2	.41	0.060	<2.0
Lithium	5.0	.15	.92		
Magnesium	500	2.5	14		
Manganese	1.5	.01	.41		
Molybdenum	2.0	.06	.32		
Nickel	4.0	.08	.35		
Phosphorus	20	.7	3.3		
Potassium	1000	3.5	32		
Selenium	2.0	.36	.65	-0.030	<2.0
Silicon	20	.22	11		
Silver	0.50	.06	.17	0.040	<0.50
Sodium	1000	1.4	78		
Strontium	5.0	.01	.18		
Sulfur	10	.37	3.9		
Thallium	1.0	.52	.58		
Tin	20	.14	3.8		
Titanium	1.0	.08	.34		
Tungsten	5.0	.13	1.8		
Vanadium	5.0	.05	.19		
Zinc	5.0	.03	2.3		

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD32749
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29112 Methods: SW846 6010D
Matrix Type: SOLID Units: mg/kg

Prep Date: 10/09/21

Metal	RL	IDL	MDL	MB raw	final
Zirconium	2.0	.05	.54		

Associated samples MP29112: JD32749-1, JD32749-2, JD32749-4, JD32749-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD32749
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29112
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 10/09/21

Metal	JD32675-7 Original	MS	Spikelot MPSPK2	% Rec	QC Limits
Aluminum	anr				
Antimony	anr				
Arsenic	12.5	207	224	86.8	75-125
Barium	210	440	224	102.7	75-125
Beryllium	anr				
Bismuth					
Boron					
Cadmium	1.3	204	224	90.5	75-125
Calcium	anr				
Chromium	14.7	215	224	89.4	75-125
Cobalt	anr				
Copper	anr				
Iron	anr				
Lead	455	627	224	76.8	75-125
Lithium					
Magnesium	anr				
Manganese	anr				
Molybdenum					
Nickel	anr				
Phosphorus					
Potassium	anr				
Selenium	0.46	198	224	88.2	75-125
Silicon					
Silver	0.44	27.0	28	94.9	75-125
Sodium	anr				
Strontium					
Sulfur					
Thallium	anr				
Tin					
Titanium					
Tungsten					
Vanadium	anr				
Zinc	anr				

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD32749
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29112
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 10/09/21

Metal	JD32675-7 Original MS	Spikelot MPSPK2	% Rec	QC Limits
Zirconium				

Associated samples MP29112: JD32749-1, JD32749-2, JD32749-4, JD32749-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD32749
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29112
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 10/09/21

Metal	JD32675-7 Original	MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Aluminum	anr					
Antimony	anr					
Arsenic	12.5	206	222	87.3	0.5	20
Barium	210	410	222	90.2	7.1	20
Beryllium	anr					
Bismuth						
Boron						
Cadmium	1.3	201	222	90.1	1.5	20
Calcium	anr					
Chromium	14.7	211	222	88.5	1.9	20
Cobalt	anr					
Copper	anr					
Iron	anr					
Lead	455	689	222	105.5	9.4	20
Lithium						
Magnesium	anr					
Manganese	anr					
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium	anr					
Selenium	0.46	194	222	87.3	2.0	20
Silicon						
Silver	0.44	26.6	27.7	94.4	1.5	20
Sodium	anr					
Strontium						
Sulfur						
Thallium	anr					
Tin						
Titanium						
Tungsten						
Vanadium	anr					
Zinc	anr					

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD32749
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29112
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 10/09/21

Metal	JD32675-7 Original MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Zirconium					

Associated samples MP29112: JD32749-1, JD32749-2, JD32749-4, JD32749-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD32749
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29112
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 10/09/21

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	180	198	90.9	80-120
Barium	186	198	93.9	80-120
Beryllium	anr			
Bismuth				
Boron				
Cadmium	187	198	94.4	80-120
Calcium	anr			
Chromium	185	198	93.4	80-120
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	194	198	98.0	80-120
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium	anr			
Selenium	184	198	92.9	80-120
Silicon				
Silver	24.8	24.8	100.2	80-120
Sodium	anr			
Strontium				
Sulfur				
Thallium	anr			
Tin				
Titanium				
Tungsten				
Vanadium	anr			
Zinc	anr			

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD32749
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29112
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 10/09/21

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Zirconium				

Associated samples MP29112: JD32749-1, JD32749-2, JD32749-4, JD32749-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD32749
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29112
Matrix Type: SOLID

Methods: SW846 6010D
Units: ug/l

Prep Date: 10/09/21

Metal	JD32675-7 Original	SDL 1:5	%DIF	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	111	112	1.0	0-10
Barium	1880	1950	3.9	0-10
Beryllium	anr			
Bismuth				
Boron				
Cadmium	12.0	11.5	4.2	0-10
Calcium	anr			
Chromium	131	139	5.9	0-10
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	4070	4240	4.2	0-10
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium	anr			
Selenium	4.10	0.00	100.0(a)	0-10
Silicon				
Silver	3.90	6.50	66.7 (a)	0-10
Sodium	anr			
Strontium				
Sulfur				
Thallium	anr			
Tin				
Titanium				
Tungsten				
Vanadium	anr			
Zinc	anr			

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD32749
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29112 Methods: SW846 6010D
Matrix Type: SOLID Units: ug/l

Prep Date: 10/09/21

Metal	JD32675-7 Original	SDL 1:5	%DIF	QC Limits
Zirconium				

Associated samples MP29112: JD32749-1, JD32749-2, JD32749-4, JD32749-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

POST DIGESTATE SPIKE SUMMARY

Login Number: JD32749
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29112
Matrix Type: SOLID

Methods: SW846 6010D
Units: ug/l

Prep Date: 10/09/21

Metal	Sample ml	Final ml	JD32675-7 Raw	Corr.**	PS ug/l	Spike ml	Spike ug/ml	Spike ug/l	% Rec	QC Limits
Aluminum										
Antimony										
Arsenic										
Barium										
Beryllium										
Bismuth										
Boron										
Cadmium										
Calcium										
Chromium										
Cobalt										
Copper										
Iron										
Lead										
Lithium										
Magnesium										
Manganese										
Molybdenum										
Nickel										
Phosphorus										
Potassium										
Selenium										
Silicon										
Silver										
Sodium										
Strontium										
Sulfur										
Thallium										
Tin										
Titanium										
Tungsten										
Vanadium										
Zinc										

POST DIGESTATE SPIKE SUMMARY

Login Number: JD32749
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29112
Matrix Type: SOLID

Methods: SW846 6010D
Units: ug/l

Prep Date: 10/09/21

Metal	Sample ml	Final ml	JD32675-7 Raw	Corr.**	PS ug/l	Spike ml	Spike ug/ml	Spike ug/l	% Rec	QC Limits
Zirconium										

Associated samples MP29112: JD32749-1, JD32749-2, JD32749-4, JD32749-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(**) Corr. sample result = Raw * (sample volume / final volume)
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD32749
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29118
Matrix Type: LEACHATE

Methods: SW846 6010D
Units: mg/l

Prep Date: 10/10/21

Metal	RL	IDL	MDL	MB raw	final
Aluminum	0.20	.016	.046		
Antimony	0.10	.0025	.0047		
Arsenic	0.10	.002	.0028	0.00030	<0.10
Barium	0.20	.0004	.013	0.0093	<0.20
Beryllium	0.0020	.0001	.0005		
Bismuth	0.020	.0036	.004		
Boron	0.10	.0019	.063		
Cadmium	0.0040	.0004	.001	0.0	<0.0040
Calcium	5.0	.0056	.099		
Chromium	0.010	.0005	.002	0.0015	<0.010
Cobalt	0.050	.0005	.0026		
Copper	0.010	.001	.0059		
Iron	0.10	.011	.032		
Lead	0.10	.0012	.0018	0.012	<0.10
Lithium	0.050	.0023	.0073		
Magnesium	5.0	.065	.14		
Manganese	0.015	.0002	.0014		
Molybdenum	0.020	.0004	.0036		
Nickel	0.010	.0003	.0017		
Phosphorus	0.050	.0041	.018		
Potassium	10	.055	.2		
Selenium	0.10	.0035	.0049	0.0022	<0.10
Silicon	0.20	.0016	.1		
Silver	0.010	.0011	.0019	0.00010	<0.010
Strontium	0.010	.0001	.001		
Sulfur	0.050	.0044	.045		
Thallium	0.10	.0025	.0018		
Tin	0.010	.001	.0037		
Titanium	0.010	.0004	.0025		
Tungsten	0.050	.0028	.04		
Vanadium	0.050	.0006	.0018		
Zinc	0.020	.0001	.0069		
Zirconium	0.010	.0004	.0041		

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD32749
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29118 Methods: SW846 6010D
Matrix Type: LEACHATE Units: mg/l

Prep Date: 10/10/21

Metal	RL	IDL	MDL	MB raw	final

Associated samples MP29118: JD32749-3A, JD32749-6A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD32749
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29118
Matrix Type: LEACHATE

Methods: SW846 6010D
Units: mg/l

Prep Date: 10/10/21

Metal	JD32818-1A Original	MS	Spikelot MPSPK2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic	0.0041	2.1	2.0	104.8	75-125
Barium	0.58	2.5	2.0	96.0	75-125
Beryllium	anr				
Bismuth					
Boron					
Cadmium	0.0018	2.1	2.0	104.9	75-125
Chromium	0.012	1.9	2.0	94.4	75-125
Cobalt					
Copper	anr				
Iron					
Lead	0.0068	2.0	2.0	99.7	75-125
Lithium					
Magnesium					
Manganese					
Molybdenum					
Nickel	anr				
Phosphorus					
Potassium					
Selenium	0.0	2.1	2.0	105.0	75-125
Silver	0.0042	0.28	0.25	110.3	75-125
Strontium					
Sulfur					
Thallium					
Tin					
Titanium					
Tungsten					
Vanadium					
Zinc	anr				
Zirconium					

Associated samples MP29118: JD32749-3A, JD32749-6A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD32749
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29118
Matrix Type: LEACHATE

Methods: SW846 6010D
Units: mg/l

Prep Date: 10/10/21

Metal	JD32818-1A Original MS	Spikelot MPSPK2	% Rec	QC Limits

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD32749
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29118
Matrix Type: LEACHATE

Methods: SW846 6010D
Units: mg/l

Prep Date: 10/10/21

Metal	JD32818-1A Original	MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	0.0041	2.1	2.0	104.8	0.0	20
Barium	0.58	2.6	2.0	101.0	3.9	20
Beryllium	anr					
Bismuth						
Boron						
Cadmium	0.0018	2.1	2.0	104.9	0.0	20
Chromium	0.012	1.9	2.0	94.4	0.0	20
Cobalt						
Copper	anr					
Iron						
Lead	0.0068	2.0	2.0	99.7	0.0	20
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium						
Selenium	0.0	2.2	2.0	110.0	4.7	20
Silver	0.0042	0.28	0.25	110.3	0.0	20
Strontium						
Sulfur						
Thallium						
Tin						
Titanium						
Tungsten						
Vanadium						
Zinc	anr					
Zirconium						

Associated samples MP29118: JD32749-3A, JD32749-6A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD32749
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29118
Matrix Type: LEACHATE

Methods: SW846 6010D
Units: mg/l

Prep Date: 10/10/21

Metal	JD32818-1A Original MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD32749
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29118
Matrix Type: LEACHATE

Methods: SW846 6010D
Units: mg/l

Prep Date: 10/10/21

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	2.0	2.0	100.0	80-120
Barium	2.0	2.0	100.0	80-120
Beryllium	anr			
Bismuth				
Boron				
Cadmium	2.1	2.0	105.0	80-120
Calcium				
Chromium	2.0	2.0	100.0	80-120
Cobalt				
Copper	anr			
Iron				
Lead	2.0	2.0	100.0	80-120
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium				
Selenium	2.1	2.0	105.0	80-120
Silicon				
Silver	0.27	0.25	108.0	80-120
Strontium				
Sulfur				
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium				
Zinc	anr			
Zirconium				

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD32749
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29118
Matrix Type: LEACHATE

Methods: SW846 6010D
Units: mg/l

Prep Date: 10/10/21

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits

Associated samples MP29118: JD32749-3A, JD32749-6A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD32749
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29118
Matrix Type: LEACHATE

Methods: SW846 6010D
Units: ug/l

Prep Date: 10/10/21

Metal	JD32818-1A Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	4.10	0.00	100.0(a)	0-10
Barium	575	582	1.2	0-10
Beryllium	anr			
Bismuth				
Boron				
Cadmium	1.80	0.00	100.0(a)	0-10
Calcium				
Chromium	11.9	12.2	2.5	0-10
Cobalt				
Copper	anr			
Iron				
Lead	6.80	8.80	29.4 (a)	0-10
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium				
Selenium	0.00	0.00	NC	0-10
Silicon				
Silver	4.20	6.30	50.0 (a)	0-10
Strontium				
Sulfur				
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium				
Zinc	anr			
Zirconium				

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD32749
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29118 Methods: SW846 6010D
Matrix Type: LEACHATE Units: ug/l

Prep Date: 10/10/21

	JD32818-1A		QC
Metal	Original SDL 1:5	%DIF	Limits

Associated samples MP29118: JD32749-3A, JD32749-6A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD32749
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29158 Methods: SW846 7470A
Matrix Type: LEACHATE Units: mg/l

Prep Date: 10/11/21

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.00020	.000034	.000095	-0.000026	<0.00020

Associated samples MP29158: JD32749-3A, JD32749-6A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD32749
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29158
Matrix Type: LEACHATE

Methods: SW846 7470A
Units: mg/l

Prep Date: 10/11/21

Metal	JD32818-1A Original	MS	Spikelot HGPW3	% Rec	QC Limits
Mercury	0.0	0.0021	0.0020	105.0	75-125

Associated samples MP29158: JD32749-3A, JD32749-6A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD32749
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29158
Matrix Type: LEACHATE

Methods: SW846 7470A
Units: mg/l

Prep Date: 10/11/21

Metal	JD32818-1A Original	MSD	Spikelot HGPW3	% Rec	MSD RPD	QC Limit
Mercury	0.0	0.0021	0.0020	105.0	0.0	20

Associated samples MP29158: JD32749-3A, JD32749-6A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD32749
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

QC Batch ID: MP29158
Matrix Type: LEACHATE

Methods: SW846 7470A
Units: mg/l

Prep Date: 10/11/21

Metal	BSP Result	Spikelot HGPW3	% Rec	QC Limits
Mercury	0.0022	0.0020	110.0	80-120

Associated samples MP29158: JD32749-3A, JD32749-6A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JD32749
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Cyanide Reactivity	GP36382/GN22833	10	0.0	mg/kg	100	4.66	4.7	.25-27%
Sulfide Reactivity	GP36380/GN22850	100	0.0	mg/kg	608	343	56.4	42-107%

Associated Samples:
Batch GP36380: JD32749-3, JD32749-6
Batch GP36382: JD32749-3, JD32749-6
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JD32749
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Corrosivity as pH	GN22716	JD32987-1A	su	7.6	7.93	4.4	0-5%
Cyanide Reactivity	GP36382/GN22833	JD32997-1	mg/kg	0.0	0.0	0.0	0-20%
Ignitability (Flashpoint)	GN22715	JD32749-3	Deg. F	>200	>200	0.0	0-10%
Paint Filter Test	GN22713	JD32749-3	ml/100g	0.0	0.0	0.0	0-10%
Solids, Percent	GN22504	JD32749-1	%	94.9	95.1	0.2	0-5%
Sulfide Reactivity	GP36380/GN22850	JD32997-1	mg/kg	0.0	0.0	0.0	0-20%

Associated Samples:
Batch GN22504: JD32749-1, JD32749-2, JD32749-4, JD32749-5
Batch GN22661: JD32749-3, JD32749-6
Batch GN22713: JD32749-3, JD32749-6
Batch GN22715: JD32749-3, JD32749-6
Batch GN22716: JD32749-3, JD32749-6
Batch GP36380: JD32749-3, JD32749-6
Batch GP36382: JD32749-3, JD32749-6
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JD32749
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge, Route 12, VT

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Sulfide Reactivity	GP36380/GN22850	JD32997-1	mg/kg	0.0	717	374	52.2	20-82%

Associated Samples:
Batch GP36380: JD32749-3, JD32749-6
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

APPENDIX C

GROUNDWATER LABORATORY ANALYTICAL REPORT

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Atlas Technical Consultants, LLC

Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH

280BS02090

SGS Job Number: JD33214

Sampling Date: 10/05/21

Report to:

Atlas Technical Consultants, LLC
51 Knight Lane
Williston, VT 05495
erik.urch@oneatlas.com

ATTN: Erik Urch

Total number of pages in report: 62

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Mike Earp
General Manager

Client Service contact: Marie Meidhof 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (ANAB L2248)

This report shall not be reproduced, except in its entirety, without the written approval of SGS.
Test results relate only to samples analyzed.

SGS is the sole authority for authorizing edits or modifications to this document.
Unauthorized modification of this report is strictly prohibited.
Review standard terms at: http://www.sgs.com/en/terms-and-conditions

Please share your ideas about how we can serve you better at:
EHS.US.CustomerCare@sgs.com

Table of Contents

Sections: 1 2 3 4 5 6 7

Section 1: Sample Summary **3**
Section 2: Case Narrative/Conformance Summary **4**
Section 3: Summary of Hits **6**
Section 4: Sample Results **7**
4.1: JD33214-1: B-101 MW 8
4.2: JD33214-2: B-104 MW 12
4.3: JD33214-3: DUP-2 16
4.4: JD33214-4: TRIP BLANK-NB 20
Section 5: Misc. Forms **23**
5.1: Chain of Custody 24
Section 6: MS Volatiles - QC Data Summaries **27**
6.1: Method Blank Summary 28
6.2: Blank Spike Summary 31
6.3: Matrix Spike/Matrix Spike Duplicate Summary 34
6.4: Instrument Performance Checks (BFB) 37
6.5: Surrogate Recovery Summaries 39
Section 7: Metals Analysis - QC Data Summaries **40**
7.1: Prep QC MP29240: Hg 41
7.2: Prep QC MP29242: Hg 45
7.3: Prep QC MP29243: Hg 49
7.4: Prep QC MP29250: As,Ba,Cd,Cr,Pb,Se,Ag 53

Sample Summary

Atlas Technical Consultants, LLC

Job No: JD33214

Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH
Project No: 280BS02090

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
This report contains results reported as ND = Not detected. The following applies:							
Organics ND = Not detected above the MDL							
JD33214-1	10/05/21	11:32	AG	10/07/21	AQ	Ground Water	B-101 MW
JD33214-2	10/05/21	12:52	AG	10/07/21	AQ	Ground Water	B-104 MW
JD33214-3	10/05/21	13:02	AG	10/07/21	AQ	Ground Water	DUP-2
JD33214-4	10/05/21	13:02	AG	10/07/21	AQ	Trip Blank Water	TRIP BLANK-NB

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	Atlas Technical Consultants, LLC	**Job No**	JD33214
Site:	Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, B	**Report Date**	10/18/2021 11:03:34 A

On 10/07/2021, 3 Sample(s), 1 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc. at a maximum corrected temperature of 3 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. Job Number of JD33214 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Compounds qualified as out of range in the continuing calibration summary report are acceptable as per method requirements when there is a high bias but the sample result is non-detect.

MS Volatiles By Method SW846 8260D

Matrix: AQ **Batch ID:** V2D8673

- All samples were analyzed within the recommended method holding time.
- Sample(s) JD33141-1MS, JD33141-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Matrix Spike Recovery(s) for Vinyl Acetate are outside control limits. Outside control limits due to matrix interference.
- Matrix Spike Duplicate Recovery(s) for Vinyl Acetate are outside control limits. Outside control limits due to matrix interference.
- JD33214-3 for 2-Hexanone: Associated CCV outside of control limits high, sample was ND.
- JD33214-1 for 2-Hexanone: Associated CCV outside of control limits high, sample was ND.
- V2D8673-BS for 2-Butanone (MEK): High percent recovery and no associated positive reported in the QC batch.
- JD33214-1 for Vinyl Acetate: Associated CCV outside of control limits high, sample was ND.
- JD33214-2 for 2-Hexanone: Associated CCV outside of control limits high, sample was ND.
- JD33214-2 for Acetone: Associated CCV outside of control limits high, sample was ND.
- V2D8673-BS for Acetone: High percent recovery and no associated positive reported in the QC batch.
- JD33214-2 for Dichlorodifluoromethane: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- JD33214-4 for Acetone: Associated CCV outside of control limits high, sample was ND.
- JD33214-3 for Acetone: Associated CCV outside of control limits high, sample was ND.
- JD33214-3 for Vinyl Acetate: Associated CCV outside of control limits high, sample was ND.
- JD33214-1 for Acetone: Associated CCV outside of control limits high, sample was ND.
- JD33214-2 for Vinyl Acetate: Associated CCV outside of control limits high, sample was ND.
- JD33214-4 for Vinyl Acetate: Associated CCV outside of control limits high, sample was ND.
- JD33214-4 for Dichlorodifluoromethane: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- JD33214-4 for 2-Hexanone: Associated CCV outside of control limits high, sample was ND.
- V2D8673-BS for Vinyl Acetate: Outside control limits. This compound is not reported in associated samples.
- JD33214-3 for Dichlorodifluoromethane: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- JD33214-1 for Dichlorodifluoromethane: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

Metals Analysis By Method SW846 6010D

Matrix:	AQ	Batch ID:	MP29250

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD32821-1MS, JD32821-1MSD, JD32821-1SDL were used as the QC samples for metals.
- RPD(s) for Serial Dilution for Arsenic are outside control limits for sample MP29250-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Metals Analysis By Method SW846 7470A

Matrix:	AQ	Batch ID:	MP29240

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD32998-2MS, JD32998-2MSD were used as the QC samples for metals.

Matrix:	AQ	Batch ID:	MP29242

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD33177-1MS, JD33177-1MSD were used as the QC samples for metals.

Matrix:	AQ	Batch ID:	MP29243

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD33177-11MS, JD33177-11MSD were used as the QC samples for metals.

SGS North America Inc. certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS North America Inc. is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS North America Inc indicated via signature on the report cover

Summary of Hits

Job Number: JD33214
Account: Atlas Technical Consultants, LLC
Project: Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH
Collected: 10/05/21

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JD33214-1	**B-101 MW**					
No hits reported in this sample.						
JD33214-2	**B-104 MW**					
Benzene		0.56	0.50	0.43	ug/l	SW846 8260D
Isopropylbenzene		1.3	1.0	0.65	ug/l	SW846 8260D
Naphthalene		8.7	5.0	2.5	ug/l	SW846 8260D
Toluene		0.57 J	1.0	0.53	ug/l	SW846 8260D
1,2,4-Trimethylbenzene		29.4	2.0	1.0	ug/l	SW846 8260D
1,3,5-Trimethylbenzene		6.5	2.0	1.0	ug/l	SW846 8260D
m,p-Xylene		62.5	1.0	0.78	ug/l	SW846 8260D
Xylene (total)		62.5	1.0	0.59	ug/l	SW846 8260D
Arsenic		4.4	3.0		ug/l	SW846 6010D
JD33214-3	**DUP-2**					
Benzene		0.66	0.50	0.43	ug/l	SW846 8260D
Isopropylbenzene		1.3	1.0	0.65	ug/l	SW846 8260D
Naphthalene		10.0	5.0	2.5	ug/l	SW846 8260D
Toluene		0.67 J	1.0	0.53	ug/l	SW846 8260D
1,2,4-Trimethylbenzene		32.6	2.0	1.0	ug/l	SW846 8260D
1,3,5-Trimethylbenzene		7.0	2.0	1.0	ug/l	SW846 8260D
m,p-Xylene		69.3	1.0	0.78	ug/l	SW846 8260D
Xylene (total)		69.3	1.0	0.59	ug/l	SW846 8260D
Arsenic		4.2	3.0		ug/l	SW846 6010D
JD33214-4	**TRIP BLANK-NB**					
No hits reported in this sample.						

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	B-101 MW		
Lab Sample ID:	JD33214-1	**Date Sampled:**	10/05/21
Matrix:	AQ - Ground Water	**Date Received:**	10/07/21
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2D199341.D	1	10/13/21 19:05	JS	n/a	n/a	V2D8673
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone [a]	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
108-86-1	Bromobenzene	ND	1.0	0.55	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	0.52	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	0.62	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	0.69	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	0.63	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	0.60	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane [b]	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-101 MW		
Lab Sample ID:	JD33214-1	**Date Sampled:**	10/05/21
Matrix:	AQ - Ground Water	**Date Received:**	10/07/21
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	1.0	0.43	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	0.52	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	0.42	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	0.54	ug/l	
591-78-6	2-Hexanone [a]	ND	5.0	2.0	ug/l	
74-88-4	Iodomethane	ND	2.0	1.6	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	0.66	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
74-95-3	Methylene bromide	ND	1.0	0.48	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
91-20-3	Naphthalene	ND	5.0	2.5	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	0.60	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	0.70	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-05-4	Vinyl Acetate [a]	ND	10	2.1	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		85-118%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-101 MW		
Lab Sample ID:	JD33214-1	**Date Sampled:**	10/05/21
Matrix:	AQ - Ground Water	**Date Received:**	10/07/21
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	107%		80-121%
2037-26-5	Toluene-D8	102%		80-120%
460-00-4	4-Bromofluorobenzene	99%		80-120%

(a) Associated CCV outside of control limits high, sample was ND.
(b) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-101 MW		
Lab Sample ID:	JD33214-1	**Date Sampled:**	10/05/21
Matrix:	AQ - Ground Water	**Date Received:**	10/07/21
		Percent Solids:	n/a
Project:	Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	< 3.0	3.0	ug/l	1	10/15/21	10/15/21	ND	SW846 6010D [2]	SW846 3010A [4]
Barium	< 200	200	ug/l	1	10/15/21	10/15/21	ND	SW846 6010D [2]	SW846 3010A [4]
Cadmium	< 3.0	3.0	ug/l	1	10/15/21	10/15/21	ND	SW846 6010D [2]	SW846 3010A [4]
Chromium	< 10	10	ug/l	1	10/15/21	10/15/21	ND	SW846 6010D [2]	SW846 3010A [4]
Lead	< 3.0	3.0	ug/l	1	10/15/21	10/15/21	ND	SW846 6010D [2]	SW846 3010A [4]
Mercury	< 0.20	0.20	ug/l	1	10/15/21	10/15/21	LM	SW846 7470A [1]	SW846 7470A [3]
Selenium	< 10	10	ug/l	1	10/15/21	10/15/21	ND	SW846 6010D [2]	SW846 3010A [4]
Silver	< 10	10	ug/l	1	10/15/21	10/15/21	ND	SW846 6010D [2]	SW846 3010A [4]

(1) Instrument QC Batch: MA51273
(2) Instrument QC Batch: MA51291
(3) Prep QC Batch: MP29243
(4) Prep QC Batch: MP29250

RL = Reporting Limit

Report of Analysis

Client Sample ID:	B-104 MW		
Lab Sample ID:	JD33214-2	**Date Sampled:**	10/05/21
Matrix:	AQ - Ground Water	**Date Received:**	10/07/21
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2D199342.D	1	10/13/21 19:34	JS	n/a	n/a	V2D8673
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone [a]	ND	10	3.1	ug/l	
71-43-2	Benzene	0.56	0.50	0.43	ug/l	
108-86-1	Bromobenzene	ND	1.0	0.55	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	0.52	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	0.62	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	0.69	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	0.63	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	0.60	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane [b]	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-104 MW		
Lab Sample ID:	JD33214-2	**Date Sampled:**	10/05/21
Matrix:	AQ - Ground Water	**Date Received:**	10/07/21
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	1.0	0.43	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	0.52	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	0.42	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	0.54	ug/l	
591-78-6	2-Hexanone [a]	ND	5.0	2.0	ug/l	
74-88-4	Iodomethane	ND	2.0	1.6	ug/l	
98-82-8	Isopropylbenzene	1.3	1.0	0.65	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	0.66	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
74-95-3	Methylene bromide	ND	1.0	0.48	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
91-20-3	Naphthalene	8.7	5.0	2.5	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	0.60	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	0.57	1.0	0.53	ug/l	J
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	0.70	ug/l	
95-63-6	1,2,4-Trimethylbenzene	29.4	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	6.5	2.0	1.0	ug/l	
108-05-4	Vinyl Acetate [a]	ND	10	2.1	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	62.5	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	62.5	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	109%		85-118%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-104 MW		
Lab Sample ID:	JD33214-2	**Date Sampled:**	10/05/21
Matrix:	AQ - Ground Water	**Date Received:**	10/07/21
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	107%		80-121%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	101%		80-120%

(a) Associated CCV outside of control limits high, sample was ND.
(b) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	B-104 MW		
Lab Sample ID:	JD33214-2	**Date Sampled:**	10/05/21
Matrix:	AQ - Ground Water	**Date Received:**	10/07/21
		Percent Solids:	n/a
Project:	Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	4.4	3.0	ug/l	1	10/15/21	10/15/21	ND	SW846 6010D [2]	SW846 3010A [4]
Barium	< 200	200	ug/l	1	10/15/21	10/15/21	ND	SW846 6010D [2]	SW846 3010A [4]
Cadmium	< 3.0	3.0	ug/l	1	10/15/21	10/15/21	ND	SW846 6010D [2]	SW846 3010A [4]
Chromium	< 10	10	ug/l	1	10/15/21	10/15/21	ND	SW846 6010D [2]	SW846 3010A [4]
Lead	< 3.0	3.0	ug/l	1	10/15/21	10/15/21	ND	SW846 6010D [2]	SW846 3010A [4]
Mercury	< 0.20	0.20	ug/l	1	10/15/21	10/15/21	LM	SW846 7470A [1]	SW846 7470A [3]
Selenium	< 10	10	ug/l	1	10/15/21	10/15/21	ND	SW846 6010D [2]	SW846 3010A [4]
Silver	< 10	10	ug/l	1	10/15/21	10/15/21	ND	SW846 6010D [2]	SW846 3010A [4]

(1) Instrument QC Batch: MA51273
(2) Instrument QC Batch: MA51291
(3) Prep QC Batch: MP29240
(4) Prep QC Batch: MP29250

RL = Reporting Limit

Report of Analysis

Client Sample ID:	DUP-2		
Lab Sample ID:	JD33214-3	**Date Sampled:**	10/05/21
Matrix:	AQ - Ground Water	**Date Received:**	10/07/21
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2D199343.D	1	10/13/21 20:04	JS	n/a	n/a	V2D8673
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone [a]	ND	10	3.1	ug/l	
71-43-2	Benzene	0.66	0.50	0.43	ug/l	
108-86-1	Bromobenzene	ND	1.0	0.55	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	0.52	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	0.62	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	0.69	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	0.63	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	0.60	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane [b]	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DUP-2		
Lab Sample ID:	JD33214-3	**Date Sampled:**	10/05/21
Matrix:	AQ - Ground Water	**Date Received:**	10/07/21
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	1.0	0.43	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	0.52	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	0.42	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	0.54	ug/l	
591-78-6	2-Hexanone [a]	ND	5.0	2.0	ug/l	
74-88-4	Iodomethane	ND	2.0	1.6	ug/l	
98-82-8	Isopropylbenzene	1.3	1.0	0.65	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	0.66	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
74-95-3	Methylene bromide	ND	1.0	0.48	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
91-20-3	Naphthalene	10.0	5.0	2.5	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	0.60	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	0.67	1.0	0.53	ug/l	J
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	0.70	ug/l	
95-63-6	1,2,4-Trimethylbenzene	32.6	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	7.0	2.0	1.0	ug/l	
108-05-4	Vinyl Acetate [a]	ND	10	2.1	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	69.3	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	69.3	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		85-118%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DUP-2		
Lab Sample ID:	JD33214-3	**Date Sampled:**	10/05/21
Matrix:	AQ - Ground Water	**Date Received:**	10/07/21
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	108%		80-121%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	100%		80-120%

(a) Associated CCV outside of control limits high, sample was ND.
(b) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DUP-2		
Lab Sample ID:	JD33214-3	**Date Sampled:**	10/05/21
Matrix:	AQ - Ground Water	**Date Received:**	10/07/21
		Percent Solids:	n/a
Project:	Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	4.2	3.0	ug/l	1	10/15/21	10/15/21	ND	SW846 6010D [2]	SW846 3010A [4]
Barium	< 200	200	ug/l	1	10/15/21	10/15/21	ND	SW846 6010D [2]	SW846 3010A [4]
Cadmium	< 3.0	3.0	ug/l	1	10/15/21	10/15/21	ND	SW846 6010D [2]	SW846 3010A [4]
Chromium	< 10	10	ug/l	1	10/15/21	10/15/21	ND	SW846 6010D [2]	SW846 3010A [4]
Lead	< 3.0	3.0	ug/l	1	10/15/21	10/15/21	ND	SW846 6010D [2]	SW846 3010A [4]
Mercury	< 0.20	0.20	ug/l	1	10/15/21	10/15/21	LM	SW846 7470A [1]	SW846 7470A [3]
Selenium	< 10	10	ug/l	1	10/15/21	10/15/21	ND	SW846 6010D [2]	SW846 3010A [4]
Silver	< 10	10	ug/l	1	10/15/21	10/15/21	ND	SW846 6010D [2]	SW846 3010A [4]

(1) Instrument QC Batch: MA51273
(2) Instrument QC Batch: MA51291
(3) Prep QC Batch: MP29242
(4) Prep QC Batch: MP29250

RL = Reporting Limit

Report of Analysis

Client Sample ID:	TRIP BLANK-NB		
Lab Sample ID:	JD33214-4	**Date Sampled:**	10/05/21
Matrix:	AQ - Trip Blank Water	**Date Received:**	10/07/21
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2D199336.D	1	10/13/21 16:39	JS	n/a	n/a	V2D8673
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone [a]	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
108-86-1	Bromobenzene	ND	1.0	0.55	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	0.52	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	0.62	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	0.69	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	0.63	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	0.60	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane [b]	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TRIP BLANK-NB		
Lab Sample ID:	JD33214-4	**Date Sampled:**	10/05/21
Matrix:	AQ - Trip Blank Water	**Date Received:**	10/07/21
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	1.0	0.43	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	0.52	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	0.42	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	0.54	ug/l	
591-78-6	2-Hexanone [a]	ND	5.0	2.0	ug/l	
74-88-4	Iodomethane	ND	2.0	1.6	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	0.66	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
74-95-3	Methylene bromide	ND	1.0	0.48	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
91-20-3	Naphthalene	ND	5.0	2.5	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	0.60	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	0.70	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-05-4	Vinyl Acetate [a]	ND	10	2.1	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		85-118%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TRIP BLANK-NB		
Lab Sample ID:	JD33214-4	**Date Sampled:**	10/05/21
Matrix:	AQ - Trip Blank Water	**Date Received:**	10/07/21
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	106%		80-121%
2037-26-5	Toluene-D8	103%		80-120%
460-00-4	4-Bromofluorobenzene	100%		80-120%

(a) Associated CCV outside of control limits high, sample was ND.
(b) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

5

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

GW
TB

CHAIN OF CUSTODY

Page 1 of 1

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

SGS

EHSA-QAC-0023-04-FORM-Standard COC

FED-EX Tracking #:
Bottle Order Control #: RR-09821-68
SGS Quote #:
SGS Job #: JD33214

Client / Reporting Information

Company Name: Atlas
Street Address: 51 Knight Lane
City: Williston State: VT Zip:
Project Contact: Erik.Urch@meatlas.com E-mail:
Phone #: 802-338-5826
Sampler(s) Name(s): Alex Gagnon Phone #:

Project Information

Project Name: Northfield Bridge - Hardesty & Hanover
Street: 6 Bedford Farms Dr. Suite 111
City: Bedford State: NH
Project #: 280 BS 02090
Client Purchase Order #:
Project Manager: Erik Urch

Billing Information (If different from Report to)

Company Name:
Street Address:
City State Zip:
Attention:

Requested Analysis

VB20 MASTD
HMB

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB - Field Blank
EB-Equipment Blank
RB - Rinse Blank
TB - Trip Blank

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Grab (G) Comp (C)	Source Chlorinated (Y/N)	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO_3	H_2SO_4	NONE	DI Water	MEOH	ENCORE	pH Check (Lab Use Only)	LAB USE ONLY
1	B-101 MW		10/05/21	1132	AG	G	N	GW	4	3		1						X X	
2	B-104 MW			1252					4	3		1						X X	
~~4~~	~~DUP-1~~			1139					4	3		1						X X AG 10/5/21	
3	DUP-2			1302					4	3		1						X X	
4	Trip Blank - NB			0800				TB	3	3								X	

Initial Assessment KG 3B
Label Verification

Turn Around Time (Business Days)

Approved By (SGS PM): / Date:

- [X] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [ ] Other

All data available via Lablink
* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [X] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] MA MCP Criteria
- [ ] CT RCP Criteria
- [ ] State Forms
- [ ] EDD Format
- [ ] DOD-QSM5

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

http://www.sgs.com/en/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by:	Date / Time:	Received By:	Relinquished By:	Date / Time:	Received By:
1	Alex Gagnon	10/5/21	FedEx	Fed Ex	10/7/21 1555	
2						
3						
4						
5						

Custody Seal # Intact Not intact ! Absent
Therm ID: See Sample Receipt Summary
On Ice
Cooler Temp. °C 3.9

TP

JD33214: Chain of Custody
Page 1 of 3

SGS Sample Receipt Summary

Job Number: JD33214 **Client:** ATLAS TECHNICAL CONSULTANTS, LLC **Project:** NORTHFIELD BRIDGE PROJECT, VT

Date / Time Received: 10/7/2021 3:55:00 PM **Delivery Method:** FEDEX **Airbill #'s:**

Cooler Temps (Raw Measured) °C: Cooler 1: (3.9);

Cooler Temps (Corrected) °C: Cooler 1: (3.0);

Cooler Security	Y	N		Y	N
1. Custody Seals Present:	☑	☐	3. COC Present:	☑	☐
2. Custody Seals Intact:	☑	☐	4. Smpl Dates/Time OK	☑	☐

Cooler Temperature	Y	N
1. Temp criteria achieved:	☑	☐
2. Cooler temp verification:	IR Gun	
3. Cooler media:	Ice (Bag)	
4. No. Coolers:	1	

Quality Control Preservation	Y	N	N/A
1. Trip Blank present / cooler:	☑	☐	☐
2. Trip Blank listed on COC:	☑	☐	☐
3. Samples preserved properly:	☑	☐	
4. VOCs headspace free:	☑	☐	☐

Sample Integrity - Documentation	Y	N
1. Sample labels present on bottles:	☑	☐
2. Container labeling complete:	☑	☐
3. Sample container label / COC agree:	☑	☐

Sample Integrity - Condition	Y	N
1. Sample recvd within HT:	☑	☐
2. All containers accounted for:	☑	☐
3. Condition of sample:	Intact	

Sample Integrity - Instructions	Y	N	N/A
1. Analysis requested is clear:	☑	☐	
2. Bottles received for unspecified tests	☐	☑	
3. Sufficient volume recvd for analysis:	☑	☐	
4. Compositing instructions clear:	☐	☐	☑
5. Filtering instructions clear:	☐	☐	☑

Test Strip Lot #s: pH 1-12: 231619 pH 12+: 203117A Other: (Specify)

Comments: 1.) The COC states there is 3 trip blanks however received only 1x40ml. Please Confirm.

SM089-02 Rev. Date 12/1/16

Responded to by: Kelly Ramos

Response Date: 10/12/2021

Please proceed with limited volume

JD33214: Chain of Custody
Page 3 of 3

MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: JD33214
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2D8673-MB	2D199328.D	1	10/13/21	JS	n/a	n/a	V2D8673

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD33214-1, JD33214-2, JD33214-3, JD33214-4

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	3.1	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
108-86-1	Bromobenzene	ND	1.0	0.55	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.48	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.45	ug/l	
75-25-2	Bromoform	ND	1.0	0.63	ug/l	
74-83-9	Bromomethane	ND	2.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	0.52	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	0.62	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	0.69	ug/l	
75-15-0	Carbon disulfide	ND	2.0	0.46	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
75-00-3	Chloroethane	ND	1.0	0.73	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
74-87-3	Chloromethane	ND	1.0	0.76	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	0.63	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	0.60	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.53	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.56	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.56	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.51	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	0.43	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	0.52	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	0.42	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.47	ug/l	

Method Blank Summary

Job Number: JD33214
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2D8673-MB	2D199328.D	1	10/13/21	JS	n/a	n/a	V2D8673

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD33214-1, JD33214-2, JD33214-3, JD33214-4

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	0.54	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.0	ug/l	
74-88-4	Iodomethane	ND	2.0	1.6	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	0.66	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.9	ug/l	
74-95-3	Methylene bromide	ND	1.0	0.48	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
91-20-3	Naphthalene	ND	5.0	2.5	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	0.60	ug/l	
100-42-5	Styrene	ND	1.0	0.49	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.60	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.65	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.53	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.40	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	0.70	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-05-4	Vinyl Acetate	ND	10	2.1	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

Method Blank Summary

Job Number: JD33214
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2D8673-MB	2D199328.D	1	10/13/21	JS	n/a	n/a	V2D8673

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD33214-1, JD33214-2, JD33214-3, JD33214-4

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	108%	85-118%
17060-07-0	1,2-Dichloroethane-D4	107%	80-121%
2037-26-5	Toluene-D8	107%	80-120%
460-00-4	4-Bromofluorobenzene	98%	80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

Blank Spike Summary

Job Number: JD33214
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2D8673-BS	2D199326.D	1	10/13/21	JS	n/a	n/a	V2D8673

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD33214-1, JD33214-2, JD33214-3, JD33214-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	200	290	145* [a]	63-137
71-43-2	Benzene	50	48.3	97	78-117
108-86-1	Bromobenzene	50	49.0	98	82-121
74-97-5	Bromochloromethane	50	51.4	103	83-124
75-27-4	Bromodichloromethane	50	53.2	106	83-123
75-25-2	Bromoform	50	52.9	106	80-140
74-83-9	Bromomethane	50	46.0	92	26-167
78-93-3	2-Butanone (MEK)	200	276	138* [a]	73-135
104-51-8	n-Butylbenzene	50	53.4	107	78-126
135-98-8	sec-Butylbenzene	50	50.0	100	78-122
98-06-6	tert-Butylbenzene	50	49.4	99	77-122
75-15-0	Carbon disulfide	50	44.3	89	60-131
56-23-5	Carbon tetrachloride	50	49.8	100	75-127
108-90-7	Chlorobenzene	50	46.8	94	83-115
75-00-3	Chloroethane	50	48.4	97	61-135
67-66-3	Chloroform	50	51.4	103	76-118
74-87-3	Chloromethane	50	49.8	100	46-144
95-49-8	o-Chlorotoluene	50	49.8	100	80-120
106-43-4	p-Chlorotoluene	50	49.9	100	80-117
96-12-8	1,2-Dibromo-3-chloropropane	50	56.2	112	75-135
124-48-1	Dibromochloromethane	50	50.3	101	84-128
106-93-4	1,2-Dibromoethane	50	52.8	106	82-129
95-50-1	1,2-Dichlorobenzene	50	49.9	100	85-117
541-73-1	1,3-Dichlorobenzene	50	47.5	95	83-116
106-46-7	1,4-Dichlorobenzene	50	49.6	99	82-115
75-71-8	Dichlorodifluoromethane	50	39.2	78	49-153
75-34-3	1,1-Dichloroethane	50	55.8	112	75-122
107-06-2	1,2-Dichloroethane	50	49.0	98	74-116
75-35-4	1,1-Dichloroethene	50	45.5	91	68-129
156-59-2	cis-1,2-Dichloroethene	50	51.1	102	78-120
156-60-5	trans-1,2-Dichloroethene	50	51.0	102	74-125
78-87-5	1,2-Dichloropropane	50	50.0	100	80-120
142-28-9	1,3-Dichloropropane	50	51.7	103	82-116
594-20-7	2,2-Dichloropropane	50	55.7	111	70-128
563-58-6	1,1-Dichloropropene	50	51.6	103	75-121
10061-01-5	cis-1,3-Dichloropropene	50	54.8	110	84-123

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JD33214
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2D8673-BS	2D199326.D	1	10/13/21	JS	n/a	n/a	V2D8673

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD33214-1, JD33214-2, JD33214-3, JD33214-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
10061-02-6	trans-1,3-Dichloropropene	50	54.6	109	84-124
100-41-4	Ethylbenzene	50	47.0	94	80-115
87-68-3	Hexachlorobutadiene	50	54.2	108	68-137
591-78-6	2-Hexanone	200	261	131	74-132
74-88-4	Iodomethane	50	47.0	94	10-200
98-82-8	Isopropylbenzene	50	47.1	94	79-120
99-87-6	p-Isopropyltoluene	50	49.2	98	80-122
1634-04-4	Methyl Tert Butyl Ether	50	53.4	107	77-124
108-10-1	4-Methyl-2-pentanone(MIBK)	200	238	119	77-129
74-95-3	Methylene bromide	50	51.9	104	83-121
75-09-2	Methylene chloride	50	54.3	109	74-125
91-20-3	Naphthalene	50	59.3	119	73-138
103-65-1	n-Propylbenzene	50	50.8	102	78-117
100-42-5	Styrene	50	47.4	95	83-122
630-20-6	1,1,1,2-Tetrachloroethane	50	48.5	97	82-125
79-34-5	1,1,2,2-Tetrachloroethane	50	57.4	115	78-122
127-18-4	Tetrachloroethene	50	46.0	92	75-125
108-88-3	Toluene	50	48.0	96	80-115
87-61-6	1,2,3-Trichlorobenzene	50	60.9	122	73-140
120-82-1	1,2,4-Trichlorobenzene	50	58.9	118	77-137
71-55-6	1,1,1-Trichloroethane	50	52.0	104	77-124
79-00-5	1,1,2-Trichloroethane	50	52.9	106	83-118
79-01-6	Trichloroethene	50	46.4	93	80-123
75-69-4	Trichlorofluoromethane	50	48.8	98	71-134
96-18-4	1,2,3-Trichloropropane	50	49.5	99	80-121
95-63-6	1,2,4-Trimethylbenzene	50	47.7	95	81-119
108-67-8	1,3,5-Trimethylbenzene	50	48.2	96	79-120
108-05-4	Vinyl Acetate	50	73.2	146* [b]	77-131
75-01-4	Vinyl chloride	50	48.8	98	56-138
	m,p-Xylene	100	93.6	94	81-118
95-47-6	o-Xylene	50	46.2	92	81-119
1330-20-7	Xylene (total)	150	140	93	81-118

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JD33214
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2D8673-BS	2D199326.D	1	10/13/21	JS	n/a	n/a	V2D8673

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD33214-1, JD33214-2, JD33214-3, JD33214-4

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	107%	85-118%
17060-07-0	1,2-Dichloroethane-D4	107%	80-121%
2037-26-5	Toluene-D8	98%	80-120%
460-00-4	4-Bromofluorobenzene	102%	80-120%

(a) High percent recovery and no associated positive reported in the QC batch.
(b) Outside control limits. This compound is not reported in associated samples.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JD33214
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD33141-1MS	2D199333.D	5	10/13/21	JS	n/a	n/a	V2D8673
JD33141-1MSD	2D199334.D	5	10/13/21	JS	n/a	n/a	V2D8673
JD33141-1 [a]	2D199337.D	5	10/13/21	JS	n/a	n/a	V2D8673

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD33214-1, JD33214-2, JD33214-3, JD33214-4

CAS No.	Compound	JD33141-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		1000	729	73	1000	722	72	1	52-133/18
71-43-2	Benzene	ND		250	230	92	250	225	90	2	55-129/11
108-86-1	Bromobenzene	ND		250	241	96	250	233	93	3	73-120/11
74-97-5	Bromochloromethane	ND		250	247	99	250	239	96	3	75-122/10
75-27-4	Bromodichloromethane	ND		250	236	94	250	238	95	1	74-123/11
75-25-2	Bromoform	ND		250	245	98	250	244	98	0	69-135/12
74-83-9	Bromomethane	ND		250	219	88	250	217	87	1	11-167/43
78-93-3	2-Butanone (MEK)	ND		1000	980	98	1000	987	99	1	64-131/15
104-51-8	n-Butylbenzene	ND		250	247	99	250	248	99	0	69-130/11
135-98-8	sec-Butylbenzene	ND		250	237	95	250	233	93	2	70-125/12
98-06-6	tert-Butylbenzene	ND		250	236	94	250	234	94	1	68-125/12
75-15-0	Carbon disulfide	ND		250	204	82	250	203	81	0	54-137/15
56-23-5	Carbon tetrachloride	ND		250	222	89	250	220	88	1	68-132/11
108-90-7	Chlorobenzene	ND		250	222	89	250	218	87	2	71-119/10
75-00-3	Chloroethane	ND		250	225	90	250	221	88	2	50-146/18
67-66-3	Chloroform	5.3		250	235	92	250	229	89	3	67-120/11
74-87-3	Chloromethane	ND		250	216	86	250	215	86	0	42-146/17
95-49-8	o-Chlorotoluene	ND		250	241	96	250	238	95	1	71-120/12
106-43-4	p-Chlorotoluene	ND		250	237	95	250	232	93	2	71-117/11
96-12-8	1,2-Dibromo-3-chloropropane	ND		250	260	104	250	266	106	2	65-130/15
124-48-1	Dibromochloromethane	ND		250	237	95	250	233	93	2	74-125/10
106-93-4	1,2-Dibromoethane	ND		250	247	99	250	246	98	0	74-125/9
95-50-1	1,2-Dichlorobenzene	ND		250	233	93	250	235	94	1	73-117/10
541-73-1	1,3-Dichlorobenzene	ND		250	225	90	250	224	90	0	73-117/10
106-46-7	1,4-Dichlorobenzene	ND		250	232	93	250	231	92	0	70-117/10
75-71-8	Dichlorodifluoromethane	ND		250	164	66	250	166	66	1	46-169/17
75-34-3	1,1-Dichloroethane	ND		250	245	98	250	238	95	3	66-124/13
107-06-2	1,2-Dichloroethane	ND		250	212	85	250	211	84	0	66-115/10
75-35-4	1,1-Dichloroethene	ND		250	209	84	250	207	83	1	60-136/15
156-59-2	cis-1,2-Dichloroethene	126		250	337	84	250	328	81	3	55-133/12
156-60-5	trans-1,2-Dichloroethene	ND		250	230	92	250	226	90	2	67-127/13
78-87-5	1,2-Dichloropropane	ND		250	231	92	250	229	92	1	72-120/11
142-28-9	1,3-Dichloropropane	ND		250	246	98	250	240	96	2	72-115/10
594-20-7	2,2-Dichloropropane	ND		250	246	98	250	239	96	3	61-133/12
563-58-6	1,1-Dichloropropene	ND		250	237	95	250	231	92	3	68-127/12
10061-01-5	cis-1,3-Dichloropropene	ND		250	254	102	250	255	102	0	75-123/12

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JD33214
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD33141-1MS	2D199333.D	5	10/13/21	JS	n/a	n/a	V2D8673
JD33141-1MSD	2D199334.D	5	10/13/21	JS	n/a	n/a	V2D8673
JD33141-1 [a]	2D199337.D	5	10/13/21	JS	n/a	n/a	V2D8673

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD33214-1, JD33214-2, JD33214-3, JD33214-4

CAS No.	Compound	JD33141-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
10061-02-6	trans-1,3-Dichloropropene	ND		250	260	104	250	251	100	4	73-122/11
100-41-4	Ethylbenzene	ND		250	221	88	250	218	87	1	44-136/10
87-68-3	Hexachlorobutadiene	ND		250	250	100	250	253	101	1	55-143/15
591-78-6	2-Hexanone	ND		1000	1050	105	1000	1040	104	1	64-129/13
74-88-4	Iodomethane	ND		250	214	86	250	214	86	0	10-200/61
98-82-8	Isopropylbenzene	ND		250	222	89	250	217	87	2	71-122/11
99-87-6	p-Isopropyltoluene	ND		250	233	93	250	229	92	2	72-124/11
1634-04-4	Methyl Tert Butyl Ether	ND		250	241	96	250	237	95	2	64-122/11
108-10-1	4-Methyl-2-pentanone(MIBK)	ND		1000	1080	108	1000	1100	110	2	68-128/13
74-95-3	Methylene bromide	ND		250	239	96	250	238	95	0	74-118/10
75-09-2	Methylene chloride	ND		250	243	97	250	241	96	1	65-126/13
91-20-3	Naphthalene	ND		250	273	109	250	275	110	1	58-140/16
103-65-1	n-Propylbenzene	ND		250	243	97	250	239	96	2	64-123/11
100-42-5	Styrene	ND		250	227	91	250	219	88	4	73-124/11
630-20-6	1,1,1,2-Tetrachloroethane	ND		250	229	92	250	226	90	1	74-123/11
79-34-5	1,1,2,2-Tetrachloroethane	ND		250	276	110	250	274	110	1	68-120/15
127-18-4	Tetrachloroethene	ND		250	222	89	250	218	87	2	61-134/11
108-88-3	Toluene	ND		250	235	94	250	229	92	3	54-130/11
87-61-6	1,2,3-Trichlorobenzene	ND		250	278	111	250	277	111	0	64-135/15
120-82-1	1,2,4-Trichlorobenzene	ND		250	269	108	250	270	108	0	67-134/14
71-55-6	1,1,1-Trichloroethane	ND		250	233	93	250	229	92	2	66-130/12
79-00-5	1,1,2-Trichloroethane	ND		250	246	98	250	245	98	0	73-117/11
79-01-6	Trichloroethene	ND		250	221	88	250	218	87	1	56-139/11
75-69-4	Trichlorofluoromethane	ND		250	214	86	250	213	85	0	63-150/16
96-18-4	1,2,3-Trichloropropane	ND		250	239	96	250	230	92	4	71-118/12
95-63-6	1,2,4-Trimethylbenzene	ND		250	226	90	250	224	90	1	45-139/11
108-67-8	1,3,5-Trimethylbenzene	ND		250	230	92	250	226	90	2	60-128/12
108-05-4	Vinyl Acetate	ND		250	345	138* [b]	250	349	140* [b]	1	66-128/15
75-01-4	Vinyl chloride	38.5		250	246	83	250	244	82	1	48-148/17
	m,p-Xylene	ND		500	443	89	500	432	86	3	42-140/10
95-47-6	o-Xylene	ND		250	219	88	250	214	86	2	54-133/11
1330-20-7	Xylene (total)	ND		750	662	88	750	646	86	2	46-138/10

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JD33214
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD33141-1MS	2D199333.D	5	10/13/21	JS	n/a	n/a	V2D8673
JD33141-1MSD	2D199334.D	5	10/13/21	JS	n/a	n/a	V2D8673
JD33141-1 [a]	2D199337.D	5	10/13/21	JS	n/a	n/a	V2D8673

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD33214-1, JD33214-2, JD33214-3, JD33214-4

CAS No.	Surrogate Recoveries	MS	MSD	JD33141-1	Limits
1868-53-7	Dibromofluoromethane	106%	105%		85-118%
17060-07-0	1,2-Dichloroethane-D4	103%	103%		80-121%
2037-26-5	Toluene-D8	101%	99%		80-120%
460-00-4	4-Bromofluorobenzene	104%	105%		80-120%

(a) Sample used for QC purposes only.
(b) Outside control limits due to matrix interference.

* = Outside of Control Limits.

Instrument Performance Check (BFB)

Job Number: JD33214
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH

Sample: V2D8656-BFB
Lab File ID: 2D199016.D
Instrument ID: GCMS2D
Injection Date: 09/26/21
Injection Time: 23:52

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	58402	19.2		Pass
75	30.0 - 60.0% of mass 95	146104	48.0		Pass
95	Base peak, 100% relative abundance	304597	100.0		Pass
96	5.0 - 9.0% of mass 95	20696	6.79		Pass
173	Less than 2.0% of mass 174	3429	1.13	(1.20) [a]	Pass
174	50.0 - 120.0% of mass 95	284629	93.4		Pass
175	5.0 - 9.0% of mass 174	20909	6.86	(7.35) [a]	Pass
176	95.0 - 101.0% of mass 174	274133	90.0	(96.3) [a]	Pass
177	5.0 - 9.0% of mass 176	18628	6.12	(6.80) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V2D8656-IC8656	2D199017.D	09/27/21	00:21	00:29	Initial cal 0.2
V2D8656-IC8656	2D199018.D	09/27/21	00:50	00:58	Initial cal 0.5
V2D8656-IC8656	2D199019.D	09/27/21	01:19	01:27	Initial cal 1
V2D8656-IC8656	2D199020.D	09/27/21	01:48	01:56	Initial cal 2
V2D8656-IC8656	2D199021.D	09/27/21	02:17	02:25	Initial cal 4
V2D8656-IC8656	2D199022.D	09/27/21	02:46	02:54	Initial cal 8
V2D8656-IC8656	2D199023.D	09/27/21	03:14	03:22	Initial cal 20
V2D8656-ICC8656	2D199024.D	09/27/21	03:43	03:51	Initial cal 50
V2D8656-IC8656	2D199025.D	09/27/21	04:12	04:20	Initial cal 100
V2D8656-IC8656	2D199026.D	09/27/21	04:41	04:49	Initial cal 200
V2D8656-ICV8656	2D199029.D	09/27/21	06:07	06:15	Initial cal verification 50
V2D8656-ICV8656	2D199030.D	09/27/21	06:36	06:44	Initial cal verification 50

Instrument Performance Check (BFB)

Job Number: JD33214
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH

Sample:	V2D8673-BFB	**Injection Date:**	10/13/21
Lab File ID:	2D199324.D	**Injection Time:**	10:11
Instrument ID:	GCMS2D		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	82983	21.6		Pass
75	30.0 - 60.0% of mass 95	186347	48.6		Pass
95	Base peak, 100% relative abundance	383680	100.0		Pass
96	5.0 - 9.0% of mass 95	24840	6.47		Pass
173	Less than 2.0% of mass 174	3585	0.93	(1.02) [a]	Pass
174	50.0 - 120.0% of mass 95	350912	91.5		Pass
175	5.0 - 9.0% of mass 174	27115	7.07	(7.73) [a]	Pass
176	95.0 - 101.0% of mass 174	352832	92.0	(100.5) [a]	Pass
177	5.0 - 9.0% of mass 176	21965	5.72	(6.23) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V2D8673-CC8656	2D199324.D	10/13/21	10:11	00:00	Continuing cal 20
V2D8673-BS	2D199326.D	10/13/21	11:18	01:07	Blank Spike
V2D8673-MB	2D199328.D	10/13/21	12:16	02:05	Method Blank
ZZZZZZ	2D199329.D	10/13/21	12:57	02:46	(unrelated sample)
ZZZZZZ	2D199330.D	10/13/21	13:26	03:15	(unrelated sample)
ZZZZZZ	2D199331.D	10/13/21	14:13	04:02	(unrelated sample)
ZZZZZZ	2D199332.D	10/13/21	14:42	04:31	(unrelated sample)
JD33141-1MS	2D199333.D	10/13/21	15:12	05:01	Matrix Spike
JD33141-1MSD	2D199334.D	10/13/21	15:41	05:30	Matrix Spike Duplicate
JD33214-4	2D199336.D	10/13/21	16:39	06:28	TRIP BLANK-NB
JD33141-1	2D199337.D	10/13/21	17:09	06:58	(used for QC only; not part of job JD33214)
ZZZZZZ	2D199339.D	10/13/21	18:07	07:56	(unrelated sample)
ZZZZZZ	2D199340.D	10/13/21	18:36	08:25	(unrelated sample)
JD33214-1	2D199341.D	10/13/21	19:05	08:54	B-101 MW
JD33214-2	2D199342.D	10/13/21	19:34	09:23	B-104 MW
JD33214-3	2D199343.D	10/13/21	20:04	09:53	DUP-2
ZZZZZZ	2D199344.D	10/13/21	20:33	10:22	(unrelated sample)
ZZZZZZ	2D199345.D	10/13/21	21:02	10:51	(unrelated sample)

Surrogate Recovery Summary

Job Number: JD33214
Account: ATCVTW Atlas Technical Consultants, LLC
Project: Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH

Method: SW846 8260D **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
JD33214-1	2D199341.D	107	107	102	99
JD33214-2	2D199342.D	109	107	100	101
JD33214-3	2D199343.D	107	108	100	100
JD33214-4	2D199336.D	105	106	103	100
JD33141-1MS	2D199333.D	106	103	101	104
JD33141-1MSD	2D199334.D	105	103	99	105
V2D8673-BS	2D199326.D	107	107	98	102
V2D8673-MB	2D199328.D	108	107	107	98

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	85-118%
S2 = 1,2-Dichloroethane-D4	80-121%
S3 = Toluene-D8	80-120%
S4 = 4-Bromofluorobenzene	80-120%

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD33214
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH

QC Batch ID: MP29240 Methods: SW846 7470A
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 10/15/21

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.20	.034	.095	0.028	<0.20

Associated samples MP29240: JD33214-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD33214
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH

QC Batch ID: MP29240
Matrix Type: AQUEOUS

Methods: SW846 7470A
Units: ug/l

Prep Date: 10/15/21

Metal	JD32998-2 Original	MS	Spikelot HGPW3	% Rec	QC Limits
Mercury	0.035	2.4	2	118.3	75-125

Associated samples MP29240: JD33214-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD33214
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH

QC Batch ID: MP29240 Methods: SW846 7470A
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 10/15/21

Metal	JD32998-2 Original	MSD	Spikelot HGPW3	% Rec	MSD RPD	QC Limit
Mercury	0.035	2.5	2	123.3	4.1	20

Associated samples MP29240: JD33214-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD33214
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH

QC Batch ID: MP29240 Methods: SW846 7470A
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 10/15/21 10/15/21

Metal	BSP Result	Spikelot HGPW3	% Rec	QC Limits	BSD Result	Spikelot HGPW3	% Rec	BSD RPD	QC Limit
Mercury	2.3	2	115.0	80-120	2.2	2	110.0	4.4	

Associated samples MP29240: JD33214-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD33214
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH

QC Batch ID: MP29242 Methods: SW846 7470A
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 10/15/21

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.20	.034	.095	0.025	<0.20

Associated samples MP29242: JD33214-3

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD33214
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH

QC Batch ID: MP29242
Matrix Type: AQUEOUS

Methods: SW846 7470A
Units: ug/l

Prep Date: 10/15/21

Metal	JD33177-1 Original	MS	Spikelot HGPW3	% Rec	QC Limits
Mercury	0.040	2.1	2	103.0	75-125

Associated samples MP29242: JD33214-3

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD33214
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH

QC Batch ID: MP29242 Methods: SW846 7470A
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 10/15/21

Metal	JD33177-1 Original	MSD	Spikelot HGPW3	% Rec	MSD RPD	QC Limit
Mercury	0.040	2.2	2	108.0	4.7	20

Associated samples MP29242: JD33214-3

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD33214
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH

QC Batch ID: MP29242
Matrix Type: AQUEOUS

Methods: SW846 7470A
Units: ug/l

Prep Date: 10/15/21

Metal	BSP Result	Spikelot HGPW3	% Rec	QC Limits
Mercury	1.9	2	95.0	80-120

Associated samples MP29242: JD33214-3

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD33214
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH

QC Batch ID: MP29243 Methods: SW846 7470A
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 10/15/21

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.20	.034	.095	0.049	<0.20

Associated samples MP29243: JD33214-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD33214
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH

QC Batch ID: MP29243 Methods: SW846 7470A
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 10/15/21

Metal	JD33177-11 Original	MS	Spikelot HGPW3	% Rec	QC Limits
Mercury	0.075	2.2	2	106.3	75-125

Associated samples MP29243: JD33214-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD33214
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH

QC Batch ID: MP29243 Methods: SW846 7470A
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 10/15/21

Metal	JD33177-11 Original	MSD	Spikelot HGPW3	% Rec	MSD RPD	QC Limit
Mercury	0.075	2.3	2	111.3	4.4	20

Associated samples MP29243: JD33214-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD33214
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH

QC Batch ID: MP29243 Methods: SW846 7470A
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 10/15/21

Metal	BSP Result	Spikelot HGPW3	% Rec	QC Limits
Mercury	2.2	2	110.0	80-120

Associated samples MP29243: JD33214-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD33214
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH

QC Batch ID: MP29250
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 10/15/21

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	16	150		
Antimony	6.0	2.5	4.7		
Arsenic	3.0	2	2.8	0.0	<3.0
Barium	200	.4	13	0.20	<200
Beryllium	1.0	.1	.5		
Bismuth	20	3.6	8.6		
Boron	100	1.9	10		
Cadmium	3.0	.4	1	0.0	<3.0
Calcium	5000	5.6	99		
Cerium	100				
Chromium	10	.5	2	-0.20	<10
Cobalt	50	.5	2.6		
Copper	10	1	5.9		
Iron	100	11	32		
Lead	3.0	1.2	1.8	0.60	<3.0
Lithium	50	2.3	7.3		
Magnesium	5000	65	140		
Manganese	15	.2	1.4		
Molybdenum	20	.4	3.6		
Nickel	10	.3	1.7		
Phosphorus	50	4.1	18		
Potassium	10000	55	200		
Selenium	10	3.5	4.9	-3.3	<10
Silicon	200	1.6	32		
Silver	10	1.1	6.1	-1.1	<10
Sodium	10000	11	570		
Strontium	10	.1	2.7		
Sulfur	50	4.4	45		
Thallium	10	2.5	1.8		
Tin	10	1	3.7		
Titanium	10	.4	2.5		
Tungsten	50	2.8	40		
Vanadium	50	.6	1.8		

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD33214
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH

QC Batch ID: MP29250 Methods: SW846 6010D
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 10/15/21

Metal	RL	IDL	MDL	MB raw	final
Zinc	20	.1	6.9		
Zirconium	10	.4	4.1		

Associated samples MP29250: JD33214-1, JD33214-2, JD33214-3

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD33214
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH

QC Batch ID: MP29250
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 10/15/21

Metal	JD32821-1 Original	MS	Spikelot MPSPK2	% Rec	QC Limits
Aluminum	anr				
Antimony	anr				
Arsenic	3.1	2000	2000	99.8	75-125
Barium	17.2	1940	2000	96.1	75-125
Beryllium	anr				
Bismuth					
Boron	anr				
Cadmium	0.0	2010	2000	100.5	75-125
Calcium	anr				
Cerium					
Chromium	0.0	1960	2000	98.0	75-125
Cobalt	anr				
Copper	anr				
Iron	anr				
Lead	0.0	1990	2000	99.5	75-125
Lithium					
Magnesium	anr				
Manganese	anr				
Molybdenum	anr				
Nickel	anr				
Phosphorus	anr				
Potassium	anr				
Selenium	0.0	1970	2000	98.5	75-125
Silicon					
Silver	0.0	253	250	101.2	75-125
Sodium	anr				
Strontium	anr				
Sulfur					
Thallium	anr				
Tin	anr				
Titanium	anr				
Tungsten					
Vanadium	anr				

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD33214
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH

QC Batch ID: MP29250 Methods: SW846 6010D
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 10/15/21

Metal	JD32821-1 Original MS	Spikelot MPSPK2	% Rec	QC Limits
Zinc	anr			
Zirconium				

Associated samples MP29250: JD33214-1, JD33214-2, JD33214-3

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD33214
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH

QC Batch ID: MP29250
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 10/15/21

Metal	JD32821-1 Original	MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Aluminum	anr					
Antimony	anr					
Arsenic	3.1	2000	2000	99.8	0.0	20
Barium	17.2	1920	2000	95.1	1.0	20
Beryllium	anr					
Bismuth						
Boron	anr					
Cadmium	0.0	1980	2000	99.0	1.5	20
Calcium	anr					
Cerium						
Chromium	0.0	1920	2000	96.0	2.1	20
Cobalt	anr					
Copper	anr					
Iron	anr					
Lead	0.0	1960	2000	98.0	1.5	20
Lithium						
Magnesium	anr					
Manganese	anr					
Molybdenum	anr					
Nickel	anr					
Phosphorus	anr					
Potassium	anr					
Selenium	0.0	1930	2000	96.5	2.1	20
Silicon						
Silver	0.0	248	250	99.2	2.0	20
Sodium	anr					
Strontium	anr					
Sulfur						
Thallium	anr					
Tin	anr					
Titanium	anr					
Tungsten						
Vanadium	anr					

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD33214
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH

QC Batch ID: MP29250 Methods: SW846 6010D
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 10/15/21

Metal	JD32821-1 Original MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Zinc	anr				
Zirconium					

Associated samples MP29250: JD33214-1, JD33214-2, JD33214-3

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD33214
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH

QC Batch ID: MP29250
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 10/15/21

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	1990	2000	99.5	80-120
Barium	1950	2000	97.5	80-120
Beryllium	anr			
Bismuth				
Boron	anr			
Cadmium	2020	2000	101.0	80-120
Calcium	anr			
Cerium				
Chromium	2000	2000	100.0	80-120
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	2000	2000	100.0	80-120
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum	anr			
Nickel	anr			
Phosphorus	anr			
Potassium	anr			
Selenium	1980	2000	99.0	80-120
Silicon				
Silver	250	250	100.0	80-120
Sodium	anr			
Strontium	anr			
Sulfur				
Thallium	anr			
Tin	anr			
Titanium	anr			
Tungsten				
Vanadium	anr			

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD33214
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH

QC Batch ID: MP29250
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 10/15/21

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Zinc	anr			
Zirconium				

Associated samples MP29250: JD33214-1, JD33214-2, JD33214-3

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD33214
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH

QC Batch ID: MP29250
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 10/15/21

Metal	JD32821-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	3.10	0.00	100.0(a)	0-10
Barium	17.2	17.1	0.6	0-10
Beryllium	anr			
Bismuth				
Boron	anr			
Cadmium	0.00	0.00	NC	0-10
Calcium	anr			
Cerium				
Chromium	0.00	0.00	NC	0-10
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	0.00	0.00	NC	0-10
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum	anr			
Nickel	anr			
Phosphorus	anr			
Potassium	anr			
Selenium	0.00	0.00	NC	0-10
Silicon				
Silver	0.00	0.00	NC	0-10
Sodium	anr			
Strontium	anr			
Sulfur				
Thallium	anr			
Tin	anr			
Titanium	anr			
Tungsten				
Vanadium	anr			

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD33214
Account: ATCVTW - Atlas Technical Consultants, LLC
Project: Northfield Bridge - Hardesty & Hanover, 6 Bedford Farms Drive, Bedford, NH

QC Batch ID: MP29250 Methods: SW846 6010D
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 10/15/21

Metal	JD32821-1 Original	SDL 1:5	%DIF	QC Limits
Zinc	anr			
Zirconium				

Associated samples MP29250: JD33214-1, JD33214-2, JD33214-3

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

APPENDIX D

FIELD NOTES

9/20/21 280BS02090 Northfield Bridge – Day 1

0800 JP onsite weather – 70° sunny
called PID#3 RF=1 isobutylene

– reached out to Ryan from H+H, no one here by 8:20

– H+H and driller estimated/scoped 8 days, not 2 days... called Erik M.

