SOIL AND GROUNDWATER MANAGEMENT PLAN

Revised July 12, 2019
Eversource Seacoast Reliability Project
Gundalow Landing Newington to Portsmouth Substation Portsmouth, New Hampshire

Table of Contents

1. Introduction

This document presents the requirements and procedures to be undertaken by Eversource personnel or hired contractors that excavate soil or manage soil or groundwater during installation of a new electric transmission line from Gundalow Landing in Newington to the Portsmouth Substation in Portsmouth, New Hampshire (the Project Area; Fig. 1). The new 115 kV transmission line is being installed as part of Eversource's Seacoast Reliability Project (SRP). The SRP will be installed in an existing distribution right-of-way corridor. The Project Area subject to this plan is approximately 4.25 miles long and begins at Gundalow Landing adjacent to Little Bay in the west and terminates at the Portsmouth Substation in the east (Fig. 1).

This plan was prepared pursuant to New Hampshire Department of Environmental Services (NHDES) Wetlands Permit Condition 38 in the New Hampshire Site Evaluation Committee (SEC) Order and Certificate of Site and Facility Conditions issued on January 31, 2019 (SEC Docket No. 2015-04) which states:

At least ninety (90) days prior to conducting dewatering activities in the vicinity of the Pease International Tradeport [i.e., the former Pease Air Force Base (Pease)] and the Daruis Frink Farm property in Newington, the Applicant shall consult with the Pease Development Authority, NH DES Waste Management Division, and US Environmental Protection Agency to determine if groundwater has been contaminated by perfluorinated compounds (e.g., PFOA, PFOS) to levels which would require special treatment. Should special treatment be necessary, the Applicant shall submit a plan to the NH DES Waste Management Division for approval and then implement the approved plan.

A site specific *Updated Soil and Water Investigation and Management Plan*, dated December 15, 2017, has been developed for the Darius Frink Farm property in Newington and is included in Appendix A. This plan is referenced in a Memorandum of Understanding (MOU) between Eversource and the Rockingham County Conservation District (RCCD) dated January 24, 2018.

This final version of the Soil and Groundwater Management Plan incorporates information requested by NHDES at plan review meetings on May 15, 2019 and July 10, 2019 and updates the previous plan dated June 12, 2019 with the means and methods proposed by Eversource's contractor(s) selected to implement the work in accordance with the requirements of this Soil and Groundwater and Management Plan, which are included in Appendix C. Information presented includes:

- Appendix C-1: Soil and Groundwater Management Plan for Construction of Structures from the Crossings Mall in Newington East to the Portsmouth Substation – May 3, 2019 Approved by NHDES on May 6, 2019

- Appendix C-2: Construction Dewatering Plan Details for Dewatering at Three Locations Requiring an EPA NPDES Dewatering or Remediation General Permit for Discharge to Surface Water Bodies Construction Dewatering Plan

- Appendix C-3: Excavation and Stockpile Management Plan

- Appendix C-4: Supplemental Information - Soil and Groundwater Management at the Frink Farm property

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2. Background and Regulatory History

The SRP alignment in Newington begins at Gundalow Landing and proceeds northeast for approximately 1.8 miles where it then turns southeasterly and continues along the Spaulding Turnpike for approximately 1.5 miles. The SRP then proceeds east over the Spaulding Turnpike and continues for 1 mile, terminating at the Portsmouth Substation. The project route is in proximity to the northern and eastern boundaries of the former Pease Air Force Base. Several historical releases are being managed at Pease including releases of jet fuel and other petroleum constituents, chlorinated solvents, and perfluorinated compounds (PFCs).

On behalf of Eversource, GEI Consultants, Inc. (GEI) filed an Area of Special Notice (ASN) request with the Pease Development Authority in May 2017 and was forwarded a letter from the United States Air Force (USAF) in August 2017, included in Appendix B. The letter documented that the project was located within (or in proximity to) two delineated Groundwater Management Zones associated with the former Pease Air Force Base as well as in areas known to have PFCs in groundwater. Specifically, the eastern boundaries of the GMZs associated with the historical chlorinated solvent release at Landfill Site 5 and Bulk Fuel Storage Area Site 13 are transected by the project as shown on the Institutional Controls Map included in Appendix B. In October of 2017, Scott Hilton of the New Hampshire Department of Environmental Services (NHDES) Waste Management Division, informed Eversource and GEI that the delineation of the GMZ for PFCs associated with Pease Site 8 is ongoing and that it is likely that the project route currently transects portions of the eventual GMZ. However, the timeline for establishment of the new GMZ was not available. Therefore, Eversource has conservatively assumed that soil and groundwater between Gundalow Landing and the Spaulding Turnpike may be impacted by PFCs. Eversource will maintain this assumption until data is collected that demonstrates that PFC contamination is not present or less than applicable standards.

In May 2019, GEI submitted a second ASN request with the USAF and Pease Development Authority to request any additional information that may have been generated since the May 2017 ASN request. USAF has provided Eversource a draft version of mapping with updated groundwater and surface water sampling data.

Proper procedures, including best management practices, for on-site management and off-site disposal of soil and groundwater are necessary to reduce the potential for exposure to oil and hazardous materials (OHM) and be protective of workers, the public, and environment. The objectives of this Soil and Groundwater Management Plan are to:

- Ensure that soil and groundwater is managed appropriately on-site or disposed of appropriately off site if necessary; and
- Specify procedures to limit exposures to contaminated soil or groundwater via dermal contact, inhalation, and/or ingestion.

2.1 NHDES Emergency Rule for PFCs

In May 2016, NHDES enacted Emergency Rule 05-31-16 under Env-Or-600 which includes the addition of perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS) to the New Hampshire state ambient groundwater quality standards (AGQS). The AGQS for PFOA, PFOS, and the combined concentration of PFOA and PFOS was set at 0.07 µg/L. Env-Or-600 does not currently include soil standards or regulations for PFOA or PFOS.

2.2 Regulatory Changes

NHDES filed a final rulemaking proposal to the New Hampshire Joint Legislative Committee on Administrative Rules (JLCAR) on June 28, 2019 to establish Maximum Contaminant Level

(MCLs)/drinking water standards and AGQS for four per- and polyfluoroalkyl substances, PFOA, PFOS, perfluoronoanooic acid (PFNA) and perfluorohexanesulfonic acid (PFHxS) on June 28, 2019. If approved by JLCAR the new rules are scheduled to become effective on October 1, 2019. The final proposed MCL and AGQS concentrations are: PFOA 0.012 µg/L; PFOS 0.015 µg/L; PFHxS 0.018 µg/L, PFNA 0.011 µg/L.

Eversource has conservatively assumed that soil and groundwater between Gundalow Landing and the Portsmouth Substation may be impacted by PFCs and will require the Contractors to manage soil and groundwater accordingly.

3. Preconstruction Requirements

The following must be completed before subsurface work commences, and approved by Eversource:

- **Notify Eversource Personnel:** The Eversource Project Manager shall be notified at least 10 business days prior to performing planned (non-emergency) soil excavation or other subsurface work that will require management of soil or groundwater. Also, Eversource shall be notified immediately (within one hour) if unanticipated conditions are encountered such as buried debris including drums, tanks or other containers.
- **Health and Safety Plan (HASP):** The contractor selected to perform the work in the Project Area is expected to prepare a HASP for its workers and the public to address the anticipated contaminants of concern, specifically PFOA, PFOS, and arsenic as well as potential contaminants including petroleum compounds or chlorinated compounds. The HASP shall include historical site characterization data. The HASP shall be prepared by a Certified Industrial Hygienist or other qualified individual appropriately trained in worker health and safety procedures and requirements. The contractor is solely responsible for conducting the work in a manner that is protective of workers and the public. Employees that will be handling contaminated or potentially contaminated soil or water are required to have OSHA HAZWOPER 24 or 40-hour training in accordance with standard 1910.120(e).
- **Regulatory Review and Submittals:** A review of other federal, state, or local regulatory requirements (e.g., National Pollutant Discharge Elimination System permits) shall be conducted before work commences depending on the location and type of planned activity.

4. Work Area Perimeter Monitoring for PFCs

General screening levels for PFOA and PFOS in soil and groundwater are not available. Based on information from the United States Environmental Protection Agency (USEPA) and New Hampshire Environmental Health Program (EHP), GEI derived the following suggested construction worker PFC screening levels for the project, where applicable. The selected contractor may use these screening levels to develop their Health and Safety Plan (HASP) and Job Hazard Analysis (JHA), as appropriate.

4.1 Soil

GEI derived a human health risk-based screening level (SL) for a construction worker exposure to PFOA and PFOS in soil based on the EHP and NHDES methodology applied to derive a Direct Contact Risk-Based (DCRB) soil concentration for PFOA and PFOS in soil. Exposure assumptions used to derive these soil SLs were similar to NHDES Soil Category S-3 exposures considered protective of adult exposures to soil during short but intense exposures, such as during excavation work. These risk-based soil SLs account for exposure to impacted soil as a result of incidental ingestion and dermal contact during excavation work. Table 1 presents the soil SL derived for both PFOA and PFOS of 0.5 mg/kg.

The adult construction worker was assumed to be exposed to outdoor soil a total of 250 days a year. This assumption was based on an excavation worker exposed to soil 5 days per week for a 1-year excavation project (350 days) assuming a worker takes 2 weeks of vacation in a year. Based on NHDES guidance, the adult excavation worker was assumed to ingest 480 mg of soil per day of intense excavation work. Also based on NHDES guidance, a soil adherence factor equal to 0.2 mg/cm^2 was assumed and an exposed skin surface area of 3,104 cm^2 was assumed, which includes hands, forearms, face and neck. Additional exposure parameters based on NHDES guidance are presented in Table 1. USEPA applies different exposure assumptions for the construction worker exposure scenario in the derivation of Regional Screening Levels (RSLs) for soil. Based on USEPA exposure assumptions for the construction worker, which are noted in Table 1, a slightly higher Construction Worker Soil Screening Level for PFOA and PFOS of 0.7 mg/kg could be derived.

The USEPA derived a Reference Dose (RfD) to evaluate non-cancer effects for PFOA and PFOS of 2×10^{-5} mg/kg-day, based on developmental effects. USEPA also derived a Cancer Slope Factor (CSF) for PFOA of 0.07 (mg/kg-day)-1; however, according to USEPA, the non-cancer developmental endpoint for PFOA represented by the RfD is protective of the cancer endpoint. In addition, because the critical effect identified for PFOA and PFOS is a developmental endpoint and can potentially result from a short-term exposure during a critical period of development, USEPA concludes that the chronic RfD is applicable to both short-term and chronic risk assessment scenarios. Therefore, it is appropriate to use the chronic RfD derived for both PFOA and PFOS to estimate short-term or subchronic risk-based SLs for a construction worker. As a result, it is GEI's opinion that a conservative SL for construction workers of 0.5 mg/kg be used for both PFOA and PFOS as stated above and shown in Table 1.

4.2 Water

USEPA derived a drinking water Health Advisory (HA) and NHDES derived the AGQS for PFOA and PFOS of 0.07 µg/L. This HA is considered protective of lifetime exposures to PFOA and PFOS from residential ingestion of drinking water. This HA does not consider potential exposure to PFOA and PFOS as a result of dermal exposure or inhalation exposure. However, USEPA notes that neither PFOA nor PFOS are volatile and are therefore not expected to be present in air except if bound to particulate matter. According to USEPA's Health Effects Support Document for PFOA (May 2016), there is evidence that PFOA is absorbed following dermal exposure. The EPA document presents a permeability coefficient for PFOA of 9.49×10^{-7} cm/hour for human skin. USEPA risk based equations for deriving RSLs (May 2016) for dermal exposure to water were used to derive the Construction Worker Groundwater Screening Level for PFOA and PFOS of 1,000 µg/Liter.

5. Soil Management

5.1 Soil Excavation

Excavated material shall be handled in general accordance with *The New Hampshire Code of Administrative Rules, Chapter Env-Or 600 - Contaminated Site Management* (Env-Or-600) and all other applicable federal, state, and local laws, regulations, and bylaws. Specifically, the following methods will be used during excavation, temporary stockpiling, and transportation to centralized stockpile locations off-site, and off-site disposal:

5.1.1 Dust Control

As needed, the contractor shall employ control measures to minimize airborne particulates during excavation or soil management (e.g. water sprays, mists, etc.). Water used for dust control shall be

managed to avoid accumulation of water on the ground surface or within temporary stockpiles. A summary of the contractor's means and methods for complying with dust control requirements is in Appendix C.

5.1.2 Materials Management Areas

Excavated materials may be placed in temporary stockpiles adjacent to excavation areas and reused for backfill as appropriate. Excess excavated material will be transported to a centralized, off-site, materials management area approved by Eversource. Excess wet or saturated soils will be loaded into a slurry-tight, roll-off or dump truck and transported to the central materials management area. The Materials Management Areas shall be approved by Eversource and managed in in accordance with NHDES Env-Or 611.05(b).

Excavated soils shall be placed on 20-mil polyethylene sheeting and covered with properly secured, 6-mil (minimum) polyethylene sheeting at the end of each work day (or more frequently if rain or wind events present the potential for stockpile erosion, dust blow off, or odor migration). Stockpile sheeting shall be ultraviolet resistant, cold crack resistant to -40 degrees Fahrenheit, and free of holes and foreign matter. Stockpiles shall not contain free liquids. If necessary, erosion control will be installed around stockpiles that will be left overnight or generated during precipitation events.

A summary of the contractor's means and methods for complying with materials management requirements is in Appendix C-3.

5.2 Soil Classification

5.2.1 On-Site Reuse

Excavated material from above the observed groundwater interface should be backfilled within excavations to the extent feasible if the visual/olfactory, chemical, or geotechnical properties of the excavated soil are suitable for reuse.

As soil is excavated, the contractor's Professional Engineer (PE) or Professional Geologist (PG) shall observe and field screen the material for visual or olfactory indications of contamination. If visual or olfactory evidence of contamination is observed, soil will be screened for the presence of VOCs with a photoionization detector (PID) using the jar-headspace method. A minimum of one sample should be screened for visual or olfactory evidence of contamination per foundation element or open length of trench. Soils shall be screened more frequently if visual or olfactory indications of contamination are observed. Soil shall be segregated, if necessary, based on results of field screening and stockpiled for disposal characterization and off-site disposal.

Soil excavated from the saturated zone along the project alignment between Gundalow Landing and the Portsmouth Substation may only be reused as backfill in the saturated zone. Any uncharacterized excess soil from the saturated zone will be stockpiled and characterized for off-site disposal.

Excess soils shall be stockpiled at one or more designated materials management areas to be approved by Eversource as discussed in Section 5.1. The PE or PG will sample and test soil based on the acceptance criteria of the approved and licensed receiving facility. All soils will be sampled for PFCs.

Excess excavated material shall be loaded and transported to an appropriate off-site reuse, recycling or disposal location approved by Eversource. Person(s) transporting the excavated materials shall be licensed and permitted to transport such material in state(s) having jurisdiction. Trailers, dump bodies, or roll-offs used for transport shall have covers to prevent dust blow-off when necessary. The Contractor may also use polyethylene liners for transport of materials classified as a hazardous waste if encountered.

The contractor shall prepare disposal documentation and shall provide Eversource with material tracking and disposal records and certifications. Project documentation shall be maintained, including accurate records of material tracking, disposal transportation manifests (e.g., Straight BOL), and if necessary, additional environmental testing required by the receiving location.

6. Dewatering

Given the proximity of the project area to Pease and given that the boundaries of the pending GMZ for PFCs from Pease Site 8 have not yet been defined, all groundwater recovered from the alignment subject to this plan will be managed by either of the management options listed below:

- **On-Site Surface Water Discharge:** On-site surface water discharge requires use of a water treatment system, which may include equipment such as fractionation (frac) tanks and carbon units, to adequately treat groundwater before discharge. It may be possible to discharge dewatering effluent into storm drains or surface water bodies under a NPDES Dewatering General Permit (DGP) with minimal treatment. Additional water testing for NPDES DGP requirements and approval from NHDES, and treatment for, at a minimum, total suspended solids (TSS) would be necessary. If, based on NHDES requirements or NPDES DGP testing results, a NPDES DGP is not appropriate, a NPDES Remediation General Permit (RGP) would likely be required to discharge dewatering effluent. Additional water treatment requirements would also likely apply.
- **Off-Site Disposal:** The contractor shall identify an appropriate off-site groundwater disposal method and licensed receiving facility(s). In addition to sampling requirements required by receiving facilities, all groundwater shall be sampled for PFCs and this data shall be provided to the receiving facility. Dewatering effluent may be pumped into a tanker truck or other appropriate containers and transported off-site to the selected facility. All receiving facilities must be pre-approved by Eversource. No excess effluent may be recharged or disposed of at an uncontrolled location.

A summary of the contractor's means and methods for complying with dewatering requirements and NPDES dewatering information is included in Appendix C-2.

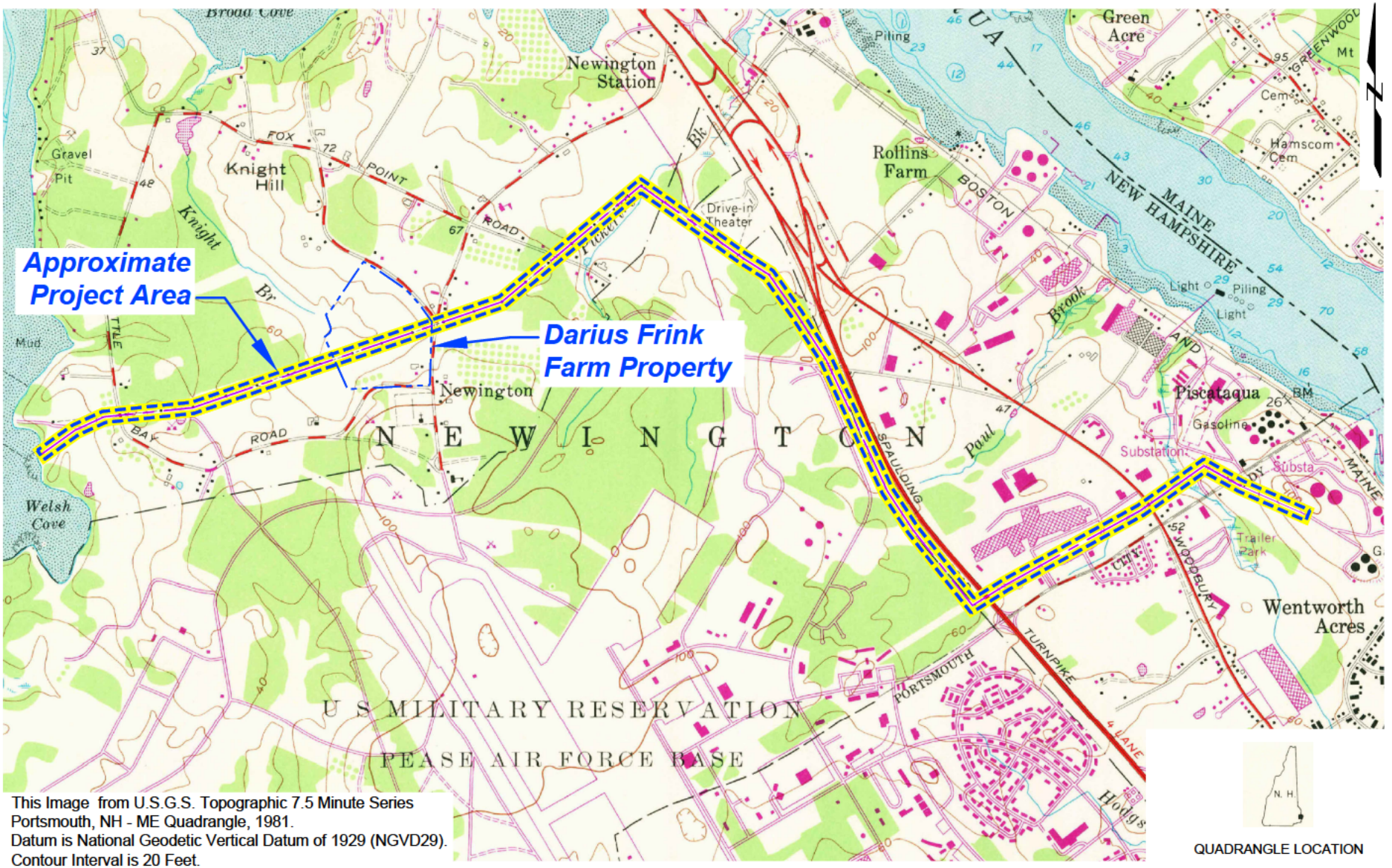
Table 1. Derivation of Soil Screening Levels for PFCs
Eversource NH Seacoast Reliability Project
Newington, New Hampshire

Development of NHDES Direct Contact Risk-Based Concentration (DCRB) for PFOA and PFOS in Soil

Soil Category	S-3	
Sensitive Receptor	Adult Construction/Excavation Worker	
RSCF	0.2	NHDES = Relative Source Contribution Factor
RfD (mg/kg-day)	2.00E-05	USEPA, 2016
CF (mg/kg)	1.00E+06	conversion factor
IR (mg/day)	480	MADEP uses 100 mg/day and USEPA uses 330 mg/day for CW
RAFo	1	NHDES
RAFd	0.1	NHDES
SA (cm2)	3,104	NHDES; USEPA uses 3,527 cm2 for CW
AF (mg/cm2)	0.2	NHDES; USEPA uses 0.3 mg/cm2 for CW
EF (days per year)	250	12 month project (5 days/week for 350 days in a year)
ED (years)	1	professional judgement
AT (days)	250	averaging period for a subchronic exposure is the subchronic period
BW (kg)	70	NHDES; USEPA uses 80 kg
S-3 DCRB Soil Concentration (mg/kg)=	**0.5**	

$$\text{Concentration in Soil (mg/kg)} = \frac{RSCF * RfD * CF}{[(IR * RAFo) + (SA * AF * RAFd)] * [(EF * ED)/(AT * BW)]}$$

Notes:
1. NHDES Soil S-1 = 0.5 mg/kg for PFOA and PFOS
2. NHDES Soil S-2 = 4.3 mg/kg for PFOA and PFOS



This Image from U.S.G.S. Topographic 7.5 Minute Series
Portsmouth, NH - ME Quadrangle, 1981.
Datum is National Geodetic Vertical Datum of 1929 (NGVD29).
Contour Interval is 20 Feet.

QUADRANGLE LOCATION

0 2000 4000

SCALE: 1" = 2000'

Soil and Groundwater Management Plan
Gundalow Landing to Portsmouth Substation
Newington and Portsmouth, New Hampshire

Eversource Energy
Manchester, New Hampshire

GEI Consultants

SITE LOCATION MAP

Project 1607530 | July 2018 | Fig. 1

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Appendix A

Darius Frink Farm Soil and Water Investigation Report and Soil and Water Management Plan – Updated 12/15/2017

GEI Consultants

Consulting
Engineers and
Scientists

December 15, 2017
Project 1607530

VIA EMAIL: Kurt.Nelson@eversource.com

Mr. Kurt I. Nelson
Eversource Energy
13 Legends Way
Hookset, NH 03106

Dear Mr. Nelson:

Re: **Updated Soil and Water Investigation and Management Plan**
Darius Frink Farm
Newington, New Hampshire

GEI Consultants, Inc. (GEI) prepared this letter report to summarize the results of our soil, groundwater, and surface water investigations and to provide recommendations for soil and water management to support Eversource Energy's installation of a new electric transmission line at Darius Frink Farm in Newington, New Hampshire (the Property; Fig. 1). The new transmission line is being installed as part of Eversource Energy's Seacoast Reliability Project (SRP).

The Property consists primarily of farm land and wetlands. Eversource has a Right of Way (ROW) through the Property that is currently used for an above-ground electric distribution line. The current design of the SRP consists of the construction of a new 115 kilovolt (kV) underground transmission line through the Property. These investigations were conducted to develop appropriate soil, groundwater, and surface water management practices to support the construction on the Property.

The Property is located within the downgradient contaminant plume of Site 8 located at Pease Air Force Base (Pease; Fig. 1). Therefore, soil and water management must be performed in accordance with State of New Hampshire Department of Environmental Services (NHDES) regulatory requirements. NHDES does not provide specific guidance for utility related work; therefore, the process for investigation, cleanup, and reporting for this project was performed in general accordance with *The New Hampshire Code of Administrative Rules, Chapter Env-Or 600 - Contaminated Site Management* (Env-Or-600). Our recommendations for soil and water management are in Appendix A.

Our scope of work included the following tasks:

- Reviewing project information provided by Eversource.
- Advancing three borings on the Property which were completed as monitoring wells.
- Collecting soil, groundwater, and surface water samples for laboratory analytical testing.
- Performing hydraulic conductivity testing.
- Developing recommendations for management of soil and water generated during construction.
- Preparing a Soil and Water Management Plan for the Property.

GEI Consultants, Inc
400 Unicorn Park Drive, Woburn, MA 01801
781 721 4000 fax: 781 721 4073

1. Summary & Findings

GEI's investigation indicated the following:

- Perfluorinated compounds (PFCs) were not present in the soil tested.
- PFC concentrations in groundwater, where encountered, were less than New Hampshire state ambient groundwater quality standards (AGQS) of 0.07 µg/L.
- PFC concentrations in surface water from Knight's Brook tributary exceeded the NH AGQS of 0.07 µg/L.
- Soils at the Property are primarily silts underlain by clay. Based on hydraulic conductivity testing, the estimated dewatering rates for the trench range from approximately 45 to 1,500 gallons per day.
- Where the SRP crosses the Knight's Brook Tributary, the conduit will be installed in the low permeability silts and clays. Since the conduit will be installed within a relatively narrow band within the subsurface zone, we do not expect that the SRP will impact the current existing conditions.
- Under current high-water conditions, the Knights Brook Tributary overtops its banks and floods adjacent wetlands indicating that PFOA and PFOS contaminated surface water may be impacting the soils currently. Though soils and groundwater within the wetland adjacent to the Knights Brook Tributary were not tested, at the nearby upland soil boring location, B101MW, PFOA and PFOS were not detected in soils, and PFOA and PFOS concentrations in groundwater, when encountered at this location, were less than New Hampshire AGQS of 0.07 ug/L.

1.1. Soil, Groundwater, & Surface Water Management

Based on the results of our investigation, GEI recommends the following for soil, groundwater, and surface water management:

- **Soil:** All excess soil will be disposed of offsite at a licensed disposal facility or reused offsite in accordance with applicable reuse regulations and guidelines.
- **Groundwater:** If dewatering is necessary, groundwater will be treated and discharged to Knight's Brook Tributary under a National Pollutant Discharge Elimination System (NPDES) Remediation General Permit or will be transported offsite for disposal.
- **Surface Water:** Surface water will be diverted during construction in a manner that does not produce excess water or require additional water management, treatment, or offsite disposal.

The proposed alignment including station locations are shown on Fig. 2 and the Soil and Water Management Plan for Darius Drink Farm is in Appendix A.

2. Background

2.1. Site Description

Eversource proposes to pass the SRP through an existing overhead transmission line corridor on the Darius Frink Farm, located to the north of Pease in Newington, NH (Fig. 1). Darius Frink Farm consists of several buildings, a cultivated vegetable garden, a cow pasture, and uncultivated fields. The work will be performed within an uncultivated field, which is currently maintained for haying operations (the Project Area; Fig. 2). The Project Area is approximately 1,600 feet long and begins at the riser structure on the western edge of the property and ends at Nimble Hill Road (Fig. 2). The proposed trench in the Project Area will be approximately 5-feet-wide and up to 6.5-feet-deep (Fig. 3A).

2.2. Regulatory History

There have been no releases of oil or hazardous material (OHM) reported at the Property, which has been owned by the Frink family for five generations. However, the Property and Project Area are located downgradient of the Pease Site 8 contaminated groundwater plume which contains PFCs associated with former firefighting activities. Since the portion of the SRP in the Project Area will be underground, there is potential to encounter contaminated soil and groundwater during construction activities. PFCs have also been detected in surface water in Knight's Brook Tributary along the western edge of the Project Area and within the proposed SRP alignment.

In May 2016, NHDES enacted Emergency Rule 05-31-16 under Env-Or-600 which includes the addition of PFCs to the New Hampshire AGQS. The AGQS for perfluorooctanoic acid (PFOA), perfluorooctane sulfonate (PFOS), and the combined concentration of PFOA and PFOS is 0.07 µg/L. Env-Or-600 does not currently include soil standards or regulations for PFOA or PFOS.

2.3. Chemicals of Concern

PFOA and PFOS are the primary contaminants of concern in the Project Area. PFOA and PFOS are PFCs and part of a group of man-made chemicals that have been used to manufacture a large range of products including nonstick cookware, carpets, some food packaging, paints, cleaning products, and firefighting foams. PFCs are very persistent in the environment, and are known to travel long distances in groundwater.

PFOA and PFOS contamination has been previously identified downgradient of Pease Site 8 in surface water in local streams (e.g. Knight's Brook tributary, Knights Brook, and Pickering Brook; Fig. 1). The presence of PFOA and PFOS downgradient of Site 8 has been associated with the historic use of aqueous film forming foam (AFFF) at Site 8 at Pease. Around 1970, the US Air Force began using aqueous AFFF for extinguishing petroleum fires during firefighting training activities at the current Site 8 location. Site 8 was used to simulate aircraft crash fires in a pit area using jet fuel, mixed waste oils, and solvents. The mixture was burned before being extinguished with AFFF. Excess fuels and AFFF were discharged from the burn pit into a drainage ditch at the northern end of Site 8.

Prior to this investigation, there was limited information on the presence of PFOA or PFOS at the Property or in the Project Area. The results of our investigation are summarized below and our recommendations for managing soil and water are presented in Appendix A.

3. Site Characterization

In August and September 2016 and April and June 2017, GEI performed an investigation to characterize soil groundwater, and surface water within the Project Area to assess conditions that may be encountered during construction activities. GEI performed soil borings, sampled soil, installed monitoring wells, sampled groundwater, performed hydraulic conductivity tests, and sampled surface water. During sampling, we took special precautions to prevent potential PFC cross-contamination from outside sources including:

- No use of Teflon®-containing materials (i.e. Teflon® tubing, bailers, tape, plumbing paste);
- No Tyvek® clothing was worn;
- Clothes treated with stain- or rain-resistant coatings were avoided or had gone through several washings; no PostIt® Notes were handled or brought on site;
- No fast food wrappers, disposable cups or microwave popcorn were brought on site during sampling;
- Hands were washed after handing such items and prior to any sampling activities;

- No use of chemical (blue) ice packs was allowed; and
- Nitrile gloves were worn during all sample collection activities.