– H+H is done geotechnical on entire overburden PLUS 10' ft into bedrock

– Haz (H) borings to 25' or refusal

– Geotech (B) borings estimated 25' plus 10' bedrock

Samples
A = shallow (0.5-1.5') – PAHs, RCRA 8
B = deep (TBD) – VOCs, PAHs, PCBs, RCRA 8
C = composite (entire boring) – waste characterization
↳ to be shipped + held per WP

	B-106-A	@ 0950	(0.5-1.5')	TOR @ 23.8' bgs no PID hits
	B-106-B	@ 1115	(20-24')	
	B-106-C	@ 1130	(0-24')	
*	H-104-A	@ 1420	(0.5-4', needed for dup)	*DUP-A @ 0001
*	H-104-B	@ 1520	(20-24')	*DUP-B @ 0002
	H-104-C1	@ 1540	needed 2 composites from one of the 10 borings	~~TOR~~
	H-104-C2	@ 1542		

freeze DI vocs; all others OK to keep on ice.

0730 arrival for tomorrow

1630 offsite

JP

1 of 4

Scale: 1 square =

9/21/21 080BS02098 Northfield Bridge - Day 2
0730 JP onsite; Ryan (H+H), Mike + Nevin (NEBC)
weather - 65°, mostly cloudy
cal'd PID #3 RF=1.0 isobutylene

- waiting on town flaggers; 2 showed up ~9am
- Erik H. to bring 2 cardboxes on Thursday for MW's

Samples:

H-101-A	@	0915	(0.5-1.5')	
H-101-B	@	1010	(24-29')	TOR = 29'
H-101-C	@	1030	(0-29')	
B-103-A	@	1110	(2-4')	
B-103-B	@	1320	(20-22')	TOR = 30'
B-103-C	@	1340	(0-27')	

still rock coring - not starting another hole.

1500 JP offsite.

9/22/21 Day 3 0830 JP onsite cal'd PID #3
weather - 65°, cloudy

- still waiting for traffic control upon arrival; arrived 0840
- town doesn't work Fridays so no traffic control; plan to do B-104 in parking lot Friday only.

#3 H+H skid and 2 Vtrans onsite ~10 am

Samples:

H-102-A	@	0930	(2-4')	
H-102-B	@	1120	(17-19')	
H-102-C	@	1140	(0-25')	
B-102-A	@	1310	(2-4')	
B-102-B	@	1330	(8-11')	TOR = 32'
B-102-C	@	1420	(0-32')	

1430 JP offsite

JP

Scale: 1 square =

9/23/21 280BS02090 Northfield Bridge — Day 4

735 E Urch onsite
weather: Cloudy, 60s
cal'd PID #3, bump 130.3, cal 100.3
met w/ Ryan (H+H) & Mike (NERR) & discussed plan

805 Begin coring B-102 at 33' — top of rock

1015 Completed rock coring @ B-102

1040 Moved + setup @ B-105 across the bridge

1145 Break for lunch — collected B-105-A (0.5-2') @ 1100

1240 Begin mud rotary @ 12' on B-105 — collected B-105-B (20-24') @ 1330

1330 Finished overburden in B105, lost water into formation — broken top of rock.

1400 Collected B-105-C (0.5-24') composite of B-105 soils

1430 offsite

9/24/21 Day 5

0830 JF onsite 60° rain, heavy at times cal'd PID #3

Start at B-104 Dom (Atlas) onsite for training

Samples

B-104-A @ 0840 (0-2')
B-104-B @ 0950 (20-24')
B-104-C @ 1000 (0-27')

TOR = 28'

- install well @ B-104 (B-104MW)
- out of water and town garage is closed. Plan to drive casing down to 20-25 ft and complete augering out hole on Monday.
- sent samples + COC's back to office w/ Dom to keep in fridge/freezer until shipment on Monday
- Drove casing to 25 ft (driller doesn't have drive points) Will clean out borehole and set well on Monday. ETA 9am

1300 offsite JF

Scale: 1 square =

9/27/21 Northfield Bridge 280B502090 Day 6

0900 JP onsite weather - 60 overcast / rain
cal'd PID #3 RF=1 isobutylene cal 100.6
- NEBC onsite ~0900, went to town garage for water
- Hager-Richter onsite doing bedrock survey; have to wait for them to finish this side of rd before we can get back onto B-104MW to complete well. HR doing seismic refraction

1000 set up on B-104MW screen 25-15' bgs; complete w/ mud bat

1130 set up on H-103 / break for lunch

1230 develop B-104MW DTW ~ 20ft (measure DTW and DTB tomorrow w/ WLM)
- peri-pump worked well, good recharge / did not go dry. Purged ~5 gals until clear / surged

1250 - had to pause augering, causing too much interference for HR

Samples

H-103-A @ 1240 (1-3')
H-103-B @ 1500 (17-19')
H-103-C @ 1530 (0-25')

on 9/28 DTW = 18.62' btoc
DTB = 25.55' btoc

1630 offsite

JP

9/28/21 Day 7 0800 onsite (JP) Alex G for training + replacement
weather 60° overcast cal'd PID #3

set up on B-101; classify overburden + set well, then do rock coring

Samples

B-101-A @ 0845 (0-2')
B-101-B @ 1450 (20-24')
B-101-C @ 1455 (0-24')

MW B-101 DTW = 17.78' btoc
DTB = 24.62' btoc

~~Alex G offsite @~~ Purged / Developed B-101 (MW) from 1545-1645

Drillers offsite @ 1655
Alex G offsite @ 1700

JP

pg 4 of 4

Scale: 1 square =

10 Northfield Bridge 10/05/21
50s - Cloudy A. Gagnon
p.1 280 BS 02690
0800-0900 Calibrated equipment / mob / TB
- YSI Professional Plus #4133
- Turbidimeter #2
- YSI Tigar #2
1000 Onsite for LF sampling (x2) AG
- Set up traffic control

Well ID	DTW	DTB	Dia.	Sampled	Notes
B-101	17.91	24.41	2"	1132	0.0 ppm
B-104	18.63	25.57	2"	1252	0.2 ppm
DUP-1	—	—	—	1139	—
DUP-2	—	—	—	1302	—
Trip Blank - NB	—	—	—	0800	—

- Geopump # 011301 → 0-3/4 max speed doesn't work

1350 Offsite (AG)

- Alex Dyson p.1/1

Scale: 1 square = _____

TURBIDITY METER CALIBRATION LOG

INSTRUMENT NAME: Hach Turbidimeter MODEL No.: 2100P

SERIAL No.: 05040C038797 DECAL No.: #2 CHARGE No. _____

CALIBRATION DATE	CAL. STANDARD 1 - 0.1 (AM / PM)		CAL. STANDARD 2 - 2.0 (AM / PM)		CAL. STANDARD 3 - 100 (AM / PM)		SIGNATURE	(Cal Standard 4) — COMMENTS AM 800 NTU PM
10/05/21	0.22	0.12	27.6	2.10	99.5	49.4	AC	751 1000

YSI MULTIPARAMETER METER

Serial No.: 13J100186 Model No.: YSI. Professional Plus Decal No.: 9135

Site Name: Northfield Bridge Job No.: 280BS02090

Instrument is calibrated in accordance with Manufacturer's Instructions

DATE:	Pre Calibration Readings	Post Calibration Readings	PM Check	Calibration STDs (lot #'s)	Signature	Remarks
Cond. mS/cm uS/cm		1413	1400		AE	
pH=4.0		3.99	4.38		AE	
pH=7.0		7.01	7.42		AE	
pH=10.0		10.02	9.99		AE	
D.O. mg/l / %		0.00	0.02		AE	
ORP mV		219.9	219.2		AE	
Temp C						
Baro. Press. mmHg						

DATE:						
Cond: mS/cm						
pH=4.0						
pH=7.0						
pH=10.0						
D.O mg/l / %						
ORP mV						
Temp C						
Baro. Press. mmHg						

ATC Well Sampling Form – Page 1 of 2

Site Name/Location: Northfield Bridge Date: 10/05/21

Sample I.D.: B-101 MW Collection Time: 1132

Sampling Sequence: 1 Of 2

EC S Field Staff Collecting This Sample: AF

Climatic Conditions (Temp/Precip): 50s - Cloudy

Depth To Product: NP Feet Depth To Water: 17.91 Feet

Reference Point (TOC or other -Describe) TOC

Ref. Point Elev. Relative To Ground Surface (Use "+" For Aboveground, "–" For Belowground): _____ feet

Measurement Technique (WLM, IP or other -Describe) IP

Presence/Absence Of NAPL And Detection Method: ND

Total Depth Of Boring (Take Measurement After Sampling): 24.61

Well Yield: High X Low _____ Pumped Dry? _____

Final Water Appearance (At Sample Collection) Clear X Cloudy _____ Opaque _____

Sample Collected from (tubing, bailer, or other-describe) Tubing

Submitted For Analysis By (Method or Methods): VOCs, Total 8-RCRA Metals

Field Test Results (HACH Kits):

Alkalinity: NS Chloride: NS

Iron (II): NS Sulfate: NS

Notes: DUP-1 collected @ 1139

NP = No Product

ND = Not Detected

NS = Not Sampled

--USE REVERSE SIDE OF FORM FOR LOW FLOW SAMPLING PARAMETERS--

Low-Flow Well Sampling Form – Page 2 of 2

Location: Northfield Bridge
Well Id: B-101 MW
Field Personnel: AG
Reference Point (RP—TOC or other-describe): TOC

Depth To Top: 17.91 / Depth To Bottom: 24.61 Of Screen (Below RP)
Pump Intake Depth: 22.5
Pumping Device: Geopump - Peristaltic

Time (24 Hr)	Depth To Water (ft)	Purge Rate mL/min)	Pump Speed	Cumulative Volume Purged (L)	Temperature °C	Specific Conductance (uS/cm)	pH	ORP / eH (mV)	DO (Mg/L)	Turbidity (NTU)	Comments
1042	17.94	150	med	0.75	13.5	2750	7.08	71.3	0.39	14.2	clear, no odor
1047	17.94	150	med	1.5	13.8	2949	6.83	68.0	0.53	12.5	SAA
1052	17.94	150	med	2.25	13.9	3107	6.72	79.3	1.58	18.0	SAA
1057	17.94	150	med	3.0	13.9	3199	6.66	80.6	1.10	25.7	SAA
1102	17.94	150	med	3.75	13.8	3285	6.63	69.9	0.18	42.7	SAA
1107	17.95	150	med	4.5	13.8	3340	6.60	65.1	0.07	33.5	SAA
1112	17.95	150	med	5.25	13.8	3482	6.57	68.0	0.08	34.9	SAA
1117	17.95	150	med	6.0	13.8	3530	6.57	69.6	0.08	20.6	SAA
1122	17.95	150	med	6.75	13.9	3628	6.55	73.3	0.10	21.9	SAA
1127	17.96	150	med	7.5	14.0	3727	6.54	77.5	0.09	15.1	SAA
1132	17.9	150	med	8.25	14.0	3744	6.54	77.8	0.10	14.8	SAA

Notes:

Began pumping @ 1037 , SAA = same as above

Sampled @ 1132 , DUP-1 sampled @ 1139

Last Update: Sep 2005

ATC Well Sampling Form – Page 1 of 2

Site Name/Location: Northfield Bridge Date: 10/05/21

Sample I.D.: B-104 MW Collection Time 1252

Sampling Sequence: 2 Of 2

ATC Field Staff Collecting This Sample: AG

Climatic Conditions (Temp/Precip): 50s - Cloudy

Depth To Product: NP Feet Depth To Water: 18.63 Feet

Reference Point (TOC or other -Describe) TOC

Ref. Point Elev. Relative To Ground Surface (Use "+" For Aboveground, "–" For Belowground): _____ feet

Measurement Technique (WLM, IP or other -Describe) IP

Presence/Absence Of NAPL And Detection Method: ND

Total Depth Of Boring (Take Measurement After Sampling): _____

Well Yield: High X Low _____ Pumped Dry? _____

Final Water Appearance (At Sample Collection) Clear X Cloudy _____ Opaque _____

Sample Collected from (tubing, bailer, or other-describe) Tubing

Submitted For Analysis By (Method or Methods): VOCs, Total 8-RCRA Metals

Field Test Results (HACH Kits):

Alkalinity: NS Chloride: NS

Iron (II): NS Sulfate: NS

Notes: DUP-2 collected @ 1302

NP = No Product

ND = Not Detected

NS = Not Sampled

Sheen on purge water

--USE REVERSE SIDE OF FORM FOR LOW FLOW SAMPLING PARAMETERS--

Low-Flow Well Sampling Form – Page 2 of 2

Location: Northfield Bridge
Well Id: B-104 MW
Field Personnel: AE
Reference Point (RP – TOC or other-describe): TOC

Depth To Top: 18.63
Depth To Bottom: 25.57
Of Screen (Below RP)
Pump Intake Depth: 23.5
Pumping Device: Geopump – Peristaltic

Time (24 Hr)	Depth To Water (ft)	Purge Rate mL/min)	Pump Speed	Cumulative Volume Purged	Temperature °C 3%	Specific Conductance (uS/cm) 3%	pH ±0.1	ORP / eH (mV) ±10	DO (Mg/L) 10 %	Turbidity (NTU) 10%	Comments
1237	18.68	150	med	0.75	12.4	2419	6.80	-57.2	0.33	34.0	clear, strong odor
1242	18.69	150	med	1.5	12.3	2405	6.77	-68.1	0.08	19.2	SAA
1247	18.69	150	med	2.25	11.9	2402	6.77	-72.0	0.00	19.8	SAA
1252	18.68	150	med	3.0	12.2	2401	6.77	-75.0	0.01	18.2	SAA, sheen on purge H_2O
1257											
1302											
1307											
1312											
1317											
1322											
1327											

Notes:

Sampled @ 1252, Started purging @ 1232, Stabilized quickly

SAA = same as above

DUP-2 collected @ 1302

☆ Sheen on purge water
↳ well head air space = 0.2 ppm

Last Update: Sep 2005

APPENDIX B

DRAFT NOTICE OF INTENT FOR GENERAL PERMIT 3-9016

VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION
WATERSHED MANAGEMENT DIVISION
WASTEWATER PROGRAM

PUBLIC NOTICE
NOTICE OF INTENT FOR DISCHARGES FROM PETROLEUM RELATED
REMEDIATION ACTIVITIES TO PUBLICLY OWNED TREATMENT WORKS (POTW)
SUBJECT TO GENERAL PERMIT NO. 3-9016

Instructions are now separate from this form

For DEC Use:

Notice of Intent Number: _____

Check #:_____ Amount: $_____ Paid By: _____

A. Applicant Information

1. Legal Entity: ☐ Private ☐ State ☑ Municipal ☐ Other (describe):

2. Applicant Name: Town of Northfield

3. Applicant Address: 51 South Main St., Northfield, VT 05663

4. Phone: 802-485-9822

5. Email address: jschulz@northfield.vt.us

B. Facility Information

1. Facility Name: Northfield Bridge

2. DEC Site No. & Staff Contact (if applicable): Site #2021-5027, Monica Ladago

3. Location of Facility (street, town, zip and county): North Main St., Northfield, 05663, Washington County

4. Municipal Consent (please attach letter from POTW representative accepting this discharge): ☑ Attached

5. Mapping (include USGS map and indicate site location): ☑ Attached

C. Contamination

1. Type of contamination: Leaded and Unleaded Gasoline

2. Source of contamination: Residual contamination from neighboring properties with former leaking underground storage tanks.

3. Description of contamination:

Gasoline impacted groundwater from a neighboring gas station to the northwest (Northfield Gulf - Site #20114199) and from a former petroleum gas station (Merchants Bank - Site #962020) to the southwest. The contamination from both sites is leaded (Gulf) and unleaded gasoline (MB) from former leaking underground storage tanks. Site activities are expected to encounter potential petroleum-impacted groundwater during excavations.

D. Treatment

1. Description of Remediation Treatment System:

Remediation will consist of directing groundwater within the excavations and structural drillings to fractionation tanks for settling, followed by bag filters for particulate removal and two granulated activated carbon vessels designed for contaminant removal. The treated water will then be discharged to the nearest manhole to the municipal sewer line. All piping will be camlocked hosing.

2. Maximum daily design flow (gpd):

(attach site schematics site features, extent of contamination and detailed design of treatment system)

150,000 gpd

3. Anticipated start date of discharge: August 2024

DRAFT

Revised: 05/2021

4. Anticipated duration of discharge: Through end of 2025

5. Discharge point(s) and name of receiving POTW:

Sewer mains to the east (DP-1), and south (DP-2) of the Northfield Bridge. The POTW will be the Northfield Wastewater Treatment Facility at 242 Dog River Drive, Northfield, VT 05663.

6. Describe conveyance to POTW:

Treated groundwater will be discharged to nearby municipal sewer points via a system of piping from the remediation train, where it will travel northward to the Northfield Wastewater Treatment Facility. DP-1 is 90-ft to the east, and DP-2 is 150-ft to the south of the bridge.

E. Fees: ***Refund Policy: administrative fees are non-refundable unless an application is withdrawn prior to administrative review.**

1. Application fee: ☐ $240.00 enclosed	2. Date of application: 2/9/2024

F. Applicant Certification (must check box)

APPLICANT CERTIFICATION: I hereby certify that I am responsible for the discharges from petroleum related remediation activities. I also certify that I have read General Permit 3-9016 and agree to abide by its terms. Consultants, contractors, and attorneys cannot sign the Notice of Intent (NOI) form on behalf of an owner/operator unless legally delegated.

Signatures:

Jeff Schulz _____ Town Manager _____

Print or type name — Title

_____ _____

Signature of applicant — Date

SUBMITTAL:

Please submit this form and payment using ANROnline at: https://anronline.vermont.gov/?formtag=WSMD_Intake
Direct questions to: ANR.WSMDWastewater@vermont.gov . If unable to submit online, mail the completed application form, all required supporting materials, and a check for the correct fee to: Vermont DEC - Watershed Management Division, Wastewater Program - 1 National Life Drive, Davis 3 - Montpelier, VT 05620-3522.

Make the check payable to: State of Vermont

For Department Use Only

VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION
AUTHORIZATION TO DISCHARGE

A determination has been made that the applicant meets the criteria necessary for inclusion under General Permit 3-9016. Subject to the conditions of General Permit No. 3-9016 the applicant is authorized to discharge from petroleum related remediation activities to Publicly Owned Treatment Works as described in Notice of Intent No.

DEC Reviewer:	Effective Date:

DRAFT

FIGURES

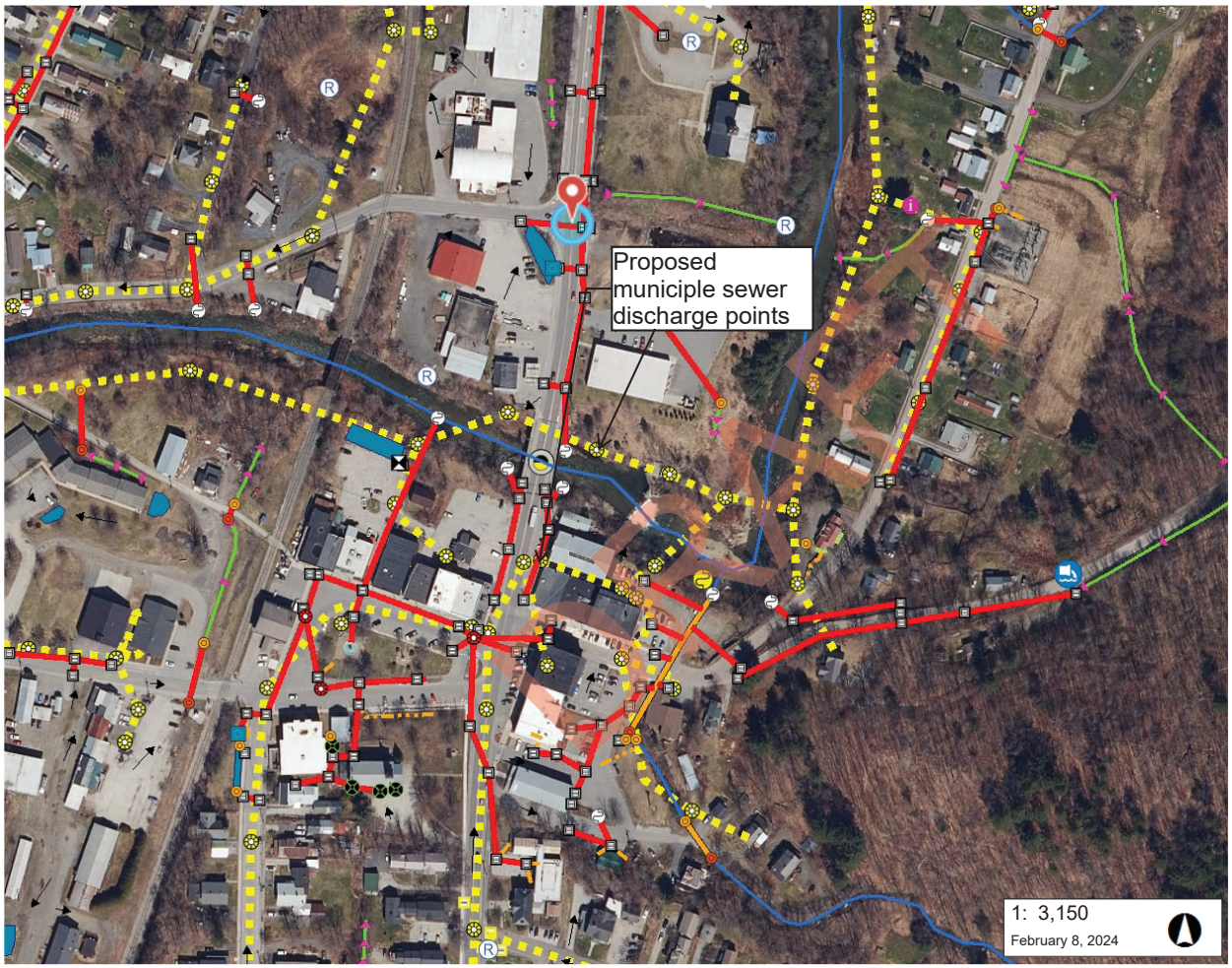
DRAFT

VERMONT

Atlas Figure 2 - Natural Resources Map

Vermont Agency of Natural Resources

vermont.gov



LEGEND

- Bridges
- Culvert

Existing stormwater point

- Pipe Cross (not connected)
- Catchbasin
- Dry Well
- Drop Inlet
- Grate/Curb Inlet
- Yard drain
- Junction Box
- Stormwater Manhole
- Outfall
- Culvert inlet
- Culvert outlet
- Pond outlet structure
- Treatment feature (see notes)
- Retrofit
- Unknown Point
- Information Point
- <all other values>

Existing stormwater line

- Storm line
- Storm line (old Sanitary line)
- Tunnel (storm)
- Swale
- Footing drain
- Under drain

NOTES

Map created using ANR's Natural Resources Atlas

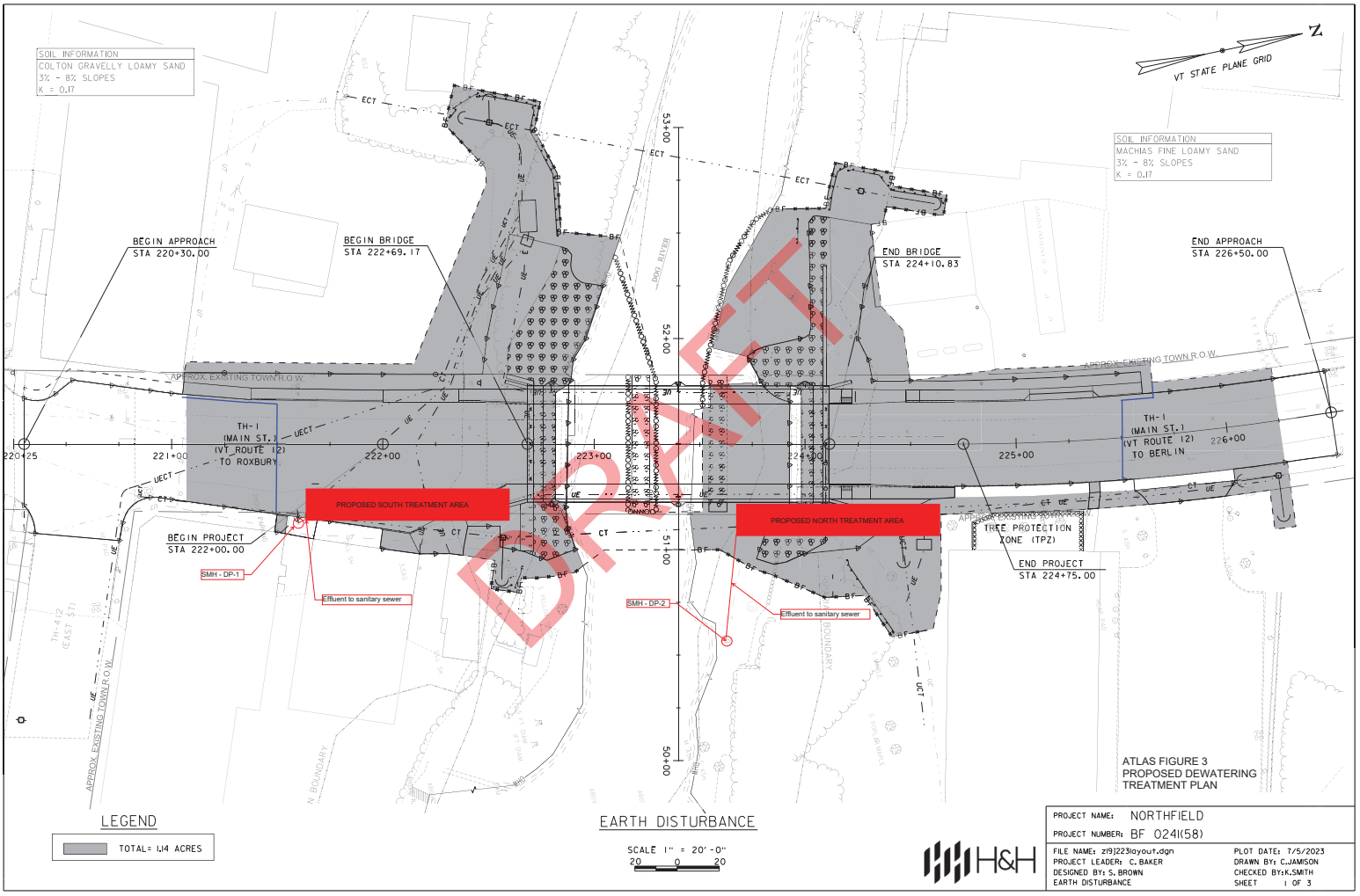
160.0 0 80.00 160.0 Meters

WGS_1984_Web_Mercator_Auxiliary_Sphere 1" = 262 Ft. 1cm = 32 Meters

© Vermont Agency of Natural Resources

THIS MAP IS NOT TO BE USED FOR NAVIGATION

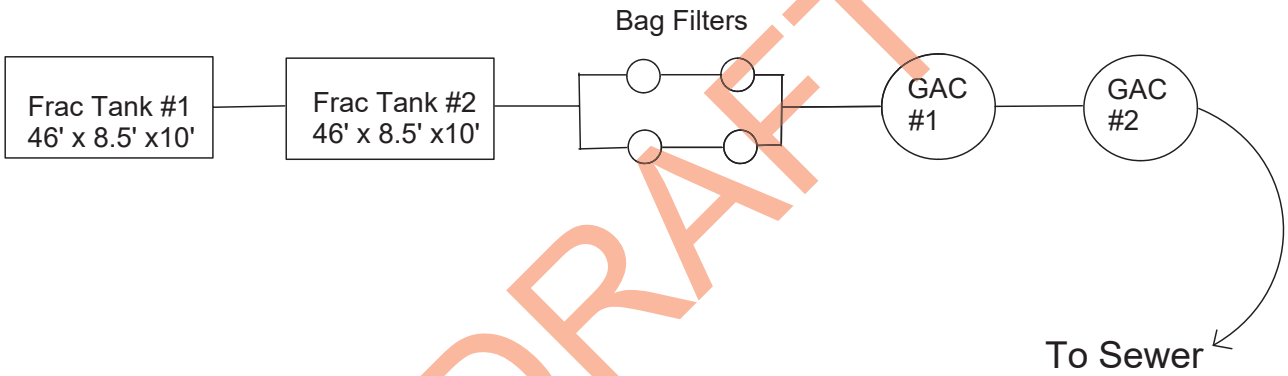
DISCLAIMER: This map is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. ANR and the State of Vermont make no representations of any kind, including but not limited to, the warranties of merchantability, or fitness for a particular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



ATLAS FIGURE 3
PROPOSED DEWATERING
TREATMENT PLAN

H&H

PROJECT NAME:	NORTHFIELD
PROJECT NUMBER:	BF 024I(58)
FILE NAME: zl9j223layout.dgn	PLOT DATE: 7/5/2023
PROJECT LEADER: C. BAKER	DRAWN BY: C.JAMISON
DESIGNED BY: S. BROWN	CHECKED BY: K.SMITH
EARTH DISTURBANCE	SHEET 1 OF 3



DRAFT

ATLAS

NAME/ADDRESS:

Northfield Bridge Replacement

Not to Scale

PROJECT #: 280EM01144

CHECKED BY: EU

DRAWN BY: DD

DRAWING TITLE:

Conceptual Groundwater Pretreatment System Schematic

FIGURE NO.

4

MUNICIPAL CONSENT LETTER

DRAFT

MUNICIPAL OFFICES

Jeff Schulz, Town Manager
jschulz@northfield.vt.us

Phone 1-802-485-9822
Fax 1-802-485-8426

February 4, 2024

Gary M. Laroche, PE. | Structures Project Manager
Vermont Agency of Transportation
Barre City Place, 219 North Main Street,
Barre, VT 05641

RE: Main St. Bridge Replacement Project – Approval to Discharge Project Water to Northfield Sewer System

Dear Gary,

This letter is to grant VAOT permission to discharge up to a 150,000 gallons per day of water from the Main Street Bridge Replacement project into Northfield's wastewater collection system during the duration of the bridge project. The maximum allowable pollutant effluent discharge limits to the collection system shall be established by the VT Agency of Natural Resources (ANR). VAOT shall present to the Town of Northfield and ANR a project pretreatment plan and process plans for review.

The Town of Northfield reserves the right to sample the discharge effluent and halt further discharge from the project if the Town has reasonable concern that the discharge exceeds the established limits.

Please feel free to contact me if you have any questions. Thank you!

Sincerely,

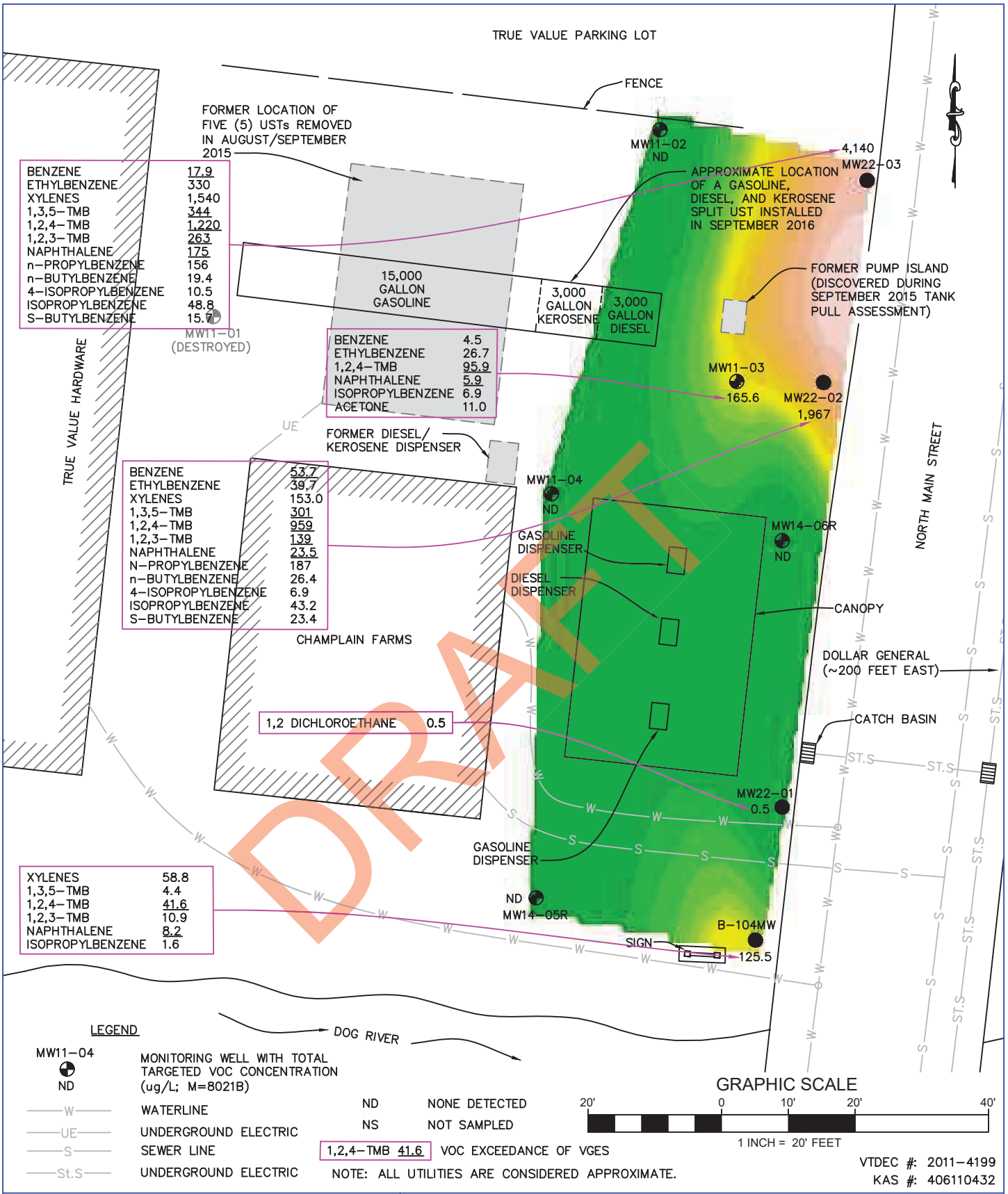
Jeff Schulz, Northfield Town Manager

Cc: Jim Russo, Utility Superintendent

DRAFT

OFFISTE HAZARDOUS SITE FIGURES

DRAFT



589 Avenue D, Suite 10
PO Box 787
Williston, VT 05495
www.kas-consulting.com
802 383.0486 p
802 383.0490 f
kas environmental science & engineering

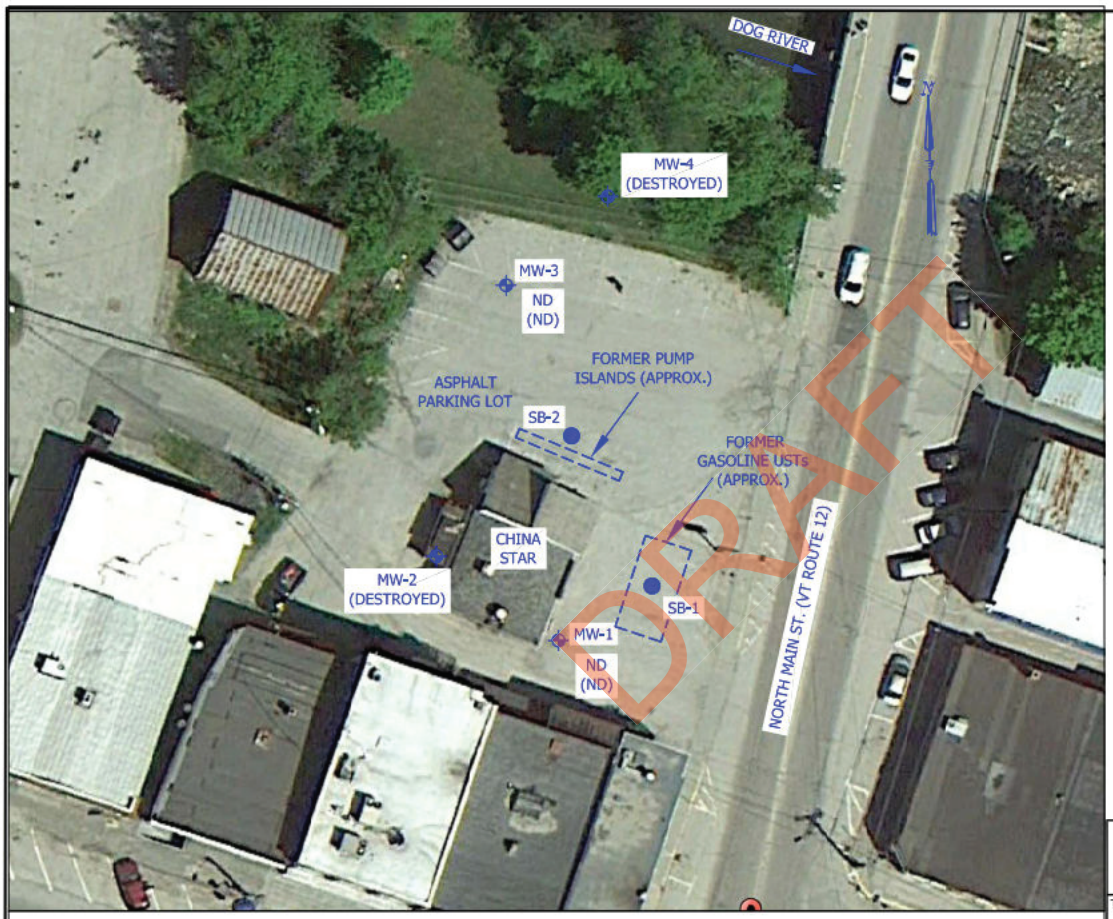
NORTHFIELD GULF (CHAMPLAIN FARMS)

73 NORTH MAIN STREET
NORTHFIELD, VERMONT

GROUNDWATER: TOTAL VOC DISTRIBUTION MAP

SAMPLED: 8/18/22

DATE: 9/9/22	DWG #: 3	SCALE: 1"=20'	DRN.: SB	APP.: SM



0 30 60

APPROX. SCALE IN FEET

LEGEND

MW-1 MONITORING WELL

SB-1 SOIL BORING

ND BENZENE (ug/L)

(ND) TOTAL BTEX (ug/L)

NOTES:

BASE MAP IMAGERY FROM GOOGLE EARTH, MAY 15, 2012. CURRENT AND HISTORIC SITE FEATURES ADOPTED FROM FIGURE 2 OF PHASE II ESA REPORT FOR THE SITE PREPARED BY KENT S. KOPTIUCH, INC., DATED 8/27/96.

ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE. NO CLAIM IS MADE TO ACCURACY. THIS PLAN SHOULD NOT BE USED FOR CONSTRUCTION PURPOSES, PROPERTY LINE DETERMINATION, EXACT LOCATION OF SITE FEATURES ETC.

Vermont HydroGeo, LLC VHG

TITLE: GROUNDWATER ANALYTICAL RESULTS: 10/12/14

PROJECT: CHINA STAR

FIGURE NO.: 2

DATE: 1/6/15

DRAWN BY: EJS

APPENDIX C

POTENTIALLY CONTAMINATED SOIL EXCAVATION VOLUMES

Hardesty & Hanover, LLC

Potentially Contaminated Soil Excavation Volumes Summary Table

Utility Duct Banks Soil Excavation Volumes (CY)

Decision Units	Development Soils	Petroleum Contaminated Soils (P.C.S.)	Uncharacterized Soils
A	325	45	205
B	255	30	120
C	0	0	0
D	0	0	0
TOTAL	**580**	**75**	**325**

Water Main Soil Excavation Volumes (CY)

Decision Units	Development Soils	Petroleum Contaminated Soils (P.C.S.)	Uncharacterized Soils
A	230	40	180
B	0	0	0
C	245	110	155
D	55	0	60
TOTAL	**530**	**150**	**395**

Bridge Replacement Project Soil Excavation Volumes (CY)

Decision Units	Development Soils	Petroleum Contaminated Soils (P.C.S.)	Uncharacterized Soils
A	940	480	450
B	330	30	130
C	835	160	735
D	195	0	65
TOTAL	**2300**	**670**	**1380**

Hardesty & Hanover, LLC

Potentially Contaminated Soil Excavation Weight Summary Table

In-situ Soil Densities

Reference: H&H Geotechnical Report Table 3-1

Fill	**125**	**LB/FT^3**	**1.69**	**TON/YD^3**
Fluvial Deposits	**130**	**LB/FT^3**	**1.76**	**TON/YD^3**

Utility Duct Banks Soil Excavation Weight (TON)

Decision Units	Development Soils	Petroleum Contaminated Soils (P.C.S.)	Uncharacterized Soils
A	548	76	346
B	430	51	203
C	0	0	0
D	0	0	0
TOTAL	**979**	**127**	**548**

Water Main Soil Excavation Weight (TON)

Decision Units	Development Soils	Petroleum Contaminated Soils (P.C.S.)	Uncharacterized Soils
A	388	68	304
B	0	0	0
C	413	186	262
D	93	0	101
TOTAL	**894**	**253**	**667**

Bridge Replacement Project Soil Excavation Weight (TON)

Decision Units	Development Soils	Petroleum Contaminated Soils (P.C.S.)	Uncharacterized Soils
A	1586	759	759
B	575	51	225
C	1418	270	1246
D	329	0	110
TOTAL	**3908**	**1080**	**2340**

APPENDIX D

SOIL STOCKPILE FORM

VERMONT

AGENCY OF NATURAL RESOURCES

State of Vermont
Department of Environmental Conservation
Waste Management & Prevention Division
1 National Life Drive – Davis 1
Montpelier, VT 05620-3704
(802) 828-1138

MANAGEMENT OF NON-HAZARDOUS CONTAMINATED SOIL REQUEST FORM
July 2021

This form is to be used to assist in the compliance with the Investigation and Remediation of Contaminated Properties Rule (IRule) §35-803. This form takes the place of the ANR Off-site Soil Treatment Form and is to be used for the movement, stockpiling, treatment, or disposal of non-hazardous contaminated soils, both on-site and off-site. This form should be included with Soil Management Plans and Corrective Action Plans, as applicable. DEC Site Manager approval must be received, as signified by signature in Section 4, prior to the initiation of soil management work.

Section 1. General Information

Soil Source Site Name: Northfield Bridge Replacement Project

Address: Northfield, Vermont

Facility ID#: NA and/or **Spill #**: NA and/or **SMS Site #**: 2021-5027

Will soils be temporarily stockpiled on-site or off-site for more than 90 days or between December 1st and April 1st?
__**Yes** _X_**No** **if Yes, date range**: _____ to _____.

Disposal Facility: TBD

Quantity of Soils: TBD cubic yards

Soil Contaminants: Development soils (DS) and petroleum contaminated soils (PCS)

Check proposed soil management scenario below:
- ☐ Soil will be live loaded and transported to disposal facility. **If yes, skip to Section 4.**
- ■ Soil to be temporarily stored on/off site, then transported to disposal facility. **If yes, complete entire form**.
- ☐ Soil is Staying On-Site for Treatment. **If yes, complete entire form**.
- ☐ Soil is Destined for Off-Site Stockpile, Management and Treatment. **If yes, complete entire form.**

Section 2. Soil Stockpile Siting Criteria Checklist

- ■ There are no potable drinking water supplies within 300-foot radius of the Soil Stockpile. This limit may need to be extended if water supplies are shown to be hydraulically down gradient.
- ■ Soil Stockpile is not within zone one or two of a groundwater source protection area.
- ■ *There are no mapped (per ANR Atlas) sensitive environments within 100 feet of the treatment location including, but not limited to:
  - Waterways (e.g., stream, river, lake, pond, wetland or floodplain zone);
  - State or Federally listed threatened or endangered species or habitat;
  - Class I or II groundwater zone;
  - Residence; or
  - Property boundary Variance from this requirement is requested

- ■ Public access to the soil is prohibited through posting no trespassing or other means approved by Secretary. Locked gate
- ☐ If the owner of the soil stockpiling parcel is different from the soil generator, written approval from the landowner that also grants access to the Secretary, has been obtained before stockpiling begins. N/A
- ☐ **The municipality in which the soils will be stockpiled or treated has been notified in writing of the soil stockpiling or treatment location. If applicable, local permits should be obtained. M**unicipal approval documents (letter, permit, etc.) attached.** N/A - the municipality (Town of Northfield) is the responsible party
- ■ ANR Atlas generated Map including the latitude and longitude of the location in decimal degrees where the soil will be stockpiled. Minimum acceptable accuracy is plus-or-minus 15 feet. **Map attached.**

*If setback criteria from sensitive receptors cannot be achieved, please provide written explanation.
**This is a requirement for off-site stockpiling of soils only.

Section 3. Ownership Information

Location of Soil Stockpile		**Generator/Owner of Soil/Responsible Party**	
Street Address	Former Town Gravel Pit	Street Address	51 South Main Street Northfield, Vermont 05663
Company Name	Town of Northfield	Company Name	Town of Northfield
Landowner Name	Jeff Schulz (Town Manager)	Owner Name	Jeff Schulz (Town Manager)
Landowner Phone #	802-485-9822	Owner Phone #	802-485-9822
Landowner email	jschulz@northfield.vt.us	Owner email	jschulz@northfield.vt.us

---

Section 4. Signature Section

Responsible Party:

As the party responsible for compliance with the Investigation and Remediation of Contaminated Properties Rule and applicable statutes, I hereby certify that the representations made on this form are to the best of my knowledge true and correct.

Jeff Schulz — Name of Owner/Operator Representative (printed)

Town Manager — Company Title

_____ Signature

_____ Date

Landowner:

As landowner of the soil treatment stockpile location, I hereby give approval to the soil generator to stockpile the soil volume cited above at the above referenced location. In addition, I hereby grant property access to DEC investigators for the purpose of inspecting the Soil Stockpile at any reasonable time.

Jeff Schulz
_____
Print Name

_____ _____
Signature Date

DEC Site Manager Approval:

Monica Ladago
_____
Print Name

_____ _____
Signature of DEC Site Manager Date of Approval

VERMONT

Offsite Soil Stockpiling Plan

Vermont Agency of Natural Resources

vermont.gov

LEGEND

- Rare Threatened and Endange
  - RTE Animal
  - RTE Plant
- Wetland - VSWI
  - Class 1 Wetland
  - Class 2 Wetland
  - Wetland Buffer
- Wetlands Advisory Layer
- Hazardous Site
- Hazardous Waste Generators
- Brownfields
- Salvage Yard
- Aboveground Storage Tank
- Underground Storage Tank (w
- Dry Cleaner
- Private Wells
  - GPS Located
  - Screen Digitized
  - E911 Address Matched
  - Welldriller/Clarion
  - Unknown Location Method
  - Incorrectly Located
- Parcels (standardized)
- Roads
  - Interstate
  - US Highway; 1
  - State Highway

NOTES

Northfield Bridge Replacement Project
Northfield, VT

237.0 0 118.00 237.0 Meters

WGS_1984_Web_Mercator_Auxiliary_Sphere 1" = 389 Ft. 1cm = 47 Meters

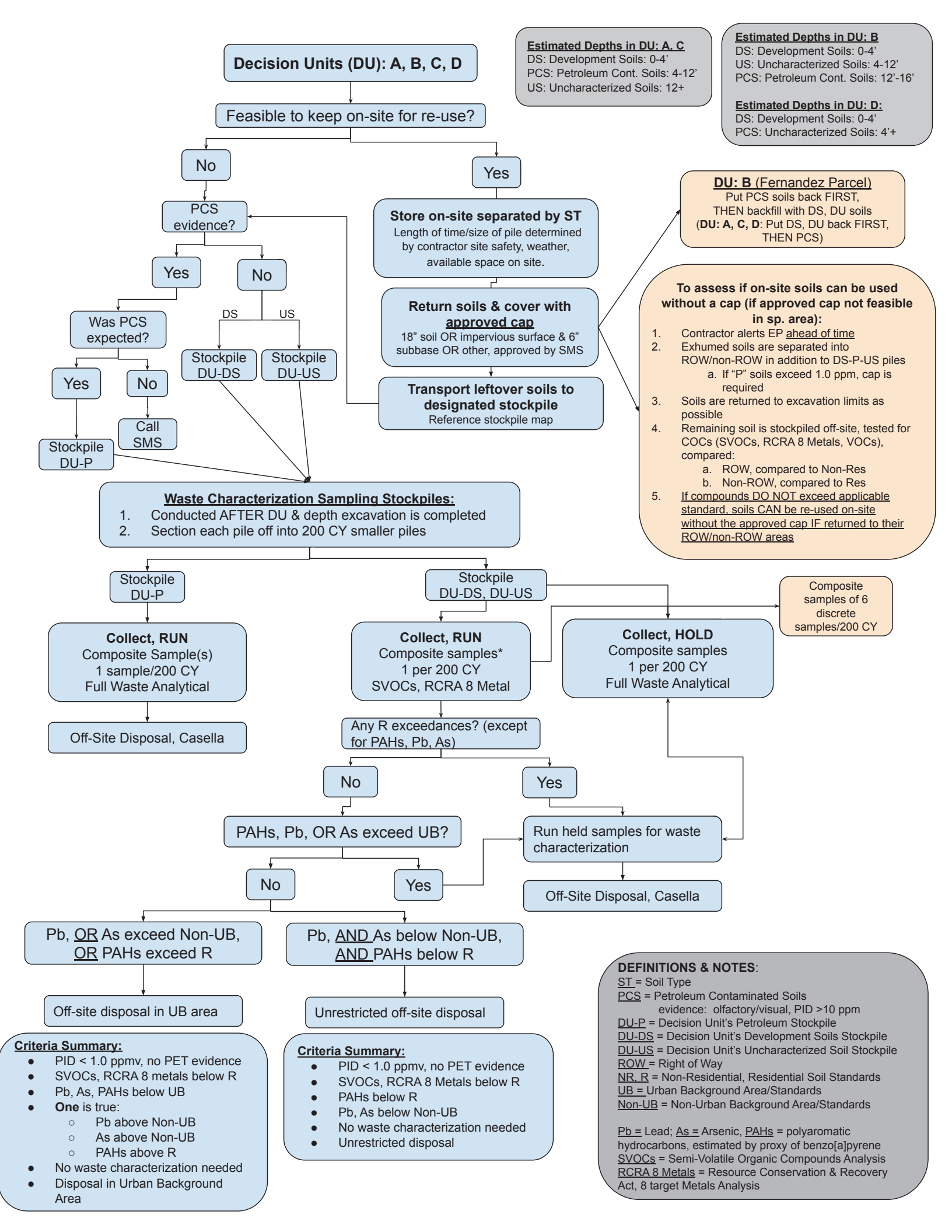
© Vermont Agency of Natural Resources

THIS MAP IS NOT TO BE USED FOR NAVIGATION

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

APPENDIX E

SOIL MANAGEMENT FLOW CHART


Estimated Depths in DU: A, C
DS: Development Soils: 0-4'
PCS: Petroleum Cont. Soils: 4-12'
US: Uncharacterized Soils: 12+
Estimated Depths in DU: B
DS: Development Soils: 0-4'
US: Uncharacterized Soils: 4-12'
PCS: Petroleum Cont. Soils: 12'-16'
Estimated Depths in DU: D:
DS: Development Soils: 0-4'
PCS: Uncharacterized Soils: 4'+
Decision Units (DU): A, B, C, D
Feasible to keep on-site for re-use?
No
Yes
PCS evidence?
Yes
No
Was PCS expected?
Yes
No
Stockpile DU-P
Call SMS
DS
US
Stockpile DU-DS
Stockpile DU-US
Store on-site separated by ST
Length of time/size of pile determined by contractor site safety, weather, available space on site.
Return soils & cover with approved cap
18" soil OR impervious surface & 6" subbase OR other, approved by SMS
Transport leftover soils to designated stockpile
Reference stockpile map
DU: B (Fernandez Parcel)
Put PCS soils back FIRST, THEN backfill with DS, DU soils
(DU: A, C, D: Put DS, DU back FIRST, THEN PCS)
To assess if on-site soils can be used without a cap (if approved cap not feasible in sp. area):
1. Contractor alerts EP ahead of time
2. Exhumed soils are separated into ROW/non-ROW in addition to DS-P-US piles
a. If "P" soils exceed 1.0 ppm, cap is required
3. Soils are returned to excavation limits as possible
4. Remaining soil is stockpiled off-site, tested for COCs (SVOCs, RCRA 8 Metals, VOCs), compared:
a. ROW, compared to Non-Res
b. Non-ROW, compared to Res
5. If compounds DO NOT exceed applicable standard, soils CAN be re-used on-site without the approved cap IF returned to their ROW/non-ROW areas
Waste Characterization Sampling Stockpiles:
1. Conducted AFTER DU & depth excavation is completed
2. Section each pile off into 200 CY smaller piles
Stockpile DU-P
Stockpile DU-DS, DU-US
Composite samples of 6 discrete samples/200 CY
Collect, RUN
Composite Sample(s)
1 sample/200 CY
Full Waste Analytical
Off-Site Disposal, Casella
Collect, RUN
Composite samples*
1 per 200 CY
SVOCs, RCRA 8 Metal
Collect, HOLD
Composite samples
1 per 200 CY
Full Waste Analytical
Any R exceedances? (except for PAHs, Pb, As)
No
Yes
PAHs, Pb, OR As exceed UB?
Run held samples for waste characterization
No
Yes
Off-Site Disposal, Casella
Pb, OR As exceed Non-UB, OR PAHs exceed R
Pb, AND As below Non-UB, AND PAHs below R
Off-site disposal in UB area
Unrestricted off-site disposal
Criteria Summary:
PID < 1.0 ppmv, no PET evidence
SVOCs, RCRA 8 metals below R
Pb, As, PAHs below UB
One is true:
Pb above Non-UB
As above Non-UB
PAHs above R
No waste characterization needed
Disposal in Urban Background Area
Criteria Summary:
PID < 1.0 ppmv, no PET evidence
SVOCs, RCRA 8 Metals below R
PAHs below R
Pb, As below Non-UB
No waste characterization needed
Unrestricted disposal
DEFINITIONS & NOTES:
ST = Soil Type
PCS = Petroleum Contaminated Soils
evidence: olfactory/visual, PID >10 ppm
DU-P = Decision Unit's Petroleum Stockpile
DU-DS = Decision Unit's Development Soils Stockpile
DU-US = Decision Unit's Uncharacterized Soil Stockpile
ROW = Right of Way
NR, R = Non-Residential, Residential Soil Standards
UB = Urban Background Area/Standards
Non-UB = Non-Urban Background Area/Standards
Pb = Lead; As = Arsenic, PAHs = polyaromatic hydrocarbons, estimated by proxy of benzo[a]pyrene
SVOCs = Semi-Volatile Organic Compounds Analysis
RCRA 8 Metals = Resource Conservation & Recovery Act, 8 target Metals Analysis

March 17, 2026

Gary M. Laroche, PE
Structures Project Manager
Vermont Agency of Natural Resources
Barre City Place, 219 North Main Street
Barre, VT 05641
gary.laroche@vermont.gov

RE: Petroleum Cleanup Fund Requirements
Town of Northfield Bridge Replacement Project
Route 12/Main Street
Northfield, Vermont 05663
SMS Site #2021-5027

Dear Gary:

Atlas Technical Consultants, LLC (Atlas) presents this letter to the Vermont Agency of Transportation (VTrans) to detail appropriate Petroleum Cleanup Fund (PCF) procedures for the Contractor and their Environmental Professional (EP) to properly manage petroleum contaminated soil and groundwater during construction related to 2027 activities of the Northfield Bridge Replacement Project in Northfield, VT (Project) located on Route 12/Main Street in Northfield Vermont (Site), SMS Site #2021-5027. The following procedures shall be performed separately for each applicable release, including Merchants Bank, aka Fernandez Property (Site #96-2020) in Decision Unit #P1/P2, and Northfield Gulf Station, aka Wesco Property (Site #2011-4199) in Decision Unit #P3, details of which are provided in the Soil Management Plan (SMS). The Contractor shall acknowledge the necessary PCF steps in the Project Operations Plan (POP), which includes the following:

- Review Procedures for Reimbursement from the PCF, September 2014 - Petroleum Clean-Up Fund | Department of Environmental Conservation
- Prepare a Work Plan/Cost Estimate (WPCE) for applicable petroleum-related investigation, remediation, or monitoring work as required by the SMP.
- Submit the WPCE to the Sites Management Section (SMS) Monica Ladago (monica.ladago@vermont.gov) and obtain written pre-approval BEFORE starting work.
- Ensure costs follow the Consultant Fee Schedule and “reasonable cost” requirements.
- Notify SMS at least 24 hours before any scheduled field work and communicate any last-minute schedule changes to SMS.
- Track labor and equipment according to the approved rates and maintain complete field logs, timesheets, sampling logs, and subcontractor documentation.
- Submit invoice packages covering ≥30 days of work and ensure invoices are <1 year old when submitted.
- Email all submittals to ANR.WMPCFClaims@vermont.gov (Lisa Brassard) who will review for accuracy, reach out for any clarifications/corrections, and then forward to SMS (Monica Ladago).

- Include the PCF Request for Reimbursement Form for each package; Sections 1–4 must be completed and signed by the responsible party (VTrans).
- Include a W-9 form for your company (only needed the first time per site).
- Attach all contractor and subcontractor invoices and include receipts for purchased materials.
- Ensure invoices are organized in the same order as listed on the submittal form.
- Break down invoices by approved WPCE task and include a Cost Summary Table.
- For equipment > $1,000 that is purchased for the work, attach title or bill of sale, provide a list of manufacturers, model, and serial number, include owner's manual, and confirm plan for transfer or salvage upon completion.
- Direct payment to Contractor or EP requires owner (VTrans) authorization (Section 4 of PCF form).
- Reimbursement to owner/operator (VTrans) must include proof-of-payment.
- Retain all project records, including logs, timesheets, contracts, receipts, and invoices for at least 3 years after site completion.

The procedures outlined above assume there are no deductible, proof of insurance, or other site eligibility requirements under the PCF by the Contractor, which is consistent with previous work as these have already been determined for each site. Please do not hesitate to contact us should you have any questions regarding this letter. We appreciate the opportunity to assist with this project.

Sincerely,
ATLAS TECHNICAL CONSULTANTS

Erik Urch
Senior Project Manager
erik.urch@oneatlas.com

DocuSign Envelope ID: 6252F6A9-99D2-4F25-9ECA-404872A6A501

VERMONT

State of Vermont *Agency of Transportation*

To: **Carolyn Cota - Structures Program Manager, Nicholas Van Den Berg - Materials and Certifications Manager, Jeremy Reed - Chief Engineer**

From: **Gary Laroche, Project Manager**

Date: **4/11/2024**

Contract: **NORTHFIELD BF 0241(58)**

Subject: **Contract Public Interest Finding (CPIF) for Bridge Lighting Poles / Fixtures**

Project Location:

Bridge 60 is a Town owned bridge located on VT Route 12 approximately 1.1 miles north of the junction with VT Route 12A South. The bridge is located in a downtown village setting. There is a crosswalk located at the north end of the bridge and on-street parking located just off the south end of the bridge.

Project Description:

Full replacement of Bridge No. 60 on VT-12 in Northfield Village crossing the Dog River.

Reason that a Patented or Proprietary Product or Process is Required:

Bridge No. 60's southern approach defines the northern boundary of Northfield's Depot Square Historic District. Contemporary, previously installed light fixtures found throughout the historic district are compatible in materials and design with the significant, character defining features of this unified collection of historically significant properties. Installing light fixtures similar to those extant, compatible fixtures found throughout Depot Square will help to avoid the potential for project-related adverse effects to the district and its contributing resources, which is essential in meeting agency obligations under Section 106 regulations of the National Historic Preservation Act —36 CFR Part 800.5(a)(1).

Product or Process Description:

Ornamental Street Light Assembly to be mounted on the new bridge. (See attached catalog details)

Category [B] Determination:

Quantity and Cost:

This contract will use approximately **6** of the specified product or process on the NORTHFIELD BF 0241(58) bridge replacement project and approximately [$4,850 / each] for a total estimated cost of $29,100 not including the contractor's installation costs.

Effective Period:

This Contract PIF will only be effective for the contract identified above.

DocuSign Envelope ID: 6252F6A9-99D2-4F25-9ECA-404872A6A501

Vermont Agency of Transportation
Contract Public Interest Finding Related to Materials Procurement for a Project

The categories listed below describe the specific conditions under which a patented or proprietary product or process may be authorized. This form contains attachments that document the necessary facts, conditions, and citations to authorize a Contract Public Interest Finding for the use of *Ornamental Street Light Assembly* on the subject contract.

Despite responsible efforts to identify the most competitive material to perform this function, the Agency, through its Project and Program Managers, has found that the patented or proprietary product or process (check the appropriate box):

☐ Category A – is the only product or process available that fulfills the required function; or

☒ Category B – is necessary for synchronization with other adjacent resources or existing facilities; or

☐ Category C – is being specified for research or experimental evaluation; or

☐ Category D – has been shown to be cost effective; or

☐ Category E – is for emergency or temporary use and its use is in the interests of public safety.

These findings have been made in accordance with Agency practices, including documentation of the underlying facts compelling the Public Interest Finding.

Recommended by: DocuSigned by: Gary Laroche 50A45F8F2C8B458... 4/11/2024, Gary Laroche, Project Manager

Approved by: DocuSigned by: Carolyn Cota 4726E89B394B431... 4/15/2024, Carolyn Cota - Program Manager

Approved by: DocuSigned by: Mick VanDenBerg 57D4DD3560C24C2... 4/15/2024, Nicholas Van Den Berg, Materials and Certifications Manager

Approved by: DocuSigned by: Jeremy Reed BBE658022DA34B7... 4/16/2024, Jeremy Reed - Chief Engineer's Office

DocuSign Envelope ID: 6252F6A9-99D2-4F25-9ECA-404872A6A501

From: Paul Abdella
To: Donahue, Bonnie; Steve Johnson; Laroche, Gary
Cc: Legacy, Alan
Subject: RE: Northfield BF 0241(58)- Exterior Bridge Lighting
Date: Thursday, January 11, 2024 4:32:19 PM
Attachments: image001.png
image002.png
image003.png
image004.png
image005.png
image006.png
image007.png
image008.png
image009.png
image010.png
image011.png
image012.png
image013.png
image014.png
copyofilluminate-emailsigsize(6)_86a783db-ee2c-4861-9b95-7e808fbfc508.png
1_2cec275c-f15c-4daa-baf0-a380a4eeb034.png
2_24f83542-2615-401d-bc09-36c4b860e572.png

Some people who received this message don't often get email from pabdella@illuminatene.com. Learn why this is important

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hello Bonnie,

Price is $4,850 contractor's cost. This is for product only, no installation.

We should discuss height and orientation of the accessories (GFI outlet, banner arms, etc…).

What is an appropriate time to do so?

Thank you,

Paul Abdella
Specification Sales

illumiSITE

P: 617-835-4517
E: pabdella@illuminatene.com
illuminateNE.com

From: Donahue, Bonnie <Bonnie.Donahue@vermont.gov>
Sent: Thursday, January 4, 2024 6:36 AM
To: Paul Abdella <pabdella@illuminatene.com>; Steve Johnson <sjohnson@illuminatene.com>; Laroche, Gary <Gary.Laroche@vermont.gov>
Cc: Legacy, Alan <Alan.Legacy@vermont.gov>
Subject: RE: Northfield BF 0241(58)- Exterior Bridge Lighting

Hi Paul,

In addition to checking which lights need the BLOC option, would you be able to send us a quote for all the fixtures specified?