3.1. Soil Boring Advancement and Monitoring Well Installation – August 2016

On August 26, 2016, GEI observed DrillEx Environmental (DrillEx) of West Boylston, Massachusetts advance three borings and install three groundwater monitoring wells (B101[MW], B102[MW], and B103[MW]) to evaluate environmental site conditions in the Project Area. Borings were advanced to approximately 8 feet below grade, which is approximately 1.5 feet below the bottom of the proposed trench depth, using hollow stem augers with continuous split spoon sampling. Boring locations are shown on Fig. 2. Boring and monitoring well installation logs are included in Appendix B.

GEI collected two soil samples from each boring consisting of composite samples from the 0 to 4-foot interval and the 4 to 8-foot interval (B101[S1-S2], B101[S3-S4], B102 [S1-S2], B102 [S3-S4], B103[S1-S2], B103[S3-S4]). GEI submitted the soil samples to Alpha Analytical, Inc. (Alpha) of Westborough, Massachusetts to be tested for PFOA, PFOS, and offsite disposal characterization parameters including: volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), total petroleum hydrocarbons (TPH), polychlorinated biphenyls (PCBs), RCRA 8 Metals (arsenic, barium, cadmium, chromium (total), lead, mercury, selenium, silver), conductivity, corrosivity, ignitability, and reactivity (cyanide and sulfide). Soil chemical testing results are summarized in Table 1 and the laboratory data report is in Appendix C.

Based on conditions we observed during our subsurface investigation, the shallow subsurface in the Project Area generally consists of silt underlain by clay. The soils encountered during our subsurface investigation are described below, starting at the ground surface. The soil conditions are known only at the boring locations. Conditions between borings may differ significantly from those described below.

- Silt: A sandy silt with mostly non-plastic fines, composes the upper layer of the soil profile.
- Clay: A lean and sandy clay with low plasticity fines.
- Gravel (in B103[MW] only): Widely graded gravel with silt and sand.

3.2. Hand Auger Borings – April 2017

On April 7, 2017, GEI advanced two shallow borings (HA1 and HA2) in the vicinity of Knight's Brook tributary to assess soil stratigraphy in the proposed trench alignment. The purpose of the April 2017 investigation was to assess the depth of clay and the potential for encountering artesian conditions during trench installation. Borings HA1 and HA2 were advanced to 6.5 feet and 6 feet, respectively and consistent with the proposed trench depth. The borings were sampled continuously using hand auger techniques. Soil samples were not collected for analytical testing because the soil collection method (e.g. hand augers) could result in soil samples being exposed to the contaminated surface water column during extraction. This scenario could potentially result in a false positive for PFCs and not be representative of existing conditions. Surface water sampling and testing results are discussed in Sections 3.3 and 4.2, respectively. Boring locations are shown on Fig. 2. Boring logs are included in Appendix B.

Based on the conditions we observed, the shallow subsurface in the Knight's Brook tributary area generally consists of sandy silt underlain by clay. The soils encountered during our subsurface investigation are described below, starting at the ground surface. The soil conditions are known only at the boring locations. Conditions between borings may differ significantly from those described below.

- Organic Soil: A layer of organic soil composed of low plasticity fines and organic matter at the surface.

- Sandy Silt: A sandy silt with mostly non-plastic fines, composes the upper layer of the soil profile.
- Clay: A lean and sandy clay with low plasticity fines.

We prepared a cross-section of the Knight's Brook tributary based on and interpolated from the information collected from the hand augers and previous investigations by GEI and others. Based on the available boring information, the general subsurface conditions appear to be consistent between F107-109 and GEI-101 with silty sands overlying clay layer. Boring logs are included in Appendix B and the cross-section is shown on Fig. 3A.

3.3. Groundwater & Surface Water Sampling – 2016

On August 29, 2016, GEI developed monitoring wells B101(MW) and B102(MW). Groundwater was measured at 4.79 feet and 3.77 feet in B101(MW) and in B102(MW), respectively. B103(MW) was not developed because the well was dry. GEI developed the wells by surging and removing water using a dedicated Watera® check valve and tubing. A well was considered developed when either:

- 10-well volumes were removed; or
- Water removed from the well was relatively free of fine-grained material; or
- The well ran dry.

Wells B101(MW) and B102 (MW) ran dry after removing approximately 2.25 gallons and 6 gallons, respectively.

On September 1, 2016, GEI returned to the Property to collect groundwater samples from B101(MW) and B102(MW) using low-flow methods. Groundwater was not detected in B103(MW); therefore, a groundwater sample was not collected. GEI used peristaltic pumps for low flow purging. Dedicated tubing was lowered to the mid-point of the saturated screen interval and a water level was used to periodically measure the water level in the well during purging. Purge rates were adjusted to minimize drawdown to the extent feasible. During low flow purging a YSI Sonde 6200 was used to measure temperature, pH, specific conductivity, dissolved oxygen, oxidation reduction potential, and turbidity. GEI collected a groundwater sample from the well when each of the parameters was stable for a minimum of three consecutive readings. Additionally, we collected a surface water sample (SW1) from Knight's Brook Tributary. Groundwater and surface water samples were submitted to Alpha to be tested for PFOA and PFOS.

Groundwater and surface water chemical testing results are summarized in Table 2 and the laboratory data report is in Appendix C. Groundwater measurements observed during each visit are included in Table 3.

3.4. Groundwater Sampling – 2017

On April 7, 2017, GEI returned to the property to gauge wells during spring conditions. At that time, we observed the field was flooded due to spring melt and heavy rains. As a result, groundwater levels in all three wells (B101[MW], B102[MW], and B103[MW]) was at approximately the ground surface. Due to these flooding conditions groundwater sampling was not performed.

On June 2, 2017 GEI returned to the property to collect groundwater level information and samples from the three monitoring wells under normalized spring conditions. During this groundwater sampling event water was detected in all three wells and groundwater samples were collected from each using the methods described in Section 3.3. Groundwater was measured at 0.83 feet, 1.12 feet, and 2.31 feet in B101(MW), B102(MW), and B103(MW), respectively. Groundwater and surface water samples were submitted to Alpha to be tested for PFOA and PFOS.

Groundwater and surface water chemical testing results are summarized in Table 2 and the laboratory data report is in Appendix C. Groundwater measurements observed during each visit are included in Table 3.

3.5. Hydraulic Conductivity Testing

On September 15, 2016, GEI conducted rising head well permeability tests on B101(MW) and B102(MW). The tests were performed using dedicated In-Situ Level TROLL 700 data loggers. Prior to starting the test, GEI collected water level and total depth readings from the wells. Groundwater was measured at 4.92 feet and 4.39 in B101(MW) and B102(MW), respectively. Groundwater was not detected in B103(MW). The data loggers were then placed near the bottom of each well and a peristaltic pump was used to draw down the water level. The water was then allowed to recharge to approximately the pre-purge level while the data loggers recorded the rebound in water level. GEI collected manual water level measurements throughout the duration of each test in order to perform quality control checks on the TROLL readings. We performed two tests on B101(MW) and three tests on B102(MW). B103(MW) was not tested because it was dry. Groundwater measurements observed during each visit are included in Table 3. The hydraulic conductivity testing results are summarized in Table 4.

4. Results

4.1. Soil Analytical Results

Soil samples did not contain detectable levels of PFOA, PFOS, VOCs, SVOCs, or PCBs. Soil chemical testing results indicated that presence of the following compounds above the laboratory detection limits:

- TPH
- Metals: arsenic, barium, chromium and lead.

TPH was detected above laboratory detection limit in samples B101(S1-S2); however, the concentration was well below the NHDES Method 1 Soil Standard (NH S-1). Barium, chromium, and lead were detected in all the soil samples at concentrations less than NH S-1. Arsenic was detected in B102(S1-S2) and B102(S3-S4) at 12 milligrams per kilogram (mg/kg). This is slightly above the NH S-1 standard and the NHDES Background Concentration of 11 mg/kg but is still likely attributable to background conditions at the Property. Soil testing results are summarized in Table 1 and the laboratory data report is in Appendix C.

4.2. Groundwater & Surface Water Analytical Results

Groundwater and surface water testing results indicated the following:

- PFOA and PFOS were not detected in B101(MW) in September 2016. PFOA and PFOS were detected in B101(MW) in June 2017 but at concentrations below the NH AGQS of 0.07 µg/L.
- PFOA and PFOS were detected in B102(MW) in both September 2016 and June 2017 but at concentrations below the NH AGQS of 0.07 µg/L.
- PFOA was not detected in B103(MW). PFOS was detected in B103(MW) but at concentrations below the NH AGQS of 0.07 µg/L.
- PFOA and PFOS were detected in sample SW1 from Knight's Brook at 0.842 µg/L and 2.91 µg/L, respectively. The total PFOA/PFOS concertation was 3.752 µg/L. Both the individual and total concentrations exceed the NH AGQS of 0.07 µg/L.

- PFOA and PFOS were not detected in a field blank sample collected during the June 2017 groundwater sampling event.

Groundwater and surface water testing results are summarized in Table 2 and the laboratory data report is in Appendix C.

4.3. Hydraulic Conductivity

Based on the testing results, we estimated the following average hydraulic conductivities:

- B101(MW) has an average hydraulic conductivity of 0.062 feet/day which is likely due to the silt and clay observed during installation of the well.
- B102(MW) has an average hydraulic conductivity of 0.222 feet/day which is likely due to the sand seam observed within the well screen interval. The sand seam was observed in the boring at approximately 5 feet below the ground surface.
- B103(MW) hydraulic conductivity was not calculated because the well was dry at the time of testing.

The hydraulic conductivity testing results are summarized in Table 4.

4.4. Groundwater Model & Dewatering Estimate

GEI calculated the expected dewatering rates of groundwater within the proposed trench alignment for both low and high groundwater conditions, as experienced in the fall of 2016 and spring of 2017, respectively. Based on our calculations, we estimate dewatering may range from 45 to 1,500 gallons per day (gpd) depending on the location of the excavation and groundwater levels. Our calculations are based on the limited geologic information observed during installation of B101(MW), B102(MW), and B103(MW). The estimated dewatering rates are as follows:

- Near B101(MW): Approximately 45 to 82 gpd during a low water condition and approximately 486 to 770 gpd during a high groundwater condition.
- Near B102(MW): Approximately 104 to 187 gpd during a low groundwater condition and approximately 942 to 1466 gpd during a high groundwater condition.
- Near B103: Based on the soil encountered in B103(MW), we estimate the dewatering rates near B103(MW) will likely be between the estimated ranges for B101(MW) and B102(MW). The trench near B103(MW) may also be dry if construction takes place during low groundwater conditions similar August and September of 2017.

The groundwater flow model and dewatering estimate is in Appendix D.

GEI has additionally evaluated the potential for changes in groundwater flow patterns and the potential for damming of surface water or groundwater due to the installation of the new conduit duct bank. The duct bank measures approximately 2-feet 6-inches tall by 3-feet 5-inches wide and consists of several polyvinyl chloride (PVC) and high-density polyethylene (HDPE) conduits encased in concrete. The top of the duct bank will be approximately 2.5-feet below grade and topped with fluidized thermal backfill west of Station 499+50 and 4-feet below grade and topped with native soils in the agricultural area east of Station 499+50. The soil boring data indicate that the duct bank will be located within shallow soils in a stratum consisting primarily of low permeability clays and silts. Given that the duct bank will occupy a relatively narrow band area in low permeability material, it should not impede the flow of groundwater.

With respect to surface water flows, the top of the proposed duct bank will be buried approximately 2.5’ below the bottom of the tributary; therefore, surface water flow will not be impacted by the duct

bank. The Knight's Brook Tributary is spring fed and the general subsurface conditions observed consist of a sandy bottom underlain by silt and clay. The presence of this type of subsurface stratification indicates that there is likely minimal contribution from groundwater to surface water flow other than from the source spring(s). It is our opinion that that contamination present in surface water is a result of the springs that feed the Knight's Brook Tributary and not from impacted groundwater in adjacent shallow soils. Eversource understands, and has observed, that under current conditions the Knights Brook Tributary overtops its banks and floods the adjacent wetlands under high water conditions indicating that PFOA and PFOS contaminated surface water may be impacting the Property currently. However, based on the results of the subsurface investigation performed by GEI and presented in the Soil and Water Investigation and Management Plan for Darius Frink Farm:

- Though soils and groundwater within the wetland adjacent to the Knights Brook Tributary were not tested, at the nearby upland soil boring location, B101MW, PFOA and PFOS were not detected in soils, and PFOA and PFOS concentrations in groundwater, when encountered at this location, were less than New Hampshire AGQS of 0.07 ug/L.

5. Construction Worker Screening Levels

General screening levels for construction worker exposure to PFOA and PFOS in soil and groundwater are not available. Based on information from the United States Environmental Protection Agency (USEPA) and New Hampshire Environmental Health Program (EHP) we have derived the following construction work screening levels for this project, where applicable:

5.1. Soil

GEI derived a human health risk-based screening level (SL) for a construction worker exposure to PFOA and PFOS in soil based on the New Hampshire Environmental Health Program (EHP) and NHDES methodology applied to derive a Direct Contact Risk-Based (DCRB) soil concentration for PFOA and PFOS in soil. Exposure assumptions used to derive these soil SLs were similar to NHDES Soil Category S-3 exposures considered protective of adult exposures to soil during short but intense exposures, such as during excavation work. These risk-based soil SLs account for exposure to impacted soil as a result of incidental ingestion and dermal contact during excavation work. Table 5 presents the soil SL derived for both PFOA and PFOS of 0.5 mg/kg.

The adult construction worker was assumed to be exposed to outdoor soil a total of 250 days a year. This assumption was based on an excavation worker exposed to soil 5 days per week for a 1-year excavation project (assumes 350 total days of excavation) and assuming a worker takes 2 weeks of vacation in a year. Based on NHDES guidance, the adult excavation worker was assumed to ingest 480 mg of soil per day of intense excavation work. Also based on NHDES guidance, a soil adherence factor equal to 0.2 mg/cm^2 was assumed and an exposed skin surface area of 3,104 cm^2 was assumed, which includes hands, forearms, face and neck. Additional exposure parameters based on NHDES guidance are presented in Table 5. USEPA applies different exposure assumptions for the construction worker exposure scenario in the derivation of Regional Screening Levels (RSLs) for soil. Based on USEPA exposure assumptions for the construction worker, which are noted in Table 5, a slightly higher Construction Worker Soil Screening Level for PFOA and PFOS of 0.7 mg/kg could be derived.

The USEPA derived a chronic Reference Dose (RfD) to evaluate non-cancer effects for PFOA and PFOS of $2x10^{-5}$ mg/kg-day, based on developmental effects. USEPA also derived a Cancer Slope Factor (CSF) for PFOA of 0.07 (mg/kg-day)-1; however, according to USEPA, the non-cancer developmental endpoint for PFOA represented by the RfD is protective of the cancer endpoint. In addition, because the critical effect identified for PFOA and PFOS is a developmental endpoint and can potentially result from a short-term exposure during a critical period of development, USEPA concludes that the chronic RfD is applicable to both short-term and chronic risk assessment scenarios.

Therefore, it is appropriate to use the chronic RfD of $2x10^{-5}$ mg/kg-day derived for both PFOA and PFOS to estimate short-term or subchronic risk-based SLs for a construction worker.

5.2. Water

USEPA derived a drinking water Health Advisory (HA) and NHDES derived the AGQS for PFOA and PFOS of 0.07 µg/L. This HA is considered protective of lifetime exposures to PFOA and PFOS from residential ingestion of drinking water. This HA does not consider potential exposure to PFOA and PFOS as a result of dermal exposure or inhalation exposure. However, USEPA notes that neither PFOA nor PFOS are volatile and are therefore not expected to be present in air except if bound to particulate matter. According to USEPA's Health Effects Support Document for PFOA (May 2016), there is evidence that PFOA is absorbed following dermal exposure. The EPA document presents a permeability coefficient for PFOA of 9.49×10^{-7} cm/hour for human skin. USEPA risk based equations for deriving RSLs (May 2016) for dermal exposure to water were used to derive the Construction Worker Water Screening Level for PFOA and PFOS of 1,000 µg/Liter.

6. Soil and Water Management

Since the work is being performed in the downgradient plume of Site 8, proper procedures for on-site management and off-site disposal of soil and groundwater are necessary to reduce the potential for exposure to PFOA and PFOS and be protective of workers and the public. GEI prepared a Soil and Water Management Plan that presents the requirements and procedures to be undertaken by Eversource personnel or hired contractors that excavate soil or manage soil, groundwater, or surface water during installation of a new overhead or underground electric transmission line at Darius Frink Farm. The Soil and Water Management Plan is in Appendix A.

Based on the results of our investigation, GEI recommends the following for soil, groundwater, and surface water management:

- **Soil:** All excess soil will be disposed of offsite at a licensed disposal facility or reused offsite in accordance with applicable state and federal regulations.
- **Groundwater:** If dewatering is necessary, groundwater will be managed by one or more of the following methods:
    - Groundwater may be treated and discharged to Knight's Brook Tributary under a National Pollutant Discharge Elimination System (NPDES) Remediation General Permit
    - Groundwater may be temporarily stored onsite in a fractionation (frac) tank and then pumped and transported offsite for disposal.
    - Groundwater may be directly pumped from the excavation into a vacuum truck for offsite disposal.
- **Surface Water:** Surface water will be diverted during construction in a manner that does not produce excess water or require additional water management, treatment, or offsite disposal.

7. Limitations

This report was prepared for the exclusive use of Eversource Energy. The conclusions provided by GEI in this report are based on the information contained in this report. Additional information not available to GEI at the time this report was prepared may result in a modification of our conclusions. This report has been prepared in accordance with generally accepted engineering and geohydrological practices. No warranty, express or implied, is made.

Please contact Jim Ash at JAsh@geiconsultants.com or 781-721-4018 or Mike Sabulis at MSabulis@geiconsultants.com or 781-721-4114 if you have any questions.

Sincerely,

GEI CONSULTANTS, INC.

James R. Ash, P.E., LSP
Senior Vice President

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CRC/MWS/JRA:jam

Attachments:

Table 1 – Laboratory Testing Results – Soil
Table 2 – Laboratory Testing Results – Groundwater and Surface Water
Table 3 – Water Level Measurements
Table 4 – Hydraulic Conductivity Test Results
Table 5 – Derivation of Soil Screening Levels
Fig. 1 – Site Location Map
Fig. 2 – Project Area Plan
Fig. 3A – Cross Section – Knight's Brook Tributary
Appendix A – Soil and Water Management Plan
Appendix B – Boring and Monitoring Well Installation Logs
Appendix C – Laboratory Test Reports
Appendix D – Groundwater Model Description

Tables

Table 1. Laboratory Testing Results - Soil
Darius Frink Farm
Eversource NH Seacoast Reliability Project
Newington, New Hampshire

					B101		B102		B103	
					S1-S2	S3-S4	S1-S2	S3-S4	S1-S2	S3-S4
					8/26/2016		8/26/2016		8/26/2016	
					0-4	4-8	0-4	4-6.8	0-4	4-8
Analyte	**Method**	**Units**	**NH S-1**	**NHDES Background**						
Perflourinated Compounds (PFCs)	537	ng/g								
Perfluorooctanoic Acid (PFOA)			NS	NS	< 1.96	< 1.96	< 1.95	< 1.95	< 1.93	< 2 02
Perfluorooctane Sulfanate (PFOS)			NS	NS	< 1.96	< 1.96	< 1.95	< 1.95	< 1.93	< 2 02
Volatile Organic Compounds (VOCs)	8260C	mg/kg								
Total VOCs			NS	NS	ND	ND	ND	ND	ND	ND
Semi-Volatile Organic Compounds (SVOCs)	8270D	mg/kg								
Total SVOCs			NS	NS	ND	ND	ND	ND	ND	ND
Total Petroleum Hydrocarbons (TPH)	8015	mg/kg								
Total Petroleum Hydrocarbons			10000	NS	39.0	< 39 8	< 39.5	< 39.9	< 35.5	< 34.1
Polychlorinated Biphenyls (PCBs)	8082A	mg/kg								
Total PCBs			1	NS	ND	ND	ND	ND	ND	ND
Total Metals		mg/kg								
Arsenic	6010C		11	11	7.4	5.6	**12**	**12**	9.0	7.1
Barium	6010C		1,000	NS	28	33	44	31	30	18
Cadmium	6010C		33	2	< 0.47	< 0.48	< 0.47	< 0.49	< 0.42	< 0.42
Chromium (Total)	6010C		1,000	33	14 F-,G	16 F-,G	19 F-,G	18 F-,G	30 F-,G	26 F-,G
Lead	6010C		400	51	5.7 F-	4.6 F-	6.8 F-	8.9 F-	7.2 F-	8.6 F-
Mercury	7471B		7	0.3	< 0.08	< 0.08	< 0.08	< 0.08	< 0.07	< 0 07
Selenium	6010C		180	5	< 0.94	< 0.96	< 0.94	< 0.98	< 0.85	< 0 84
Silver	6010C		89	NS	< 0.47	< 0.48	< 0.47	< 0.49	< 0.42	< 0.42
Other										
Conductivity	EPA 120.1M	umhos/cm	NS	NS	< 10	< 10	< 10	28 G	< 10	44 G
Corrosivity (pH)	9045D	S.U.	NS	NS	6.2 A	6.4 A	6.3 A	7.4 A	5.7 A	0 3
Oxidation-Reduction Potential	ASTM D1498-76M	mv	NS	NS	180 A	170 A	170 A	190 A	170 A	150 A
Flashpoint	1030	deg F	NS	NS	NI	NI	NI	NI	NI	NI
Reactive Cyanide	CHAP7	mg/kg	NS	NS	< 10	< 10	< 10	< 10	< 10	< 10
Reactive Sulfide	CHAP7	mg/kg	NS	NS	< 10	< 10	< 10	< 10	< 10	< 10
Percent Solids	SM 2540G-97 MOD	%	NS	NS	84.2	80 9	83.6	79.2	93 3	92.4

General Notes

1. In general, analytes detected in at least one sample are reported here. For a complete list of analytes see the laboratory data sheets.
2. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
3. NH S-1 and NHDES Background standards from The New Hampshire Code of Administrative Rules, Chapter Env-Or 600 - Contaminated Site Management.
4. Values in bold exceed the NH S-1 and/or NDHES Background values.
5. NS = No standard or criteria has been established for this analyte.
6. NI = Not Ignitable
7. ND = Not detected.
8. Soil samples for VOC analysis were preserved in the field with methanol.
10. mg/kg = milligrams per kilogram.
9. umhos/cm = micromhos per centimeter.
10. S.U. = standard units.
11. mv = millivolts.
12. deg F = degrees Fahrenheit.
13. ng/g = nanograms per gram.

Qualifying Notes

A The result is estimated due to exceedance of holding time criteria.
F- The result has a low bias due to matrix spike recovery below lower control limits.
G The result is estimated due to duplicate precision outside control limits.

Table 2. Laboratory Testing Results - Groundwater and Surface Water
Darius Frink Farm
Eversource NH Seacoast Reliability Project
Newington, New Hampshire

				Sample Location:	1607530-B101(MW)		1607530-B102(MW)		1607530-B103(MW)	1607530-SW1
				Sample Date:	9/1/2016	6/2/2017	9/1/2016	6/2/2017	6/2/2017	9/1/2016
				Screen Interval:	2-8'	2-8'	2-7'	2-7'	2-8'	NA
Analyte	**Method**	**Units**	**NH AGQS**							
Perflourinated Compounds (PFCs)	537	ug/L								
Perfluorooctanoic Acid (PFOA)			0.07		< 0.00786	0.00248	0.0112	0.00711	< 0.00185	**0.842**
Perfluorooctane Sulfanate (PFOS)			0.07		< 0.00786	0.00305	0.0161	0.0142	0.00187	**2.91**
Total PFCs			0.07		ND	0.00553	0.0273	0.02131	0.00187	**3.752**

General Notes:

1. In general, analytes detected in at least one sample are reported here. For a complete list of analytes see the laboratory data sheets.
2. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
3. NH AGQS = New Hampshire Ambient Groundwater Quality Standards
4. NH AGQS for PFOA and PFOS from Emergency Rule 05-31-16 to Amend The New Hampshire Code of Administra ive Rules Env-OR 603.03(b), eff 6-1-15
5. Values in bold exceed he NH AGQS values.
6. ND = Not detected.
7. ug/L = milligrams per liter.

Table 3. Water Level Measurements
Darisu Frink Farm
Eversource NH Seacoast Reliability Project
Newington, New Hampshire

Well ID	August 26, 2016		August 29, 2016		September 1, 2016		September 15, 2016		April 7,2017		June 2, 2017	
	Depth to GW from Top of PVC (ft)	Depth to GW from Ground Surface (ft)	Depth to GW from Top of PVC (ft)	Depth to GW from Ground Surface (ft)	Depth to GW from Top of PVC (ft)	Depth to GW from Ground Surface (ft)	Depth to GW from Top of PVC (ft)	Depth to GW from Ground Surface (ft)	Depth to GW from Top of PVC (ft)	Depth to GW from Ground Surface (ft)	Depth to GW from Top of PVC (ft)	Depth to GW from Ground Surface (ft)
MW101	ND	ND	7.91	4.79	7.79	4.67	8.04	4.92	3.41	0.29	3.95	0.83
MW102	7.29	4.39	6.67	3.77	6.79	3.89	7.18	4.28	3.61	0.71	4.02	1.12
MW103	NM	NM	ND	ND	ND	ND	ND	ND	At ground surface		2.11	2.31

Notes:
1. ft = feet
2. GW = groundwater
3. NM = Not measured
4. ND = Not detected

Table 4. Hydraulic Conductivity Test Results - Rising Head Test
Darius Frink Farm
Eversource NH Seacoast Reliability Project
Newington, New Hampshire

Well ID	Hydraulic Conductivity (ft/day)			
	Test 1	Test 2	Test 3	Average
B101(MW)	0.08	0.05	NA	0.062
B102(MW)	0.23	0.22	0.22	0.222
B103(MW)	NT	NT	NT	

Notes:
1. NA = Not applicable
2. NT = Not testsed due to dry well
3. ft = feet

Table 5. Derivation of Soil Screening Levels for PFCs
Darius Frink Farm
Eversource NH Seacoast Reliability Project
Newington, New Hampshire

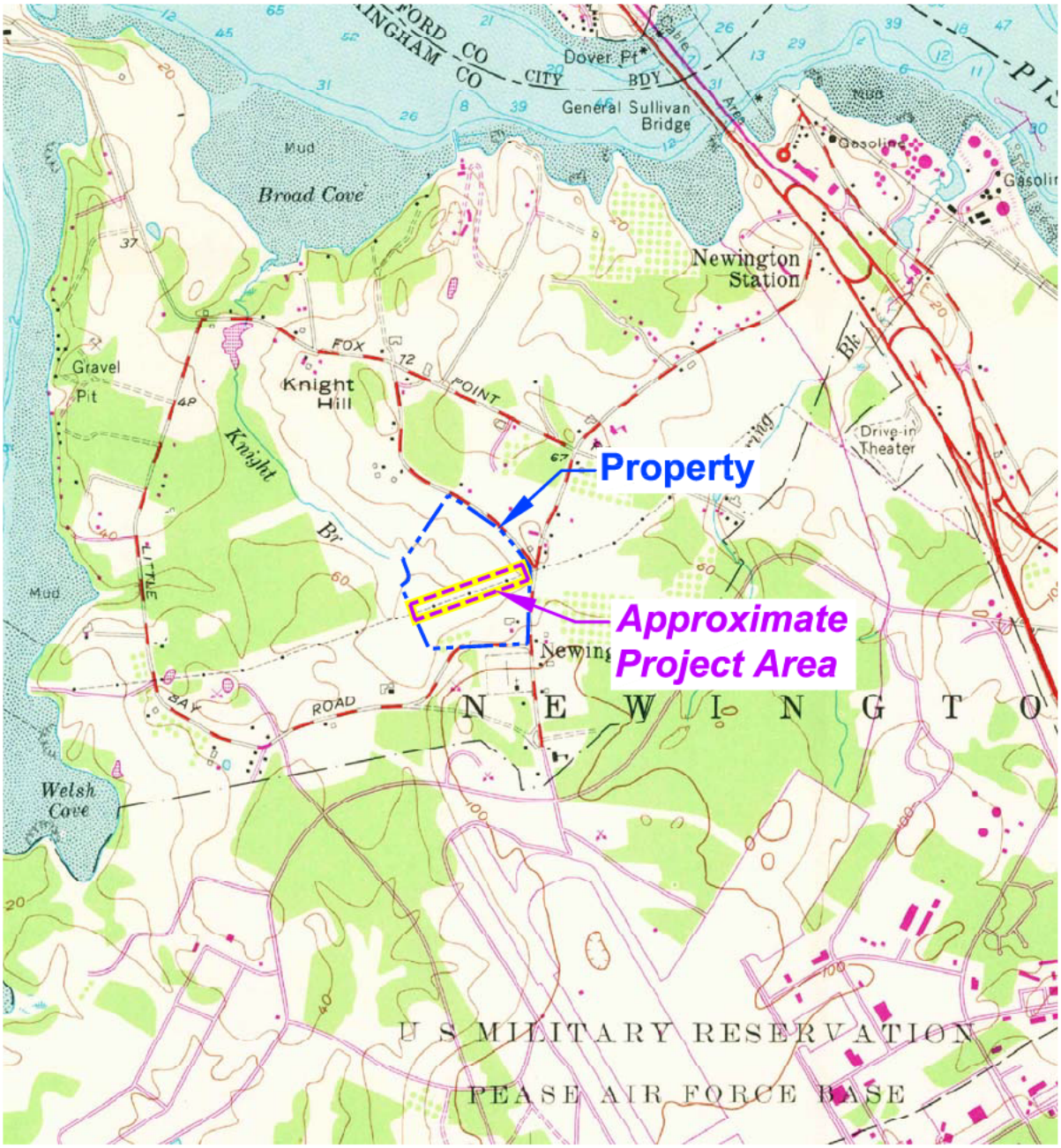
Development of NHDES Direct Contact Risk-Based Concentration (DCRB) for PFOA and PFOS in Soil

Soil Category	S-3	
Sensitive Receptor	Adult Construction/Excavation Worker	
RSCF	0.2	NHDES = Relative Source Contribution Factor
RfD (mg/kg-day)	2.00E-05	USEPA, 2016
CF (mg/kg)	1.00E+06	conversion factor
IR (mg/day)	480	MADEP uses 100 mg/day and USEPA uses 330 mg/day for CW
RAFo	1	NHDES
RAFd	0.1	NHDES
SA (cm2)	3,104	NHDES; USEPA uses 3,527 cm2 for CW
AF (mg/cm2)	0.2	NHDES; USEPA uses 0.3 mg/cm2 for CW
EF (days per year)	250	12 month project (5 days/week for 350 days in a year)
ED (years)	1	professional judgement
AT (days)	250	averaging period for a subchronic exposure is the subchronic period
BW (kg)	70	NHDES; USEPA uses 80 kg
S-3 DCRB Soil Concentration (mg/kg)=	**0.5**	

$$\text{Concentration in Soil (mg/kg)} = \frac{RSCF * RfD * CF}{[(IR * RAFo) + (SA * AF * RAFd)] * [(EF * ED)/(AT * BW)]}$$

Notes:
1. NHDES Soil S-1 = 0.5 mg/kg for PFOA and PFOS
2. NHDES Soil S-2 = 4.3 mg/kg for PFOA and PFOS

Figures



0 1000 2000 4000 6000

SCALE, FEET

This Image from U.S.G.S. Topographic 7.5 Minute Series
Portsmouth, NH - ME Quadrangle, 1981.
Datum is National Geodetic Vertical Datum of 1929 (NGVD29).
Contour Interval is 20 Feet.

QUADRANGLE LOCATION

Soil and Water Management Plan Darius Frink Farm Newington, New Hampshire	GEI Consultants	SITE LOCATION MAP
Eversource Energy Manchester, New Hampshire	Project 1607530	December 2017 Fig. 1

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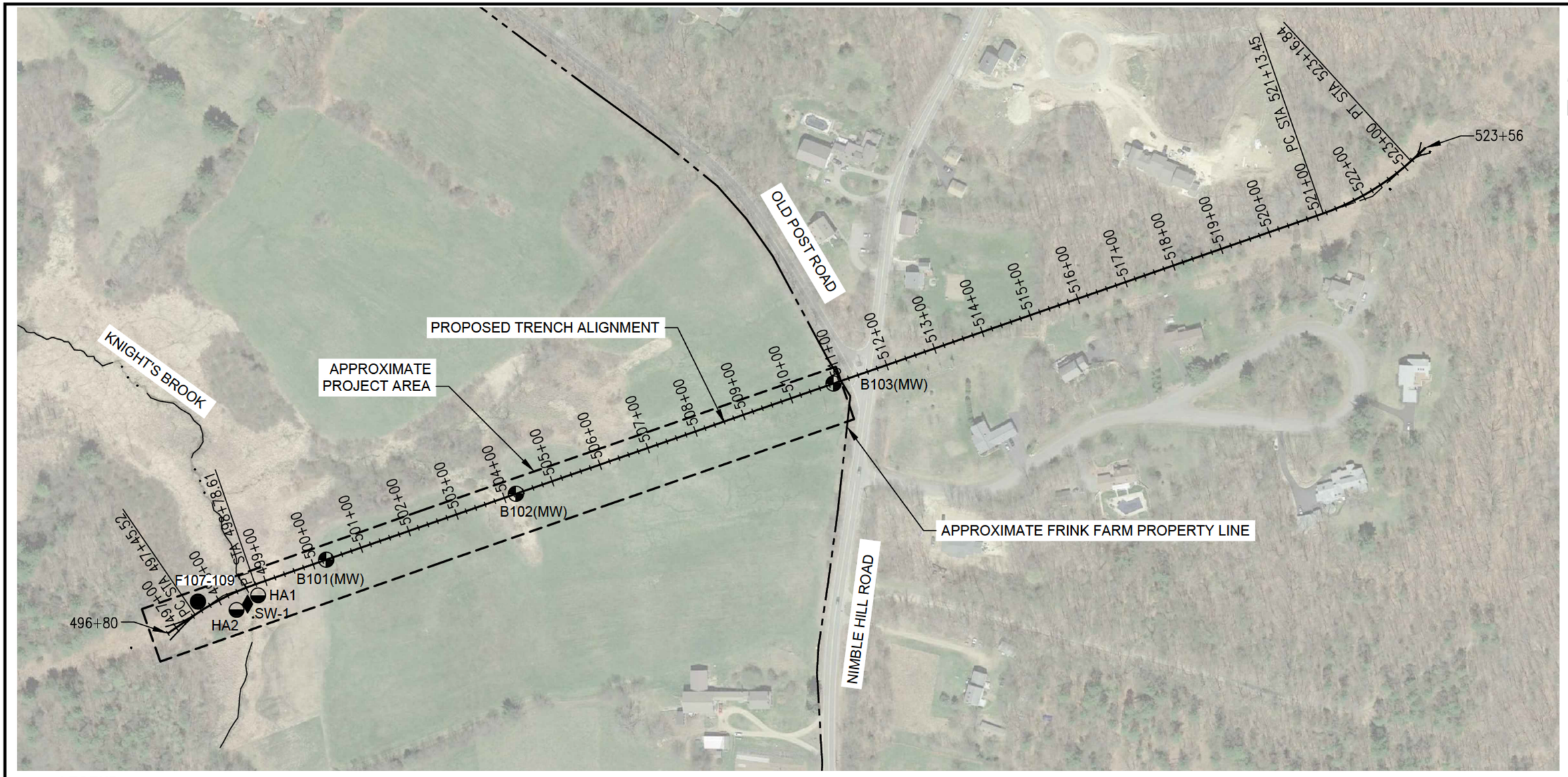

LEGEND:

- MONITORING WELL INSTALLED BY GEI IN AUGUST 2016
- SURFACE WATER SAMPLE COLLECTED BY GEI IN SEPTEMBER 2016
- HAND AUGER BY GEI IN APRIL 2017
- BORING BY TERRACON IN SEPTEMBER 2016
- 498+00 — TRENCH ALIGNMENT AND STATION

NOTES:

1. LOCATIONS ARE APPROXIMATE.

0 200 400

SCALE: 1" = 200'

Soil and Water Investigation Darius Frink Farm Newington, New Hampshire	GEI Consultants	PROJECT AREA PLAN
Eversource Manchester, New Hampshire	Project 1607530	December 2017 Fig. 2

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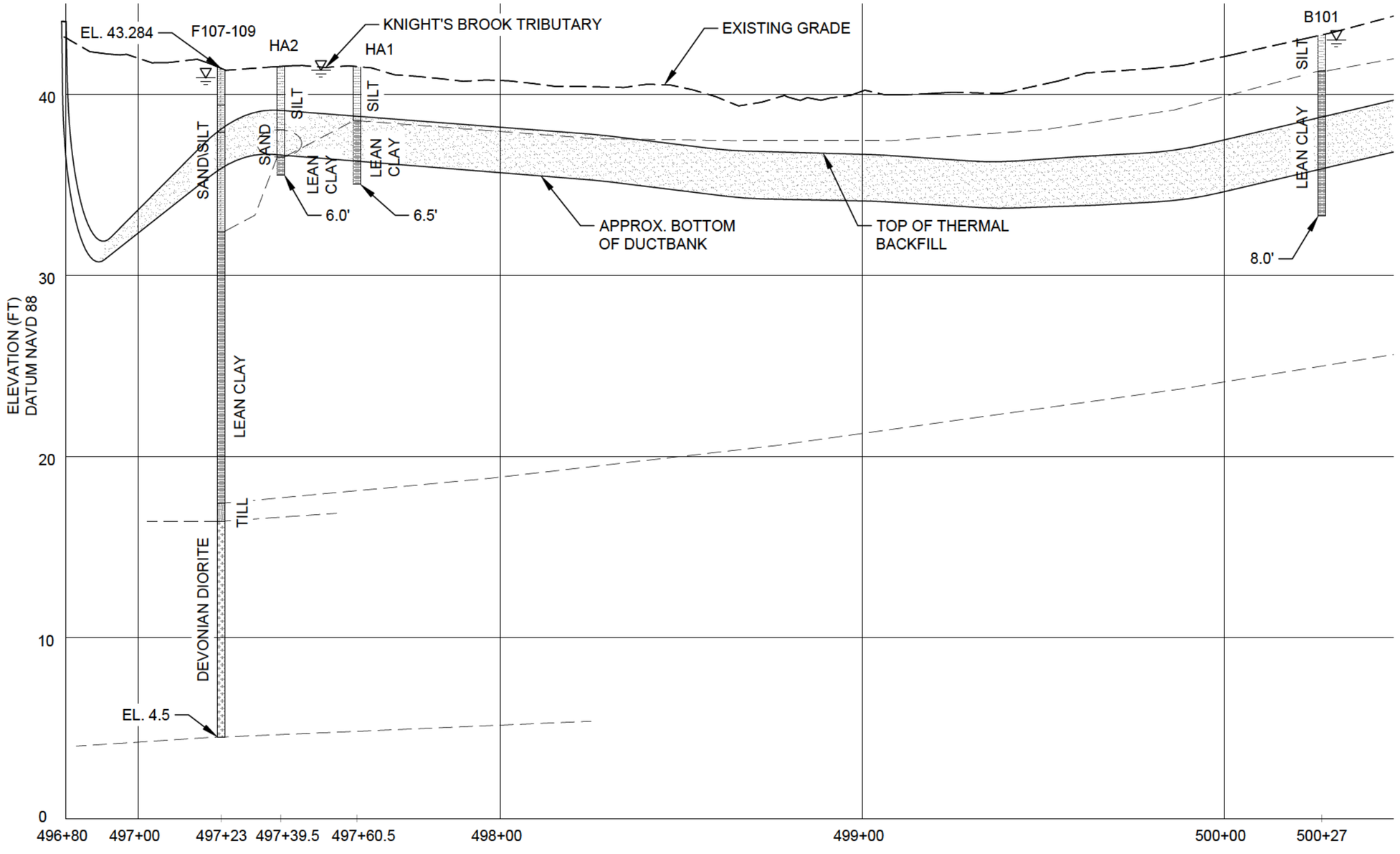

LEGEND:

– – – INTERPOLATED STRATA BOUNDARIES

NOTES:

1. EXISTING GRADE AND DUCTBANK PROFILE FROM POWER ENGINEERS DRAWINGS, RECEIVED SEPTEMBER 2017.
2. ELEVATION APPROXIMATED FROM PROJECT PLANS, CIVIL DRAWINGS.
3. TERRACON BORING ELEVATIONS AND SOIL PROFILE FROM TERRACON BORING LOG.

0 30 60

SCALE: 1" = 30'

Soil and Water Investigation Darius Frink Farm Newington, New Hampshire	GEI Consultants	CROSS SECTION - KNIGHT'S BROOK TRIBUTARY
Eversource Manchester, New Hampshire	Project 1607530	December 2017 Fig. 3A

\geiconsulta B:\Working\EVERSOURCE\1607530 - EVS-SRP NH\00_CAD\Design\Working\1607530 - Frink Farm Trench Dam Details Figure - F-3_v1.dwg - 9/22/2017

Appendix A

Soil and Water Management Plan

SOIL AND WATER MANAGEMENT PLAN

Eversource Seacoast Reliability Project
Darius Frink Farm
Newington, New Hampshire

1. Introduction

This document presents the requirements and procedures to be undertaken by Eversource personnel or hired contractors that excavate soil or manage soil, groundwater, or surface water during installation of a new underground electric transmission line at Darius Frink Farm in Newington, New Hampshire (the Property; Fig. 1). The new transmission line is being installed as part of Eversource's Seacoast Reliability Project (SRP). The new transmission line will be installed in Eversource's Right of Way (ROW) through the Property (the Project Area; Fig. 1) that is currently used for above-ground electric lines and towers. The Project Area is approximately 1,600 feet long and begins at the riser structure on the western edge of the property (Station 496+80) and ends at Nimble Hill Road (Station 511+00) (Fig. 2). This Soil and Water Management Plan is applicable only to the Project Area shown on the plan, not the entire Property.

2. Background and Regulatory History

There have been no releases of oil or hazardous material (OHM) reported at the Property, which has been owned by the Frink family for five generations. However, the Property and Project Area are located downgradient of the Pease Site 8 contaminated groundwater plume which contains perfluorinated compounds (PFCs) associated with former firefighting activities. Since the portion of the SRP in the Project Area will be underground, there is potential to encounter contaminated soil and groundwater during construction activities. Additionally, PFCs have been detected in surface water along the eastern edge of the Project Area in Knight's Brook.

In May 2016, NHDES enacted Emergency Rule 05-31-16 under Env-Or-600 which includes the addition of perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS) to the New Hampshire state ambient groundwater quality standards (AGQS). The AGQS for PFOA, PFOS, and the combined concentration of PFOA and PFOS is 0.07 µg/L. Env-Or-600 does not currently include soil standards or regulations for PFOA or PFOS.

Proper procedures for on-site management and off-site disposal of soil and water are necessary to reduce the potential for exposure to oil and hazardous materials (OHM) and be protective of workers and the public. The objectives of this Soil and Water Management Plan are to:

a) Ensure that soil and water are managed appropriately on-site or disposed of appropriately off-site if necessary; and

b) Specify procedures to limit exposures to contaminated soil or water via dermal contact, inhalation, and/or ingestion.

3. Preconstruction Requirements

The following must be completed before subsurface work commences, and approved by Eversource:

- **Notify Eversource Personnel:** The Eversource Project Manager shall be notified at least 10 business days prior to performing planned (non-emergency) soil excavation or other subsurface work that will require management of soil, groundwater, or surface water. Also, Eversource shall be notified immediately (within one hour) if unanticipated conditions are encountered such as buried debris including drums, tanks or other containers.

- **Health and Safety Plan (HASP):** The contractor selected to perform the work in the Project Area is expected to prepare a HASP for its workers and the public to address the anticipated contaminants of concern, specifically PFOA, PFOS, and arsenic. The HASP shall include historical site characterization data. The HASP shall be prepared by a Certified Industrial Hygienist or other qualified individual appropriately trained in worker health and safety procedures and requirements. The contractor is solely responsible for conducting the work in a manner that is protective of workers and the public. Employees that will be handling contaminated soil or water are required to have OSHA HAZWOPER 40-hour training.
- **Regulatory Review and Submittals:** A review of other federal, state, or local regulatory requirements (e.g., National Pollutant Discharge Elimination System permits) shall be conducted before work commences depending on the location and type of planned activity.

4. Soil Pre-Characterization and Classification

GEI conducted soil pre-characterization in August 2016 which did not indicate the presence of PFCs in soil at the property. However, since the extent of the investigation was limited and testing of soil and sediments within the Knight's Brook Tributary was not performed, all excess soil will be disposed of offsite at a licensed disposal facility. All backfill and restoration activities, including soil decompaction, fertilization, and seeding, shall be in accordance with the *Soil Management Plan for Easement* prepared by Gove Environmental Services (Attachment A-1).

The Contractor shall identify an appropriate off-site reuse or disposal facility and submit the facility name and location to Eversource for review and approval. GEI's pre-characterization data may be sufficient to meet acceptance criteria for offsite reuse, recycling or disposal. If required by the selected reuse, recycling or disposal location, additional characterization for waste profiling of Project Area soil may be performed in-situ or from excavated or stockpiled material.

Based on the proposed Project Area trench dimensions of 5-feet wide by up to 6.5-feet-deep and 1,600-feet-long, a total of approximately 1,925 cubic yards of soil may be generated during trenching activities on Frink Farm. For portions of the new underground duct bank located in the agricultural zone between approximately 499+50 to 511+00 the transmission line must be covered with at least 4 feet of native material (Fig. 2). All excess soil will be disposed of offsite at a licensed disposal facility or reused offsite in accordance with applicable reuse regulations and guidelines.

5. Soil Excavation

Excavated material shall be handled in general accordance with *The New Hampshire Code of Administrative Rules, Chapter Env-Or 600 - Contaminated Site Management* (Env-Or-600) and all other applicable federal, state, and local laws, regulations, and bylaws.

- **Materials Management Area:** If excavated materials are to be stored or stockpiled in the Project Area, an Excavated Material Management Area will be established by the contractor and approved by Eversource, ensuring it is in accordance with NHDES Env-Or 611.05(b). The Materials Management Area shall be within the Eversource Project Area.
- **Dust Monitoring:** As needed, the contractor shall employ control measures to minimize airborne particulates during excavation or soil management (e.g. water sprays, mists, etc.).
- **Offsite Transport and Documentation:** The Contractor shall select a location for off-site reuse and submit to Eversource for approval. Excess excavated material shall be loaded and transported to an appropriate off-site reuse, recycling or disposal location. Person(s) transporting the excavated materials shall be licensed and permitted to transport such material in state(s) having jurisdiction. Trailers used for transport shall have covers to prevent dust blow-off.

The contractor shall prepare disposal documentation and shall provide Eversource with material tracking and disposal records and certifications. Project documentation shall be maintained, including accurate records of material tracking, disposal transportation manifests (e.g., Straight BOL), and if necessary, additional environmental testing required by the receiving location.

- **Stream Crossing:** While performing the excavation through the Knight's Brook Tributary, the Contractor will:
    - Construct an access road to cross the tributary that meets the specified requirements and permit obligations for the project.
    - Install the necessary equipment to divert surface water around the excavation.
    - Install the necessary materials to prevent surface water from entering the excavation during construction.

The requirements for crossing the Knight's Brook Tributary and diverting the stream during work is shown on Fig. 3B.

6. Dewatering

- **Groundwater Pre-characterization and Classification:** GEI tested groundwater for PFOA and PFOS in September 2016 and June 2017. Groundwater testing results indicated the following:
    - PFOA and PFOS were not detected in B101(MW) in September 2016. PFOA and PFOS were detected in B101(MW) in June 2017 but at concentrations below the NH AGQS of 0.07 µg/L.
    - PFOA and PFOS were detected in B102(MW) in both September 2016 and June 2017 but at concentrations below the NH AGQS of 0.07 µg/L.
    - PFOA was not detected in B103(MW). PFOS was detected in B103(MW) but at concentrations below the NH AGQS of 0.07 µg/L.

Prior to the start of construction, additional groundwater samples will be collected, if possible, from B101(MW), B102(MW), and B103(MW), to assess site conditions at the time of construction.

- **Groundwater Management**

GEI conducted hydraulic conductivity testing and calculated expected dewatering rates of groundwater within the trench. The estimated dewatering rates are as follows:

- Near B101(MW): Approximately 45 to 82 gpd during a low water condition and approximately 486 to 770 gpd during a high groundwater condition.
- Near B102(MW): Approximately 104 to 187 gpd during a low groundwater condition and approximately 942 to 1466 gpd during a high groundwater condition.
- Near B103: Based on the soil encountered in B103(MW), we estimate the dewatering rates near B103(MW) will likely be between the estimated ranges for B101(MW) and B102(MW). The trench near B103(MW) may also be dry if construction takes place during low groundwater conditions similar August and September of 2017.

Our calculations are based on the limited geologic information observed during installation of B101(MW) and B102(MW). Actual dewatering rates may be higher or lower depending on site-specific and seasonal conditions.

Although, groundwater testing results did not exceed the AGQS for PFOA/PFOS, Eversource has elected to manage groundwater by one or a combination of the following methods:

- **Treatment and discharge to surface water:** Groundwater generated as part of dewatering may be discharged to surface water under a NPDES Remediation General Permit (RGP). On-site surface water discharge will likely require use of a water treatment system, including equipment such as fractionation (frac) tanks and carbon units, to adequately treat the groundwater for contaminants before discharging into Knight's Brook Tributary. Additional water testing for NPDES RGP requirements as well as approval from USEPA and NHDES will be obtained prior to treatment and discharge of water.
- **Offsite disposal of groundwater*:*** Groundwater may be temporarily stored onsite in a frac tank and then pumped to a vacuum truck and transported offsite for disposal or directly pumped from the excavation with a vacuum truck and transported offsite for disposal. All receiving facilities must be pre-approved by Eversource. No excess effluent may be recharged or disposed of at an uncontrolled location

- **Surface Water Pre-characterization and Classification:** Surface water testing from September 2016 indicated that PFOA and PFOS were detected in sample SW1 from Knight's Brook tributary at 0.842 µg/L and 2.91 µg/L, respectively. The total PFOA/PFOS concertation was 3.752 µg/L. Both the individual and total concentrations exceed the NH AGQS of 0.07 µg/L.

  We understand that Knight's Brook tributary will be diverted during construction in a manner that does not produce excess water or require additional water management, treatment, or offsite disposal. However, if excess water is generated, the contractor shall propose methods of treatment or disposal of the surface water for approval by Eversource.

Attachments:

Fig. 1 – Site Location Map
Fig. 2 – Project Area Plan
Fig. 3B – Temporary Stream Crossing Section & Details
Attachment A-1 – Gove Environmental Services Soil Management Plan

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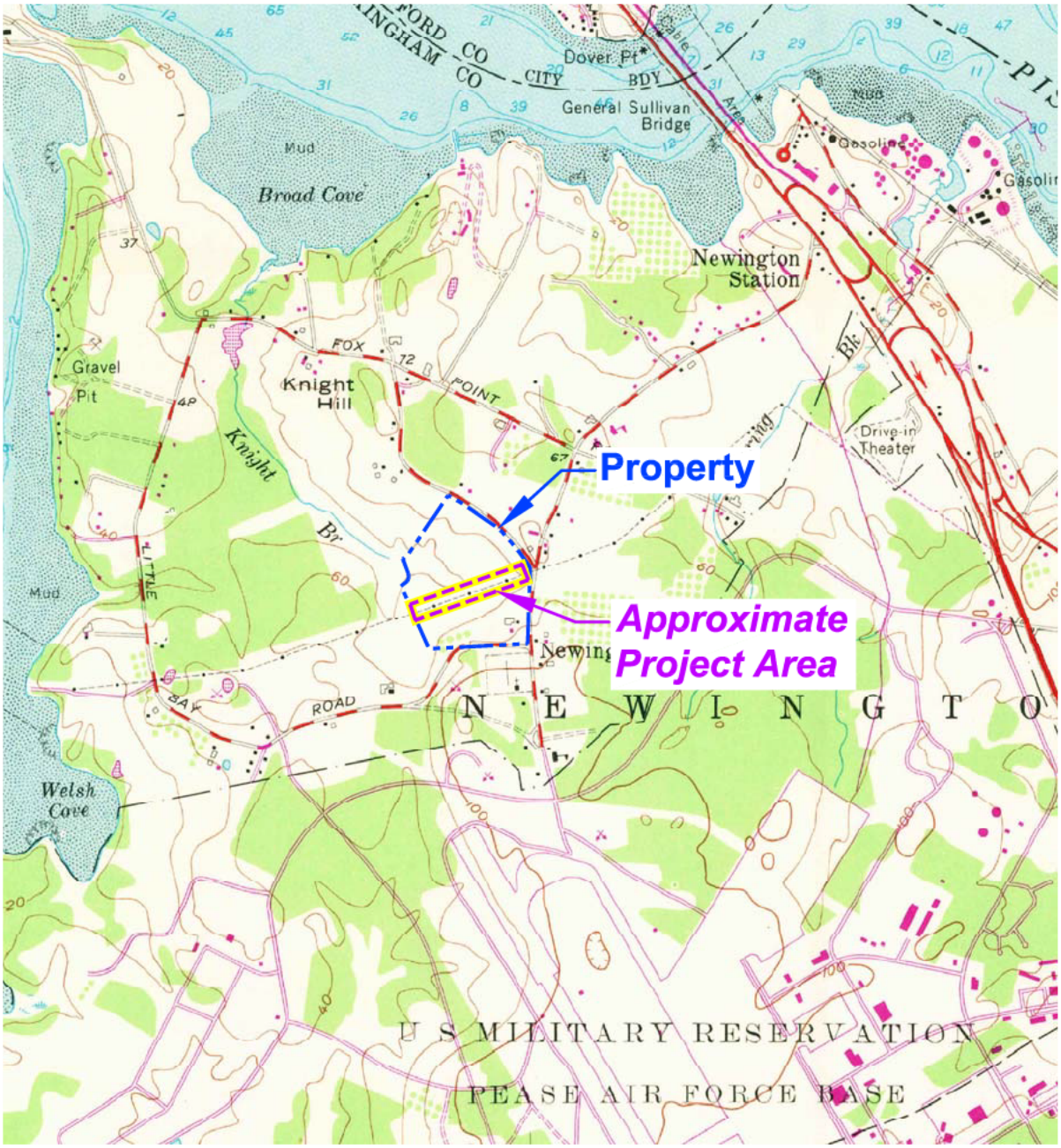
Figures



0 1000 2000 4000 6000

SCALE, FEET

This Image from U.S.G.S. Topographic 7.5 Minute Series
Portsmouth, NH - ME Quadrangle, 1981.
Datum is National Geodetic Vertical Datum of 1929 (NGVD29).
Contour Interval is 20 Feet.

QUADRANGLE LOCATION

Soil and Water Management Plan Darius Frink Farm Newington, New Hampshire	GEI Consultants	SITE LOCATION MAP
Eversource Energy Manchester, New Hampshire	Project 1607530	December 2017 Fig. 1

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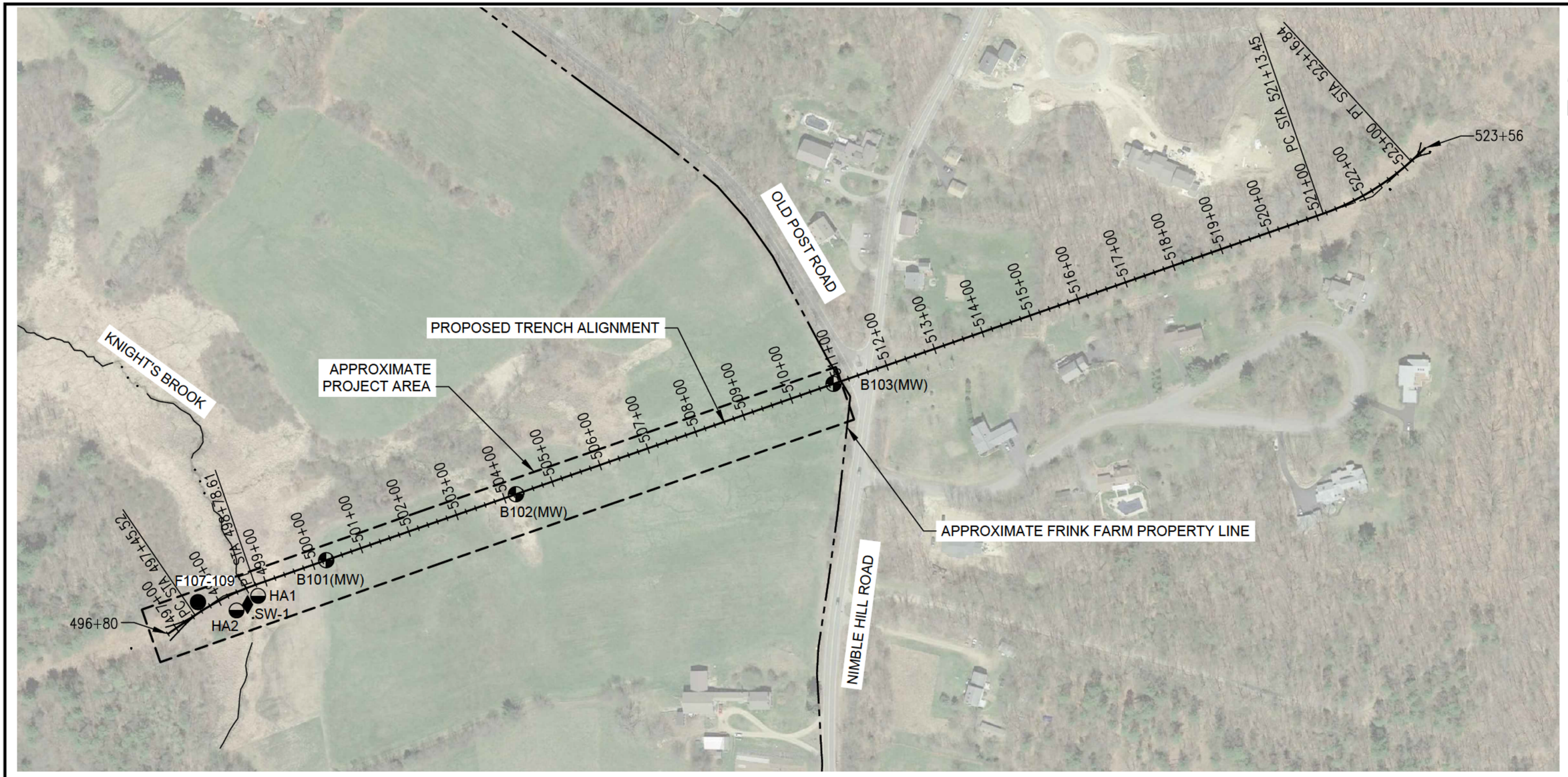


LEGEND:

- MONITORING WELL INSTALLED BY GEI IN AUGUST 2016
- SURFACE WATER SAMPLE COLLECTED BY GEI IN SEPTEMBER 2016
- HAND AUGER BY GEI IN APRIL 2017
- BORING BY TERRACON IN SEPTEMBER 2016
- 498+00 — TRENCH ALIGNMENT AND STATION

NOTES:

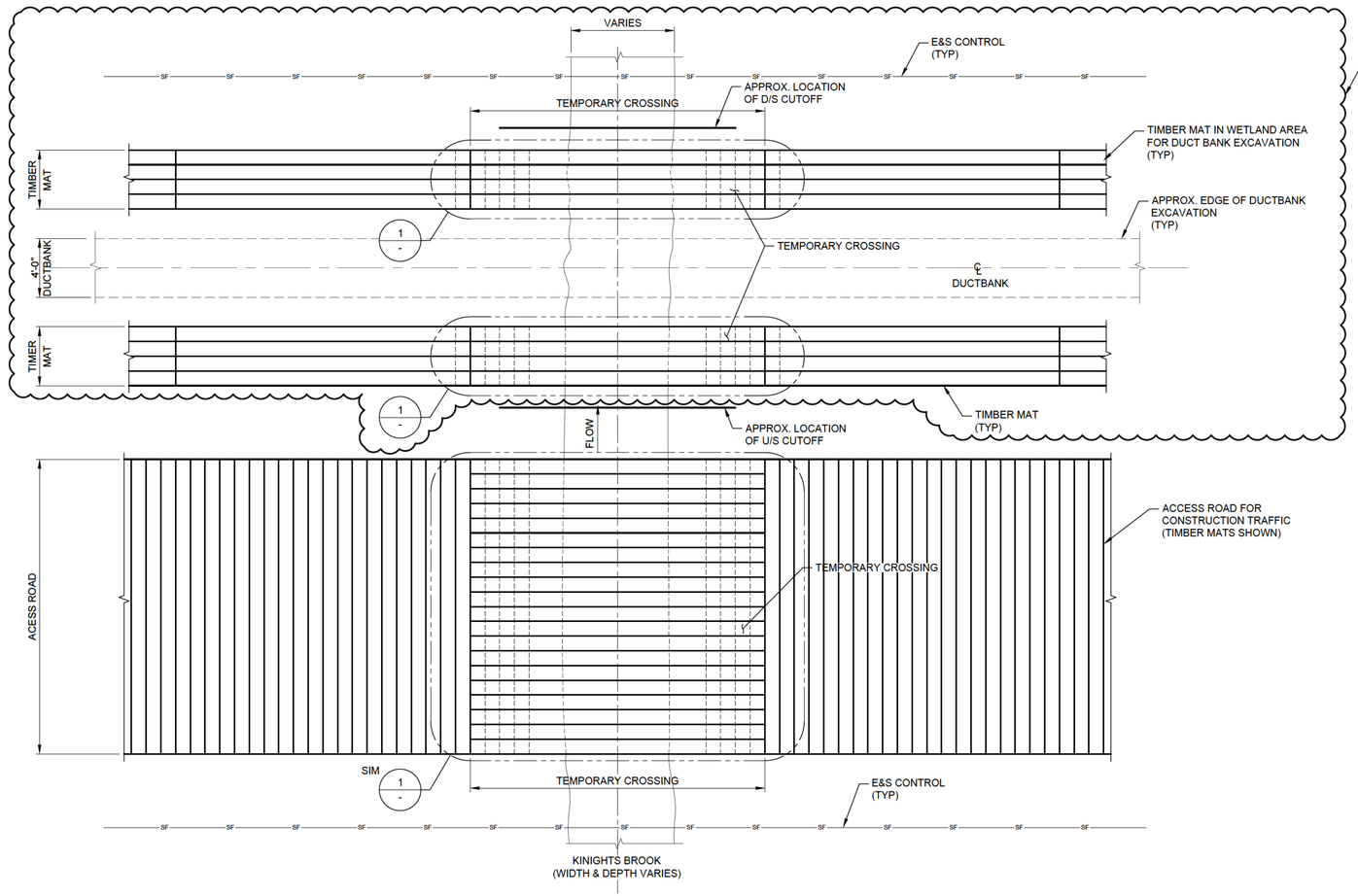
1. LOCATIONS ARE APPROXIMATE.