Thanks so much,
Bonnie

Bonnie Kirn Donahue, PLA (she/her)
VTrans Landscape Architect
802-793-1583

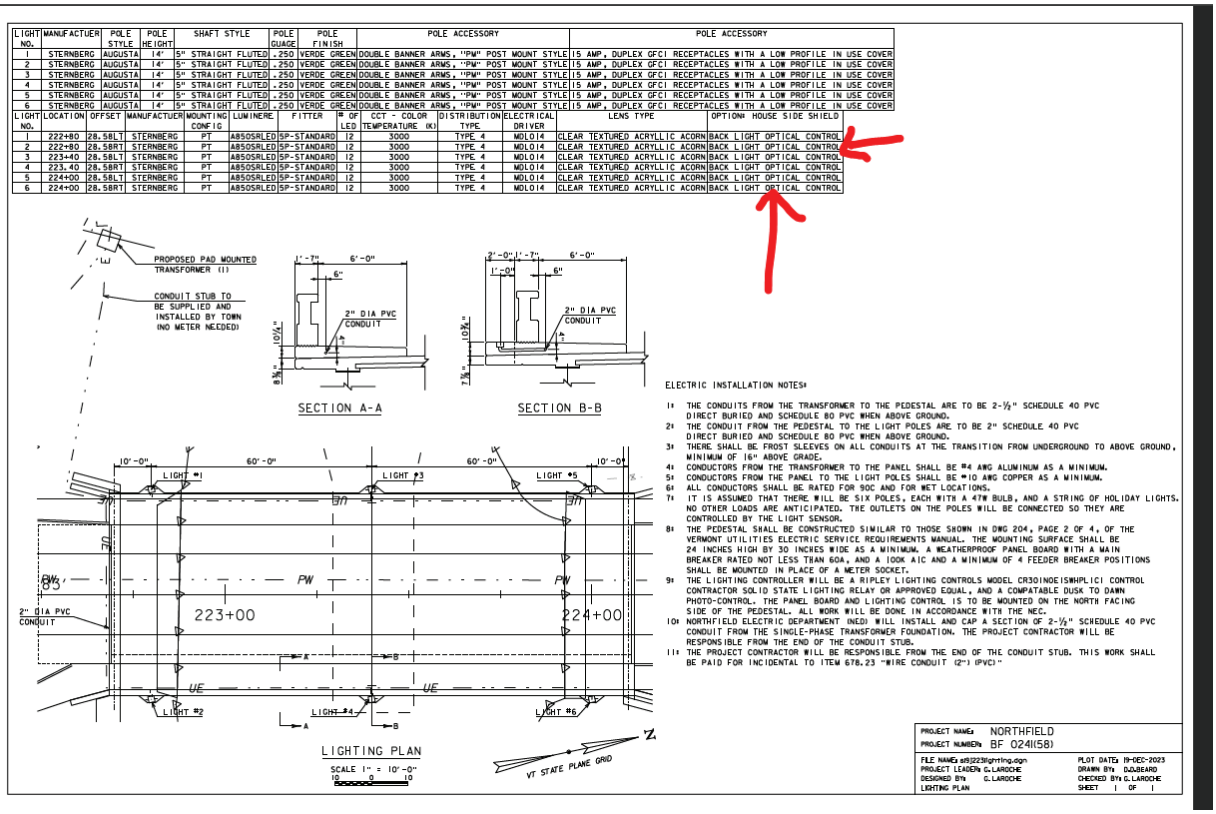
From: Donahue, Bonnie
Sent: Wednesday, January 3, 2024 10:26 AM
To: Paul Abdella <pabdella@illuminatene.com>; Steve Johnson <sjohnson@illuminatene.com>; Laroche, Gary <Gary.Laroche@vermont.gov>
Cc: Legacy, Alan <Alan.Legacy@vermont.gov>
Subject: RE: Northfield BF 0241(58)- Exterior Bridge Lighting

Hi Paul,

Please find below an image of the lighting plan. Light #2 is the one in front of the historic property. For context, here is the location of the existing bridge: https://maps.app.goo.gl/H1XQZKU2UR1Fr4zm7

Thanks,
Bonnie

DocuSign Envelope ID: 6252F6A9-99D2-4F25-9ECA-404872A6A501



LIGHT NO.	MANUFACTUER	POLE STYLE	POLE HEIGHT	SHAFT STYLE	POLE GUAGE	POLE FINISH	POLE ACCESSORY	POLE ACCESSORY
1	STERNBERG	AUGUSTA	14'	5" STRAIGHT FLUTED	.250	VERDE GREEN	DOUBLE BANNER ARMS, "PW" POST MOUNT STYLE	15 AMP, DUPLEX GFCI RECEPTACLES WITH A LOW PROFILE IN USE COVER
2	STERNBERG	AUGUSTA	14'	5" STRAIGHT FLUTED	.250	VERDE GREEN	DOUBLE BANNER ARMS, "PW" POST MOUNT STYLE	15 AMP, DUPLEX GFCI RECEPTACLES WITH A LOW PROFILE IN USE COVER
3	STERNBERG	AUGUSTA	14'	5" STRAIGHT FLUTED	.250	VERDE GREEN	DOUBLE BANNER ARMS, "PW" POST MOUNT STYLE	15 AMP, DUPLEX GFCI RECEPTACLES WITH A LOW PROFILE IN USE COVER
4	STERNBERG	AUGUSTA	14'	5" STRAIGHT FLUTED	.250	VERDE GREEN	DOUBLE BANNER ARMS, "PW" POST MOUNT STYLE	15 AMP, DUPLEX GFCI RECEPTACLES WITH A LOW PROFILE IN USE COVER
5	STERNBERG	AUGUSTA	14'	5" STRAIGHT FLUTED	.250	VERDE GREEN	DOUBLE BANNER ARMS, "PW" POST MOUNT STYLE	15 AMP, DUPLEX GFCI RECEPTACLES WITH A LOW PROFILE IN USE COVER
6	STERNBERG	AUGUSTA	14'	5" STRAIGHT FLUTED	.250	VERDE GREEN	DOUBLE BANNER ARMS, "PW" POST MOUNT STYLE	15 AMP, DUPLEX GFCI RECEPTACLES WITH A LOW PROFILE IN USE COVER

LIGHT NO.	LOCATION	OFFSET	MANUFACTUER	MOUNTING CONFIG	LUMINERE FITTER	# OF LED	CCT - COLOR TEMPERATURE (K)	DISTRIBUTION TYPE	ELECTRICAL DRIVER	LENS TYPE	OPTION# HOUSE SIDE SHIELD
1	222+80	28.58LT	STERNBERG	PT	A850SRLED	5P-STANDARD	12	3000	TYPE 4	MDL014	CLEAR TEXTURED ACRYLLIC ACORN	BACK LIGHT OPTICAL CONTROL
2	222+80	28.58RT	STERNBERG	PT	A850SRLED	5P-STANDARD	12	3000	TYPE 4	MDL014	CLEAR TEXTURED ACRYLLIC ACORN	BACK LIGHT OPTICAL CONTROL
3	223+40	28.58LT	STERNBERG	PT	A850SRLED	5P-STANDARD	12	3000	TYPE 4	MDL014	CLEAR TEXTURED ACRYLLIC ACORN	BACK LIGHT OPTICAL CONTROL
4	223.40	28.58RT	STERNBERG	PT	A850SRLED	5P-STANDARD	12	3000	TYPE 4	MDL014	CLEAR TEXTURED ACRYLLIC ACORN	BACK LIGHT OPTICAL CONTROL
5	224+90	28.58LT	STERNBERG	PT	A850SRLED	5P-STANDARD	12	3000	TYPE 4	MDL014	CLEAR TEXTURED ACRYLLIC ACORN	BACK LIGHT OPTICAL CONTROL
6	224+00	28.58RT	STERNBERG	PT	A850SRLED	5P-STANDARD	12	3000	TYPE 4	MDL014	CLEAR TEXTURED ACRYLLIC ACORN	BACK LIGHT OPTICAL CONTROL

ELECTRIC INSTALLATION NOTES:

1. THE CONDUITS FROM THE TRANSFORMER TO THE PEDESTAL ARE TO BE 2-½" SCHEDULE 40 PVC DIRECT BURIED AND SCHEDULE 80 PVC WHEN ABOVE GROUND.
2. THE CONDUIT FROM THE PEDESTAL TO THE LIGHT POLES ARE TO BE 2" SCHEDULE 40 PVC DIRECT BURIED AND SCHEDULE 80 PVC WHEN ABOVE GROUND.
3. THERE SHALL BE FROST SLEEVES ON ALL CONDUITS AT THE TRANSITION FROM UNDERGROUND TO ABOVE GROUND, MINIMUM OF 16" ABOVE GRADE.
4. CONDUCTORS FROM THE TRANSFORMER TO THE PANEL SHALL BE #4 AWG ALUMINUM AS A MINIMUM.
5. CONDUCTORS FROM THE PANEL TO THE LIGHT POLES SHALL BE #10 AWG COPPER AS A MINIMUM.
6. ALL CONDUCTORS SHALL BE RATED FOR 90C AND FOR WET LOCATIONS.
7. IT IS ASSUMED THAT THERE WILL BE SIX POLES, EACH WITH A 47W BULB, AND A STRING OF HOLIDAY LIGHTS. NO OTHER LOADS ARE ANTICIPATED. THE OUTLETS ON THE POLES WILL BE CONNECTED SO THEY ARE CONTROLLED BY THE LIGHT SENSOR.
8. THE PEDESTAL SHALL BE CONSTRUCTED SIMILAR TO THOSE SHOWN IN DWG 204, PAGE 2 OF 4, OF THE VERMONT UTILITIES ELECTRIC SERVICE REQUIREMENTS MANUAL. THE MOUNTING SURFACE SHALL BE 24 INCHES HIGH BY 30 INCHES WIDE AS A MINIMUM. A WEATHERPROOF PANEL BOARD WITH A MAIN BREAKER RATED NOT LESS THAN 60A, AND A 100K AIC AND A MINIMUM OF 4 FEEDER BREAKER POSITIONS SHALL BE MOUNTED IN PLACE OF A METER SOCKET.
9. THE LIGHTING CONTROLLER WILL BE A RIPLEY LIGHTING CONTROLS MODEL CR30INOEISWHPLICI CONTROL CONTRACTOR SOLID STATE LIGHTING RELAY OR APPROVED EQUAL, AND A COMPATABLE DUSK TO DAWN PHOTO-CONTROL. THE PANEL BOARD AND LIGHTING CONTROL IS TO BE MOUNTED ON THE NORTH FACING SIDE OF THE PEDESTAL. ALL WORK WILL BE DONE IN ACCORDANCE WITH THE NEC.
10. NORTHFIELD ELECTRIC DEPARTMENT (NED) WILL INSTALL AND CAP A SECTION OF 2-½" SCHEDULE 40 PVC CONDUIT FROM THE SINGLE-PHASE TRANSFORMER FOUNDATION. THE PROJECT CONTRACTOR WILL BE RESPONSIBLE FROM THE END OF THE CONDUIT STUB.
11. THE PROJECT CONTRACTOR WILL BE RESPONSIBLE FROM THE END OF THE CONDUIT STUB. THIS WORK SHALL BE PAID FOR INCIDENTAL TO ITEM 678.23 "WIRE CONDUIT (2") (PVC)"

PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 0241(58)
FILE NAME: s:\223\lighting.dgn
PROJECT LEADER: G.LAROCHE
DESIGNED BY: G.LAROCHE
LIGHTING PLAN
PLOT DATE: 19-DEC-2023
DRAWN BY: DJUBEARD
CHECKED BY: G.LAROCHE
SHEET 1 OF 1

Bonnie Kirn Donahue, PLA (she/her)
VTrans Landscape Architect
802-793-1583

From: Paul Abdella <pabdella@illuminatene.com>
Sent: Tuesday, January 2, 2024 2:27 PM
To: Donahue, Bonnie <Bonnie.Donahue@vermont.gov>; Steve Johnson <sjohnson@illuminatene.com>; Laroche, Gary <Gary.Laroche@vermont.gov>
Cc: Legacy, Alan <Alan.Legacy@vermont.gov>
Subject: RE: Northfield BF 0241(58)- Exterior Bridge Lighting

You don't often get email from pabdella@illuminatene.com. Learn why this is important

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hi Bonnie,

Glad we could help.

Can you kindly refresh my memory of the pole locations relative to the bridge and its walkway? A top view in PDF and graphical scale should do the trick. Do you have that available?

After a review of that, I could offer a recommendation.

Thank you,

Paul Abdella
Specification Sales

illumiSITE

P: 617-835-4517
E: pabdella@illuminatene.com
illuminateNE.com

From: Donahue, Bonnie <Bonnie.Donahue@vermont.gov>
Sent: Tuesday, January 2, 2024 2:21 PM
To: Steve Johnson <sjohnson@illuminatene.com>; Laroche, Gary <Gary.Laroche@vermont.gov>; Paul Abdella <pabdella@illuminatene.com>
Cc: Legacy, Alan <Alan.Legacy@vermont.gov>
Subject: RE: Northfield BF 0241(58)- Exterior Bridge Lighting

Hi Steve and Paul,

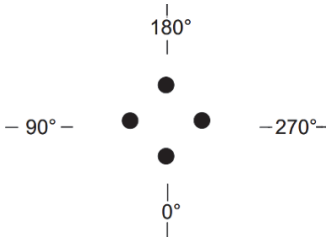
Thanks for your help specifying the proper lights for this project last year. I have a follow up question:

1. Should we specify that all lights use the BLOC option, or just the light in front of the historic property? Is there an advantage or disadvantage one way or another?

Thanks,
Bonnie

DocuSign Envelope ID: 6252F6A9-99D2-4F25-9ECA-404872A6A501

Arms and Accessory	Orientation
Double Banner Arm (DBA)	0
Ground Fault Interrupter (GFILP-IUC)	180



(4) 1/2" X 18" Anchor Bolts, 12" Bolt Circle, Diamond pattern

Access Door Orientation:	0°
Street Side Orientation:	180°

555 Lawrence Avenue | Roselle, IL 60172 | p 847.588.3400 | www.sternberglighting.com

CONCEPTUAL ASSEMBLY DRAWING, SUBJECT TO ENGINEERING VERIFICATION BY THE FACTORY

CENTER POST TOP FIXTURE: A850SRLED

The A850 Old Town series is a traditional acorn style fixture which consists of a decorative cast aluminum fitter, and a solid cast aluminum roof which includes optimized heat sinks to provide maximum life and performance for the LED light sources. The acorn shall be sealed to the cast aluminum roof to provide a moisture-free and bug-free optics chamber for the LED light sources. The luminaire shall be rated IP65 and shall be UL listed in US and Canada.

PT FITTER: 5P

Fitter: 5P

PT LIGHT SOURCE: -12L30T4-MDL014

Array:	12 LEDS, 27W for MD_008, 47W for MD_014 (12L)
Color Temp:	3000K (30)
Distribution:	Type 4 (T4)
Driver:	Multi-Volt Dimmable Low-Range Driver - 120-277V, 140mA (MDL014)

PT FIXTURE OPTIONS: -A-BLOC

Acorn Material:	Clear Acrylic (A)
Houseside Shield or Back Lighting Optical Control:	Yes (BLOC)

POLE: 4214FP5-.250

The 17" diameter cast 356 aluminum alloy base and aluminum shaft shall be a one-piece construction. The pole shall be U.L. or E.T.L. listed in U.S. and Canada. All pole heights to have a tolerance of ± 2"

Model:	4200 Augusta (42)
Height:	14 Ft (14)
Shaft Type:	Fluted Straight 5 Inch, 6061-T6 Aluminum Alloy (FP5)
Gauge:	0.250" (.250)

ACCESSORY: DBA/

Made from heavy-wall aluminum, double banner arms mount to the side of the pole and measure 36" between post centers. Banners (18"W x 36"H) by others.

Model: Double Banner Arm (DBA)

ACCESSORY: GFI-LPIUC/

Ground-fault interrupter with duplex receptacle and low-profile in-use cover.

Model: GFI-LPIUC

FINISH: VG

Assembly shall be powder coated to Verde Green finish. Prior to coating, the assembly shall be chemically cleaned and etched in a 5-stage washing system which includes alkaline cleaning, rinsing, phosphoric etching, reverse osmosis water rinsing, and non-chrome sealing to ensure corrosion resistance.

Wind Load Evaluation

This assembly, as configured, MEETS AASHTO requirements for wind loading

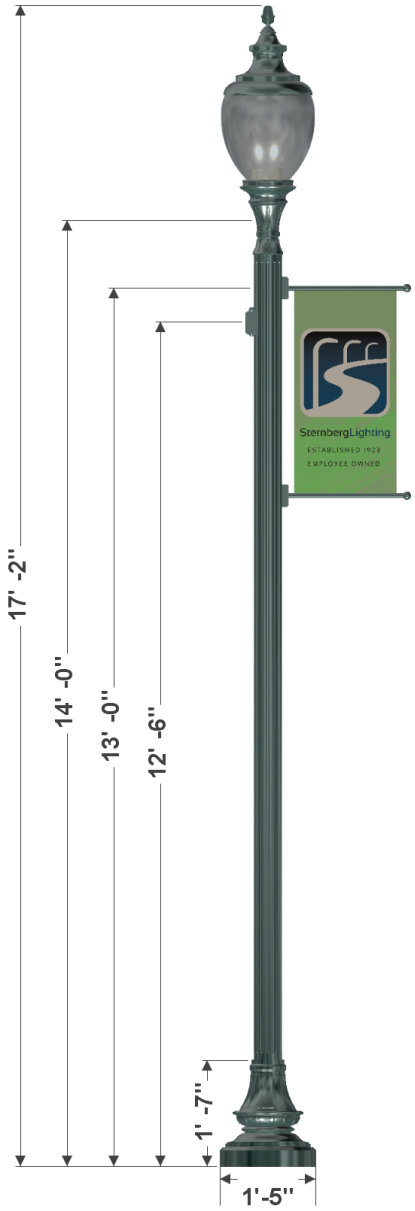
Wind Speed:	90 mph
Gust Factor:	1.14

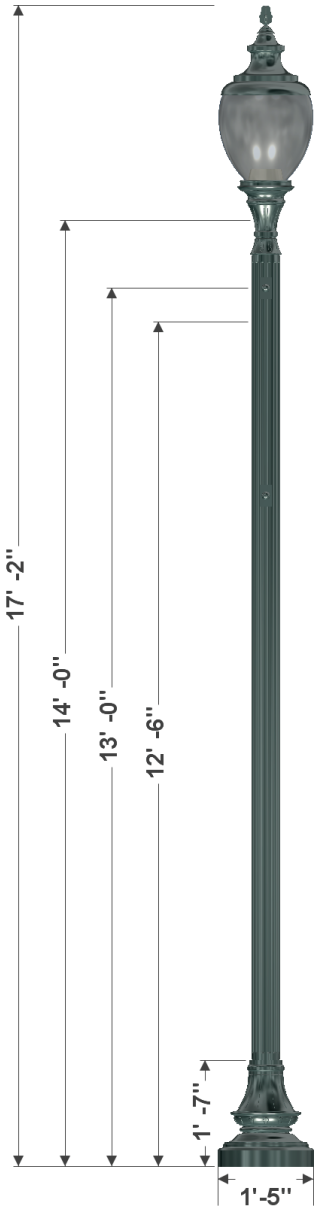
Catalog Number: PT-A850SRLED-5P-12L30T4-MDL014-A-BLOC / 4214FP5-.250 / DBA / GFI-LPIUC / VG

DocuSign Envelope ID: 6252F6A9-99D2-4F25-9ECA-404872A6A501

555 Lawrence Avenue | Roselle, IL 60172 | p 847.588.3400 | www.sternberglighting.com

CONCEPTUAL ASSEMBLY DRAWING, SUBJECT TO ENGINEERING VERIFICATION BY THE FACTORY





Catalog Number: PT-A850SRLED-5P-12L30T4-MDL014-A-BLOC / 4214FP5-.250 / DBA / GFI-LPIUC / VG

Paul Abdella
Director IllumiSite

illumiSITE

P: 617.835.4517
E: pabdella@illuminatene.com

Job Name: northfield bridge	Customer Signature:	Drawing #44624
Job Location: northfield ma	Date: 2022/09/14	2 of 2

DocuSign Envelope ID: 6252F6A9-99D2-4F25-9ECA-404872A6A501

From: Ducey, Wendy
To: Bassett, Daryl; Laroche, Gary
Cc: AOT - HWY Precontract Specifications; Cota, Carolyn; LaCroix, Michael; Lyman, Derek; Peloquin, Phil
Subject: RE: NORTHFIELD BF 0241(58): Ornamental Street Light Assembly Special Specification For Approval
Date: Monday, March 25, 2024 9:18:10 AM
Attachments: image001.png

Thanks for submitting your Special Specifications (SS) for review and approval.

Special Specification: SECTION 679-0001 – ORNAMENTAL STREET LIGHT ASSEMBLY has been approved and Pay Items: 679.4600001 ORNAMENTAL STREET LIGHT ASSEMBLY, Unit of Measure: EACH and 679.4600002 ORNAMENTAL STREET LIGHT FOUNDATION, Unit of Measure: EACH have been added to iPDWeb and is available for your use on estimates.

As a reminder when you submit PS&E please upload the final word version of the SS so that we can post the final pdf to the SharePoint site once you advertise the contract. At this stage, the SS becomes locked down and no other revisions can be made. If additional revisions are required in the future a new SS will need to be proposed.

Thanks!
Wendy

Wendy Ducey, Construction and Materials Bureau | Pre-Contract and Specifications Manager
Highway Division
2178 Airport Rd, Unit B | Berlin, VT 05641
802-279-1417| wendy.ducey@vermont.gov
http://vtrans.vermont.gov/

Help raise money for Vermonters impacted by flood damage and show your Vermont pride with *Vermont Strong* and *Tough Too* license plates and socks. Click here to purchase your Vermont Strong gear or visit DMV.Vermont.gov/VermontStrong23.

Impacted Vermonters can find resources and referrals by visiting Vermont.Gov/Flood.

From: Bassett, Daryl <Daryl.Bassett@partner.vermont.gov>
Sent: Thursday, March 21, 2024 12:42 PM
To: Ducey, Wendy <Wendy.Ducey@vermont.gov>
Cc: Laroche, Gary <Gary.Laroche@vermont.gov>
Subject: RE: NORTHFIELD BF 0241(58): Ornamental Street Light Assembly Special Specification For Approval

Hi Wendy,

I have provided responses to your comments on the ornamental street light assembly document located on the PC&S sharepoint site. Also, please find attached email exchanges related to the SME, Materials and Research, and Program Manager approval for your records.

If you need any additional information, please let me know.

Thanks,

DocuSign Envelope ID: 6252F6A9-99D2-4F25-9ECA-404872A6A501

Daryl

Daryl Bassett
DuBois & King, Inc.
28 North Main Street
Randolph, VT 05060
Cell Phone: (802) 279-2738

From: Ducey, Wendy <Wendy.Ducey@vermont.gov>
Sent: Wednesday, March 20, 2024 8:07 AM
To: Laroche, Gary <Gary.Laroche@vermont.gov>; AOT - Pre-Contract & Specifications <AOT.PreContractandSpecificationsTeam@vermont.gov>
Cc: Bassett, Daryl <Daryl.Bassett@partner.vermont.gov>
Subject: RE: NORTHFIELD BF 0241(58): Ornamental Street Light Assembly Special Specification For Approval

Morning Gary – we have finished our review. Please see our comments in the shared file. This folder is intended to be used for reviews moving forward. Have lead SMEs and materials reviewed and approved this yet?

Thanks!
Wendy

Wendy Ducey, Construction and Materials Bureau | Pre-Contract and Specifications Manager
Highway Division
2178 Airport Rd, Unit B | Berlin, VT 05641
802-279-1417| wendy.ducey@vermont.gov
http://vtrans.vermont.gov/

Help raise money for Vermonters impacted by flood damage and show your Vermont pride with *Vermont Strong* and *Tough Too* license plates and socks. Click here to purchase your Vermont Strong gear or visit DMV.Vermont.gov/VermontStrong23.

Impacted Vermonters can find resources and referrals by visiting Vermont.Gov/Flood.

From: Laroche, Gary <Gary.Laroche@vermont.gov>
Sent: Tuesday, March 19, 2024 5:01 PM
To: AOT - Pre-Contract & Specifications <AOT.PreContractandSpecificationsTeam@vermont.gov>
Cc: Bassett, Daryl <Daryl.Bassett@partner.vermont.gov>
Subject: FW: NORTHFIELD BF 0241(58): Ornamental Street Light Assembly Special Specification For Approval

Hello PC&S Team.

We have Program Manager approval for the Ornamental Street Light Assembly Special Specification. Please proceed with your review and let me know what you think.

DocuSign Envelope ID: 6252F6A9-99D2-4F25-9ECA-404872A6A501

SECTION 679-0001 – ORNAMENTAL STREET LIGHT ASSEMBLY

679-0001.01 DESCRIPTION. This work shall consist of furnishing and installing ornamental street light assemblies, complete with luminaire, wiring, fuses, foundations, and fuse holders internal to the pole hand hole, with grounding electrodes installed, and all other items necessary to provide a complete and operational system.

The work under this section shall be performed in accordance with these provisions, the Plans, and Section 679.

679-0001.02 MATERIALS. Materials shall meet the requirements of the following subsections:

Bar Reinforcement.....713.01
Anchor Bolts for Signals, Lighting, and Overhead Signs.....714.09
Bearing Pads.....731.01
Electrical Conduit.....752.06
Grounding Electrodes.....752.11
Highway Illumination Conductor Cable.....753.06

Concrete for ornamental street light assembly foundations shall be Concrete, Class B in accordance with Section 541.

Anchor bolts shall meet the requirements shown on the Plans.

The ornamental street light assembly shall be of the type and manufacturer specified on the Plans.

679-0001.03 CONSTRUCTION REQUIREMENTS. The Contractor shall submit working drawings in accordance with Subsection 105.06 and Subsection 679.04, in addition to the manufacturer's descriptive literature for the materials specified.

Transport, storage, handling, and installation of products shall be in accordance with the manufacturer's instructions. The Contractor shall protect all parts of the ornamental street light assemblies and maintain them in an undamaged condition until they are installed and accepted for payment. Factory applied shipping wrap of cardboard or other material shall remain in place throughout handling and installation to protect assembly finish. The factory shipping wrap shall only be removed after final assembly installation. Pole grips, truck arms, jaws, trailers, and any other surfaces that contact assemblies prior to or during installation shall be fully and thickly padded to prevent scratching assemblies.

Ornamental street light pole foundations shall be installed true to line and grade as shown on the Plans or as directed by the Engineer.

DocuSign Envelope ID: 6252F6A9-99D2-4F25-9ECA-404872A6A501

Ornamental street light assembly foundations shall be installed at the locations indicated and in the configurations shown on the Plans. All locations shall be field approved by the Engineer prior to installation.

The Contractor shall provide and install the grounding electrode and associated ground wiring for each ornamental street light assembly. Each assembly shall be provided with its own separate ground rod adjacent to its foundation and bonded to the pole's grounding lug, as shown on the Plans. In the case of bridge deck mounted ornamental street light assemblies, the grounding method shall be in accordance with the *National Electrical Code*.

Poles shall be installed plumb and true on the foundations and in strict accordance with the manufacturer's instructions. If needed, stainless steel flat washers or stainless-steel horseshoe shims shall be used to plumb the poles. For aluminum bases mounted on concrete, a 1/8 inch thick preformed fabric bearing pad shall be placed on the concrete surface. Sealant shall not be placed under the ornamental street light base to allow for drainage.

Ornamental luminaires shall be installed with the correct optical system orientation, socket position, and inclination angle to meet the specified photometric requirements. Ornamental luminaires shall be installed at the orientation to the roadway as specified on the Plans. All ornamental street light assembly components shall be cleaned of all dirt, dust, and fingerprints prior to acceptance.

A wattage identification sticker shall be installed inside the base hand hole. No other identifying numbers except the manufacturer's nameplate shall be installed on the poles, arms, or luminaries, unless otherwise specified on the Plans.

Splices and junctions shall be made in accordance with Section 678.

Acceptance of the ornamental street light assemblies shall be in accordance with Subsection 679.16.

Any components damaged due to Contractor negligence shall be replaced with new components at the Contractor's expense, and as directed by the Engineer.

679-0001.04 METHOD OF MEASUREMENT. The quantity of Ornamental Street Light Assembly and Ornamental Street Light Foundation of the type specified to be measured for payment will be for each ornamental street light assembly and ornamental street light foundation installed in the complete and accepted work.

679-0001.05 BASIS OF PAYMENT. The accepted quantity of Ornamental Street Light Assembly of the type specified will be paid for at the Contract unit price per each. Payment will be full compensation for furnishing, transporting, handling, and placing the materials specified including poles, luminaries, bracket arms, and photocells; for providing a complete street light assembly, wired in place; performing all splices and junctions; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

DocuSign Envelope ID: 6252F6A9-99D2-4F25-9ECA-404872A6A501

The accepted quantity of Ornamental Street Light Foundation will be paid for at the Contract unit price for each. Payment will be full compensation for furnishing, transporting, handling, assembling, and placing the materials specified, including concrete, reinforcing bar, electrical conduit, anchor bolts, grounding electrodes, preformed fabric bearing pads, highway illumination conductor cable, and accessories; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	Pay Unit
679.4600001 Ornamental Street Light Assembly	Each
679.4600002 Ornamental Street Light Foundation	Each

DocuSign Envelope ID: 6252F6A9-99D2-4F25-9ECA-404872A6A501

PAY ITEM NUMBER	PAY ITEM DESCRIPTION	ITEM UNIT	MATERIAL CODE	MATERIAL DESCRIPTION	Buy America (BA), Buy America Build America (BABA), or Not Applicable	Applicability Justification
201.10	CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS	LS			No Applicability	No Associated Materials
201.11	CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS	ACRE				
201.15	REMOVING MEDIUM TREES	EACH				
201.16	REMOVING LARGE TREES	EACH				
201.20	REMOVING MEDIUM STUMPS	EACH				
201.21	REMOVING LARGE STUMPS	EACH				
201.30	THINNING AND TRIMMING	ACRE				
201.31	THINNING AND TRIMMING FOR SIGNS	EACH				
202.10	DEMOLITION AND DISPOSAL OF BUILDING	EACH				
203.15	COMMON EXCAVATION	CY				
203.16	SOLID ROCK EXCAVATION	CY				
203.17	UNCLASSIFIED EXCAVATION	CY				
203.20	MUCK EXCAVATION	CY				
203.25	CHANNEL EXCAVATION OF EARTH	CY				
203.26	CHANNEL EXCAVATION OF ROCK	CY				
203.27	UNCLASSIFIED CHANNEL EXCAVATION	CY				
203.28	EXCAVATION OF SURFACES AND PAVEMENTS	CY				
203.30	EARTH BORROW	CY	703.02	Earth Borrow	No Applicability	Aggregate
203.31	SAND BORROW	CY	703.03	Sand Borrow and Cushion	No Applicability	Aggregate
203.32	GRANULAR BORROW	CY	703.04	Granular Borrow	No Applicability	Aggregate
203.33	ROCK BORROW	CY	703.05	Rock Borrow	No Applicability	Aggregate
203.35	GRAVEL FILTER FOR SLOPE STABILIZATION	CY	704.07	Gravel Filter for Slope Stabilization	No Applicability	Aggregate
203.40	SHOULDER BERM REMOVAL	LF			No Applicability	No Associated Materials
203.45	TEST BORINGS	LF				
204.20	TRENCH EXCAVATION OF EARTH	CY				
204.21	TRENCH EXCAVATION OF ROCK	CY				
204.22	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	CY				
204.25	STRUCTURE EXCAVATION	CY				
204.30	GRANULAR BACKFILL FOR STRUCTURES	CY	704.08	Granular Backfill for Structures	No Applicability	Aggregate
205.10	DRILLING AND BLASTING OF SOLID ROCK	LF			No Applicability	No Associated Materials
205.20	DRILLING AND BLASTING OF SOLID ROCK SUBGRADE	SY				
208.30	COFFERDAM EXCAVATION, EARTH	CY				
208.35	COFFERDAM EXCAVATION, ROCK	CY				
208.40	COFFERDAM	LS			No Applicability	Temporary
210.10	COARSE-MILLING, BITUMINOUS PAVEMENT	SY			No Applicability	No Associated Materials
210.12	FINE-MILLING, BITUMINOUS PAVEMENT	SY				
213.10	MILLED RUMBLE STRIPS	LF				
301.15	SUBBASE OF GRAVEL	CY	704.04	Gravel for Subbase	No Applicability	Aggregate
301.25	SUBBASE OF CRUSHED GRAVEL, COARSE GRADED	CY	704.05	Crushed Gravel for Subbase (704.05A)	No Applicability	Aggregate
301.26	SUBBASE OF CRUSHED GRAVEL, FINE GRADED	CY	704.05	Crushed Gravel for Subbase (704.05B)	No Applicability	Aggregate
301.28	SUBBASE OF CRUSHED GRAVEL, FINE GRADED	TON	704.05	Crushed Gravel for Subbase (704.05B)	No Applicability	Aggregate
301.35	SUBBASE OF DENSE GRADED CRUSHED STONE	CY	704.06	Dense Graded Crushed Stone for Subbase	No Applicability	Aggregate
301.40	SUBBASE, RAP	TON			No Applicability	Aggregate
310.20	FULL DEPTH RECLAMATION (FDR)	SY	704.05	Crushed Gravel for Subbase	No Applicability	Aggregate
			745.01	Water	No Applicability	Non Construction Material
			746.01	Calcium Chloride	No Applicability	Non Construction Material
401.10	AGGREGATE SURFACE COURSE	CY	704.12	Aggregate for Surface Course and Shoulders	No Applicability	Aggregate
402.12	AGGREGATE SHOULDERS	TON	704.12	Aggregate for Surface Course and Shoulders	No Applicability	Aggregate
402.13	AGGREGATE SHOULDERS, RAP	TON	704.12	Aggregate for Surface Course and Shoulders	No Applicability	Aggregate
403.12	AGGREGATE SHOULDERS, RAP WITH RAS	TON	704.12	Aggregate for Surface Course and Shoulders	No Applicability	Aggregate
			745.01	Water	No Applicability	Non Construction Material
404.65	EMULSIFIED ASPHALT	CWT	702.04	Emulsified Asphalt	No Applicability	Aggregate Binding Agent
406.25	MARSHALL BITUMINOUS CONCRETE PAVEMENT	TON	702.02	Performance-Graded Asphalt Binder	No Applicability	Aggregate Binding Agent
406.27	MEDIUM DUTY MARSHALL BITUMINOUS CONCRETE PAVEMENT	TON	702.04	Emulsified Asphalt	No Applicability	Aggregate Binding Agent
			704.10(a)	Aggregate for Surface Course and Shoulders	No Applicability	Aggregate
406.28	AIR VOIDS PAY ADJUSTMENT (N.A.B.I.)	LU			No Applicability	No Associated Materials
406.29	MAT DENSITY PAY ADJUSTMENT (N.A.B.I.)	LU				
406.30	SURFACE TOLERANCE PAY ADJUSTMENT (N.A.B.I.)	LU				
406.31	LONGITUDINAL JOINT COMPACTION PAY ADJUSTMENT (N.A.B.I.)	LU				
406.35	SUPERPAVE BITUMINOUS CONCRETE PAVEMENT	TON	702.02	Performance-Graded Asphalt Binder	No Applicability	Aggregate Binding Agent
406.36	SUPERPAVE BITUMINOUS CONCRETE PAVEMENT, TYPE IVB	TON	702.04	Emulsified Asphalt	No Applicability	Aggregate Binding Agent
406.38	HAND-PLACED BITUMINOUS CONCRETE MATERIAL, DRIVES	SY	704.10(a)	Aggregate for Surface Course and Shoulders	No Applicability	Aggregate
406.45	BITUMINOUS CONCRETE PAVEMENT SURFACE PREPARATION	TON				
406.50	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	LU			No Applicability	Non Construction Material
407.15	BONDED WEARING COURSE	SY	702.02	Performance-Graded Asphalt Binder	No Applicability	Aggregate Binding Agent
			704.10(b)	Aggregate for Ultra-Thin Bonded Wearing Course	No Applicability	Aggregate
			707.04(a)	Joint Sealer, Hot Poured	BABA	Manufactured Product (Waived)
407.16	POLYMER-MODIFIED EMULSIFIED ASPHALT	CWT	702.04(c)	Polymer-Modified Emulsified Asphalt	No Applicability	Aggregate Binding Agent
410.10	MATERIAL TRANSFER VEHICLE	TON			No Applicability	No Associated Materials
410.11	MATERIAL TRANSFER VEHICLE, COLD MIX	TON				

All materials noted as "Manufactured Product (Waived)" are not required to meet Build America, Buy America requirements.

Materials on the Agency's Approved Products List do not require certification.

DocuSign Envelope ID: 6252F6A9-99D2-4F25-9ECA-404872A6A501

PAY ITEM NUMBER	PAY ITEM DESCRIPTION	ITEM UNIT	MATERIAL CODE	MATERIAL DESCRIPTION	Buy America (BA), Buy America Build America (BABA), or Not Applicable	Applicability Justification
415.20	COLD MIXED RECYCLED BITUMINOUS PAVEMENT	SY			No Applicability	Aggregate & Aggregate Binding Agent
415.25	EMULSIFIED ASPHALT, COLD MIX	CWT			No Applicability	Aggregate Binding Agent
417.10	BITUMINOUS CRACK SEALING	LB	707.04(a)	Joint Sealer, Hot Poured	BABA	Manufactured Product (Waived)
417.20	BITUMINOUS CRACK SEALING, "BLOW AND GO" METHOD	LB	707.04(a)	Joint Sealer, Hot Poured	BABA	Manufactured Product (Waived)
418.10	ASPHALTIC APPROACH MATERIAL	SF	707.17	Asphaltic Plug Joint Binder	No Applicability	Aggregate Binding Agent
501.37	HIGH PERFORMANCE CONCRETE, CLASS PCD	CY	701.02	Portland Cement	No Applicability	Cement/Cementitious
501.38	HIGH PERFORMANCE CONCRETE, CLASS PCS	CY	701.05	Portland-Pozzolan Cement	No Applicability	Cement/Cementitious
501.39	HIGH PERFORMANCE CONCRETE, CLASS SCC	CY	701.06	Portland-Limestone Cement	No Applicability	Cement/Cementitious
			701.07	Portland Blast-Furnace Slag Cement	No Applicability	Cement/Cementitious
			701.08	Ternary Blended Cement	No Applicability	Cement/Cementitious
			704.01	Fine Aggregate for Concrete	No Applicability	Aggregate
			704.02	Coarse Aggregate for Concrete	No Applicability	Aggregate
			704.14	Lightweight Coarse Aggregatre for Structural Concrete	No Applicability	Aggregate
			707.08	Preformed Joint Filler, Cork, and Asphalt-Treated Felt	BABA	Manufactured Product (Waived)
			707.10	Polyvinyl Chloride (PVC) Waterstop	BABA	Construction Material - Plastic/Polymer
			707.16	Concrete Bonding Systems	BABA	Manufactured Product (Waived)
			715.05	Stay-in-Place Corrugated Metals Forms for Superstructure Slabs	BA	Steel
			719.02	Epoxy Bonding Systems	BABA	Manufactured Product (Waived)
			725.01	Concrete Curing Materials	No Applicability	Temporary
			725.02(b)	Air-Entraining Admixtures	No Applicability	Aggregate Binding Additive
			725.02(c)	Retarding Admixtures	No Applicability	Aggregate Binding Additive
			725.02(e)	Water-Reducing Admixtures	No Applicability	Aggregate Binding Additive
			725.02(f)	Water-Reducing and Retarding Admixtures	No Applicability	Aggregate Binding Additive
			725.02(g)	Water-Reducing, High Range Admixtures	No Applicability	Aggregate Binding Additive
			725.02(h)	Water-Reducing, High Range, and Retarding Admixtures	No Applicability	Aggregate Binding Additive
			725.02(i)	Accelerating Admixtures	No Applicability	Aggregate Binding Additive
			725.02(j)	Water-Reducing and Accelerating Admixtures	No Applicability	Aggregate Binding Additive
			725.02(k)	Specific Performance Admixtures	No Applicability	Aggregate Binding Additive
			725.03	Mineral Admixtures	No Applicability	Aggregate Binding Additive
			725.03(b)	Silica Fume	No Applicability	Aggregate Binding Additive
			725.03(c)	Ground Granulated Blast-Furnace Slag (GGBFS)	No Applicability	Aggregate Binding Additive
			735.01	Polystyrene Insulation Board	BABA	Non Construction Material
			735.02	Blanket Insulation Material	BABA	Manufactured Product (Waived)
			740.08	Pipe Insulation	BABA	Manufactured Product (Waived)
			745.01	Water	No Applicability	Non Construction Material
502.10	SHORING SUPERSTRUCTURE	LS			No Applicability	No Associated Materials
502.11	SHORING SUPERSTRUCTURE BEARINGS	EACH				
504.10	FURNISHING EQUIPMENT FOR DRIVING PILING	LS				
505.10	STEEL PILING, HP 10 X 42	LF	730.01	Steel Piling	BA	Steel
505.12	STEEL PILING, HP 10 X 57	LF				
505.15	STEEL PILING, HP 12 X 53	LF				
505.155	STEEL PILING, HP 12 X 63	LF				
505.16	STEEL PILING, HP 12 X 74	LF				
505.165	STEEL PILING, HP 12 X 84	LF				
505.17	STEEL PILING, HP 14 X 73	LF				
505.18	STEEL PILING, HP 14 X 89	LF				
505.19	STEEL PILING, HP 14 X 102	LF				
505.20	STEEL PILING, HP 14 X 117	LF				
505.35	PERMANENT STEEL SHEET PILING	LF	730.02	Steel Sheet Piling	BA	Steel
505.45	DYNAMIC PILE LOADING TEST	EACH			No Applicability	No Associated Materials
506.50	STRUCTURAL STEEL, ROLLED BEAM	LB	707.03	Mortar, Type IV	No Applicability	Aggregate & Aggregate Binding Agent
506.55	STRUCTURAL STEEL, PLATE GIRDER	LB	708.03	Structural Steel Coating Systems	BA	Steel
506.56	STRUCTURAL STEEL, CURVED PLATE GIRDER	LB	708.04	Grease Rustproofing Compound	BABA	Manufactured Product (Waived)
506.57	STRUCTURAL STEEL, TRUSS	LB	714.02	Structural Steel	BA	Steel
506.60	STRUCTURAL STEEL	LB	714.03	High-Strength Low-Alloy Structural Steel	BA	Steel
506.75	STRUCTURAL STEEL	LS	714.04	Carbon Steel Bolts, Nuts, and Washers	BA	Steel
			714.05	High-Strength Bolts, Nuts, and Washers	BA	Steel
			714.06	Heat-Treated Steel Structural Bolts	BA	Steel
			714.08	Anchor Bolts, Bearing Devices	BA	Steel
			714.10	Welded Stud Shear Connectors	BA	Steel
			714.11	Steel Tubing	BA	Steel
			714.12	Direct Tension Indicators	BA	Steel
			714.13	Tension Control Assemblies	BA	Steel
			726.08	Galvanizing	BA	Steel
			726.09	Metalizing	BA	Steel
507.11	REINFORCING STEEL, LEVEL I	LB	713.01	Bar Reinforcement	BA	Steel
507.12	REINFORCING STEEL, LEVEL II	LB				
507.13	REINFORCING STEEL, LEVEL III	LB				
507.16	DRILLING AND GROUTING DOWELS	LF	707.03	Mortar, Type IV	No Applicability	Cement/Cementitious & Aggregate
			713.01	Bar Reinforcement	BA	Steel
507.19	MECHANICAL BAR CONNECTOR	EACH	713.02	Mechanical Splices for Bar Reinforcement	BA	Steel

All materials noted as "Manufactured Product (Waived)" are not required to meet Build America, Buy America requirements.

Materials on the Agency's Approved Products List do not require certification.

DocuSign Envelope ID: 6252F6A9-99D2-4F25-9ECA-404872A6A501

PAY ITEM NUMBER	PAY ITEM DESCRIPTION	ITEM UNIT	MATERIAL CODE	MATERIAL DESCRIPTION	Buy America (BA), Buy America Build America (BABA), or Not Applicable	Applicability Justification
508.15	SHEAR CONNECTORS	LS	714.10	Welded Stud Shear Connectors	BA	Steel
509.10	LONGITUDINAL DECK GROOVING	SY	745.01	Water	No Applicability	Non Construction Material
510.21	PRESTRESSED CONCRETE BOX BEAMS	LF	701.02	Portland Cement	No Applicability	Aggregate Binding Agent
510.22	PRESTRESSED CONCRETE VOIDED SLABS	LF	701.04	High Early-Strength Portland Cement	No Applicability	Aggregate Binding Agent
510.23	PRESTRESSED CONCRETE GIRDERS	LF	701.05	Portland-Pozzolan Cement	No Applicability	Aggregate Binding Agent
510.24	GROUTING SHEAR KEYS	LF	701.06	Portland-Limestone Cement	No Applicability	Aggregate Binding Agent
510.25	PRESTRESSED CONCRETE SOLID SLABS	LF	701.07	Portland Blast-Furnace Slag Cement	No Applicability	Aggregate Binding Agent
510.26	PRESTRESSED CONCRETE NEXT D BEAMS	LF	701.08	Ternary Blended Cement	No Applicability	Aggregate Binding Agent
			704.01	Fine Aggregate for Concrete	No Applicability	Aggregate
			704.02	Coarse Aggregate for Concrete	No Applicability	Aggregate
			707.03	Mortar, Type IV	No Applicability	Cement/Cementitious & Aggregate
			707.08	Preformed Joint Filler, Cork, and Asphalt-Treated Felt	BABA	Manufactured Product (Waived)
			707.10	Polyvinyl Chloride (PVC) Waterstop	BABA	Construction Material - Plastic/Polymer
			713.01	Bar ReinforCement/Cementitious	BA	Steel
			713.06	Prestressing Strand	BA	Steel
			714.04	Carbon Steel Bolts, Nuts, and Washers	BA	Steel
			714.05	High-Strength Bolts, Nuts, and Washers	BA	Steel
			725.01	Concrete Curing Materials	No Applicability	Temporary
			725.02(b)	Air-Entraining Admixtures	No Applicability	Aggregate Binding Additive
			725.02(c)	Retarding Admixtures	No Applicability	Aggregate Binding Additive
			725.02(e)	Water-Reducing Admixtures	No Applicability	Aggregate Binding Additive
			725.02(f)	Water-Reducing and Retarding Admixtures	No Applicability	Aggregate Binding Additive
			725.02(g)	Water-Reducing, High Range Admixtures	No Applicability	Aggregate Binding Additive
			725.02(h)	Water-Reducing, High Range, and Retarding Admixtures	No Applicability	Aggregate Binding Additive
			725.02(i)	Accelerating Admixtures	No Applicability	Aggregate Binding Additive
			725.02(j)	Water-Reducing and Acceleratign Admixtures	No Applicability	Aggregate Binding Additive
			725.02(k)	Specific Performance Admixtures	No Applicability	Aggregate Binding Additive
			725.03	Mineral Admixtures	No Applicability	Aggregate Binding Additive
			731.01	Preformed Fabric Bearing Pads	No Applicability	Temporary
			731.02	Bearing Pads	No Applicability	Temporary
			731.03	Elastomeric Material	No Applicability	Temporary
			731.05	Stainless Steel	No Applicability	Temporary
			731.07	Brass Rings	No Applicability	Temporary
			731.08	PTFE Material	No Applicability	Temporary
			735.01	Polystyrene Insulation Board	BABA	Non Construction Material
			735.02	Blanket Insulation Material	BABA	Manufactured Product (Waived)
			740.08	Pipe Insulation	BABA	Manufactured Product (Waived)
			745.01	Water	No Applicability	Non Construction Material
			780.01(a)	Concrete Repair Material, Type I	No Applicability	Cement/Cementitious & Aggregate
514.10	WATER REPELLENT, SILANE	GAL	514.02	Water Repellent, Silane	No Applicability	Non Construction Material
516.10	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	LF	707.06	Joint Sealer, Preformed Neoprene	BABA	Manufactured Product (Waived)
516.11	BRIDGE EXPANSION JOINT, VERMONT	LF	707.07	Preformed Fabric Material	BABA	Manufactured Product (Waived)
516.12	BRIDGE EXPANSION JOINT, FINGER PLATE	LF	707.12	Joint Sealer, Butyl Rubber Tape	BABA	Manufactured Product (Waived)
516.20	PARTIAL REMOVAL AND MODIFICATION OF BRIDGE JOINT	LF	707.15	Asphaltic Plug Joints for Bridges	BABA	Manufactured Product (Waived)
			714.02	Structural Steel	BA	Steel
			714.03	High-Strength Low-Alloy Structural Steel	BA	Steel
			714.04	Carbon Steel Bolts, Nuts, and Washers	BA	Steel
			714.05	High-Strength Bolts, Nuts, and Washers	BA	Steel
			714.10	Welded Stud Shear Connectors	BA	Steel
			719.02	Epoxy Bonding Systems	BABA	Manufactured Product (Waived)
			726.08	Galvanizing	BA	Steel
519.10	MEMBRANE WATERPROOFING, SPRAY APPLIED	SY	726.11(a)	Waterproofing Membrane System, Type I	No Applicability	Manufactured Product (Waived)
519.20	SHEET MEMBRANE WATERPROOFING, TORCH APPLIED	SY	726.11(b)	Waterproofing Membrane System, Type II	No Applicability	Manufactured Product (Waived)
522.20	STRUCTURAL LUMBER AND TIMBER, UNTREATED	MFBM	707.04(a)	Joint Sealer, Hot Poured	BABA	Manufactured Product (Waived)
			709.01	Structural Lumber and Timber	BABA	Construction Material - Lumber
			709.01(h)	Miscellaneous Hardware, Shapes, and Fabricated Materials	BA	Steel
			726.08	Galvanizing	BA	Steel
522.25	STRUCTURAL LUMBER AND TIMBER, TREATED	MFBM	707.04(a)	Joint Sealer, Hot Poured	BABA	Manufactured Product (Waived)
			708.05	Coatings for Wood	No Applicability	Non Construction Material
			709.01	Structural Lumber and Timber	BABA	Manufactured Product (Waived)
			709.01(h)	Miscellaneous Hardware, Shapes, and Fabricated Materials	BA	Steel
			726.01	Timber Preservative	No Applicability	Manufactured Product (Waived)
			726.05	Waterproofing Pitch	No Applicability	Non Construction Material
			726.08	Galvanizing	No Applicability	Non Construction Material
522.30	NONSTRUCTURAL LUMBER, UNTREATED	MFBM	707.04(a)	Joint Sealer, Hot Poured	BABA	Manufactured Product (Waived)
			709.01(h)	Miscellaneous Hardware, Shapes, and Fabricated Materials	BA	Steel
			709.02	Nonstructural Lumber	BABA	Construction Material - Lumber
			726.08	Galvanizing	BA	Steel

All materials noted as "Manufactured Product (Waived)" are not required to meet Build America, Buy America requirements.

Materials on the Agency's Approved Products List do not require certification.

DocuSign Envelope ID: 6252F6A9-99D2-4F25-9ECA-404872A6A501

PAY ITEM NUMBER	PAY ITEM DESCRIPTION	ITEM UNIT	MATERIAL CODE	MATERIAL DESCRIPTION	Buy America (BA), Buy America Build America (BABA), or Not Applicable	Applicability Justification
522.35	NONSTRUCTURAL LUMBER, TREATED	MFBM	707.04(a)	Joint Sealer, Hot Poured	BABA	Manufactured Product (Waived)
			708.05	Coatings for Wood	No Applicability	Non Construction Material
			709.01(h)	Miscellaneous Hardware, Shapes, and Fabricated Materials	BA	Steel
			709.02	Nonstructural Lumber	BABA	Manufactured Product (Waived)
			726.01	Timber Preservative	BABA	Manufactured Product (Waived)
			726.05	Waterproofing Pitch	No Applicability	Non Construction Material
			726.08	Galvanizing	BA	Steel
522.40	STRUCTURAL GLUED LAMINATED TIMBER	LS	707.04(a)	Joint Sealer, Hot Poured	BABA	Manufactured Product (Waived)
			708.05	Coatings for Wood	No Applicability	Non Construction Material
			709.01(h)	Miscellaneous Hardware, Shapes, and Fabricated Materials	BA	Steel
			709.03	Structural Glued Laminated Timber	BABA	Manufactured Product (Waived)
			726.01	Timber Preservative	BABA	Manufactured Product (Waived)
			726.05	Waterproofing Pitch	No Applicability	Non Construction Material
			726.08	Galvanizing	BA	Steel
524.10	JOINT SEALER, HOT POURED	GAL	707.04(a)	Joint Sealer, Hot Poured	BABA	Manufactured Product (Waived)
524.11	JOINT SEALER, HOT POURED	LF	707.04(c)	Backer Rod	BABA	Manufactured Product (Waived)
			707.05(c)	Bond Breaker	BABA	Manufactured Product (Waived)
			707.15	Asphaltic Plug Joints for Bridges	BA	Steel
524.12	JOINT SEALER, COLD POURED	GAL	707.04(b)	Joint Sealer, Cold Poured	BABA	Manufactured Product (Waived)
524.13	JOINT SEALER, COLD POURED	LF	707.04(c)	Backer Rod	BABA	Manufactured Product (Waived)
			707.05(c)	Bond Breaker	BABA	Manufactured Product (Waived)
			707.15	Asphaltic Plug Joints for Bridges	BA	Steel
524.20	JOINT SEALER, POLYURETHANE	GAL	707.04(c)	Backer Rod	BABA	Manufactured Product (Waived)
524.21	JOINT SEALER, POLYURETHANE	LF	707.05	Joint Sealer, Polyurethane	BABA	Manufactured Product (Waived)
			707.05(c)	Bond Breaker	BABA	Manufactured Product (Waived)
			707.15	Asphaltic Plug Joints for Bridges	BA	Steel
525.10	REMOVAL OF EXISTING BRIDGE RAILING	LF			No Applicability	No Associated Materials
525.11	RESET EXISTING BRIDGE RAILING	LF	707.03	Mortar, Type IV	No Applicability	Cement/Cementitious & Aggregate
525.33	BRIDGE RAILING, GALVANIZED 2 RAIL BOX BEAM	LF	708.04	Grease Rustproofing Compound	No Applicability	Non Construction Material
525.335	BRIDGE RAILING, GALVANIZED 3 RAIL BOX BEAM	LF	714.02	Structural Steel	BA	Steel
525.34	BRIDGE RAILING, GALVANIZED 4 RAIL BOX BEAM	LF	714.07	Anchor Bolts, Bridge Railing	BA	Steel
525.41	BRIDGE RAILING, GALVANIZED HD STEEL BEAM/FASCIA MOUNTED	LF	726.08	Galvanizing	BA	Steel
525.44	BRIDGE RAILING, GALVANIZED HDSB/FASCIA MOUNTED/STEEL TUBING	LF	726.09	Metalizing	BA	Steel
525.45	BRIDGE RAILING, GALVANIZED STEEL TUBING/CONCRETE COMBINATION	LF	731.01	Preformed Fabric Bearing Pads	BABA	Manufactured Product (Waived)
525.50	BRIDGE RAILING REPAIR, TYPE I	LF	731.02	Bearing Pads	BABA	Manufactured Product (Waived)
525.55	BRIDGE RAILING REPAIR, TYPE II	LF	732.01	Metal Hand Railing	BA	Steel
525.60	BRIDGE RAILING REPAIR, TYPE III	LF	732.03	Galvanied Box Beam Bridge Railing	BA	Steel
525.70	BRIDGE RAILING, CONCRETE F-SHAPE	LF	732.04	Steel Beam Bridge Railing	BA	Steel
527.10	MAINTENANCE OF STRUCTURES AND APPROACHES	LS			No Applicability	No Associated Materials
528.10	ONE-WAY TEMPORARY BRIDGE	LS				
528.11	TWO-WAY TEMPORARY BRIDGE	LS				
528.12	TEMPORARY PEDESTRIAN BRIDGE	LS				
529.10	REMOVAL OF BRIDGE PAVEMENT	SY				
529.15	REMOVAL OF STRUCTURE	EACH				
529.20	PARTIAL REMOVAL OF STRUCTURE	EACH				
529.25	REMOVAL OF CONCRETE OR MASONRY	CY				
529.26	REMOVAL OF CONCRETE OR MASONRY	SY				
531.15	BEARING DEVICE ASSEMBLY, HIGH LOAD MULTI-ROTATIONAL	EACH	707.03	Mortar, Type IV	No Applicability	Cement/Cementitious & Aggregate
			714.02	Structural Steel	BA	Steel
			714.03	High-Strength Low-Alloy Structural Steel	BA	Steel
			714.05	High-Strength Bolts, Nuts, and Washers	BA	Steel
			714.08	Anchor Bolts, Bridge Railing	BA	Steel
			726.08	Galvanizing	BA	Steel
			726.09	Metalizing	BA	Steel
			731.02	Bearing Pads	BABA	Manufactured Product (Waived)
			731.03	Elastomeric Material	BABA	Manufactured Product (Waived)
			731.05	Stainless Steel	BA	Steel
			731.07	Brass Rings	BABA	Manufactured Product (Waived)
			731.08	PTFE Material	BABA	Manufactured Product (Waived)
531.16	BEARING DEVICE ASSEMBLY, PLAIN ELASTOMERIC PAD	EACH	707.03	Mortar, Type IV	No Applicability	Cement/Cementitious & Aggregate
			714.02	Structural Steel	BA	Steel
			714.03	High-Strength Low-Alloy Structural Steel	BA	Steel
			714.05	High-Strength Bolts, Nuts, and Washers	BA	Steel
			714.08	Anchor Bolts, Bridge Railing	BA	Steel
			726.08	Galvanizing	BA	Steel
			726.09	Metalizing	BA	Steel
			731.02	Bearing Pads	BABA	Manufactured Product (Waived)
			731.03	Elastomeric Material	BABA	Construction Material - Plastic/Polymer
			731.05	Stainless Steel	BA	Steel
			731.07	Brass Rings	BABA	Manufactured Product (Waived)
			731.08	PTFE Material	BABA	Manufactured Product (Waived)

All materials noted as "Manufactured Product (Waived)" are not required to meet Build America, Buy America requirements.

Materials on the Agency's Approved Products List do not require certification.

DocuSign Envelope ID: 6252F6A9-99D2-4F25-9ECA-404872A6A501

PAY ITEM NUMBER	PAY ITEM DESCRIPTION	ITEM UNIT	MATERIAL CODE	MATERIAL DESCRIPTION	Buy America (BA), Buy America Build America (BABA), or Not Applicable	Applicability Justification
531.17	BEARING DEVICE ASSEMBLY, STEEL REINFORCED ELASTOMERIC PAD	EACH	707.03	Mortar, Type IV	No Applicability	Cement/Cementitious & Aggregate
531.18	BEARING DEVICE ASSEMBLY, ELASTOMERIC PAD W/ EXT. LOAD PLATES	EACH	714.02	Structural Steel	BA	Steel
531.19	REMOVE AND REPLACE EXISTING ANCHOR BOLT	EACH	714.03	High-Strength Low-Alloy Structural Steel	BA	Steel
			714.05	High-Strength Bolts, Nuts, and Washers	BA	Steel
			714.08	Anchor Bolts, Bridge Railing	BA	Steel
			726.08	Galvanizing	BA	Steel
			726.09	Metalizing	BA	Steel
			731.02	Bearing Pads	BABA	Manufactured Product (Waived)
			731.03	Elastomeric Material	BABA	Manufactured Product (Waived)
			731.05	Stainless Steel	BA	Steel
			731.07	Brass Rings	BABA	Manufactured Product (Waived)
			731.08	PTFE Material	BABA	Manufactured Product (Waived)
540.10	PRECAST CONCRETE STRUCTURE	LS	701.02	Portland Cement	No Applicability	Aggregate Binding Agent
			701.04	High Early-Strength Portland Cement	No Applicability	Aggregate Binding Agent
			701.05	Portland-Pozzolan Cement	No Applicability	Aggregate Binding Agent
			701.06	Portland-Limestone Cement	No Applicability	Aggregate Binding Agent
			701.07	Portland Blast-Furnace Slag Cement	No Applicability	Aggregate Binding Agent
			701.08	Ternary Blended Cement	No Applicability	Aggregate Binding Agent
			704.01	Fine Aggregate for Concrete	No Applicability	Aggregate
			704.02	Coarse Aggregate for Concrete	No Applicability	Aggregate
			707.03	Mortar, Type IV	No Applicability	Cement/Cementitious & Aggregate
			707.08	Preformed Joint Filler, Cork, and Asphalt-Treated Felt	BABA	Manufactured Product (Waived)
			707.10	Polyvinyle Chloride (PVC) Waterstop	BABA	Construction Material - Plastic/Polymer
			713.01	Bar ReinforCement/Cementitious	BA	Steel
			713.02	Mechanical Splices for Bar Reinforcement	BA	Steel
			713.05	Welded Wire Reinforcement	BA	Steel
			713.06	Prestressing Strand	BA	Steel
			714.02	Structural Steel	BA	Steel
			714.03	High-Strength Low-Alloy Structural Steel	BA	Steel
			714.04	Carbon Steel Bolts, Nuts and Washers	BA	Steel
			714.05	High-Strength Bolts, Nuts, and Washers	BA	Steel
			725.01	Concrete Curing Materials	No Applicability	Temporary
			725.02(b)	Air-Entraining Admixtures	No Applicability	Aggregate Binding Additive
			725.02(c)	Retarding Admixtures	No Applicability	Aggregate Binding Additive
			725.02(e)	Water-Reducing Admixtures	No Applicability	Aggregate Binding Additive
			725.02(f)	Water-Reducing and Retarding Admixtures	No Applicability	Aggregate Binding Additive
			725.02(g)	Water-Reducing, High Range Admixtures	No Applicability	Aggregate Binding Additive
			725.02(h)	Water-Reducing, High Range, and Retarding Admixtures	No Applicability	Aggregate Binding Additive
			725.02(i)	Accelerating Admixtures	No Applicability	Aggregate Binding Additive
			725.02(j)	Water-Reducing and Acceleratign Admixtures	No Applicability	Aggregate Binding Additive
			725.02(k)	Specific Performance Admixtures	No Applicability	Aggregate Binding Additive
			725.03	Mineral Admixtures	No Applicability	Aggregate Binding Additive
			726.11(c)	Waterproofing Membrane System, Type III	BABA	Manufactured Product (Waived)
			735.01	Polystyrene Insulation Board	BABA	Non Construction Material
			735.02	Blanket Insulation Material	BABA	Manufactured Product (Waived)
			740.08	Pipe Insulation	BABA	Manufactured Product (Waived)
			745.01	Water	No Applicability	Non Construction Material
			780.01(a)	Concrete Repair Material, Type I	No Applicability	Cement/Cementitious & Aggregate
			780.01(b)	Concrete Repair Material, Type II	No Applicability	Cement/Cementitious & Aggregate
541.21	CONCRETE, CLASS AA	CY	701.02	Portland Cement	No Applicability	Aggregate Binding Agent
541.22	CONCRETE, CLASS A	CY	701.04	High Early-Strength Portland Cement	No Applicability	Aggregate Binding Agent
541.25	CONCRETE, CLASS B	CY	701.05	Portland-Pozzolan Cement	No Applicability	Aggregate Binding Agent
541.30	CONCRETE, CLASS C	CY	701.06	Portland-Limestone Cement	No Applicability	Aggregate Binding Agent
541.31	CONCRETE, CLASS D	CY	701.07	Portland Blast-Furnace Slag Cement	No Applicability	Aggregate Binding Agent
541.35	CONCRETE, CLASS SCC	CY	704.01	Fine Aggregate for Concrete	No Applicability	Aggregate
541.40	CONCRETE, CLASS LW	CY	704.02	Coarse Aggregate for Concrete	No Applicability	Aggregate
541.45	CONTROLLED DENSITY (FLOWABLE) FILL	CY	704.14	Lightweight Coarse Aggregate for Structural Concrete	No Applicability	Aggregate
			707.03	Mortar, Type IV	No Applicability	Cement/Cementitious & Aggregate
			707.08	Preformed Joint Filler, Cork, and Asphalt-Treated Felt	BABA	Manufactured Product (Waived)
			707.10	Polyvinyle Chloride (PVC) Waterstop	BABA	Construction Material - Plastic/Polymer
			725.01	Concrete Curing Materials	No Applicability	Temporary
			725.02(b)	Air-Entraining Admixtures	No Applicability	Aggregate Binding Additive
			725.02(c)	Retarding Admixtures	No Applicability	Aggregate Binding Additive
			725.02(e)	Water-Reducing Admixtures	No Applicability	Aggregate Binding Additive
			725.02(f)	Water-Reducing and Retarding Admixtures	No Applicability	Aggregate Binding Additive
			725.02(g)	Water-Reducing, High Range Admixtures	No Applicability	Aggregate Binding Additive
			725.02(h)	Water-Reducing, High Range, and Retarding Admixtures	No Applicability	Aggregate Binding Additive
			725.02(i)	Accelerating Admixtures	No Applicability	Aggregate Binding Additive
			725.02(j)	Water-Reducing and Acceleratign Admixtures	No Applicability	Aggregate Binding Additive
			725.02(k)	Specific Performance Admixtures	No Applicability	Aggregate Binding Additive
			725.03	Mineral Admixtures	No Applicability	Aggregate Binding Additive
			725.03(c)	Ground Granulated Blast-Furnace Slag (GGBFS)	No Applicability	Aggregate Binding Additive
			735.01	Polystyrene Insulation Board	BABA	Non Construction Material
			735.02	Blanket Insulation Material	BABA	Manufactured Product (Waived)
			740.08	Pipe Insulation	BABA	Manufactured Product (Waived)
			745.01	Water	No Applicability	Non Construction Material

All materials noted as "Manufactured Product (Waived)" are not required to meet Build America, Buy America requirements.

Materials on the Agency's Approved Products List do not require certification.