0 200 400

SCALE: 1" = 200'

Soil and Water Investigation Darius Frink Farm Newington, New Hampshire	GEI Consultants	PROJECT AREA PLAN
Eversource Manchester, New Hampshire	Project 1607530	December 2017 Fig. 2

\\geiconsulta B:\Working\EVERSOURCE\1607530 - EVS-SRP NH\00_CAD\Design\Working\1607530 - Frink Farm Trench Dam Details Figure - F-2.dwg - 6/21/2017

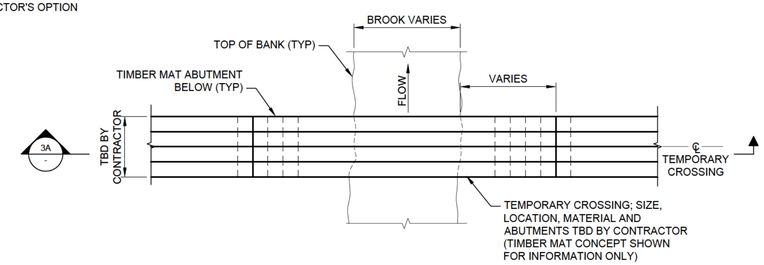


(PLAN VIEW) EXCAVATION AND CONSTRUCTION ACCESS CONCEPT

TEMPORARY CROSSING

0 5 10

SCALE: 1" = 5'



1 - TYPICAL DETAIL (PLAN VIEW)

TEMPORARY CROSSING (OPTIONAL)

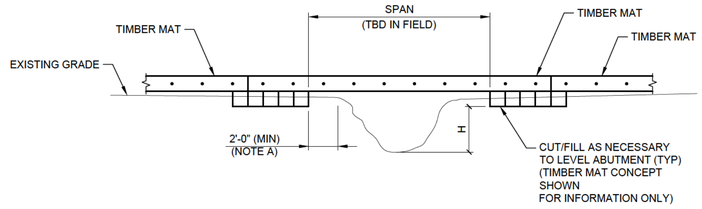
SCALE: N.T.S.

DIMENSIONS

DIM. X	LOCATION REQUIRED
4'-0" (MIN)	CROSSING AT DUCTBANK EXCAVATION
12'-0" (MIN)	CROSSING AT CONSTRUCTION ACCESS ROAD

CROSSING NOTES:

1. LOCATIONS OF THE TEMPORARY STREAM CROSSING ARE TO BE DETERMINED IN THE FIELD BY THE CONTRACTOR.
2. THE DESIGN AND CONSTRUCTION OF THE TEMPORARY CROSSING AND ABUTMENTS ARE THE RESPONSIBILITY OF THE CONTRACTOR AND MAY DIFFER FROM THE LAYOUT SHOWN.
3. THE TOTAL AREA OF MATTING IN WETLAND NW-16, AS SHOWN IN THE SEACOAST RELIABILITY PROJECT ENVIRONMENTAL MAP SET, SHALL NOT EXCEED 16,577 SQUARE FEET.
4. THE EXISTING GRADE SHALL BE CUT AND FILLED AS NECESSARY TO PROVIDE A LEVEL SURFACE FOR THE CROSSING.
5. REMOVE THE TEMPORARY STREAM CROSSING WHEN WORK IS COMPLETE, RESTORE EXISTING GRADES, AND STABILIZE THE AREA OF TEMPORARY IMPACT AT THE DIRECTION OF THE ENVIRONMENTAL MONITOR.



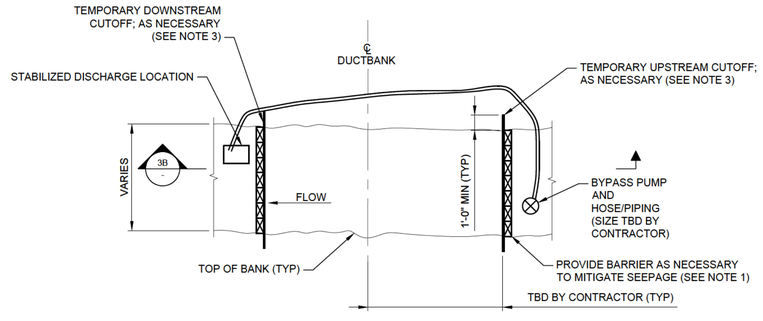
3A - TYPICAL SECTION

TEMPORARY CROSSING (OPTIONAL)

SCALE: N.T.S.

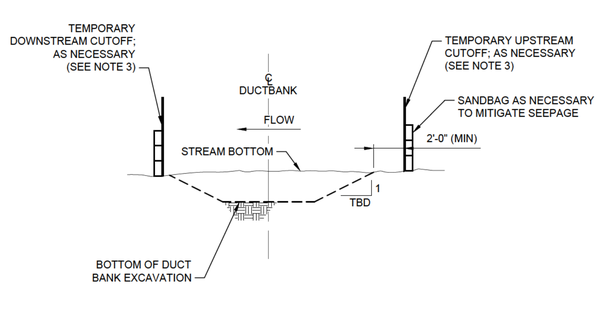
NOTE:

A. SET LEADING EDGE OF ABUTMENTS 2 FEET OR H FEET FROM THE TOP OF THE BANK, WHICHEVER IS LARGER.



TYPICAL DETAIL (PLAN VIEW)

TEMPORARY STREAM DIVERSION



3B - TYPICAL SECTION

TEMPORARY STREAM DIVERSION

SCALE: N.T.S.

NOTE:

A. BYPASS PUMP, HOSE, STABILIZED DISCHARGE LOCATION, AND SAND BAGS NOT SHOWN FOR CLARITY.

STREAM DIVERSION NOTES:

1. THE CONTRACTOR SHALL CONSTRUCT, MAINTAIN, AND OPERATE A STREAM DIVERSION STRUCTURE AS NEEDED TO DIVERT STREAM FLOWS AROUND THE DUCT BANK TRENCH. THE DIVERSION STRUCTURE SHALL BE MADE OF NON-ERODIBLE MATERIAL SUCH AS SAND BAGS, RIP RAP, CONCRETE OR OTHER SUITABLE MATERIAL ABLE TO WITHSTAND THE ANTICIPATED FLOWS.
2. THE LOCATION OF THE TEMPORARY STREAM DIVERSION STRUCTURE UPSTREAM OF THE PROPOSED DUCT BANK ALIGNMENT IS TO BE DETERMINED IN THE FIELD BY THE CONTRACTOR.
3. IF SURFACE AND/OR GROUNDWATER FLOW CONDITIONS REQUIRE, A CONTINUOUS STEEL PLATE, SHEET PILES, OR OTHER IMPERVIOUS BARRIER MAY BE DRIVEN INTO THE SUBSURFACE SOILS BOTH UPSTREAM AND DOWNSTREAM OF THE TRENCH TO PROVIDE A CUTOFF AND TO PREVENT SURFACE WATER AND GROUNDWATER FROM INFILTRATING INTO THE WORK AREA.
4. TRENCH SHORING AND EXCAVATION SLOPING TO BE CONDUCTED IN ACCORDANCE WITH OSHA REQUIREMENTS.
5. CONTRACTOR TO INSTALL AN APPROPRIATELY SIZED BYPASS PUMP UPSTREAM OF THE WORK AREA. THE PUMP SHALL BE OPERATED TO APPROXIMATE STREAM FLOW RATES AND NOT CAUSE UPSTREAM FLOODING OR OVERTOPPING OF THE STREAM BANK. AN APPROPRIATELY SIZED BASIN MAY BE INSTALLED UPSTREAM OF THE DIVERSION. FILTERING METHODS SHOULD BE EMPLOYED TO REDUCE THE MIGRATION OF FINES.
6. A STABILIZED DISCHARGE POINT DOWNSTREAM OF THE TRENCH SHALL BE CONSTRUCTED TO DISSIPATE ENERGY OF DIVERTED FLOWS. THE STABILIZED DISCHARGE POINT MAY CONSIST OF STONE PLACED ON A GEOTEXTILE SEPARATION LAYER OR OTHER SOLID SURFACE THAT RESULTS IN LOW-VELOCITY SHEET FLOW DISCHARGE TO THE STREAM. THE CONTRACTOR SHALL LOCATE THE STABILIZED DISCHARGE POINT SUFFICIENTLY DOWNSTREAM OF THE WORK AREA TO MITIGATE THE POTENTIAL FOR BACKWATER FROM THE BYPASS SYSTEM FROM IMPACTING THE WORK AREA.
7. GROUNDWATER MANAGEMENT IN THE IMMEDIATE WORK AREA IS THE RESPONSIBILITY OF THE CONTRACTOR AND SHOULD BE MANAGED IN ACCORDANCE WITH THE FRINK FARM AREA SOIL AND GROUNDWATER MANAGEMENT PLAN PREPARED BY GEI, DATED NOVEMBER 2017.
8. FOLLOWING INSTALLATION OF THE DUCT BANK, RESTORE SURFACE SOIL IN ACCORDANCE WITH THE SOIL MANAGEMENT PLAN FOR EASEMENT FRINK FARM, NIMBLE HILL ROAD, NEWINGTON, NH, PREPARED BY GOVE ENVIRONMENTAL SERVICES, DATED AUGUST 2016. RESTORE AND STABILIZE STREAM BANKS AND REMOVE THE DIVERSION STRUCTURE AT THE DIRECTION OF THE ENVIRONMENTAL MONITOR.

Frink Farm 115kV Underground Transmission Line Newington, New Hampshire	GEI Consultants	TEMPORARY STREAM CROSSING PLAN, SECTION & DETAILS
Eversource Manchester, New Hampshire	Project 1607530	December 2017 Fig. 3B

B:\Working\EVERSOURCE\1607530 - EVS-SRP NH\00_CAD\Design\Working\1607530 - Temporary Stream Crossing Figure - F-1_v2.dwg - 11/15/2017

Attachment A-1

Gove Environmental Services Soil Management Plan

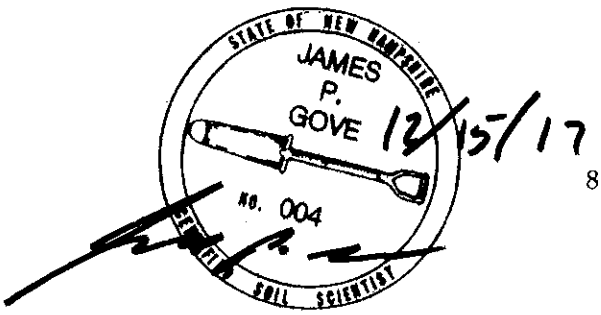
GOVE ENVIRONMENTAL SERVICES, INC.

December 15, 2017

SOIL MANAGEMENT PLAN FOR EASEMENT
FRINK FARM, NIMBLE HILL ROAD, NEWINGTON, NH

1- A meeting will be held with the contractor, prior to construction, to discuss handling of soil.
2- The concept is to segregate the topsoil (A horizon) from the subsoil (B horizon) from the substratum (C horizon). The natural soil profile is a topsoil over a subsoil over a substratum. The intent is to replicate the natural soil profile when the excavation in the field is to be restored.
3- A qualified person will be on site during the excavation of the line to identify the soil horizons for the contractor.
4- The contractor, during the course of the excavation, shall segregate the topsoil, segregate the subsoil and segregate the substratum such that they are individually stock piled and not intermixed.
5- At 25-foot intervals along the trench in the field, the depth of the topsoil, subsoil and substratum shall be recorded as a basis for replicating the soil profile during restoration.
6- After the transmission line duct bank is constructed, the substratum shall be placed in the trench and slightly compacted up to the depth of the bottom of the subsoil layer.
7- The subsoil shall be placed into the trench, over the substratum layer, up to the depth of the bottom of the topsoil layer. Care will be taken to remove any open voids, but shall not compact the subsoil layer.
8- The topsoil shall be placed over the subsoil, mounded 2 inches above the natural grade on either side of the trench to allow for natural settling. Care will be taken to remove any open voids, but shall not compact the topsoil layer. . The surface will be disk harrowed to break up any clods or root balls.
9- The topsoil shall be seeded with a seed mix recommended by the Rockingham County Conservation District and mulched with straw.
10- All ground surface areas impacted construction activities shall be scarified to remove compaction, and shall be seeded and mulched as specified in 9.
11- Excess substratum/subsoil soil material shall be removed from the field. Excess topsoil shall be spread evenly in the easement area in the stock pile areas and seeded and mulched as noted in 9.
12 – Monitor success of seeding and reseed as necessary.

Compiled by Jim Gove, President of Gove Environmental Services, Inc.
GES Project Number 2015138



8 Continental Dr Bldg 2 Unit H, Exeter, NH 03833-7526
Ph (603) 778 0644 / *Fax* (603) 778 0654
www.gesinc.biz
info@gesinc.biz

Appendix B

Boring Logs

BORING INFORMATION

LOCATION: West end of field at Frink Farm
GROUND SURFACE EL. (ft): NM
VERTICAL DATUM: NA
TOTAL DEPTH (ft): 8 0
LOGGED BY: C Conti
DATE START/END: 8/26/2016 - 8/26/2016
DRILLING COMPANY: Drilex Environmental
DRILLER NAME: J Jalutkewicz
RIG TYPE: CME 45

BORING

B101

DRILLING INFORMATION

HAMMER TYPE: Automatic
AUGER I.D./O.D.: NA / NA
DRILLING METHOD: Hollow Stem Auger
CASING I.D./O.D.: 4 25 inch/ 8 inch
DRILL ROD O.D.:
CORE BARREL TYPE: NA
CORE BARREL I.D./O.D. NA / NA
WATER LEVEL DEPTHS (ft): Not Encountered

ABBREVIATIONS:
Pen = Penetration Length
Rec = Recovery Length
RQD = Rock Quality Designation = Length o Sound Cores>4 in / Pen %
WOR = Weight o Rods
WOH = Weight o Hammer
S = Split Spoon Sample
C = Core Sample
U = Undisturbed Sample
SC = Sonic Core
DP = Direct Push Sample
HSA = Hollow-Stem Auger
Qp = Pocket Penetrometer Strength
Sv = Pocket orvane Shear Strength
LL = Liquid Limit
P = Plasticity ndex
P D = Photoionization Detector
D /O D = nside Diameter/Outside Diameter
NA NM = Not Applicable Not Measured
Blows per 6 in 140-lb hammer alling 30 inches to drive a 2-inch-O D split spoon sampler

E ev. (ft)	Depth (ft)	Samp e Informat on: Samp e No.	Depth (ft)	Pen./ Rec. (n)	B ows per 6 n. or RQD	Dr ng Remarks/ F e d Test Data	Layer Name	So and Rock Descr pt on
		S1	0 to 2	24/18	3 4 4 6	S1= 32.5 ppm	SILT	S1: SILT WITH SAND (ML); ~90% nonp ast c f nes, ~10% f en sand, gray, dry, roots.
		S2	2 to 4	24/20	6 6 5 5	S2= 7.0 ppm	CLAY	S2: LEAN CLAY WITH SAND (CL); ~90% ow p ast c ty f nes, ~10% most y f ne sand, gray. Mo st n bottom 6 nches.
	5	S3	4 to 6	24/21	1 2 2 2	S3= 5.6 ppm		S3: S m ar to S2. Wet start ng at ~4.5 to 5 feet. Some redd sh orange mott ng.
		S4	6 to 8	24/17	3 3 2 1	S4= 4.6 ppm		S4: S m ar to S2. Gray ght brown, wet, some mott ng w th redd sh orange.
	10							Bottom of bor ng at ~8 feet. Insta ed mon tor ng we .
	15							
	20							

NOTES:
Samples collected B101(S1-S2) composite and B101(S3-S4) composite

PROJECT NAME: Eversource New Hampshire Seacoast Reliability Project
CITY/STATE: Newington NH
GEI PROJECT NUMBER: 1607530

GEI Consultants

GE WOBURN S D 1-LOCA ON-LAYER NAME EVS NH SRP GPJ GE DA A EMPLA E 2011 GD 8/29/16

BORING INFORMATION

LOCATION: Middle of field at Frink Farm
GROUND SURFACE EL. (ft): NM
VERTICAL DATUM: NA
TOTAL DEPTH (ft): 7 5
LOGGED BY: C Conti
DATE START/END: 8/26/2016 - 8/26/2016
DRILLING COMPANY: Drilex Environmental
DRILLER NAME: J Jalutkewicz
RIG TYPE: CME 45

BORING
B102
PAGE 1 of 1

DRILLING INFORMATION

HAMMER TYPE: Automatic
AUGER I.D./O.D.: NA / NA
DRILLING METHOD: Hollow Stem Auger
CASING I.D./O.D.: 4 25 inch/ 8 inch
DRILL ROD O.D.:
CORE BARREL TYPE: NA
CORE BARREL I.D./O.D. NA / NA
WATER LEVEL DEPTHS (ft): Not Encountered

ABBREVIATIONS:
Pen = Penetration Length
Rec = Recovery Length
RQD = Rock Quality Designation = Length o Sound Cores>4 in / Pen %
WOR = Weight o Rods
WOH = Weight o Hammer
S = Split Spoon Sample
C = Core Sample
U = Undisturbed Sample
SC = Sonic Core
DP = Direct Push Sample
HSA = Hollow-Stem Auger
Qp = Pocket Penetrometer Strength
Sv = Pocket orvane Shear Strength
LL = Liquid Limit
P = Plasticity ndex
P D = Photoionization Detector
D /O D = nside Diameter/Outside Diameter
NA NM = Not Applicable Not Measured
Blows per 6 in 140-lb hammer alling 30 inches to drive a 2-inch-O D split spoon sampler

E ev. (ft)	Depth (ft)	Samp e Informat on: Samp e No.	Depth (ft)	Pen./ Rec. (n)	B ows per 6 n. or RQD	Dr ng Remarks/ F e d Test Data	Layer Name	So and Rock Descr pt on
		S1	0 to 2	24/14	3 3 5 5	S1= 5.6 ppm	SILT	S1: SILT WITH SAND (ML); ~85% nonp ast c f nes, ~15% most y f ne sand, ght brown to gray, roots.
		S2	2 to 4	24/20	8 9 10 10	S2= 5.1 ppm		S2: SILT (ML); ~95% ow p ast c ty f nes, ~5% f ne sand, gray.
	5	S3	4 to 6	24/19	2 2 2 2	S3= 5.4 ppm	CLAY	S3: LEAN CLAY WITH SAND (CL); ~85% ow p ast c ty f nes, ~15% most y f ne sand, brown gray. Wet at 5 feet w th 2" seam of f ne sand at ~ 5 feet. Increas ng f ne sand w th depth.
		S4	6 to 6.8	9/9	18 55/3"	S4= 5.1 ppm Weathered rock n t p. Auger refusa at 7.5 feet.		S4: SANDY LEAN CLAY (CL); ~75% ow p ast c ty f nes, ~25% most y f ne sand, ght brown gray, wet, rock n t p.
	10							Bottom of bor ng @ 7.5 feet. Insta ed mon tor ng we . Rock sh fted, bottom of screen at 7 feet.
	15							
	20							

NOTES:
Samples collected B102(S1-S2) composite and B102 (S3-S4) composite

PROJECT NAME: Eversource New Hampshire Seacoast Reliability Project
CITY/STATE: Newington NH
GEI PROJECT NUMBER: 1607530

GEI Consultants

GE WOBURN S D 1-LOCA ON-LAYER NAME EVS NH SRP GPJ GE DA A EMPLA E 2011 GD 8/29/16

BORING INFORMATION

LOCATION: East end of field Frink Farm
GROUND SURFACE EL. (ft): NM
VERTICAL DATUM: NA
TOTAL DEPTH (ft): 8 0
LOGGED BY: C Conti
DATE START/END: 8/26/2016 - 8/26/2016
DRILLING COMPANY: Drilex Environmental
DRILLER NAME: J Jalutkewicz
RIG TYPE: CME 45

BORING

B103

DRILLING INFORMATION

HAMMER TYPE: Automatic
AUGER I.D./O.D.: NA / NA
DRILLING METHOD: Hollow Stem Auger
CASING I.D./O.D.: 4 25 inch/ 8 inch
DRILL ROD O.D.:
CORE BARREL TYPE: NA
CORE BARREL I.D./O.D. NA / NA
WATER LEVEL DEPTHS (ft): Not Encountered

ABBREVIATIONS:
Pen = Penetration Length
Rec = Recovery Length
RQD = Rock Quality Designation = Length o Sound Cores>4 in / Pen %
WOR = Weight o Rods
WOH = Weight o Hammer
S = Split Spoon Sample
C = Core Sample
U = Undisturbed Sample
SC = Sonic Core
DP = Direct Push Sample
HSA = Hollow-Stem Auger
Qp = Pocket Penetrometer Strength
Sv = Pocket orvane Shear Strength
LL = Liquid Limit
P = Plasticity ndex
P D = Photoionization Detector
D /O D = nside Diameter/Outside Diameter
NA NM = Not Applicable Not Measured
Blows per 6 in 140-lb hammer alling 30 inches to drive a 2-inch-O D split spoon sampler

E ev. (ft)	Depth (ft)	Samp e No.	Samp e Depth (ft)	Pen./ Rec. (n)	B ows per 6 n. or RQD	Dr ng Remarks/ F e d Test Data	Layer Name	So and Rock Descr pt on
		S1	0 to 2	24/13	3 5 8 8	S1= 0.3 ppm	S LT	S1: SILT WITH SAND (ML); ~70% nonp ast c f nes, ~25% most y f ne sand, ~5% grave to 3/4", ght brown, dry, some roots n top 3".
		S2	2 to 2.9	11/11	18 65/5"	S2= 0.5 ppm		S2: S m ar to S1, no roots.
						Cobb e from 3 4 feet.		
	5	S3	4 to 6	24/13	18 19 25 32	S3= 0.6 ppm	GRAVEL	S3: WIDELY GRADED GRAVEL WITH SILT AND SAND (GW GM); ~75% f ne to coarse grave , ~15% most y f ne sand, ~10% nonp ast c f nes, brown.
		S4			55 30 80/7"	S4= 0.8 ppm		S4: WIDELY GRADED GRAVEL WITH SILT AND SAND (GW GM); ~60% f ne to coarse grave , ~30% f ne to coarse sand, ~10% nonp ast c f nes, brown to redd sh brown.
	10					Refusa on cobb e/ weathered rock. Augrered to 8 feet.		Bottom of bor ng at 8 feet. Insta ed mon tor ng we .
	15							
	20							

NOTES:
Samples collected B103(S1-S2) composite and B103 (S3-S4) composite

PROJECT NAME: Eversource New Hampshire Seacoast Reliability Project
CITY/STATE: Newington NH
GEI PROJECT NUMBER: 1607530

GEI Consultants

GE WOBURN S D 1-LOCA ON-LAYER NAME EVS NH SRP GPJ GE DA A EMPLA E 2011 GD 8/29/16

BORING INFORMATION

LOCATION: East side of tributary

GROUND SURFACE EL. (ft): NM | **DATE START/END:** 4/7/2017 - 4/7/2017

VERTICAL DATUM: NM | **DRILLING COMPANY:** GE Consultants

TOTAL DEPTH (ft): 6 5 | **DRILLER NAME:** M Greer J Wolpert

LOGGED BY: M Greer | **RIG TYPE:** Hand Auger

BORING

HA1

DRILLING INFORMATION

HAMMER TYPE: NA | **CASING I.D./O.D.:** NA / NA | **CORE BARREL TYPE:** NA

AUGER I.D./O.D.: 2 5 inch / 2 6 inch | **DRILL ROD O.D.:** NM | **CORE BARREL I.D./O.D.** NA / NA

DRILLING METHOD: Auger

WATER LEVEL DEPTHS (ft): Not measured

ABBREVIATIONS:

Pen = Penetration Length
Rec = Recovery Length
RQD = Rock Quality Designation = Length o Sound Cores>4 in / Pen %
WOR = Weight o Rods
WOH = Weight o Hammer

S = Split Spoon Sample
C = Core Sample
U = Undisturbed Sample
SC = Sonic Core
DP = Direct Push Sample
HSA = Hollow-Stem Auger

Qp = Pocket Penetrometer Strength
Sv = Pocket orvane Shear Strength
LL = Liquid Limit
P = Plasticity ndex
P D = Photoionization Detector
D /O D = nside Diameter/Outside Diameter

NA NM = Not Applicable Not Measured
Blows per 6 in 140-lb hammer alling 30 inches to drive a 2-inch-O D split spoon sampler

Elev. (ft)	Depth (ft)	Sample Information: Sample No.	Sample Information: Depth (ft)	Sample Information: Pen./Rec. (in)	Sample Information: Blows per 6 in. or RQD	Drilling Remarks/Field Test Data	Layer Name	Soil and Rock Description
		S1	1 to 2	12/12			OL	S1 (0 1'): ORGANIC SOIL (OL); ~85% ow p ast c ty f nes, ~15% f ne sand, dark brown, roots n top 6 nches, wet.
		S2	2 to 3	12/12			ML	S2 (1 1.5'): S mm ar to S1(0 1'), no roots. S2(1.5 2'): SANDY SILT (ML); ~70% ow p ast c ty f nes, ~30% f ne sand, gray, wet.
		S3	3 to 4	12/12				S3: Same as above.
		S4	4 to 5	12/12			CLAY	S4: LEAN CLAY (CL); ~95% med um p ast c f nes, ~5% f ne sand, gray, wet.
	5	S5	5 to 6	12/12				S5: S mm ar to S4, mott ed orange, some roots.
		S6	6 to 7	12/12				S6: S mm ar to S4, mott ed orange, some roots.
		S7	6.5 to 7	6/6				S7: S mm ar to S4, mott ed orange, some roots.
								Bottom of bor ng at about 6.5 feet. Backf ed w th cutt ngs.
	10							
	15							
	20							

NOTES:

PROJECT NAME: Eversource New Hampshire Seacoast Reliability Project

CITY/STATE: Newington NH

GEI PROJECT NUMBER: 1607530

GEI Consultants

GE WOBURN S D 1-LOCA ON-LAYER NAME EVS NH SRP GPJ 6/21/17

BORING INFORMATION

LOCATION: West side of tributary
GROUND SURFACE EL. (ft): NM
VERTICAL DATUM: NM
TOTAL DEPTH (ft): 6 0
LOGGED BY: M Greer
DATE START/END: 4/7/2017 - 4/7/2017
DRILLING COMPANY: GE Consultants
DRILLER NAME: M Greer J Wolpert
RIG TYPE: Hand Auger

BORING

HA2

DRILLING INFORMATION

HAMMER TYPE: NA
AUGER I.D./O.D.: 2 5 inch / 2 6 inch
DRILLING METHOD: Auger
WATER LEVEL DEPTHS (ft): Not measured
CASING I.D./O.D.: NA / NA
DRILL ROD O.D.: NM
CORE BARREL TYPE: NA
CORE BARREL I.D./O.D. NA / NA

ABBREVIATIONS:
Pen = Penetration Length
Rec = Recovery Length
RQD = Rock Quality Designation = Length o Sound Cores>4 in / Pen %
WOR = Weight o Rods
WOH = Weight o Hammer
S = Split Spoon Sample
C = Core Sample
U = Undisturbed Sample
SC = Sonic Core
DP = Direct Push Sample
HSA = Hollow-Stem Auger
Qp = Pocket Penetrometer Strength
Sv = Pocket orvane Shear Strength
LL = Liquid Limit
P = Plasticity ndex
P D = Photoionization Detector
D /O D = nside Diameter/Outside Diameter
NA NM = Not Applicable Not Measured
Blows per 6 in 140-lb hammer alling 30 inches to drive a 2-inch-O D split spoon sampler

E ev. (ft)	Depth (ft)	Samp e Informat on: Samp e No.	Depth (ft)	Pen./ Rec. (n)	B ows per 6 n. or RQD	Dr ng Remarks/ F e d Test Data	Layer Name	So and Rock Descr pt on
							OL	S1(0 0.5'): ORGANIC SOIL (OL); ~85% ow p ast c ty f nes, ~15% f ne sand, dark brown, roots, wet.
		S1	1 to 2	12/12			SANDY S L	S1(0.5 1'): SANDY SILT (ML); ~80% ow p ast c ty f nes, ~20% f ne sand, no roots, organe mott ng, b ue, wet.
		S2	2 to 3	12/12				S2: same as S1(0.5 1').
		S3	3 to 4	12/12				S3: same as S1(0.5 1').
		S4	4 to 5	12/12			SAND	S4(3 3.5'): same as S1(0.5 1').
	5	S5	5 to 6	12/12				S4(3.5 4'): NARROWLY GRADED SAND WITH SILT (SP SM); ~80% most y f ne sand sand, ~20% ow p ast c ty f nes, gray, wet.
		S6	6 to 7	12/12			CLAY	S5: s mm ar to S4(3.5 4').
								S6: LEAN CLAY (CL); ~95% med um p ast c f nes, ~5% f ne sand, gray, mott ed, wet.
								Bottom of bor ng at about 6 feet. Backf ed w th cutt ngs.
	10							
	15							
	20							

NOTES:

PROJECT NAME: Eversource New Hampshire Seacoast Reliability Project
CITY/STATE: Newington NH
GEI PROJECT NUMBER: 1607530

GEI Consultants

GE WOBURN S D 1-LOCA ON-LAYER NAME EVS NH SRP GPJ 6/21/17

BORING LOG NO. F107-109

PROJECT: Seacoast Reliability Project

CLIENT: Eversource Energy

SITE: Portsmouth, Newington, Durham, and Madbury, New Hampshire

LOCATION See Exhibit A-2

Latitude 43 10076522° Longitude -70 83778978°

Surface Elev 43 284 (Ft)