DocuSign Envelope ID: 6252F6A9-99D2-4F25-9ECA-404872A6A501

PAY ITEM NUMBER	PAY ITEM DESCRIPTION	ITEM UNIT	MATERIAL CODE	MATERIAL DESCRIPTION	Buy America (BA), Buy America Build America (BABA), or Not Applicable	Applicability Justification
541.55	MORTAR, TYPE I	CY	707.01	Mortar, Type I	No Applicability	Cement/Cementitious & Aggregate
541.58	MORTAR, TYPE IV	CY	707.03	Mortar, Type IV	No Applicability	Cement/Cementitious & Aggregate
543.10	CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE	LS	701.02	Portland Cement	No Applicability	Cement/Cementitious
544.10	PREFABRICATED BRIDGE UNIT SUPERSTRUCTURE	LF	701.04	High Early-Strength Portland Cement	No Applicability	Cement/Cementitious
			701.05	Portland-Pozzolan Cement	No Applicability	Cement/Cementitious
			701.06	Portland-Limestone Cement	No Applicability	Cement/Cementitious
			701.07	Portland Blast-Furnace Slag Cement	No Applicability	Cement/Cementitious
			701.08	Ternary Blended Cement	No Applicability	Cement/Cementitious
			704.01	Fine Aggregate for Concrete	No Applicability	Aggregate
			704.02	Coarse Aggregate for Concrete	No Applicability	Aggregate
			704.14	Lightweight Coarse Aggregate for Structural Concrete	No Applicability	Aggregate
			707.03	Mortar, Type I	No Applicability	Cement/Cementitious & Aggregate
			707.08	Preformed Joint Filler, Cork, and Asphalt-Treated Felt	BABA	Manufactured Product (Waived)
			707.10	Plyvinyl Chloride (PVC) Waterstop	BABA	Construction Material - Plastic/Polymer
			707.16	Concrete Bonding Systems	BABA	Manufactured Product (Waived)
			713.01	Bar Reinfordement	BA	Steel
			713.02	Mechanical Splices for Bar Reinforcement	BA	Steel
			713.04	Cold Drawn Steel Wire	BA	Steel
			713.05	Welded Wire Reinforcement	BA	Steel
			713.06	Prestressing Strand	BA	Steel
			714.04	Carbon Steel Bolts, Nuts, and Washers	BA	Steel
			714.05	High-Strength Bolts, Nuts, and Washers	BA	Steel
			715.05	Stay-in-Place Corrugated Metals Forms for Superstructure Slabs	BA	Steel
			719.02	Epoxy Bonding Systems	BABA	Manufactured Product (Waived)
			725.01	Concrete Curing Materials	No Applicability	Temporary
			725.02(b)	Air-Entraining Admixtures	No Applicability	Aggregate Binding Additive
			725.02(c)	Retarding Admixtures	No Applicability	Aggregate Binding Additive
			725.02(e)	Water-Reducing Admixtures	No Applicability	Aggregate Binding Additive
			725.02(f)	Water-Reducing and Retarding Admixtures	No Applicability	Aggregate Binding Additive
			725.02(g)	Water-Reducing, High Range Admixtures	No Applicability	Aggregate Binding Additive
			725.02(h)	Water-Reducing, High Range, and Retarding Admixtures	No Applicability	Aggregate Binding Additive
			725.02(i)	Accelerating Admixtures	No Applicability	Aggregate Binding Additive
			725.02(j)	Water-Reducing and Accelerating Admixtures	No Applicability	Aggregate Binding Additive
			725.02(k)	Specific Performance Admixtures	No Applicability	Aggregate Binding Additive
			725.03	Mineral Admixtures	No Applicability	Aggregate Binding Additive
			725.03(b)	Silica Fume	No Applicability	Aggregate Binding Additive
			725.03(c)	Ground Granulated Blast-Furnace Slag (GGBFS)	No Applicability	Aggregate Binding Additive
			726.11(c)	Waterproofing Membrane System, Type III	BABA	Manufactured Product (Waived)
			735.01	Polystyrene Insulation Board	BABA	Non Construction Material
			735.02	Blanket Insulation Material	BABA	Manufactured Product (Waived)
			740.08	Pipe Insulation	BABA	Manufactured Product (Waived)
			745.01	Water	No Applicability	Non Construction Material
			780.01(a)	Concrete Repair Material, Type I	No Applicability	Aggregate & Aggregate Binding Agent
			780.01(b)	Concrete Repair Material, Type II	No Applicability	Aggregate & Aggregate Binding Agent
546.10	PRE-EXCAVATION OF ABUTMENT PILES, EARTH	LF	703.03	Sand Borrow and Cushion	No Applicability	Aggregate
546.20	PRE-EXCAVATION OF ABUTMENT PILES, ROCK	LF				
580.10	REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS I	SY	780.01(a)	Concrete Repair Material, Type I	No Applicability	Cement/Cementitious & Aggregate
580.11	REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS II	SY	780.01(b)	Concrete Repair Material, Type II	No Applicability	Cement/Cementitious & Aggregate
580.12	REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS III	CY	780.01(c)	Concrete Repair Material, Type III	No Applicability	Cement/Cementitious & Aggregate
580.13	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS I	SY	780.01(d)	Concrete Repair Material, Type IV	No Applicability	Aggregate & Aggregate Binding Agent
580.14	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II	SY				
580.15	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS III	CY				
580.16	SURFACE PREPARATION FOR MEMBRANE	SF				
580.17	RAPID SETTING CONCRETE REPAIR MATERIAL	CF	780.01(a)	Concrete Repair Material, Type I	No Applicability	Cement/Cementitious & Aggregate
580.18	OVERHEAD AND VERTICAL CONCRETE REPAIR MATERIAL	CF	780.01(b)	Concrete Repair Material, Type II	No Applicability	Cement/Cementitious & Aggregate

All materials noted as "Manufactured Product (Waived)" are not required to meet Build America, Buy America requirements.

Materials on the Agency's Approved Products List do not require certification.

DocuSign Envelope ID: 6252F6A9-99D2-4F25-9ECA-404872A6A501

PAY ITEM NUMBER	PAY ITEM DESCRIPTION	ITEM UNIT	MATERIAL CODE	MATERIAL DESCRIPTION	Buy America (BA), Buy America Build America (BABA), or Not Applicable	Applicability Justification
580.19	CONCRETE, CLASS AA OVERLAY	SY	701.02	Portland Cement	No Applicability	Cement/Cementitious
			701.04	High Early-Strength Portland Cement	No Applicability	Cement/Cementitious
			701.05	Portland-Pozzolan Cement	No Applicability	Cement/Cementitious
			701.06	Portland-Limestone Cement	No Applicability	Cement/Cementitious
			701.07	Portland Blast-Furnace Slag Cement	No Applicability	Cement/Cementitious
			704.01	Fine Aggregate for Concrete	No Applicability	Aggregate
			704.02	Coarse Aggregate for Concrete	No Applicability	Aggregate
			704.14	Lightweight Coarse Aggregate for Structural Concrete	No Applicability	Aggregate
			707.03	Mortar, Type IV	No Applicability	Cement/Cementitious & Aggregate
			707.08	Preformed Joint Filler, Cork, and Asphalt-Treated Felt	BABA	Manufactured Product (Waived)
			707.10	Polyvinyl Chloride (PVC) Waterstop	BABA	Construction Material - Plastic/Polymer
			725.01	Concrete Curing Materials	No Applicability	Temporary
			725.02(b)	Air-Entraining Admixtures	No Applicability	Aggregate Binding Additive
			725.02(c)	Retarding Admixtures	No Applicability	Aggregate Binding Additive
			725.02(e)	Water-Reducing Admixtures	No Applicability	Aggregate Binding Additive
			725.02(f)	Water-Reducing and Retarding Admixtures	No Applicability	Aggregate Binding Additive
			725.02(g)	Water-Reducing, High Range Admixtures	No Applicability	Aggregate Binding Additive
			725.02(h)	Water-Reducing, High Range, and Retarding Admixtures	No Applicability	Aggregate Binding Additive
			725.02(i)	Accelerating Admixtures	No Applicability	Aggregate Binding Additive
			725.02(j)	Water-Reducing and Accelerating Admixtures	No Applicability	Aggregate Binding Additive
			725.02(k)	Specific Performance Admixtures	No Applicability	Aggregate Binding Additive
			725.03	Mineral Admixtures	No Applicability	Aggregate Binding Additive
			725.03(c)	Ground Granulated Blast-Furnace Slag (GGBFS)	No Applicability	Aggregate Binding Additive
			735.01	Polystyrene Insulation Board	BABA	Non Construction Material
			735.02	Blanket Insulation Material	BABA	Manufactured Product (Waived)
			740.08	Pipe Insulation	BABA	Manufactured Product (Waived)
			745.01	Water	No Applicability	Non Construction Material
580.20	RAPID SETTING CONCRETE REPAIR MATERIAL WITH COARSE AGGREGATE	CF	780.01(c)	Concrete Repair Material, Type III	No Applicability	Cement/Cementitious & Aggregate
580.21	POLYMER CONCRETE REPAIR MATERIAL	CY	780.01(d)	Concrete Repair Material, Type IV	No Applicability	Aggregate & Aggregate Binding Agent
601.0005	12" CSP .064 (2-2/3 X 1/2)	LF	711.01	Corrugated Steel Pipe, Pipe Arches, and Underdrains	BA	Steel
601.0010	15" CSP .064 (2-2/3 X 1/2)	LF				
601.0011	15" CSP .079 (2-2/3 X 1/2)	LF				
601.0015	18" CSP .064 (2-2/3 X 1/2)	LF				
601.0016	18" CSP .079 (2-2/3 X 1/2)	LF				
601.0025	24" CSP .064 (2-2/3 X 1/2)	LF				
601.0036	30" CSP .079 (2-2/3 X 1/2)	LF				
601.0046	36" CSP .079 (2-2/3 X 1/2)	LF				
601.0052	42" CSP .109 (2-2/3 X 1/2)	LF				
601.0057	48" CSP .109 (2-2/3 X 1/2)	LF				
601.0068	60" CSP .138 (2-2/3 X 1/2)	LF				
601.0132	60" CSP .109 (3 X 1)	LF				
601.0205	12" CAAP .060 (2-2/3 X 1/2)	LF	711.02	Corrugated Aluminum Alloy Pipe, Pipe Arches, and Underdrains	BABA	Construction Material - Non-Ferrous Metal
601.0210	15" CAAP .060 (2-2/3 X 1/2)	LF				
601.0211	15" CAAP .075 (2-2/3 X 1/2)	LF				
601.0215	18" CAAP .060 (2-2/3 X 1/2)	LF				
601.0216	18" CAAP .075 (2-2/3 X 1/2)	LF				
601.0217	18" CAAP .105 (2-2/3 X 1/2)	LF				
601.0225	24" CAAP .060 (2-2/3 X 1/2)	LF				
601.0226	24" CAAP .075 (2-2/3 X 1/2)	LF				
601.0227	24" CAAP .105 (2-2/3 X 1/2)	LF				
601.0236	30" CAAP .075 (2-2/3 X 1/2)	LF				
601.0237	30" CAAP .105 (2-2/3 X 1/2)	LF				
601.0246	36" CAAP .075 (2-2/3 X 1/2)	LF				
601.0252	42" CAAP .105 (2-2/3 X 1/2)	LF				
601.0257	48" CAAP .105 (2-2/3 X 1/2)	LF				
601.0262	54" CAAP .105 (2-2/3 X 1/2)	LF				
601.0268	60" CAAP .135 (2-2/3 X 1/2)	LF				
601.0305	30" CAAP .060 (3 X 1)	LF				
601.0306	30" CAAP .075 (3 X 1)	LF				
601.0310	36" CAAP .060 (3 X 1)	LF				
601.0316	42" CAAP .075 (3 X 1)	LF				
601.0342	72" CAAP .105 (3 X 1)	LF				

All materials noted as "Manufactured Product (Waived)" are not required to meet Build America, Buy America requirements.

Materials on the Agency's Approved Products List do not require certification.

DocuSign Envelope ID: 6252F6A9-99D2-4F25-9ECA-404872A6A501

PAY ITEM NUMBER	PAY ITEM DESCRIPTION	ITEM UNIT	MATERIAL CODE	MATERIAL DESCRIPTION	Buy America (BA), Buy America Build America (BABA), or Not Applicable	Applicability Justification
601.0405	12" PCCSP .064 (2-2/3 X 1/2)	LF	711.03	Polymeric Coated Corrugated Steel Pipe and Pipe Arches	BA	Steel
601.0410	15" PCCSP .064 (2-2/3 X 1/2)	LF				
601.0415	18" PCCSP .064 (2-2/3 X 1/2)	LF				
601.0416	18" PCCSP .079 (2-2/3 X 1/2)	LF				
601.0425	24" PCCSP .064 (2-2/3 X 1/2)	LF				
601.0426	24" PCCSP .079 (2-2/3 X 1/2)	LF				
601.0427	24" PCCSP .109 (2-2/3 X 1/2)	LF				
601.0436	30" PCCSP .079 (2-2/3 X 1/2)	LF				
601.0437	30" PCCSP .109 (2-2/3 X 1/2)	LF				
601.0446	36" PCCSP .079 (2-2/3 X 1/2)	LF				
601.0447	36" PCCSP .109 (2-2/3 X 1/2)	LF				
601.0452	42" PCCSP .109 (2-2/3 X 1/2)	LF				
601.0457	48" PCCSP .109 (2-2/3 X 1/2)	LF				
601.0526	54" PCCSP .079 (3 X 1)	LF				
601.0527	54" PCCSP .109 (3 X 1)	LF				
601.0542	72" PCCSP .109 (3 X 1)	LF				
601.0615	18" PCCSP(PI) .064 (2-2/3 X 1/2)	LF				
601.0625	24" PCCSP(PI) .064 (2-2/3 X 1/2)	LF				
601.0636	30" PCCSP(PI) .079 (2-2/3 X 1/2)	LF				
601.0646	36" PCCSP(PI) .079 (2-2/3 X 1/2)	LF				
601.0657	48" PCCSP(PI) .109 (2-2/3 X 1/2)	LF				
601.0805	12" RCP CLASS III	LF	710.01	Reinforced Concrete Pipe	BA	Steel
601.0806	12" RCP CLASS IV	LF				
601.0810	15" RCP CLASS III	LF				
601.0811	15" RCP CLASS IV	LF				
601.0815	18" RCP CLASS III	LF				
601.0816	18" RCP CLASS IV	LF				
601.0817	18" RCP CLASS V	LF				
601.0820	21" RCP CLASS III	LF				
601.0821	21" RCP CLASS IV	LF				
601.0825	24" RCP CLASS III	LF				
601.0826	24" RCP CLASS IV	LF				
601.0827	24" RCP CLASS V	LF				
601.0835	30" RCP CLASS III	LF				
601.0836	30" RCP CLASS IV	LF				
601.0837	30" RCP CLASS V	LF				
601.0845	36" RCP CLASS III	LF				
601.0846	36" RCP CLASS IV	LF				
601.0850	42" RCP CLASS III	LF				
601.0855	48" RCP CLASS III	LF				
601.0866	60" RCP CLASS IV	LF				
601.0870	66" RCP CLASS III	LF				
601.0905	12" CPEP	LF	710.03	Corrugated Polyethylene Pipe (CPEP)	BABA	Manufactured Product (Waived)
601.0910	15" CPEP	LF				
601.0915	18" CPEP	LF				
601.0920	24" CPEP	LF				
601.2603	8" CPEP(SL)	LF				
601.2605	12" CPEP(SL)	LF				
601.2610	15" CPEP(SL)	LF				
601.2615	18" CPEP(SL)	LF				
601.2620	24" CPEP(SL)	LF				
601.2625	30" CPEP(SL)	LF				
601.2630	36" CPEP(SL)	LF				
601.2635	42" CPEP(SL)	LF				
601.2640	48" CPEP(SL)	LF				
601.2645	54" CPEP(SL)	LF				
601.2650	60" CPEP(SL)	LF				
601.2805	12" CPPP(SL)	LF	710.07	Corrugated Polypropylene Pipe (CPPP)	BABA	Construction Material - Plastic/Polymer
601.2810	15" CPPP(SL)	LF				
601.2815	18" CPPP(SL)	LF				
601.2820	24" CPPP(SL)	LF				
601.2825	30" CPPP(SL)	LF				
601.2830	36" CPPP(SL)	LF				
601.2835	42" CPPP(SL)	LF				
601.3236	35" X 24" CAAPA .075 (2-2/3 X 1/2)	LF	711.02	Corrugated Aluminum Alloy Pipe, Pipe Arches, and Underdrains	BABA	Construction Material - Non-Ferrous Metal
601.3258	57 IN. X 38 IN. CAAPA .135 (2-2/3X1/2)	LF				
601.3436	35" X 24" PCCSPA .079 (2-2/3 X 1/2)	LF	711.03	Polymeric Coated Corrugated Steel Pipe and Pipe Arches	BA	Steel
601.3457	57 IN. X 38 IN. PCCSPA .109 (2-2/3X1/2)	LF				
601.4252	49" X 33" CAAPA(SL) 0.105 (2-2/3 X 1/2)	LF	711.02	Corrugated Aluminum Alloy Pipe, Pipe Arches, and Underdrains	BABA	Construction Material - Non-Ferrous Metal
601.4258	57" X 38" CAAPA(SL) 0.135 (2-2/3 X 1/2)	LF				
601.4457	57" X 38" PCCSPA(SL) 0.109 (2-2/3 X 1/2)	LF	711.03	Polymeric Coated Corrugated Steel Pipe and Pipe Arches	BA	Steel

All materials noted as "Manufactured Product (Waived)" are not required to meet Build America, Buy America requirements.

Materials on the Agency's Approved Products List do not require certification.

DocuSign Envelope ID: 6252F6A9-99D2-4F25-9ECA-404872A6A501

PAY ITEM NUMBER	PAY ITEM DESCRIPTION	ITEM UNIT	MATERIAL CODE	MATERIAL DESCRIPTION	Buy America (BA), Buy America Build America (BABA), or Not Applicable	Applicability Justification
601.5005	12" CSP ELBOW .064 (2-2/3 X 1/2)	EACH	711.01	Corrugated Steel Pipe, Pipe Arches, and Underdrains	BA	Steel
601.5010	15" CSP ELBOW .064 (2-2/3 X 1/2)	EACH				
601.5015	18" CSP ELBOW .064 (2-2/3 X 1/2)	EACH				
601.5036	30" CSP ELBOW .079 (2-2/3 X 1/2)	EACH				
601.5046	36" CSP ELBOW .079 (2-2/3 X 1/2)	EACH				
601.5205	12" CAAP ELBOW .060 (2-2/3 X 1/2)	EACH	711.02	Corrugated Aluminum Alloy Pipe, Pipe Arches, and Underdrains	BABA	Construction Material - Non-Ferrous Metal
601.5210	15" CAAP ELBOW .060 (2-2/3 X 1/2)	EACH				
601.5215	18" CAAP ELBOW .060 (2-2/3 X 1/2)	EACH				
601.5225	24" CAAP ELBOW .060 (2-2/3 X 1/2)	EACH				
601.5236	30" CAAP ELBOW .075 (2-2/3 X 1/2)	EACH				
601.5252	42" CAAP ELBOW .105 (2-2/3 X 1/2)	EACH				
601.5405	12" PCCSP ELBOW .064 (2-2/3 X 1/2)	EACH	711.03	Polymeric Coated Corrugated Steel Pipe and Pipe Arches	BA	Steel
601.5410	15" PCCSP ELBOW .064 (2-2/3 X 1/2)	EACH				
601.5415	18" PCCSP ELBOW .064 (2-2/3 X 1/2)	EACH				
601.5425	24" PCCSP ELBOW .064 (2-2/3 X 1/2)	EACH				
601.5436	30" PCCSP ELBOW .079 (2-2/3 X 1/2)	EACH				
601.5456	42" PCCSP ELBOW .109 (2-2/3 X 1/2)	EACH				
601.5802	12" CPEP ELBOW	EACH	710.03	Corrugated Polyethylene Pipe (CPEP)	BABA	Manufactured Product (Waived)
601.5808	15" CPEP ELBOW	EACH				
601.5814	18" CPEP ELBOW	EACH				
601.5824	24" CPEP ELBOW	EACH				
601.5902	12" CPPP ELBOW	EACH	710.07	Corrugated Polypropylene Pipe (CPPP)	BABA	Construction Material - Plastic/Polymer
601.5908	15" CPPP ELBOW	EACH				
601.5914	18" CPPP ELBOW	EACH				
601.5924	24" CPPP ELBOW	EACH				
601.6005	12" CSPES .064 (2-2/3 X 1/2)	EACH	711.01	Corrugated Steel Pipe, Pipe Arches, and Underdrains	BA	Steel
601.6010	15" CSPES .064 (2-2/3 X 1/2)	EACH				
601.6015	18" CSPES .064 (2-2/3 X 1/2)	EACH				
601.6025	24" CSPES .064 (2-2/3 X 1/2)	EACH				
601.6036	30" CSPES .079 (2-2/3 X 1/2)	EACH				
601.6046	36" CSPES .079 (2-2/3 X 1/2)	EACH				
601.6052	42" CSPES .109 (2-2/3 X 1/2)	EACH				
601.6057	48" CSPES .109 (2-2/3 X 1/2)	EACH				
601.6210	15" CAAPES .060 (2-2/3 X 1/2)	EACH	711.02	Corrugated Aluminum Alloy Pipe, Pipe Arches, and Underdrains	BABA	Construction Material - Non-Ferrous Metal
601.6215	18" CAAPES .060 (2-2/3 X 1/2)	EACH				
601.6225	24" CAAPES .060 (2-2/3 X 1/2)	EACH				
601.6236	30" CAAPES .075 (2-2/3 X 1/2)	EACH				
601.6246	36" CAAPES .075 (2-2/3 X 1/2)	EACH				
601.6252	42" CAAPES .105 (2-2/3 X 1/2)	EACH				
601.6257	48" CAAPES .105 (2-2/3 X 1/2)	EACH				
601.6810	15" RCPES CLASS III	EACH	710.02	Reinforced Concrete Pipe End Sections	BA	Steel
601.6815	18" RCPES CLASS III	EACH				
601.6825	24" RCPES CLASS III	EACH				
601.6835	30" RCPES CLASS III	EACH				
601.6845	36" RCPES CLASS III	EACH				
601.6855	48" RCPES CLASS III	EACH				
601.7005	12" CPEPES	EACH	710.03	Corrugated Polyethylene Pipe (CPEP)	BABA	Manufactured Product (Waived)
601.7010	15" CPEPES	EACH				
601.7015	18" CPEPES	EACH				
601.7020	24" CPEPES	EACH				
601.7025	30" CPEPES	EACH				
601.7030	36" CPEPES	EACH				
601.7105	12" CPPPES	EACH	710.07	Corrugated Polypropylene Pipe (CPPP)	BABA	Construction Material - Plastic/Polymer
601.7110	15" CPPPES	EACH				
601.7115	18" CPPPES	EACH				
601.7120	24" CPPPES	EACH				
601.7125	30" CPPPES	EACH				
601.7130	36" CPPPES	EACH				
601.8036	35" X 24" CSPAES 2.01 (68 X 12)	EACH	711.01	Corrugated Steel Pipe, Pipe Arches, and Underdrains	BA	Steel
601.8236	35" X 24" CAAPAES 1.91 (68 X 12)	EACH	711.02	Corrugated Aluminum Alloy Pipe, Pipe Arches, and Underdrains	BABA	Construction Material - Non-Ferrous Metal
601.99	RE-LAYING PIPE CULVERTS	LF			No Applicability	No Associated Materials
601.995	CLEANING CULVERT PIPE, IN-PLACE [0 TO 24 IN., INCL.]	LF				
601.996	CLEANING CULVERT PIPE, IN-PLACE [GREATER THAN 24 IN.]	LF				
602.15	CEMENT MASONRY	CY	706.01	Stone for Masonry	No Applicability	Aggregate
602.20	DRY MASONRY	CY	707.02	Mortar, Type II	No Applicability	Cement/Cementitious & Aggregate
			707.03	Mortar, Type IV	No Applicability	Cement/Cementitious & Aggregate
			713.01	Bar Reinforcement	BA	Steel
602.25	STONE MASONRY FACING	SY	706.02	Stone for Masonry Facing	No Applicability	Aggregate
			707.02	Mortar, Type II	No Applicability	Cement/Cementitious & Aggregate
			707.03	Mortar, Type IV	No Applicability	Cement/Cementitious & Aggregate
602.30	REPOINTING MASONRY	SY	707.02	Mortar, Type II	No Applicability	Cement/Cementitious & Aggregate

All materials noted as "Manufactured Product (Waived)" are not required to meet Build America, Buy America requirements.

Materials on the Agency's Approved Products List do not require certification.

DocuSign Envelope ID: 6252F6A9-99D2-4F25-9ECA-404872A6A501

BUY AMERICA/BUILD AMERICA, BUY AMERICA APPLICABILITY

PAY ITEM NUMBER	PAY ITEM DESCRIPTION	ITEM UNIT	MATERIAL CODE	MATERIAL DESCRIPTION	Buy America (BA), Buy America Build America (BABA), or Not Applicable	Applicability Justification
602.35	REBUILT STONE MASONRY	CY	706.01	Stone for Masonry	No Applicability	Aggregate
602.40	REPAIRING STONE MASONRY	SY	707.02	Mortar, Type II	No Applicability	Cement/Cementitious & Aggregate
			707.03	Mortar, Type IV	No Applicability	Cement/Cementitious & Aggregate
604.10	CONCRETE CATCH BASIN WITH CAST IRON GRATE	EACH	541	Concrete, Class B	No Applicability	Cement/Cementitious & Aggregate
604.11	CONCRETE MANHOLE WITH CAST IRON COVER	EACH	705.01(c)	Clay or Shale Sewer Brick	No Applicability	Cement/Cementitious & Aggregate
			705.02	Concrete Masonry Blocks	No Applicability	Cement/Cementitious & Aggregate
			713.01	Bar Reinforcement	BA	Steel
			713.05	Welded Wire Reinforcement	BA	Steel
			715.01(b)	Gray Iron Castings	BA	Iron
			715.01(c)	Ductile Iron Castings	BA	Iron
604.18	PRECAST REINFORCED CONCRETE DROP INLET WITH CAST IRON GRATE	EACH	541	Concrete, Class B	No Applicability	Cement/Cementitious & Aggregate
604.20	PRECAST REINFORCED CONCRETE CATCH BASIN WITH CAST IRON GRATE	EACH	705.01(c)	Clay or Shale Sewer Brick	No Applicability	Cement/Cementitious & Aggregate
604.21	PRECAST REINFORCED CONCRETE MANHOLE WITH CAST IRON COVER	EACH	705.02	Concrete Masonry Blocks	No Applicability	Cement/Cementitious & Aggregate
604.22	SANITARY SEWER MANHOLE	EACH	705.04	Precast Drop Inlets, Catch Basins, and Manholes	BA	Steel
			713.01	Bar Reinforcement	BA	Steel
			715.01(b)	Gray Iron Castings	BA	Iron
			715.01(c)	Ductile Iron Castings	BA	Iron
604.25	PRECAST REINFORCED CONCRETE PIPE DI WITH CAST IRON GRATE	EACH	541	Concrete, Class B	No Applicability	Cement/Cementitious & Aggregate
604.26	PRECAST REINFORCED CONCRETE PIPE DI WITH CONCRETE COVER	EACH	710.01	Reinforced Concrete Pipe	BA	Steel
			705.01(c)	Clay or Shale Sewer Brick	No Applicability	Cement/Cementitious & Aggregate
			705.02	Concrete Masonry Blocks	No Applicability	Cement/Cementitious & Aggregate
			713.01	Bar Reinforcement	BA	Steel
			715.01(b)	Gray Iron Castings	BA	Iron
			715.01(c)	Ductile Iron Castings	BA	Iron
604.30	PRECAST REINFORCED CONCRETE CURB DI WITH CAST IRON GRATE	EACH	541	Concrete, Class B	No Applicability	Cement/Cementitious & Aggregate
			705.01(c)	Clay or Shale Sewer Brick	No Applicability	Cement/Cementitious & Aggregate
			705.02	Concrete Masonry Blocks	No Applicability	Cement/Cementitious & Aggregate
			705.04	Precast Drop Inlets, Catch Basins, and Manholes	BA	Steel
			713.01	Bar Reinforcement	BA	Steel
			715.01(b)	Gray Iron Castings	BA	Iron
			715.01(c)	Ductile Iron Castings	BA	Iron
604.40	CHANGING ELEVATION OF DROP INLETS, CATCH BASINS, OR MANHOLES	EACH	705.01(c)	Clay or Shale Sewer Brick	No Applicability	Cement/Cementitious & Aggregate
604.412	REHAB. DROP INLETS, CATCH BASINS, OR MANHOLES, CLASS I	EACH	705.02	Concrete Masonry Blocks	No Applicability	Cement/Cementitious & Aggregate
604.415	REHAB. DROP INLETS, CATCH BASINS, OR MANHOLES, CLASS II	EACH	707.02	Mortar, Type II	No Applicability	Cement/Cementitious & Aggregate
604.418	REHAB. DROP INLETS, CATCH BASINS, OR MANHOLES, CLASS III	EACH	707.03	Mortar, Type IV	No Applicability	Cement/Cementitious & Aggregate
604.42	CHANGING ELEVATION OF SEWER MANHOLES	EACH				
604.45	CAST IRON GRATE WITH FRAME, TYPE A	EACH	715.01(b)	Gray Iron Castings	BA	Iron
604.46	CAST IRON GRATE WITH FRAME, TYPE B	EACH	715.01(c)	Ductile Iron Castings	BA	Iron
604.47	CAST IRON GRATE WITH FRAME, TYPE D	EACH				
604.48	CAST IRON GRATE WITH FRAME, TYPE E	EACH				
604.49	CAST IRON GRATE, TYPE C	EACH				
604.55	CAST IRON COVER WITH FRAME	EACH				
604.56	CAST IRON COVER WITH FRAME, SEWER	EACH				
604.60	CAP DROP INLET	EACH	704.08	Granular Backfill for Structures	No Applicability	Aggregate
			714.02	Structural Steel	BA	Steel
604.65	DECOMMISSION DROP INLET	EACH	541	Controlled Density (Flowable) Fill	No Applicability	Cement/Cementitious & Aggregate
			704.08	Granular Backfill for Structures	No Applicability	Aggregate
605.10	UNDERDRAIN PIPE, 6 INCHES	LF	704.08	Granular Backfill for Structures	No Applicability	Aggregate
605.11	UNDERDRAIN PIPE, 8 INCHES	LF	704.16	Drainage Aggregatre	No Applicability	Aggregate
605.13	UNDERDRAIN PIPE, 12 INCHES	LF	710.03	Corrugated Polyethylene Pipe (CPEP)	BABA	Non Construction Material
605.20	UNDERDRAIN CARRIER PIPE, 6 INCHES	LF	710.06	Plyvinyl Chloride (PVC) Plastic Pipe	BABA	Construction Material - Plastic/Polymer
605.21	UNDERDRAIN CARRIER PIPE, 8 INCHES	LF	711.01	Corrugated Steel Pipe, Pipe Arches and Underdrains	BA	Steel
605.23	UNDERDRAIN CARRIER PIPE, 12 INCHES	LF	711.02	Corrugated Aluminum Alloy Pipe, Pipe Arches, and Underdrains	BABA	Construction Material - Non-Ferrous Metal
			720.05	Geotextile for Underdrain Trench Lining	BABA	Manufactured Product (Waived)
605.95	UNDERDRAIN FLUSHING BASIN	EACH	715.01(b)	Gray Iron Castings	BA	Iron
607.10	ROADWAY PATROL MAINTENANCE	HR			No Applicability	No Associated Materials
608.10	BULLDOZER RENTAL, TYPE I	HR				
608.11	BULLDOZER RENTAL, TYPE II	HR				
608.15	POWER GRADER RENTAL	HR				
608.25	ALL PURPOSE EXCAVATOR RENTAL, TYPE I	HR				
608.26	ALL PURPOSE EXCAVATOR RENTAL, TYPE II	HR				
608.30	POWER BROOM RENTAL, TYPE I	HR				
608.31	POWER BROOM RENTAL, TYPE II	HR				
608.32	POWER BROOM RENTAL, TYPE III	HR				
608.37	TRUCK RENTAL	HR				
608.40	LOADER RENTAL, TYPE I	HR				
608.45	TRUCK-MOUNTED ATTENUATOR	HR			No Applicability	Temporary
608.50	TRUCK-MOUNTED ATTENUATOR, AWV/PV	HR				
609.10	DUST CONTROL WITH WATER	MGAL	745.01	Water	No Applicability	Non Construction Material
609.15	DUST AND ICE CONTROL WITH CALCIUM CHLORIDE	TON	746.01	Calcium Chloride	No Applicability	Non Construction Material

All materials noted as "Manufactured Product (Waived)" are not required to meet Build America, Buy America requirements.

Materials on the Agency's Approved Products List do not require certification.

DocuSign Envelope ID: 6252F6A9-99D2-4F25-9ECA-404872A6A501

PAY ITEM NUMBER	PAY ITEM DESCRIPTION	ITEM UNIT	MATERIAL CODE	MATERIAL DESCRIPTION	Buy America (BA), Buy America Build America (BABA), or Not Applicable	Applicability Justification
613.05	STONE FILL, CULVERT LINING	CY	706.07	Environmental Stone (E-Stone)	No Applicability	Aggregate
613.06	STONE FILL, STREAM BED MATERIAL	CY				
613.10	STONE FILL, TYPE I	CY	706.04(a)	Stone for Stone Fill, Type I	No Applicability	Aggregate
613.11	STONE FILL, TYPE II	CY	706.04(b)	Stone for Stone Fill, Type II	No Applicability	Aggregate
613.12	STONE FILL, TYPE III	CY	706.04(c)	Stone for Stone Fill, Type III	No Applicability	Aggregate
613.13	STONE FILL, TYPE IV	CY	706.04(d)	Stone for Stone Fill, Type IV	No Applicability	Aggregate
613.15	RIPRAP, HEAVY TYPE	CY	706.03(a)	Stone for Riprap, Heavy Type	No Applicability	Aggregate
613.16	RIPRAP, LIGHT TYPE	CY	706.03(b)	Stone for Riprap, Light Type	No Applicability	Aggregate
616.20	GRANITE SLOPE EDGING	LF	729.03	Granite Slope Edging	No Applicability	Non Construction Material
			707.01	Mortar, Type I	No Applicability	Cement/Cementitious & Aggregate
616.21	VERTICAL GRANITE CURB	LF	729.03	Granite Slope Edging	No Applicability	Non Construction Material
616.215	VERTICAL GRANITE CURB, MOUNTABLE	LF	707.01	Mortar, Type I	No Applicability	Cement/Cementitious & Aggregate
616.225	REPOINTING GRANITE BRIDGE CURB	GAL	707.01	Mortar, Type I	No Applicability	Cement/Cementitious & Aggregate
616.25	PRECAST REINFORCED CONCRETE CURB, TYPE A	LF	540	Concrete	No Applicability	Cement/Cementitious & Aggregate
616.26	PRECAST REINFORCED CONCRETE CURB, TYPE B	LF	713.01	Bar Reinforcement	BA	Steel
			729.04	Precast Reinforced Concrete Curb	BA	Steel
			707.08	Preformed Joint Filler, Cork, and Asphalt-Treated Felt	BABA	Manufactured Product (Waived)
			707.14(a)	Preformed Joint Filler Bituminous Type	No Applicability	Aggregate Binding Agent
616.27	CAST-IN-PLACE CONCRETE CURB, TYPE A	LF	541	Concrete, Class B	No Applicability	Cement/Cementitious & Aggregate
616.28	CAST-IN-PLACE CONCRETE CURB, TYPE B	LF	707.08	Preformed Joint Filler, Cork, and Asphalt-Treated Felt	BABA	Manufactured Product (Waived)
			707.14(a)	Preformed Joint Filler Bituminous Type	No Applicability	Aggregate Binding Agent
616.305	BITUMINOUS CONCRETE CURB, TYPE A	LF	406	Bituminous Concrete Pavement	No Applicability	Aggregate & Aggregate Binding Agent
616.315	BITUMINOUS CONCRETE CURB, TYPE B	LF	702.04	Emulsified Asphalt	No Applicability	Aggregate Binding Agent
616.35	TREATED TIMBER CURB	LF	406	Bituminous Concrete Pavement	No Applicability	Aggregate & Aggregate Binding Agent
			729.06	Treated Timber Curb	BABA	Manufactured Product (Waived)
			726.01	Timber Preservative	BABA	Manufactured Product (Waived)
616.40	REMOVING AND RESETTING CURB	LF	707.01	Mortar, Type I	No Applicability	Aggregate & Aggregate Binding Agent
616.41	REMOVAL OF EXISTING CURB	LF				
616.47	BITUMINOUS CONCRETE GUTTERS AND TRAFFIC ISLANDS	TON	406	Bituminous Concrete Pavement	No Applicability	Aggregate & Aggregate Binding Agent
			702.04	Emulsified Asphalt	No Applicability	Aggregate Binding Agent
617.10	REMOVE AND RESET MAILBOX, SINGLE SUPPORT	EACH			No Applicability	No Associated Materials
617.12	REMOVE AND RESET MAILBOX, MULTIPLE SUPPORT	EACH				
617.15	REMOVE AND REPLACE MAILBOX, SINGLE SUPPORT	EACH	726.01	Timber Preservative	BABA	Manufactured Product (Waived)
617.17	REMOVE AND REPLACE MAILBOX, MULTIPLE SUPPORT	EACH	750.01(c)	Wood Posts	BABA	Manufactured Product (Waived)
618.10	PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH	SY	541	Concrete, Class B	No Applicability	Cement/Cementitious & Aggregate
618.11	PORTLAND CEMENT CONCRETE SIDEWALK, 8 INCH	SY	707.08	Preformed Joint Filler, Cork, and Asphalt-Treated Felt	BABA	Manufactured Product (Waived)
			707.14	Preformed Joint Filler, Bituminous Type	No Applicability	Manufactured Product (Waived)
618.15	BITUMINOUS CONCRETE SIDEWALK	TON	406	Bituminous Concrete Pavement	No Applicability	Aggregate & Aggregate Binding Agent
			702.04	Emulsified Asphalt	No Applicability	Aggregate Binding Agent
618.30	DETECTABLE WARNING SURFACE	SF	751.08	Detectable Warning Surface	BA	Iron
619.10	BOUNDARY MARKERS	EACH	707.01	Mortar, Type I	No Applicability	Cement/Cementitious & Aggregate
			713.01	Bar Reinforcement	BA	Steel
619.14	BOLLARDS	EACH			BABA	
619.15	WOOD MARKER POSTS	EACH	728.01(a)	Wood Posts and Offset Blocks for Rail, Guardrail, Barriers and Guide Posts	BABA	Manufactured Product (Waived)
619.17	YIELDING MARKER POSTS	EACH	751.01(a)	Steel Posts and Anchors	BA	Steel
619.20	REMOVING AND RESETTING PROPERTY MARKERS	EACH			No Applicability	No Associated Materials
620.11	CHAIN-LINK FENCE, 4 FEET	LF	727.02	Chain-Link Fence	BA	Steel
620.12	CHAIN-LINK FENCE, 6 FEET	LF	752.15	Grounding Electrodes	BABA	Construction Material - Non-Ferrous Metal
620.13	CHAIN-LINK FENCE, 8 FEET	LF				
620.15	GATE FOR CHAIN-LINK FENCE, 4 FEET	LF	727.02(c)	Gate Components	BA	Steel
620.16	GATE FOR CHAIN-LINK FENCE, 6 FEET	LF				
620.17	GATE FOR CHAIN-LINK FENCE, 8 FEET	LF				
620.20	BRACING ASSEMBLY FOR CHAIN-LINK FENCE, 4 FEET	EACH	727.02(c)(2)	Brace Rod	BA	Steel
620.21	BRACING ASSEMBLY FOR CHAIN-LINK FENCE, 6 FEET	EACH	727.02(d)	Miscellaneous Hardware and Fittings	BA	Steel
620.22	BRACING ASSEMBLY FOR CHAIN-LINK FENCE, 8 FEET	EACH				
620.25	WOVEN WIRE FENCE WITH STEEL POSTS	LF	727.01	Woven Wire Fence	BA	Steel
620.26	WOVEN WIRE FENCE WITH WOOD POSTS	LF				
620.30	DRIVE GATE FOR WOVEN WIRE FENCE	EACH	727.01(e)	Gates	BA	Steel
620.40	STEEL BRACE FOR WOVEN WIRE FENCE	EACH	727.01(d)	Steel Posts and Braces	BA	Steel
620.41	WOOD BRACE FOR WOVEN WIRE FENCE	EACH	726.01	Timber Preservative	BABA	Manufactured Product (Waived)
			727.01(c)	Wood Posts and Braces	BABA	Manufactured Product (Waived)
620.45	PLANK RAIL FENCE	LF	727.06	Plank Rail Fence	BA	Steel
620.50	REMOVING AND RESETTING FENCE	LF			No Applicability	No Associated Materials
620.55	REMOVAL OF EXISTING FENCE	LF				
620.75	SNOW BARRIER FENCE	LF	727.05	Snow Barrier Fence	BA	Steel

All materials noted as "Manufactured Product (Waived)" are not required to meet Build America, Buy America requirements.

Materials on the Agency's Approved Products List do not require certification.

DocuSign Envelope ID: 6252F6A9-99D2-4F25-9ECA-404872A6A501

PAY ITEM NUMBER	PAY ITEM DESCRIPTION	ITEM UNIT	MATERIAL CODE	MATERIAL DESCRIPTION	Buy America (BA), Buy America Build America (BABA), or Not Applicable	Applicability Justification
621.17	CABLE GUARDRAIL	LF	728	Guardrail, Guide Posts, and Barriers	BA	Steel
621.173	CABLE GUARDRAIL HOOK BOLT, GALVANIZED	EACH				
621.174	CABLE GUARDRAIL SPLICE UNIT	EACH				
621.175	REPLACEMENT OF GUARDRAIL CABLE	LF				
621.18	STEEL BACKED TIMBER GUARDRAIL	LF				
621.20	STEEL BEAM GUARDRAIL, GALVANIZED	LF				
621.205	STEEL BEAM GUARDRAIL, GALVANIZED W/8 FEET POSTS	LF				
621.206	STEEL BEAM GUARDRAIL, GALVANIZED/NESTED	LF				
621.207	STEEL BEAM GUARDRAIL, GALVANIZED/NESTED W/8 FEET POSTS	LF				
621.21	HD STEEL BEAM GUARDRAIL, GALVANIZED	LF				
621.215	HD STEEL BEAM GUARDRAIL, GALVANIZED W/8 FEET POSTS	LF				
621.216	HD STEEL BEAM GUARDRAIL, GALVANIZED/NESTED	LF				
621.217	HD STEEL BEAM GUARDRAIL, GALVANIZED/NESTED W/8 FEET POSTS	LF				
621.218	TRAFFIC BARRIER DELINEATOR	EACH				
621.219	STEEL BEAM GUARDRAIL OFFSET BLOCK	EACH				
621.25	THRIE BEAM GUARDRAIL	LF				
621.30	BOX BEAM GUARDRAIL	LF				
621.50	MANUFACTURED TERMINAL SECTION, FLARED	EACH				
621.51	MANUFACTURED TERMINAL SECTION, TANGENT	EACH				
621.53	TERMINAL CONNECTOR FOR STEEL BEAM GUARDRAIL	EACH				
621.56	ENERGY ABSORPTION ATTENUATOR, TEMPORARY	EACH				
621.575	ENERGY ABSORPTION ATTENUATOR, PERMANENT	EACH				
621.60	ANCHOR FOR STEEL BEAM RAIL	EACH				
621.61	ANCHOR FOR STEEL TO BOX BEAM TRANSITION	EACH				
621.65	ANCHOR FOR CABLE RAIL	EACH				
621.70	GUARDRAIL APPROACH SECTION, GALVANIZED, TYPE I	EACH				
621.71	GUARDRAIL APPROACH SECTION, GALVANIZED, TYPE II	EACH				
621.72	GUARDRAIL APPROACH SECTION, GALVANIZED 2 RAIL BOX BEAM	EACH				
621.725	GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM	EACH				
621.73	GUARDRAIL APPROACH SECTION, GALVANIZED 4 RAIL BOX BEAM	EACH				
621.737	GUARDRAIL APPROACH SECTION, GALV HD STEEL BEAM	EACH				
621.738	GUARDRAIL APPROACH SECTION, GALV HD STEEL BEAM W/ 8FT POSTS	EACH				
621.746	GUARDRAIL APPROACH SECTION TO CONCRETE BRIDGE RAILING, TL-2	EACH				
621.747	GUARDRAIL APPROACH SECTION TO CONCRETE BRIDGE RAILING, TL-3	EACH				
621.748	GUARDRAIL APPROACH SECTION TO CONC COMB BRIDGE RAILING TL-3	EACH				
621.75	REMOVE AND RESET GUARDRAIL	LF			No Applicability	No Associated Materials
621.76	REPLACE GUARDRAIL POST ASSEMBLY	EACH				
621.77	REPLACE GUARDRAIL BEAM UNIT	EACH				
621.79	ADJUST HEIGHT OF GUARDRAIL	LF				
621.80	REMOVAL AND DISPOSAL OF GUARDRAIL	LF				
621.81	REMOVAL AND DISPOSAL OF GUIDE POSTS	EACH				
621.85	GUIDE POSTS	EACH	478.01	Posts and Post Accessories	BA	Steel
621.90	TEMPORARY TRAFFIC BARRIER	LF			No Applicability	Temporary
621.95	REMOVE AND RESET TEMPORARY TRAFFIC BARRIER	LF			No Applicability	No Associated Materials
622.10	INSULATION BOARD	MFBM	703.03	Sand Borrow and Cushion	No Applicability	Aggregate
			735.01	Polystyrene Insulation Board	BABA	Non Construction Material
625.10	SLEEVES FOR UTILITIES	LF	406	Bituminous Concrete Pavement	No Applicability	Aggregate & Aggregate Binding Agent
			507	Reinforcing Steel	BA	Steel
			541	Concrete, Class B	No Applicability	Cement/Cementitious & Aggregate
			702.04	Emulsified Asphalt	No Applicability	Aggregate Binding Agent
			705.01	Brick	No Applicability	Cement/Cementitious & Aggregate
			707.02	Mortar, Type II	No Applicability	Cement/Cementitious & Aggregate
			707.03	Mortar, Type IV	No Applicability	Cement/Cementitious & Aggregate
			707.04(a)	Joint Sealer, Hot Poured	BABA	Manufactured Product (Waived)
			707.08	Preformed Joint Filler, Cork, and Asphalt-Treated Felt	BA	Manufactured Product (Waived)
			707.10	Polyvinyl Chloride (PVC) Waterstop	BABA	Construction Material - Plastic/Polymer
			707.15	Asphaltic Plug Joints for Bridges	BABA	Manufactured Product (Waived)
			710.01	Reinforced Concrete Pipe	BA	Steel
			710.05	Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe	BABA	Construction Material - Plastic/Polymer
			710.06	Polyvinyl Chloride (PVC) Plastic Pipe	BABA	Manufactured Product (Waived)
			711.01	Corrugated Steel Pipe, Pipe Arches, and Underdrains	BA	Steel
			711.02	Corrugated Aluminum Alloy Pipe, Pipe Arches, and Underdrains	BABA	Construction Material - Non-Ferrous Metal
			740.01	Plastic Pipe, Flexible	BABA	Construction Material - Plastic/Polymer
			752.08(b)	Polyethylene Plastic Pipe and Fittings (HDPE) Electical Conduit	BABA	Construction Material - Plastic/Polymer
628.28	DUCTILE IRON SEWER PIPE, CEMENT-LINED	LF	704.08	Granular Backfill for Structures	No Applicability	Aggregate
			707.11	Rubber Gaskets	BABA	Manufactured Product (Waived)
			740.07	Ductile Iron Pipe, Cement/Cementitious Line	BA	Iron
628.30	RE-LAYING SEWER PIPE	LF			No Applicability	No Associated Materials
628.35	PVC SEWER PIPE	LF	704.08	Granular Backfill for Structures	No Applicability	Aggregate
			707.11	Rubber Gaskets	BABA	Manufactured Product (Waived)
			710.06	Polyvinyl Chloride (PVC) Plastic Pipe	BABA	Manufactured Product (Waived)

All materials noted as "Manufactured Product (Waived)" are not required to meet Build America, Buy America requirements.

Materials on the Agency's Approved Products List do not require certification.

DocuSign Envelope ID: 6252F6A9-99D2-4F25-9ECA-404872A6A501

PAY ITEM NUMBER	PAY ITEM DESCRIPTION	ITEM UNIT	MATERIAL CODE	MATERIAL DESCRIPTION	Buy America (BA), Buy America Build America (BABA), or Not Applicable	Applicability Justification
628.42	TRANSFER TO NEW SYSTEM, SANITARY SEWER	LS			No Applicability	No Associated Materials
629.20	ADJUST ELEVATION OF VALVE BOX	EACH			BA	Steel or Iron
629.23	SEAMLESS COPPER WATER TUBE	LF	740.04	Copper Tube, Seamless	BABA	Construction Material - Non-Ferrous Metal
629.24	DUCTILE IRON WATER PIPE, CEMENT-LINED	LF	740.07	Ductile Iron Pipe, Cement-Lined	BA	Iron
629.25	EXTENSION SERVICE BOX AND CURB STOP	EACH			BA	Steel or Iron
629.26	GATE VALVE	EACH			BA	Steel or Iron
629.27	GATE VALVE WITH VALVE BOX	EACH			BA	Steel or Iron
629.28	HYDRANT	EACH			BA	Steel or Iron
629.29	RELOCATE HYDRANT	EACH			No Applicability	No Associated Materials
629.30	REMOVE HYDRANT	EACH				
629.31	METER PIT	EACH			BA	Steel or Iron
629.32	PLASTIC WATER PIPE, FLEXIBLE	LF	740.01	Plastic Pipe, Flexible	BABA	Construction Material - Plastic/Polymer
629.33	PLASTIC WATER PIPE, RIGID	LF	740.02	Plastic Pipe, Tigid (PVC)	BABA	Construction Material - Plastic/Polymer
629.35	TAPPING SLEEVE AND VALVE WITH VALVE BOX	EACH			BA	Steel or Iron
629.39	CORPORATION STOP	EACH			BA	Steel or Iron
629.40	EXPANSION ASSEMBLY	EACH			BA	Steel or Iron
629.42	TRANSFER TO NEW SYSTEM, WATER SYSTEM	LS			No Applicability	No Associated Materials
629.54	CRUSHED STONE BEDDING	TON	704.02B	Coarse Aggregate for Concrete 3/4 Inch Stone	No Applicability	Aggregate
630.10	UNIFORMED TRAFFIC OFFICERS	HR			No Applicability	No Associated Materials
630.15	FLAGGERS	HR				
631.10	FIELD OFFICE, ENGINEERS	LS				
631.11	FIELD OFFICE, SOILS AND MATERIALS	LS				
631.16	TESTING EQUIPMENT, CONCRETE	LS				
631.17	TESTING EQUIPMENT, BITUMINOUS	LS				
631.18	TESTING EQUIPMENT, PROTECTIVE COATINGS	LS				
631.19	TESTING EQUIPMENT, GROUT	LS				
631.26	FIELD OFFICE COMMUNICATIONS (N.A.B.I.)	DL				
632.10	RAILROAD FLAGGERS (N.A.B.I.)	DL				
633.10	CPM SCHEDULE	EACH				
634.10	EMPLOYEE TRAINEESHIP	HR				
635.11	MOBILIZATION/DEMOBILIZATION	LS				
641.10	TRAFFIC CONTROL	LS				
641.11	TRAFFIC CONTROL, ALL-INCLUSIVE	LS				
641.15	PORTABLE CHANGEABLE MESSAGE SIGN	EACH				
641.16	PORTABLE ARROW BOARD	EACH				
641.17	PORTABLE CHANGEABLE MESSAGE SIGN RENTAL	DAY				
641.18	PORTABLE ARROW BOARD RENTAL	DAY				
646.201	4 INCH WHITE LINE, WATERBORNE PAINT	LF	708.08(c)	Waterborne Paint	No Applicability	Non Construction Material
646.2111	4 INCH YELLOW LINE, WATERBORNE PAINT	LF				
646.2141	6 INCH WHITE LINE, WATERBORNE PAINT	LF				
646.2151	6 INCH YELLOW LINE, WATERBORNE PAINT	LF				
646.221	8 INCH WHITE LINE, WATERBORNE PAINT	LF				
646.231	8 INCH YELLOW LINE, WATERBORNE PAINT	LF				
646.241	12 INCH WHITE LINE, WATERBORNE PAINT	LF				
646.251	12 INCH YELLOW LINE, WATERBORNE PAINT	LF				
646.261	24 INCH STOP BAR, WATERBORNE PAINT	LF				
646.301	LETTER OR SYMBOL, WATERBORNE PAINT	EACH				
646.311	CROSSWALK MARKING, WATERBORNE PAINT	LF				
646.321	RAILROAD CROSSING SYMBOL, WATERBORNE PAINT	EACH				
646.4011	DURABLE 4 INCH WHITE LINE, TYPE A TAPE	LF	754.03(a)	Pavement Marking Tape, Type A	BABA	Manufactured Product (Waived)
646.4012	DURABLE 4 INCH WHITE LINE, TYPE B TAPE	LF	754.03(b)	Pavement Marking Tape, Type B	BABA	Manufactured Product (Waived)
646.4013	DURABLE 4 INCH WHITE LINE, TYPE C TAPE	LF	754.03(c)	Pavement Marking Tape, Type C	BABA	Manufactured Product (Waived)
646.402	DURABLE 4 INCH WHITE LINE, THERMOPLASTIC	LF	708.10(a)	Thermoplastic Pavement Markings, Type A	BABA	Manufactured Product (Waived)
			708.10(b)	Thermoplastic Pavement Markings, Type B	BABA	Manufactured Product (Waived)
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.403	DURABLE 4 INCH WHITE LINE, EPOXY PAINT	LF	708.08(b)	Epoxy Paint	No Applicability	Non Construction Material
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.404	DURABLE 4 INCH WHITE LINE, POLYUREA	LF	708.08(a)	Polyurea Pavement Markings	BABA	Manufactured Product (Waived)
646.406	DURABLE 4 INCH WHITE LINE, RECESSED POLYUREA	LF	754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.4071	DURABLE 4 INCH WHITE LINE, RECESSED TYPE A TAPE	LF	754.03(a)	Pavement Marking Tape, Type A	BABA	Manufactured Product (Waived)
646.4072	DURABLE 4 INCH WHITE LINE, RECESSED TYPE B TAPE	LF	754.03(b)	Pavement Marking Tape, Type B	BABA	Manufactured Product (Waived)
646.4073	DURABLE 4 INCH WHITE LINE, RECESSED TYPE C TAPE	LF			No Applicability	Manufactured Product (Waived)
646.408	DURABLE 4 INCH WHITE LINE, RECESSED THERMOPLASTIC	LF	708.10(a)	Thermoplastic Pavement Markings, Type A	BABA	Manufactured Product (Waived)
			708.10(b)	Thermoplastic Pavement Markings, Type B	BABA	Manufactured Product (Waived)
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass

All materials noted as "Manufactured Product (Waived)" are not required to meet Build America, Buy America requirements.

Materials on the Agency's Approved Products List do not require certification.

DocuSign Envelope ID: 6252F6A9-99D2-4F25-9ECA-404872A6A501

PAY ITEM NUMBER	PAY ITEM DESCRIPTION	ITEM UNIT	MATERIAL CODE	MATERIAL DESCRIPTION	Buy America (BA), Buy America Build America (BABA), or Not Applicable	Applicability Justification
646.409	DURABLE 4 INCH WHITE LINE, RECESSED EPOXY PAINT	LF	708.08(b)	Epoxy Paint	No Applicability	Non Construction Material
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.4111	DURABLE 4 INCH YELLOW LINE, TYPE A TAPE	LF	754.03(a)	Pavement Marking Tape, Type A	BABA	Manufactured Product (Waived)
646.4112	DURABLE 4 INCH YELLOW LINE, TYPE B TAPE	LF	754.03(b)	Pavement Marking Tape, Type B	BABA	Manufactured Product (Waived)
646.4113	DURABLE 4 INCH YELLOW LINE, TYPE C TAPE	LF			No Applicability	Manufactured Product (Waived)
646.412	DURABLE 4 INCH YELLOW LINE, THERMOPLASTIC	LF	708.10(a)	Thermoplastic Pavement Markings, Type A	BABA	Manufactured Product (Waived)
			708.10(b)	Thermoplastic Pavement Markings, Type B	BABA	Manufactured Product (Waived)
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.413	DURABLE 4 INCH YELLOW LINE, EPOXY PAINT	LF	708.08(b)	Epoxy Paint	No Applicability	Non Construction Material
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.414	DURABLE 4 INCH YELLOW LINE, POLYUREA	LF	708.08(a)	Polyurea Pavement Markings	BABA	Manufactured Product (Waived)
646.416	DURABLE 4 INCH YELLOW LINE, RECESSED POLYUREA	LF	754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.4171	DURABLE 4 INCH YELLOW LINE, RECESSED TYPE A TAPE	LF	754.03(a)	Pavement Marking Tape, Type A	BABA	Manufactured Product (Waived)
646.4172	DURABLE 4 INCH YELLOW LINE, RECESSED TYPE B TAPE	LF	754.03(b)	Pavement Marking Tape, Type B	BABA	Manufactured Product (Waived)
646.4173	DURABLE 4 INCH YELLOW LINE, RECESSED TYPE C TAPE	LF			No Applicability	Manufactured Product (Waived)
646.418	DURABLE 4 INCH YELLOW LINE, RECESSED THERMOPLASTIC	LF	708.10(a)	Thermoplastic Pavement Markings, Type A	BABA	Manufactured Product (Waived)
			708.10(b)	Thermoplastic Pavement Markings, Type B	BABA	Manufactured Product (Waived)
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.419	DURABLE 4 INCH YELLOW LINE, RECESSED EPOXY PAINT	LF	708.08(b)	Epoxy Paint	No Applicability	Non Construction Material
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.4211	DURABLE 6 INCH WHITE LINE, TYPE A TAPE	LF	754.03(a)	Pavement Marking Tape, Type A	BABA	Manufactured Product (Waived)
646.4212	DURABLE 6 INCH WHITE LINE, TYPE B TAPE	LF	754.03(b)	Pavement Marking Tape, Type B	BABA	Manufactured Product (Waived)
646.4213	DURABLE 6 INCH WHITE LINE, TYPE C TAPE	LF			No Applicability	Manufactured Product (Waived)
646.422	DURABLE 6 INCH WHITE LINE, THERMOPLASTIC	LF	708.10(a)	Thermoplastic Pavement Markings, Type A	BABA	Manufactured Product (Waived)
			708.10(b)	Thermoplastic Pavement Markings, Type B	BABA	Manufactured Product (Waived)
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.423	DURABLE 6 INCH WHITE LINE, EPOXY PAINT	LF	708.08(b)	Epoxy Paint	No Applicability	Non Construction Material
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.424	DURABLE 6 INCH WHITE LINE, POLYUREA	LF	708.08(a)	Polyurea Pavement Markings	BABA	Manufactured Product (Waived)
646.426	DURABLE 6 INCH WHITE LINE, RECESSED POLYUREA	LF	754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.4271	DURABLE 6 INCH WHITE LINE, RECESSED TYPE A TAPE	LF	754.03(a)	Pavement Marking Tape, Type A	BABA	Manufactured Product (Waived)
646.4272	DURABLE 6 INCH WHITE LINE, RECESSED TYPE B TAPE	LF	754.03(b)	Pavement Marking Tape, Type B	BABA	Manufactured Product (Waived)
646.4273	DURABLE 6 INCH WHITE LINE, RECESSED TYPE C TAPE	LF			No Applicability	Manufactured Product (Waived)
646.428	DURABLE 6 INCH WHITE LINE, RECESSED THERMOPLASTIC	LF	708.10(a)	Thermoplastic Pavement Markings, Type A	BABA	Manufactured Product (Waived)
			708.10(b)	Thermoplastic Pavement Markings, Type B	BABA	Manufactured Product (Waived)
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.429	DURABLE 6 INCH WHITE LINE, RECESSED EPOXY PAINT	LF	708.08(b)	Epoxy Paint	No Applicability	Non Construction Material
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.4311	DURABLE 6 INCH YELLOW LINE, TYPE A TAPE	LF	754.03(a)	Pavement Marking Tape, Type A	BABA	Manufactured Product (Waived)
646.4312	DURABLE 6 INCH YELLOW LINE, TYPE B TAPE	LF	754.03(b)	Pavement Marking Tape, Type B	BABA	Manufactured Product (Waived)
646.4313	DURABLE 6 INCH YELLOW LINE, TYPE C TAPE	LF			No Applicability	Manufactured Product (Waived)
646.432	DURABLE 6 INCH YELLOW LINE, THERMOPLASTIC	LF	708.10(a)	Thermoplastic Pavement Markings, Type A	BABA	Manufactured Product (Waived)
			708.10(b)	Thermoplastic Pavement Markings, Type B	BABA	Manufactured Product (Waived)
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.433	DURABLE 6 INCH YELLOW LINE, EPOXY PAINT	LF	708.08(b)	Epoxy Paint	No Applicability	Non Construction Material
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.434	DURABLE 6 INCH YELLOW LINE, POLYUREA	LF	708.08(a)	Polyurea Pavement Markings	BABA	Manufactured Product (Waived)
646.436	DURABLE 6 INCH YELLOW LINE, RECESSED POLYUREA	LF	754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.4371	DURABLE 6 INCH YELLOW LINE, RECESSED TYPE A TAPE	LF	754.03(a)	Pavement Marking Tape, Type A	BABA	Manufactured Product (Waived)
646.4372	DURABLE 6 INCH YELLOW LINE, RECESSED TYPE B TAPE	LF	754.03(b)	Pavement Marking Tape, Type B	BABA	Manufactured Product (Waived)
646.4373	DURABLE 6 INCH YELLOW LINE, RECESSED TYPE C TAPE	LF			No Applicability	Manufactured Product (Waived)
646.438	DURABLE 6 INCH YELLOW LINE, RECESSED THERMOPLASTIC	LF	708.10(a)	Thermoplastic Pavement Markings, Type A	BABA	Manufactured Product (Waived)
			708.10(b)	Thermoplastic Pavement Markings, Type B	BABA	Manufactured Product (Waived)
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass

All materials noted as "Manufactured Product (Waived)" are not required to meet Build America, Buy America requirements.

Materials on the Agency's Approved Products List do not require certification.

DocuSign Envelope ID: 6252F6A9-99D2-4F25-9ECA-404872A6A501

PAY ITEM NUMBER	PAY ITEM DESCRIPTION	ITEM UNIT	MATERIAL CODE	MATERIAL DESCRIPTION	Buy America (BA), Buy America Build America (BABA), or Not Applicable	Applicability Justification
646.439	DURABLE 6 INCH YELLOW LINE, RECESSED EPOXY PAINT	LF	708.08(b)	Epoxy Paint	No Applicability	Non Construction Material
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.4411	DURABLE 8 INCH WHITE LINE, TYPE A TAPE	LF	754.03(a)	Pavement Marking Tape, Type A	BABA	Manufactured Product (Waived)
646.4412	DURABLE 8 INCH WHITE LINE, TYPE B TAPE	LF	754.03(b)	Pavement Marking Tape, Type B	BABA	Manufactured Product (Waived)
646.4413	DURABLE 8 INCH WHITE LINE, TYPE C TAPE	LF			No Applicability	Manufactured Product (Waived)
646.442	DURABLE 8 INCH WHITE LINE, THERMOPLASTIC	LF	708.10(a)	Thermoplastic Pavement Markings, Type A	BABA	Manufactured Product (Waived)
			708.10(b)	Thermoplastic Pavement Markings, Type B	BABA	Manufactured Product (Waived)
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.443	DURABLE 8 INCH WHITE LINE, EPOXY PAINT	LF	708.08(b)	Epoxy Paint	No Applicability	Non Construction Material
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.444	DURABLE 8 INCH WHITE LINE, POLYUREA	LF	708.08(a)	Polyurea Pavement Markings	BABA	Manufactured Product (Waived)
646.446	DURABLE 8 INCH WHITE LINE, RECESSED POLYUREA	LF	754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.4471	DURABLE 8 INCH WHITE LINE, RECESSED TYPE A TAPE	LF	754.03(a)	Pavement Marking Tape, Type A	BABA	Manufactured Product (Waived)
646.4472	DURABLE 8 INCH WHITE LINE, RECESSED TYPE B TAPE	LF	754.03(b)	Pavement Marking Tape, Type B	BABA	Manufactured Product (Waived)
646.4473	DURABLE 8 INCH WHITE LINE, RECESSED TYPE C TAPE	LF			No Applicability	Manufactured Product (Waived)
646.448	DURABLE 8 INCH WHITE LINE, RECESSED THERMOPLASTIC	LF	708.10(a)	Thermoplastic Pavement Markings, Type A	BABA	Manufactured Product (Waived)
			708.10(b)	Thermoplastic Pavement Markings, Type B	BABA	Manufactured Product (Waived)
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.449	DURABLE 8 INCH WHITE LINE, RECESSED EPOXY PAINT	LF	708.08(b)	Epoxy Paint	No Applicability	Non Construction Material
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.4511	DURABLE 8 INCH YELLOW LINE, TYPE A TAPE	LF	754.03(a)	Pavement Marking Tape, Type A	BABA	Manufactured Product (Waived)
646.4512	DURABLE 8 INCH YELLOW LINE, TYPE B TAPE	LF	754.03(b)	Pavement Marking Tape, Type B	BABA	Manufactured Product (Waived)
646.4513	DURABLE 8 INCH YELLOW LINE, TYPE C TAPE	LF			No Applicability	Manufactured Product (Waived)
646.452	DURABLE 8 INCH YELLOW LINE, THERMOPLASTIC	LF	708.10(a)	Thermoplastic Pavement Markings, Type A	BABA	Manufactured Product (Waived)
			708.10(b)	Thermoplastic Pavement Markings, Type B	BABA	Manufactured Product (Waived)
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.453	DURABLE 8 INCH YELLOW LINE, EPOXY PAINT	LF	708.08(b)	Epoxy Paint	No Applicability	Non Construction Material
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.454	DURABLE 8 INCH YELLOW LINE, POLYUREA	LF	708.08(a)	Polyurea Pavement Markings	BABA	Manufactured Product (Waived)
646.456	DURABLE 8 INCH YELLOW LINE, RECESSED POLYUREA	LF	754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.4571	DURABLE 8 INCH YELLOW LINE, RECESSED TYPE A TAPE	LF	754.03(a)	Pavement Marking Tape, Type A	BABA	Manufactured Product (Waived)
646.4572	DURABLE 8 INCH YELLOW LINE, RECESSED TYPE B TAPE	LF	754.03(b)	Pavement Marking Tape, Type B	BABA	Manufactured Product (Waived)
646.4573	DURABLE 8 INCH YELLOW LINE, RECESSED TYPE C TAPE	LF			No Applicability	Manufactured Product (Waived)
646.458	DURABLE 8 INCH YELLOW LINE, RECESSED THERMOPLASTIC	LF	708.10(a)	Thermoplastic Pavement Markings, Type A	BABA	Manufactured Product (Waived)
			708.10(b)	Thermoplastic Pavement Markings, Type B	BABA	Manufactured Product (Waived)
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.459	DURABLE 8 INCH YELLOW LINE, RECESSED EPOXY PAINT	LF	708.08(b)	Epoxy Paint	No Applicability	Non Construction Material
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.4611	DURABLE 12 INCH WHITE LINE, TYPE A TAPE	LF	754.03(a)	Pavement Marking Tape, Type A	BABA	Manufactured Product (Waived)
646.4612	DURABLE 12 INCH WHITE LINE, TYPE B TAPE	LF	754.03(b)	Pavement Marking Tape, Type B	BABA	Manufactured Product (Waived)
646.4613	DURABLE 12 INCH WHITE LINE, TYPE C TAPE	LF			No Applicability	Manufactured Product (Waived)
646.462	DURABLE 12 INCH WHITE LINE, THERMOPLASTIC	LF	708.10(a)	Thermoplastic Pavement Markings, Type A	BABA	Manufactured Product (Waived)
			708.10(b)	Thermoplastic Pavement Markings, Type B	BABA	Manufactured Product (Waived)
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.463	DURABLE 12 INCH WHITE LINE, EPOXY PAINT	LF	708.08(b)	Epoxy Paint	No Applicability	Non Construction Material
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.464	DURABLE 12 INCH WHITE LINE, POLYUREA	LF	708.08(a)	Polyurea Pavement Markings	BABA	Manufactured Product (Waived)
646.466	DURABLE 12 INCH WHITE LINE, RECESSED POLYUREA	LF	754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.4671	DURABLE 12 INCH WHITE LINE, RECESSED TYPE A TAPE	LF	754.03(a)	Pavement Marking Tape, Type A	BABA	Manufactured Product (Waived)
646.4672	DURABLE 12 INCH WHITE LINE, RECESSED TYPE B TAPE	LF	754.03(b)	Pavement Marking Tape, Type B	BABA	Manufactured Product (Waived)
646.4673	DURABLE 12 INCH WHITE LINE, RECESSED TYPE C TAPE	LF			No Applicability	Manufactured Product (Waived)
646.468	DURABLE 12 INCH WHITE LINE, RECESSED THERMOPLASTIC	LF	708.10(a)	Thermoplastic Pavement Markings, Type A	BABA	Manufactured Product (Waived)
			708.10(b)	Thermoplastic Pavement Markings, Type B	BABA	Manufactured Product (Waived)
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass

All materials noted as "Manufactured Product (Waived)" are not required to meet Build America, Buy America requirements.

Materials on the Agency's Approved Products List do not require certification.

DocuSign Envelope ID: 6252F6A9-99D2-4F25-9ECA-404872A6A501

PAY ITEM NUMBER	PAY ITEM DESCRIPTION	ITEM UNIT	MATERIAL CODE	MATERIAL DESCRIPTION	Buy America (BA), Buy America Build America (BABA), or Not Applicable	Applicability Justification
646.469	DURABLE 12 INCH WHITE LINE, RECESSED EPOXY PAINT	LF	708.08(b)	Epoxy Paint	No Applicability	Non Construction Material
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.4711	DURABLE 12 INCH YELLOW LINE, TYPE A TAPE	LF	754.03(a)	Pavement Marking Tape, Type A	BABA	Manufactured Product (Waived)
646.4712	DURABLE 12 INCH YELLOW LINE, TYPE B TAPE	LF	754.03(b)	Pavement Marking Tape, Type B	BABA	Manufactured Product (Waived)
646.4713	DURABLE 12 INCH YELLOW LINE, TYPE C TAPE	LF			No Applicability	Manufactured Product (Waived)
646.472	DURABLE 12 INCH YELLOW LINE, THERMOPLASTIC	LF	708.10(a)	Thermoplastic Pavement Markings, Type A	BABA	Manufactured Product (Waived)
			708.10(b)	Thermoplastic Pavement Markings, Type B	BABA	Manufactured Product (Waived)
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.473	DURABLE 12 INCH YELLOW LINE, EPOXY PAINT	LF	708.08(b)	Epoxy Paint	No Applicability	Non Construction Material
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.474	DURABLE 12 INCH YELLOW LINE, POLYUREA	LF	708.08(a)	Polyurea Pavement Markings	BABA	Manufactured Product (Waived)
646.476	DURABLE 12 INCH YELLOW LINE, RECESSED POLYUREA	LF	754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.4771	DURABLE 12 INCH YELLOW LINE, RECESSED TYPE A TAPE	LF	754.03(a)	Pavement Marking Tape, Type A	BABA	Manufactured Product (Waived)
646.4772	DURABLE 12 INCH YELLOW LINE, RECESSED TYPE B TAPE	LF	754.03(b)	Pavement Marking Tape, Type B	BABA	Manufactured Product (Waived)
646.4773	DURABLE 12 INCH YELLOW LINE, RECESSED TYPE C TAPE	LF			No Applicability	Manufactured Product (Waived)
646.478	DURABLE 12 INCH YELLOW LINE, RECESSED THERMOPLASTIC	LF	708.10(a)	Thermoplastic Pavement Markings, Type A	BABA	Manufactured Product (Waived)
			708.10(b)	Thermoplastic Pavement Markings, Type B	BABA	Manufactured Product (Waived)
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.479	DURABLE 12 INCH YELLOW LINE, RECESSED EPOXY PAINT	LF	708.08(b)	Epoxy Paint	No Applicability	Non Construction Material
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.4811	DURABLE 24 INCH STOP BAR, TYPE A TAPE	LF	754.03(a)	Pavement Marking Tape, Type A	BABA	Manufactured Product (Waived)
646.4812	DURABLE 24 INCH STOP BAR, TYPE B TAPE	LF	754.03(b)	Pavement Marking Tape, Type B	BABA	Manufactured Product (Waived)
646.4813	DURABLE 24 INCH STOP BAR, TYPE C TAPE	LF			No Applicability	Manufactured Product (Waived)
646.4814	DURABLE 24 IN STOP BAR, TYPE D TAPE	LF			No Applicability	Manufactured Product (Waived)
646.482	DURABLE 24 INCH STOP BAR, THERMOPLASTIC	LF	708.10(a)	Thermoplastic Pavement Markings, Type A	BABA	Manufactured Product (Waived)
			708.10(b)	Thermoplastic Pavement Markings, Type B	BABA	Manufactured Product (Waived)
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.483	DURABLE 24 INCH STOP BAR, EPOXY PAINT	LF	708.08(b)	Epoxy Paint	No Applicability	Non Construction Material
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.484	DURABLE 24 INCH STOP BAR, POLYUREA	LF	708.08(a)	Polyurea Pavement Markings	BABA	Manufactured Product (Waived)
646.486	DURABLE 24 INCH STOP BAR, RECESSED POLYUREA	LF	754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.4871	DURABLE 24 INCH STOP BAR, RECESSED TYPE A TAPE	LF	754.03(a)	Pavement Marking Tape, Type A	BABA	Manufactured Product (Waived)
646.4872	DURABLE 24 INCH STOP BAR, RECESSED TYPE B TAPE	LF	754.03(b)	Pavement Marking Tape, Type B	BABA	Manufactured Product (Waived)
646.4873	DURABLE 24 INCH STOP BAR, RECESSED TYPE C TAPE	LF			No Applicability	Manufactured Product (Waived)
646.4874	DURABLE 24 INCH STOP BAR, RECESSED TYPE D TAPE	LF			No Applicability	Manufactured Product (Waived)
646.488	DURABLE 24 INCH STOP BAR, RECESSED THERMOPLASTIC	LF	708.10(a)	Thermoplastic Pavement Markings, Type A	BABA	Manufactured Product (Waived)
			708.10(b)	Thermoplastic Pavement Markings, Type B	BABA	Manufactured Product (Waived)
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.489	DURABLE 24 INCH STOP BAR, RECESSED EPOXY PAINT	LF	708.08(b)	Epoxy Paint	No Applicability	Non Construction Material
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.4911	DURABLE LETTER OR SYMBOL, TYPE A TAPE	EACH	754.03(a)	Pavement Marking Tape, Type A	BABA	Manufactured Product (Waived)
646.4912	DURABLE LETTER OR SYMBOL, TYPE B TAPE	EACH	754.03(b)	Pavement Marking Tape, Type B	BABA	Manufactured Product (Waived)
646.4913	DURABLE LETTER OR SYMBOL, TYPE C TAPE	EACH			No Applicability	Manufactured Product (Waived)
646.4914	DURABLE LETTER OR SYMBOL, TYPE D TAPE	EACH			No Applicability	Manufactured Product (Waived)
646.492	DURABLE LETTER OR SYMBOL, THERMOPLASTIC	EACH	708.10(a)	Thermoplastic Pavement Markings, Type A	BABA	Manufactured Product (Waived)
			708.10(b)	Thermoplastic Pavement Markings, Type B	BABA	Manufactured Product (Waived)
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.493	DURABLE LETTER OR SYMBOL, EPOXY PAINT	EACH	708.08(b)	Epoxy Paint	No Applicability	Non Construction Material
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.494	DURABLE LETTER OR SYMBOL, POLYUREA	EACH	708.08(a)	Polyurea Pavement Markings	BABA	Manufactured Product (Waived)
646.496	DURABLE LETTER OR SYMBOL, RECESSED POLYUREA	EACH	754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.4971	DURABLE LETTER OR SYMBOL, RECESSED TYPE A TAPE	EACH	754.03(a)	Pavement Marking Tape, Type A	BABA	Manufactured Product (Waived)
646.4972	DURABLE LETTER OR SYMBOL, RECESSED TYPE B TAPE	EACH	754.03(b)	Pavement Marking Tape, Type B	BABA	Manufactured Product (Waived)
646.4973	DURABLE LETTER OR SYMBOL, RECESSED TYPE C TAPE	EACH			No Applicability	Manufactured Product (Waived)
646.4974	DURABLE LETTER OR SYMBOL, RECESSED TYPE D TAPE	EACH			No Applicability	Manufactured Product (Waived)

All materials noted as "Manufactured Product (Waived)" are not required to meet Build America, Buy America requirements.

Materials on the Agency's Approved Products List do not require certification.

DocuSign Envelope ID: 6252F6A9-99D2-4F25-9ECA-404872A6A501

PAY ITEM NUMBER	PAY ITEM DESCRIPTION	ITEM UNIT	MATERIAL CODE	MATERIAL DESCRIPTION	Buy America (BA), Buy America Build America (BABA), or Not Applicable	Applicability Justification
646.498	DURABLE LETTER OR SYMBOL, RECESSED THERMOPLASTIC	EACH	708.10(a)	Thermoplastic Pavement Markings, Type A	BABA	Manufactured Product (Waived)
			708.10(b)	Thermoplastic Pavement Markings, Type B	BABA	Manufactured Product (Waived)
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.499	DURABLE LETTER OR SYMBOL, RECESSED EPOXY PAINT	EACH	708.08(b)	Epoxy Paint	No Applicability	Non Construction Material
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.5011	DURABLE CROSSWALK MARKING, TYPE A TAPE	LF	754.03(a)	Pavement Marking Tape, Type A	BABA	Manufactured Product (Waived)
646.5012	DURABLE CROSSWALK MARKING, TYPE B TAPE	LF	754.03(b)	Pavement Marking Tape, Type B	BABA	Manufactured Product (Waived)
646.5013	DURABLE CROSSWALK MARKING, TYPE C TAPE	LF			No Applicability	Manufactured Product (Waived)
646.5014	DURABLE CROSSWALK MARKING, TYPE D TAPE	LF			No Applicability	Manufactured Product (Waived)
646.502	DURABLE CROSSWALK MARKING, THERMOPLASTIC	LF	708.10(a)	Thermoplastic Pavement Markings, Type A	BABA	Manufactured Product (Waived)
			708.10(b)	Thermoplastic Pavement Markings, Type B	BABA	Manufactured Product (Waived)
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.503	DURABLE CROSSWALK MARKING, EPOXY PAINT	LF	708.08(b)	Epoxy Paint	No Applicability	Non Construction Material
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.504	DURABLE CROSSWALK MARKING, POLYUREA	LF	708.08(a)	Polyurea Pavement Markings	BABA	Manufactured Product (Waived)
646.506	DURABLE CROSSWALK MARKING, RECESSED POLYUREA	LF	754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.5071	DURABLE CROSSWALK MARKING, RECESSED TYPE A TAPE	LF	754.03(a)	Pavement Marking Tape, Type A	BABA	Manufactured Product (Waived)
646.5072	DURABLE CROSSWALK MARKING, RECESSED TYPE B TAPE	LF	754.03(b)	Pavement Marking Tape, Type B	BABA	Manufactured Product (Waived)
646.5073	DURABLE CROSSWALK MARKING, RECESSED TYPE C TAPE	LF			No Applicability	Manufactured Product (Waived)
646.5074	DURABLE CROSSWALK MARKING, RECESSED TYPE D TAPE	LF			No Applicability	Manufactured Product (Waived)
646.508	DURABLE CROSSWALK MARKING, RECESSED THERMOPLASTIC	LF	708.10(a)	Thermoplastic Pavement Markings, Type A	BABA	Manufactured Product (Waived)
			708.10(b)	Thermoplastic Pavement Markings, Type B	BABA	Manufactured Product (Waived)
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.509	DURABLE CROSSWALK MARKING, RECESSED EPOXY PAINT	LF	708.08(b)	Epoxy Paint	No Applicability	Non Construction Material
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.5111	DURABLE RAILROAD CROSSING SYMBOL, TYPE A TAPE	EACH	754.03(a)	Pavement Marking Tape, Type A	BABA	Manufactured Product (Waived)
646.5112	DURABLE RAILROAD CROSSING SYMBOL, TYPE B TAPE	EACH	754.03(b)	Pavement Marking Tape, Type B	BABA	Manufactured Product (Waived)
646.5113	DURABLE RAILROAD CROSSING SYMBOL, TYPE C TAPE	EACH			No Applicability	Manufactured Product (Waived)
646.5114	DURABLE RAILROAD CROSSING SYMBOL, TYPE D TAPE	EACH			No Applicability	Manufactured Product (Waived)
646.512	DURABLE RAILROAD CROSSING SYMBOL, THERMOPLASTIC	EACH	708.10(a)	Thermoplastic Pavement Markings, Type A	BABA	Manufactured Product (Waived)
			708.10(b)	Thermoplastic Pavement Markings, Type B	BABA	Manufactured Product (Waived)
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.513	DURABLE RAILROAD CROSSING SYMBOL, EPOXY PAINT	EACH	708.08(b)	Epoxy Paint	No Applicability	Non Construction Material
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.514	DURABLE RAILROAD CROSSING SYMBOL, POLYUREA	EACH	708.08(a)	Polyurea Pavement Markings	BABA	Manufactured Product (Waived)
646.516	DURABLE RAILROAD CROSSING SYMBOL, RECESSED POLYUREA	EACH	754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.5171	DURABLE RAILROAD CROSSING SYMBOL, RECESSED TYPE A TAPE	EACH	754.03(a)	Pavement Marking Tape, Type A	BABA	Manufactured Product (Waived)
646.5172	DURABLE RAILROAD CROSSING SYMBOL, RECESSED TYPE B TAPE	EACH	754.03(b)	Pavement Marking Tape, Type B	BABA	Manufactured Product (Waived)
646.5173	DURABLE RAILROAD CROSSING SYMBOL, RECESSED TYPE C TAPE	EACH			No Applicability	Manufactured Product (Waived)
646.5174	DURABLE RAILROAD CROSSING SYMBOL, RECESSED TYPE D TAPE	EACH			No Applicability	Manufactured Product (Waived)
646.518	DURABLE RAILROAD CROSSING SYMBOL, RECESSED THERMOPLASTIC	EACH	708.10(a)	Thermoplastic Pavement Markings, Type A	BABA	Manufactured Product (Waived)
			708.10(b)	Thermoplastic Pavement Markings, Type B	BABA	Manufactured Product (Waived)
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.519	DURABLE RAILROAD CROSSING SYMBOL, RECESSED EPOXY PAINT	EACH	708.08(b)	Epoxy Paint	No Applicability	Non Construction Material
			754.01(a)	Optics, Type I	BABA	Construction Material - Glass
			754.01(b)	Optics, Type II	BABA	Construction Material - Glass
646.600	TEMPORARY 4 INCH WHITE LINE	LF	708.08(c)	Waterborne Paint	No Applicability	Temporary
			754.01(a)	Optics, Type I	No Applicability	Temporary
			754.03(c)	Pavement Marking Tape, Type C	No Applicability	Temporary
646.6011	TEMPORARY 4 INCH WHITE LINE, TEMPORARY PAVEMENT MARKING TAPE	LF	754.03(c)	Pavement Marking Tape, Type C	No Applicability	Temporary
646.602	TEMPORARY 4 INCH WHITE LINE, PAINT	LF	708.08(c)	Waterborne Paint	No Applicability	Temporary
			754.01(a)	Optics, Type I	No Applicability	Temporary
646.610	TEMPORARY 4 INCH YELLOW LINE	LF	708.08(c)	Waterborne Paint	No Applicability	Temporary
			754.01(a)	Optics, Type I	No Applicability	Temporary
			754.03(c)	Pavement Marking Tape, Type C	No Applicability	Temporary
646.6111	TEMPORARY 4 IN YELLOW LINE, TEMPORARY PAVEMENT MARKING TAPE	LF	754.03(c)	Pavement Marking Tape, Type C	No Applicability	Temporary
646.612	TEMPORARY 4 INCH YELLOW LINE, PAINT	LF	708.08(c)	Waterborne Paint	No Applicability	Temporary
			754.01(a)	Optics, Type I	No Applicability	Temporary

All materials noted as "Manufactured Product (Waived)" are not required to meet Build America, Buy America requirements.

Materials on the Agency's Approved Products List do not require certification.

DocuSign Envelope ID: 6252F6A9-99D2-4F25-9ECA-404872A6A501

PAY ITEM NUMBER	PAY ITEM DESCRIPTION	ITEM UNIT	MATERIAL CODE	MATERIAL DESCRIPTION	Buy America (BA), Buy America Build America (BABA), or Not Applicable	Applicability Justification
646.620	TEMPORARY 6 INCH WHITE LINE	LF	708.08(c)	Waterborne Paint	No Applicability	Temporary
			754.01(a)	Optics, Type I	No Applicability	Temporary
			754.03(c)	Pavement Marking Tape, Type C	No Applicability	Temporary
646.6211	TEMPORARY 6 INCH WHITE LINE, TEMPORARY PAVEMENT MARKING TAPE	LF	754.03(c)	Pavement Marking Tape, Type C	No Applicability	Temporary
646.622	TEMPORARY 6 INCH WHITE LINE, PAINT	LF	708.08(c)	Waterborne Paint	No Applicability	Temporary
			754.01(a)	Optics, Type I	No Applicability	Temporary
646.630	TEMPORARY 6 INCH YELLOW LINE	LF	708.08(c)	Waterborne Paint	No Applicability	Temporary
			754.01(a)	Optics, Type I	No Applicability	Temporary
			754.03(c)	Pavement Marking Tape, Type C	No Applicability	Temporary
646.6311	TEMPORARY 6 IN YELLOW LINE, TEMPORARY PAVEMENT MARKING TAPE	LF	754.03(c)	Pavement Marking Tape, Type C	No Applicability	Temporary
646.632	TEMPORARY 6 INCH YELLOW LINE, PAINT	LF	708.08(c)	Waterborne Paint	No Applicability	Temporary
			754.01(a)	Optics, Type I	No Applicability	Temporary
646.640	TEMPORARY 8 INCH WHITE LINE	LF	708.08(c)	Waterborne Paint	No Applicability	Temporary
			754.01(a)	Optics, Type I	No Applicability	Temporary
			754.03(c)	Pavement Marking Tape, Type C	No Applicability	Temporary
646.6411	TEMPORARY 8 INCH WHITE LINE, TEMPORARY PAVEMENT MARKING TAPE	LF	754.03(c)	Pavement Marking Tape, Type C	No Applicability	Temporary
646.642	TEMPORARY 8 INCH WHITE LINE, PAINT	LF	708.08(c)	Waterborne Paint	No Applicability	Temporary
			754.01(a)	Optics, Type I	No Applicability	Temporary
646.650	TEMPORARY 8 INCH YELLOW LINE	LF	708.08(c)	Waterborne Paint	No Applicability	Temporary
			754.01(a)	Optics, Type I	No Applicability	Temporary
			754.03(c)	Pavement Marking Tape, Type C	No Applicability	Temporary
646.6511	TEMPORARY 8 IN YELLOW LINE, TEMPORARY PAVEMENT MARKING TAPE	LF	754.03(c)	Pavement Marking Tape, Type C	No Applicability	Temporary
646.652	TEMPORARY 8 INCH YELLOW LINE, PAINT	LF	708.08(c)	Waterborne Paint	No Applicability	Temporary
			754.01(a)	Optics, Type I	No Applicability	Temporary
646.660	TEMPORARY 12 INCH WHITE LINE	LF	708.08(c)	Waterborne Paint	No Applicability	Temporary
			754.01(a)	Optics, Type I	No Applicability	Temporary
			754.03(c)	Pavement Marking Tape, Type C	No Applicability	Temporary
646.6611	TEMPORARY 12 IN WHITE LINE, TEMPORARY PAVEMENT MARKING TAPE	LF	754.03(c)	Pavement Marking Tape, Type C	No Applicability	Temporary
646.662	TEMPORARY 12 INCH WHITE LINE, PAINT	LF	708.08(c)	Waterborne Paint	No Applicability	Temporary
			754.01(a)	Optics, Type I	No Applicability	Temporary
646.670	TEMPORARY 12 INCH YELLOW LINE	LF	708.08(c)	Waterborne Paint	No Applicability	Temporary
			754.01(a)	Optics, Type I	No Applicability	Temporary
			754.03(c)	Pavement Marking Tape, Type C	No Applicability	Temporary
646.6711	TEMPORARY 12 IN YELLOW LINE, TEMPORARY PAVEMENT MARKING TAPE	LF	754.03(c)	Pavement Marking Tape, Type C	No Applicability	Temporary
646.672	TEMPORARY 12 INCH YELLOW LINE, PAINT	LF	708.08(c)	Waterborne Paint	No Applicability	Temporary
			754.01(a)	Optics, Type I	No Applicability	Temporary
646.680	TEMPORARY 24 INCH STOP BAR	LF	708.08(c)	Waterborne Paint	No Applicability	Temporary
			754.01(a)	Optics, Type I	No Applicability	Temporary
			754.03(c)	Pavement Marking Tape, Type C	No Applicability	Temporary
646.6811	TEMPORARY 24 INCH STOP BAR, TEMPORARY PAVEMENT MARKING TAPE	LF	754.03(c)	Pavement Marking Tape, Type C	No Applicability	Temporary
646.682	TEMPORARY 24 INCH STOP BAR, PAINT	LF	708.08(c)	Waterborne Paint	No Applicability	Temporary
			754.01(a)	Optics, Type I	No Applicability	Temporary
646.690	TEMPORARY LETTER OR SYMBOL	EACH	708.08(c)	Waterborne Paint	No Applicability	Temporary
			754.01(a)	Optics, Type I	No Applicability	Temporary
			754.03(c)	Pavement Marking Tape, Type C	No Applicability	Temporary
646.6911	TEMPORARY LETTER OR SYMBOL, TEMPORARY PAVEMENT MARKING TAPE	EACH	754.03(c)	Pavement Marking Tape, Type C	No Applicability	Temporary
646.692	TEMPORARY LETTER OR SYMBOL, PAINT	EACH	708.08(c)	Waterborne Paint	No Applicability	Temporary
			754.01(a)	Optics, Type I	No Applicability	Temporary
646.700	TEMPORARY CROSSWALK MARKING	LF	708.08(c)	Waterborne Paint	No Applicability	Temporary
			754.01(a)	Optics, Type I	No Applicability	Temporary
			754.03(c)	Pavement Marking Tape, Type C	No Applicability	Temporary
646.7011	TEMPORARY CROSSWALK MARKING, TEMPORARY PAVEMENT MARKING TAPE	LF	754.03(c)	Pavement Marking Tape, Type C	No Applicability	Temporary
646.702	TEMPORARY CROSSWALK MARKING, PAINT	LF	708.08(c)	Waterborne Paint	No Applicability	Temporary
			754.01(a)	Optics, Type I	No Applicability	Temporary
646.710	TEMPORARY RAILROAD CROSSING SYMBOL	EACH	708.08(c)	Waterborne Paint	No Applicability	Temporary
			754.01(a)	Optics, Type I	No Applicability	Temporary
			754.03(c)	Pavement Marking Tape, Type C	No Applicability	Temporary
646.7111	TEMPORARY RR XING SYMBOL, TEMPORARY PAVEMENT MARKING TAPE	EACH	754.03(c)	Pavement Marking Tape, Type C	No Applicability	Temporary
646.712	TEMPORARY RAILROAD CROSSING SYMBOL, PAINT	EACH	708.08(c)	Waterborne Paint	No Applicability	Temporary
			754.01(a)	Optics, Type I	No Applicability	Temporary
646.76	LINE STRIPING TARGETS	EACH	708.12(a)	Line Striping Targets	No Applicability	Temporary
646.81	PAINTED CURB	LF	708.08(c)	Waterborne Paint	No Applicability	Non Construction Material
646.82	PAINTED ISLAND	SF	754.01(a)	Optics, Type I	BABA	Construction Material - Glass
646.85	REMOVAL OF EXISTING PAVEMENT MARKINGS	SF			No Applicability	No Associated Materials
646.86	PAVEMENT MARKING MASK	SF	708.12(b)	Pavement Marking Mask	No Applicability	Temporary
649.11	GEOTEXTILE FOR ROADBED SEPARATOR	SY	720.02	Geotextile for Roadbed Separator	No Applicability	Manufactured Product (Waived)
649.21	GEOTEXTILE UNDER RAILROAD BALLAST	SY	720.03	Geotextile Under Railroad Ballast	No Applicability	Manufactured Product (Waived)
649.31	GEOTEXTILE UNDER STONE FILL	SY	720.04	Geotextile Under Stone Fill	No Applicability	Manufactured Product (Waived)
649.41	GEOTEXTILE FOR UNDERDRAIN TRENCH LINING	SY	720.05	Geotextile for Underdrain Trench Lining	No Applicability	Manufactured Product (Waived)
649.61	GEOTEXTILE FOR FILTER CURTAIN	SY	720.06	Geotextile for Filter Curtain	No Applicability	Temporary

All materials noted as "Manufactured Product (Waived)" are not required to meet Build America, Buy America requirements.

Materials on the Agency's Approved Products List do not require certification.

DocuSign Envelope ID: 6252F6A9-99D2-4F25-9ECA-404872A6A501

PAY ITEM NUMBER	PAY ITEM DESCRIPTION	ITEM UNIT	MATERIAL CODE	MATERIAL DESCRIPTION	Buy America (BA), Buy America Build America (BABA), or Not Applicable	Applicability Justification
651.15	SEED	LB	755.04	Seed	No Applicability	Non Construction Material
651.16	WILDFLOWER SEED	LB				
651.17	SEED, WINTER RYE	LB				
651.18	FERTILIZER	LB	755.06	Fertilizer	No Applicability	Non Construction Material
651.20	AGRICULTURAL LIMESTONE	TON	755.08	Agricultural Limestone	No Applicability	Non Construction Material
651.30	SODDING	SY	755.03	Sod	No Applicability	Non Construction Material
651.35	TOPSOIL	CY	755.02	Topsoil	No Applicability	Non Construction Material
651.40	GRUBBING MATERIAL	SY			No Applicability	Non Construction Material
653.01	EPSC PLAN	LS			No Applicability	No Associated Materials
653.02	MONITORING EPSC PLAN	HR				
653.03	MAINTENANCE OF EPSC PLAN (N.A.B.I.)	LU				
653.10	HAY MULCH	TON	755.10(a)	Hay Mulch	No Applicability	Non Construction Material
653.11	HYDRAULIC MULCH	GAL	755.10(d)	Fiber Mulch	No Applicability	Non Construction Material
			755.10(e)	Hydraulic Matrix	No Applicability	Non Construction Material
653.12	STRAW MULCH	TON	755.10(g)	Straw Mulch	No Applicability	Non Construction Material
653.20	ROLLED EROSION CONTROL PRODUCT, TYPE I	SY	755.11(a)	Rolled Erosion Control Product, Type I	No Applicability	Temporary
653.21	ROLLED EROSION CONTROL PRODUCT, TYPE II	SY	755.11(b)	Rolled Erosion Control Product, Type II	No Applicability	Temporary
653.25	CHECK DAM, TYPE I	CY	704.17	Aggregate for Erosion Prevention and Sediment Control	No Applicability	Aggregate
			720.04	Geotextile Under Stone Fill	No Applicability	Temporary
653.26	CHECK DAM, TYPE II	CY	704.02C	Coarse Aggregate for Concrete	No Applicability	Aggregate
			704.17	Aggregate for Erosion Prevention and Sediment Control	No Applicability	Aggregate
653.30	CHECK DAM, TYPE III	EACH	653.30	Check Dam, Type III	No Applicability	Temporary
653.35	STABILIZED CONSTRUCTION ENTRANCE	CY	704.17	Aggregate for Erosion Prevention and Sediment Control	No Applicability	Aggregate
653.40	INLET PROTECTION DEVICE, TYPE I	EACH	704.17	Aggregate for Erosion Prevention and Sediment Control	No Applicability	Aggregate
			720.07	Geotextile for Silt Fence	No Applicability	Temporary
653.41	INLET PROTECTION DEVICE, TYPE II	EACH	653.09(b)(2)	Inlet Protection Device, Type II	No Applicability	Temporary
653.42	INLET PROTECTION DEVICE, TYPE III	CY	704.17	Aggregate for Erosion Prevention and Sediment Control	No Applicability	Aggregate
			720.04	Geotextile Under Stone Fill	No Applicability	Temporary
653.45	FILTER BAG	EACH	653.09(c)	Filter Bag	No Applicability	Temporary
653.475	SILT FENCE, TYPE I	LF	720.07	Geotextile for Silt Fence	No Applicability	Temporary
653.476	SILT FENCE, TYPE II	LF				
653.50	BARRIER FENCE	LF			No Applicability	Temporary
653.55	PROJECT DEMARCATION FENCE	LF				
653.60	EROSION LOG	LF	653.08(c)	Erosion Log	No Applicability	Temporary
656.15	EVERGREEN SEEDLINGS	EACH	745.01	Water	No Applicability	Non Construction Material
656.16	DECIDUOUS SEEDLINGS	EACH	755.12	Plant Materials	No Applicability	Non Construction Material
656.20	EVERGREEN TREES	EACH				
656.25	EVERGREEN SHRUBS	EACH				
656.30	DECIDUOUS TREES	EACH				
656.35	DECIDUOUS SHRUBS	EACH				
656.40	GROUND COVERS AND VINES	EACH				
656.41	PERENNIALS	EACH				
656.45	TRANSPLANTING TREES	EACH	745.01	Water	No Applicability	Non Construction Material
656.50	TRANSPLANTING SHRUBS	EACH				
656.55	TRANSPLANTING GROUNDCOVER	SY				
656.65	LANDSCAPE WATERING	MGAL				
656.80	LANDSCAPE BACKFILL, TRUCK MEASUREMENT	CY	755.01	Landscape Backfill	No Applicability	Non Construction Material
656.85	TREE PROTECTION	LS			No Applicability	No Associated Materials
675.20	TRAFFIC SIGN, TYPE A	SF	750.03	Flat Sheet Aluminum	BABA	Manufactured Product (Waived)
			750.08	Retroreflective Sheeting	BABA	Manufactured Product (Waived)
675.21	TRAFFIC SIGN, TYPE B	SF	750.02	Extruded Aluminum Panels	BABA	Manufactured Product (Waived)
			750.08	Retroreflective Sheeting	BABA	Manufactured Product (Waived)
675.31	W-SHAPE STEEL SIGN POST	LB	750.01(a)	Steel Posts and Anchors	BA	Steel
675.32	TUBULAR ALUMINUM SIGN POST	LB	750.01(b)	Aluminum Posts	BABA	Construction Material - Non-Ferrous Metal
675.33	TUBULAR STEEL SIGN POST	LB	750.01(a)	Steel Posts and Anchors	BA	Steel
675.341	SQUARE TUBE SIGN POST AND ANCHOR	LF				
675.35	SOIL BEARING SLIP BASE	EACH	675.05	Slip Bases	BA	Steel
675.41	FOUNDATION FOR W-SHAPE STEEL POST, 24 INCH DIAMETER	EACH	541	Concrete, Class B	No Applicability	Cement/Cementitious & Aggregate
675.42	FOUNDATION FOR W-SHAPE STEEL POST, 30 INCH DIAMETER	EACH	713.01	Bar ReinforCement/Cementitious	BA	Steel
675.43	FOUNDATION FOR TUBULAR STEEL POST	EACH	750.01(a)	Steel Posts and Anchors	BA	Steel
675.50	REMOVING SIGNS	EACH			No Applicability	No Associated Materials
675.60	RESETTING SIGNS	EACH				
675.61	SETTING SALVAGED POSTS	EACH				
676.10	DELINEATOR WITH STEEL POST	EACH	750.03	Flat Sheet Aluminum	BABA	Manufactured Product (Waived)
			750.08	Retroreflective Sheeting	BABA	Manufactured Product (Waived)
			751.01	Delineator Posts	BA	Steel
			751.06	Assembly Hardware	BABA	Construction Material - Non-Ferrous Metal
676.12	REMOVAL OF EXISTING DELINEATOR AND POST	EACH			No Applicability	No Associated Materials

All materials noted as "Manufactured Product (Waived)" are not required to meet Build America, Buy America requirements.

Materials on the Agency's Approved Products List do not require certification.

DocuSign Envelope ID: 6252F6A9-99D2-4F25-9ECA-404872A6A501

PAY ITEM NUMBER	PAY ITEM DESCRIPTION	ITEM UNIT	MATERIAL CODE	MATERIAL DESCRIPTION	Buy America (BA), Buy America Build America (BABA), or Not Applicable	Applicability Justification
676.15	REMOVE AND REPLACE DELINEATOR	EACH	750.03	Flat Sheet Aluminum	BABA	Construction Material - Non-Ferrous Metal
			750.08	Retroreflective Sheeting	BABA	Manufactured Product (Waived)
			751.06	Assembly Hardware	BABA	Construction Material - Non-Ferrous Metal
676.20	DELINEATOR WITH FLEXIBLE POST	EACH	751.01(b)	Flexible Delineators	BABA	Manufactured Product (Waived)
677.12	OVERHEAD TRAFFIC SIGN SUPPORT, CANTILEVER	EACH	541	Concrete, Class B	No Applicability	Cement/Cementitious & Aggregate
677.13	OVERHEAD TRAFFIC SIGN SUPPORT, MULTI-SUPPORT	EACH	707.03	Mortar, Type IV	No Applicability	Cement/Cementitious & Aggregate
677.22	OVERHEAD TRAFFIC SIGN SUPPORT, CANTILEVER WITH LIGHTING	EACH	707.13	Aluminum-Impregnated Caulking Compound	BABA	Manufactured Product (Waived)
677.23	OVERHEAD TRAFFIC SIGN SUPPORT, MULTI-SUPPORT WITH LIGHTING	EACH	713.01	Bar Reinforcement	BA	Steel
			714.04	Carbon Steel Bolts, Nuts, and Washers	BA	Steel
			714.05	High-Strength Bolts, Nuts, and Washers	BA	Steel
			714.09	Anchor Bolts,Traffic Signals, Lighting, and Overhead Sign Structures	BA	Steel
			714.11	Steel Tubing	BA	Steel
			731.01	Preformed Fabric Bearing Pads	BABA	Manufactured Product (Waived)
			752.15	Grounding Electrodes	BABA	Construction Material - Non-Ferrous Metal
677.25	REMOVE AND RESET OVERHEAD TRAFFIC SIGN SUPPORT	EACH				
677.30	REMOVE EXISTING OVERHEAD SIGN ASSEMBLY, CANTILEVER	EACH			No Applicability	No Associated Materials
677.35	REMOVE EXISTING OVERHEAD SIGN ASSEMBLY, MULTI-SUPPORT	EACH				
678.15	TRAFFIC CONTROL SIGNAL SYSTEM, INTERSECTION	EACH	708.07	Paint for Traffic Control Signals	No Applicability	Non Construction Material
			714.09	Anchor Bolts,Traffic Signals, Lighting, and Overhead Sign Structures	BA	Steel
			752.01(a)(1)	Pedestal Posts, Steel Posts	BA	Steel
			752.01(a)(2)	Pedestal Posts, Aluminum Posts	BABA	Construction Material - Non-Ferrous Metal
			752.01(b)(1)	Bases, Cast Iron Bases	BA	Iron
			752.01(b)(2)	Bases, Cast Aluminum Bases	BABA	Construction Material - Non-Ferrous Metal
			752.02(a)	Wood Poles	BABA	Manufactured Product (Waived)
			752.02(b)	Steel Poles and Baseplates	BA	Steel
			752.03(a)	Steel Poles and Baseplates	BA	Steel
			752.03(c)	Aluminum Poles, Baes, and Mast Arms	BABA	Construction Material - Non-Ferrous Metal
			752.04	Span Wire	BA	Steel
			752.05	Traffic Signal Heads	BABA	Manufactured Product (Waived)
			752.06	Traffic Signal Controllers and Cabinets	BABA	Manufactured Product (Waived)
			752.08(a)	Rigid Polyvinyl Chloride (PVC) Electrical Conduit	BABA	Construction Material - Plastic/Polymer
			752.08(b)	Polyethylene Plastic Pipe and Fittings (HDPE) Electical Conduit	BABA	Construction Material - Plastic/Polymer
			752.08(c)	Plastic-Coated, Galvanized Steel, Rigid Metallic Electrical Conduit	BA	Steel
			752.09	Traffic Signal Conductor Cable	BABA	Construction Material - Plastic/Polymer
			752.13	Accessible Pedestrian Signals	BABA	Manufactured Product (Waived)
			752.14	Pedestrian Pushbutton Assemblies	BABA	Manufactured Product (Waived)
			752.15	Grounding Electrodes	BABA	Construction Material - Non-Ferrous Metal
678.16	FLASHING BEACON, GROUND MOUNTED	EACH	752.07	Flashing Beacons	BABA	Manufactured Product (Waived)
678.17	FLASHING BEACON, AERIAL MOUNTED	EACH				
678.20	INTERCONNECTING CABLE	LF	752.09	Traffic Signal Conductor Cable	BABA	Manufactured Product (Waived)
678.21	ELECTRICAL CONDUIT	LF	752.08(a)	Rigid Polyvinyl Chloride (PVC) Electrical Conduit	BABA	Construction Material - Plastic/Polymer
			752.08(b)	Polyethylene Plastic Pipe and Fittings (HDPE) Electrical Conduit	BABA	Construction Material - Plastic/Polymer
			752.08(c)	Plastic-Coated, Galvanized Steel, Rigid Metallic Electrical Conduit	BA	Steel
678.22	VEHICLE LOOP DETECTOR	LF	752.10	Detectors	BABA	Manufactured Product (Waived)
			752.11	Vehicle Detector Slot Sealant	No Applicability	Non Construction Material
678.23	WIRED CONDUIT	LF	752.08(a)	Rigid Polyvinyl Chloride (PVC) Electrical Conduit	BABA	Construction Material - Plastic/Polymer
			752.08(b)	Polyethylene Plastic Pipe and Fittings (HDPE) Electircal Conduit	BABA	Construction Material - Plastic/Polymer
			752.08(c)	Plastic Coated, Galvanized Steel, Rigid Metallic Electrical Conduit	BA	Steel
			752.09	Traffic Signal Conductor Wire	BABA	Manufactured Product (Waived)
678.24	ELECTRICAL WIRING	LF	752.09	Traffic Signal Conductor Wire	BABA	Manufactured Product (Waived)
678.25	PULL BOX, STANDARD	EACH	752.12(a)	Pull Boxes	BA	Steel
678.26	JUNCTION BOX	EACH	752.12(b)	Junction Boxes	BABA	Construction Material - Plastic/Polymer
678.27	PULL BOX, DOUBLE	EACH	752.12(a)	Pull Boxes	BA	Steel
678.30	ELECTRICAL CONDUIT SLEEVE	LF	752.08(a)	Rigid Polyvinyl Chloride (PVC) Electrical Conduit	BABA	Construction Material - Plastic/Polymer
			752.08(b)	Polyethylene Plastic Pipe and Fittings (HDPE) Electircal Conduit	BABA	Construction Material - Plastic/Polymer
			752.08(c)	Plastic Coated, Galvanized Steel, Rigid Metallic Electrical Conduit	BA	Steel
678.40	TEMPORARY TRAFFIC SIGNAL SYSTEM	EACH			No Applicability	Temporary
678.41	TEMPORARY FLASHING BEACON	EACH	752.07	Flashing Beacons	No Applicability	Temporary
678.42	TEMPORARY DETECTOR	EACH	752.10	Detectors	No Applicability	Temporary
			752.11	Vehicle Detector Slot Sealant	No Applicability	Temporary
678.45	REMOVAL OF EXISTING TRAFFIC CONTROL SIGNAL SYSTEM	EACH			No Applicability	No Associated Materials
679.24	REMOVE STREET LIGHT ASSEMBLY	EACH				
679.25	REMOVE AND RESET LIGHT POLE	EACH				

All materials noted as "Manufactured Product (Waived)" are not required to meet Build America, Buy America requirements.

Materials on the Agency's Approved Products List do not require certification.

DocuSign Envelope ID: 6252F6A9-99D2-4F25-9ECA-404872A6A501

Special Specification SECTION 679.0001 ORNAMENTAL STREET LIGHT ASSEMBLY has been approved and Pay Items: 679.4600001 ORNAMENTAL STREET LIGHT ASSEMBLY, Unit of Measure: EACH and 679.4600002 ORNAMENTAL STREET LIGHT FOUNDATION, Unit

PAY ITEM NUMBER	PAY ITEM DESCRIPTION	ITEM UNIT	MATERIAL CODE	MATERIAL DESCRIPTION	Buy America (BA), Buy America Build America (BABA), or Not Applicable	Applicability Justification
679.46	STREET LIGHT ASSEMBLY	EACH	752.15	Grounding Electrodes	BABA	Construction Material - Non-Ferrous Metal
			753.01	Light Pole Foundations	BA	Steel
			753.02	Transformer Bases	BABA	Construction Material - Non-Ferrous Metal
			753.03	Light Poles	BABA	Construction Material - Non-Ferrous Metal
			753.04(a)	Bracket Arms, Aluminum	BABA	Construction Material - Non-Ferrous Metal
			753.04(b)	Bracket Arms, Steel	BA	Steel
			753.05	Luminaires	BABA	Manufactured Product (Waived)
			753.06	Highway Illumination Conductor Cable	BABA	Manufactured Product (Waived)
			753.07	Finish of Highway Illumination Components	BABA	Manufactured Product (Waived)
679.47	BRACKET ARM	EACH	753.04(a)	Bracket Arms, Aluminum	BABA	Construction Material - Non-Ferrous Metal
			753.04(b)	Bracket Arms, Steel	BA	Steel
679.50	LUMINAIRE	EACH	753.05	Luminaires	BABA	Manufactured Product (Waived)
679.54	STREET LIGHTING CONTROL DEVICE	EACH	679.10	Street Lighting Control Device	BABA	Manufactured Product (Waived)
679.55	POWER DROP STANCHION, STREET LIGHTING	EACH	679.11	Power Drop Stanchion, Street Lighting	BABA	Manufactured Product (Waived)
680.20	TRAVEL INFORMATION SIGN	SF	750.03	Flat Sheet Aluminum	BABA	Manufactured Product (Waived)
680.25	BUSINESS DIRECTIONAL SIGN	SF	750.08	Retroreflective Sheeting	BABA	Manufactured Product (Waived)
			750.12	Assembly Hardware	BA	Steel
680.30	TRAVEL INFORMATION PLAZA	EACH	709.01	Structural Timber and Lumber	BABA	Manufactured Product (Waived)
680.40	RELOCATE INFORMATION PLAZA	EACH	709.02	Nonstructural Lumber	BABA	Manufactured Product (Waived)
			726.01	Timber Preservative	BABA	Manufactured Product (Waived)
680.65	6 INCH MAGNETIC INFORMATION PLAQUE	EACH			No Applicability	Non Construction Material
680.70	TRAVEL INFORMATION SYMBOL	EACH			No Applicability	Non Construction Material
680.72	OVERLAY FOR TRAVEL INFORMATION SIGN	EACH			No Applicability	Non Construction Material
690.50	PRICE ADJUSTMENT, FUEL (N.A.B.I.)	LU			No Applicability	No Associated Materials

All materials noted as "Manufactured Product (Waived)" are not required to meet Build America, Buy America requirements.

Materials on the Agency's Approved Products List do not require certification.

DocuSign Envelope ID: 6252F6A9-99D2-4F25-9ECA-404872A6A501

From: Bassett, Daryl
To: Laroche, Gary
Subject: FW: Northfield BF 0241(58) - Buy America Requirements (FOR PROJECT RECORDS)
Date: Friday, January 5, 2024 9:38:27 AM
Attachments: RE Northfield BF 0241(58).msg
image001.png
Importance: High

Hi Gary,

Please see below and attached email response from Phil Peloquin and FHWA in regards to the Buy American Act (BAA), Build America Buy America Act (BABAA)
FHWA determination for the subject projects street lights.

Thank you,

Daryl Bassett
DuBois & King, Inc.
28 North Main Street
Randolph, VT 05060
Cell Phone: (802) 279-2738

From: Peloquin, Phil <Phil.Peloquin@vermont.gov>
Sent: Friday, January 5, 2024 8:57 AM
To: Bassett, Daryl <Daryl.Bassett@partner.vermont.gov>
Subject: Northfield BF 0241(58) - Buy America Requirements

Hi Daryl,

I proposed this be categorized as a manufactured product and FHWA has concurred with that proposal. This is described in the attached email, please keep it in the project files for future reference.

As a manufactured product BABA requirements can be waived for the ornamental light pole pay item (not for the light pole base pay item, Buy America will still apply for the anchor bolts, rebar, and any other steel incorporated for that pay item).

I will have a little more work to do on this special provision once it goes through the review process, but it should be relatively minor.

Please let me know if you need anything further on this.

Philip Peloquin, Material Testing & Certifications | Quality Assurance Manager
Highway Division
Vermont Agency of Transportation
2178 Airport Road, Unit B | Berlin, VT 05641

DocuSign Envelope ID: 6252F6A9-99D2-4F25-9ECA-404872A6A501

From: Wellborn, Larkin
To: Peloquin, Phil
Cc: Van Den Berg, Nick; Digiovanni, Matthew
Subject: RE: Northfield BF 0241(58)
Date: Friday, January 5, 2024 8:37:16 AM
Attachments: image001.png

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Thanks Phil. I was wondering if the bolts were considered as part of another pay item. Good to know that the bolts do meet Buy America. The light pole assembly would definitely be considered a manufactured product.

Larkin

From: Peloquin, Phil <Phil.Peloquin@vermont.gov>
Sent: Friday, January 5, 2024 8:21 AM
To: Wellborn, Larkin (FHWA) <Larkin.Wellborn@dot.gov>
Cc: Van Den Berg, Nick <Nick.VanDenBerg@vermont.gov>; DiGiovanni, Matthew (FHWA) <matthew.digiovanni@dot.gov>
Subject: RE: Northfield BF 0241(58)

CAUTION: This email originated from outside of the Department of Transportation (DOT). Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Thanks Larkin,

The only components listed as steel are anchor bolts, however these anchor bolts will be associated to the light pole base pay item and not the light pole pay item. BA requirements will be required for the anchor bolts via the light pole base pay item.

The manufacturer has confirmed the light pole is shipped as a finished product (fully assembled) from their location in IL, this was the basis for prosing this be considered a manufactured product.

The manufacturer did offer information in the attached email, I didn't originally include it as it doesn't provide enough information to determine cost but please let me know if you would like more information and I can work with the design team to get that.

Philip Peloquin, Material Testing & Certifications | Quality Assurance Manager
Highway Division
Vermont Agency of Transportation
2178 Airport Road, Unit B | Berlin, VT 05641
802-595-9888 cell | phil.peloquin@vermont.gov
vtrans.vermont.gov

DocuSign Envelope ID: 6252F6A9-99D2-4F25-9ECA-404872A6A501

From: Wellborn, Larkin (FHWA) <Larkin.Wellborn@dot.gov>
Sent: Thursday, January 4, 2024 3:04 PM
To: Peloquin, Phil <Phil.Peloquin@vermont.gov>
Cc: Van Den Berg, Nick <Nick.VanDenBerg@vermont.gov>; Digiovanni, Matthew <matthew.digiovanni@dot.gov>
Subject: FW: Northfield BF 0241(58)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.
Thanks Phil.

I would definitely consider this a manufactured product. I know the steel and iron components here are minimal, but are you aware of what steel/iron components may be used here? Bolts, cables? Anything else? I spoke with Nick about this briefly on Tuesday. This is more for my knowledge than anything. The amount of steel or iron used here would never be enough to push it into Buy America requirements for iron and steel.

Thanks Phil.

Larkin

From: Peloquin, Phil <Phil.Peloquin@vermont.gov>
Sent: Thursday, January 4, 2024 2:13 PM
To: Wellborn, Larkin (FHWA) <Larkin.Wellborn@dot.gov>
Cc: Van Den Berg, Nick <Nick.VanDenBerg@vermont.gov>
Subject: Northfield BF 0241(58)

CAUTION: This email originated from outside of the Department of Transportation (DOT). Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Hi Larkin,

Attached is the current special provision that is intended to be included in the subject project as a special specification when let. In addition to the attached special provision is product data sheets for the product that will be specified in the contract.

We will be proceeding with special specification that includes this product that is not currently included in our Standard Specifications for Construction and as such neither Buy America nor Build America, Buy America applicability has been determined. Please consider this email a request for your concurrence on the following. As an FYI, the design team will be completing a Public

DocuSign Envelope ID: 6252F6A9-99D2-4F25-9ECA-404872A6A501

Information Finding on the basis the town requires this particular product be installed for aesthetic consistency with existing lighting.

I am proposing the attached product be considered a manufactured product under BABA with BABA requirements waived per the manufactured product waiver.

Please either concur or disagree with this interpretation. Your response to this email will be maintained in the project files as documentation of this determination.

Thanks,

Philip Peloquin, Material Testing & Certifications | Quality Assurance Manager
Highway Division
Vermont Agency of Transportation
2178 Airport Road, Unit B | Berlin, VT 05641
802-595-9888 cell | phil.peloquin@vermont.gov
vtrans.vermont.gov

1498499897057_PastedImage

DocuSign Envelope ID: 625DF6A9-99D2-4F25-9ECA-404872A6A501

VILLAGE OF NORTHFIELD
COUNTY OF WASHINGTON

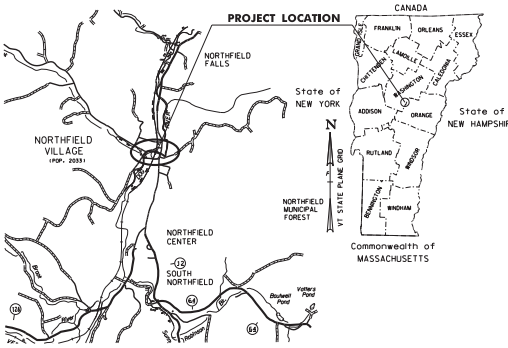
PROPOSED IMPROVEMENT
NORTHFIELD COMMON
SIDEWALK IMPROVEMENTS
STP EH 11(9)

INDEX OF SHEETS

1	TITLE SHEET
2	TYPICAL SECTIONS
3	GENERAL NOTES
4	TIE SHEET
5-6	QUANTITY SHEETS
7	LAYOUT SHEET
8-9	DETAIL SHEETS
10	LIGHTING AND UTILITY PLAN
11	LIGHTING DETAILS
12	SIGNING SHEET
13-15	TRAFFIC SIGN SUMMARY SHEET
16	SIGNING DETAILS
17	CONSTRUCTION APPROACH SIGNING SHEET
18	EPSC NARRATIVE
19	EPSC DETAILS
20	ROW DETAIL SHEET
21	ROW LAYOUT SHEET
22-25	SIDEWALK CROSS SECTIONS

VTRANS STANDARDS

C-10	CURBING	2/11/2008
C-2A	PORTLAND CEMENT CONCRETE SIDEWALK DRIVE ENTRANCES WITH SIDEWALK ADJACENT TO CURB	10/14/2005
D-1	PRECAST REINFORCED CONCRETE DROP INLET DETAILS	6/1/1994
C-3A	SIDEWALK RAMPS	3/10/2008
C-3B	SIDEWALK RAMPS AND MEDIAN ISLANDS	3/10/2008
E-100	CONSTRUCTION APPROACH SIGNS	1/2/2004
E-106	TRAFFIC CONTROL-MISCELLANEOUS DETAILS	3/1/2004
E-121	STANDARD SIGN PLACEMENT - CONVENTIONAL ROAD	8/8/1995
E-164	SQUARE STEEL SIGN POST	6/8/2009
E-173	PULL BOXES AND JUNCTION BOXES	8/9/1995
E-175	POWER DROP STANCHIONS	6/8/2009
E-180A	STREET LIGHTING DETAILS	8/9/1995
E-180B	STREET LIGHTING DETAILS	8/9/1995
E-191	PAVEMENT MARKING DETAILS	2/1/1999
E-193	PAVEMENT MARKING DETAILS	8/18/1995



PROJECT LOCATION : BEGINNING AT THE SOUTHWEST CORNER OF THE COMMON, CONTINUING NORTH AND EAST AROUND THE COMMON ON DEPOT SQUARE, AND ENDING ON THE EAST SIDE OF MAIN STREET

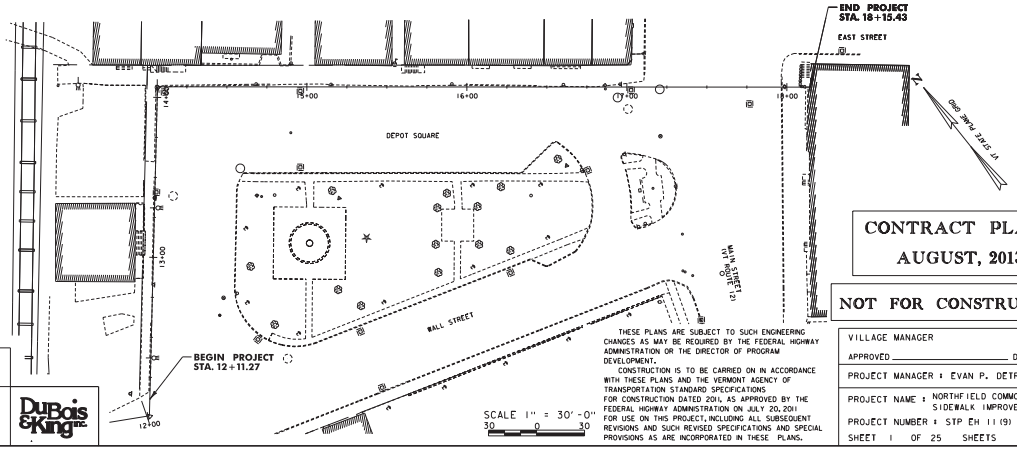
PROJECT DESCRIPTION : WORK TO BE PERFORMED UNDER THIS PROJECT INCLUDES THE RECONSTRUCTION OF SIDEWALK, ROADWAY RECONSTRUCTION, LANDSCAPING, LIGHTING, UTILITY RELOCATIONS, SIGNING, PAVEMENT MARKINGS, DRAINAGE, AND HANDICAPPED ACCESS IMPROVEMENTS.

LENGTH OF PROJECT : 603.84 FEET

LENGTH OF SIDEWALK : 556.20 FEET

PARTICIPATING ITEMS : PARTICIPATING (GRANT ELIGIBLE) ITEMS INCLUDE SIDEWALK RESTORATION, CURB REPLACEMENT, REMOVAL AND INSTALLATION OF LIGHTS AND DRAINAGE IMPROVEMENTS.

NON-PARTICIPATING ITEMS: NON-PARTICIPATING ITEMS INCLUDE UTILITY RELOCATION, ROADWAY REHABILITATION AND PAVEMENT.



QUALITY ASSURANCE PROGRAM: LEVEL 3

CONVENTIONAL SYMBOLS

COUNTY LINE
TOWN LINE
LIMITS OF ACCESS
POINT OF ACCESS
FENCE LINE
STONE WALL
TRAVELED WAY
GUARD RAIL
RAILROAD
SURVEY LINE
CULVERT
POWER POLE
TELEPHONE POLE
TREES
CONTROL OF ACCESS
PROPERTY LINE
R.O.W. TAKING LINE
SLOPE RIGHTS
TOP OF CUT
TOE OF SLOPE

SURVEYED BY : DuBOIS & KING, INC.
SURVEYED DATE : APRIL 4, 2012

DATUM GPS DERIVED
VERTICAL NAVD 88
HORIZONTAL NAV 83

DuBois & King inc.

SCALE 1" = 30'-0"
30 0 30

THESE PLANS ARE SUBJECT TO SUCH ENGINEERING CHANGES AS MAY BE REQUIRED BY THE FEDERAL HIGHWAY ADMINISTRATION OR THE DIRECTOR OF PROGRAM DEVELOPMENT.
CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2011, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON JULY 20, 2011 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

CONTRACT PLANS
AUGUST, 2013

NOT FOR CONSTRUCTION

VILLAGE MANAGER
APPROVED _____ DATE _____

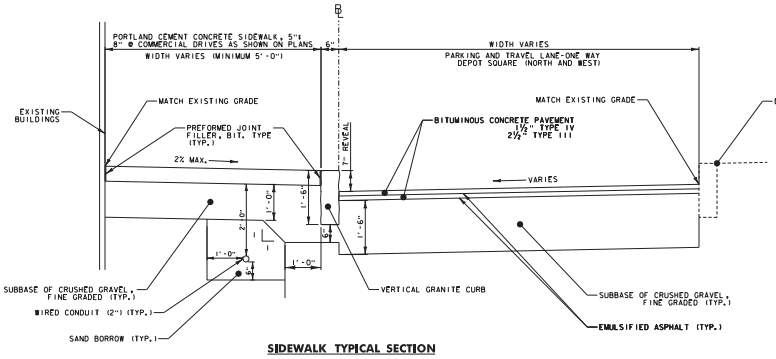
PROJECT MANAGER : EVAN P. DETRICK, P.E.

PROJECT NAME : NORTHFIELD COMMON SIDEWALK IMPROVEMENTS

PROJECT NUMBER : STP EH 11(9)

SHEET 1 OF 25 SHEETS

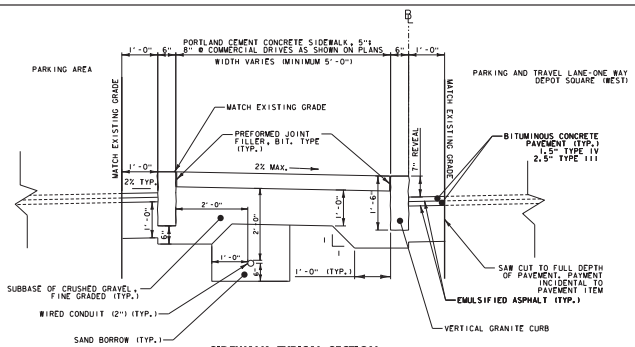
DocuSign Envelope ID: 625ZF0A9-99D2-4F25-9ECA-404872A6A501



SIDEWALK TYPICAL SECTION

STA. 14+05.00 TO STA. 16+72.16

SCALE ¾" = 1'-0"



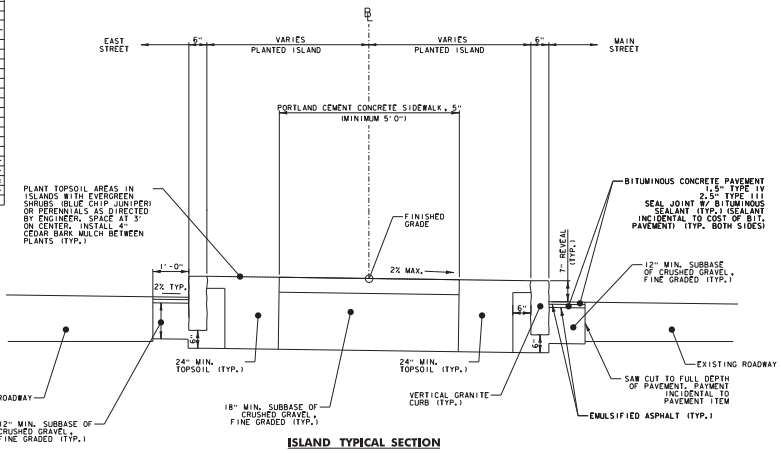
SIDEWALK TYPICAL SECTION

STA. 12+11.59 TO STA. 14+05.00

SCALE ¾" = 1'-0"

LEGEND

EXISTING	DESCRIPTION	PROPOSED
	HARDWOOD TREE/SHRUB	
	SOFTWOOD TREE	
—OE	LUMINAIR	
	UTILITY POLE	
	MAILBOX	
	RAILROAD SIGNAL	
	SEWER MANHOLE	
	HYDRANT	
	GATE VALVE	
	STREET LIGHT	
	SIGN	
	CATCH BASIN	
	DRAINAGE MANHOLE	
	POWER STANCHION	
	PULLBOX/JUNCTION BOX	
	FOUNTAIN VAULT	
	DETECTABLE WARNINGS	
	RIGHT OF WAY	
	RAILROAD RIGHT OF WAY	
— W —	WATER LINE	— W —
— S —	SEWER LINE	— S —
	STORM DRAIN LINE	
— UE —	UNDERGROUND ELECTRIC	— UE —
	CROSS WALK	



ISLAND TYPICAL SECTION

STA. 16+72.16 TO STA. 17+20.18
STA. 17+67.82 TO STA. 18.01.69

SCALE ¾" = 1'-0"

NOTE:
EXCAVATION AND BACKFILLING OF CURB SHALL BE PAID FOR UNDER ITEM 203.15 "COMMON EXCAVATION" AND ITEM 301.26 "SUBBASE OF CRUSHED GRAVEL, FINE GRADED".

NOT FOR CONSTRUCTION

PROJECT NAME:	NORTHFIELD COMMON SIDEWALK IMPROVEMENTS
PROJECT NUMBER:	STP EH II(9)
FILE NAME: ...\CADD files\621577_TYP.dgn	PLOT DATE: 8/1/2013
PROJECT LEADER: EPD	DRAWN BY: RSD
DESIGNED BY: RSD	CHECKED BY: JDM
TYPICAL SECTIONS	SHEET 2 OF 25

\\FILERND\Projects\621577 - Northfield Sidewalk\CADD files\621577_TYP.dgn

DocuSign Envelope ID: 625DF6A9-99D2-4F25-9ECA-404672A6A501

GENERAL NOTES:

1.) ALL CONSTRUCTION ACTIVITIES SHALL BE IN ACCORDANCE WITH THE VERMONT AGENCY OF TRANSPORTATION'S (VTRANS) STANDARD SPECIFICATIONS FOR CONSTRUCTION, 2011 EDITION WITH THE MOST RECENT EDITION OF THE GENERAL SPECIAL PROVISIONS, AND VTRANS' STANDARD DRAWINGS FOR CONSTRUCTION.

2.) THE CONTRACTOR SHALL NOT DISRUPT ANY EXISTING UTILITY SERVICE (PRIVATE OR PUBLIC) WITHOUT WRITTEN AUTHORIZATION FROM THE VILLAGE OF NORTHFIELD.

3.) SURFACE FEATURES SUCH AS SIGNS, FENCES, MAIL BOXES, STONE WALLS, PROPERTY CORNER MARKERS, ETC., ENCOUNTERED IN THE CONSTRUCTION OF THE PROJECT SHALL BE TAKEN DOWN, STORED AND RESET BY THE CONTRACTOR UNLESS OTHERWISE NOTED ON THE PLANS. THE COST OF REMOVING AND RESETTING ITEMS SHALL BE INCIDENTAL TO THE CONTRACT.

4.) ALL UTILITY POLES ARE TO REMAIN UNDISTURBED UNLESS OTHERWISE NOTED IN THE PLANS.

5.) SUBSURFACE FEATURES SUCH AS ELECTRIC AND TELEPHONE LINES, WATER LINES, SEWER LINES, STORM DRAIN AND CULVERTS, ETC., ENCOUNTERED IN THE CONSTRUCTION OF THE PROJECT SHALL BE PROTECTED, SUPPORTED, OR REMOVED AND REPLACED BY THE CONTRACTOR UNLESS OTHERWISE NOTED ON THE PLANS. WATER GATE BOXES AND SERVICE BOXES SHALL BE ADJUSTED TO FINAL GRADE. THE COST OF THIS WORK SHALL BE INCIDENTAL TO THE CONTRACT UNLESS PAYMENT IS SPECIFICALLY NOTED AS A SEPARATE PAY ITEM. THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES AND/OR HIGHWAY DEPARTMENTS WHEN THE WORK INVOLVES THEIR RESPECTIVE FACILITIES.

6.) THE CONTRACTOR SHALL CONTACT THE VILLAGE OF NORTHFIELD WATER AND SEWER DEPARTMENT, "DIG SAFE" (1-888-DIG-SAFE (1-888-344-7233)) AND ALL AFFECTED UTILITY COMPANIES PRIOR TO PERFORMING ANY EXCAVATION, IN ACCORDANCE WITH DIG SAFE'S RULES OF NOTIFICATION. THE COST OF COORDINATING WITH DIG SAFE AND THE UTILITY COMPANIES SHALL BE INCIDENTAL TO ITEM 635.11, "MOBILIZATION/DEMOBILIZATION".

7.) ANY SURFACE OR SUBSURFACE FEATURES DAMAGED BY THE CONTRACTOR DURING CONSTRUCTION SHALL BE RESTORED TO A CONDITION AT LEAST EQUAL TO THAT IN WHICH THEY WERE FOUND IMMEDIATELY PRIOR TO THE BEGINNING OF CONSTRUCTION. ALL COSTS ASSOCIATED WITH THE RESTORATION SHALL BE AT THE CONTRACTORS SOLE EXPENSE.

8.) TOPOGRAPHIC INFORMATION WAS COMPILED BY DUBOIS & KING, INC. FROM SURVEYS PERFORMED BY DUBOIS & KING, INC. ON APRIL 4, 2012.

9.) PRIOR TO CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH THE ENGINEER AND SURVEYOR TO LAYOUT BASELINE, MAINTAINING HORIZONTAL AND VERTICAL CONTROL, AND RE-ESTABLISHING ELEVATIONAL BENCH MARKS THAT WILL BE LOST OR DISTURBED DURING CONSTRUCTION. THE COST TO LAYOUT AND MAINTAIN THE BASELINE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. PAYMENT WILL NOT BE MADE DIRECTLY, BUT WILL BE CONSIDERED INCIDENTAL TO ITEM 635.11, "MOBILIZATION/DEMOBILIZATION".

10.) THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING FIELD MEASUREMENTS OF ALL EXISTING CONDITIONS AFFECTING THE WORK. ANY DISCREPANCIES IN DIMENSIONS, CHARACTER OR EXTENT OF EXISTING FEATURES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE ADVANCING THE WORK. SHOP DRAWINGS REQUIRED FOR VARIOUS ITEMS OF THE WORK SHALL INDICATE THE ACTUAL FIELD MEASUREMENTS BY THE CONTRACTOR PRIOR TO SUBMITTAL FOR THE ENGINEER'S APPROVAL AND SHALL BE SO NOTED.

11.) THIS PROJECT SHALL BE CONSTRUCTED IN COMPLIANCE WITH THE AMERICANS WITH DISABILITIES ACT.

12.) ALL SIGNAGE AND STRIPING SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) 2009 EDITION AND ITS LATEST REVISIONS.

13.) THE CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING AND UNDERSTANDING ALL APPLICABLE ENVIRONMENTAL PERMITS AND SHALL ENSURE THAT ALL CONSTRUCTION REQUIREMENTS ARE MET.

14.) NO CONSTRUCTION ACTIVITY, INCLUDING MATERIALS STORAGE SHALL BE WITHIN 15 FT OF THE CENTER LINE OF THE TRACKS, AND NO ROADWAY TRAFFIC SHALL BE PERMITTED TO DISRUPT RAIL CROSSINGS AT ANY TIME.