DEPTH	ELEVATION (Ft)	Description	DEPTH (Ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (n)	FIELD TEST RESULTS	RQD (%)	Core Rate (min/ft)
0	43 4	3 nches of forest oam, roots							
2 0	41 5	6 nches of subso							
3 5	40	**SILTY SAND (SM)**, ght brown to wh te, des ccated, med um dense				12	4 7 11 12 N=18		
						16	7 9 8 8 N=17		
		SILT WITH SAND (ML), o ve brown, des ccated	5			24	6 5 7 8 N=12		
9 0	34 5								
		LEAN CLAY (CL), gray, very soft	10			24	woh 1 1 woh N=2		
			15			24	wor/12" woh/12"		
			20			24	wor/12" woh/12"		
24 0	19 5								
25 0	18 5	**SILTY SAND (SM)**, w th fractured grave , brown, very dense, (GLACIAL TILL)	25			18	18 18 32 21 N=50		
		Ro er b t to 29 feet							
29 0	14 5								
		Run 1 Hard, s ght y weathered, gray, aphan t c PHYLLITE, moderate y d pp ng, c ose jo nts EXETER DIORITE FORMATION	30			49		25	
		Run 2 S m ar Note: Numerous mechan ca breaks due to jamm ng ns de the barre	35			41		13	

Stratification lines are approximate n-situ the transition may be gradual

Hammer Type Automatic

Advancement Method
3-inch casing

Abandonment Method
Boring backfilled with soil cuttings upon completion

See Exhibit A-3 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any)
See Appendix C for explanation of symbols and abbreviations

Notes

WATER LEVEL OBSERVATIONS

No free water observed

Terracon
77 Sundial Ave Ste 401W
Manchester NH

Boring Started 8/26/2016 Boring Completed 8/26/2016

Drill Rig Diedrich D-50 turbo Driller Drilex

Project No J1165081 Exhibit A-31

H S BOR NG LOG S NO VAL D F SEPARA ED FROM OR G NAL REPOR GEO SMAR LOG-NO WELL J1165081 GPJ

BORING LOG NO. F107-109

PROJECT: Seacoast Reliability Project

CLIENT: Eversource Energy

SITE: Portsmouth, Newington, Durham, and Madbury, New Hampshire

LOCATION See Exhibit A-2

Latitude 43 10076522° Longitude -70 83778978°

Surface Elev 43 284 (Ft)

GRAPH C LOG	DEPTH	ELEVAT ON (Ft)	DEPTH (Ft)	WATER LEVEL OBSERVAT ONS	SAMPLE TYPE	RECOVERY (n)	F ELD TEST RESULTS	RQD (%)	Core Rate (min/ft)
	39 0	4 5				41			
	Boring Terminated at 39 Feet								

Stratification lines are approximate n-situ the transition may be gradual

Hammer Type Automatic

Advancement Method
3-inch casing

Abandonment Method
Boring backfilled with soil cuttings upon completion

See Exhibit A-3 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any)
See Appendix C for explanation of symbols and abbreviations

Notes

WATER LEVEL OBSERVATIONS

No free water observed

Terracon
77 Sundial Ave Ste 401W
Manchester NH

Boring Started 8/26/2016 Boring Completed 8/26/2016

Drill Rig Diedrich D-50 turbo Driller Drilex

Project No J1165081 Exhibit A-31

H S BOR NG LOG S NO VAL D F SEPARA ED FROM OR G NAL REPOR GEO SMAR LOG-NO WELL J1165081 GPJ

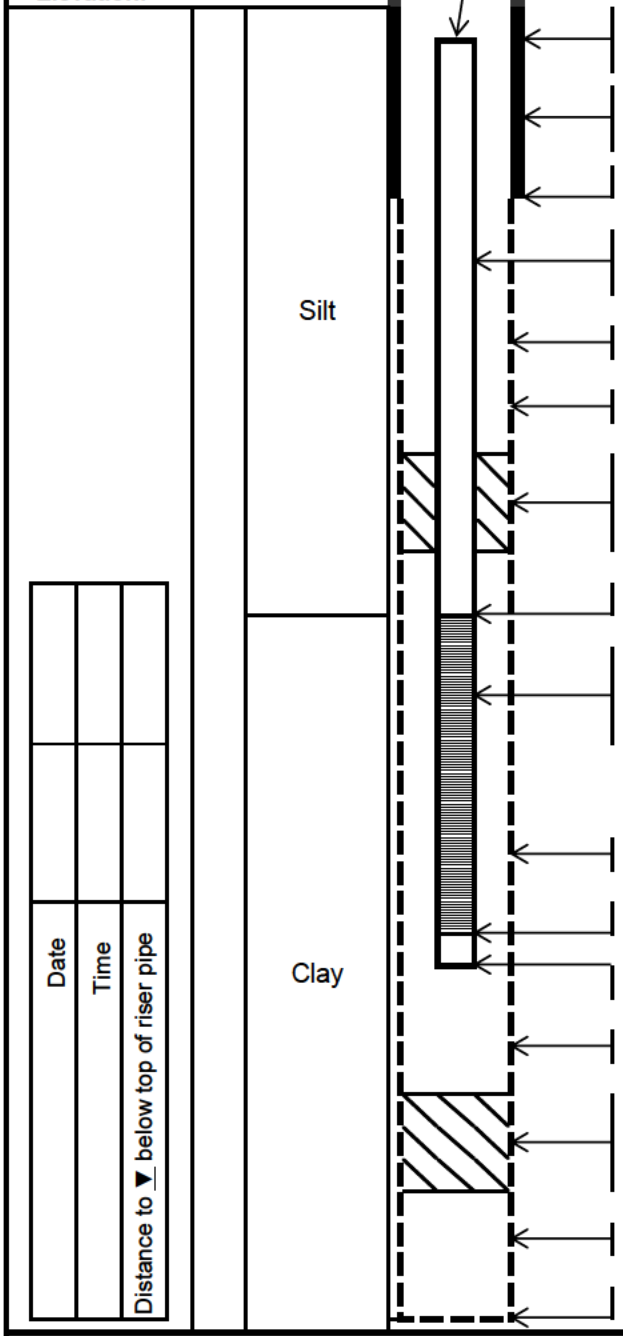
Groundwater Well Installation Log

B101(MW)

Project	Eversource New Hampshire Seacoast Reliability Project	**GEI Proj. No.**	1607530
City / Town	Newington, NH	**Location**	East end of field at Frink Farm
Client	Eversource		
Contractor	Drilex Environmental		
Driller	J. Jalutkewicz **GEI Rep.** C. Conti	**Install Date**	8/26/2016

Survey Datum:

Ground Elevation:



Length of Surface Casing above Ground	3.3'
Dist. Top of Surf. Casing to Top of Riser Pipe	0.18'
Type and Thickness of Seal around Surface Casing	NA
ID of Surface Casing	4"
Type of Surface Casing	
Depth Bottom of Surface Casing	1.7
ID and OD of Riser Pipe	2.0"/2.5"
Type of Riser Pipe	Sch. 40 PVC
Type of Backfill around Riser Pipe	NA
Diameter of Borehole	8"
Depth Top of Seal	NA
Type of Seal	Med. Bentonite Chips
Depth Bottom of Seal	1.5'
Depth Top of Screened Section	2'
Type of Screen	Sch. 40 PVC
Description of Screen Openings	0.010 Slotted
ID and OD of Screened Section	2.0"/2.5"
Type of Filter Material	Sand Type 0
Depth Bottom of Screened Section	7.7'
Depth Bottom of Silt Trap	8'
Depth Bottom of Filter Material	NA
Depth Top of Seal	NA
Type of Seal	NA
Depth Bottom of Seal	NA
Type of Backfill below Filter Material	NA
Bottom of Borehole	8'

Notes:

GEI Consultants

M:\Draf ing\Office\Forms\Well Install Log Blank Form

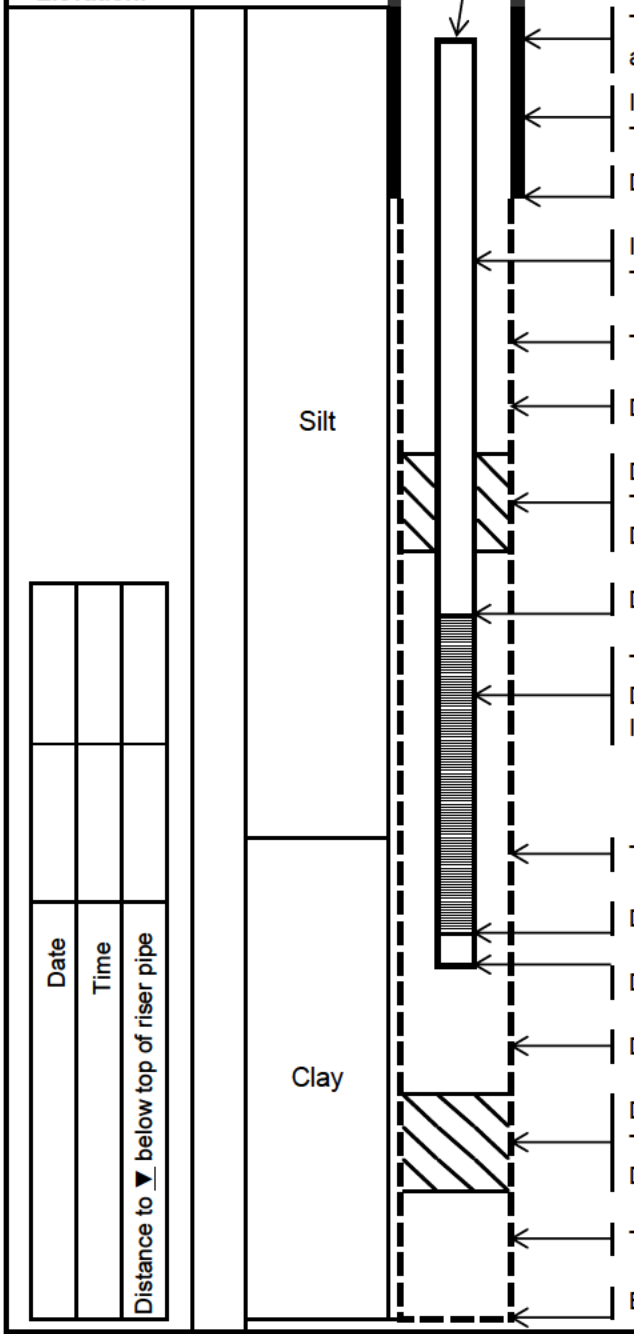
Groundwater Well Installation Log

B102(MW)

Project	Eversource New Hampshire Seacoast Reliability Project	**GEI Proj. No.**	1607530
City / Town	Newington, NH	**Location**	Middle of field at Frink Farm
Client	Eversource		
Contractor	Drilex Environmental		
Driller	J. Jalutkewicz **GEI Rep.** C. Conti	**Install Date**	8/26/2016

Survey Datum:

Ground Elevation:



Length of Surface Casing above Ground	3.1'
Dist. Top of Surf. Casing to Top of Riser Pipe	0.2'
Type and Thickness of Seal around Surface Casing	NA
ID of Surface Casing	4.25"
Type of Surface Casing	Steel guard pipe
Depth Bottom of Surface Casing	1.9
ID and OD of Riser Pipe	2.0"/2.5"
Type of Riser Pipe	Sch. 40 PVC
Type of Backfill around Riser Pipe	NA
Diameter of Borehole	8"
Depth Top of Seal	NA
Type of Seal	Med. Bentonite Chips
Depth Bottom of Seal	1.5'
Depth Top of Screened Section	2'
Type of Screen	Sch. 40 PVC
Description of Screen Openings	0.010 Slotted
ID and OD of Screened Section	2.0"/2.5"
Type of Filter Material	Sand Type 0
Depth Bottom of Screened Section	6.7'
Depth Bottom of Silt Trap	7'
Depth Bottom of Filter Material	NA
Depth Top of Seal	NA
Type of Seal	NA
Depth Bottom of Seal	NA
Type of Backfill below Filter Material	NA
Bottom of Borehole	7'

Notes:

GEI Consultants

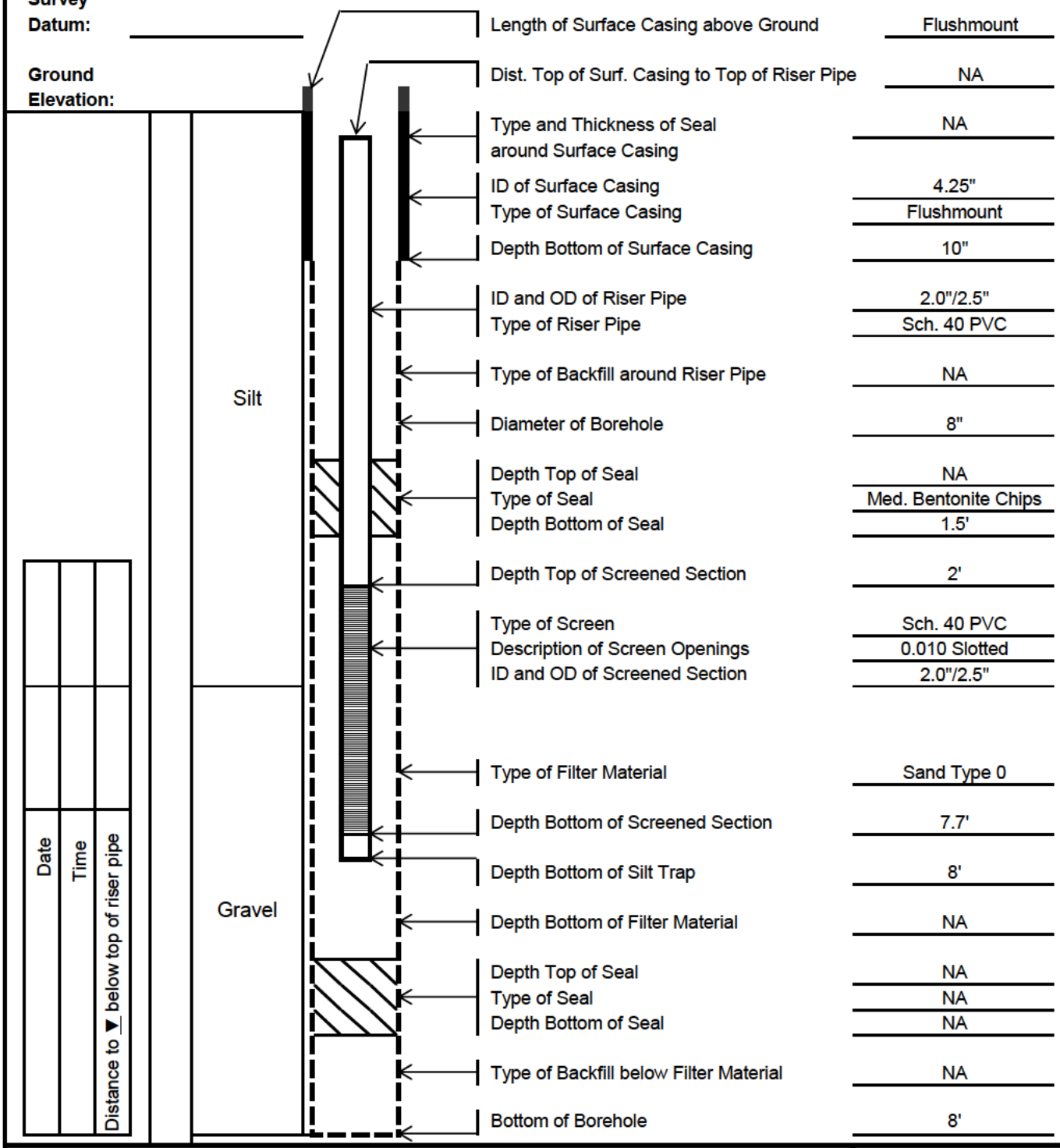
Groundwater Well Installation Log

B103(MW)

Project	Eversource New Hampshire Seacoast Reliability Project	**GEI Proj. No.**	1607530
City / Town	Newington, NH	**Location**	West end of field at Frink Farm
Client	Eversource		
Contractor	Drilex Environmental		
Driller	J. Jalutkewicz **GEI Rep.** C. Conti	**Install Date**	8/26/2016

Survey Datum: _____

Ground Elevation: _____



Length of Surface Casing above Ground	Flushmount
Dist. Top of Surf. Casing to Top of Riser Pipe	NA
Type and Thickness of Seal around Surface Casing	NA
ID of Surface Casing	4.25"
Type of Surface Casing	Flushmount
Depth Bottom of Surface Casing	10"
ID and OD of Riser Pipe	2.0"/2.5"
Type of Riser Pipe	Sch. 40 PVC
Type of Backfill around Riser Pipe	NA
Diameter of Borehole	8"
Depth Top of Seal	NA
Type of Seal	Med. Bentonite Chips
Depth Bottom of Seal	1.5'
Depth Top of Screened Section	2'
Type of Screen	Sch. 40 PVC
Description of Screen Openings	0.010 Slotted
ID and OD of Screened Section	2.0"/2.5"
Type of Filter Material	Sand Type 0
Depth Bottom of Screened Section	7.7'
Depth Bottom of Silt Trap	8'
Depth Bottom of Filter Material	NA
Depth Top of Seal	NA
Type of Seal	NA
Depth Bottom of Seal	NA
Type of Backfill below Filter Material	NA
Bottom of Borehole	8'

Notes:

GEI Consultants

Appendix C

Laboratory Data Reports

ANALYTICAL REPORT

Lab Number:	L1627010
Client:	GEI Consultants 400 Unicorn Park Drive Woburn, MA 01801
ATTN:	Mike Sabulis
Phone:	(781) 721-4114
Project Name:	EVERSOURCE NH SRP
Project Number:	1607530
Report Date:	09/15/16

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

Certifications & Approvals: MA (M-MA086), NY (11148), CT (PH-0574), NH (2003), NJ NELAP (MA935), RI (LAO00065), ME (MA00086), PA (68-03671), VA (460195), MD (348), IL (200077), NC (666), TX (T104704476), DOD (L2217), USDA (Permit #P-330-11-00240).

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

Project Name: EVERSOURCE NH SRP
Project Number: 1607530

Lab Number: L1627010
Report Date: 09/15/16

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1627010-01	1607530-B103(S1-S2)	SOIL	NEWINGTON, NH	08/26/16 09:25	08/29/16
L1627010-02	1607530-B103(S3-S4)	SOIL	NEWINGTON, NH	08/26/16 09:55	08/29/16
L1627010-03	1607530-B102(S1-S2)	SOIL	NEWINGTON, NH	08/26/16 10:45	08/29/16
L1627010-04	1607530-B102(S3-S4)	SOIL	NEWINGTON, NH	08/26/16 11:00	08/29/16
L1627010-05	1607530-B101(S1-S2)	SOIL	NEWINGTON, NH	08/26/16 11:45	08/29/16
L1627010-06	1607530-B101(S3-S4)	SOIL	NEWINGTON, NH	08/26/16 12:00	08/29/16

Project Name: EVERSOURCE NH SRP
Project Number: 1607530
Lab Number: L1627010
Report Date: 09/15/16

Case Narrative

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

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

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

Please contact Client Services at 800-624-9220 with any questions.

Project Name: EVERSOURCE NH SRP **Lab Number:** L1627010
Project Number: 1607530 **Report Date:** 09/15/16

Case Narrative (continued)

Report Submission

This final report replaces the partial report issued September 6, 2016 and includes the results of all requested analyses.

The analyses of PFOA and PFOS by Method 537 were subcontracted. A copy of the laboratory report is included as an addendum. Please note: This data is only available in PDF format and is not available on Data Merger.

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

Authorized Signature: Kelly Stenstrom

Title: Technical Director/Representative Date: 09/15/16

ORGANICS

VOLATILES

Project Name: EVERSOURCE NH SRP
Project Number: 1607530
Lab Number: L1627010
Report Date: 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-01
Client ID: 1607530-B103(S1-S2)
Sample Location: NEWINGTON, NH
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 09/05/16 12:20
Analyst: BN
Percent Solids: 93%

Date Collected: 08/26/16 09:25
Date Received: 08/29/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methylene chloride	ND		ug/kg	610	--	1
1,1-Dichloroethane	ND		ug/kg	92	--	1
Chloroform	ND		ug/kg	92	--	1
Carbon tetrachloride	ND		ug/kg	61	--	1
1,2-Dichloropropane	ND		ug/kg	210	--	1
Dibromochloromethane	ND		ug/kg	61	--	1
1,1,2-Trichloroethane	ND		ug/kg	92	--	1
Tetrachloroethene	ND		ug/kg	61	--	1
Chlorobenzene	ND		ug/kg	61	--	1
Trichlorofluoromethane	ND		ug/kg	300	--	1
1,2-Dichloroethane	ND		ug/kg	61	--	1
1,1,1-Trichloroethane	ND		ug/kg	61	--	1
Bromodichloromethane	ND		ug/kg	61	--	1
trans-1,3-Dichloropropene	ND		ug/kg	61	--	1
cis-1,3-Dichloropropene	ND		ug/kg	61	--	1
1,3-Dichloropropene, Total	ND		ug/kg	61	--	1
1,1-Dichloropropene	ND		ug/kg	300	--	1
Bromoform	ND		ug/kg	240	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	61	--	1
Benzene	ND		ug/kg	61	--	1
Toluene	ND		ug/kg	92	--	1
Ethylbenzene	ND		ug/kg	61	--	1
Chloromethane	ND		ug/kg	300	--	1
Bromomethane	ND		ug/kg	120	--	1
Vinyl chloride	ND		ug/kg	120	--	1
Chloroethane	ND		ug/kg	120	--	1
1,1-Dichloroethene	ND		ug/kg	61	--	1
trans-1,2-Dichloroethene	ND		ug/kg	92	--	1
Trichloroethene	ND		ug/kg	61	--	1
1,2-Dichlorobenzene	ND		ug/kg	300	--	1

Project Name: EVERSOURCE NH SRP **Lab Number:** L1627010

Project Number: 1607530 **Report Date:** 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-01 Date Collected: 08/26/16 09:25

Client ID: 1607530-B103(S1-S2) Date Received: 08/29/16

Sample Location: NEWINGTON, NH Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	300	--	1
1,4-Dichlorobenzene	ND		ug/kg	300	--	1
Methyl tert butyl ether	ND		ug/kg	120	--	1
p/m-Xylene	ND		ug/kg	120	--	1
o-Xylene	ND		ug/kg	120	--	1
Xylenes, Total	ND		ug/kg	120	--	1
cis-1,2-Dichloroethene	ND		ug/kg	61	--	1
1,2-Dichloroethene, Total	ND		ug/kg	61	--	1
Dibromomethane	ND		ug/kg	610	--	1
1,4-Dichlorobutane	ND		ug/kg	610	--	1
1,2,3-Trichloropropane	ND		ug/kg	610	--	1
Styrene	ND		ug/kg	120	--	1
Dichlorodifluoromethane	ND		ug/kg	610	--	1
Acetone	ND		ug/kg	2200	--	1
Carbon disulfide	ND		ug/kg	610	--	1
2-Butanone	ND		ug/kg	610	--	1
Vinyl acetate	ND		ug/kg	610	--	1
4-Methyl-2-pentanone	ND		ug/kg	610	--	1
2-Hexanone	ND		ug/kg	610	--	1
Ethyl methacrylate	ND		ug/kg	610	--	1
Acrylonitrile	ND		ug/kg	240	--	1
Bromochloromethane	ND		ug/kg	300	--	1
Tetrahydrofuran	ND		ug/kg	1200	--	1
2,2-Dichloropropane	ND		ug/kg	300	--	1
1,2-Dibromoethane	ND		ug/kg	240	--	1
1,3-Dichloropropane	ND		ug/kg	300	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	61	--	1
Bromobenzene	ND		ug/kg	300	--	1
n-Butylbenzene	ND		ug/kg	61	--	1
sec-Butylbenzene	ND		ug/kg	61	--	1
tert-Butylbenzene	ND		ug/kg	300	--	1
o-Chlorotoluene	ND		ug/kg	300	--	1
p-Chlorotoluene	ND		ug/kg	300	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	300	--	1
Hexachlorobutadiene	ND		ug/kg	300	--	1
Isopropylbenzene	ND		ug/kg	61	--	1
p-Isopropyltoluene	ND		ug/kg	61	--	1
Naphthalene	ND		ug/kg	300	--	1
n-Propylbenzene	ND		ug/kg	61	--	1

Project Name: EVERSOURCE NH SRP **Lab Number:** L1627010

Project Number: 1607530 **Report Date:** 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-01 Date Collected: 08/26/16 09:25

Client ID: 1607530-B103(S1-S2) Date Received: 08/29/16

Sample Location: NEWINGTON, NH Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	300	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	300	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	300	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	300	--	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	300	--	1
Ethyl ether	ND		ug/kg	300	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	94		70-130

Project Name: EVERSOURCE NH SRP **Lab Number:** L1627010

Project Number: 1607530 **Report Date:** 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-02
Client ID: 1607530-B103(S3-S4)
Sample Location: NEWINGTON, NH
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 09/05/16 12:47
Analyst: BN
Percent Solids: 92%

Date Collected: 08/26/16 09:55
Date Received: 08/29/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methylene chloride	ND		ug/kg	520	--	1
1,1-Dichloroethane	ND		ug/kg	77	--	1
Chloroform	ND		ug/kg	77	--	1
Carbon tetrachloride	ND		ug/kg	52	--	1
1,2-Dichloropropane	ND		ug/kg	180	--	1
Dibromochloromethane	ND		ug/kg	52	--	1
1,1,2-Trichloroethane	ND		ug/kg	77	--	1
Tetrachloroethene	ND		ug/kg	52	--	1
Chlorobenzene	ND		ug/kg	52	--	1
Trichlorofluoromethane	ND		ug/kg	260	--	1
1,2-Dichloroethane	ND		ug/kg	52	--	1
1,1,1-Trichloroethane	ND		ug/kg	52	--	1
Bromodichloromethane	ND		ug/kg	52	--	1
trans-1,3-Dichloropropene	ND		ug/kg	52	--	1
cis-1,3-Dichloropropene	ND		ug/kg	52	--	1
1,3-Dichloropropene, Total	ND		ug/kg	52	--	1
1,1-Dichloropropene	ND		ug/kg	260	--	1
Bromoform	ND		ug/kg	210	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	52	--	1
Benzene	ND		ug/kg	52	--	1
Toluene	ND		ug/kg	77	--	1
Ethylbenzene	ND		ug/kg	52	--	1
Chloromethane	ND		ug/kg	260	--	1
Bromomethane	ND		ug/kg	100	--	1
Vinyl chloride	ND		ug/kg	100	--	1
Chloroethane	ND		ug/kg	100	--	1
1,1-Dichloroethene	ND		ug/kg	52	--	1
trans-1,2-Dichloroethene	ND		ug/kg	77	--	1
Trichloroethene	ND		ug/kg	52	--	1
1,2-Dichlorobenzene	ND		ug/kg	260	--	1

Project Name: EVERSOURCE NH SRP **Lab Number:** L1627010

Project Number: 1607530 **Report Date:** 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-02 Date Collected: 08/26/16 09:55

Client ID: 1607530-B103(S3-S4) Date Received: 08/29/16

Sample Location: NEWINGTON, NH Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	260	--	1
1,4-Dichlorobenzene	ND		ug/kg	260	--	1
Methyl tert butyl ether	ND		ug/kg	100	--	1
p/m-Xylene	ND		ug/kg	100	--	1
o-Xylene	ND		ug/kg	100	--	1
Xylenes, Total	ND		ug/kg	100	--	1
cis-1,2-Dichloroethene	ND		ug/kg	52	--	1
1,2-Dichloroethene, Total	ND		ug/kg	52	--	1
Dibromomethane	ND		ug/kg	520	--	1
1,4-Dichlorobutane	ND		ug/kg	520	--	1
1,2,3-Trichloropropane	ND		ug/kg	520	--	1
Styrene	ND		ug/kg	100	--	1
Dichlorodifluoromethane	ND		ug/kg	520	--	1
Acetone	ND		ug/kg	1800	--	1
Carbon disulfide	ND		ug/kg	520	--	1
2-Butanone	ND		ug/kg	520	--	1
Vinyl acetate	ND		ug/kg	520	--	1
4-Methyl-2-pentanone	ND		ug/kg	520	--	1
2-Hexanone	ND		ug/kg	520	--	1
Ethyl methacrylate	ND		ug/kg	520	--	1
Acrylonitrile	ND		ug/kg	210	--	1
Bromochloromethane	ND		ug/kg	260	--	1
Tetrahydrofuran	ND		ug/kg	1000	--	1
2,2-Dichloropropane	ND		ug/kg	260	--	1
1,2-Dibromoethane	ND		ug/kg	210	--	1
1,3-Dichloropropane	ND		ug/kg	260	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	52	--	1
Bromobenzene	ND		ug/kg	260	--	1
n-Butylbenzene	ND		ug/kg	52	--	1
sec-Butylbenzene	ND		ug/kg	52	--	1
tert-Butylbenzene	ND		ug/kg	260	--	1
o-Chlorotoluene	ND		ug/kg	260	--	1
p-Chlorotoluene	ND		ug/kg	260	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	260	--	1
Hexachlorobutadiene	ND		ug/kg	260	--	1
Isopropylbenzene	ND		ug/kg	52	--	1
p-Isopropyltoluene	ND		ug/kg	52	--	1
Naphthalene	ND		ug/kg	260	--	1
n-Propylbenzene	ND		ug/kg	52	--	1

Project Name: EVERSOURCE NH SRP **Lab Number:** L1627010

Project Number: 1607530 **Report Date:** 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-02 Date Collected: 08/26/16 09:55

Client ID: 1607530-B103(S3-S4) Date Received: 08/29/16

Sample Location: NEWINGTON, NH Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	260	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	260	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	260	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	260	--	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	260	--	1
Ethyl ether	ND		ug/kg	260	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	94		70-130

Project Name: EVERSOURCE NH SRP
Project Number: 1607530
Lab Number: L1627010
Report Date: 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-03
Client ID: 1607530-B102(S1-S2)
Sample Location: NEWINGTON, NH
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 09/05/16 13:13
Analyst: BN
Percent Solids: 84%