15.) THE CONTRACTOR SHALL ENSURE THAT A MINIMUM WIDTH OF 4'0" IS PROVIDED ALONG THE LENGTH OF THE SIDEWALK BETWEEN THE FACE OF ANY LIGHT POLE AND RAILING, STEPS OR OTHER OBSTRUCTION.

16.) THE CONTRACTOR SHALL MINIMIZE THE DISRUPTION TO THE ADJACENT BUSINESSES TO THE EXTENT POSSIBLE. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL DOORS AND STAIRS THROUGHOUT THE WORK. FOR DISRUPTIONS TO ACCESSES (SUCH AS POURING CONCRETE AT DOORWAYS), 24-HOUR ADVANCE NOTICE SHALL BE GIVEN TO THE OWNERS/TENANTS, AND THE WORK SHALL NOT BE PERFORMED WITHOUT PRIOR APPROVAL OF THE ENGINEER. ADDITIONAL RESTRICTIONS TO MINIMIZE DISRUPTION TO BUSINESSES MAY BE IMPLEMENTED, IF NECESSARY. THIS WILL BE DISCUSSED AT THE PRE-CONSTRUCTION MEETING.

17.) NO WORK SHALL BE CONDUCTED BEFORE 7:00 A.M. NOR AFTER 8:00 P.M. WITHOUT PERMISSION BY THE ENGINEER AND THE VILLAGE OF NORTHFIELD.

18.) RECONSTRUCTION OF THE ROADWAY PAVEMENT THROUGHOUT THE COMMON MUST BE CONDUCTED WITH MINIMAL TRAFFIC DISRUPTIONS. VEHICULAR TRAFFIC MAY BE PROHIBITED ON THE COMMON FOR A PERIOD OF NO MORE THAN 2 WEEKS, WITH 7-DAYS ADVANCE NOTICE TO THE ENGINEER AND THE VILLAGE OF NORTHFIELD.

PEDESTRIAN TEMPORARY TRAFFIC CONTROL NOTES:

1.) THE CONTRACTOR SHALL MAINTAIN PEDESTRIAN THROUGH MOVEMENTS FROM ONE END OF THE CONSTRUCTION AREA TO THE OTHER, ON AT LEAST ONE SIDE OF THE STREET DURING CONSTRUCTION. ANY SIDEWALK CLOSURES SHALL MEET THE REQUIREMENTS OF THE MUTCD, PART 6.

2.) PEDESTRIAN ACCESS SHALL BE PROVIDED TO ALL ADJACENT PROPERTIES, BUILDINGS, RESIDENCES AND COMMERCIAL PROPERTIES AT ALL TIMES. THIS MAY INCLUDE TEMPORARY WALKWAYS SPANNING THE CONSTRUCTION AREA. ALL TEMPORARY PEDESTRIAN FACILITIES SHALL BE COMPLIANT WITH THE AMERICANS WITH DISABILITIES ACT.

3.) IF SIDEWALKS ARE CLOSED, A TEMPORARY PEDESTRIAN ACCESS ROUTE (TPAR) SHALL BE PROVIDED ON THE SAME SIDE OF THE ROAD AS THE CLOSED SIDEWALK, IF POSSIBLE. SIGNS AND BARRICADES SHALL BE USED TO PROVIDE ADVANCE NOTICE OF THE CLOSURE AND THE ROUTE OF ANY PEDESTRIAN DETOURS. THE TPAR SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF 4 FEET. IF THE TPAR IS LESS THAN 5 FEET IN WIDTH, A 5 FOOT BY 5 FOOT PASSING SPACE SHOULD BE PROVIDED AT LEAST EVERY 200 FEET. THE SURFACE OF THE TPAR SHALL BE SMOOTH AND CONTINUOUS FOR THE LENGTH OF THE TPAR. THE TPAR SHALL MAINTAIN THE SAME LEVEL OF ACCESSIBILITY AND DETECTABILITY AS THE FACILITY THAT IS BEING CLOSED. THE TPAR SHALL NOT LEAD PEDESTRIANS INTO CONFLICTS WITH VEHICLES, EQUIPMENT, OR CONSTRUCTION OPERATIONS.

4.) IF THE TPAR IS ADJACENT TO MOVING TRAFFIC, CONSTRUCTION OPERATIONS/EQUIPMENT, OR DROP-OFFS, THEN CRASH WORTHY CHANNELIZING DEVICES THAT MEET THE REQUIREMENTS OF THE MUTCD SHALL BE USED.

5.) THE CONTRACTOR SHALL NOT STORE OR PLACE ANY CONSTRUCTION MATERIALS, EQUIPMENT OR SIGNS IN THE PEDESTRIAN PATH OF TRAVEL.

6.) THE CONTRACTOR'S OPERATIONS SHALL NOT OCCUPY SIDEWALKS EXCEPT WHERE PROPER PROTECTION AND A TPAR HAVE BEEN PROVIDED.

7.) THE CONTRACTOR SHALL PROVIDE A TEMPORARY PEDESTRIAN TRAFFIC CONTROL PLAN FOR REVIEW AND WRITTEN APPROVAL BY THE RESIDENT ENGINEER A MINIMUM OF TWO WEEKS BEFORE SUCH PLAN IS IMPLEMENTED. THIS PLAN SHALL DETAIL THE CONSTRUCTION PHASING AND SCHEDULE AND THE SPECIFIC METHODS OF MAINTAINING SAFE PEDESTRIAN ACCESS THROUGHOUT THE CONSTRUCTION AREA. THIS PLAN SHALL PROVIDE THE LOCATION AND DETAILS OF TEMPORARY CONSTRUCTION SIGNING, MARKINGS, BARRICADES, CHANNELIZING DEVICES, TPARS AND METHODS TO MAINTAIN ACCESS TO ADJACENT PROPERTIES, BUSINESSES, RESIDENCES, ETC.

8.) PROVISIONS OF THE TPAR AND ALL OF ITS ELEMENTS, INCLUDING BUT NOT LIMITED TO SIGNS, CHANNELIZING DEVICES, BARRICADES, TEMPORARY PAVEMENT MARKINGS AND OTHER TRAFFIC CONTROL DEVICES IS TO BE PAID FOR INCIDENTAL TO TRAFFIC CONTROL (ITEM 641.10).

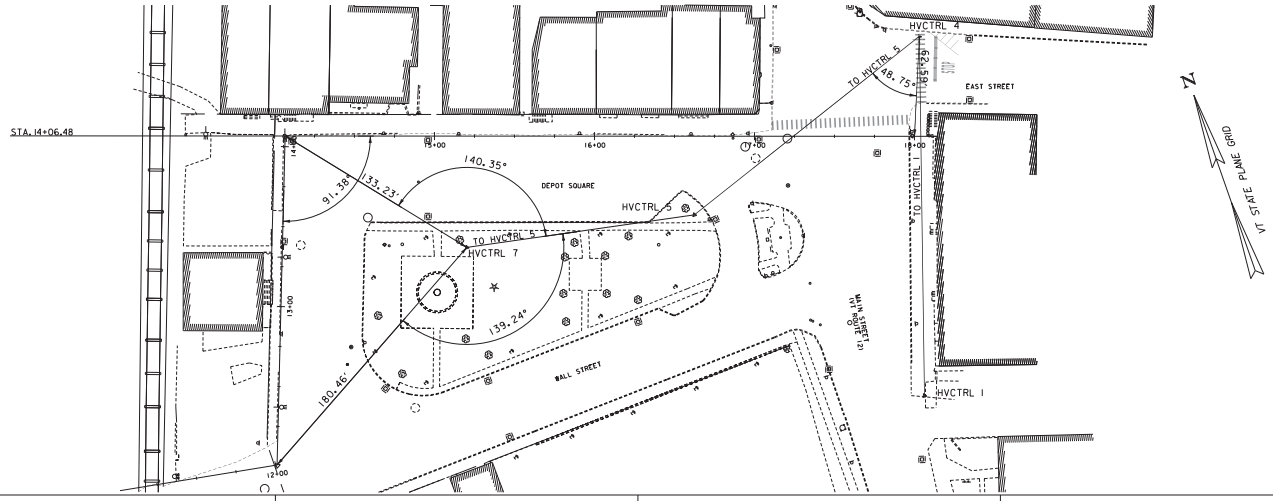
NOT FOR CONSTRUCTION

PROJECT NAME:	NORTHFIELD COMMON SIDEWALK IMPROVEMENTS
PROJECT NUMBER:	STP EH 11(9)
FILE NAME: ...\CADD files\62577_Notes.dgn	PLOT DATE: 8/1/2013
PROJECT LEADER: EPD	DRAWN BY: RSD
DESIGNED BY: RSD	CHECKED BY: JDM
GENERAL NOTES	SHEET 3 OF 25

\\FILE2\NDO\Projects\62577 - Northfield Sidewalk\CADD files\62577_Notes.dgn

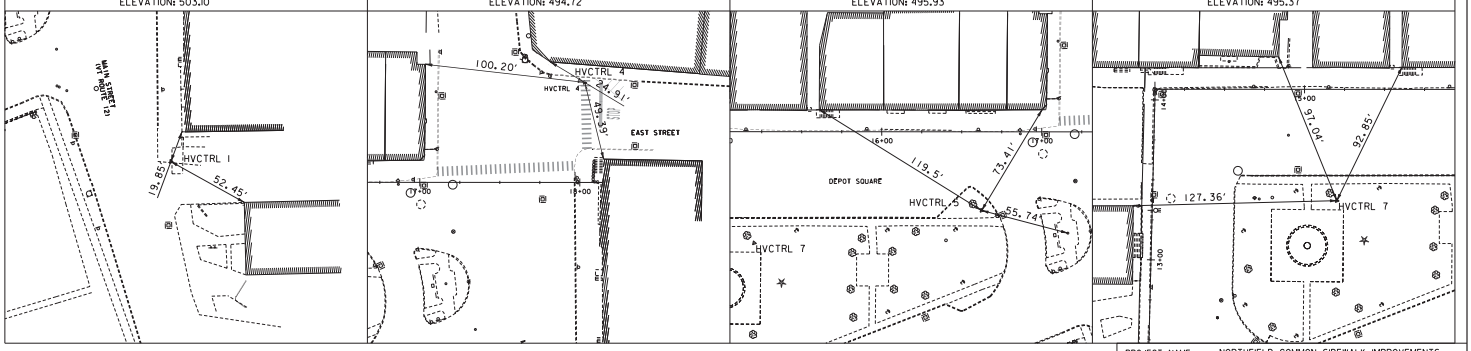
DocuSign Envelope ID: 625270A9-99D2-4F25-9ECA-404672A6A501

ALIGNMENT TIES



CONTROL TIES

HVCTRL 1	HVCTRL 4	HVCTRL 5	HVCTRL 7
NORTHING: 1599434.94	NORTHING: 1599505.87	NORTHING: 1599336.25	NORTHING: 1599195.33
EASTING: 600794.98	EASTING: 601008.05	EASTING: 600949.17	EASTING: 600976.96
ELEVATION: 503.10	ELEVATION: 494.72	ELEVATION: 495.93	ELEVATION: 495.37



DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83

NOT FOR CONSTRUCTION

PROJECT NAME: NORTHFIELD COMMON SIDEWALK IMPROVEMENTS
PROJECT NUMBER: STP EH II(9)

FILE NAME: ...\CADD files\621577_Ties.dgn
PROJECT LEADER: EPD
DESIGNED BY: RSD
TIE SHEET

PLOT DATE: 8/1/2013
DRAWN BY: RSD
CHECKED BY: JDM
SHEET 4 OF 25

\\FILEPOND\Projects\621577 - Northfield Sidewalk\CADD files\621577_Ties.dgn

DocuSign Envelope ID: 625370A9-99D2-4F25-9ECA-404872A6A501

QUANTITY SHEET 1

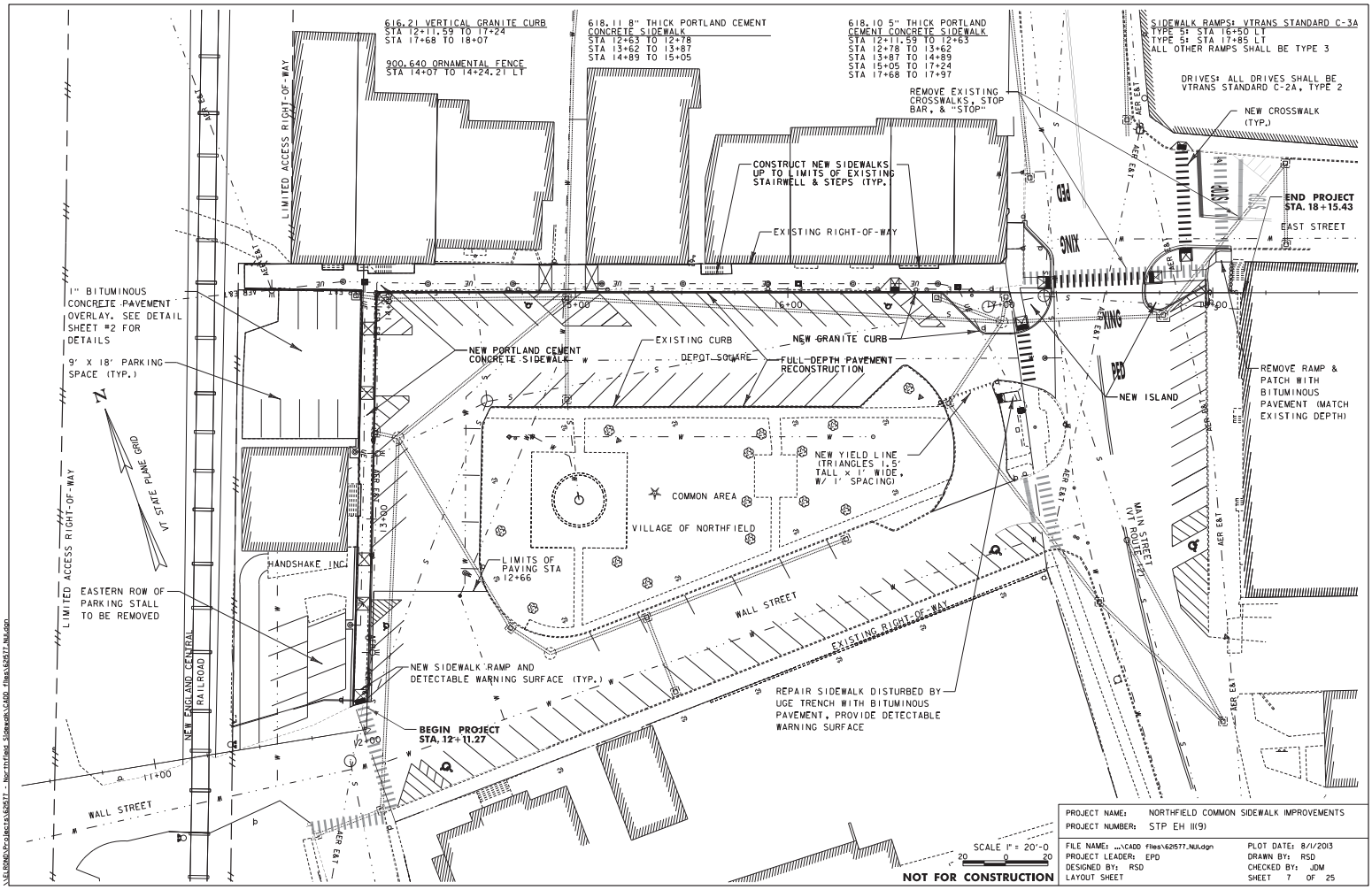
| SUMMARY OF ESTIMATED QUANTITIES | | |

DocuSign Envelope ID: 625370A9-99D2-4F25-9ECA-404872A6A501

QUANTITY SHEET 2

| SUMMARY OF ESTIMATED QUANTITIES | | |

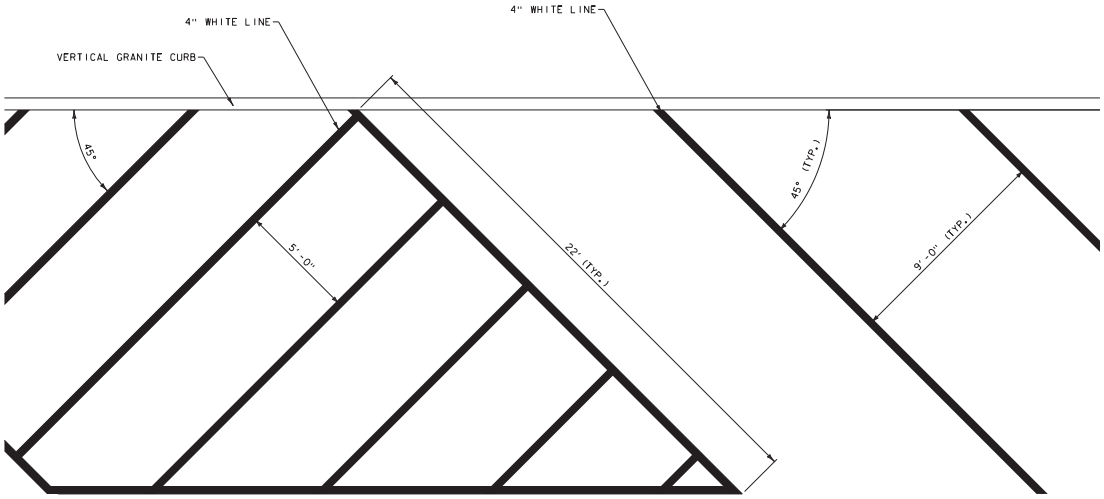
DocuSign Envelope ID: 625DF0A9-99D2-4F25-9ECA-404872A6A501



PROJECT NAME:	NORTHFIELD COMMON SIDEWALK IMPROVEMENTS
PROJECT NUMBER:	STP EH II(9)
FILE NAME: ...\CADD files\62577_NJJ.dgn	PLOT DATE: 8/1/2013
PROJECT LEADER: EPD	DRAWN BY: RSD
DESIGNED BY: RSD	CHECKED BY: JDM
LAYOUT SHEET	SHEET 7 OF 25

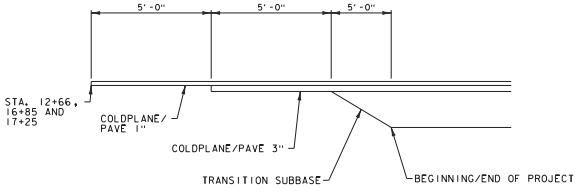
\\GLBONDO\Projects\62577 - Northfield Sidewalk\CADD files\62577_NJJ.dgn

DocuSign Envelope ID: 625270A9-99D2-4F25-9ECA-404672A6A501



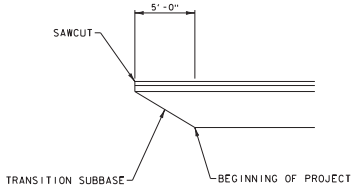
TYPICAL PARKING SPACE & NO PARKING DETAIL, NO PARKING AT

STA. 12+50 RT
STA. 13+40 RT
STA. 13+87 RT
STA. 14+79 RT
STA. 16+50 RT



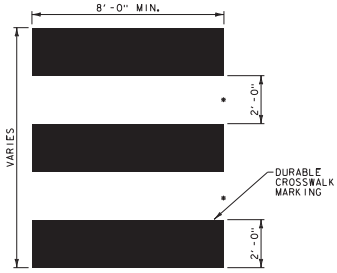
SUBBASE TRANSITION DETAIL

NOT TO SCALE
STA. 12+66 WALL STREET
STA. 16+85 DEPOT SQUARE
STA. 17+25 DEPOT SQUARE



SUBBASE TRANSITION DETAIL
WALL ST. TO DEPOT SQ.

16+90 +/- RT



CROSSWALK DETAIL

STA. 17+12 RT
STA. 17+47 LT
STA. 17+86 LT

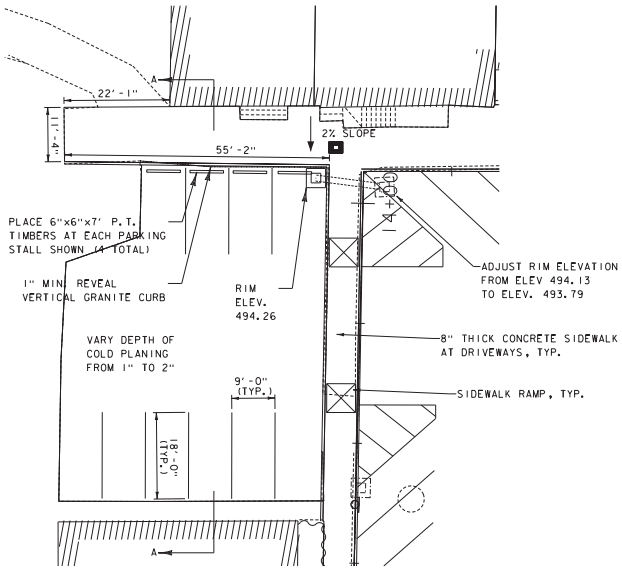
*ADJUST SPACING (12" - 24") TO AVOID WHEEL PATHS

NOT TO SCALE
NOT FOR CONSTRUCTION

PROJECT NAME: NORTHFIELD COMMON SIDEWALK IMPROVEMENTS	
PROJECT NUMBER: STP EH II(9)	
FILE NAME: ...\CADD files\62577_TYP.dgn	PLOT DATE: 8/1/2013
PROJECT LEADER: EPD	DRAWN BY: RSD
DESIGNED BY: RSD	CHECKED BY: JDM
DETAIL SHEET #1OF 2	SHEET 8 OF 25

\\SERVER01\Projects\62577 - Northfield Sidewalk\CADD files\62577_TYP.dgn

DocuSign Envelope ID: 625DF6A9-99D2-4F25-9ECA-404872A6A501

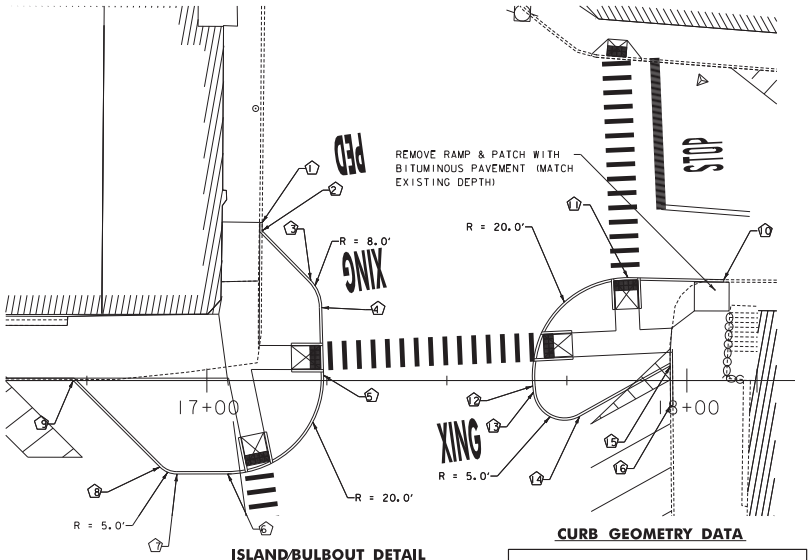


MERCHANT'S BANK/FERNANDEZ HARDWARE STORE PARKING LOT DETAIL

SCALE 1" = 10'-0

10 0 10

NOTE:
MATCH EXISTING EDGE OF PAVEMENT LIMITS OF PARKING LOT

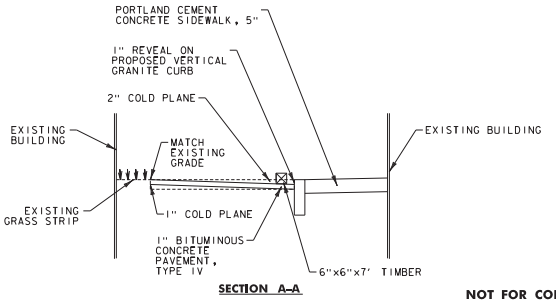


ISLAND/BULBOUT DETAIL

SCALE 1" = 10'-0

10 0 10

NOTE:
SIDEWALK RAMPS PER VAOT STANDARD DRAWING C-3A. TYPE 3 RAMPS CALL FOR VERTICAL FACE CURB TRANSITIONS. ALL SIDEWALK RAMPS SHALL BE TYPE 3, EXCEPT TYPE 5 RAMPS AT STATION 16+50 LT AND 17+85 LT



SECTION A-A

CURB GEOMETRY DATA

POINT NAME	EVENT CODE	STATION	OFFSET
WEST ISLAND			
1	PI	17+11.53	33.00 LT
2	PI	17+11.53	31.11 LT
3	PC	17+21.67	20.93 LT
4	PT	17+24.06	15.20 LT
5	PC	17+24.33	1.07 LT
6	PT	17+04.36	19.46 RT
7	PC	16+93.15	19.50 RT
8	PT	16+90.20	18.02 RT
9	PI	16+72.16	0.00
EAST ISLAND			
10	PI	18+07.71	21.01 LT
11	PC	17+87.71	21.43 LT
12	PT	17+67.88	1.13 LT
13	PC	17+68.04	2.46 LT
14	PT	17+77.68	7.46 LT
15	PI	17+96.53	3.07 RT
16	PI	17+96.53	5.21 RT

NOT FOR CONSTRUCTION

PROJECT NAME:	NORTHFIELD COMMON SIDEWALK IMPROVEMENTS
PROJECT NUMBER:	STP EH 11(9)
FILE NAME: ...\CADD files\62577_NJI.dgn	PLOT DATE: 8/1/2013
PROJECT LEADER: EPD	DRAWN BY: RSD
DESIGNED BY: RSD	CHECKED BY: JDM
DETAIL SHEET #2 OF 2	SHEET 9 OF 25

\\SERVER01\Projects\62577 - Northfield_Sidewalk\CADD files\62577_NJI.dgn

DocuSign Envelope ID: 625DF0A9-99D2-4F25-9ECA-404872A6A501

900.620 (REMOVAL OF EXISTING LIGHT POLE)
STA. 15+17 LT
STA. 15+96 LT
STA. 16+86 LT

678.25 PULLBOX, STANDARD
STA. 14+07 OFF. 5.6 LT
STA. 16+80 OFF. 2.5 LT
STA. 17+10 OFF. 55.5 RT

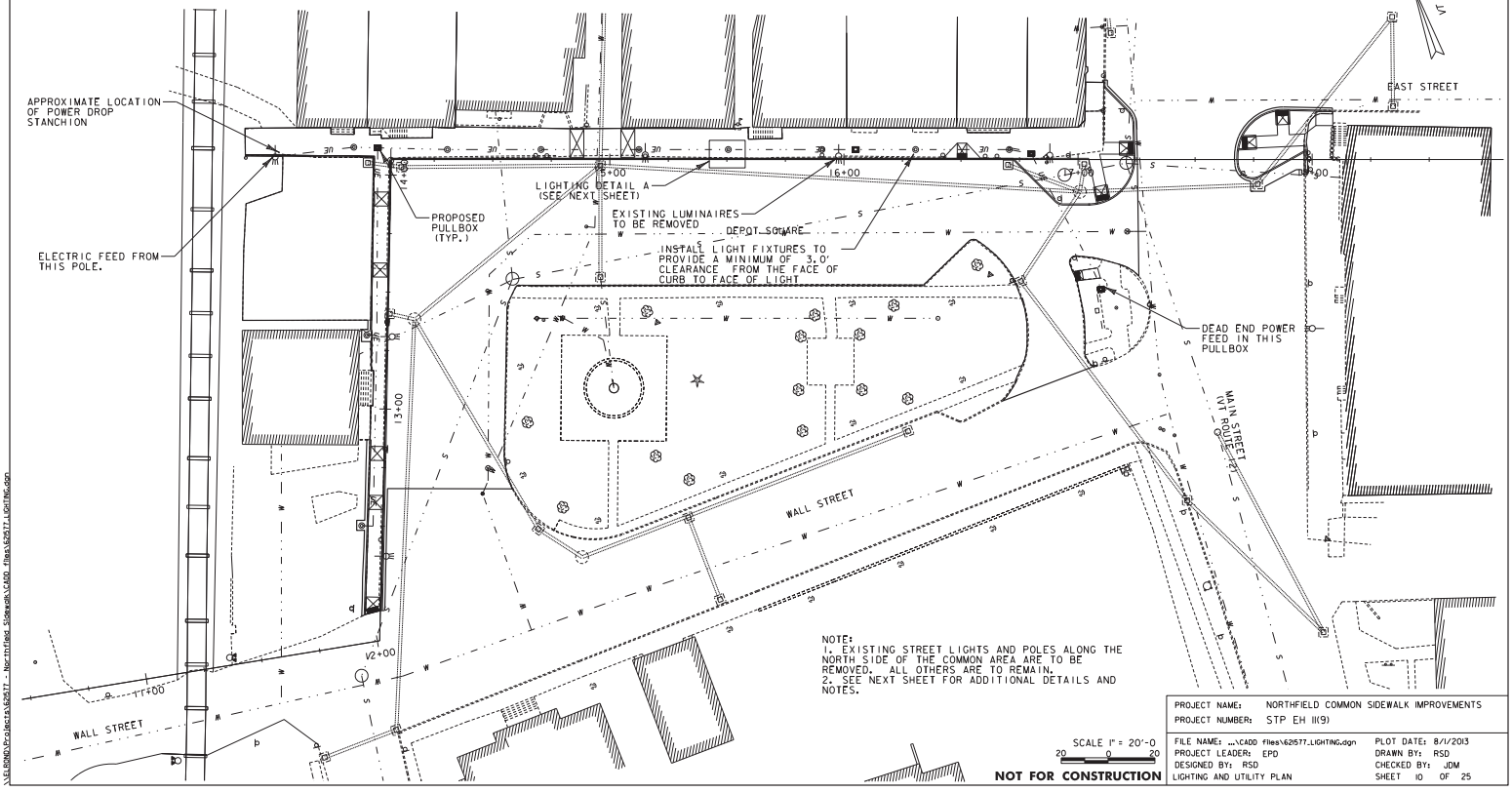
900.620 (WATERPROOF ELECTRICAL RECEPTACLE BOX)
STA. 16+05 OFF. 3.0 LT

679.21 LIGHT POLE BASE
STA. 12+49 OFF. 8.6 LT
STA. 13+31 OFF. 8.6 LT
STA. 14+07 OFF. 16.1 LT
STA. 14+36 OFF. 2.8 LT
STA. 14+70 OFF. 2.8 LT
STA. 15+12 OFF. 2.8 LT
STA. 15+51 OFF. 2.8 LT
STA. 15+91 OFF. 1.6 LT
STA. 16+31 OFF. 2.8 LT
STA. 16+71 OFF. 2.8 LT

679.45 LIGHT POLE
STA. 12+49 OFF. 8.6 LT
STA. 13+31 OFF. 8.6 LT
STA. 14+07 OFF. 16.1 LT
STA. 14+36 OFF. 2.8 LT
STA. 14+70 OFF. 2.8 LT
STA. 15+12 OFF. 2.8 LT
STA. 15+51 OFF. 2.8 LT
STA. 15+91 OFF. 1.6 LT
STA. 16+31 OFF. 2.8 LT
STA. 16+71 OFF. 2.8 LT

679+50 LUMINAIRE
STA. 12+49 OFF. 8.6 LT
STA. 13+31 OFF. 8.6 LT
STA. 14+07 OFF. 16.1 LT
STA. 14+36 OFF. 2.8 LT
STA. 14+70 OFF. 2.8 LT
STA. 15+12 OFF. 2.8 LT
STA. 15+51 OFF. 2.8 LT
STA. 15+91 OFF. 1.6 LT
STA. 16+31 OFF. 2.8 LT
STA. 16+71 OFF. 2.8 LT

679.55 POWER DROP STANCHION, STREET LIGHTING
STA. 14+07 OFF. 47.5 LT



NOTE:
1. EXISTING STREET LIGHTS AND POLES ALONG THE NORTH SIDE OF THE COMMON AREA ARE TO BE REMOVED. ALL OTHERS ARE TO REMAIN.
2. SEE NEXT SHEET FOR ADDITIONAL DETAILS AND NOTES.

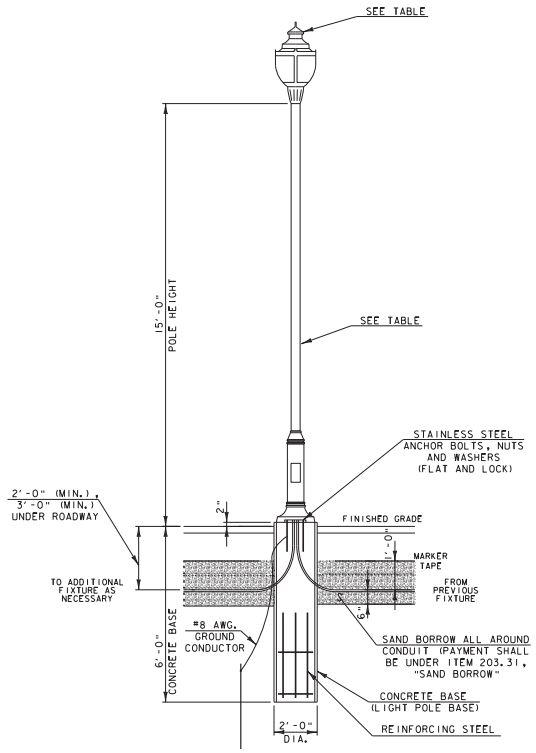
SCALE 1" = 20'-0
20 0 20

NOT FOR CONSTRUCTION

PROJECT NAME:	NORTHFIELD COMMON SIDEWALK IMPROVEMENTS
PROJECT NUMBER:	STP EH 11(9)
FILE NAME: ...\CADD files\621577_LIGHTING.dgn	PLOT DATE: 8/1/2013
PROJECT LEADER: EPD	DRAWN BY: RSD
DESIGNED BY: RSD	CHECKED BY: JDM
LIGHTING AND UTILITY PLAN	SHEET 10 OF 25

\\FILER\PROJECTS\621577 - Northfield_Sidewalk\CADD files\621577_LIGHTING.dgn

DocuSign Envelope ID: 625DF6A9-99D2-4F25-9ECA-404872A6A501



LIGHT FIXTURE DETAIL A

NOT TO SCALE

LIGHTING NOTES

1. SEE VTRANS STANDARD E-175 FOR "TRENCH FOR SECONDARY LOAD SIDE" DETAIL FOR UNDERGROUND ELECTRICAL CONDUIT TRENCH DETAILS.
2. SEE VTRANS STANDARDS E-180A AND E-180B FOR CONCRETE BASE DETAILS.
3. LIGHT POLES, FIXTURES AND ASSOCIATED HARDWARE SHALL BE VERDE GREEN ALUMINUM TO MATCH FINISH OF EXISTING POLES ON THE SOUTH SIDE OF THE NORTHFIELD COMMON. POLES SHALL BE 15'-0" IN HEIGHT WITH A STRAIGHT, FLUTED SHAFT. POLES SHALL HAVE GROUND FAULT INTERRUPTERS MOUNTED ON THEM.
4. LIGHT FIXTURES SHALL AS INDICATED IN THE TABLE BELOW.
5. ALL WIRING SHALL BE IN RIGID STEEL CONDUIT 1" MINIMUM (27MM) WITH APPROVED FITTINGS.
6. ALL WIRING SHALL BE THHN/THWN, #10 AWG STRANDED COPPER TO SERVE THE RECEPTACLE AND LIGHTING FIXTURE CIRCUITS.
7. EACH OUTLET OR JUNCTION IN THE WIRING SYSTEM SHALL BE MADE IN AN APPROVED WEATHERPROOF METALLIC JUNCTION BOX. THE BOX SHALL BE SUITABLE FOR THE SIZE AND NUMBER OF CONDUCTORS TO BE INSTALLED, AS WELL AS THE CONDITIONS ENCOUNTERED. ALL SPLICES SHALL BE MADE WITH APPROVED WATERTIGHT ELECTRICAL CONNECTORS.
8. THE ELECTRICAL SYSTEMS SHALL BE COMPLETELY AND EFFECTIVELY GROUNDED AS REQUIRED BY NEC. ALL METALLIC RACEWAYS SHALL BE ELECTRICALLY SECURE AT ALL JOINTS AND AT ALL BOXES, CABINETS, FITTINGS AND EQUIPMENT.
9. EQUIPMENT GROUNDING CONDUCTORS SHALL BE PROVIDED IN ALL ELECTRICAL RACEWAYS, BE CONTINUOUS AND BE PROVIDED IN ACCORDANCE WITH NEC ARTICLE 250.
10. PANEL BOARD CIRCUIT DIRECTORIES SHALL BE COMPLETED TO REFLECT THE AS-BUILT CONDITIONS.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING, INSTALLATION, TESTING, CALIBRATING AND MAKING OPERATIONAL ALL DEVICES AND EQUIPMENT SHOWN ON THE DRAWINGS.
12. ALL ELECTRICAL WORK SHALL BE CAREFULLY COORDINATED WITH THE WORK OF OTHER TRADES AND ON-SITE CONDITIONS. WHERE CUTTING, DRILLING OR ALTERATION TO THE WORK OF OTHERS IS NECESSARY, FOR THE INSTALLATION OF ELECTRICAL EQUIPMENT, SUCH WORK SHALL BE PLANNED IN ADVANCE WITH THE GENERAL CONTRACTOR AND SHALL BE CAREFULLY COMPLETED. ANY DAMAGE CAUSED BY THE WORK SHALL BE REPAIRED BY PROPERLY TRAINED PERSONNEL, TO THE SATISFACTION OF THE ENGINEER AT NO ADDITIONAL COST TO THE OWNER.
13. LIGHTPOLES SHALL BE LOCATED 3' OFF OF THE FACE OF CURB & SHALL HAVE A 4' MINIMUM CLEAR DISTANCE FROM ANY OBSTRUCTION (e.g. STAIRWELLS).

PROPOSED LIGHTING SCHEDULE
PROVIDE ONE OF THE FOLLOWING OPTIONS, OR EQUIVALENT:

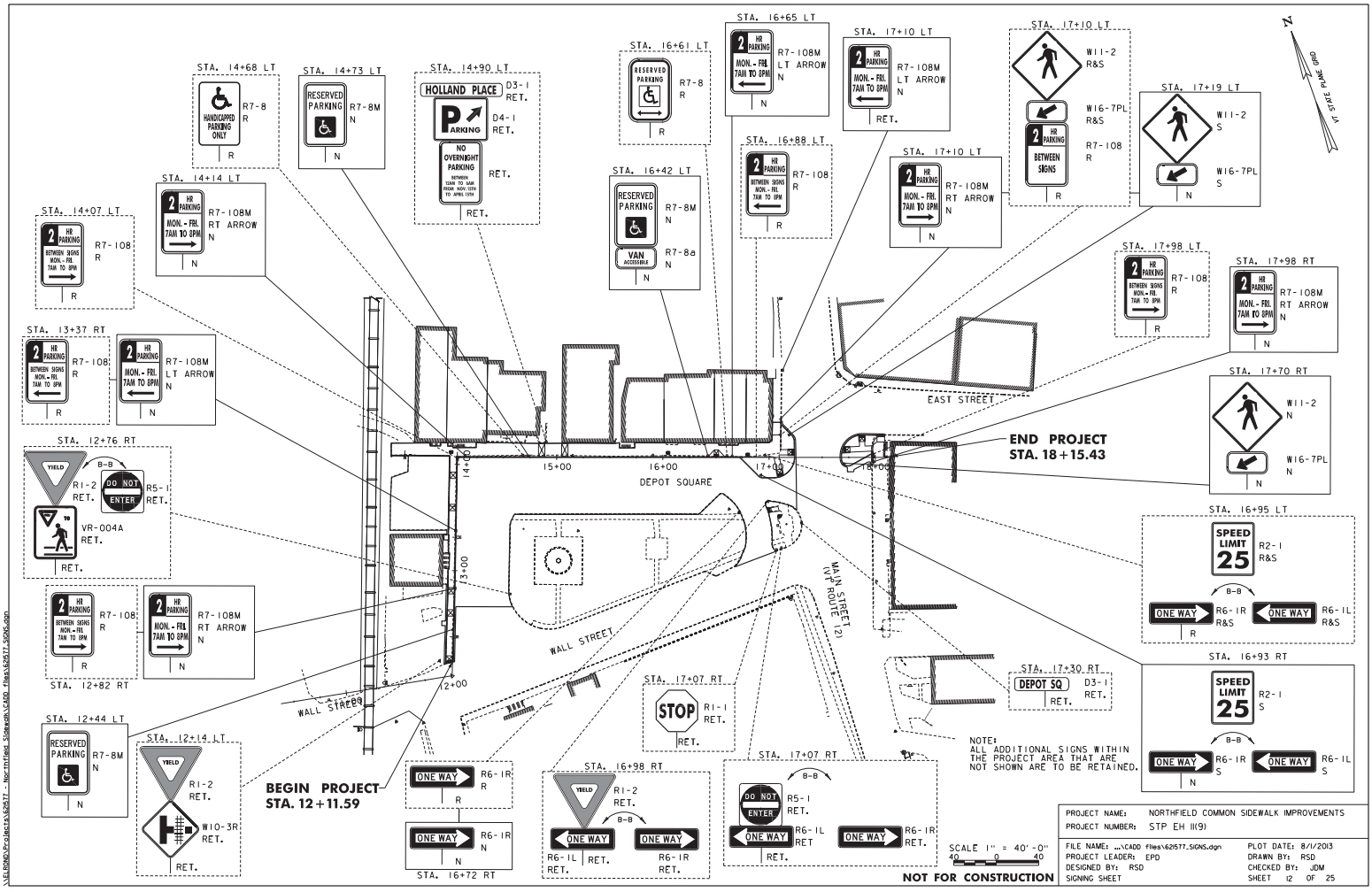
	QUANT	KEY	MANUFACTURER	FIXTURE MODEL	MOUNTING HEIGHT	WATTAGE	LAMP TYPE	POLE MODEL
	10	◎	STERNBERG	"OLD TOWN" ACORN, A850SRLED/SP/PT	15'	35 W	LED	"AUGUSTA" 421S/FP5
OR	10	◎	UNION METAL	TOP MOUNTED, DLC	15'	35 W	LED	"NATIONAL", 5" 16 FLUTE
OR	10	◎	PHILIPS HADCO	TOP MOUNTED, RL34	15'	35 W	LED	P5000 SERIES
OR	10	◎	HOLOPHANE	GRANVILLE CLASSIC	15'	35 W	LED	"WADSWORTH"

NOT FOR CONSTRUCTION

PROJECT NAME:	NORTHFIELD COMMON SIDEWALK IMPROVEMENTS
PROJECT NUMBER:	STP EH 11(9)
FILE NAME: ...\CADD files\62l577_TYP.dgn	PLOT DATE: 8/1/2013
PROJECT LEADER: EPD	DRAWN BY: RSD
DESIGNED BY: RSD	CHECKED BY: JDM
LIGHTING DETAILS	SHEET 11 OF 25

\\FILENDG\Projects\62577 - Northfield Sidewalk\CADD files\62577_TYP.dgn

DocuSign Envelope ID: 625270A9-99D2-4F25-9ECA-404672A6A501



PROJECT NAME:	NORTHFIELD COMMON SIDEWALK IMPROVEMENTS
PROJECT NUMBER:	STP EH 11(9)
FILE NAME:	...\CADD Files\621577.SIGNS.dgn
PROJECT LEADER:	EPD
DESIGNED BY:	RSD
SIGNING SHEET	
PLOT DATE:	8/1/2013
DRAWN BY:	RSD
CHECKED BY:	JDM
SHEET	12 OF 25

SCALE 1" = 40'-0"
40 0 40

NOT FOR CONSTRUCTION

\\EGROUP\Projects\621577 - Northfield Sidewalk\CADD Files\621577_SIGNS.dgn

DocuSign Envelope ID: 625DF0A9-99D2-4F25-9ECA-404872A6A501

TRAFFIC SIGN SUMMARY SHEET #1

MILEMARKER, STATION, OR SIGN NUMBER	SIGN LEGEND	SIGN DIMENSIONS EA	WIDTH (in)	HEIGHT (in)	NEW & SALVAGED SIGNS "A"	"B"	SALV SIGN	SALV TIS	EXIST POST RETAIN	SALVAGE	NEW SIGN POSTS NO. OF POSTS	FLANGED CHANNEL lb/ft 1.12	2.0	3.0	SQUARE STEEL (in) lb/ft 1.75	2.0 1.88	2.5 2.42	3.35	ANCHOR	SLIPBASE	TUBULAR ALUMINUM Ø (in) lb/ft 3.0 1.3	4.0 1.7	4.0 MOD 1.7	FOUNDATION	TUBULAR STEEL Ø (in) lb/ft 3.0 7.6	3.5 9.0	4.0 10.8	5.0 14.6	W-SHAPE STEEL FTG. SIZE 24"	30"	WEIGHT	POST SIZE	REFLECTORIZED SIGNAGE	REMARKS SHSM = STANDARD HIGHWAY SIGNS MARKINGS BOOK	SIGN DETAIL DETAIL IN SHSM	DETAIL ON SHEET NUMBER	STD. SHEET NUMBER
											OPTION ITEMS																									
STA. 12+44 LT	RESERVED PARKING	1	12	18	1.50						1					X		X	X															R7-8M		16	
STA. 12+82 RT	R1-1 PHYSICALLY HANDICAPPED PENALTY $250 MIN - $1,000 MAX OR 90 DAYS IMPRISONMENT OR BOTH	1																															TO BE REMOVED			
STA. 12+82 RT	R1-1 PHYSICALLY HANDICAPPED PENALTY $250 MIN - $1,000 MAX OR 90 DAYS IMPRISONMENT OR BOTH	1	12	18	1.50						1					X		X	X															R7-108M		16	
STA. 13+37 RT	R1-1 PHYSICALLY HANDICAPPED PENALTY $250 MIN - $1,000 MAX OR 90 DAYS IMPRISONMENT OR BOTH	1																															TO BE REMOVED			
STA. 13+37 RT	R1-1 PHYSICALLY HANDICAPPED PENALTY $250 MIN - $1,000 MAX OR 90 DAYS IMPRISONMENT OR BOTH	1	12	18	1.50						1					X		X	X															R7-108M		16	
STA. 14+07 LT	R1-1 PHYSICALLY HANDICAPPED PENALTY $250 MIN - $1,000 MAX OR 90 DAYS IMPRISONMENT OR BOTH	1																															TO BE REMOVED			
STA. 14+14 LT	R1-1 PHYSICALLY HANDICAPPED PENALTY $250 MIN - $1,000 MAX OR 90 DAYS IMPRISONMENT OR BOTH	1	12	18	1.50						1					X		X	X															R7-108M		16	
STA. 14+68 LT	HANDICAPPED PARKING ONLY	1																															TO BE REMOVED			
STA. 14+73 LT	RESERVED PARKING	1	12	18	1.50						1					X		X	X															R7-8M		16	
STA. 15+15 LT	R1-1 PHYSICALLY HANDICAPPED PENALTY $250 MIN - $1,000 MAX OR 90 DAYS IMPRISONMENT OR BOTH	1																															TO BE REMOVED			
STA. 15+90 LT	R1-1 PHYSICALLY HANDICAPPED PENALTY $250 MIN - $1,000 MAX OR 90 DAYS IMPRISONMENT OR BOTH	1																															TO BE REMOVED			
FINAL POST LENGTHS ARE TO BE DETERMINED IN THE FIELD. POST SIZES ARE COMPUTED BASED ON INFORMATION FURNISHED ON THE STANDARD SHEETS AND THE TRAFFIC & SAFETY DIVISION'S "SIGN POST DESIGN GUIDELINE."												FT	FT	FT	FT	FT 75	FT	EA 5	LB	LB	LB		LB	LB	LB	LB						POSTS FOR ROADWAY SIGNS ARE ASSUMED TO BE 15 FEET LONG.			
	TOTALS	SF 7.50	SF	EA.	SF							FT			FT 75				LB			EA.	LB				EA.	EA.							

NOT FOR CONSTRUCTION

PROJECT NAME:	NORTHFIELD COMMON SIDEWALK IMPROVEMENTS
PROJECT NUMBER:	STP EH II(9)
FILE NAME:	...\CADD files\621577.SIGNS.dgn
PROJECT LEADER:	EPD
DESIGNED BY:	RSD
TRAFFIC SIGN SUMMARY SHEET #1	
PLOT DATE:	8/1/2013
DRAWN BY:	RSD
CHECKED BY:	JDM
SHEET	13 OF 25

\\EBONDProjects\621577 - Northfield Sidewalk\CADD files\621577.SIGNS.dgn

DocuSign Envelope ID: 625DF0A9-99D2-4F25-9ECA-404872A6A501

TRAFFIC SIGN SUMMARY SHEET #2

MILEMARKER, STATION, OR SIGN NUMBER	SIGN LEGEND	SIGN DIMENSIONS EA	WIDTH (in)	HEIGHT (in)	NEW & SALVAGED SIGNS "A"	"B"	SALV SIGN	SALV TIS	EXIST POST RETAIN	SALVAGE	NO. OF POSTS	NEW SIGN POSTS: FLANGED CHANNEL lb/ft 1.12	2.0	3.0	SQUARE STEEL (in) 1.75 lb/ft 1.88	2.0 lb/ft 2.42	2.5 lb/ft 3.35	ANCHOR	SLEEVE	TUBULAR ALUMINUM Ø (in) 3.0 lb/ft 1.3	4.0 lb/ft 1.7	4.0 MOD lb/ft 1.7	FOUNDATION	TUBULAR STEEL Ø (in) 3.0 lb/ft 7.6	3.5 lb/ft 9.0	4.0 lb/ft 10.8	5.0 lb/ft 14.6	W-SHAPE STEEL FTG. SIZE 24"	30"	WEIGHT	POST SIZE	REQUIRED SIGNAGE	REMARKS SHSM = STANDARD HIGHWAY SIGNS MARKINGS BOOK	SIGN DETAIL: DETAIL IN SHSM	DETAIL ON SHEET NUMBER	STD. SHEET NUMBER
												OPTION ITEMS																										
STA. 16+42 LT	RESERVED PARKING / VAN ACCESS	1	12	18	1.50						1					X		X	X															R7-8M		16	
		1	18	9	1.13																												R7-8a	X		
STA. 16+61 LT		1																															TO BE REMOVED			
STA. 16+65 LT	2 HR PARKING MON – FRI 9AM TO 6PM	1	12	18	1.50						1					X		X	X															R7-108M	X	16	
STA. 16+88 RT	2 HR PARKING MON – FRI 9AM TO 6PM	1																															TO BE REMOVED			
STA. 16+72 LT	ONE WAY	1																															TO BE REMOVED			
STA. 16+72 LT	ONE WAY	1	36	12	3.00						1					X		X															R6-1R	X		
STA. 16+93 RT	SPEED LIMIT 25	1					1				1					X		X															SALVAGED	X		
STA. 16+93 RT	B–B ONE WAY / ONE WAY	1					1																										SALVAGED	X		
		1					1																										SALVAGED	X		
STA. 16+95 LT	SPEED LIMIT 25	1																															TO BE REMOVED			
STA. 16+95 RT	B–B ONE WAY / ONE WAY	1																															TO BE REMOVED			
		1																															TO BE REMOVED			
FINAL POST LENGTHS ARE TO BE DETERMINED IN THE FIELD. POST SIZES ARE COMPUTED BASED ON INFORMATION FURNISHED ON THE STANDARD SHEETS AND THE TRAFFIC & SAFETY DIVISION'S "SIGN POST DESIGN GUIDELINE."							3					FT	FT	FT	FT	FT 60	FT	EA 2	LB	LB	LB		LB	LB	LB	LB						POSTS FOR ROADWAY SIGNS ARE ASSUMED TO BE 15 FEET LONG.			
	TOTALS		SF 7.13	SF	EA. 3	SF						FT			FT 60				LB			EA.	LB				EA.	EA.							

NOT FOR CONSTRUCTION

PROJECT NAME:	NORTHFIELD COMMON SIDEWALK IMPROVEMENTS
PROJECT NUMBER:	STP EH 11(9)
FILE NAME:	...\CADD files\621577.SIGNS.dgn
PROJECT LEADER:	EPD
DESIGNED BY:	RSD
TRAFFIC SIGN SUMMARY SHEET #2	
PLOT DATE:	8/1/2013
DRAWN BY:	RSD
CHECKED BY:	JDM
SHEET	14 OF 25

\\EBONDO\Projects\621577 - Northfield Sidewalk\CADD files\621577.SIGNS.dgn

DocuSign Envelope ID: 625DF0A9-99D2-4F25-9ECA-404872A6A501

TRAFFIC SIGN SUMMARY SHEET #3

MILEMARKER, STATION, OR SIGN NUMBER	SIGN LEGEND	SIGN DIMENSIONS EA	WIDTH (In)	HEIGHT (In)	NEW & SALVAGED SIGNS "A"	"B"	SALV SIGN	SALV TIS	EXIST POST RETAIN	SALVAGE	NEW SIGN POSTS NO. OF POSTS	FLANGED CHANNEL lb/ft 1.12	2.0	3.0	SQUARE STEEL (In) lb/ft 1.75	1.88	2.0	2.42	2.5	3.35	ANCHOR	SLEEVE	TUBULAR ALUMINUM Ø (In) lb/ft 3.0	1.3	4.0	1.7	4.0 MOD	1.7	FOUNDATION	TUBULAR STEEL Ø (In) lb/ft 3.0	7.6	3.5	9.0	4.0	10.8	5.0	14.6	W-SHAPE STEEL FTG. SIZE 24"	30"	WEIGHT	POST SIZE	RELOCATED SIGN NEEDED	REMARKS SHSM = STANDARD HIGHWAY SIGNS MARKINGS BOOK	SIGN DETAIL DETAIL IN SHSM	DETAIL ON SHEET NUMBER	STD. SHEET NUMBER
																						OPTION ITEMS																													
STA. 17+10 LT	2 TO WORKERS BETWEEN SIGNS	1																																							TO BE REMOVED			
STA. 17+10 LT		1 1																																							TO BE REMOVED TO BE REMOVED			
STA. 17+10 LT	2 TO WORKERS RIDE - FIRE TAIL TO SPIKE	1	12	18	1.50						1					X			X	X																					R7-108M		16	
STA. 17+19 LT		1 1					1 1				1					X			X																						SALVAGED SALVAGED	X X		
STA. 17+70 RT		1 1	30 24	30 12	6.25 2.00						1					X			X																						W11-2: COLOR FYG W16-7PL: COLOR FYG	X X		
STA. 17+98 LT	2 TO WORKERS RIDE - FIRE TAIL TO SPIKE	1																																							TO BE REMOVED			
STA. 17+98 RT	2 TO WORKERS RIDE - FIRE TAIL TO SPIKE	1	12	18	1.50						1					X			X	X																						R7-108M		16	
	TOTALS				SF 11.25	SF	EA. 2	SF				FT	FT	FT	FT	FT 60	FT				EA 2	LB	LB	LB	EA.	LB	LB	LB	LB			EA.	EA.											
												FT	FT	FT	FT	FT 60	FT				EA 2	LB	LB	LB	EA.	LB	LB	LB	LB			EA.	EA.	POSTS FOR ROADWAY SIGNS ARE ASSUMED TO BE 15 FEET LONG.			
FINAL POST LENGTHS ARE TO BE DETERMINED IN THE FIELD. POST SIZES ARE COMPUTED BASED ON INFORMATION FURNISHED ON THE STANDARD SHEETS AND THE TRAFFIC & SAFETY DIVISION'S "SIGN POST DESIGN GUIDELINE."	T.S.S.S. #1		7.50													75					5																						
	T.S.S.S. #2		7.13		3											60					2																						
	T.S.S.S. #3		11.25		2											60					2																						
	TOTALS		SF 25.88		SF	EA. 5	SF					FT			FT 180							LB			EA.	LB																

PROJECT NAME: NORTHFIELD COMMON SIDEWALK IMPROVEMENTS
PROJECT NUMBER: STP EH 11(9)

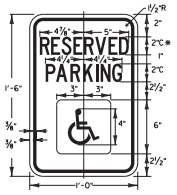
FILE NAME: ...\CADD files\621577.SIGNS.dgn
PROJECT LEADER: EPD
DESIGNED BY: RSD
TRAFFIC SIGN SUMMARY SHEET #3

PLOT DATE: 8/1/2013
DRAWN BY: RSD
CHECKED BY: JDM
SHEET 15 OF 25

NOT FOR CONSTRUCTION

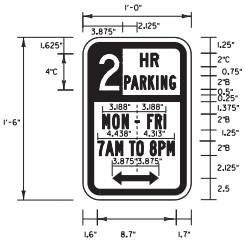
\\EL60WDG\Projects\62577 - Northfield Sidewalk\CADD files\62577_SIGNS.dgn

DocuSign Envelope ID: 625DF6A9-99D2-4F25-9ECA-404872A6A501



R7-8M

COLORS:
LEGEND AND BORDER-GREEN (REFL)
WHITE SYMBOL ON BLUE BACKGROUND (REFL)
BACKGROUND-WHITE (REFL)
* REDUCE SPACING BY 50%



R7-108M

COLORS:
LEGEND AND BORDER-GREEN (REFL)
BACKGROUND-WHITE (REFL)
BORDER: R = 1.5", TH = 0.375", IN = 0.375"
DOUBLE ARROW SHOWN. REPLACE WITH LEFT ARROW OR RIGHT ARROW AS INDICATED ON PLANS.

NOTES:

1. TEXT LAYOUT DIMENSIONS ARE BASED ON THE "LETTER & NUMERAL WIDTHS AND SPACE" TABLES FOUND IN THE "STANDARD HIGHWAY SIGNS AND MARKINGS" BOOK. MINOR VARIATIONS IN THE TEXT DIMENSIONS ARE ACCEPTABLE BASED ON INDIVIDUAL MANUFACTURER'S LETTER FABRICATION. SIGNIFICANT CHANGES WHICH AFFECTS SIGN APPEARANCE SHALL BE BROUGHT TO THE ATTENTION OF VTRANS PRIOR TO FABRICATION.
2. ALL REFLECTORIZED SHEETING TO BE ASTM TYPE III
3. ALL MEASUREMENTS SHOWN IN INCHES.
4. LETTERS IN SIGN DIMENSIONS ("A"-"F") REFER TO ALHPHABETS DETAILED IN THE "STANDARD HIGHWAY SIGNS AND MARKINGS" BOOKLET. "R" IS RADIUS.

NOT TO SCALE
NOT FOR CONSTRUCTION

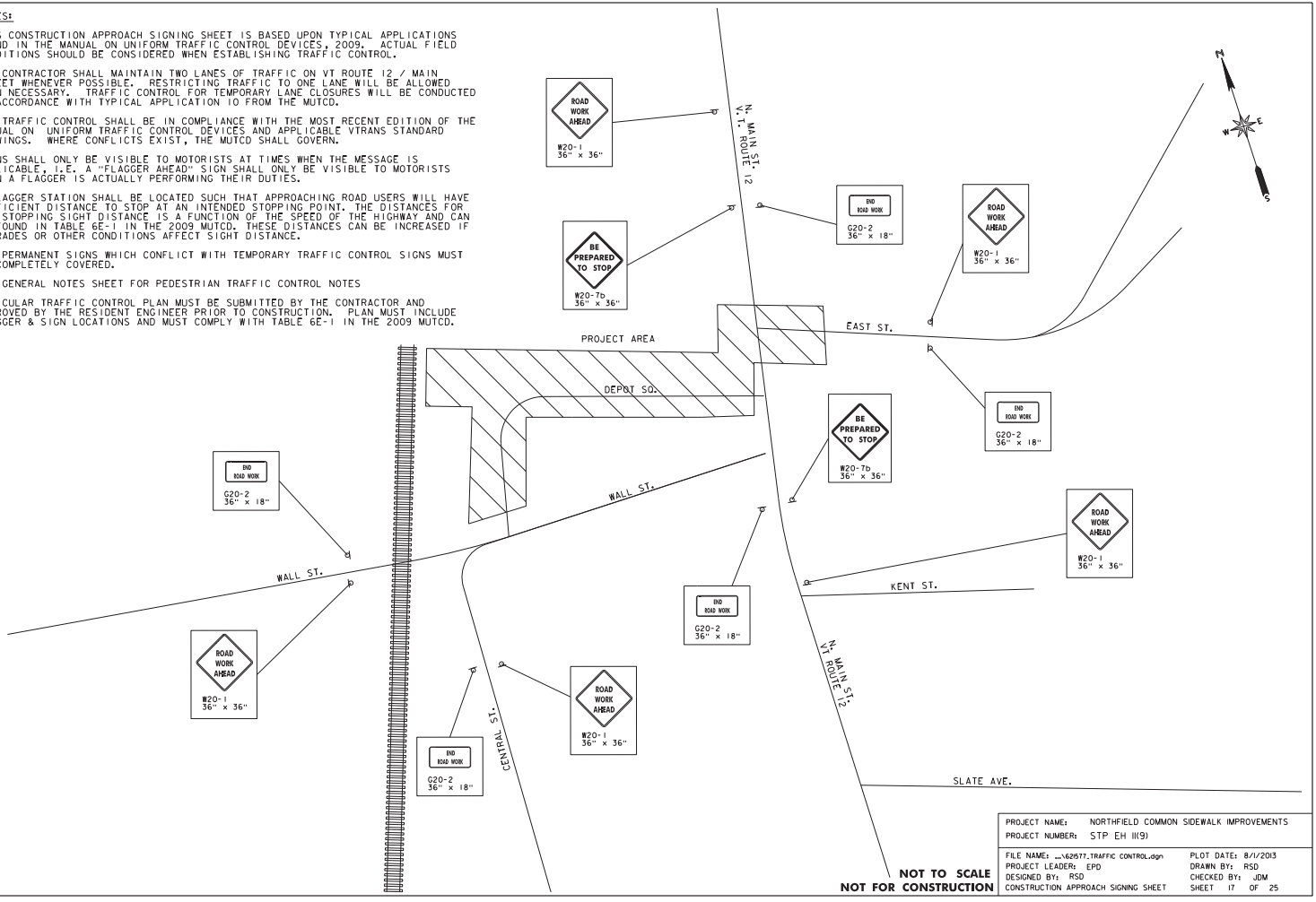
PROJECT NAME:	NORTHFIELD COMMON SIDEWALK IMPROVEMENTS
PROJECT NUMBER:	STP EH 11(9)
FILE NAME: ...\CADD files\621577_SIGNS.dgn	PLOT DATE: 8/1/2013
PROJECT LEADER: EPD	DRAWN BY: RSD
DESIGNED BY: MAM	CHECKED BY: JDM
SIGNING DETAILS	SHEET 16 OF 25

\\FILE02\NDO\Projects\621577 - Northfield Sidewalk\CADD files\621577_SIGNS.dgn

DocuSign Envelope ID: 625ZF6A9-99D2-4F25-9ECA-404872A6A501

NOTES:

1. THIS CONSTRUCTION APPROACH SIGNING SHEET IS BASED UPON TYPICAL APPLICATIONS FOUND IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 2009. ACTUAL FIELD CONDITIONS SHOULD BE CONSIDERED WHEN ESTABLISHING TRAFFIC CONTROL.
2. THE CONTRACTOR SHALL MAINTAIN TWO LANES OF TRAFFIC ON VT ROUTE 12 / MAIN STREET WHENEVER POSSIBLE. RESTRICTING TRAFFIC TO ONE LANE WILL BE ALLOWED WHEN NECESSARY. TRAFFIC CONTROL FOR TEMPORARY LANE CLOSURES WILL BE CONDUCTED IN ACCORDANCE WITH TYPICAL APPLICATION 10 FROM THE MUTCD.
3. ALL TRAFFIC CONTROL SHALL BE IN COMPLIANCE WITH THE MOST RECENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND APPLICABLE VTRANS STANDARD DRAWINGS. WHERE CONFLICTS EXIST, THE MUTCD SHALL GOVERN.
4. SIGNS SHALL ONLY BE VISIBLE TO MOTORISTS AT TIMES WHEN THE MESSAGE IS APPLICABLE, I.E. A "FLAGGER AHEAD" SIGN SHALL ONLY BE VISIBLE TO MOTORISTS WHEN A FLAGGER IS ACTUALLY PERFORMING THEIR DUTIES.
5. A FLAGGER STATION SHALL BE LOCATED SUCH THAT APPROACHING ROAD USERS WILL HAVE SUFFICIENT DISTANCE TO STOP AT AN INTENDED STOPPING POINT. THE DISTANCES FOR THE STOPPING SIGHT DISTANCE IS A FUNCTION OF THE SPEED OF THE HIGHWAY AND CAN BE FOUND IN TABLE 6E-1 IN THE 2009 MUTCD. THESE DISTANCES CAN BE INCREASED IF UPGRADES OR OTHER CONDITIONS AFFECT SIGHT DISTANCE.
6. ALL PERMANENT SIGNS WHICH CONFLICT WITH TEMPORARY TRAFFIC CONTROL SIGNS MUST BE COMPLETELY COVERED.
7. SEE GENERAL NOTES SHEET FOR PEDESTRIAN TRAFFIC CONTROL NOTES
8. VEHICULAR TRAFFIC CONTROL PLAN MUST BE SUBMITTED BY THE CONTRACTOR AND APPROVED BY THE RESIDENT ENGINEER PRIOR TO CONSTRUCTION. PLAN MUST INCLUDE FLAGGER & SIGN LOCATIONS AND MUST COMPLY WITH TABLE 6E-1 IN THE 2009 MUTCD.



NOT TO SCALE
NOT FOR CONSTRUCTION

PROJECT NAME:	NORTHFIELD COMMON SIDEWALK IMPROVEMENTS
PROJECT NUMBER:	STP EH 11(9)
FILE NAME: ...\621577_TRAFFIC CONTROL.dgn	PLOT DATE: 8/1/2013
PROJECT LEADER: EPD	DRAWN BY: RSD
DESIGNED BY: RSD	CHECKED BY: JDM
CONSTRUCTION APPROACH SIGNING SHEET	SHEET 17 OF 25

\\EGROUP\Projects\621577 - Northfield Sidewalk\CADD files\621577_TRAFFIC CONTROL.dgn

DocuSign Envelope ID: 625DF6A9-99D2-4F25-9ECA-404672A6A501

EPSC PLAN NARRATIVE

1.1 PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE REMOVAL OF EXISTING SIDEWALK. THIS SIDEWALK WILL BE REPLACED WITH A NEW CONCRETE SIDEWALK WITH VERTICAL GRANITE CURB. THE SIDEWALK WILL BE LOCATED IN THE SAME LOCATION AS THE EXISTING SIDEWALK AND MATCH THE EXISTING CURBLINE. THE SIDEWALK IS LOCATED IN THE TOWN OF NORTHFIELD, ON V.T. ROUTE 12, BEGINNING AT THE INTERSECTION OF WALL ST. AND CENTRAL ST. AND CONTINUES NORTH AND WEST AROUND DEPOT SQ., AND CROSSING V.T. ROUTE 12. THE SIDEWALK WILL BE APPROXIMATELY THE SAME LENGTH AS THE EXISTING SIDEWALK.