Date Collected: 08/26/16 10:45
Date Received: 08/29/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methylene chloride	ND		ug/kg	650	--	1
1,1-Dichloroethane	ND		ug/kg	97	--	1
Chloroform	ND		ug/kg	97	--	1
Carbon tetrachloride	ND		ug/kg	65	--	1
1,2-Dichloropropane	ND		ug/kg	230	--	1
Dibromochloromethane	ND		ug/kg	65	--	1
1,1,2-Trichloroethane	ND		ug/kg	97	--	1
Tetrachloroethene	ND		ug/kg	65	--	1
Chlorobenzene	ND		ug/kg	65	--	1
Trichlorofluoromethane	ND		ug/kg	320	--	1
1,2-Dichloroethane	ND		ug/kg	65	--	1
1,1,1-Trichloroethane	ND		ug/kg	65	--	1
Bromodichloromethane	ND		ug/kg	65	--	1
trans-1,3-Dichloropropene	ND		ug/kg	65	--	1
cis-1,3-Dichloropropene	ND		ug/kg	65	--	1
1,3-Dichloropropene, Total	ND		ug/kg	65	--	1
1,1-Dichloropropene	ND		ug/kg	320	--	1
Bromoform	ND		ug/kg	260	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	65	--	1
Benzene	ND		ug/kg	65	--	1
Toluene	ND		ug/kg	97	--	1
Ethylbenzene	ND		ug/kg	65	--	1
Chloromethane	ND		ug/kg	320	--	1
Bromomethane	ND		ug/kg	130	--	1
Vinyl chloride	ND		ug/kg	130	--	1
Chloroethane	ND		ug/kg	130	--	1
1,1-Dichloroethene	ND		ug/kg	65	--	1
trans-1,2-Dichloroethene	ND		ug/kg	97	--	1
Trichloroethene	ND		ug/kg	65	--	1
1,2-Dichlorobenzene	ND		ug/kg	320	--	1

Project Name: EVERSOURCE NH SRP **Lab Number:** L1627010

Project Number: 1607530 **Report Date:** 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-03 Date Collected: 08/26/16 10:45

Client ID: 1607530-B102(S1-S2) Date Received: 08/29/16

Sample Location: NEWINGTON, NH Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	320	--	1
1,4-Dichlorobenzene	ND		ug/kg	320	--	1
Methyl tert butyl ether	ND		ug/kg	130	--	1
p/m-Xylene	ND		ug/kg	130	--	1
o-Xylene	ND		ug/kg	130	--	1
Xylenes, Total	ND		ug/kg	130	--	1
cis-1,2-Dichloroethene	ND		ug/kg	65	--	1
1,2-Dichloroethene, Total	ND		ug/kg	65	--	1
Dibromomethane	ND		ug/kg	650	--	1
1,4-Dichlorobutane	ND		ug/kg	650	--	1
1,2,3-Trichloropropane	ND		ug/kg	650	--	1
Styrene	ND		ug/kg	130	--	1
Dichlorodifluoromethane	ND		ug/kg	650	--	1
Acetone	ND		ug/kg	2300	--	1
Carbon disulfide	ND		ug/kg	650	--	1
2-Butanone	ND		ug/kg	650	--	1
Vinyl acetate	ND		ug/kg	650	--	1
4-Methyl-2-pentanone	ND		ug/kg	650	--	1
2-Hexanone	ND		ug/kg	650	--	1
Ethyl methacrylate	ND		ug/kg	650	--	1
Acrylonitrile	ND		ug/kg	260	--	1
Bromochloromethane	ND		ug/kg	320	--	1
Tetrahydrofuran	ND		ug/kg	1300	--	1
2,2-Dichloropropane	ND		ug/kg	320	--	1
1,2-Dibromoethane	ND		ug/kg	260	--	1
1,3-Dichloropropane	ND		ug/kg	320	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	65	--	1
Bromobenzene	ND		ug/kg	320	--	1
n-Butylbenzene	ND		ug/kg	65	--	1
sec-Butylbenzene	ND		ug/kg	65	--	1
tert-Butylbenzene	ND		ug/kg	320	--	1
o-Chlorotoluene	ND		ug/kg	320	--	1
p-Chlorotoluene	ND		ug/kg	320	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	320	--	1
Hexachlorobutadiene	ND		ug/kg	320	--	1
Isopropylbenzene	ND		ug/kg	65	--	1
p-Isopropyltoluene	ND		ug/kg	65	--	1
Naphthalene	ND		ug/kg	320	--	1
n-Propylbenzene	ND		ug/kg	65	--	1

Project Name: EVERSOURCE NH SRP **Lab Number:** L1627010

Project Number: 1607530 **Report Date:** 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-03 Date Collected: 08/26/16 10:45

Client ID: 1607530-B102(S1-S2) Date Received: 08/29/16

Sample Location: NEWINGTON, NH Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	320	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	320	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	320	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	320	--	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	320	--	1
Ethyl ether	ND		ug/kg	320	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	94		70-130

Project Name: EVERSOURCE NH SRP
Project Number: 1607530
Lab Number: L1627010
Report Date: 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-04
Client ID: 1607530-B102(S3-S4)
Sample Location: NEWINGTON, NH
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 09/05/16 13:40
Analyst: BN
Percent Solids: 79%

Date Collected: 08/26/16 11:00
Date Received: 08/29/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methylene chloride	ND		ug/kg	480	--	1
1,1-Dichloroethane	ND		ug/kg	73	--	1
Chloroform	ND		ug/kg	73	--	1
Carbon tetrachloride	ND		ug/kg	48	--	1
1,2-Dichloropropane	ND		ug/kg	170	--	1
Dibromochloromethane	ND		ug/kg	48	--	1
1,1,2-Trichloroethane	ND		ug/kg	73	--	1
Tetrachloroethene	ND		ug/kg	48	--	1
Chlorobenzene	ND		ug/kg	48	--	1
Trichlorofluoromethane	ND		ug/kg	240	--	1
1,2-Dichloroethane	ND		ug/kg	48	--	1
1,1,1-Trichloroethane	ND		ug/kg	48	--	1
Bromodichloromethane	ND		ug/kg	48	--	1
trans-1,3-Dichloropropene	ND		ug/kg	48	--	1
cis-1,3-Dichloropropene	ND		ug/kg	48	--	1
1,3-Dichloropropene, Total	ND		ug/kg	48	--	1
1,1-Dichloropropene	ND		ug/kg	240	--	1
Bromoform	ND		ug/kg	190	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	48	--	1
Benzene	ND		ug/kg	48	--	1
Toluene	ND		ug/kg	73	--	1
Ethylbenzene	ND		ug/kg	48	--	1
Chloromethane	ND		ug/kg	240	--	1
Bromomethane	ND		ug/kg	97	--	1
Vinyl chloride	ND		ug/kg	97	--	1
Chloroethane	ND		ug/kg	97	--	1
1,1-Dichloroethene	ND		ug/kg	48	--	1
trans-1,2-Dichloroethene	ND		ug/kg	73	--	1
Trichloroethene	ND		ug/kg	48	--	1
1,2-Dichlorobenzene	ND		ug/kg	240	--	1

Project Name: EVERSOURCE NH SRP **Lab Number:** L1627010

Project Number: 1607530 **Report Date:** 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-04 Date Collected: 08/26/16 11:00

Client ID: 1607530-B102(S3-S4) Date Received: 08/29/16

Sample Location: NEWINGTON, NH Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	240	--	1
1,4-Dichlorobenzene	ND		ug/kg	240	--	1
Methyl tert butyl ether	ND		ug/kg	97	--	1
p/m-Xylene	ND		ug/kg	97	--	1
o-Xylene	ND		ug/kg	97	--	1
Xylenes, Total	ND		ug/kg	97	--	1
cis-1,2-Dichloroethene	ND		ug/kg	48	--	1
1,2-Dichloroethene, Total	ND		ug/kg	48	--	1
Dibromomethane	ND		ug/kg	480	--	1
1,4-Dichlorobutane	ND		ug/kg	480	--	1
1,2,3-Trichloropropane	ND		ug/kg	480	--	1
Styrene	ND		ug/kg	97	--	1
Dichlorodifluoromethane	ND		ug/kg	480	--	1
Acetone	ND		ug/kg	1700	--	1
Carbon disulfide	ND		ug/kg	480	--	1
2-Butanone	ND		ug/kg	480	--	1
Vinyl acetate	ND		ug/kg	480	--	1
4-Methyl-2-pentanone	ND		ug/kg	480	--	1
2-Hexanone	ND		ug/kg	480	--	1
Ethyl methacrylate	ND		ug/kg	480	--	1
Acrylonitrile	ND		ug/kg	190	--	1
Bromochloromethane	ND		ug/kg	240	--	1
Tetrahydrofuran	ND		ug/kg	970	--	1
2,2-Dichloropropane	ND		ug/kg	240	--	1
1,2-Dibromoethane	ND		ug/kg	190	--	1
1,3-Dichloropropane	ND		ug/kg	240	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	48	--	1
Bromobenzene	ND		ug/kg	240	--	1
n-Butylbenzene	ND		ug/kg	48	--	1
sec-Butylbenzene	ND		ug/kg	48	--	1
tert-Butylbenzene	ND		ug/kg	240	--	1
o-Chlorotoluene	ND		ug/kg	240	--	1
p-Chlorotoluene	ND		ug/kg	240	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	240	--	1
Hexachlorobutadiene	ND		ug/kg	240	--	1
Isopropylbenzene	ND		ug/kg	48	--	1
p-Isopropyltoluene	ND		ug/kg	48	--	1
Naphthalene	ND		ug/kg	240	--	1
n-Propylbenzene	ND		ug/kg	48	--	1

Project Name: EVERSOURCE NH SRP **Lab Number:** L1627010

Project Number: 1607530 **Report Date:** 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-04 Date Collected: 08/26/16 11:00

Client ID: 1607530-B102(S3-S4) Date Received: 08/29/16

Sample Location: NEWINGTON, NH Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	240	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	240	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	240	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	240	--	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	240	--	1
Ethyl ether	ND		ug/kg	240	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	93		70-130

Project Name: EVERSOURCE NH SRP
Project Number: 1607530
Lab Number: L1627010
Report Date: 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-05
Client ID: 1607530-B101(S1-S2)
Sample Location: NEWINGTON, NH
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 09/05/16 14:06
Analyst: BN
Percent Solids: 84%

Date Collected: 08/26/16 11:45
Date Received: 08/29/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methylene chloride	ND		ug/kg	650	--	1
1,1-Dichloroethane	ND		ug/kg	98	--	1
Chloroform	ND		ug/kg	98	--	1
Carbon tetrachloride	ND		ug/kg	65	--	1
1,2-Dichloropropane	ND		ug/kg	230	--	1
Dibromochloromethane	ND		ug/kg	65	--	1
1,1,2-Trichloroethane	ND		ug/kg	98	--	1
Tetrachloroethene	ND		ug/kg	65	--	1
Chlorobenzene	ND		ug/kg	65	--	1
Trichlorofluoromethane	ND		ug/kg	320	--	1
1,2-Dichloroethane	ND		ug/kg	65	--	1
1,1,1-Trichloroethane	ND		ug/kg	65	--	1
Bromodichloromethane	ND		ug/kg	65	--	1
trans-1,3-Dichloropropene	ND		ug/kg	65	--	1
cis-1,3-Dichloropropene	ND		ug/kg	65	--	1
1,3-Dichloropropene, Total	ND		ug/kg	65	--	1
1,1-Dichloropropene	ND		ug/kg	320	--	1
Bromoform	ND		ug/kg	260	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	65	--	1
Benzene	ND		ug/kg	65	--	1
Toluene	ND		ug/kg	98	--	1
Ethylbenzene	ND		ug/kg	65	--	1
Chloromethane	ND		ug/kg	320	--	1
Bromomethane	ND		ug/kg	130	--	1
Vinyl chloride	ND		ug/kg	130	--	1
Chloroethane	ND		ug/kg	130	--	1
1,1-Dichloroethene	ND		ug/kg	65	--	1
trans-1,2-Dichloroethene	ND		ug/kg	98	--	1
Trichloroethene	ND		ug/kg	65	--	1
1,2-Dichlorobenzene	ND		ug/kg	320	--	1

Project Name: EVERSOURCE NH SRP **Lab Number:** L1627010

Project Number: 1607530 **Report Date:** 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-05 Date Collected: 08/26/16 11:45

Client ID: 1607530-B101(S1-S2) Date Received: 08/29/16

Sample Location: NEWINGTON, NH Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	320	--	1
1,4-Dichlorobenzene	ND		ug/kg	320	--	1
Methyl tert butyl ether	ND		ug/kg	130	--	1
p/m-Xylene	ND		ug/kg	130	--	1
o-Xylene	ND		ug/kg	130	--	1
Xylenes, Total	ND		ug/kg	130	--	1
cis-1,2-Dichloroethene	ND		ug/kg	65	--	1
1,2-Dichloroethene, Total	ND		ug/kg	65	--	1
Dibromomethane	ND		ug/kg	650	--	1
1,4-Dichlorobutane	ND		ug/kg	650	--	1
1,2,3-Trichloropropane	ND		ug/kg	650	--	1
Styrene	ND		ug/kg	130	--	1
Dichlorodifluoromethane	ND		ug/kg	650	--	1
Acetone	ND		ug/kg	2300	--	1
Carbon disulfide	ND		ug/kg	650	--	1
2-Butanone	ND		ug/kg	650	--	1
Vinyl acetate	ND		ug/kg	650	--	1
4-Methyl-2-pentanone	ND		ug/kg	650	--	1
2-Hexanone	ND		ug/kg	650	--	1
Ethyl methacrylate	ND		ug/kg	650	--	1
Acrylonitrile	ND		ug/kg	260	--	1
Bromochloromethane	ND		ug/kg	320	--	1
Tetrahydrofuran	ND		ug/kg	1300	--	1
2,2-Dichloropropane	ND		ug/kg	320	--	1
1,2-Dibromoethane	ND		ug/kg	260	--	1
1,3-Dichloropropane	ND		ug/kg	320	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	65	--	1
Bromobenzene	ND		ug/kg	320	--	1
n-Butylbenzene	ND		ug/kg	65	--	1
sec-Butylbenzene	ND		ug/kg	65	--	1
tert-Butylbenzene	ND		ug/kg	320	--	1
o-Chlorotoluene	ND		ug/kg	320	--	1
p-Chlorotoluene	ND		ug/kg	320	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	320	--	1
Hexachlorobutadiene	ND		ug/kg	320	--	1
Isopropylbenzene	ND		ug/kg	65	--	1
p-Isopropyltoluene	ND		ug/kg	65	--	1
Naphthalene	ND		ug/kg	320	--	1
n-Propylbenzene	ND		ug/kg	65	--	1

Project Name: EVERSOURCE NH SRP **Lab Number:** L1627010

Project Number: 1607530 **Report Date:** 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-05 Date Collected: 08/26/16 11:45

Client ID: 1607530-B101(S1-S2) Date Received: 08/29/16

Sample Location: NEWINGTON, NH Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	320	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	320	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	320	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	320	--	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	320	--	1
Ethyl ether	ND		ug/kg	320	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	94		70-130

Project Name: EVERSOURCE NH SRP
Project Number: 1607530
Lab Number: L1627010
Report Date: 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-06
Client ID: 1607530-B101(S3-S4)
Sample Location: NEWINGTON, NH
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 09/05/16 14:33
Analyst: BN
Percent Solids: 81%

Date Collected: 08/26/16 12:00
Date Received: 08/29/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methylene chloride	ND		ug/kg	480	--	1
1,1-Dichloroethane	ND		ug/kg	71	--	1
Chloroform	ND		ug/kg	71	--	1
Carbon tetrachloride	ND		ug/kg	48	--	1
1,2-Dichloropropane	ND		ug/kg	170	--	1
Dibromochloromethane	ND		ug/kg	48	--	1
1,1,2-Trichloroethane	ND		ug/kg	71	--	1
Tetrachloroethene	ND		ug/kg	48	--	1
Chlorobenzene	ND		ug/kg	48	--	1
Trichlorofluoromethane	ND		ug/kg	240	--	1
1,2-Dichloroethane	ND		ug/kg	48	--	1
1,1,1-Trichloroethane	ND		ug/kg	48	--	1
Bromodichloromethane	ND		ug/kg	48	--	1
trans-1,3-Dichloropropene	ND		ug/kg	48	--	1
cis-1,3-Dichloropropene	ND		ug/kg	48	--	1
1,3-Dichloropropene, Total	ND		ug/kg	48	--	1
1,1-Dichloropropene	ND		ug/kg	240	--	1
Bromoform	ND		ug/kg	190	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	48	--	1
Benzene	ND		ug/kg	48	--	1
Toluene	ND		ug/kg	71	--	1
Ethylbenzene	ND		ug/kg	48	--	1
Chloromethane	ND		ug/kg	240	--	1
Bromomethane	ND		ug/kg	95	--	1
Vinyl chloride	ND		ug/kg	95	--	1
Chloroethane	ND		ug/kg	95	--	1
1,1-Dichloroethene	ND		ug/kg	48	--	1
trans-1,2-Dichloroethene	ND		ug/kg	71	--	1
Trichloroethene	ND		ug/kg	48	--	1
1,2-Dichlorobenzene	ND		ug/kg	240	--	1

Project Name: EVERSOURCE NH SRP **Lab Number:** L1627010

Project Number: 1607530 **Report Date:** 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-06 Date Collected: 08/26/16 12:00

Client ID: 1607530-B101(S3-S4) Date Received: 08/29/16

Sample Location: NEWINGTON, NH Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	240	--	1
1,4-Dichlorobenzene	ND		ug/kg	240	--	1
Methyl tert butyl ether	ND		ug/kg	95	--	1
p/m-Xylene	ND		ug/kg	95	--	1
o-Xylene	ND		ug/kg	95	--	1
Xylenes, Total	ND		ug/kg	95	--	1
cis-1,2-Dichloroethene	ND		ug/kg	48	--	1
1,2-Dichloroethene, Total	ND		ug/kg	48	--	1
Dibromomethane	ND		ug/kg	480	--	1
1,4-Dichlorobutane	ND		ug/kg	480	--	1
1,2,3-Trichloropropane	ND		ug/kg	480	--	1
Styrene	ND		ug/kg	95	--	1
Dichlorodifluoromethane	ND		ug/kg	480	--	1
Acetone	ND		ug/kg	1700	--	1
Carbon disulfide	ND		ug/kg	480	--	1
2-Butanone	ND		ug/kg	480	--	1
Vinyl acetate	ND		ug/kg	480	--	1
4-Methyl-2-pentanone	ND		ug/kg	480	--	1
2-Hexanone	ND		ug/kg	480	--	1
Ethyl methacrylate	ND		ug/kg	480	--	1
Acrylonitrile	ND		ug/kg	190	--	1
Bromochloromethane	ND		ug/kg	240	--	1
Tetrahydrofuran	ND		ug/kg	950	--	1
2,2-Dichloropropane	ND		ug/kg	240	--	1
1,2-Dibromoethane	ND		ug/kg	190	--	1
1,3-Dichloropropane	ND		ug/kg	240	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	48	--	1
Bromobenzene	ND		ug/kg	240	--	1
n-Butylbenzene	ND		ug/kg	48	--	1
sec-Butylbenzene	ND		ug/kg	48	--	1
tert-Butylbenzene	ND		ug/kg	240	--	1
o-Chlorotoluene	ND		ug/kg	240	--	1
p-Chlorotoluene	ND		ug/kg	240	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	240	--	1
Hexachlorobutadiene	ND		ug/kg	240	--	1
Isopropylbenzene	ND		ug/kg	48	--	1
p-Isopropyltoluene	ND		ug/kg	48	--	1
Naphthalene	ND		ug/kg	240	--	1
n-Propylbenzene	ND		ug/kg	48	--	1

Project Name: EVERSOURCE NH SRP **Lab Number:** L1627010

Project Number: 1607530 **Report Date:** 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-06 Date Collected: 08/26/16 12:00

Client ID: 1607530-B101(S3-S4) Date Received: 08/29/16

Sample Location: NEWINGTON, NH Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	240	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	240	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	240	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	240	--	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	240	--	1
Ethyl ether	ND		ug/kg	240	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	93		70-130

Project Name: EVERSOURCE NH SRP
Project Number: 1607530
Lab Number: L1627010
Report Date: 09/15/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 09/05/16 08:21
Analyst: BN

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 01-06 Batch: WG929175-5					
Methylene chloride	ND		ug/kg	500	--
1,1-Dichloroethane	ND		ug/kg	75	--
Chloroform	ND		ug/kg	75	--
Carbon tetrachloride	ND		ug/kg	50	--
1,2-Dichloropropane	ND		ug/kg	180	--
Dibromochloromethane	ND		ug/kg	50	--
1,1,2-Trichloroethane	ND		ug/kg	75	--
2-Chloroethylvinyl ether	ND		ug/kg	1000	--
Tetrachloroethene	ND		ug/kg	50	--
Chlorobenzene	ND		ug/kg	50	--
Trichlorofluoromethane	ND		ug/kg	250	--
1,2-Dichloroethane	ND		ug/kg	50	--
1,1,1-Trichloroethane	ND		ug/kg	50	--
Bromodichloromethane	ND		ug/kg	50	--
trans-1,3-Dichloropropene	ND		ug/kg	50	--
cis-1,3-Dichloropropene	ND		ug/kg	50	--
1,3-Dichloropropene, Total	ND		ug/kg	50	--
1,1-Dichloropropene	ND		ug/kg	250	--
Bromoform	ND		ug/kg	200	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	50	--
Benzene	ND		ug/kg	50	--
Toluene	ND		ug/kg	75	--
Ethy benzene	ND		ug/kg	50	--
Chloromethane	ND		ug/kg	250	--
Bromomethane	ND		ug/kg	100	--
Vinyl chloride	ND		ug/kg	100	--
Chloroethane	ND		ug/kg	100	--
1,1-Dichloroethene	ND		ug/kg	50	--
trans-1,2-Dichloroethene	ND		ug/kg	75	--

Project Name: EVERSOURCE NH SRP
Project Number: 1607530
Lab Number: L1627010
Report Date: 09/15/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 09/05/16 08:21
Analyst: BN

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 01-06 Batch: WG929175-5					
Trichloroethene	ND		ug/kg	50	--
1,2-Dichlorobenzene	ND		ug/kg	250	--
1,3-Dichlorobenzene	ND		ug/kg	250	--
1,4-Dichlorobenzene	ND		ug/kg	250	--
Methyl tert butyl ether	ND		ug/kg	100	--
p/m-Xylene	ND		ug/kg	100	--
o-Xylene	ND		ug/kg	100	--
Xylenes, Total	ND		ug/kg	100	--
cis-1,2-Dichloroethene	ND		ug/kg	50	--
1,2-Dichloroethene, Total	ND		ug/kg	50	--
Dibromomethane	ND		ug/kg	500	--
1,4-Dichlorobutane	ND		ug/kg	500	--
1,2,3-Trichloropropane	ND		ug/kg	500	--
Styrene	ND		ug/kg	100	--
Dichlorodifluoromethane	ND		ug/kg	500	--
Acetone	ND		ug/kg	1800	--
Carbon disulfide	ND		ug/kg	500	--
2-Butanone	ND		ug/kg	500	--
Vinyl acetate	ND		ug/kg	500	--
4-Methyl-2-pentanone	ND		ug/kg	500	--
2-Hexanone	ND		ug/kg	500	--
Ethyl methacrylate	ND		ug/kg	500	--
Acrolein	ND		ug/kg	1200	--
Acrylonitrile	ND		ug/kg	200	--
Bromochloromethane	ND		ug/kg	250	--
Tetrahydrofuran	ND		ug/kg	1000	--
2,2-Dichloropropane	ND		ug/kg	250	--
1,2-Dibromoethane	ND		ug/kg	200	--
1,3-Dichloropropane	ND		ug/kg	250	--

Project Name: EVERSOURCE NH SRP
Project Number: 1607530
Lab Number: L1627010
Report Date: 09/15/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 09/05/16 08:21
Analyst: BN

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 01-06 Batch: WG929175-5					
1,1,1,2-Tetrachloroethane	ND		ug/kg	50	--
Bromobenzene	ND		ug/kg	250	--
n-Buty benzene	ND		ug/kg	50	--
sec-Buty benzene	ND		ug/kg	50	--
tert-Butylbenzene	ND		ug/kg	250	--
1,3,5-Trichlorobenzene	ND		ug/kg	200	--
o-Chlorotoluene	ND		ug/kg	250	--
p-Chlorotoluene	ND		ug/kg	250	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	250	--
Hexachlorobutadiene	ND		ug/kg	250	--
Isopropylbenzene	ND		ug/kg	50	--
p-Isopropyltoluene	ND		ug/kg	50	--
Naphthalene	ND		ug/kg	250	--
n-Propy benzene	ND		ug/kg	50	--
1,2,3-Trichlorobenzene	ND		ug/kg	250	--
1,2,4-Trichlorobenzene	ND		ug/kg	250	--
1,3,5-Trimethylbenzene	ND		ug/kg	250	--
1,2,4-Trimethylbenzene	ND		ug/kg	250	--
trans-1,4-Dichloro-2-butene	ND		ug/kg	250	--
Halothane	ND		ug/kg	2000	--
Ethyl ether	ND		ug/kg	250	--
Methyl Acetate	ND		ug/kg	1000	--
Ethyl Acetate	ND		ug/kg	1000	--
Isopropyl Ether	ND		ug/kg	200	--
Cyclohexane	ND		ug/kg	1000	--
Tert-Butyl Alcohol	ND		ug/kg	5000	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	200	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	200	--
1,4-Dioxane	ND		ug/kg	5000	--

Project Name: EVERSOURCE NH SRP
Project Number: 1607530
Lab Number: L1627010
Report Date: 09/15/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 09/05/16 08:21
Analyst: BN

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 01-06 Batch: WG929175-5					
Methyl cyclohexane	ND		ug/kg	200	--
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		ug/kg	1000	--
p-Diethylbenzene	ND		ug/kg	200	--
4-Ethyltoluene	ND		ug/kg	200	--
1,2,4,5-Tetramethylbenzene	ND		ug/kg	200	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	98		70-130
D bromofluoromethane	96		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: EVERSOURCE NH SRP
Project Number: 1607530

Lab Number: L1627010
Report Date: 09/15/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01-06 Batch: WG929175-3 WG929175-4								
Methylene chloride	89		87		70-130	2		30
1,1-Dichloroethane	96		95		70-130	1		30
Chloroform	95		93		70-130	2		30
Carbon tetrachloride	93		91		70-130	2		30
1,2-Dichloropropane	94		92		70-130	2		30
Dibromochloromethane	92		92		70-130	0		30
1,1,2-Trichloroethane	94		93		70-130	1		30
2-Chloroethylvinyl ether	94		93		70-130	1		30
Tetrachloroethene	103		98		70-130	5		30
Chlorobenzene	96		94		70-130	2		30
Trichlorofluoromethane	112		107		70-139	5		30
1,2-Dichloroethane	93		92		70-130	1		30
1,1,1-Trichloroethane	95		93		70-130	2		30
Bromodichloromethane	92		89		70-130	3		30
trans-1,3-Dichloropropene	96		94		70-130	2		30
cis-1,3-Dichloropropene	95		95		70-130	0		30
1,1-Dichloropropene	107		104		70-130	3		30
Bromoform	83		83		70-130	0		30
1,1,2,2-Tetrachloroethane	94		93		70-130	1		30
Benzene	97		94		70-130	3		30
Toluene	97		94		70-130	3		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: EVERSOURCE NH SRP
Project Number: 1607530

Lab Number: L1627010
Report Date: 09/15/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01-06 Batch: WG929175-3 WG929175-4								
Ethylbenzene	99		95		70-130	4		30
Chloromethane	115		111		52-130	4		30
Bromomethane	109		103		57-147	6		30
Vinyl chloride	104		99		67-130	5		30
Chloroethane	112		104		50-151	7		30
1,1-Dichloroethene	89		85		65-135	5		30
trans-1,2-Dichloroethene	99		95		70-130	4		30
Trichloroethene	98		94		70-130	4		30
1,2-Dichlorobenzene	99		98		70-130	1		30
1,3-Dichlorobenzene	100		98		70-130	2		30
1,4-Dichlorobenzene	99		97		70-130	2		30
Methyl tert butyl ether	92		91		66-130	1		30
p/m-Xylene	101		97		70-130	4		30
o-Xylene	101		98		70-130	3		30
cis-1,2-Dichloroethene	97		94		70-130	3		30
Dibromomethane	91		90		70-130	1		30
1,4-Dichlorobutane	94		92		70-130	2		30
1,2,3-Trichloropropane	94		94		68-130	0		30
Styrene	100		97		70-130	3		30
Dichlorodifluoromethane	118		112		30-146	5		30
Acetone	86		86		54-140	0		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: EVERSOURCE NH SRP
Project Number: 1607530

Lab Number: L1627010
Report Date: 09/15/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01-06 Batch: WG929175-3 WG929175-4								
Carbon disulfide	73		72		59-130	1		30
2-Butanone	77		78		70-130	1		30
Vinyl acetate	95		96		70-130	1		30
4-Methyl-2-pentanone	89		88		70-130	1		30
2-Hexanone	86		86		70-130	0		30
Ethyl methacrylate	84		83		70-130	1		30
Acrolein	**44**	Q	**47**	Q	70-130	7		30
Acrylonitrile	84		83		70-130	1		30
Bromochloromethane	97		95		70-130	2		30
Tetrahydrofuran	84		85		66-130	1		30
2,2-Dichloropropane	97		94		70-130	3		30
1,2-Dibromoethane	94		92		70-130	2		30
1,3-Dichloropropane	96		94		69-130	2		30
1,1,1,2-Tetrachloroethane	95		93		70-130	2		30
Bromobenzene	100		97		70-130	3		30
n-Butylbenzene	109		106		70-130	3		30
sec-Butylbenzene	104		101		70-130	3		30
tert-Butylbenzene	103		100		70-130	3		30
1,3,5-Trichlorobenzene	104		102		70-139	2		30
o-Chlorotoluene	98		95		70-130	3		30
p-Chlorotoluene	98		97		70-130	1		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: EVERSOURCE NH SRP
Project Number: 1607530

Lab Number: L1627010
Report Date: 09/15/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01-06 Batch: WG929175-3 WG929175-4								
1,2-Dibromo-3-chloropropane	84		87		68-130	4		30
Hexachlorobutadiene	107		104		67-130	3		30
Isopropylbenzene	102		98		70-130	4		30
p-Isopropyltoluene	106		103		70-130	3		30
Naphthalene	96		95		70-130	1		30
n-Propylbenzene	104		101		70-130	3		30
1,2,3-Trichlorobenzene	101		100		70-130	1		30
1,2,4-Trichlorobenzene	103		102		70-130	1		30
1,3,5-Trimethylbenzene	102		98		70-130	4		30
1,2,4-Trimethylbenzene	103		101		70-130	2		30
trans-1,4-Dichloro-2-butene	90		90		70-130	0		30
Halothane	107		105		70-130	2		20
Ethyl ether	105		102		67-130	3		30
Methyl Acetate	101		100		65-130	1		30
Ethyl Acetate	92		94		70-130	2		30
Isopropyl Ether	93		92		66-130	1		30
Cyclohexane	108		105		70-130	3		30
Tert-Butyl Alcohol	76		76		70-130	0		30
Ethyl-Tert-Butyl-Ether	94		93		70-130	1		30
Tertiary-Amyl Methyl Ether	91		90		70-130	1		30
1,4-Dioxane	78		75		65-136	4		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: EVERSOURCE NH SRP

Project Number: 1607530

Lab Number: L1627010

Report Date: 09/15/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01-06 Batch: WG929175-3 WG929175-4								
Methyl cyclohexane	114		109		70-130	4		30
1,1,2-Trichloro-1,2,2-Trifluoroethane	101		96		70-130	5		30
p-Diethylbenzene	107		104		70-130	3		30
4-Ethyltoluene	109		105		70-130	4		30
1,2,4,5-Tetramethylbenzene	105		103		70-130	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	95		97		70-130
Toluene-d8	101		100		70-130
4-Bromofluorobenzene	101		100		70-130
Dibromofluoromethane	100		100		70-130

SEMIVOLATILES

Project Name: EVERSOURCE NH SRP **Lab Number:** L1627010

Project Number: 1607530 **Report Date:** 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-01
Client ID: 1607530-B103(S1-S2)
Sample Location: NEWINGTON, NH
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 09/02/16 04:52
Analyst: KV
Percent Solids: 93%

Date Collected: 08/26/16 09:25
Date Received: 08/29/16
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 08/31/16 00:26

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	140	--	1
Benzidine	ND		ug/kg	580	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	180	--	1
Hexachlorobenzene	ND		ug/kg	110	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	160	--	1
2-Chloronaphthalene	ND		ug/kg	180	--	1
1,2-Dichlorobenzene	ND		ug/kg	180	--	1
1,3-Dichlorobenzene	ND		ug/kg	180	--	1
1,4-Dichlorobenzene	ND		ug/kg	180	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	180	--	1
2,4-Dinitrotoluene	ND		ug/kg	180	--	1
2,6-Dinitrotoluene	ND		ug/kg	180	--	1
Azobenzene	ND		ug/kg	180	--	1
Fluoranthene	ND		ug/kg	110	--	1
4-Chlorophenyl phenyl ether	ND		ug/kg	180	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	180	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	210	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	190	--	1
Hexachlorobutadiene	ND		ug/kg	180	--	1
Hexachlorocyclopentadiene	ND		ug/kg	500	--	1
Hexachloroethane	ND		ug/kg	140	--	1
Isophorone	ND		ug/kg	160	--	1
Naphthalene	ND		ug/kg	180	--	1
Nitrobenzene	ND		ug/kg	160	--	1
NDPA/DPA	ND		ug/kg	140	--	1
n-Nitrosodi-n-propylamine	ND		ug/kg	180	--	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	180	--	1
Butyl benzyl phthalate	ND		ug/kg	180	--	1
Di-n-butylphthalate	ND		ug/kg	180	--	1
Di-n-octylphthalate	ND		ug/kg	180	--	1

Project Name: EVERSOURCE NH SRP **Lab Number:** L1627010

Project Number: 1607530 **Report Date:** 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-01 Date Collected: 08/26/16 09:25

Client ID: 1607530-B103(S1-S2) Date Received: 08/29/16

Sample Location: NEWINGTON, NH Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/kg	180	--	1
Dimethyl phthalate	ND		ug/kg	180	--	1
Benzo(a)anthracene	ND		ug/kg	110	--	1
Benzo(a)pyrene	ND		ug/kg	140	--	1
Benzo(b)fluoranthene	ND		ug/kg	110	--	1
Benzo(k)fluoranthene	ND		ug/kg	110	--	1
Chrysene	ND		ug/kg	110	--	1
Acenaphthylene	ND		ug/kg	140	--	1
Anthracene	ND		ug/kg	110	--	1
Benzo(ghi)perylene	ND		ug/kg	140	--	1
Fluorene	ND		ug/kg	180	--	1
Phenanthrene	ND		ug/kg	110	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	110	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	--	1
Pyrene	ND		ug/kg	110	--	1
Biphenyl	ND		ug/kg	400	--	1
Aniline	ND		ug/kg	210	--	1
4-Chloroaniline	ND		ug/kg	180	--	1
1-Methylnaphthalene	ND		ug/kg	180	--	1
2-Nitroaniline	ND		ug/kg	180	--	1
3-Nitroaniline	ND		ug/kg	180	--	1
4-Nitroaniline	ND		ug/kg	180	--	1
Dibenzofuran	ND		ug/kg	180	--	1
2-Methylnaphthalene	ND		ug/kg	210	--	1
n-Nitrosodimethylamine	ND		ug/kg	350	--	1
2,4,6-Trichlorophenol	ND		ug/kg	110	--	1
p-Chloro-m-cresol	ND		ug/kg	180	--	1
2-Chlorophenol	ND		ug/kg	180	--	1
2,4-Dichlorophenol	ND		ug/kg	160	--	1
2,4-Dimethylphenol	ND		ug/kg	180	--	1
2-Nitrophenol	ND		ug/kg	380	--	1
4-Nitrophenol	ND		ug/kg	250	--	1
2,4-Dinitrophenol	ND		ug/kg	850	--	1
4,6-Dinitro-o-cresol	ND		ug/kg	460	--	1
Pentachlorophenol	ND		ug/kg	140	--	1
Phenol	ND		ug/kg	180	--	1
2-Methylphenol	ND		ug/kg	180	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	250	--	1
2,4,5-Trichlorophenol	ND		ug/kg	180	--	1

Project Name: EVERSOURCE NH SRP **Lab Number:** L1627010

Project Number: 1607530 **Report Date:** 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-01 Date Collected: 08/26/16 09:25

Client ID: 1607530-B103(S1-S2) Date Received: 08/29/16

Sample Location: NEWINGTON, NH Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzoic Acid	ND		ug/kg	570	--	1
Benzyl Alcohol	ND		ug/kg	180	--	1
Carbazole	ND		ug/kg	180	--	1
Pyridine	ND		ug/kg	710	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	98		25-120
Phenol-d6	101		10-120
Nitrobenzene-d5	103		23-120
2-Fluorobiphenyl	83		30-120
2,4,6-Tribromophenol	89		10-136
4-Terphenyl-d14	84		18-120

Project Name: EVERSOURCE NH SRP
Project Number: 1607530
Lab Number: L1627010
Report Date: 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-02
Client ID: 1607530-B103(S3-S4)
Sample Location: NEWINGTON, NH
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 09/02/16 05:18
Analyst: KV
Percent Solids: 92%

Date Collected: 08/26/16 09:55
Date Received: 08/29/16
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 08/31/16 00:26

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	140	--	1
Benzidine	ND		ug/kg	580	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	180	--	1
Hexachlorobenzene	ND		ug/kg	100	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	160	--	1
2-Chloronaphthalene	ND		ug/kg	180	--	1
1,2-Dichlorobenzene	ND		ug/kg	180	--	1
1,3-Dichlorobenzene	ND		ug/kg	180	--	1
1,4-Dichlorobenzene	ND		ug/kg	180	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	180	--	1
2,4-Dinitrotoluene	ND		ug/kg	180	--	1
2,6-Dinitrotoluene	ND		ug/kg	180	--	1
Azobenzene	ND		ug/kg	180	--	1
Fluoranthene	ND		ug/kg	100	--	1
4-Chlorophenyl phenyl ether	ND		ug/kg	180	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	180	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	210	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	190	--	1
Hexachlorobutadiene	ND		ug/kg	180	--	1
Hexachlorocyclopentadiene	ND		ug/kg	500	--	1
Hexachloroethane	ND		ug/kg	140	--	1
Isophorone	ND		ug/kg	160	--	1
Naphthalene	ND		ug/kg	180	--	1
Nitrobenzene	ND		ug/kg	160	--	1
NDPA/DPA	ND		ug/kg	140	--	1
n-Nitrosodi-n-propylamine	ND		ug/kg	180	--	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	180	--	1
Butyl benzyl phthalate	ND		ug/kg	180	--	1
Di-n-butylphthalate	ND		ug/kg	180	--	1
Di-n-octylphthalate	ND		ug/kg	180	--	1

Project Name: EVERSOURCE NH SRP **Lab Number:** L1627010

Project Number: 1607530 **Report Date:** 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-02 Date Collected: 08/26/16 09:55

Client ID: 1607530-B103(S3-S4) Date Received: 08/29/16

Sample Location: NEWINGTON, NH Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/kg	180	--	1
Dimethyl phthalate	ND		ug/kg	180	--	1
Benzo(a)anthracene	ND		ug/kg	100	--	1
Benzo(a)pyrene	ND		ug/kg	140	--	1
Benzo(b)fluoranthene	ND		ug/kg	100	--	1
Benzo(k)fluoranthene	ND		ug/kg	100	--	1
Chrysene	ND		ug/kg	100	--	1
Acenaphthylene	ND		ug/kg	140	--	1
Anthracene	ND		ug/kg	100	--	1
Benzo(ghi)perylene	ND		ug/kg	140	--	1
Fluorene	ND		ug/kg	180	--	1
Phenanthrene	ND		ug/kg	100	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	100	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	--	1
Pyrene	ND		ug/kg	100	--	1
Biphenyl	ND		ug/kg	400	--	1
Aniline	ND		ug/kg	210	--	1
4-Chloroaniline	ND		ug/kg	180	--	1
1-Methylnaphthalene	ND		ug/kg	180	--	1
2-Nitroaniline	ND		ug/kg	180	--	1
3-Nitroaniline	ND		ug/kg	180	--	1
4-Nitroaniline	ND		ug/kg	180	--	1
Dibenzofuran	ND		ug/kg	180	--	1
2-Methylnaphthalene	ND		ug/kg	210	--	1
n-Nitrosodimethylamine	ND		ug/kg	350	--	1
2,4,6-Trichlorophenol	ND		ug/kg	100	--	1
p-Chloro-m-cresol	ND		ug/kg	180	--	1
2-Chlorophenol	ND		ug/kg	180	--	1
2,4-Dichlorophenol	ND		ug/kg	160	--	1
2,4-Dimethylphenol	ND		ug/kg	180	--	1
2-Nitrophenol	ND		ug/kg	380	--	1
4-Nitrophenol	ND		ug/kg	250	--	1
2,4-Dinitrophenol	ND		ug/kg	840	--	1
4,6-Dinitro-o-cresol	ND		ug/kg	460	--	1
Pentachlorophenol	ND		ug/kg	140	--	1
Phenol	ND		ug/kg	180	--	1
2-Methylphenol	ND		ug/kg	180	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	250	--	1
2,4,5-Trichlorophenol	ND		ug/kg	180	--	1

Project Name: EVERSOURCE NH SRP **Lab Number:** L1627010

Project Number: 1607530 **Report Date:** 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-02 Date Collected: 08/26/16 09:55

Client ID: 1607530-B103(S3-S4) Date Received: 08/29/16

Sample Location: NEWINGTON, NH Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzoic Acid	ND		ug/kg	570	--	1
Benzyl Alcohol	ND		ug/kg	180	--	1
Carbazole	ND		ug/kg	180	--	1
Pyridine	ND		ug/kg	700	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	93		25-120
Phenol-d6	98		10-120
Nitrobenzene-d5	98		23-120
2-Fluorobiphenyl	85		30-120
2,4,6-Tribromophenol	92		10-136
4-Terphenyl-d14	93		18-120

Project Name: EVERSOURCE NH SRP **Lab Number:** L1627010

Project Number: 1607530 **Report Date:** 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-03
Client ID: 1607530-B102(S1-S2)
Sample Location: NEWINGTON, NH
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 09/02/16 05:43
Analyst: KV
Percent Solids: 84%

Date Collected: 08/26/16 10:45
Date Received: 08/29/16
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 08/31/16 00:26

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	150	--	1
Benzidine	ND		ug/kg	640	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	190	--	1
Hexachlorobenzene	ND		ug/kg	120	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	170	--	1
2-Chloronaphthalene	ND		ug/kg	190	--	1
1,2-Dichlorobenzene	ND		ug/kg	190	--	1
1,3-Dichlorobenzene	ND		ug/kg	190	--	1
1,4-Dichlorobenzene	ND		ug/kg	190	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	190	--	1
2,4-Dinitrotoluene	ND		ug/kg	190	--	1
2,6-Dinitrotoluene	ND		ug/kg	190	--	1
Azobenzene	ND		ug/kg	190	--	1
Fluoranthene	ND		ug/kg	120	--	1
4-Chlorophenyl phenyl ether	ND		ug/kg	190	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	190	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	230	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	210	--	1
Hexachlorobutadiene	ND		ug/kg	190	--	1
Hexachlorocyclopentadiene	ND		ug/kg	550	--	1
Hexachloroethane	ND		ug/kg	150	--	1
Isophorone	ND		ug/kg	170	--	1
Naphthalene	ND		ug/kg	190	--	1
Nitrobenzene	ND		ug/kg	170	--	1
NDPA/DPA	ND		ug/kg	150	--	1
n-Nitrosodi-n-propylamine	ND		ug/kg	190	--	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	190	--	1
Butyl benzyl phthalate	ND		ug/kg	190	--	1
Di-n-butylphthalate	ND		ug/kg	190	--	1
Di-n-octylphthalate	ND		ug/kg	190	--	1

Project Name: EVERSOURCE NH SRP **Lab Number:** L1627010

Project Number: 1607530 **Report Date:** 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-03 Date Collected: 08/26/16 10:45

Client ID: 1607530-B102(S1-S2) Date Received: 08/29/16

Sample Location: NEWINGTON, NH Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/kg	190	--	1
Dimethyl phthalate	ND		ug/kg	190	--	1
Benzo(a)anthracene	ND		ug/kg	120	--	1
Benzo(a)pyrene	ND		ug/kg	150	--	1
Benzo(b)fluoranthene	ND		ug/kg	120	--	1
Benzo(k)fluoranthene	ND		ug/kg	120	--	1
Chrysene	ND		ug/kg	120	--	1
Acenaphthylene	ND		ug/kg	150	--	1
Anthracene	ND		ug/kg	120	--	1
Benzo(ghi)perylene	ND		ug/kg	150	--	1
Fluorene	ND		ug/kg	190	--	1
Phenanthrene	ND		ug/kg	120	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	150	--	1
Pyrene	ND		ug/kg	120	--	1
Biphenyl	ND		ug/kg	440	--	1
Aniline	ND		ug/kg	230	--	1
4-Chloroaniline	ND		ug/kg	190	--	1
1-Methylnaphthalene	ND		ug/kg	190	--	1
2-Nitroaniline	ND		ug/kg	190	--	1
3-Nitroaniline	ND		ug/kg	190	--	1
4-Nitroaniline	ND		ug/kg	190	--	1
Dibenzofuran	ND		ug/kg	190	--	1
2-Methylnaphthalene	ND		ug/kg	230	--	1
n-Nitrosodimethylamine	ND		ug/kg	390	--	1
2,4,6-Trichlorophenol	ND		ug/kg	120	--	1
p-Chloro-m-cresol	ND		ug/kg	190	--	1
2-Chlorophenol	ND		ug/kg	190	--	1
2,4-Dichlorophenol	ND		ug/kg	170	--	1
2,4-Dimethylphenol	ND		ug/kg	190	--	1
2-Nitrophenol	ND		ug/kg	420	--	1
4-Nitrophenol	ND		ug/kg	270	--	1
2,4-Dinitrophenol	ND		ug/kg	930	--	1
4,6-Dinitro-o-cresol	ND		ug/kg	500	--	1
Pentachlorophenol	ND		ug/kg	150	--	1
Phenol	ND		ug/kg	190	--	1
2-Methylphenol	ND		ug/kg	190	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	280	--	1
2,4,5-Trichlorophenol	ND		ug/kg	190	--	1

Project Name: EVERSOURCE NH SRP **Lab Number:** L1627010

Project Number: 1607530 **Report Date:** 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-03 Date Collected: 08/26/16 10:45

Client ID: 1607530-B102(S1-S2) Date Received: 08/29/16

Sample Location: NEWINGTON, NH Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzoic Acid	ND		ug/kg	630	--	1
Benzyl Alcohol	ND		ug/kg	190	--	1
Carbazole	ND		ug/kg	190	--	1
Pyridine	ND		ug/kg	770	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	89		25-120
Phenol-d6	93		10-120
Nitrobenzene-d5	96		23-120
2-Fluorobiphenyl	82		30-120
2,4,6-Tribromophenol	90		10-136
4-Terphenyl-d14	86		18-120

Project Name: EVERSOURCE NH SRP **Lab Number:** L1627010

Project Number: 1607530 **Report Date:** 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-04
Client ID: 1607530-B102(S3-S4)
Sample Location: NEWINGTON, NH
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 09/02/16 06:08
Analyst: KV
Percent Solids: 79%

Date Collected: 08/26/16 11:00
Date Received: 08/29/16
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 08/31/16 00:26

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	170	--	1
Benzidine	ND		ug/kg	690	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	210	--	1
Hexachlorobenzene	ND		ug/kg	120	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	190	--	1
2-Chloronaphthalene	ND		ug/kg	210	--	1
1,2-Dichlorobenzene	ND		ug/kg	210	--	1
1,3-Dichlorobenzene	ND		ug/kg	210	--	1
1,4-Dichlorobenzene	ND		ug/kg	210	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	210	--	1
2,4-Dinitrotoluene	ND		ug/kg	210	--	1
2,6-Dinitrotoluene	ND		ug/kg	210	--	1
Azobenzene	ND		ug/kg	210	--	1
Fluoranthene	ND		ug/kg	120	--	1
4-Chlorophenyl phenyl ether	ND		ug/kg	210	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	210	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	250	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	220	--	1
Hexachlorobutadiene	ND		ug/kg	210	--	1
Hexachlorocyclopentadiene	ND		ug/kg	600	--	1
Hexachloroethane	ND		ug/kg	170	--	1
Isophorone	ND		ug/kg	190	--	1
Naphthalene	ND		ug/kg	210	--	1
Nitrobenzene	ND		ug/kg	190	--	1
NDPA/DPA	ND		ug/kg	170	--	1
n-Nitrosodi-n-propylamine	ND		ug/kg	210	--	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	210	--	1
Butyl benzyl phthalate	ND		ug/kg	210	--	1
Di-n-butylphthalate	ND		ug/kg	210	--	1
Di-n-octylphthalate	ND		ug/kg	210	--	1

Project Name: EVERSOURCE NH SRP **Lab Number:** L1627010

Project Number: 1607530 **Report Date:** 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-04 Date Collected: 08/26/16 11:00

Client ID: 1607530-B102(S3-S4) Date Received: 08/29/16

Sample Location: NEWINGTON, NH Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/kg	210	--	1
Dimethyl phthalate	ND		ug/kg	210	--	1
Benzo(a)anthracene	ND		ug/kg	120	--	1
Benzo(a)pyrene	ND		ug/kg	170	--	1
Benzo(b)fluoranthene	ND		ug/kg	120	--	1
Benzo(k)fluoranthene	ND		ug/kg	120	--	1
Chrysene	ND		ug/kg	120	--	1
Acenaphthylene	ND		ug/kg	170	--	1
Anthracene	ND		ug/kg	120	--	1
Benzo(ghi)perylene	ND		ug/kg	170	--	1
Fluorene	ND		ug/kg	210	--	1
Phenanthrene	ND		ug/kg	120	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	170	--	1
Pyrene	ND		ug/kg	120	--	1
Biphenyl	ND		ug/kg	480	--	1
Aniline	ND		ug/kg	250	--	1
4-Chloroaniline	ND		ug/kg	210	--	1
1-Methylnaphthalene	ND		ug/kg	210	--	1
2-Nitroaniline	ND		ug/kg	210	--	1
3-Nitroaniline	ND		ug/kg	210	--	1
4-Nitroaniline	ND		ug/kg	210	--	1
Dibenzofuran	ND		ug/kg	210	--	1
2-Methylnaphthalene	ND		ug/kg	250	--	1
n-Nitrosodimethylamine	ND		ug/kg	420	--	1
2,4,6-Trichlorophenol	ND		ug/kg	120	--	1
p-Chloro-m-cresol	ND		ug/kg	210	--	1
2-Chlorophenol	ND		ug/kg	210	--	1
2,4-Dichlorophenol	ND		ug/kg	190	--	1
2,4-Dimethylphenol	ND		ug/kg	210	--	1
2-Nitrophenol	ND		ug/kg	450	--	1
4-Nitrophenol	ND		ug/kg	290	--	1
2,4-Dinitrophenol	ND		ug/kg	1000	--	1
4,6-Dinitro-o-cresol	ND		ug/kg	540	--	1
Pentachlorophenol	ND		ug/kg	170	--	1
Phenol	ND		ug/kg	210	--	1
2-Methylphenol	ND		ug/kg	210	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	300	--	1
2,4,5-Trichlorophenol	ND		ug/kg	210	--	1

Project Name: EVERSOURCE NH SRP **Lab Number:** L1627010

Project Number: 1607530 **Report Date:** 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-04 Date Collected: 08/26/16 11:00

Client ID: 1607530-B102(S3-S4) Date Received: 08/29/16

Sample Location: NEWINGTON, NH Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzoic Acid	ND		ug/kg	680	--	1
Benzyl Alcohol	ND		ug/kg	210	--	1
Carbazole	ND		ug/kg	210	--	1
Pyridine	ND		ug/kg	830	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	91		25-120
Phenol-d6	94		10-120
Nitrobenzene-d5	97		23-120
2-Fluorobiphenyl	79		30-120
2,4,6-Tribromophenol	84		10-136
4-Terphenyl-d14	82		18-120

Project Name: EVERSOURCE NH SRP
Project Number: 1607530
Lab Number: L1627010
Report Date: 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-05
Client ID: 1607530-B101(S1-S2)
Sample Location: NEWINGTON, NH
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 09/02/16 06:34
Analyst: KV
Percent Solids: 84%

Date Collected: 08/26/16 11:45
Date Received: 08/29/16
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 08/31/16 00:26

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	160	--	1
Benzidine	ND		ug/kg	640	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	200	--	1
Hexachlorobenzene	ND		ug/kg	120	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	180	--	1
2-Chloronaphthalene	ND		ug/kg	200	--	1
1,2-Dichlorobenzene	ND		ug/kg	200	--	1
1,3-Dichlorobenzene	ND		ug/kg	200	--	1
1,4-Dichlorobenzene	ND		ug/kg	200	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	200	--	1
2,4-Dinitrotoluene	ND		ug/kg	200	--	1
2,6-Dinitrotoluene	ND		ug/kg	200	--	1
Azobenzene	ND		ug/kg	200	--	1
Fluoranthene	ND		ug/kg	120	--	1
4-Chlorophenyl phenyl ether	ND		ug/kg	200	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	200	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	230	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	210	--	1
Hexachlorobutadiene	ND		ug/kg	200	--	1
Hexachlorocyclopentadiene	ND		ug/kg	560	--	1
Hexachloroethane	ND		ug/kg	160	--	1
Isophorone	ND		ug/kg	180	--	1
Naphthalene	ND		ug/kg	200	--	1
Nitrobenzene	ND		ug/kg	180	--	1
NDPA/DPA	ND		ug/kg	160	--	1
n-Nitrosodi-n-propylamine	ND		ug/kg	200	--	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	200	--	1
Butyl benzyl phthalate	ND		ug/kg	200	--	1
Di-n-butylphthalate	ND		ug/kg	200	--	1
Di-n-octylphthalate	ND		ug/kg	200	--	1

Project Name: EVERSOURCE NH SRP **Lab Number:** L1627010

Project Number: 1607530 **Report Date:** 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-05 Date Collected: 08/26/16 11:45

Client ID: 1607530-B101(S1-S2) Date Received: 08/29/16

Sample Location: NEWINGTON, NH Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/kg	200	--	1
Dimethyl phthalate	ND		ug/kg	200	--	1
Benzo(a)anthracene	ND		ug/kg	120	--	1
Benzo(a)pyrene	ND		ug/kg	160	--	1
Benzo(b)fluoranthene	ND		ug/kg	120	--	1
Benzo(k)fluoranthene	ND		ug/kg	120	--	1
Chrysene	ND		ug/kg	120	--	1
Acenaphthylene	ND		ug/kg	160	--	1
Anthracene	ND		ug/kg	120	--	1
Benzo(ghi)perylene	ND		ug/kg	160	--	1
Fluorene	ND		ug/kg	200	--	1
Phenanthrene	ND		ug/kg	120	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	160	--	1
Pyrene	ND		ug/kg	120	--	1
Biphenyl	ND		ug/kg	440	--	1
Aniline	ND		ug/kg	230	--	1
4-Chloroaniline	ND		ug/kg	200	--	1
1-Methylnaphthalene	ND		ug/kg	200	--	1
2-Nitroaniline	ND		ug/kg	200	--	1
3-Nitroaniline	ND		ug/kg	200	--	1
4-Nitroaniline	ND		ug/kg	200	--	1
Dibenzofuran	ND		ug/kg	200	--	1
2-Methylnaphthalene	ND		ug/kg	230	--	1
n-Nitrosodimethylamine	ND		ug/kg	390	--	1
2,4,6-Trichlorophenol	ND		ug/kg	120	--	1
p-Chloro-m-cresol	ND		ug/kg	200	--	1
2-Chlorophenol	ND		ug/kg	200	--	1
2,4-Dichlorophenol	ND		ug/kg	180	--	1
2,4-Dimethylphenol	ND		ug/kg	200	--	1
2-Nitrophenol	ND		ug/kg	420	--	1
4-Nitrophenol	ND		ug/kg	270	--	1
2,4-Dinitrophenol	ND		ug/kg	940	--	1
4,6-Dinitro-o-cresol	ND		ug/kg	510	--	1
Pentachlorophenol	ND		ug/kg	160	--	1
Phenol	ND		ug/kg	200	--	1
2-Methylphenol	ND		ug/kg	200	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	280	--	1
2,4,5-Trichlorophenol	ND		ug/kg	200	--	1

Project Name: EVERSOURCE NH SRP **Lab Number:** L1627010

Project Number: 1607530 **Report Date:** 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-05 Date Collected: 08/26/16 11:45

Client ID: 1607530-B101(S1-S2) Date Received: 08/29/16

Sample Location: NEWINGTON, NH Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzoic Acid	ND		ug/kg	630	--	1
Benzyl Alcohol	ND		ug/kg	200	--	1
Carbazole	ND		ug/kg	200	--	1
Pyridine	ND		ug/kg	780	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	86		25-120
Phenol-d6	89		10-120
Nitrobenzene-d5	95		23-120
2-Fluorobiphenyl	78		30-120
2,4,6-Tribromophenol	90		10-136
4-Terphenyl-d14	87		18-120

Project Name: EVERSOURCE NH SRP **Lab Number:** L1627010

Project Number: 1607530 **Report Date:** 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-06
Client ID: 1607530-B101(S3-S4)
Sample Location: NEWINGTON, NH
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 09/02/16 07:00
Analyst: KV
Percent Solids: 81%

Date Collected: 08/26/16 12:00
Date Received: 08/29/16
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 08/31/16 00:26

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	160	--	1
Benzidine	ND		ug/kg	660	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	200	--	1
Hexachlorobenzene	ND		ug/kg	120	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	180	--	1
2-Chloronaphthalene	ND		ug/kg	200	--	1
1,2-Dichlorobenzene	ND		ug/kg	200	--	1
1,3-Dichlorobenzene	ND		ug/kg	200	--	1
1,4-Dichlorobenzene	ND		ug/kg	200	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	200	--	1
2,4-Dinitrotoluene	ND		ug/kg	200	--	1
2,6-Dinitrotoluene	ND		ug/kg	200	--	1
Azobenzene	ND		ug/kg	200	--	1
Fluoranthene	ND		ug/kg	120	--	1
4-Chlorophenyl phenyl ether	ND		ug/kg	200	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	200	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	240	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	220	--	1
Hexachlorobutadiene	ND		ug/kg	200	--	1
Hexachlorocyclopentadiene	ND		ug/kg	580	--	1
Hexachloroethane	ND		ug/kg	160	--	1
Isophorone	ND		ug/kg	180	--	1
Naphthalene	ND		ug/kg	200	--	1
Nitrobenzene	ND		ug/kg	180	--	1
NDPA/DPA	ND		ug/kg	160	--	1
n-Nitrosodi-n-propylamine	ND		ug/kg	200	--	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	200	--	1
Butyl benzyl phthalate	ND		ug/kg	200	--	1
Di-n-butylphthalate	ND		ug/kg	200	--	1
Di-n-octylphthalate	ND		ug/kg	200	--	1

Project Name: EVERSOURCE NH SRP **Lab Number:** L1627010

Project Number: 1607530 **Report Date:** 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-06 Date Collected: 08/26/16 12:00

Client ID: 1607530-B101(S3-S4) Date Received: 08/29/16

Sample Location: NEWINGTON, NH Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/kg	200	--	1
Dimethyl phthalate	ND		ug/kg	200	--	1
Benzo(a)anthracene	ND		ug/kg	120	--	1
Benzo(a)pyrene	ND		ug/kg	160	--	1
Benzo(b)fluoranthene	ND		ug/kg	120	--	1
Benzo(k)fluoranthene	ND		ug/kg	120	--	1
Chrysene	ND		ug/kg	120	--	1
Acenaphthylene	ND		ug/kg	160	--	1
Anthracene	ND		ug/kg	120	--	1
Benzo(ghi)perylene	ND		ug/kg	160	--	1
Fluorene	ND		ug/kg	200	--	1
Phenanthrene	ND		ug/kg	120	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	160	--	1
Pyrene	ND		ug/kg	120	--	1
Biphenyl	ND		ug/kg	460	--	1
Aniline	ND		ug/kg	240	--	1
4-Chloroaniline	ND		ug/kg	200	--	1
1-Methylnaphthalene	ND		ug/kg	200	--	1
2-Nitroaniline	ND		ug/kg	200	--	1
3-Nitroaniline	ND		ug/kg	200	--	1
4-Nitroaniline	ND		ug/kg	200	--	1
Dibenzofuran	ND		ug/kg	200	--	1
2-Methylnaphthalene	ND		ug/kg	240	--	1
n-Nitrosodimethylamine	ND		ug/kg	400	--	1
2,4,6-Trichlorophenol	ND		ug/kg	120	--	1
p-Chloro-m-cresol	ND		ug/kg	200	--	1
2-Chlorophenol	ND		ug/kg	200	--	1
2,4-Dichlorophenol	ND		ug/kg	180	--	1
2,4-Dimethylphenol	ND		ug/kg	200	--	1
2-Nitrophenol	ND		ug/kg	440	--	1
4-Nitrophenol	ND		ug/kg	280	--	1
2,4-Dinitrophenol	ND		ug/kg	970	--	1
4,6-Dinitro-o-cresol	ND		ug/kg	520	--	1
Pentachlorophenol	ND		ug/kg	160	--	1
Phenol	ND		ug/kg	200	--	1
2-Methylphenol	ND		ug/kg	200	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	290	--	1
2,4,5-Trichlorophenol	ND		ug/kg	200	--	1

Project Name: EVERSOURCE NH SRP **Lab Number:** L1627010

Project Number: 1607530 **Report Date:** 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-06 Date Collected: 08/26/16 12:00