NOTE: AREA OF DISTURBANCE INCLUDES LIMITS OF EARTH DISTURBANCE WITHIN THE PROJECT AREA, AS WELL AS WASTE, BORROW AND STAGING AREAS, AND OTHER EARTH DISTURBING ACTIVITIES WITHIN OR DIRECTLY ADJACENT TO THE PROJECT LIMITS.

TOTAL AREA OF DISTURBANCE IS APPROXIMATELY 1.85 ACRES

IT IS ANTICIPATED THAT THIS PROJECT WILL BE COMPLETED OVER PORTIONS OF TWO CONSTRUCTION SEASONS, INCLUDING WORK IN THE FALL AND FOLLOWING SPRING. THE CONTRACTOR SHALL BE REQUIRED TO SHUT DOWN CONSTRUCTION ACTIVITIES DURING THE WINTER PERIOD. DURING THE WINTER SHUT DOWN PERIOD, THE SITE WILL BE STABILIZED IN ACCORDANCE WITH THE MEASURES OUTLINED IN NOTE 1.4.9 BELOW.

1.2 SITE INVENTORY

1.2.1 TOPOGRAPHY

THE TOPOGRAPHY OF THE AREA CONSISTS OF MAINLY COMMERCIAL DEVELOPMENT AND GRASSY AREAS. THE PARCELS ARE SMALL AND COVERED BY A COMBINATION OF GRASS, PAVEMENT AND BUILDINGS. BUILDINGS IN THE PROJECT AREA ARE ONE OR TWO STORY STORES AND MOST ARE ADJACENT TO THE SIDEWALK. THE CONSTRUCTION AREA CONSISTS OF THE EXISTING SIDEWALK AND THE ROADWAY. NO VEGETATED AREAS WILL BE DISTURBED. THE MAJORITY OF THE PROJECT AREA IS FLAT.

1.2.2 DRAINAGE, WATERWAYS, BODIES OF WATER, AND PROXIMITY TO NATURAL OR MAN-MADE WATER FEATURES

THE DOG RIVER IS THE ONLY WATER SOURCE LOCATED NEAR THE PROJECT SITE. AT ITS CLOSEST PROXIMITY, THE DOG RIVER IS LOCATED APPROXIMATELY 250 FEET NORTH OF THE PROJECT SITE. THIS RIVER IS CLASSIFIED AS A SMALL MEANDERING, PERENNIAL, GRAVEL BOTTOMED STREAM, WITH A LOW RELIEF VALLEY AND A NARROW FLOOD PLAIN. THERE ARE A NUMBER OF DROP INLETS ON SITE DRAINING FROM THE ROADWAY TO AN EXISTING STORM DRAIN SYSTEM.

1.2.3 VEGETATION

THE VEGETATION IN THE PROJECT AREA CONSISTS OF GRASS, SOFTWOOD AND HARDWOOD TREES. THE IMPACT TO VEGETATION WILL BE LIMITED TO THAT WHICH IS DIRECTLY AFFECTED BY REPLACEMENT OF THE EXISTING SIDEWALK.

1.2.4 SOILS

ALL SOIL DATA CAME FROM THE U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE FOR WASHINGTON COUNTY, VERMONT. 100% OF THE SOILS ON THE PROJECT SITE ARE COLTON GRAVELLY LOAM SAND, 3-8% SLOPES, "K FACTOR" = .15.

NOTE: K-VALUES GENERALLY INDICATE THE FOLLOWING:
0.0-0.23 = LOW EROSION POTENTIAL
0.24-0.36 = MODERATE EROSION POTENTIAL
0.37 AND HIGHER = HIGH EROSION POTENTIAL

1.2.5 SENSITIVE RESOURCE AREAS

CRITICAL HABITATS: NO
HISTORICAL OR ARCHEOLOGICAL AREAS: YES. TOWN DOES CONTAIN HISTORICAL LOCATIONS AND BUILDINGS, BUT PROJECT DOES NOT AFFECT SUCH BUILDINGS SINCE SIDEWALK WILL BE RECONSTRUCTED IN PLACE.
PRIME AGRICULTURAL LAND: NO.
THREATENED AND ENDANGERED SPECIES: NO
WATER RESOURCE: NO.
WETLANDS: NO

1.3 RISK EVALUATION

IT IS ANTICIPATED THAT LESS THAN 1 ACRE OF EARTH DISTURBANCE WILL OCCUR DURING PROJECT CONSTRUCTION. SHOULD THE CONTRACTOR'S OPERATIONS RESULT IN MORE THAN 1 ACRE OF EARTH DISTURBANCE, THE CONTRACTOR WILL BE RESPONSIBLE FOR ADDITIONAL PERMITTING WITH THE AGENCY OF NATURAL RESOURCES (ANR) VIA THE FILING OF A JOINT NOTICE OF INTENT WITH THE (TOWN) FOR COVERAGE UNDER THE APPROPRIATE CONSTRUCTION GENERAL PERMIT (I.E. CGP-3-9020 (2006) OR INDIVIDUAL PERMIT) PRIOR TO SUCH DISTURBANCE. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY NECESSARY EROSION PREVENTION AND SEDIMENT CONTROL MEASURES NEEDED TO SATISFY ANY SUCH PERMIT REQUIREMENTS. HOWEVER, IT SHOULD BE NOTED THAT THE CONTRACTOR IS ALWAYS RESPONSIBLE FOR ENSURING THAT PROPER EROSION PREVENTION AND SEDIMENT CONTROL TECHNIQUES ARE USED DURING CONSTRUCTION. GUIDANCE ON EROSION PREVENTION AND SEDIMENT CONTROL CAN IN ANR'S PUBLICATIONS ENTITLED "THE LOW RISK SITE HANDBOOK FOR EROSION PREVENTION AND SEDIMENT CONTROL" AND THE "VERMONT EROSION PREVENTION AND SEDIMENT CONTROL FIELD GUIDE".

1.4 EROSION PREVENTION AND SEDIMENT CONTROL

THE EROSION CONTROL DETAILS ARE MEANT AS A GUIDELINE FOR PREVENTING EROSION AND CONTROLLING SEDIMENT TRANSPORT. THE PRINCIPLES OUTLINED IN THIS NARRATIVE CONSIST OF APPLYING MEASURES THROUGHOUT CONSTRUCTION OF THE PROJECT IN ORDER TO MINIMIZE SEDIMENT TRANSPORT TO THE RECEIVING WATERS. THE MEASURES INCLUDE STABILIZATION AND STRUCTURAL PRACTICES, STORM WATER CONTROLS AND OTHER POLLLUTION PREVENTION PRACTICES. THEY HAVE BEEN PROPOSED BY THE DESIGNER AS A BASIS FOR PROTECTING RESOURCES AND WILL NEED TO BE BUILT UPON BASED ON THE SPECIFIC MEANS AND METHODS OF THE CONTRACTOR. REFER TO THE LOW RISK SITE HANDBOOK AND APPROPRIATE DETAIL SHEETS FOR SPECIFIC GUIDANCE AND CONSTRUCTION DETAILING.

ALL MEASURES SHALL BE REGULARLY MAINTAINED AND SHALL BE CHECKED FOR SEDIMENT BUILD-UP. SEDIMENT SHALL BE DISPOSED OF AT AN APPPROVED SITE WHERE IT WILL NOT BE SUBJECT TO EROSION.

1.4.1 MARK SITE BOUNDARIES

SITE BOUNDARIES AND AREAS CONSTRUCTION EQUIPMENT CAN ACCESS SHALL BE DELINEATED.

1.4.2 LIMIT DISTURBANCE AREA

PREVENTING INITIAL SOIL EROSION BY MINIMIZING THE EXPOSED AREA IS MUCH MORE EFFECTIVE THAN TREATING ERODED SEDIMENT. EARTH DISTURBANCE CAN BE MINIMIZED THROUGH CONSTRUCTION PHASING BY ONLY OPENING UP EARTH AS NECESSARY. THIS CAN LIMIT THE AREA THAT WILL BE DISTURBED AND EXPOSED TO EROSION. EMPLOY TEMPORARY CONSTRUCTION STABILIZATION PRACTICES IN INCREMENTAL STAGES AS PHASES CHANGE. FOR PROJECTS WHICH FALL UNDER THE CONSTRUCTION GENERAL PERMIT, ONLY THE ACREAGE LISTED ON THE PERMIT AUTHORIZATION MAY BE EXPOSED AT ANY GIVEN TIME.

MAINTAINING VEGETATED BUFFERS ALONG STREAM BANKS, WETLANDS OR OTHER SENSITIVE AREAS IS A CRUCIAL EROSION AND SEDIMENT CONTROL MEASURE THAT SHOULD BE ESTABLISHED WHEREVER POSSIBLE.

1.4.3 SITE ENTRANCE/EXIT STABILIZATION

TRACKING OF SEDIMENT ONTO PUBLIC HIGHWAYS SHALL BE MINIMIZED TO REDUCE THE POTENTIAL FOR RUNOFF ENTERING RECEIVING WATERS. INSTALLATION SHALL COINCIDE WITH THE CONTRACTORS PROGRESS SCHEDULE.

1.4.4 INSTALL SEDIMENT BARRIERS

SEDIMENT BARRIERS SHALL BE UTILIZED TO INTERCEPT RUNOFF AND ALLOW SUSPENDED SEDIMENT TO SETTLE OUT. THEY SHALL BE INSTALLED PRIOR TO ANY UP SLOPE WORK.

SILT FENCE WILL BE INSTALLED AS NEEDED OR DIRECTED BY THE ENGINEER.

1.4.5 DIVERT UPLAND RUNOFF

DIVERSIONARY MEASURES SHALL BE USED TO INTERCEPT RUNOFF FROM ABOVE THE CONSTRUCTION AND DIRECT IT AROUND THE DISTURBED AREA SO THAT CLEAN WATER DOES NOT BECOME MUDDIED WHILE TRAVELING OVER EXPOSED SOILS ON THE CONSTRUCTION SITE.

THE PROJECT AREA IS RELATIVELY FLAT. THERFORE IT IS NOT ANTICIPIATED THAT DIVERSION MEASURES WILL BE NECESSARY.

1.4.6 SLOW DOWN CHANNELIZED RUNOFF

CHECK STRUCTURES ARE NOT NEEDED FOR THIS PROJECT DUE TO THE LIMITED DISTURBANCE AND THE FLAT TERRAIN.

1.4.7 CONSTRUCT PERMANENT CONTROLS

PERMANENT STORMWATER TREATMENT DEVICES HAVE BEEN INSTALLED AS SHOWN ON THE PLANS AND IN ACCORDANCE WITH PERMIT CONDITIONS BUT NO ADDITIONAL CONTROLS ARE NEEDED.

INLET PROTECTION SHALL BE INSTALLED ON ALL DROP INLETS AND CATCH BASINS WITHIN THE PROJECT LIMITS.

1.4.8 STABILIZE EXPOSED SOILS DURING CONSTRUCTION

ALL AREAS OF DISTURBANCE MUST HAVE TEMPORARY STABILIZATION IN PLACE WITHIN 48 HOURS OF DISTURBANCE OR IN ACCORDANCE WITH THE CONSTRUCTION GENERAL PERMIT 3-9020 AUTHORIZATION.

SURFACE ROUGHENING OF ALL EXPOSED SLOPES, COMBINED WITH TEMPORARY MULCHING, SHALL BE UTILIZED ON A REGULAR BASIS. BIODEGRADABLE EROSION CONTROL MATTING OR AN EQUIVALENT SHALL BE USED TO STABILIZE ALL SLOPES STEEPER THAN 1:3.

THE FORECAST OF RAINFALL EVENTS SHALL TRIGGER IMMEDIATE PROTECTION OF EXPOSED SOILS.

1.4.9 WINTER STABILIZATION

VARIOUS MEASURES SPECIFIC TO WINTER MAY BE NECESSARY SHOULD THE PROJECT EXTEND INTO WINTER (OCTOBER 15 THROUGH APRIL 15). REFER TO THE LOW RISK SITE HANDBOOK FOR GUIDANCE.

1.4.10 STABILIZE SOIL AT FINAL GRADE

EXPOSED SOIL MUST BE STABILIZED WITHIN 48 HOURS OF REACHING FINAL GRADE.

SEED, MULCH, FERTILIZER AND LIME SHALL BE USED TO ESTABLISH PERMANENT VEGETATION. FOR SLOPES STEEPER THAN 1:3, BIODEGRADABLE EROSION CONTROL MATTING OR AN EQUIVALENT SHALL BE USED INSTEAD OF MULCH.

1.4.11 DEWATERING ACTIVITIES

DISCHARGE FROM DEWATERING ACTIVITIES THAT FLOWS OFF OF THE CONSTRUCTION SITE MUST NOT CAUSE OR CONTRIBUTE TO A VIOLATION OF THE VERMONT WATER QUALITY STANDARDS.

1.4.12 INSPECT YOUR SITE

INSPECT THE PROJECT SITE BASED ON SPECIAL PROVISION REQUIRMENTS OR CONSTRUCTION GENERAL PERMIT AUTHORIZATION STIPULATIONS.

1.5 SEQUENCE AND STAGING

THIS SECTION WILL BE DEVELOPED BY THE CONTRACTOR USING THE GUIDANCE OUTLNED IN THE VTRANS EPSC PLAN CONTRACTOR CHECKLIST.

1.5.1 CONSTRUCTION SEQUENCE

NOT RECOMMENDED.

1.5.2 OFF-SITE ACTIVITIES

IN ADDITION TO THE CONTRACTOR CHECKLIST ANY ACTIVITIES OUTSIDE THE CONSTRUCTION LIMITS SHALL FOLLOW SPECIFICATION 105.15- 105.29 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION.

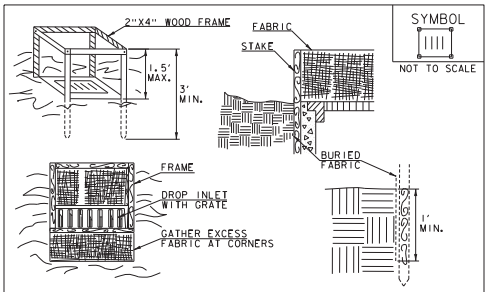
1.5.3 UPDATES

NOT FOR CONSTRUCTION

PROJECT NAME: NORTHFIELD COMMON SIDEWALK IMPROVEMENTS	
PROJECT NUMBER: STP EH 11(9)	
FILE NAME: ...\62577_EPSC_Narrative_2D.dgn	PLOT DATE: 8/1/2013
PROJECT LEADER: EPD	DRAWN BY: RSD
DESIGNED BY: RSD	CHECKED BY: JDM
EPSC NARRATIVE	SHEET 18 OF 25

\\EGROUP\Projects\62577 - Northfield Sidewalk\CADD files\62577_EPSC_Narrative_2D.dgn

DocuSign Envelope ID: 625DF6A9-99D2-4F25-9ECA-404872A6A501



SYMBOL

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

1. FILTER FABRIC SHALL HAVE AN APPARENT OPENING SIZE OF 40-85. BURLAP MAY BE USED FOR SHORT TERM APPLICATIONS.
2. CUT FABRIC FROM A CONTINUOUS ROLL TO ELIMINATE JOINTS. IF JOINTS ARE NEEDED THEY WILL BE OVERLAPPED TO THE NEXT STAKE.
3. STAKE MATERIALS WILL BE STANDARD 2"x 4" WOOD OR EQUIVALENT METAL WITH A MINIMUM LENGTH OF 3'.
4. SPACE STAKES EVENLY AROUND INLET 3' APART AND DRIVE A MINIMUM 18" DEEP. SPANS GREATER THAN 3' MAY BE BRIDGED WITH THE USE OF WIRE MESH BEHIND THE FILTER FABRIC FOR SUPPORT.
5. FABRIC SHALL BE EMBEDDED 1' MINIMUM BELOW GROUND AND BACKFILLED. IT SHALL BE SECURELY FASTENED TO THE STAKES AND FRAME.
6. A 2" x 4" WOOD FRAME SHALL BE COMPLETED AROUND THE CREST OF THE FABRIC FOR OVER FLOW STABILITY.
7. MAXIMUM DRAINAGE AREA 1 ACRE

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FILTER FABRIC DROP INLET PROTECTION

NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- " FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 FOR INLET PROTECTION DEVICE, TYPE I (PAY ITEM 653.40).

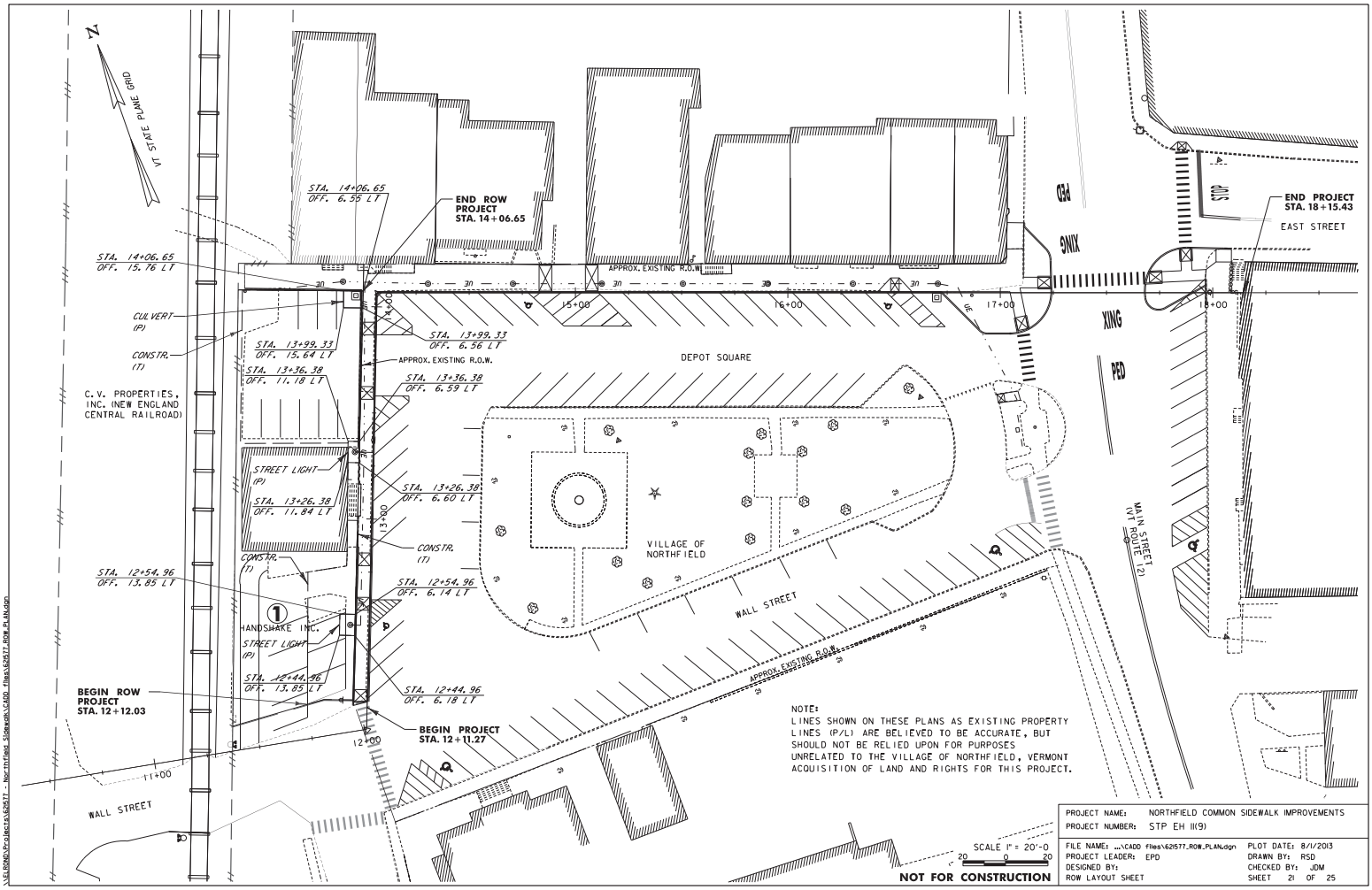
REVISIONS	
MARCH 7, 2008	WHF
JANUARY 13, 2009	WHF

NOT FOR CONSTRUCTION

PROJECT NAME:	NORTHFIELD COMMON SIDEWALK IMPROVEMENTS
PROJECT NUMBER:	STP EH 11(9)
FILE NAME: ...\621577_EPSC Details.dgn	PLOT DATE: 8/1/2013
PROJECT LEADER: EPD	DRAWN BY: RSD
DESIGNED BY: RSD	CHECKED BY: JDM
EPSC DETAIL SHEET	SHEET 19 OF 25

\\FILE02\Projects\621577 - Northfield Sidewalk\CADD files\621577_EPSC Details.dgn

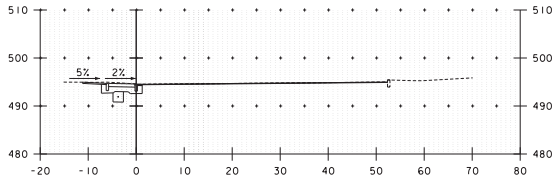
DocuSign Envelope ID: 625DF6A9-99D2-4F25-9ECA-404872A6A501



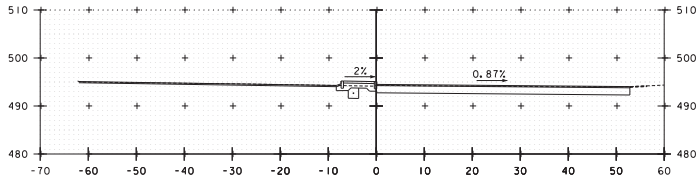
PROJECT NAME:	NORTHFIELD COMMON SIDEWALK IMPROVEMENTS
PROJECT NUMBER:	STP EH 11(9)
FILE NAME: ...\CADD files\621577_ROW_PLAN.dgn	PLOT DATE: 8/1/2013
PROJECT LEADER: EPD	DRAWN BY: RSD
DESIGNED BY:	CHECKED BY: JDM
ROW LAYOUT SHEET	SHEET 21 OF 25

\\EGROUP\Projects\621577 - Northfield Sidewalk\CADD files\621577_ROW_PLAN.dgn

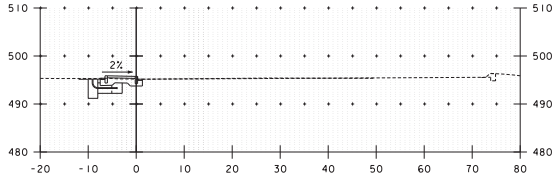
DocuSign Envelope ID: 625DF6A9-99D2-4F25-9ECA-404872A6A501



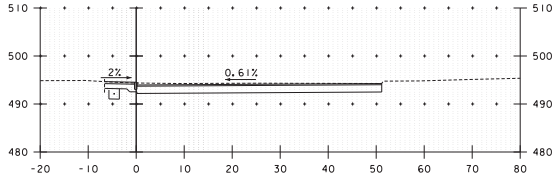
12+75



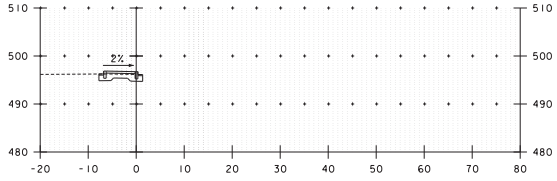
13+50



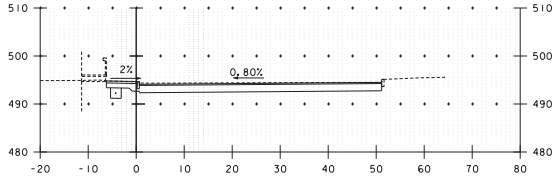
12+50



13+25



12+25



13+00

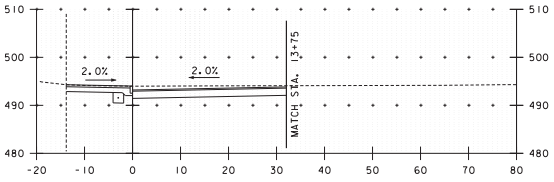
SCALE 1" = 10'-0
10 0 10

NOT FOR CONSTRUCTION

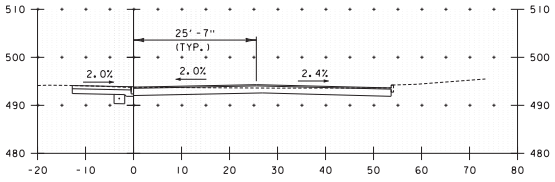
PROJECT NAME: NORTHFIELD COMMON SIDEWALK IMPROVEMENTS	
PROJECT NUMBER: STP EH 11(9)	
FILE NAME: ...\621577_XS_NEW STATIONING.dgn	PLOT DATE: 8/1/2013
PROJECT LEADER: EPD	DRAWN BY: RSD
DESIGNED BY: RSD	CHECKED BY: JDM
CROSS SECTIONS SHEET 1 OF 4	SHEET 22 OF 25

\\SEH2KDC\Projects\621577 - Northfield_Sidewalk\CADD files\621577_XS_NEW_STATIONING.dgn

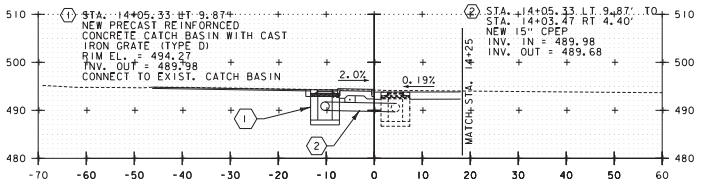
DocuSign Envelope ID: 625DF6A9-99D2-4F25-9ECA-404872A6A501



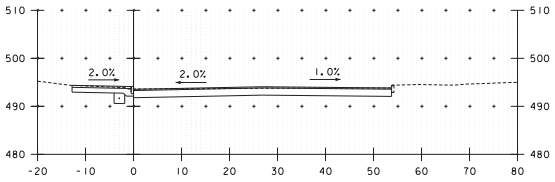
14+25



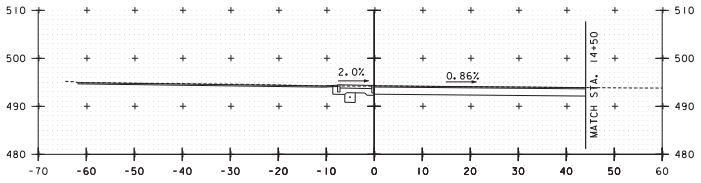
15+00



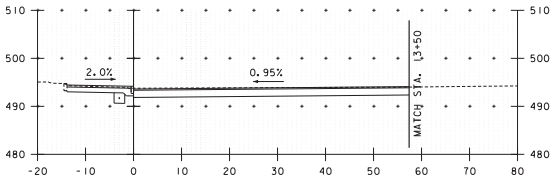
14+00



14+75



13+75



14+50

PROJECT NAME:	NORTHFIELD COMMON SIDEWALK IMPROVEMENTS
PROJECT NUMBER:	STP EH II(9)
FILE NAME:	...\62577_XS_NEW STATIONING.dgn
PROJECT LEADER:	EPD
DESIGNED BY:	RSD
CROSS SECTIONS SHEET 2 OF 4	
PLOT DATE:	8/1/2013
DRAWN BY:	RSD
CHECKED BY:	JDM
SHEET	23 OF 25

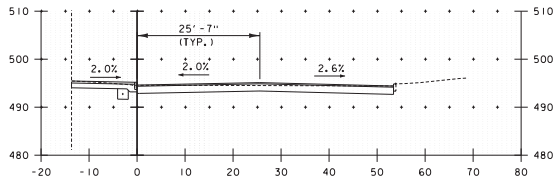
SCALE 1" = 10'-0

10 0 10

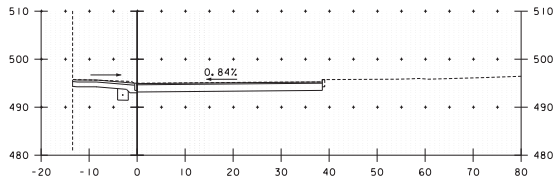
NOT FOR CONSTRUCTION

\\EGROUP\Projects\62577 - Northfield Sidewalk\CADD files\62577_XS_NEW STATIONING.dgn

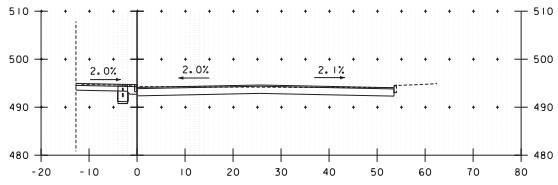
DocuSign Envelope ID: 625DF6A9-99D2-4F25-9ECA-404872A6A501



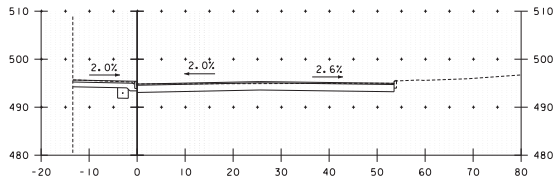
15+75



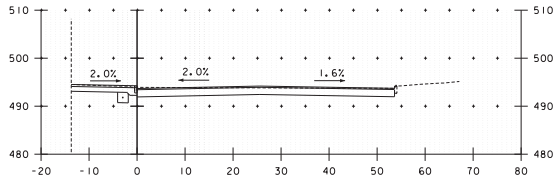
16+50



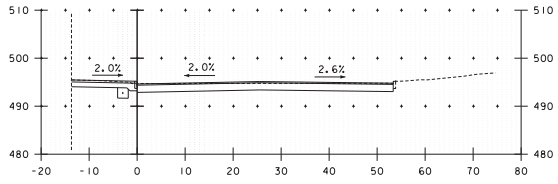
15+50



16+25



15+25



16+00

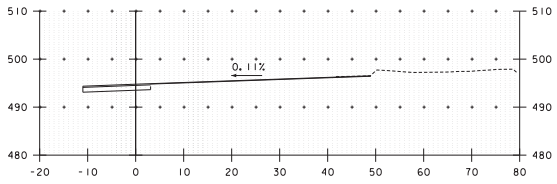
SCALE 1" = 10'-0

NOT FOR CONSTRUCTION

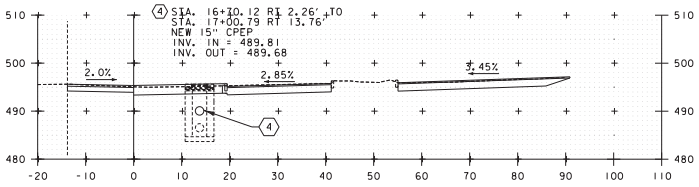
PROJECT NAME:	NORTHFIELD COMMON SIDEWALK IMPROVEMENTS
PROJECT NUMBER:	STP EH 11(9)
FILE NAME:	...\62577_XS_NEW STATIONING.dgn
PROJECT LEADER:	EPD
DESIGNED BY:	RSD
CROSS SECTIONS	SHEET 3 OF 4
PLOT DATE:	8/1/2013
DRAWN BY:	RSD
CHECKED BY:	JDM
SHEET	24 OF 25

\\EGROUP\Projects\62577 - Northfield Sidewalk\CADD files\62577_XS_NEW STATIONING.dgn

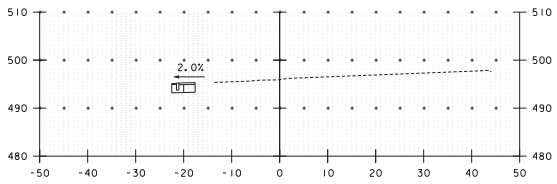
DocuSign Envelope ID: 625DF0A9-99D2-4F25-9ECA-404872A6A501



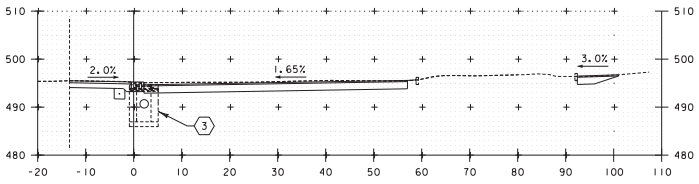
17+25



17+00

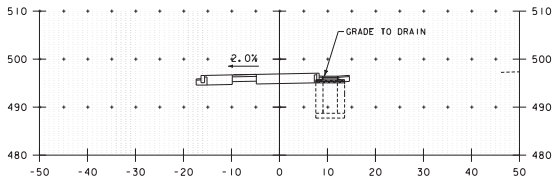


18+00



16+75

③ STA. 16+70.12 RT 2.26'
NEW PRECAST REINFORNCED CONCRETE CATCH BASIN WITH CAST IRON GRATE (TYPE D)
RIM EL. = 494.67
INV. OUT = 489.81
CONNECT TO EXIST. CATCH BASIN



17+75

SCALE 1" = 10'-0
10 0 10

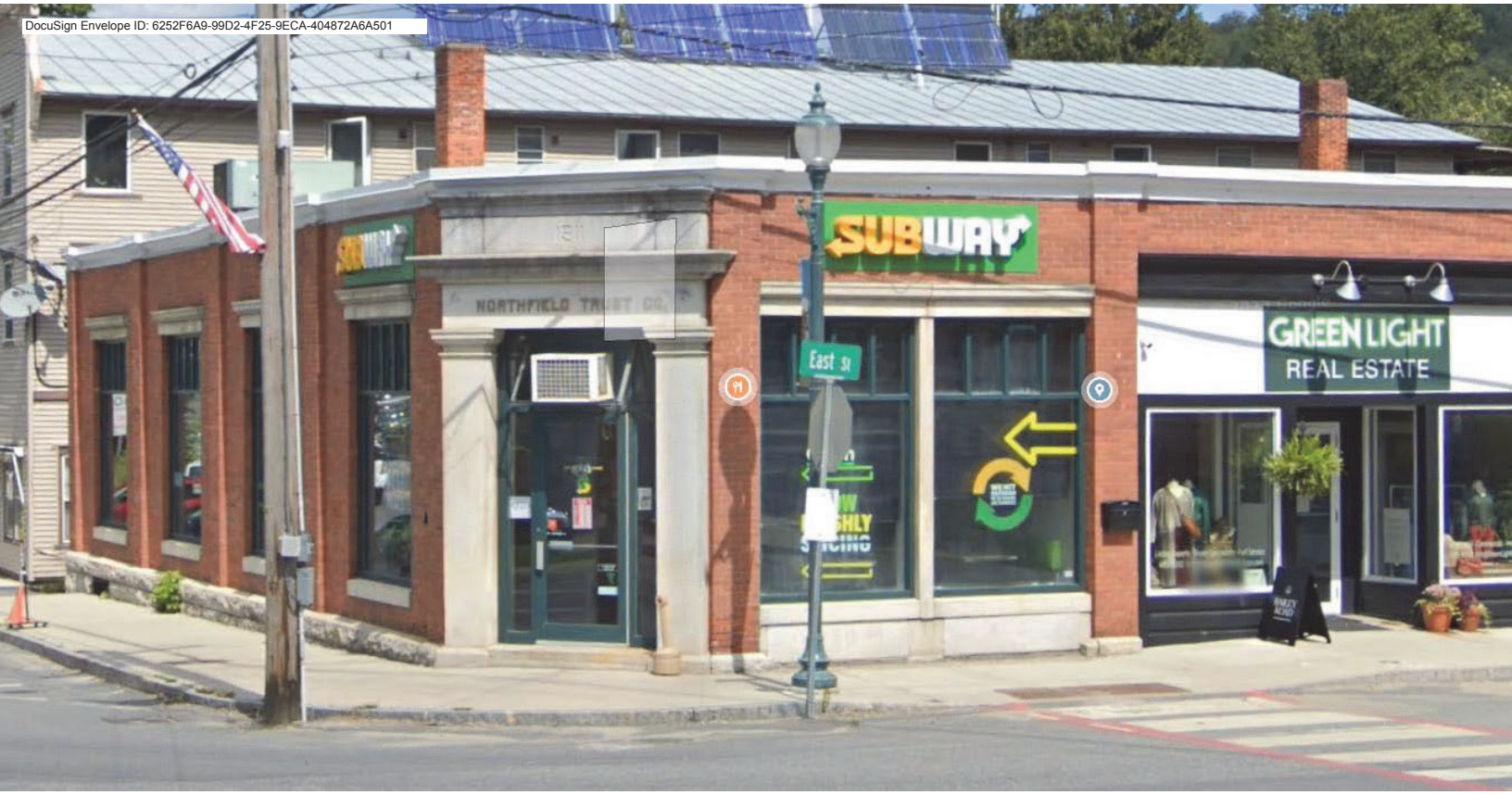
NOT FOR CONSTRUCTION

PROJECT NAME: NORTHFIELD COMMON SIDEWALK IMPROVEMENTS	
PROJECT NUMBER: STP EH 11(9)	
FILE NAME: ...\62577_XS_NEW STATIONING.dgn	PLOT DATE: 8/1/2013
PROJECT LEADER: EPD	DRAWN BY: RSD
DESIGNED BY: RSD	CHECKED BY: JDM
CROSS SECTIONS SHEET 4 OF 4	SHEET 25 OF 25

\\SEH2ND\Projects\62577 - Northfield Sidewalk\CADD files\62577_XS_NEW STATIONING.dgn

DocuSign Envelope ID: 6252F6A9-99D2-4F25-9ECA-404872A6A501

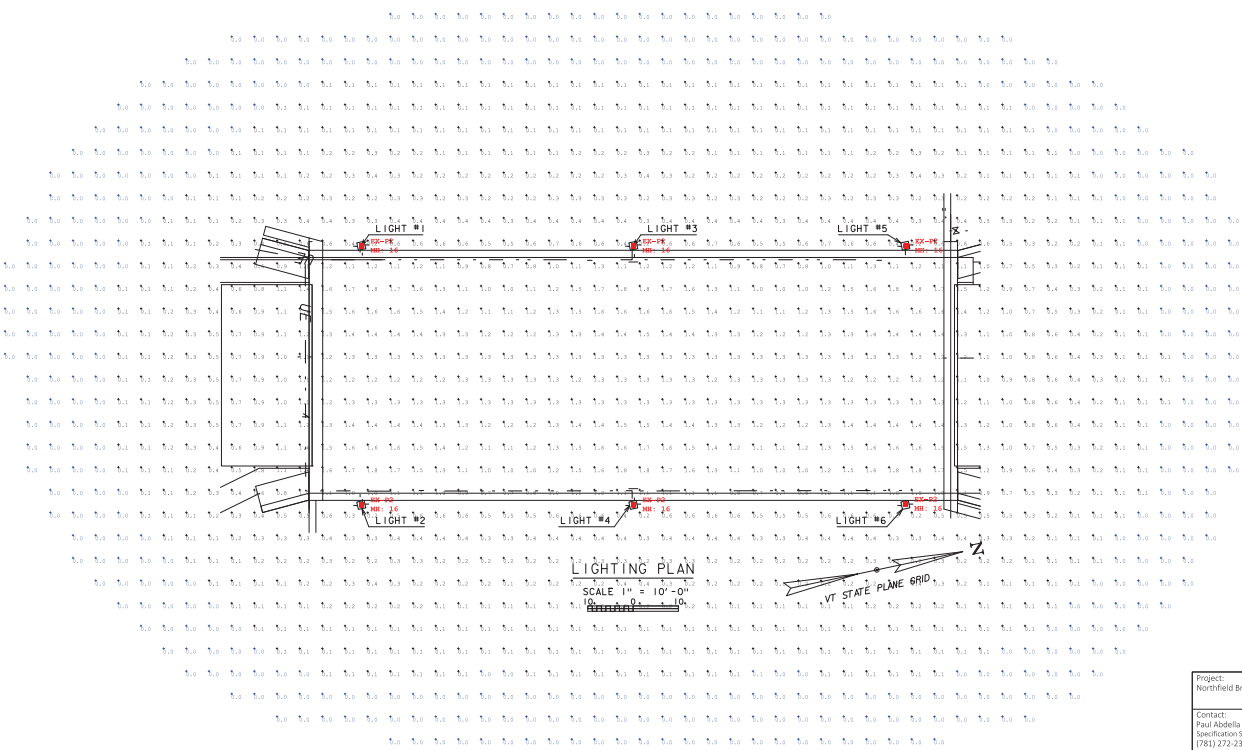
DocuSign Envelope ID: 6252F6A9-99D2-4F25-9ECA-404872A6A501



DocuSign Envelope ID: 625DF0A9-98D2-4F25-9ECA-404872ABA501

Luminaire Schedule					
Qty	Label	Arr. Watts	Arrangement	LLF	Description
6	EN-92	46.1	SINGLE	0.900	RA50SHLED-12L405Y4-MDG514-BLOC

Calculation Summary						
Label	Units	Avg	Max	Min	Avg/Min	Max/Min
Bridge	Fc	0.41	1.8	0.0	N.A.	N.A.



Project:
Northfield Bridge - Site

Contact:
Paul Abdella
Specification Sales
(781) 272-2300 X208
pabdella@omnilite.com

illumination
263 Winn Street
Burlington, MA 01803
(781) 935-8500

333 Pleasant Valley Road
South Windsor, CT 06074
(860) 282-0597

Detail: Photometric Calculation
Date: 12/16/2022
Revision: 1
Scale: 1" = 10'-0"
Drawn By: SHJ

Drawing Number:

L-1

DocuSign

Certificate Of Completion

Envelope Id: 6252F6A999D24F259ECA404872A6A501
Status: Completed
Subject: Complete with DocuSign: PIF - NORTHFIELD BF 0241(58) - Ornamental Street Light Assembly.pdf
Source Envelope:
Document Pages: 63
Signatures: 4
Certificate Pages: 2
Initials: 0
AutoNav: Enabled
EnvelopeId Stamping: Enabled
Time Zone: (UTC-05:00) Eastern Time (US & Canada)

Envelope Originator:
Gary Laroche
One National Life Drive - Dewey Building
Montpelier, VT 05620-2001
Gary.Laroche@vermont.gov
IP Address: 72.73.69.22

Record Tracking

Status: Original
4/11/2024 12:21:25 PM
Security Appliance Status: Connected
Storage Appliance Status: Connected

Holder: Gary Laroche
Gary.Laroche@vermont.gov
Pool: StateLocal
Pool: AOT - Agency of Transportation - AOT40

Location: DocuSign
Location: DocuSign

Signer Events	Signature	Timestamp
Gary Laroche gary.laroche@vermont.gov SOV Security Level: Email, Account Authentication (None)	DocuSigned by: Gary Laroche 50A45F6F2C8B458... Signature Adoption: Pre-selected Style Using IP Address: 72.73.69.22	Sent: 4/11/2024 12:25:35 PM Viewed: 4/11/2024 12:25:46 PM Signed: 4/11/2024 12:25:59 PM
Electronic Record and Signature Disclosure: Not Offered via DocuSign		
Carolyn Cota Carolyn.Cota@vermont.gov Structures Program Manager SOV Security Level: Email, Account Authentication (None)	DocuSigned by: Carolyn Cota 4726E89B394B431... Signature Adoption: Pre-selected Style Using IP Address: 73.227.239.235	Sent: 4/11/2024 12:26:04 PM Viewed: 4/15/2024 6:47:58 AM Signed: 4/15/2024 6:48:10 AM
Electronic Record and Signature Disclosure: Not Offered via DocuSign		
Nick VanDenBerg Nick.VanDenBerg@vermont.gov Materials Manager SOV Security Level: Email, Account Authentication (None)	DocuSigned by: Nick VanDenBerg 57D4DD3560C24C2... Signature Adoption: Pre-selected Style Using IP Address: 73.218.136.153	Sent: 4/15/2024 6:48:15 AM Viewed: 4/15/2024 6:50:19 AM Signed: 4/15/2024 7:25:05 AM
Electronic Record and Signature Disclosure: Not Offered via DocuSign		
Jeremy Reed Jeremy.Reed@vermont.gov Chief Engineer SOV Security Level: Email, Account Authentication (None)	DocuSigned by: Jeremy Reed BBE658022DA34B7... Signature Adoption: Pre-selected Style Using IP Address: 170.222.128.10	Sent: 4/15/2024 7:25:09 AM Viewed: 4/16/2024 7:51:48 AM Signed: 4/16/2024 7:52:08 AM
Electronic Record and Signature Disclosure: Not Offered via DocuSign		

In Person Signer Events	Signature	Timestamp

Editor Delivery Events	Status	Timestamp

Agent Delivery Events	Status	Timestamp

Intermediary Delivery Events	Status	Timestamp

Certified Delivery Events	Status	Timestamp

Carbon Copy Events	Status	Timestamp

Witness Events	Signature	Timestamp

Notary Events	Signature	Timestamp

Envelope Summary Events	Status	Timestamps
Envelope Sent	Hashed/Encrypted	4/11/2024 12:25:35 PM
Certified Delivered	Security Checked	4/16/2024 7:51:48 AM
Signing Complete	Security Checked	4/16/2024 7:52:08 AM
Completed	Security Checked	4/16/2024 7:52:08 AM

Payment Events	Status	Timestamps

VERMONT

State of Vermont
Highway Division
Project Delivery Bureau
Structures Design Section
219 North Main Street, 3rd Floor
Barre, Vermont 05641

Agency of Transportation

[fax] 802-917-8514
[ttd] 800-253-0191

July 1, 2025

David Simendinger
WESCO REALTY, LLC.
32 San Remo Dr.
South Burlington, VT 05403

Project Name: NORTHFIELD BF 0241(58)

Structure Identification: REMOVAL AND REPLACEMENT OF BRIDGE NO. 60

Dear David,

The purpose of this memorandum is to follow up the onsite meeting June 24, 2025, at 2:00 PM to go over easements necessary to construct the bride project and discussed logistics of temporarily removing the lighted fuel station sign, relocation of the propane tank, and relocation of the trash bins to the north side of the building during construction of the project. This memorandum will provide more specifics for removal and resetting the fuel station private sign assembly situated directly behind the existing northwest retaining wall (WW3) and relocation of the propane tank on the southwest corner of the building.

The NORTHFIELD BF 0241(58) project will include the removal and replacement of bridge number 60 with related approach roadway and channel work. For construction of the northern bridge abutment and northwest retaining wall, VTrans on behalf of the Town of Northfield, requests easements as specified in the option agreement.

As specified in the option agreement, VTrans on behalf of the Town of Northfield is acquiring *"temporary easements to enter upon the land of the Grantor, during the period of construction, to remove and reset the same locations(s): a sign, left of and between approximate stations 224+08.63 and 224+15.78; a light post, at or near and left of approximate station 224+12.83; and a propane tank, at or near and left of approximate station 224+23.23, all stations are of the established centerline of the Transportation Project."*

Where:

The fuel station lighted sign and foundation will be reset in the same approximate (+/-) location as it exists today, as specified in the project documents just behind the proposed soldier pile retaining wall.

Temporary signage:

While the permanent lighted sign is out of service, the property owner agrees to utilize a standalone fuel price flip sign to advertise fuel prices. The contractor and engineer will coordinate the placement of the flip sign during construction activities in the event it needs to be moved around. If the temporary sign is damaged during construction activities and/or by the contractor's operations it will be replaced by the contractor at no additional cost to the Agency.

Schedule:

To successfully complete the bridge closure period within the specified 12-weeks, the bridge contractor or their subcontractor(s) will need to perform work leading up to the bridge closure, and after the bridge closure has concluded to complete the project. The existing fuel station sign will need to be removed 21 days prior to the bridge closure period and erected within 21-days of the bridge closure period concluding. Work leading up to the bridge closure includes but is not limited to drilling H-Piles for the proposed soldier pile retaining wall and installation of the 6" waterline service to the adjacent D&D Kenyon parcel. The Town of Northfield would like the bridge open for the annual Labor Day festivities, so the bridge closure is scheduled for (+/-) June 1, 2026, to August 24, 2026.

Construction activities:

VTrans will carry items within the bridge project contract to assist the property owner in removing and resetting the sign poles, engineering the proposed sign foundations, constructing the fuel station sign footing, and power for the sign.

- 675.6000002 Remove and Reset Private Sign Assembly, Lighted

Due to the recent fuel station franchise change many components of the lighted sign are brand new. To mitigate the risk of damage to the sign, the property owner agrees to disassemble the sign, its appurtenances, and ship them away for storage during bridge construction activities.

The property owner may elect to purchase new sign poles at their own expense due to being previously modified to match the existing foundation. In either case, the property owner agrees to provide plan drawings that include details of the pole spacing, pole anchorage spacing, sign foundation design criteria, and electricity details for project conformance.

From the foundation detailed in the property owner's plans, not provided to date, VTrans item 675.6000002 Remove and Reset Private Sign Assembly – Lighted, the basis of payment includes the bridge contractors professional engineer to submit a sign foundation design substantiating the ground loads from the sign imposed on the soldier pile wall do not negatively affect the soldier pile wall. If the sign foundation needs to be modified, the bridge contractors professional engineer will provide a foundation design suitable for use behind the soldier pile retaining wall.

Construction updates and coordination:

To remain apprised of construction activities, VTrans will be onboarding a public outreach coordinator for this project to provide regular construction updates.

The VTrans Construction Resident Engineer assigned to this project is Stephen Coley, P.E. The VTrans Resident Engineer will be on-site every day to oversee construction and ensure coordination of activities leading up to the closure, during the closure, and after the closure occurs. Leading up to the bridge closure period the Contractor will be responsible to coordinate the disassembly/removal of the fuel station sign with the property owner. If any questions arise or communications are not occurring as you would expect during construction operations, please reach out to either Stephen Coley, P.E. at 802-917-8406 cell, the contractor (TBD), or myself.

VTrans Working to Get You There
Vermont Agency of Transportation

Future maintenance concerns:

The proposed permanent soldier pile retaining wall retaining WESCO property fill does not require reinforced earth or tie backs, so excavation may occur on the backside of the wall for future Town of Northfield waterline maintenance and WESCO property maintenance / construction activities. To mitigate risk of water building up behind the proposed retaining wall, the wall is designed to include prefabricated composite structural drains with outlet pipes to alleviate any pore water pressure from the backfill for long term functionality.

Propane tank relocation:

The property owner agrees to work with their propane fuel distributor to relocate the propane tank located at the southwest corner of the building for construction of the bridge project. Other than the building's heating system, the propane tank is not utilized for other business activities including, but not limited to cookstoves, etc. Similar to the fuel station sign, the propane tank will need to be relocated 21 days prior to the bridge closure period and may be reset 21 days after the bridge closure period has concluded. Ideally the propane tank will be reset outside of the easement area required to maintain the waterline in the future while conforming to other boundary / building setback requirements.

Sincerely,

Gary Laroche

Gary M. Laroche, P.E.
Structures Project Manager

VTrans Working to Get You There
Vermont Agency of Transportation

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

I. General
II. Nondiscrimination
III. Non-segregated Facilities
IV. Davis-Bacon and Related Act Provisions
V. Contract Work Hours and Safety Standards Act Provisions
VI. Subletting or Assigning the Contract
VII. Safety: Accident Prevention
VIII. False Statements Concerning Highway Projects
IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
X. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion
XI. Certification Regarding Use of Contract Funds for Lobbying
XII. Use of United States-Flag Vessels:

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under title 23, United States Code, as required in 23 CFR 633.102(b) (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services). 23 CFR 633.102(e).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider. 23 CFR 633.102(e).

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services) in accordance with 23 CFR 633.102. The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in solicitation-for-bids or request-for-proposals documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract). 23 CFR 633.102(b).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract. 23 CFR 633.102(d).

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. 23 U.S.C. 114(b). The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors. 23 U.S.C. 101(a).

II. NONDISCRIMINATION (23 CFR 230.107(a); 23 CFR Part 230, Subpart A, Appendix A; EO 11246)

The provisions of this section related to 23 CFR Part 230, Subpart A, Appendix A are applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR Part 60, 29 CFR Parts 1625-1627, 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding $10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR Part 60, and 29 CFR Parts 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), and Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR Part 230, Subpart A, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal Employment Opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (*see* 28 CFR Part 35, 29 CFR Part 1630, 29 CFR Parts 1625-1627, 41 CFR Part 60 and 49 CFR Part 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140, shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR Part 35 and 29 CFR Part 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract. 23 CFR 230.409 (g)(4) & (5).

b. The contractor will accept as its operating policy the following statement:

> "It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, sexual orientation, gender identity, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action or are substantially involved in such action, will be made fully cognizant of and will implement the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer or other knowledgeable company official.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to ensure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action

within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs (i.e., apprenticeship and on-the-job training programs for the geographical area of contract performance). In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. 23 CFR 230.409. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established thereunder. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors, suppliers, and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurances Required:

a. The requirements of 49 CFR Part 26 and the State DOT's FHWA-approved Disadvantaged Business Enterprise (DBE) program are incorporated by reference.

b. The contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:
(1) Withholding monthly progress payments;
(2) Assessing sanctions;
(3) Liquidated damages; and/or
(4) Disqualifying the contractor from future bidding as non-responsible.

c. The Title VI and nondiscrimination provisions of U.S. DOT Order 1050.2A at Appendixes A and E are incorporated by reference. 49 CFR Part 21.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women.

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of more than $10,000. 41 CFR 60-1.5.

As prescribed by 41 CFR 60-1.8, the contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, sexual orientation, gender identity, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location under the contractor's control where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding $2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size), in accordance with 29 CFR 5.5. The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. 23 U.S.C. 113. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. 23 U.S.C. 101. Where applicable law requires that projects be treated as a project on a Federal-aid highway, the provisions of this subpart will apply regardless of the location of the project. Examples include: Surface Transportation Block Grant Program projects funded under 23 U.S.C. 133 [excluding recreational trails projects], the Nationally Significant Freight and Highway Projects funded under 23 U.S.C. 117, and National Highway Freight Program projects funded under 23 U.S.C. 167.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 “Contract provisions and related matters” with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages (29 CFR 5.5)

a. *Wage rates and fringe benefits.* All laborers and mechanics employed or working upon the site of the work (or otherwise working in construction or development of the project under a development statute), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of basic hourly wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. As provided in paragraphs (d) and (e) of 29 CFR 5.5, the appropriate wage determinations are effective by operation of law even if they have not been attached to the contract. Contributions made or costs reasonably anticipated for bona fide fringe benefits under the Davis-Bacon Act (40 U.S.C. 3141(2)(B)) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.e. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics must be paid the appropriate wage rate and fringe benefits on the wage determination for the classification(s) of work actually performed, without regard to skill, except as provided in paragraph 4. of this section. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: *Provided,* That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classifications and wage rates conformed under paragraph 1.c. of this section) and the Davis-Bacon poster (WH–1321) must be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b. *Frequently recurring classifications.* (1) In addition to wage and fringe benefit rates that have been determined to be prevailing under the procedures set forth in 29 CFR part 1, a wage determination may contain, pursuant to § 1.3(f), wage and fringe benefit rates for classifications of laborers and mechanics for which conformance requests are regularly submitted pursuant to paragraph 1.c. of this section, provided that:

(i) The work performed by the classification is not performed by a classification in the wage determination for which a prevailing wage rate has been determined;

(ii) The classification is used in the area by the construction industry; and

(iii) The wage rate for the classification bears a reasonable relationship to the prevailing wage rates contained in the wage determination.

(2) The Administrator will establish wage rates for such classifications in accordance with paragraph 1.c.(1)(iii) of this section. Work performed in such a classification must be paid at no less than the wage and fringe benefit rate listed on the wage determination for such classification.

c. *Conformance.* (1) The contracting officer must require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract be classified in conformance with the wage determination. Conformance of an additional classification and wage rate and fringe benefits is appropriate only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is used in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) The conformance process may not be used to split, subdivide, or otherwise avoid application of classifications listed in the wage determination.

(3) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken will be sent by the contracting officer by email to *DBAconformance@dol.gov*. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30–day period that additional time is necessary.

(4) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer will, by email to *DBAconformance@dol.gov*, refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30–day period that additional time is necessary.

(5) The contracting officer must promptly notify the contractor of the action taken by the Wage and Hour Division under paragraphs 1.c.(3) and (4) of this section. The contractor must furnish a written copy of such determination to each affected worker or it must be posted as a part of the wage determination. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 1.c.(3) or (4) of this section must be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

d. *Fringe benefits not expressed as an hourly rate.* Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor may either pay the benefit as stated in the wage determination or may pay another bona fide fringe benefit or an hourly cash equivalent thereof.

e. *Unfunded plans.* If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, *Provided,* That the Secretary of Labor has found, upon the written request of the contractor, in accordance with the criteria set forth in § 5.28, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

f. *Interest.* In the event of a failure to pay all or part of the wages required by the contract, the contractor will be required to pay interest on any underpayment of wages.

2. Withholding (29 CFR 5.5)

a. *Withholding requirements.* The contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for the full amount of wages and monetary relief, including interest, required by the clauses set forth in this section for violations of this contract, or to satisfy any such liabilities required by any other Federal contract, or federally assisted contract subject to Davis-Bacon labor standards, that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to Davis-Bacon labor standards requirements and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld. In the event of a contractor's failure to pay any laborer or mechanic, including any apprentice or helper working on the site of the work all or part of the wages required by the contract, or upon the contractor's failure to submit the required records as discussed in paragraph 3.d. of this section, the contracting agency may on its own initiative and after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with paragraph

2.a. of this section or Section V, paragraph 3.a., or both, over claims to those funds by:

(1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;

(2) A contracting agency for its reprocurement costs;

(3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;

(4) A contractor's assignee(s);

(5) A contractor's successor(s); or

(6) A claim asserted under the Prompt Payment Act, 31 U.S.C. 3901–3907.

3. Records and certified payrolls (29 CFR 5.5)

a. *Basic record requirements* (1) *Length of record retention.* All regular payrolls and other basic records must be maintained by the contractor and any subcontractor during the course of the work and preserved for all laborers and mechanics working at the site of the work (or otherwise working in construction or development of the project under a development statute) for a period of at least 3 years after all the work on the prime contract is completed.

(2) *Information required.* Such records must contain the name; Social Security number; last known address, telephone number, and email address of each such worker; each worker's correct classification(s) of work actually performed; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in 40 U.S.C. 3141(2)(B) of the Davis-Bacon Act); daily and weekly number of hours actually worked in total and on each covered contract; deductions made; and actual wages paid.

(3) *Additional records relating to fringe benefits.* Whenever the Secretary of Labor has found under paragraph 1.e. of this section that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in 40 U.S.C. 3141(2)(B) of the Davis-Bacon Act, the contractor must maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits.

(4) *Additional records relating to apprenticeship.* Contractors with apprentices working under approved programs must maintain written evidence of the registration of apprenticeship programs, the registration of the apprentices, and the ratios and wage rates prescribed in the applicable programs.

b. *Certified payroll requirements* (1) *Frequency and method of submission.* The contractor or subcontractor must submit weekly, for each week in which any DBA- or Related Acts-covered work is performed, certified payrolls to the contracting agency. The prime contractor is responsible for the submission of all certified payrolls by all subcontractors. A contracting agency or prime contractor may permit or require contractors to submit certified payrolls through an electronic system, as long as the electronic system requires a legally valid electronic signature; the system allows the contractor, the contracting agency, and the Department of Labor to access the certified payrolls upon request for at least 3 years after the work on the prime contract has been completed; and the contracting agency or prime contractor permits other methods of submission in situations where the contractor is unable or limited in its ability to use or access the electronic system.

(2) *Information required.* The certified payrolls submitted must set out accurately and completely all of the information required to be maintained under paragraph 3.a.(2) of this section, except that full Social Security numbers and last known addresses, telephone numbers, and email addresses must not be included on weekly transmittals. Instead, the certified payrolls need only include an individually identifying number for each worker (*e.g.,* the last four digits of the worker's Social Security number). The required weekly certified payroll information may be submitted using Optional Form WH–347 or in any other format desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division website at *https://www.dol.gov/sites/dolgov/files/WHD/legacy/files/wh347/.pdf* or its successor website. It is not a violation of this section for a prime contractor to require a subcontractor to provide full Social Security numbers and last known addresses, telephone numbers, and email addresses to the prime contractor for its own records, without weekly submission by the subcontractor to the contracting agency.

(3) *Statement of Compliance.* Each certified payroll submitted must be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor, or the contractor's or subcontractor's agent who pays or supervises the payment of the persons working on the contract, and must certify the following:

(i) That the certified payroll for the payroll period contains the information required to be provided under paragraph 3.b. of this section, the appropriate information and basic records are being maintained under paragraph 3.a. of this section, and such information and records are correct and complete;

(ii) That each laborer or mechanic (including each helper and apprentice) working on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR part 3; and

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification(s) of work actually performed, as specified in the applicable wage determination incorporated into the contract.

(4) *Use of Optional Form WH–347.* The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH–347 will satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(3) of this section.

(5) *Signature.* The signature by the contractor, subcontractor, or the contractor's or subcontractor's agent must be an original handwritten signature or a legally valid electronic signature.

(6) *Falsification.* The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under 18 U.S.C. 1001 and 31 U.S.C. 3729.

(7) *Length of certified payroll retention.* The contractor or subcontractor must preserve all certified payrolls during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

c. *Contracts, subcontracts, and related documents.* The contractor or subcontractor must maintain this contract or subcontract and related documents including, without limitation, bids, proposals, amendments, modifications, and extensions. The contractor or subcontractor must preserve these contracts, subcontracts, and related documents during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

d. *Required disclosures and access* (1) *Required record disclosures and access to workers.* The contractor or subcontractor must make the records required under paragraphs 3.a. through 3.c. of this section, and any other documents that the contracting agency, the State DOT, the FHWA, or the Department of Labor deems necessary to determine compliance with the labor standards provisions of any of the applicable statutes referenced by § 5.1, available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and must permit such representatives to interview workers during working hours on the job.

(2) *Sanctions for non-compliance with records and worker access requirements.* If the contractor or subcontractor fails to submit the required records or to make them available, or refuses to permit worker interviews during working hours on the job, the Federal agency may, after written notice to the contractor, sponsor, applicant, owner, or other entity, as the case may be, that maintains such records or that employs such workers, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available, or to permit worker interviews during working hours on the job, may be grounds for debarment action pursuant to § 5.12. In addition, any contractor or other person that fails to submit the required records or make those records available to WHD within the time WHD requests that the records be produced will be precluded from introducing as evidence in an administrative proceeding under 29 CFR part 6 any of the required records that were not provided or made available to WHD. WHD will take into consideration a reasonable request from the contractor or person for an extension of the time for submission of records. WHD will determine the reasonableness of the request and may consider, among other things, the location of the records and the volume of production.

(3) *Required information disclosures.* Contractors and subcontractors must maintain the full Social Security number and last known address, telephone number, and email address of each covered worker, and must provide them upon request to the contracting agency, the State DOT, the FHWA, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or other compliance action.

4. Apprentices and equal employment opportunity (29 CFR 5.5)

a. *Apprentices* (1) *Rate of pay.* Apprentices will be permitted to work at less than the predetermined rate for the work they perform when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship (OA), or with a State Apprenticeship Agency recognized by the OA. A person who is not individually registered in the program, but who has been certified by the OA or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice, will be permitted to work at less than the predetermined rate for the work they perform in the first 90 days of probationary employment as an apprentice in such a program. In the event the OA or a State Apprenticeship Agency recognized by the OA withdraws approval of an apprenticeship program, the contractor will no longer be permitted to use apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(2) *Fringe benefits.* Apprentices must be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringe benefits must be paid in accordance with that determination.

(3) *Apprenticeship ratio.* The allowable ratio of apprentices to journeyworkers on the job site in any craft classification must not be greater than the ratio permitted to the contractor as to the entire work force under the registered program or the ratio applicable to the locality of the project pursuant to paragraph 4.a.(4) of this section. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in paragraph 4.a.(1) of this section, must be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under this section must be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(4) *Reciprocity of ratios and wage rates.* Where a contractor is performing construction on a project in a locality other than the locality in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyworker's hourly rate) applicable within the locality in which the construction is being performed must be observed. If there is no applicable ratio or wage rate for the locality of the project, the ratio and wage rate specified in the contractor's registered program must be observed.

b. *Equal employment opportunity.* The use of apprentices and journeyworkers under this part must be in conformity with

the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

c. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. 23 CFR 230.111(e)(2). The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeyworkers shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract as provided in 29 CFR 5.5.

6. Subcontracts. The contractor or subcontractor must insert FHWA-1273 in any subcontracts, along with the applicable wage determination(s) and such other clauses or contract modifications as the contracting agency may by appropriate instructions require, and a clause requiring the subcontractors to include these clauses and wage determination(s) in any lower tier subcontracts. The prime contractor is responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this section. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and may be subject to debarment, as appropriate. 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract as provided in 29 CFR 5.5.

9. Disputes concerning labor standards. As provided in 29 CFR 5.5, disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility. a. By entering into this contract, the contractor certifies that neither it nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of 40 U.S.C. 3144(b) or § 5.12(a).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of 40 U.S.C. 3144(b) or § 5.12(a).

c. The penalty for making false statements is prescribed in the U.S. Code, Title 18 Crimes and Criminal Procedure, 18 U.S.C. 1001.

11. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the DBA, Related Acts, this part, or 29 CFR part 1 or 3;

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under the DBA, Related Acts, this part, or 29 CFR part 1 or 3;

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under the DBA, Related Acts, this part, or 29 CFR part 1 or 3; or

d. Informing any other person about their rights under the DBA, Related Acts, this part, or 29 CFR part 1 or 3.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

Pursuant to 29 CFR 5.5(b), the following clauses apply to any Federal-aid construction contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchpersons and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek. 29 CFR 5.5.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph 1. of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages and interest from the date of the underpayment. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or

mechanic, including watchpersons and guards, employed in violation of the clause set forth in paragraph 1. of this section, in the sum currently provided in 29 CFR 5.5(b)(2)* for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph 1. of this section.

* $31 as of January 15, 2023 (See 88 FR 88 FR 2210) as may be adjusted annually by the Department of Labor, pursuant to the Federal Civil Penalties Inflation Adjustment Act of 1990.

3. Withholding for unpaid wages and liquidated damages

a. *Withholding process.* The FHWA or the contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for any unpaid wages; monetary relief, including interest; and liquidated damages required by the clauses set forth in this section on this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract subject to the Contract Work Hours and Safety Standards Act that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to the Contract Work Hours and Safety Standards Act and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with Section IV paragraph 2.a. or paragraph 3.a. of this section, or both, over claims to those funds by:

(1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;

(2) A contracting agency for its reprocurement costs;

(3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;

(4) A contractor's assignee(s);

(5) A contractor's successor(s); or

(6) A claim asserted under the Prompt Payment Act, 31 U.S.C. 3901–3907.

4. Subcontracts. The contractor or subcontractor must insert in any subcontracts the clauses set forth in paragraphs 1. through 5. of this section and a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor is responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs 1. through 5. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and associated liquidated damages and may be subject to debarment, as appropriate.

5. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the Contract Work Hours and Safety Standards Act (CWHSSA) or its implementing regulations in this part;

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under CWHSSA or this part;

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under CWHSSA or this part; or

d. Informing any other person about their rights under CWHSSA or this part.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System pursuant to 23 CFR 635.116.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term “perform work with its own organization” in paragraph 1 of Section VI refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions: (based on longstanding interpretation)

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
(2) the prime contractor remains responsible for the quality of the work of the leased employees;

(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and

(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract. 23 CFR 635.102.

2. Pursuant to 23 CFR 635.116(a), the contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. Pursuant to 23 CFR 635.116(c), the contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract. (based on long-standing interpretation of 23 CFR 635.116).

5. The 30-percent self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements. 23 CFR 635.116(d).

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR Part 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract. 23 CFR 635.108.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR Part 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704). 29 CFR 1926.10.

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR Part 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 11, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT (42 U.S.C. 7606; 2 CFR 200.88; EO 11738)

This provision is applicable to all Federal-aid construction contracts in excess of $150,000 and to all related subcontracts. 48 CFR 2.101; 2 CFR 200.327.

By submission of this bid/proposal or the execution of this contract or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, subcontractor, supplier, or vendor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal Highway Administration and the Regional Office of the Environmental Protection Agency. 2 CFR Part 200, Appendix II.

The contractor agrees to include or cause to be included the requirements of this Section in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements. 2 CFR 200.327.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost $25,000 or more – as defined in 2 CFR Parts 180 and 1200. 2 CFR 180.220 and 1200.220.

1**. Instructions for Certification – First Tier Participants:**

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction. 2 CFR 180.320.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default. 2 CFR 180.325.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances. 2 CFR 180.345 and 180.350.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900-180.1020, and 1200. “First Tier Covered Transactions” refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction. 2 CFR 180.330.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold. 2 CFR 180.220 and 180.300.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. 2 CFR 180.300; 180.320, and 180.325. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. 2 CFR 180.335. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (https://www.sam.gov/). 2 CFR 180.300, 180.320, and 180.325.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default. 2 CFR 180.325.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.335;.

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property, 2 CFR 180.800;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification, 2 CFR 180.700 and 180.800; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default. 2 CFR 180.335(d).

(5) Are not a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(6) Are not a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability (USDOT Order 4200.6 implementing appropriations act requirements).

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal. 2 CFR 180.335 and 180.340.

* * * * *

3. **Instructions for Certification - Lower Tier Participants:**

(Applicable to all subcontracts, purchase orders, and other lower tier transactions requiring prior FHWA approval or estimated to cost $25,000 or more - 2 CFR Parts 180 and 1200). 2 CFR 180.220 and 1200.220.

a. By signing and submitting this proposal, the prospective lower tier participant is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances. 2 CFR 180.365.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900 – 180.1020, and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. “First Tier Covered Transactions” refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated. 2 CFR 1200.220 and 1200.332.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold. 2 CFR 180.220 and 1200.220.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (https://www.sam.gov/), which is compiled by the General Services Administration. 2 CFR 180.300, 180.320, 180.330, and 180.335.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily

excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment. 2 CFR 180.325.

* * * * *

4. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

a. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals:

(1) is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.355;

(2) is a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(3) is a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability. (USDOT Order 4200.6 implementing appropriations act requirements)

b. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000. 49 CFR Part 20, App. A.

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

XII. USE OF UNITED STATES-FLAG VESSELS:

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, or any other covered transaction. 46 CFR Part 381.

This requirement applies to material or equipment that is acquired for a specific Federal-aid highway project. 46 CFR 381.7. It is not applicable to goods or materials that come into inventories independent of an FHWA funded-contract.

When oceanic shipments (or shipments across the Great Lakes) are necessary for materials or equipment acquired for a specific Federal-aid construction project, the bidder, proposer, contractor, subcontractor, or vendor agrees:

1. To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels. 46 CFR 381.7.

2. To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, ‘on-board’ commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b)(1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Office of Cargo and Commercial Sealift (MAR-620), Maritime Administration, Washington, DC 20590. (MARAD requires copies of the ocean carrier's (master) bills of lading, certified onboard, dated, with rates and charges. These bills of lading may contain business sensitive information and therefore may be submitted directly to MARAD by the Ocean Transportation Intermediary on behalf of the contractor). 46 CFR 381.7.

ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS (23 CFR 633, Subpart B, Appendix B)
This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

"General Decision Number: VT20260056 01/02/2026

Superseded General Decision Number: VT20250056

State: Vermont

Construction Type: Highway

County: Washington County in Vermont.

HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels, building structures in rest area projects & railroad construction; bascule, suspension & spandrel arch bridges designed for commercial navigation, bridges involving marine construction; and other major bridges).

Modification Number	Publication Date
0	01/02/2026

SUVT2017-017 08/06/2019

	Rates	Fringes
CARPENTER, Includes Form Work	$ 24.11	0.64
CEMENT MASON/CONCRETE FINISHER	$ 25.34	0.00
ELECTRICIAN	$ 28.15	2.03
HIGHWAY/PARKING LOT STRIPING: Painter	$ 20.36	3.87
INSTALLER - SIGN	$ 18.01	2.48
IRONWORKER, REINFORCING	$ 25.21	0.79
IRONWORKER, STRUCTURAL	$ 31.81	4.65
LABORER: Concrete Worker	$ 20.19	1.31
LABORER: Landscape	$ 14.70	1.03
LABORER: Common or General, Includes Asphalt Raker, Shoveler, Spreader and Distributor	$ 17.29	3.74
OPERATOR: Backhoe/Excavator/Trackhoe	$ 21.57	4.15
OPERATOR: Bobcat/Skid Steer/Skid Loader	$ 20.94	5.89
OPERATOR: Broom/Sweeper	$ 19.25	5.97
OPERATOR: Bulldozer	$ 21.05	4.38
OPERATOR: Crane	$ 24.41	1.36
OPERATOR: Drill	$ 19.83	3.94
OPERATOR: Grader/Blade	$ 21.13	5.53

OPERATOR: Loader.....$ 21.65 4.70

OPERATOR: Mechanic.....$ 23.48 6.17

OPERATOR: Milling Machine.....$ 22.50 10.24

OPERATOR: Paver (Asphalt, Aggregate, and Concrete).....$ 22.41 7.18

OPERATOR: Pounder.....$ 22.65 0.00

OPERATOR: Roller.....$ 19.44 6.00

OPERATOR: Screed.....$ 22.80 10.55

TRAFFIC CONTROL: Flagger.....$ 13.07 0.00

TRAFFIC CONTROL: Laborer-Cones/ Barricades/Barrels - Setter/Mover/Sweeper.....$ 17.20 6.71

TRUCK DRIVER, Includes all axles including Dump Trucks.....$ 19.12 3.31

TRUCK DRIVER: Distributor Truck.....$ 22.55 11.87

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

==========

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at https://www.dol.gov/agencies/whd/government-contracts.

Note: Executive Order 13658 generally applies to contracts subject to the Davis-Bacon Act that were awarded on or between January 1, 2015 and January 29, 2022, and that have not been renewed or extended on or after January 30, 2022. Executive Order 13658 does not apply to contracts subject only to the Davis-Bacon Related Acts regardless of when they were awarded. If a contract is subject to Executive Order 13658, the contractor must pay all covered workers at least $13.30 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2025. The applicable Executive Order minimum wage rate will be adjusted annually. Additional

information on contractor requirements and worker protections under Executive Order 13658 is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classifications and wage rates that have been found to be prevailing for the type(s) of construction and geographic area covered by the wage determination. The classifications are listed in alphabetical order under rate identifiers indicating whether the particular rate is a union rate (current union negotiated rate), a survey rate, a weighted union average rate, a state adopted rate, or a supplemental classification rate.

Union Rate Identifiers

A four-letter identifier beginning with characters other than ""SU"", ""UAVG"", ?SA?, or ?SC? denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union whose collectively bargained rate prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2024 in the example, is the effective date of the most current negotiated rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The ""SU"" identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may

include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

?SU? wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The ""SA"" identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

1) Has there been an initial decision in the matter? This can be:

a) a survey underlying a wage determination
b) an existing published wage determination
c) an initial WHD letter setting forth a position on a wage determination matter
d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to davisbaconinfo@dol.gov or by mail to:

Branch of Wage Surveys
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or by mail to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2) If an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to dba.reconsideration@dol.gov or by mail to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210.

==========

END OF GENERAL DECISION
"

January 2026
CR110

DISADVANTAGED BUSINESS ENTERPRISE (DBE) POLICY
CONTRACT REQUIREMENTS

Disadvantaged Business Enterprise (DBE) Policy. It shall be the policy of the Vermont Agency of Transportation (VTrans) to ensure nondiscriminatory opportunity for Disadvantaged Business Enterprises (DBEs) to participate in the performance of all contracts and subcontracts financed with Federal funds as specified by the regulations of the United States Department of Transportation (USDOT) and as set forth below.

1. **Policy.** It is the policy of USDOT that DBEs as defined in 49 Code of Federal Regulation (CFR) Part 26 shall have the maximum opportunity to participate in the performance of contracts financed in whole or in part with Federal funds. Consequently, the DBE requirements of 49 CFR Part 26 and 23 CFR, Chapter 1, Part 230, Subpart b apply to this contract.

2. **DBE Obligation.** The State and its Contractors agree to ensure that DBEs as defined in 49 CFR Part 26, have the maximum opportunity to participate in the performance of contracts and subcontracts financed in whole or in part with Federal funds. **Each subcontract the prime contractor signs with a subcontractor must include this assurance:** *The contractor, sub recipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the award and performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of USDOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy, as VTrans deems appropriate.*

3. **Sanctions for Noncompliance.** The Contractor is hereby advised that failure of the Contractor, or any Subcontractor performing work under this contract, to carry out the requirements set forth in paragraphs 1 and 2 above shall constitute a breach of contract and after the notification of the Vermont Agency of Transportation, Secretary of Transportation, may result in termination of this contract by the State or such remedy as the State deems necessary.

4. **Inclusion in Subcontracts.** The Contractor shall insert in each of its subcontracts this Disadvantaged Business Enterprise (DBE) Policy and a clause requiring its subcontractors to include this same Policy in any lower tier subcontracts which they may enter into, together with a clause requiring the inclusion of the Policy in any further subcontract that may in turn be made. This Policy shall not be incorporated by reference.

Disadvantaged Business Enterprise (DBE) Program Goals. The Vermont Agency of Transportation (VTrans) is required to set an overall DBE goal for participation in all transportation related Federal-aid projects. The goal is determined following guidelines set forth in 49 CFR 26.45, and based on the availability of ready, willing and able DBEs who submitted bids and quotes for transportation related projects, compared as a percentage of all available contractors who submitted bids and quotes for transportation related projects during the same time period. The DBE goal may be adjusted to take into account other factors impacting DBE utilization, in an effort to narrowly tailor the overall DBE goal. The detailed goal setting methodology and current overall DBE goal may be viewed on the VTrans website at: http://vtrans.vermont.gov/civil-rights/doing-business/dbe-center/program-goals

The VTrans overall DBE goal is currently achieved by a combination of contract specific goals and a race/gender neutral policy. Contractors should be proactive and solicit bids and quotes from certified DBEs for use when submitting their own bids and employ certified DBEs when participating on transportation related projects.

Disadvantaged Business Enterprise (DBE) Definition. A DBE is defined as a business that is owned and controlled by one or more socially and economically disadvantaged person(s). For the purposes of this definition:

(1) "Socially and economically disadvantaged person" means an individual who is a citizen or lawful permanent resident of the United States and who is a Woman, Black, Hispanic, Portuguese, Native American, Asian American, or a member of another group, or an individual found to be disadvantaged by the Small Business Administration pursuant to Section 3 of the Small Business Act.

(2) "Owned and controlled" means a business which is:

a. A sole proprietorship legitimately owned and controlled by an individual who is a disadvantaged person.

b. A partnership, joint venture or limited liability company in which at least 51% of the beneficial ownership interests legitimately is held by a disadvantaged person(s).

c. A corporation or other entity in which at least 51% of the voting interest and 51% of the beneficial ownership interests legitimately are held by a disadvantaged person(s).

The disadvantaged group owner(s) or stockholder(s) must possess control over management, interest in capital, and interest in earnings commensurate with percentage of ownership. Disadvantaged participation in a joint venture must also be based on the sharing of real earnings, as above. If the disadvantaged group ownership interests are real, substantial and continuing and not created solely to meet the requirements of the program, a firm is considered a bona fide DBE.

Certified DBE Directory. The current Vermont Unified Disadvantaged Business Enterprise (DBE) Directory is available online at: http://vtrans.vermont.gov/civil-rights/doing-business/dbe-center/directory. This directory contains all currently certified DBEs available for work in Vermont and is updated continuously. Only firms listed in this directory are eligible for DBE credit on Vermont Federal-aid projects. If you have questions about DBE certification, or do not have access to the Internet, please call the AOT DBE Program Manager for assistance.

Counting DBE Participation Towards Project Goals. For payments made to DBE contractors to be counted toward DBE goals, the DBE contractors must perform a commercially useful function (CUF). The DBE must be responsible for execution of the work of the contract and must carry out its responsibilities by performing, managing, and supervising the work involved, consistent with standard industry practices.

This means that:

- The DBE must also be responsible for ordering its own materials and supplies, determining quantity and quality, negotiating price, installing (where applicable) and paying for the material itself;

- The DBE must perform work commensurate with the amount of its contract;

- The DBE's contribution cannot be that of an extra participant or a conduit through which funds are passed in order to obtain the appearance of DBE participation.

- The DBE must exercise responsibility for at least fifty percent of the total cost of its contract with its own workforce.

- None of the DBE's work can be subcontracted back to the prime contractor, nor can the DBE employ the prime's or other subcontractor's supervisors currently working on the project;
- The DBE's labor force must be separate and apart from that of the prime contractor or other subcontractors on the project. Transferring crews between primes, subcontractors, and DBE contractors is not acceptable.

- The DBE owner must hold necessary professional or craft license(s) or certification(s) for the type of work he/she performs on the project.

- The DBE may rent or lease, at competitive rates, equipment needed on the project from customary leasing sources or from other subcontractors on the project.

Allowable credit for payments made to DBEs for work performed. A contractor may take credit for payments made to a certified DBE that satisfies CUF requirements at the following rate:

- A DBE Prime Contractor: Count 100% of the value of the work performed by own forces, equipment and materials towards the DBE goals.

- An approved DBE subcontractor: Count 100% of the value of work performed by the DBE's own forces, equipment and materials, excluding the following:

    - The cost of materials/supplies purchased from a non-DBE Prime Contractor.

    - The value of work provided by non-DBE lower tier subcontractors, including non-DBE trucking to deliver asphalt to a DBE contractor.

- A DBE owner-operator of construction equipment: Count 100% of expenditures committed.

- A DBE manufacturer: Count 100% of expenditures committed. The manufacturer must be a firm that operates or maintains a factory or establishment that produces on the premises the materials or supplies obtained by the Contractor.

- A regular DBE dealer/supplier: Count 60% of expenditures committed. A regular dealer/supplier is defined as a firm that owns, operates, or maintains a store, warehouse or other establishment, in which the materials or supplies required for the performance of the contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business. A person may be a dealer in such bulk items as petroleum products, steel, cement, gravel, stone or asphalt without owning, operating or maintaining a place of business, if the person both owns and operates distribution equipment for the products, by means of a long-term agreement, and not by a contract by contract basis.

- A DBE broker: Count for DBE credit only the fees or commissions charged for assistance in the procurement, and fees and transportation charges for the delivery of materials or supplies required at the job site, but not the cost of materials procured. A broker is defined as any person(s) or firm who arranges or expedites transactions for materials or supplies and does not take physical possession of the materials or supplies at their place of business for resale.

- A DBE renter of construction equipment to a contractor: Count 20% of expenditures committed, with or without operator.

- A bona fide DBE service provider: Count 100% of reasonable fees or commissions. Eligible services include professional, technical, consultant, or managerial, services and assistance in the procurement of essential personnel, facilities, equipment, materials or supplies required for the performance of the contract. Eligible services also include agencies providing bonding and insurance specifically required for the performance of the contract.

- A trucking, hauling or delivery operation: Count 100% of expenditures committed when trucks are owned, operated, licensed and insured by the DBE and used on the contract and, if applicable, includes the cost of the materials and supplies. 100% of expenditures committed when the DBE leases trucks from another DBE firm including an owner-operator. 100% of reasonable fees, or commissions, the DBE receives as a result of a lease arrangement for trucks from a non-DBE, including an owner-operator.

- Any combination of the above.

Removal of Approved DBE From Transportation Related Project. Contractors may not terminate for convenience, any approved DBE subcontractor and perform the work with their own forces, without prior written consent from the AOT DBE Program Manager or the AOT Civil Rights Director

Federal-aid projects which specify a DBE contract goal. The provisions of the Vermont Agency of Transportation Supplemental Specification – Disadvantaged Business Enterprise (DBE) Utilization (CR 160) shall apply to all VTrans Federal-aid projects which specify a DBE contract goal.

Subcontractor Payments. In accordance with VTrans Standard Specifications for Construction, Section 107.01(h), on all federal-aid and state funded contracts, the Contractor, during the life of the Contract and on a monthly basis, shall submit a listing of payments to subcontractors using the tool specified in the Civil Rights Compliance Requirement document located in the working drawer in Doc Express. Reports are due to the Agency Office of Civil Rights by the tenth working day after month-end. There shall be no direct compensation allowed the Contractor for this work, but the cost thereof shall be included in the general cost of the work. In accordance with 9 V.S.A. Section 4003, notwithstanding any contrary agreement, payments made to subcontractors after seven days from receipt of a corresponding progress payment by the State to the Contractor, or seven days after receipt of a subcontractor's invoice, whichever is later, violate this agreement. Violations shall be reported to the Agency Office of Civil Rights for review. Failure to resolve disputes in a timely manner may result in a complaint made to the Agency Pre-qualification Committee. In this Committee's judgment, appropriate penalties may be involved for failure to comply with this specification. Penalties may include suspension, reduction or revocation of the Contractor's pre-qualification rating. This clause shall be included in the prime Contractor's Contract made with all if its subcontractors.

Attachment C: Standard State Provisions for Contracts and Grants

Revised: February 13, 2026

1. **Definitions:** For purposes of this Attachment, "Party" shall mean the Contractor, Grantee, or Subrecipient, with whom the State of Vermont is executing this Agreement and consistent with the form of the Agreement. "Agreement" shall mean the specific contract or grant to which this form is attached.
2. **Entire Agreement:** This Agreement, whether in the form of a contract, State-funded grant, or Federally-funded grant, represents the entire agreement between the parties on the subject matter. All prior agreements, representations, statements, negotiations, and understandings shall have no effect. Where an authorized individual is either required to click-through or otherwise accept, or made subject to, any electronic terms and conditions to use or access any product or service provided hereunder, such terms and conditions are not binding and shall have no force or effect. Further, any terms and conditions of Party's invoice, acknowledgment, confirmation, or similar document, shall not apply, and any such terms and conditions on any such document are objected to without need of further notice or objection.
3. **Governing Law, Jurisdiction and Venue; No Waiver of Jury Trial:** This Agreement will be governed by the laws of the State of Vermont without resort to conflict of laws principles. Any action or proceeding brought by either the State or the Party in connection with this Agreement shall be brought and enforced in the Superior Court of the State of Vermont, Civil Division, Washington Unit. The Party irrevocably submits to the jurisdiction of this court for any action or proceeding regarding this Agreement. The Party agrees that it must first exhaust any applicable administrative remedies with respect to any cause of action that it may have against the State regarding its performance under this Agreement. Party agrees that the State shall not be required to submit to binding arbitration or waive its right to a jury trial.
4. **Sovereign Immunity:** The State reserves all immunities, defenses, rights, or actions arising out of the State's sovereign status or under the Eleventh Amendment to the United States Constitution. No waiver of the State's immunities, defenses, rights, or actions shall be implied or otherwise deemed to exist by reason of the State's entry into this Agreement.
5. **No Employee Benefits For Party:** The Party understands that the State will not provide any individual retirement benefits, group life insurance, group health and dental insurance, vacation or sick leave, workers compensation or other benefits or services available to State employees, nor will the State withhold any state or Federal taxes except as required under applicable tax laws, which shall be determined in advance of execution of the Agreement. The Party understands

that all tax returns required by the Internal Revenue Code and the State of Vermont, including but not limited to income, withholding, sales and use, and rooms and meals, must be filed by the Party, and information as to Agreement income will be provided by the State of Vermont to the Internal Revenue Service and the Vermont Department of Taxes.

6. **Independence:** The Party will act in an independent capacity and not as officers or employees of the State.
7. **Defense and Indemnity:**
   A. The Party shall defend the State and its officers and employees against all third-party claims or suits arising in whole or in part from any act or omission of the Party or of any agent of the Party in connection with the performance of this Agreement. The State shall notify the Party in the event of any such claim or suit, and the Party shall immediately retain counsel and otherwise provide a complete defense against the entire claim or suit. The State retains the right to participate at its own expense in the defense of any claim. The State shall have the right to approve all proposed settlements of such claims or suits.
   B. After a final judgment or settlement, the Party may request recoupment of specific defense costs and may file suit in Washington Superior Court requesting recoupment. The Party shall be entitled to recoup costs only upon a showing that such costs were entirely unrelated to the defense of any claim arising from an act or omission of the Party in connection with the performance of this Agreement.
   C. The Party shall indemnify the State and its officers and employees if the State, its officers, or employees become legally obligated to pay any damages or losses arising from any act or omission of the Party or an agent of the Party in connection with the performance of this Agreement.
   D. Notwithstanding any contrary language anywhere, in no event shall the terms of this Agreement or any document furnished by the Party in connection with its performance under this Agreement obligate the State to (1) defend or indemnify the Party or any third party, or (2) otherwise be liable for the expenses or reimbursement, including attorneys' fees, collection costs or other costs of the Party or any third party.
8. **Insurance:** During the term of this Agreement, Party, at its expense, shall maintain in full force and effect the insurance coverages set forth in the Vermont State Insurance Specification in effect at the time of incorporation of this Attachment C into this Agreement. The terms of the Vermont State Insurance Specification are hereby incorporated by reference into this Attachment C as if fully set forth herein. A copy of the Vermont State Insurance Specification is available at: https://aoa.vermont.gov/Risk-Claims-COI.
9. **Reliance by the State on Representations:** All payments by the State under this Agreement will be made in reliance upon the accuracy of all representations

made by the Party in accordance with this Agreement, including but not limited to bills, invoices, progress reports, and other proofs of work.

10. **False Claims Act:** Any liability to the State under the Vermont False Claims Act (32 V.S.A. § 630 et seq.) shall not be limited notwithstanding any agreement of the State to otherwise limit Party's liability.

11. **Whistleblower Protections:** The Party shall not discriminate or retaliate against one of its employees or agents for disclosing information concerning a violation of law, fraud, waste, abuse of authority, or acts threatening health or safety, including but not limited to allegations concerning the False Claims Act. Further, the Party shall not require such employees or agents to forego monetary awards as a result of such disclosures, nor should they be required to report misconduct to the Party or its agents prior to reporting to any governmental entity and/or the public.

12. **Use and Protection of State Information:**

    A. As between the State and Party, "State Data" includes all data received, obtained, or generated by the Party in connection with performance under this Agreement. Party acknowledges that certain State Data to which the Party may have access may contain information that is deemed confidential by the State, or which is otherwise confidential by law, rule, or practice, or otherwise exempt from disclosure under the State of Vermont Access to Public Records Act, 1 V.S.A. § 315 et seq. ("Confidential State Data").

    B. With respect to State Data, Party shall:

        i. take reasonable precautions for its protection;

        ii. not rent, sell, publish, share, or otherwise appropriate it; and

        iii. upon termination of this Agreement for any reason, Party shall dispose of or retain State Data if and to the extent required by this Agreement, law, or regulation, or otherwise requested in writing by the State.

    C. With respect to Confidential State Data, Party shall:

        i. strictly maintain its confidentiality;

        ii. not collect, access, use, or disclose it except as necessary to provide services to the State under this Agreement;

        iii. provide at a minimum the same care to avoid disclosure or unauthorized use as it provides to protect its own similar confidential and proprietary information;

        iv. implement and maintain administrative, technical, and physical safeguards and controls to protect against any anticipated threats or hazards or unauthorized access or use;

        v. promptly notify the State of any request or demand by any court, governmental agency or other person asserting a demand or

request for Confidential State Data so that the State may seek an appropriate protective order; and

vi. upon termination of this Agreement for any reason, and except as necessary to comply with subsection B.iii above in this section, return or destroy all Confidential State Data remaining in its possession or control.

D. If Party is provided or accesses, creates, collects, processes, receives, stores, or transmits Confidential State Data in any electronic form or media, Party shall utilize:

i. industry-standard firewall protection;

ii. multi-factor authentication controls;

iii. encryption of electronic Confidential State Data while in transit and at rest;

iv. measures to ensure that the State Data shall not be altered without the prior written consent of the State;

v. measures to protect against destruction, loss, or damage of State Data due to potential environmental hazards, such as fire and water damage;

vi. training to implement the information security measures; and

vii. monitoring of the security of any portions of the Party's systems that are used in the provision of the services against intrusion.

E. No Confidential State Data received, obtained, or generated by the Party in connection with performance under this Agreement shall be processed, transmitted, stored, or transferred by any means outside the United States, except with the express written permission of the State.

F. Party shall notify the State within twenty-four hours after becoming aware of any unauthorized destruction, loss, alteration, disclosure of, or access to, any State Data.

G. State of Vermont Cybersecurity Standard Update: Party confirms that all products and services provided to or for the use of the State under this Agreement shall be in compliance with State of Vermont Cybersecurity Standard Update in effect at the time of incorporation of this Attachment C into this Agreement. The State of Vermont Cybersecurity Standard Update prohibits the use of certain branded products in State information systems or any vendor system, and a copy is available at: https://digitalservices.vermont.gov/cybersecurity/cybersecurity-standards-and-directives.

H. In addition to the requirements of this Section 12, Party shall comply with any additional requirements regarding the protection of data that may be included in this Agreement or required by law or regulation.

13. **Records Available for Audit:** The Party shall maintain all records pertaining to performance under this Agreement. “Records” means any written or recorded information, regardless of physical form or characteristics, which is produced or acquired by the Party in the performance of this Agreement. Records produced or acquired in a machine-readable electronic format shall be maintained in that format. The records described shall be made available at reasonable times during the period of this Agreement and for three years thereafter or for any period required by law for inspection by any authorized representatives of the State or Federal Government. If any litigation, claim, or audit is started before the expiration of the three-year period, the records shall be retained until all litigation, claims, or audit findings involving the records have been resolved.

14. **Nondiscrimination:**

    A. **Fair Employment Practices and Americans with Disabilities Act:** Party agrees to comply with the requirement of 21 V.S.A. Chapter 5, Subchapter 6, relating to fair employment practices, to the full extent applicable, and shall include this provision in all subcontracts for work performed in Vermont. Party shall also ensure, to the full extent required by the Americans with Disabilities Act of 1990, as amended, that qualified individuals with disabilities receive equitable access to the services, programs, and activities provided by the Party under this Agreement.

    B. **IT Accessibility Standards:** Party acknowledges and agrees that any digital products, services, and content provided under this Agreement, whether supporting State programs or intended for the State's use, must adhere to the State's accessibility standards and guidelines as established by Section 504 of the Rehabilitation Act of 1973 and Title II of the Americans with Disabilities Act of 1990 (28 CFR Part 35) (hereinafter, for purposes of this subsection B, the “Rule”). The Rule requires communication and content on web platforms and mobile applications to meet or exceed specific success criteria and conformance requirements. The Rule applies to websites, software applications, electronic reports and output documentation, and training delivered in electronic formats (including, but not limited to, documents, videos, and webinars), and other digital content. Information concerning the Rule and the State’s Universal Digital Accessibility resources are available on the State’s Communications and Marketing Office website at: https://cmo.vermont.gov.

        i. Party warrants that the software, products, services, or subscriptions provided under this Agreement, whether supporting State programs or intended for the State's use (hereinafter, for purposes of this subsection B, “Products”) comply with the Rule and agrees to defend, indemnify, and hold harmless the State against any claims related to a Product’s non-compliance with the Rule.

        ii. When updates or upgrades are made to the Products available through this Agreement, the Party agrees:

a) to develop functionality that supports accessibility in conformance with the Rule and, if any issues arise due to nonconformance with the Rule, to provide alternative solutions upon request at no additional cost to the State; and

b) to document how the changes will impact or improve the Product's accessibility and usability. This documentation, upon request, must be provided to the State in advance of the update or upgrade, occurring within an agreed timeframe sufficient for the State to review the changes and either approve them or request a remediation plan from the Party.

iii. If agreed-upon updates fail to improve the Product's accessibility or usability as planned, such failure shall be a material breach of this Agreement.

15. **Offset:** The State may offset any sums which the Party owes the State against any sums due the Party under this Agreement; provided, however, that any offset of amounts due the State of Vermont as taxes shall be in accordance with the procedures more specifically provided in 32 V.S.A. § 3113.

16. **Taxes Due to the State:** Party certifies under the pains and penalties of perjury that, as of the date this Agreement is signed, the Party is in good standing with respect to, or in full compliance with, a plan to pay any and all taxes due the State of Vermont.

17. **Taxation of Purchases:** All State purchases must be invoiced tax free. An exemption certificate will be furnished upon request with respect to otherwise taxable items.

18. **Child Support:** (Only applicable if the Party is a natural person, not a corporation or partnership.) Party states that, as of the date this Agreement is signed, Party is not under an obligation to pay child support or is in good standing with respect to or in full compliance with a plan to pay any and all child support payable under a support order. Party makes this statement with regard to support owed to any and all children residing in Vermont. In addition, if the Party is a resident of Vermont, Party makes this statement with regard to support owed to any and all children residing in any other state or territory of the United States.

19. Sub-Agreements: Party shall not assign, subcontract, or subgrant the performance of this Agreement or any portion thereof to any other Party without the prior written approval of the State. Party shall be responsible and liable to the State for all acts or omissions of subcontractors and any other person performing work under this Agreement pursuant to an agreement with Party or any subcontractor.

    In the case this Agreement is a contract with a total cost in excess of $250,000, the Party shall provide to the State a list of all proposed subcontractors and subcontractors' subcontractors, together with the identity of those subcontractors' workers compensation insurance providers, and additional required or requested information, as applicable, in accordance with Section 32 of The Vermont

Recovery and Reinvestment Act of 2009 (Act No. 54), as amended by Section 17 of Act No. 142 (2010) and by Section 6 of Act No. 50 (2011).

Party shall include the following provisions of this Attachment C in all subcontracts for work performed solely for the State of Vermont and subcontracts for work performed in the State of Vermont: Section 10 ("False Claims Act"); Section 11 ("Whistleblower Protections"); Section 12 ("Confidentiality and Protection of State Information"); Section 14 ("Fair Employment Practices and Americans with Disabilities Act"); Section 16 ("Taxes Due the State"); Section 18 ("Child Support"); Section 20 ("No Gifts or Gratuities"); Section 22 ("Certification Regarding Debarment"); Section 30 ("State Facilities"); and Section 32.A ("Certification Regarding Use of State Funds").

20. **No Gifts or Gratuities:** Party shall not give title or possession of anything of substantial value (including property, currency, travel, and/or education programs) to any officer or employee of the State during the term of this Agreement.
21. **Regulation of Hydrofluorocarbons:** Party confirms that all products provided to or for the use of the State under this Agreement shall not contain hydrofluorocarbons, as prohibited under 10 V.S.A. § 586.
22. **Certification Regarding Debarment:** Party certifies under pains and penalties of perjury that, as of the date that this Agreement is signed, neither Party nor Party's principals (officers, directors, owners, or partners) are presently debarred, suspended, proposed for debarment, declared ineligible, or excluded from participation in Federal programs, or programs supported in whole or in part by Federal funds. Party further certifies under pains and penalties of perjury that, as of the date that this Agreement is signed, Party is not presently debarred, suspended, nor named on the State's Debarment List at: https://bgs.vermont.gov/purchasing-contracting/debarment.
23. **Conflict of Interest:**
    A. **Organizational Conflict of Interest (OCOI):** An OCOI arises when the Party as a business entity has an interest (for example, customers, partners, contracts) that could undermine, or reasonably be perceived to undermine, its faithful and unbiased performance of this Agreement.
    B. **Personal Conflict of Interest (PCOI):** A PCOI arises when an interest held by an agent or employee of the Party could undermine, or reasonably be perceived to undermine, the faithful and unbiased performance of this Agreement.
    C. **Requirements:** Party shall not have PCOIs or OCOI's with respect to this Agreement nor with respect to any other agreement(s) it may hold with the State. To ensure that PCOIs and OCOIs do not exist, the Party shall:
        i. Conduct an internal review of its current affiliations and activities and employees and agents and identify actual, potential, or reasonably perceived PCOIs or OCOIs relative to this Agreement.

ii. Maintain effective oversight to verify compliance with PCOI and OCOI prohibitions.

iii. Prevent PCOIs, including not assigning or allowing an employee to perform any role or task under this Agreement for which the Party has identified a PCOI.

iv. Inform employees and agents of their obligation to disclose PCOIs and to comply with the confidentiality provisions and any non-disclosure agreement required by this Agreement.

v. Make an immediate and full disclosure, in writing, to the State point of contact for this Agreement of any actual or potential PCOI or OCOI or the existence of any facts that may cause a reasonably prudent person to perceive a PCOI or OCOI with respect to this Agreement.

D. **Remedies:**

i. In the event the State determines that a PCOI or OCOI exists, the State will discuss the matter with the Party to determine whether the PCOI or OCOI can be mitigated to the State's satisfaction.

ii. If the State does not deem mitigation practicable, the State may terminate all or a portion of this Agreement for default or pursue such other remedies as may be permitted by law or this Agreement.

iii. If Party fails to disclose facts pertaining to the existence of a potential or actual PCOI or misrepresents relevant information to the State, the State may terminate this Agreement for default or pursue such other remedies as may be permitted by law or this Agreement.

24. **Vermont Public Records Act:** Party acknowledges and agrees that this Agreement, any and all information obtained by the State from the Party in connection with this Agreement, and any obligations of the State to maintain the confidentiality of information are subject to the State of Vermont Access to Public Records Act, 1 V.S.A. § 315 et seq.

25. **Force Majeure:** Neither the State nor the Party shall be liable to the other for any failure or delay of performance of any obligations under this Agreement to the extent such failure or delay shall have been wholly or principally caused by acts or events beyond its reasonable control rendering performance illegal or impossible (excluding strikes or lockouts) ("Force Majeure"). Where Force Majeure is asserted, the nonperforming party must prove that it made all reasonable efforts to remove, eliminate or minimize such cause of delay or damages, diligently pursued performance of its obligations under this Agreement, substantially fulfilled all non-excused obligations, and timely notified the other party of the likelihood or actual occurrence of an event described in this paragraph.

26. **Marketing:** Party shall not use the State's logo or otherwise refer to the State in any publicity materials, information pamphlets, press releases, research reports,

advertising, sales promotions, trade shows, or marketing materials or similar communications to third parties except with the prior written consent of the State.

27. **Termination:**

    A. **Non-Appropriation:** If this Agreement extends into more than one fiscal year of the State (July 1 to June 30), and if appropriations are insufficient to support this Agreement, the State may cancel this Agreement at the end of the fiscal year, or otherwise upon the expiration of existing appropriation authority. In the case that this Agreement is funded in whole or in part by Federal funds, and in the event Federal funds become unavailable or reduced, the State may suspend or cancel this Agreement immediately, and the State shall have no obligation to pay Party from State revenues.

    B. **Termination for Cause:** Either party may terminate this Agreement if a party materially breaches its obligations under this Agreement, and such breach is not cured within thirty (30) days after delivery of the non-breaching party's notice or such longer time as the non-breaching party may specify in the notice.

    C. **Termination Assistance:** Upon nearing the end of the final term or termination of this Agreement, without respect to cause, the Party shall take all reasonable and prudent measures to facilitate any transition required by the State. All State property, tangible and intangible, shall be returned to the State upon demand at no additional cost to the State in a format acceptable to the State.

28. **Continuity of Performance:** In the event of a dispute between the Party and the State, each party will continue to perform its obligations under this Agreement during the resolution of the dispute until this Agreement is terminated in accordance with its terms.

29. **No Implied Waiver of Remedies:** Either party's delay or failure to exercise any right, power, or remedy under this Agreement shall not impair any such right, power, or remedy, or be construed as a waiver of any such right, power, or remedy. All waivers must be in writing.

30. **State Facilities:** If the State makes space available to the Party in any State facility during the term of this Agreement for purposes of the Party's performance under this Agreement, the Party shall only use the space in accordance with all policies and procedures governing access to, and use of, State facilities, which shall be made available upon request. State facilities will be made available to Party on an "AS IS, WHERE IS" basis, with no warranties whatsoever.

31. **Requirements Pertaining Only to Federal Grants and Subrecipient Agreements:** If this Agreement is a grant that is funded in whole or in part by Federal funds:

    A. **Requirement to Have a Single Audit:** The Subrecipient will complete the Subrecipient Annual Report annually within 45 days after its fiscal year end, informing the State of Vermont whether or not a Single Audit is required for

the prior fiscal year. If a Single Audit is required, the Subrecipient will submit a copy of the audit report to the Federal Audit Clearinghouse within nine months. If a single audit is not required, only the Subrecipient Annual Report is required. A Single Audit is required if the subrecipient expends $1,000,000 or more in Federal assistance during its fiscal year and must be conducted in accordance with 2 CFR Chapter I, Chapter II, Part 200, Subpart F. The Subrecipient Annual Report is required to be submitted within 45 days, whether or not a Single Audit is required.

B. **Internal Controls:** In accordance with 2 CFR Part II, §200.303, the Party must establish and maintain effective internal control over the Federal award to provide reasonable assurance that the Party is managing the Federal award in compliance with Federal statutes, regulations, and the terms and conditions of the award. These internal controls should be in compliance with guidance in "Standards for Internal Control in the Federal Government" issued by the Comptroller General of the United States and the "Internal Control Integrated Framework" issued by the Committee of Sponsoring Organizations of the Treadway Commission.

C. **Mandatory Disclosures:** In accordance with 2 CFR Part II, §200.113, Party must disclose, in a timely manner, in writing to the State, all violations of Federal criminal law involving fraud, bribery, or gratuity violations potentially affecting the Federal award. Failure to make required disclosures may result in the imposition of sanctions which may include disallowance of costs incurred, withholding of payments, termination of the Agreement, suspension/debarment, etc.

32. Requirements Pertaining Only to State-Funded Grants:

A. **Certification Regarding Use of State Funds:** If Party is an employer and this Agreement is a State-funded grant in excess of $1,000, Party certifies that none of these State funds will be used to interfere with or restrain the exercise of Party's employee's rights with respect to unionization.

B. **Good Standing Certification (Act 154 of 2016):** If this Agreement is a State-funded grant, Party hereby represents: (i) that it has signed and provided to the State the form prescribed by the Secretary of Administration for purposes of certifying that it is in good standing (as provided in Section 13(a)(2) of Act 154) with the Agency of Natural Resources and the Agency of Agriculture, Food and Markets, or otherwise explaining the circumstances surrounding the inability to so certify; and (ii) that it will comply with the requirements stated therein.

(End of Standard State Provisions)

USDOT Standard Title VI Nondiscrimination Assurances Appendix A, E

Assurance Appendix A

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

1. **Compliance with Regulations:** The contractor (hereinafter includes consultants) will comply with the Acts and the Regulations relative to Nondiscrimination in Federally-assisted programs of the U.S. Department of Transportation, Federal Highway Administration (FHWA), as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.

2. **Nondiscrimination:** The contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, national origin, sex, age, disability, income-level, or LEP in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor will not participate directly or indirectly in the discrimination prohibited by the Acts and the Regulations as set forth in Appendix E, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR Part 21.

3. **Solicitations for Subcontracts, Including Procurements of Materials and Equipment:** In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the contractor of the contractor's obligations under this contract and the Acts and the Regulations relative to Non-discrimination on the grounds of race, color, national origin, sex, age, disability, income-level, or LEP.

4. **Information and Reports:** The contractor will provide all information and reports required by the Acts, the Regulations and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the FHWA to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the contractor will so certify to the Recipient or the FHWA, as appropriate, and will set forth what efforts it has made to obtain the information.

5. **Sanctions for Noncompliance:** In the event of a contractor's noncompliance with the Non-discrimination provisions of this contract, the Recipient will impose such contract sanctions as it or the FHWA may determine to be appropriate, including, but not limited to:

    a. withholding payments to the contractor under the contract until the contractor complies; and/or
    b. cancelling, terminating, or suspending a contract, in whole or in part.

6. **Incorporation of Provisions:** The contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The contractor will take action with respect to any subcontract or procurement

as the Recipient or the FHWA may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the contractor may request the Recipient to enter into any litigation to protect the interests of the Recipient. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

Assurance Appendix E

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d *et seq*., 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin), as implemented by 49 C.F.R. § 21.1 et seq. and 49 C.F.R. § 303;

- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 *et seq*.), (prohibits discrimination on the basis of sex);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 *et seq*.), as amended, (prohibits discrimination on the basis of disability); and 49 CFR Part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 *et seq*.), (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987, (102 Stat. 28.), ("*….which restore[d] the broad scope of coverage and to clarify the application of title IX of the Education Amendments of 1972, section 504 of the Rehabilitation Act of 1973, the Age Discrimination Act of 1975, and title VI of the Civil Rights Act of 1964*.");
- Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131 -- 12189) as implemented by Department of Justice regulations at 28 C.F.R. parts 35 and 36, and Department of Transportation regulations at 49 C.F.R. parts 37 and 38;
- The Federal Aviation Administration's Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures non-discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 et seq), as implemented by 49 C.F.R. § 25.1 et seq.

CA-26

STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY
CONSTRUCTION CONTRACT SPECIFICATIONS
(EXECUTIVE ORDER 11246)

1. As used in these specifications:

   a. "Covered Area" means the geographical area described in the solicitation from which this contract resulted.

   b. "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority.

   c. "Employer Identification Number" means the Federal Social Security Number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.

   A Minority Group Member is:

   ...American Indian or Alaskan Native
   consisting of all persons having origins in any of the original people of North American and who maintain cultural identification through tribal affiliations or community recognition.

   ...Black
   consisting of all persons having origins in any of the Black racial groups of Africa.

   ...Asian or Pacific Islander
   consisting of all persons having origins in any of the original people of the Far East, Southeast Asia, the Indian Sub-Continent or the Pacific Islands. This area includes China, India, Japan, Korea, the Philippines and Samoa.

   ...Hispanic
   consisting of all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish culture or origin.

   ...Cape Verde an
   consisting of all persons having origins in the Cape Verde Islands.

   ...Portuguese
   consisting of all persons of Portuguese, Brazilian or other Portuguese culture or origin.

2. Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of $10,000.00 the provisions of these specifications and the notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.

3. If the Contractor is participating (pursuant to 41 CFR 60-4.5) in the Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or subcontract participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. the overall good faith performance by other Contractors or subcontractors toward a goal in an approved Plan does not excuse any covered Contractor's or subcontractor's failure to make good faith efforts to achieve the Plan goals and timetables.

4. The Contractor shall implement the specific affirmative action standards provided in Paragraphs 7a through p of these specifications. The goals set for the Contractor in the solicitation from which this contract resulted are expressed as percentages in the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. The Contractor is expected to make substantially uniform progress toward its goals in each craft during the period specified.

5. Neither the provisions of any collective bargaining agreement nor the failure by a union with whom the Contractor has a collective bargaining agreement to refer either minority or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.

6. In order for the non-working training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

7. The Contractor shall take specific affirmative actions to ensure equal employment opportunity . The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully and shall implement affirmative action steps at least as extensive as the following:

    a. Ensure and maintain a working environment free of harassment, intimidation and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment with specific attention to minority or female individuals working at such sites or in such facilities.

    b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available and maintain a record of the organizations' responses.

c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefor, along with whatever additional actions the Contractor may have taken.

d. Provide immediate written notifications to the Regional Director when the union or unions, with which the Contractor has a collective bargaining agreement, have not referred to the Contractor a minority person or woman sent by the Contractor or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under Paragraph 7b above.

f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction is performed.

g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with on-site supervisory personnel such as Superintendents, Supervisors etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, and providing written notification to, and discussing the Contractor's EEO policy with, other Contractors and subcontractors with whom the Contractor anticipates doing business.

i. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notifications to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a Contractor's workforce.

k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.

l. Conduct, at least annually, an inventory and evaluation of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment-related activities to ensure that the EEO policy and Contractor's obligations under these specifications are being carried out.

n. Ensure that all facilities and company activities are non-segregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

p. Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (Paragraph 7a through p). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the Contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under Paragraph 7a through p of these Specifications provided that the Contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, reflected in the Contractor's minority and female workforce participation , makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's, and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's non-compliance.

9. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if a specific minority group of women is under-utilized).

10. The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex or national origin.

11. The Contractor shall not enter into any subcontract with any person for firm debarred from Government contracts pursuant to Executive Order 11246.

12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, terminations and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

13. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in Paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.

14. The Contractor shall designate a responsible official to monitor all employment-related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application or requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

NOTICE OF REQUIREMENTS FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY (EXECUTIVE ORDER 11246)

1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Specifications" set forth herein.

2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Economic Areas	Timetables	Goals for Minority participation for each trade (%)	Goals for Female Participation in each trade (%)
Entire State of Vermont:			
Vermont 003 Burlington, VT Non-SMSA Counties NH Coos; NH Grafton: NH Sullivan; VT Addison; VT Caledonia; VT Chitten- den; VT Essex; VT Frank- lin; VT Grand Isle; VT Lamoille; VT Orange; VT Orleans; VT Rutland; VT Washington; VT Windsor	Indefinite	0.8	6.9
Connecticut (Mass) 006 Hartford - New Haven Springfield, CT-MA Non-SMSA Counties CT Litchfield; CT Windham; MA Franklin; NH Cheshire; VT Windham	Indefinite	5.9	
New York 007 Albany - Schnec- tady - Troy, NY Non-SMSA Counties NY Clinton; NY Columbia; NY Essex; NY Fulton; NY Greene; NY Hamilton; NY Sohoharie; NY Warren; NY Washington; VT Bennington	Indefinite	2.6	

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the Contractor also is subject to the goals for both its federally involved and non-federally involved construction.

The Contractor's compliance with the Executive Order and the regulation in CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3 (a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract and in each trade, and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within ten working days of award of any construction subcontract in excess of $10,000.00 at any tier for construction work under the contract resulting from this solicitation. The notifications shall list the name, address and telephone number of the subcontractor; employer identification number of the subcontractor; estimated dollar amount of the subcontract; and the geographical area in which the subcontract is to be performed.

4. As used in this Notice, and in the contract resulting from this solicitation, the "covered area" is (insert description of the geographical areas where the contract is to be performed giving the state, county and city, if any)

STATE OF VERMONT
AGENCY OF TRANSPORTATION

November, 1985
CA-109

CONTRACTOR'S EEO CERTIFICATION FORM

Certification with regard to the Performance of Previous Contracts of Subcontracts subject to the Equal Opportunity Clause and the filing of Required Reports.

The bidder ____, proposed subcontractor _____, hereby certifies that he/she has _____, has not _____, participated in a previous contract or subcontract subject to the equal opportunity clause, as required by Executive Orders 10925, 11114, or 11246 as amended, and that he/she has _____, has not _____, filed with the Joint Reporting Committee, the Director of the Office of Federal Contract Compliance, a Federal Government contracting or administering agency, or the President's Committee on Equal Employment Opportunity, all reports due under the applicable filing requirements.

_____	_____	_____
Company	By	Title

NOTE: The above certification is required by the Equal Employment Opportunity regulations of the Secretary of Labor (41 CFR 60-1.7(b) (1)), and must be submitted by bidders and proposed subcontractors only in connection with contracts and subcontracts which are subject to the equal opportunity clause. Contracts and subcontracts which are exempt from the equal opportunity clause are set forth in 41 CFR 60-1.5 (Generally only contracts or subcontracts of $10,000 or under are exempt.) Currently, Standard Form 100 (EEO-1) is the only report required by the Executive Orders or their implementing regulations.

Proposed prime contractors and subcontractors who have participated in a previous contract or subcontract subject to the Executive Orders and have not filed the required reports should note that 41 CFR 60-1.7 (b) (1) prevents the award of contracts and subcontracts unless such contractor submits a report covering the delinquent period or such other period specified by the Federal Highway Administration, or by the Director, Office of Federal Contract Compliance, U.S. Department of Labor.

STATE OF VERMONT
AGENCY OF TRANSPORTATION
CERTIFICATE OF COMPLIANCE

For a bid/proposal to be considered valid, this form must be completed in its entirety, executed by a duly authorized representative of the bidder, and submitted as part of the response to the proposal.

A. **NON-COLLUSION:** The undersigned certifies under the penalties of perjury under the laws of the State of Vermont and the United States that it has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action, in restraint of free competitive bidding in connection with the submitted bid/proposal.

B. **DEBARMENT:** The undersigned certifies under the penalties of perjury under the laws of the State of Vermont and the United States that it:

1. Is not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency; and

2. Has not within a three-year period preceding this bid/proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property; and

3. Is not presently indicted for, or otherwise criminally or civilly charged by a governmental entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph 2 above; and

4. Has not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

5. **Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this bid/proposal, including whom it applies and dates of action. Exceptions will not necessarily result in denial of award but will be considered in determining bidder eligibility and/or responsibility. Providing false information may result in criminal prosecution or administration sanctions.**

C. **BYRD ANTI-LOBBYING:** The undersigned hereby certifies, by signing and submitting this bid/proposal, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or

employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

3. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction as required by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

4. The undersigned also agrees by submitting its bid/proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

E. **WORKER CLASSIFICATION COMPLIANCE REQUIREMENT:** In accordance with Section 32 of The Vermont Recovery and Reinvestment Act of 2009 (Act No. 54), the following provisions and requirements apply to the undersigned when the total project costs exceed $250,000.00.

Bidder is required to self-report the following information relating to past violations, convictions, suspensions, and any other information related to past performance and likely compliance with proper coding and classification of employees. The Agency of Transportation is requiring information on any incidents that occurred in the previous 12 months. Attach additional pages as necessary. **If not applicable, please enter 'Not Applicable' or 'N/A' below.**

Summary of Detailed Information	Date of Notification	Outcome

Bidder hereby certifies that the company/individual is in compliance with the requirements as detailed in Section 32 of Act 54(2009), as amended by Section 17 of Act 142 (2010) and further amended by Section 6 of Act 50 (2011).

Subcontractor Reporting.

A. **Contracts for Services.** The undersigned hereby acknowledges and agrees that if it is a successful bidder, prior to execution of any contract resulting from this solicitation, the undersigned will provide to the State a list of all proposed subcontractors and subcontractors' subcontractors, together with the identity of those subcontractors' workers compensation insurance providers, and additional required or requested information, as applicable, in accordance with Section 32 of The Vermont Recovery and Reinvestment Act of 2009 (Act No. 54), the undersigned will provide any update of such list to the State as additional subcontractors are hired. The undersigned further acknowledges and agrees that the failure to submit subcontractor reporting in accordance with Section 32 of The Vermont Recovery and Reinvestment Act of 2009 (Act No. 54) will constitute non-compliance and may result in cancellation of contract and/or restriction from bidding on future state contracts.

B. **Construction Contracts**. The Contractor is required to provide a list of subcontractors on the job along with lists of subcontractor's subcontractors and by whom those subcontractors are insured for workers' compensation purposes. This is not a requirement for subcontractor's providing supplies only and no labor to the overall contract or project.

   Additionally, the Contractor shall collect and retain evidence of subcontractors' workers' compensation insurance, such as the ACORD insurance coverage summary sheet. Agency of Transportation will periodically verify the Contractor's compliance.

This information must be updated as necessary and provided to the State as additional subcontractors are hired. If none, please enter 'Not Applicable' or 'N/A' below.

Sub-Contractor	Insured By	Sub-Contractor's Sub	Insured By

The undersigned further acknowledges and agrees that the failure to submit subcontractor reporting in accordance with Section 32 of The Vermont Recovery and Reinvestment Act of 2009 (Act No. 54), and as amended will constitute non-compliance and may result in cancellation of contract and/or restriction from bidding on future state contracts.

As a duly authorized representative of the bidder, I hereby certify that the information above is true and correct.

Date: _____

Duly Authorized Signature: _____

Name and Title of Person Signing:
(Duly Authorized Signer) _____

Company Name: _____

Company Address: _____

_____

E-Mail Address: _____

Minimum Labor and Truck Rates
Under Title 19, Vermont Statutes
Annotated Section 18, as amended

STATE OF VERMONT
AGENCY OF TRANSPORTATION
MONTPELIER

FOR OTHER THAN FEDERAL-AID. In accordance with the provisions of Title 19, VSA, Section 18, the following minimum rate for labor shall apply to this project:

The minimum wage for common labor will not be less than the State or Federal minimum wage, whichever is higher.

ON FEDERAL-AID PROJECTS ONLY.

The minimum rates for labor for Federal-Aid Projects shall be those set in the Wage Determination Decision of the U.S. Secretary of Labor for each project in accordance with the Federal-Aid Highway Act of 1956. When such wage rates are required they shall be included in the proposal. In the event these rates are lower than the Vermont rates, the Vermont rates shall prevail.

TRUCK RATES. In accordance with the provisions of Title 19, VSA, Section 18, the following minimum rates for trucks shall apply to this project:

Trucks, not Including Driver Water Level Body Capacity	Minimum Rates Per YD per Hr.
Trucks, Equipment Loaded	$1.65

STATE OF VERMONT

AGENCY OF TRANSPORTATION

MONTPELIER

COMMODITY INDEX PRICES.

(a) Price Adjustment, Asphalt. When Item 690.0300 is included in the Contract, asphalt price adjustment will be performed according to the requirements of Section 690 for all asphalt and emulsified asphalt incorporated into the work, including that incorporated under Special Specification pay items.

(b) Price Adjustment, Fuel. When Item 690.0400 is included in the Contract, fuel price adjustment will be performed according to the requirements of Section 690 for the pay items specified therein, and for any pay items identified in the Special Provisions as being eligible for fuel price adjustment.

(c) Commodity Index Prices. The Index Prices for asphalt and fuel for this Contract are specified in Table 1.

TABLE 1 – COMMODITY INDEX PRICES FOR THIS CONTRACT

	Asphalt (dollars/ton)	Fuel (dollars/gallon)
Index Price	$730.00	$6.00

VERMONT AGENCY OF TRANSPORTATION
PROPOSAL SCHEDULE OF PAY ITEMS

LETTING DATE: 05/22/2026 11:00 AM

CONTRACT ID:C03275
PROJECT(S):NORTHFIELD BF 0241(58)

ITEM NO.	DESCRIPTION	QUANTITY	UNITS
ITEMS COMMON TO ALL ALTERNATES			
199.8101	INCENTIVE OR DISINCENTIVE (N.A.B.I.)	225,000.000	DL
201.1000	CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS	1.000	LS
203.1500	COMMON EXCAVATION	1,200.000	CY
203.1600	SOLID ROCK EXCAVATION	134.000	CY
203.1700	UNCLASSIFIED EXCAVATION	15.000	CY
203.2700	UNCLASSIFIED CHANNEL EXCAVATION	1,950.000	CY
204.2000	TRENCH EXCAVATION OF EARTH	1,000.000	CY
204.2100	TRENCH EXCAVATION OF ROCK	1.000	CY
204.2200	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	1.000	CY
204.2500	STRUCTURE EXCAVATION	940.000	CY
204.3000	GRANULAR BACKFILL FOR STRUCTURES	760.000	CY
210.1000	COARSE-MILLING, BITUMINOUS PAVEMENT	230.000	SY
225.0300002	SOLDIER PILES FOR SOLDIER PILE AND LAGGING WALL	376.000	LF
225.0300003	DRILLED HOLE IN EARTH FOR SOLDIER PILE AND LAGGING WALL	306.000	LF
225.0300004	DRILLED HOLE IN ROCK FOR SOLDIER PILE AND LAGGING WALL	70.000	LF
225.0300005	TIMBER LAGGING FOR SOLDIER PILE AND LAGGING WALL	425.000	SF
225.0300006	CONCRETE FACING FOR SOLDIER PILE AND LAGGING WALL	591.000	SF
225.0500	RETAINING WALL, CONCRETE (WINGWALL 1)	1.000	LS
225.0500	RETAINING WALL, CONCRETE (WINGWALL 4)	1.000	LS
230.0010	DISPOSAL OF CONTAMINATED MATERIALS (N.A.B.I.) ((PCF)(N.A.B.I.))	145,792.000	DL
230.0010	DISPOSAL OF CONTAMINATED MATERIALS (N.A.B.I.) (DEVELOPMENT SOIL)	538,624.000	DL
230.0020	REUSE OF CONTAMINATED MATERIALS	500.000	CY
230.0030	PROJECT OPERATIONS PLAN	1.000	LS
230.0040	PROJECT OPERATIONS COMPLETION REPORT	1.000	LS
230.0040	PROJECT OPERATIONS COMPLETION REPORT (EARTH CRUSHING FOR DISPOSAL ACCEPTANCE)	1.000	LS
230.0050	ENVIRONMENTAL OVERSIGHT ((NON-PCF))	240.000	HR
230.0050	ENVIRONMENTAL OVERSIGHT ((PCF))	240.000	HR
230.0060	MANAGEMENT OF CONTAMINATED GROUNDWATER (PCF)	1.000	LS
240.0100	TEMPORARY ACCESS ROAD	1.000	LS
240.0200	TEMPORARY CAUSEWAY	1.000	LS
250.0100	CONSTRUCTION VIBRATION AND CRACK MONITORING	1.000	LS
301.3500	SUBBASE OF DENSE GRADED CRUSHED STONE	848.000	CY
404.1100	TACK COAT, EMULSIFIED ASPHALT	100.000	CWT
406.0230	BITUMINOUS CONCRETE PAVEMENT, TYPE IIS, QA TIER III	155.000	TON
406.0330	BITUMINOUS CONCRETE PAVEMENT, TYPE IIIS, QA TIER III	136.000	TON
406.0430	BITUMINOUS CONCRETE PAVEMENT, TYPE IVS, QA TIER III	220.000	TON
406.3400	BITUMINOUS CONCRETE PAVEMENT, NON-PAVER PLACED, TYPE IVS	310.000	SY
406.9100	PAY ADJUSTMENT, BCP, MIXTURE PROPERTIES (N.A.B.I.)	1.000	DL
406.9200	PAY ADJUSTMENT, BCP, MAT DENSITY (N.A.B.I.)	1.000	DL
501.3700	PERFORMANCE-BASED CONCRETE, CLASS PCD	355.000	CY
501.3800	PERFORMANCE-BASED CONCRETE, CLASS PCS	145.000	CY
505.1650	STEEL PILING, HP 12 × 84	364.000	LF
506.5500	STRUCTURAL STEEL, PLATE GIRDER	335,100.000	LB
507.1100	REINFORCING STEEL, LEVEL I	7,800.000	LB

VERMONT AGENCY OF TRANSPORTATION
PROPOSAL SCHEDULE OF PAY ITEMS

LETTING DATE: 05/22/2026 11:00 AM

CONTRACT ID:C03275

PROJECT(S):NORTHFIELD BF 0241(58)

ITEM NO.	DESCRIPTION	QUANTITY	UNITS
507.1200	REINFORCING STEEL, LEVEL II	96,300.000	LB
508.1500	SHEAR CONNECTORS (1974 - 7/8 X 7IN)	1.000	LS
509.1500	CONCRETE BRIDGE DECK SURFACE PREPARATION	6,144.000	SF
510.4000	PRESTRESSED CONCRETE DECK PANELS	5,568.000	SF
514.1000	WATER REPELLENT, SILANE	106.000	GAL
516.1000	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	76.000	LF
524.1100	JOINT SEALER, HOT POURED	76.000	LF
525.5200	BRIDGE RAILING, TEXAS RAIL WITH WINDOWS	329.000	LF
529.2000	PARTIAL REMOVAL OF STRUCTURE	1.000	EACH
541.2800	CONCRETE, CLASS SCC	79.000	CY
541.4500	FLOWABLE FILL	2.000	CY
546.1000	PRE-EXCAVATION OF ABUTMENT PILES, EARTH	224.000	LF
546.2000	PRE-EXCAVATION OF ABUTMENT PILES, ROCK	98.000	LF
546.3000	PRE-EXCAVATION FOR PILES OBSTRUCTION DRILLING AND REMOVAL	30.000	LF
546.4000	FURNISHING EQUIPMENT FOR PRE-EXCAVATION FOR PILES	1.000	LS
601.0920	24 INCH CPEP	111.000	LF
601.2625	30 INCH CPEP(SL)	70.000	LF
601.2630	36 INCH CPEP(SL)	63.000	LF
601.7025	30 INCH CPEPES	1.000	EACH
601.7030	36 INCH CPEPES	1.000	EACH
604.1800	PRECAST REINFORCED CONCRETE DI WITH CAST IRON GRATE	2.000	EACH
604.2000	PRECAST REINFORCED CONCRETE CATCH BASIN WITH CAST IRON GRATE	5.000	EACH
604.4000	CHANGING ELEVATION OF DIS, CATCH BASINS, OR MANHOLES	2.000	EACH
604.4200	CHANGING ELEVATION OF SEWER MANHOLES	1.000	EACH
604.4504	CAST IRON GRATE WITH FRAME, TYPE D	3.000	EACH
605.1006	UNDERDRAIN PIPE, 6 INCH	156.000	LF
613.0601	E-STONE FILL, TYPE I	180.000	CY
613.0604	E-STONE FILL, TYPE IV	240.000	CY
613.1004	STONE FILL, TYPE IV	840.000	CY
614.1000	TEMPORARY RELOCATION OF STREAM	1.000	EACH
616.2100	VERTICAL GRANITE CURB	280.000	LF
616.4000	REMOVING AND RESETTING CURB	33.000	LF
616.4100	REMOVAL OF EXISTING CURB	37.000	LF
618.1005	PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH	170.000	SY
618.1008	PORTLAND CEMENT CONCRETE SIDEWALK, 8 INCH	61.000	SY
618.3000	DETECTABLE WARNING SURFACE	25.000	SF
620.1006	CHAIN-LINK FENCE, 6 FOOT	70.000	LF
620.5500	REMOVAL OF EXISTING FENCE	20.000	LF
621.0100	REMOVAL OF GUARDRAIL	100.000	LF
625.2004	SLEEVES FOR UTILITIES, PVC, 4 INCH	20.000	LF
625.3000	SLEEVES FOR UTILITIES, STEEL (32 INCH)	45.000	LF
625.4000	CONCRETE ENCASED CONDUIT	118.000	LF
625.5000	DIRECT BURIAL CONDUIT	363.000	LF
625.6000	WIRED CONDUIT	481.000	LF
625.7010	JUNCTION BOX	2.000	EACH

VERMONT AGENCY OF TRANSPORTATION
PROPOSAL SCHEDULE OF PAY ITEMS

LETTING DATE: 05/22/2026 11:00 AM

CONTRACT ID:C03275

PROJECT(S):NORTHFIELD BF 0241(58)

ITEM NO.	DESCRIPTION	QUANTITY	UNITS
629.1700002	WATER MAIN ON BRIDGE, ALL-INCLUSIVE	1.000	LS
629.2800	ADJUST ELEVATION OF VALVE BOX	7.000	EACH
629.4300	TRANSFER TO NEW SYSTEM, WATER, ALL-INCLUSIVE	1.000	LS
630.1500	FLAGGERS	1,500.000	HR
631.1000	FIELD OFFICE, ENGINEER'S	1.000	LS
631.1600	TESTING EQUIPMENT, CONCRETE	1.000	LS
631.1700	TESTING EQUIPMENT, BITUMINOUS	1.000	LS
631.2600	FIELD OFFICE COMMUNICATIONS (N.A.B.I.)	3,000.000	DL
632.1000	RAILROAD FLAGGERS (N.A.B.I.)	14,000.000	DL
633.1000	CPM SCHEDULE	14.000	EACH
634.1000	EMPLOYEE TRAINEESHIP	520.000	HR
635.1100	MOBILIZATION/DEMOBILIZATION	1.000	LS
641.1100	TRAFFIC CONTROL, ALL-INCLUSIVE	1.000	LS
641.1200	MAINTENANCE OF PEDESTRIAN TRAFFIC	1.000	LS
641.1500	PORTABLE CHANGEABLE MESSAGE SIGN	3.000	EACH
646.4030	DURABLE 4 INCH WHITE LINE, EPOXY PAINT	1,650.000	LF
646.4130	DURABLE 4 INCH YELLOW LINE, EPOXY PAINT	1,120.000	LF
646.4230	DURABLE 6 INCH WHITE LINE, EPOXY PAINT	1,280.000	LF
646.4930	DURABLE LETTER OR SYMBOL, EPOXY PAINT	12.000	EACH
646.5020	DURABLE CROSSWALK MARKING, THERMOPLASTIC	80.000	LF
649.3100	GEOTEXTILE UNDER STONE FILL	685.000	SY
651.1500	TURF ESTABLISHMENT, GENERAL SEED	403.000	SY
651.1600	TURF ESTABLISHMENT, SPECIALTY SEED	1,477.000	SY
651.3500	TOPSOIL	45.000	CY
651.4000	GRUBBING MATERIAL	510.000	SY
653.0100	EPSC PLAN	1.000	LS
653.0200	MONITORING EPSC PLAN	80.000	HR
653.0300	MAINTENANCE OF EPSC PLAN (N.A.B.I.)	3,000.000	DL
653.1000	HAY MULCH	1.000	TON
653.2001	ROLLED EROSION CONTROL PRODUCT, TYPE I	282.000	SY
653.3500	STABILIZED CONSTRUCTION ENTRANCE	170.000	CY
653.4002	INLET PROTECTION DEVICE, TYPE II	10.000	EACH
653.4500	FILTER BAG	3.000	EACH
653.4702	SILT FENCE, TYPE II	260.000	LF
653.5000	BARRIER FENCE	600.000	LF
656.3002	DECIDUOUS TREES, MEDIUM	4.000	EACH
656.3500	DECIDUOUS SHRUBS	80.000	EACH
656.6500	LANDSCAPE WATERING	11.000	MGAL
656.8000	LANDSCAPE BACKFILL, TRUCK MEASUREMENT	16.000	CY
656.8500	TREE PROTECTION	1.000	LS
675.2000	TRAFFIC SIGN, FLAT SHEET ALUMINUM	47.000	SF
675.3410	SQUARE TUBE SIGN POST AND ANCHOR	108.000	LF
675.4300	FOUNDATION FOR TUBULAR STEEL POST	2.000	EACH
675.5000	SIGN REMOVAL, FLAT SHEET ALUMINUM	1.000	EACH
675.6000	RESETTING SIGNS	4.000	EACH

VERMONT AGENCY OF TRANSPORTATION
PROPOSAL SCHEDULE OF PAY ITEMS

LETTING DATE: 05/22/2026 11:00 AM

CONTRACT ID:C03275

PROJECT(S):NORTHFIELD BF 0241(58)

ITEM NO.	DESCRIPTION	QUANTITY	UNITS
675.6000002	REMOVE AND RESET PRIVATE SIGN ASSEMBLY, LIGHTED	1.000	EACH
676.1000	DELINEATOR WITH STEEL POST	4.000	EACH
679.2400	REMOVE STREET LIGHT ASSEMBLY	4.000	EACH
679.2500	REMOVE AND RESET LIGHT POLE (WESCO)	1.000	EACH
679.4600001	ORNAMENTAL STREET LIGHT ASSEMBLY	6.000	EACH
679.4600002	ORNAMENTAL STREET LIGHT FOUNDATION	6.000	EACH
690.0300	PRICE ADJUSTMENT, ASPHALT (N.A.B.I.)	1.000	DL