Client ID: 1607530-B101(S3-S4) Date Received: 08/29/16

Sample Location: NEWINGTON, NH Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzoic Acid	ND		ug/kg	650	--	1
Benzyl Alcohol	ND		ug/kg	200	--	1
Carbazole	ND		ug/kg	200	--	1
Pyridine	ND		ug/kg	810	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	111		25-120
Phenol-d6	115		10-120
Nitrobenzene-d5	120		23-120
2-Fluorobiphenyl	92		30-120
2,4,6-Tribromophenol	92		10-136
4-Terphenyl-d14	90		18-120

Project Name: EVERSOURCE NH SRP
Project Number: 1607530
Lab Number: L1627010
Report Date: 09/15/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 09/02/16 03:36
Analyst: KV

Extraction Method: EPA 3546
Extraction Date: 08/31/16 00:26

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-06 Batch: WG927494-1					
Acenaphthene	ND		ug/kg	130	--
Benzidine	ND		ug/kg	540	--
1,2,4-Trichlorobenzene	ND		ug/kg	160	--
Hexachlorobenzene	ND		ug/kg	98	--
Bis(2-chloroethyl)ether	ND		ug/kg	150	--
2-Chloronaphthalene	ND		ug/kg	160	--
1,2-Dichlorobenzene	ND		ug/kg	160	--
1,3-Dichlorobenzene	ND		ug/kg	160	--
1,4-Dichlorobenzene	ND		ug/kg	160	--
3,3'-Dichlorobenzidine	ND		ug/kg	160	--
2,4-Dinitrotoluene	ND		ug/kg	160	--
2,6-Dinitrotoluene	ND		ug/kg	160	--
Azobenzene	ND		ug/kg	160	--
Fluoranthene	ND		ug/kg	98	--
4-Chlorophenyl phenyl ether	ND		ug/kg	160	--
4-Bromophenyl phenyl ether	ND		ug/kg	160	--
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	--
Bis(2-chloroethoxy)methane	ND		ug/kg	180	--
Hexachlorobutadiene	ND		ug/kg	160	--
Hexachlorocyclopentadiene	ND		ug/kg	470	--
Hexachloroethane	ND		ug/kg	130	--
Isophorone	ND		ug/kg	150	--
Naphthalene	ND		ug/kg	160	--
Nitrobenzene	ND		ug/kg	150	--
NDPA/DPA	ND		ug/kg	130	--
n-Nitrosodi-n-propylamine	ND		ug/kg	160	--
Bis(2-ethylhexyl)phthalate	ND		ug/kg	160	--
Butyl benzyl phthalate	ND		ug/kg	160	--
Di-n-butylphthalate	ND		ug/kg	160	--

Project Name: EVERSOURCE NH SRP
Project Number: 1607530
Lab Number: L1627010
Report Date: 09/15/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 09/02/16 03:36
Analyst: KV

Extraction Method: EPA 3546
Extraction Date: 08/31/16 00:26

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-06 Batch: WG927494-1					
Di-n-octylphthalate	ND		ug/kg	160	--
Diethyl phthalate	ND		ug/kg	160	--
Dimethyl phthalate	ND		ug/kg	160	--
Benzo(a)anthracene	ND		ug/kg	98	--
Benzo(a)pyrene	ND		ug/kg	130	--
Benzo(b)fluoranthene	ND		ug/kg	98	--
Benzo(k)fluoranthene	ND		ug/kg	98	--
Chrysene	ND		ug/kg	98	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	98	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	160	--
Phenanthrene	ND		ug/kg	98	--
Dibenzo(a,h)anthracene	ND		ug/kg	98	--
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	98	--
Biphenyl	ND		ug/kg	370	--
Aniline	ND		ug/kg	200	--
4-Chloroaniline	ND		ug/kg	160	--
1-Methylnaphthalene	ND		ug/kg	160	--
2-Nitroaniline	ND		ug/kg	160	--
3-Nitroaniline	ND		ug/kg	160	--
4-Nitroaniline	ND		ug/kg	160	--
Dibenzofuran	ND		ug/kg	160	--
2-Methylnaphthalene	ND		ug/kg	200	--
n-Nitrosodimethylamine	ND		ug/kg	330	--
2,4,6-Trichlorophenol	ND		ug/kg	98	--
p-Chloro-m-cresol	ND		ug/kg	160	--
2-Chlorophenol	ND		ug/kg	160	--

Project Name: EVERSOURCE NH SRP
Project Number: 1607530
Lab Number: L1627010
Report Date: 09/15/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 09/02/16 03:36
Analyst: KV

Extraction Method: EPA 3546
Extraction Date: 08/31/16 00:26

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-06 Batch: WG927494-1					
2,4-Dichlorophenol	ND		ug/kg	150	--
2,4-Dimethylphenol	ND		ug/kg	160	--
2-Nitrophenol	ND		ug/kg	350	--
4-Nitrophenol	ND		ug/kg	230	--
2,4-Dinitrophenol	ND		ug/kg	780	--
4,6-Dinitro-o-cresol	ND		ug/kg	420	--
Pentachlorophenol	ND		ug/kg	130	--
Phenol	ND		ug/kg	160	--
2-Methylphenol	ND		ug/kg	160	--
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	--
2,4,5-Trichlorophenol	ND		ug/kg	160	--
Benzoic Acid	ND		ug/kg	530	--
Benzyl Alcohol	ND		ug/kg	160	--
Carbazole	ND		ug/kg	160	--
Pyridine	ND		ug/kg	650	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	71		25-120
Phenol-d6	71		10-120
Nitrobenzene-d5	74		23-120
2-Fluorobiphenyl	61		30-120
2,4,6-Tribromophenol	64		10-136
4-Terphenyl-d14	67		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: EVERSOURCE NH SRP
Project Number: 1607530

Lab Number: L1627010
Report Date: 09/15/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-06 Batch: WG927494-2 WG927494-3								
Acenaphthene	74		75		31-137	1		50
Benzidine	52		47		10-66	10		50
1,2,4-Trichlorobenzene	73		82		38-107	12		50
Hexachlorobenzene	74		74		40-140	0		50
Bis(2-chloroethyl)ether	75		85		40-140	13		50
2-Chloronaphthalene	74		75		40-140	1		50
1,2-Dichlorobenzene	69		83		40-140	18		50
1,3-Dichlorobenzene	67		80		40-140	18		50
1,4-Dichlorobenzene	68		82		28-104	19		50
3,3'-Dichlorobenzidine	82		76		40-140	8		50
2,4-Dinitrotoluene	**96**	Q	**93**	Q	28-89	3		50
2,6-Dinitrotoluene	83		84		40-140	1		50
Azobenzene	76		77		40-140	1		50
Fluoranthene	80		77		40-140	4		50
4-Chlorophenyl phenyl ether	75		75		40-140	0		50
4-Bromophenyl phenyl ether	74		75		40-140	1		50
Bis(2-chloroisopropyl)ether	73		80		40-140	9		50
Bis(2-chloroethoxy)methane	77		84		40-117	9		50
Hexachlorobutadiene	71		77		40-140	8		50
Hexachlorocyclopentadiene	89		93		40-140	4		50
Hexachloroethane	73		88		40-140	19		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: EVERSOURCE NH SRP
Project Number: 1607530

Lab Number: L1627010
Report Date: 09/15/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-06 Batch: WG927494-2 WG927494-3								
Isophorone	82		89		40-140	8		50
Naphthalene	73		79		40-140	8		50
Nitrobenzene	89		100		40-140	12		50
NDPA/DPA	76		77		36-157	1		50
n-Nitrosodi-n-propylamine	86		92		32-121	7		50
Bis(2-ethylhexyl)phthalate	88		84		40-140	5		50
Butyl benzyl phthalate	95		91		40-140	4		50
Di-n-butylphthalate	89		85		40-140	5		50
Di-n-octylphthalate	98		95		40-140	3		50
Diethyl phthalate	82		79		40-140	4		50
Dimethyl phthalate	83		81		40-140	2		50
Benzo(a)anthracene	79		77		40-140	3		50
Benzo(a)pyrene	86		84		40-140	2		50
Benzo(b)fluoranthene	81		80		40-140	1		50
Benzo(k)fluoranthene	81		75		40-140	8		50
Chrysene	76		74		40-140	3		50
Acenaphthylene	80		81		40-140	1		50
Anthracene	81		80		40-140	1		50
Benzo(ghi)perylene	82		80		40-140	2		50
Fluorene	77		77		40-140	0		50
Phenanthrene	72		72		40-140	0		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: EVERSOURCE NH SRP
Project Number: 1607530
Lab Number: L1627010
Report Date: 09/15/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-06 Batch: WG927494-2 WG927494-3								
Dibenzo(a,h)anthracene	84		83		40-140	1		50
Indeno(1,2,3-cd)pyrene	84		83		40-140	1		50
Pyrene	77		74		35-142	4		50
Biphenyl	80		81		54-104	1		50
Aniline	64		69		40-140	8		50
4-Chloroaniline	66		74		40-140	11		50
1-Methylnaphthalene	72		78		26-130	8		50
2-Nitroaniline	91		91		47-134	0		50
3-Nitroaniline	84		79		26-129	6		50
4-Nitroaniline	86		83		41-125	4		50
Dibenzofuran	75		76		40-140	1		50
2-Methylnaphthalene	74		78		40-140	5		50
1,2,4,5-Tetrachlorobenzene	75		80		40-117	6		50
Acetophenone	83		91		14-144	9		50
n-Nitrosodimethylamine	69		83		22-100	18		50
2,4,6-Trichlorophenol	84		83		30-130	1		50
p-Chloro-m-cresol	90		91		26-103	1		50
2-Chlorophenol	87		99		25-102	13		50
2,4-Dichlorophenol	94		97		30-130	3		50
2,4-Dimethylphenol	95		105		30-130	10		50
2-Nitrophenol	113		123		30-130	8		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: EVERSOURCE NH SRP
Project Number: 1607530

Lab Number: L1627010
Report Date: 09/15/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-06 Batch: WG927494-2 WG927494-3								
4-Nitrophenol	85		83		11-114	2		50
2,4-Dinitrophenol	118		109		4-130	8		50
4,6-Dinitro-o-cresol	126		120		10-130	5		50
Pentachlorophenol	76		76		17-109	0		50
Phenol	81		90		26-90	11		50
2-Methylphenol	88		95		30-130.	8		50
3-Methylphenol/4-Methylphenol	86		91		30-130	6		50
2,4,5-Trichlorophenol	92		93		30-130	1		50
Benzoic Acid	45		45		10-110	0		50
Benzyl Alcohol	85		94		40-140	10		50
Carbazole	79		76		54-128	4		50
Pyridine	54		72		10-93	29		50
Parathion, ethyl	135		131		40-140	3		50
Atrazine	97		97		40-140	0		50
Benzaldehyde	63		75		40-140	17		50
Caprolactam	90		89		15-130	1		50
2,3,4,6-Tetrachlorophenol	88		86		40-140	2		50

Lab Control Sample Analysis

Batch Quality Control

Project Name: EVERSOURCE NH SRP

Project Number: 1607530

Lab Number: L1627010

Report Date: 09/15/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-06 Batch: WG927494-2 WG927494-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	86		97		25-120
Phenol-d6	87		97		10-120
Nitrobenzene-d5	95		102		23-120
2-Fluorobiphenyl	75		76		30-120
2,4,6-Tribromophenol	80		81		10-136
4-Terphenyl-d14	77		74		18-120

PETROLEUM HYDROCARBONS

Project Name: EVERSOURCE NH SRP
Lab Number: L1627010
Project Number: 1607530
Report Date: 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-01
Client ID: 1607530-B103(S1-S2)
Sample Location: NEWINGTON, NH
Matrix: Soil
Analytical Method: 1,8015C(M)
Analytical Date: 09/01/16 20:20
Analyst: DV
Percent Solids: 93%

Date Collected: 08/26/16 09:25
Date Received: 08/29/16
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 08/31/16 20:59

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH	ND		ug/kg	35500	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	54		40-140

Project Name: EVERSOURCE NH SRP
Lab Number: L1627010
Project Number: 1607530
Report Date: 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-02
Client ID: 1607530-B103(S3-S4)
Sample Location: NEWINGTON, NH
Matrix: Soil
Analytical Method: 1,8015C(M)
Analytical Date: 09/01/16 20:53
Analyst: DV
Percent Solids: 92%

Date Collected: 08/26/16 09:55
Date Received: 08/29/16
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 08/31/16 20:59

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH	ND		ug/kg	34100	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	81		40-140

Project Name: EVERSOURCE NH SRP
Lab Number: L1627010
Project Number: 1607530
Report Date: 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-03
Client ID: 1607530-B102(S1-S2)
Sample Location: NEWINGTON, NH
Matrix: Soil
Analytical Method: 1,8015C(M)
Analytical Date: 09/01/16 21:25
Analyst: DV
Percent Solids: 84%

Date Collected: 08/26/16 10:45
Date Received: 08/29/16
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 08/31/16 20:59

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH	ND		ug/kg	39500	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	83		40-140

Project Name: EVERSOURCE NH SRP
Lab Number: L1627010
Project Number: 1607530
Report Date: 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-04
Client ID: 1607530-B102(S3-S4)
Sample Location: NEWINGTON, NH
Matrix: Soil
Analytical Method: 1,8015C(M)
Analytical Date: 09/01/16 21:57
Analyst: DV
Percent Solids: 79%

Date Collected: 08/26/16 11:00
Date Received: 08/29/16
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 08/31/16 20:59

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH	ND		ug/kg	39900	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	78		40-140

Project Name: EVERSOURCE NH SRP
Lab Number: L1627010
Project Number: 1607530
Report Date: 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-05
Client ID: 1607530-B101(S1-S2)
Sample Location: NEWINGTON, NH
Matrix: Soil
Analytical Method: 1,8015C(M)
Analytical Date: 09/01/16 22:29
Analyst: DV
Percent Solids: 84%

Date Collected: 08/26/16 11:45
Date Received: 08/29/16
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 08/31/16 20:59

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH	39000		ug/kg	37500	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	82		40-140

Project Name: EVERSOURCE NH SRP
Lab Number: L1627010
Project Number: 1607530
Report Date: 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-06
Client ID: 1607530-B101(S3-S4)
Sample Location: NEWINGTON, NH
Matrix: Soil
Analytical Method: 1,8015C(M)
Analytical Date: 09/01/16 23:01
Analyst: DV
Percent Solids: 81%

Date Collected: 08/26/16 12:00
Date Received: 08/29/16
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 08/31/16 20:59

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH	ND		ug/kg	39800	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	79		40-140

Project Name: EVERSOURCE NH SRP
Project Number: 1607530
Lab Number: L1627010
Report Date: 09/15/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015C(M)
Analytical Date: 09/01/16 17:08
Analyst: SR

Extraction Method: EPA 3546
Extraction Date: 08/31/16 19:47

Parameter	Result	Qualifier	Units	RL	MDL
Petroleum Hydrocarbon Quantitation - Westborough Lab for sample(s): 01-06 Batch: WG927867-1					
TPH	ND		ug/kg	33000	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	85		40-140

Lab Control Sample Analysis

Batch Quality Control

Project Name: EVERSOURCE NH SRP

Project Number: 1607530

Lab Number: L1627010

Report Date: 09/15/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Petroleum Hydrocarbon Quantitation - Westborough Lab Associated sample(s): 01-06 Batch: WG927867-2								
TPH	92		-		40-140	-		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
o-Terphenyl	89				40-140

PCBS

Project Name: EVERSOURCE NH SRP
Project Number: 1607530
Lab Number: L1627010
Report Date: 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-01
Client ID: 1607530-B103(S1-S2)
Sample Location: NEWINGTON, NH
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 09/02/16 22:16
Analyst: JA
Percent Solids: 93%

Date Collected: 08/26/16 09:25
Date Received: 08/29/16
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 08/31/16 18:23
Cleanup Method: EPA 3665A
Cleanup Date: 09/01/16
Cleanup Method: EPA 3660B
Cleanup Date: 09/01/16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
PCB by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	33.9	--	1	A
Aroclor 1221	ND		ug/kg	33.9	--	1	A
Aroclor 1232	ND		ug/kg	33.9	--	1	A
Aroclor 1242	ND		ug/kg	33.9	--	1	A
Aroclor 1248	ND		ug/kg	33.9	--	1	A
Aroclor 1254	ND		ug/kg	33.9	--	1	A
Aroclor 1260	ND		ug/kg	33.9	--	1	A
Aroclor 1262	ND		ug/kg	33.9	--	1	A
Aroclor 1268	ND		ug/kg	33.9	--	1	A
PCBs, Total	ND		ug/kg	33.9	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	67		30-150	A
Decachlorobiphenyl	67		30-150	A
2,4,5,6-Tetrachloro-m-xylene	72		30-150	B
Decachlorobiphenyl	75		30-150	B

Project Name: EVERSOURCE NH SRP
Project Number: 1607530
Lab Number: L1627010
Report Date: 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-02
Client ID: 1607530-B103(S3-S4)
Sample Location: NEWINGTON, NH
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 09/02/16 22:31
Analyst: JA
Percent Solids: 92%

Date Collected: 08/26/16 09:55
Date Received: 08/29/16
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 08/31/16 18:23
Cleanup Method: EPA 3665A
Cleanup Date: 09/01/16
Cleanup Method: EPA 3660B
Cleanup Date: 09/01/16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
PCB by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	34.4	--	1	A
Aroclor 1221	ND		ug/kg	34.4	--	1	A
Aroclor 1232	ND		ug/kg	34.4	--	1	A
Aroclor 1242	ND		ug/kg	34.4	--	1	A
Aroclor 1248	ND		ug/kg	34.4	--	1	A
Aroclor 1254	ND		ug/kg	34.4	--	1	A
Aroclor 1260	ND		ug/kg	34.4	--	1	A
Aroclor 1262	ND		ug/kg	34.4	--	1	A
Aroclor 1268	ND		ug/kg	34.4	--	1	A
PCBs, Total	ND		ug/kg	34.4	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	78		30-150	A
Decachlorobiphenyl	82		30-150	A
2,4,5,6-Tetrachloro-m-xylene	82		30-150	B
Decachlorobiphenyl	85		30-150	B

Project Name: EVERSOURCE NH SRP
Project Number: 1607530
Lab Number: L1627010
Report Date: 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-03
Client ID: 1607530-B102(S1-S2)
Sample Location: NEWINGTON, NH
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 09/02/16 22:45
Analyst: JA
Percent Solids: 84%

Date Collected: 08/26/16 10:45
Date Received: 08/29/16
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 08/31/16 18:23
Cleanup Method: EPA 3665A
Cleanup Date: 09/01/16
Cleanup Method: EPA 3660B
Cleanup Date: 09/01/16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
PCB by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	39.1	--	1	A
Aroclor 1221	ND		ug/kg	39.1	--	1	A
Aroclor 1232	ND		ug/kg	39.1	--	1	A
Aroclor 1242	ND		ug/kg	39.1	--	1	A
Aroclor 1248	ND		ug/kg	39.1	--	1	A
Aroclor 1254	ND		ug/kg	39.1	--	1	A
Aroclor 1260	ND		ug/kg	39.1	--	1	A
Aroclor 1262	ND		ug/kg	39.1	--	1	A
Aroclor 1268	ND		ug/kg	39.1	--	1	A
PCBs, Total	ND		ug/kg	39.1	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	77		30-150	A
Decachlorobiphenyl	84		30-150	A
2,4,5,6-Tetrachloro-m-xylene	78		30-150	B
Decachlorobiphenyl	93		30-150	B

Project Name: EVERSOURCE NH SRP
Project Number: 1607530
Lab Number: L1627010
Report Date: 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-04
Client ID: 1607530-B102(S3-S4)
Sample Location: NEWINGTON, NH
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 09/04/16 16:48
Analyst: KEG
Percent Solids: 79%

Date Collected: 08/26/16 11:00
Date Received: 08/29/16
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 09/04/16 06:18
Cleanup Method: EPA 3665A
Cleanup Date: 09/04/16
Cleanup Method: EPA 3660B
Cleanup Date: 09/04/16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
PCB by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	41.5	--	1	A
Aroclor 1221	ND		ug/kg	41.5	--	1	A
Aroclor 1232	ND		ug/kg	41.5	--	1	A
Aroclor 1242	ND		ug/kg	41.5	--	1	A
Aroclor 1248	ND		ug/kg	41.5	--	1	A
Aroclor 1254	ND		ug/kg	41.5	--	1	A
Aroclor 1260	ND		ug/kg	41.5	--	1	A
Aroclor 1262	ND		ug/kg	41.5	--	1	A
Aroclor 1268	ND		ug/kg	41.5	--	1	A
PCBs, Total	ND		ug/kg	41.5	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	54		30-150	A
Decachlorobiphenyl	49		30-150	A
2,4,5,6-Tetrachloro-m-xylene	56		30-150	B
Decachlorobiphenyl	62		30-150	B

Project Name: EVERSOURCE NH SRP
Project Number: 1607530
Lab Number: L1627010
Report Date: 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-05
Client ID: 1607530-B101(S1-S2)
Sample Location: NEWINGTON, NH
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 09/02/16 23:14
Analyst: JA
Percent Solids: 84%

Date Collected: 08/26/16 11:45
Date Received: 08/29/16
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 08/31/16 18:23
Cleanup Method: EPA 3665A
Cleanup Date: 09/01/16
Cleanup Method: EPA 3660B
Cleanup Date: 09/01/16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
PCB by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	39.2	--	1	A
Aroclor 1221	ND		ug/kg	39.2	--	1	A
Aroclor 1232	ND		ug/kg	39.2	--	1	A
Aroclor 1242	ND		ug/kg	39.2	--	1	A
Aroclor 1248	ND		ug/kg	39.2	--	1	A
Aroclor 1254	ND		ug/kg	39.2	--	1	A
Aroclor 1260	ND		ug/kg	39.2	--	1	A
Aroclor 1262	ND		ug/kg	39.2	--	1	A
Aroclor 1268	ND		ug/kg	39.2	--	1	A
PCBs, Total	ND		ug/kg	39.2	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	89		30-150	A
Decachlorobiphenyl	92		30-150	A
2,4,5,6-Tetrachloro-m-xylene	96		30-150	B
Decachlorobiphenyl	113		30-150	B

Project Name: EVERSOURCE NH SRP
Project Number: 1607530
Lab Number: L1627010
Report Date: 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-06
Client ID: 1607530-B101(S3-S4)
Sample Location: NEWINGTON, NH
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 09/04/16 17:04
Analyst: KEG
Percent Solids: 81%

Date Collected: 08/26/16 12:00
Date Received: 08/29/16
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 09/04/16 06:18
Cleanup Method: EPA 3665A
Cleanup Date: 09/04/16
Cleanup Method: EPA 3660B
Cleanup Date: 09/04/16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
PCB by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	40.0	--	1	A
Aroclor 1221	ND		ug/kg	40.0	--	1	A
Aroclor 1232	ND		ug/kg	40.0	--	1	A
Aroclor 1242	ND		ug/kg	40.0	--	1	A
Aroclor 1248	ND		ug/kg	40.0	--	1	A
Aroclor 1254	ND		ug/kg	40.0	--	1	A
Aroclor 1260	ND		ug/kg	40.0	--	1	A
Aroclor 1262	ND		ug/kg	40.0	--	1	A
Aroclor 1268	ND		ug/kg	40.0	--	1	A
PCBs, Total	ND		ug/kg	40.0	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	39		30-150	A
Decachlorobiphenyl	32		30-150	A
2,4,5,6-Tetrachloro-m-xylene	38		30-150	B
Decachlorobiphenyl	43		30-150	B

Project Name: EVERSOURCE NH SRP
Project Number: 1607530
Lab Number: L1627010
Report Date: 09/15/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8082A
Analytical Date: 09/02/16 21:33
Analyst: JA

Extraction Method: EPA 3546
Extraction Date: 08/31/16 18:23
Cleanup Method: EPA 3665A
Cleanup Date: 09/01/16
Cleanup Method: EPA 3660B
Cleanup Date: 09/01/16

Parameter	Result	Qualifier	Units	RL	MDL	Column
PCB by GC - Westborough Lab for sample(s): 01-03,05 Batch: WG927841-1						
Aroclor 1016	ND		ug/kg	32.6	--	A
Aroclor 1221	ND		ug/kg	32.6	--	A
Aroclor 1232	ND		ug/kg	32.6	--	A
Aroclor 1242	ND		ug/kg	32.6	--	A
Aroclor 1248	ND		ug/kg	32.6	--	A
Aroclor 1254	ND		ug/kg	32.6	--	A
Aroclor 1260	ND		ug/kg	32.6	--	A
Aroclor 1262	ND		ug/kg	32.6	--	A
Aroclor 1268	ND		ug/kg	32.6	--	A
PCBs, Total	ND		ug/kg	32.6	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	82		30-150	A
Decachlorobiphenyl	85		30-150	A
2,4,5,6-Tetrachloro-m-xylene	89		30-150	B
Decachlorobiphenyl	93		30-150	B

Project Name: EVERSOURCE NH SRP
Project Number: 1607530
Lab Number: L1627010
Report Date: 09/15/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8082A
Analytical Date: 09/04/16 19:10
Analyst: JA

Extraction Method: EPA 3546
Extraction Date: 09/04/16 02:28
Cleanup Method: EPA 3665A
Cleanup Date: 09/04/16
Cleanup Method: EPA 3660B
Cleanup Date: 09/04/16

Parameter	Result	Qualifier	Units	RL	MDL	Column
PCB by GC - Westborough Lab for sample(s): 04,06 Batch: WG928866-1						
Aroclor 1016	ND		ug/kg	31.9	--	A
Aroclor 1221	ND		ug/kg	31.9	--	A
Aroclor 1232	ND		ug/kg	31.9	--	A
Aroclor 1242	ND		ug/kg	31.9	--	A
Aroclor 1248	ND		ug/kg	31.9	--	A
Aroclor 1254	ND		ug/kg	31.9	--	A
Aroclor 1260	ND		ug/kg	31.9	--	A
Aroclor 1262	ND		ug/kg	31.9	--	A
Aroclor 1268	ND		ug/kg	31.9	--	A
PCBs, Total	ND		ug/kg	31.9	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	78		30-150	A
Decachlorobiphenyl	74		30-150	A
2,4,5,6-Tetrachloro-m-xylene	74		30-150	B
Decachlorobiphenyl	71		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: EVERSOURCE NH SRP

Project Number: 1607530

Lab Number: L1627010

Report Date: 09/15/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
PCB by GC - Westborough Lab Associated sample(s): 01-03,05 Batch: WG927841-2 WG927841-3									
Aroclor 1016	102		98		40-140	4		50	A
Aroclor 1260	88		87		40-140	1		50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	94		89		30-150	A
Decachlorobiphenyl	86		88		30-150	A
2,4,5,6-Tetrachloro-m-xylene	94		95		30-150	B
Decachlorobiphenyl	93		99		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: EVERSOURCE NH SRP

Project Number: 1607530

Lab Number: L1627010

Report Date: 09/15/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
PCB by GC - Westborough Lab Associated sample(s): 04,06 Batch: WG928866-2 WG928866-3									
Aroclor 1016	72		75		40-140	4		50	A
Aroclor 1260	70		62		40-140	12		50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	72		76		30-150	A
Decachlorobiphenyl	71		73		30-150	A
2,4,5,6-Tetrachloro-m-xylene	71		71		30-150	B
Decachlorobiphenyl	69		69		30-150	B

METALS

Project Name: EVERSOURCE NH SRP
Lab Number: L1627010
Project Number: 1607530
Report Date: 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-01
Client ID: 1607530-B103(S1-S2)
Sample Location: NEWINGTON, NH
Matrix: Soil
Percent Solids: 93%

Date Collected: 08/26/16 09:25
Date Received: 08/29/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	9.0		mg/kg	0.42	--	1	08/31/16 06:40	08/31/16 13:28	EPA 3050B	1,6010C	PS
Barium, Total	30		mg/kg	0.42	--	1	08/31/16 06:40	08/31/16 13:28	EPA 3050B	1,6010C	PS
Cadmium, Total	ND		mg/kg	0.42	--	1	08/31/16 06:40	08/31/16 13:28	EPA 3050B	1,6010C	PS
Chromium, Total	30		mg/kg	0.42	--	1	08/31/16 06:40	08/31/16 13:28	EPA 3050B	1,6010C	PS
Lead, Total	7.2		mg/kg	2.1	--	1	08/31/16 06:40	08/31/16 13:28	EPA 3050B	1,6010C	PS
Mercury, Total	ND		mg/kg	0.07	--	1	08/30/16 09:00	08/30/16 15:06	EPA 7471B	1,7471B	BV
Selenium, Total	ND		mg/kg	0.85	--	1	08/31/16 06:40	08/31/16 13:28	EPA 3050B	1,6010C	PS
Silver, Total	ND		mg/kg	0.42	--	1	08/31/16 06:40	08/31/16 13:28	EPA 3050B	1,6010C	PS

Project Name: EVERSOURCE NH SRP
Lab Number: L1627010
Project Number: 1607530
Report Date: 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-02
Client ID: 1607530-B103(S3-S4)
Sample Location: NEWINGTON, NH
Matrix: Soil
Percent Solids: 92%

Date Collected: 08/26/16 09:55
Date Received: 08/29/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	7.1		mg/kg	0.42	--	1	08/31/16 06:40	08/31/16 14:39	EPA 3050B	1,6010C	PS
Barium, Total	18		mg/kg	0.42	--	1	08/31/16 06:40	08/31/16 14:39	EPA 3050B	1,6010C	PS
Cadmium, Total	ND		mg/kg	0.42	--	1	08/31/16 06:40	08/31/16 14:39	EPA 3050B	1,6010C	PS
Chromium, Total	26		mg/kg	0.42	--	1	08/31/16 06:40	08/31/16 14:39	EPA 3050B	1,6010C	PS
Lead, Total	8.6		mg/kg	2.1	--	1	08/31/16 06:40	08/31/16 14:39	EPA 3050B	1,6010C	PS
Mercury, Total	ND		mg/kg	0.07	--	1	08/30/16 09:00	08/30/16 15:08	EPA 7471B	1,7471B	BV
Selenium, Total	ND		mg/kg	0.84	--	1	08/31/16 06:40	08/31/16 14:39	EPA 3050B	1,6010C	PS
Silver, Total	ND		mg/kg	0.42	--	1	08/31/16 06:40	08/31/16 14:39	EPA 3050B	1,6010C	PS

Project Name: EVERSOURCE NH SRP
Lab Number: L1627010
Project Number: 1607530
Report Date: 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-03
Client ID: 1607530-B102(S1-S2)
Sample Location: NEWINGTON, NH
Matrix: Soil
Percent Solids: 84%

Date Collected: 08/26/16 10:45
Date Received: 08/29/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	12		mg/kg	0.47	--	1	08/31/16 06:40	08/31/16 14:43	EPA 3050B	1,6010C	PS
Barium, Total	44		mg/kg	0.47	--	1	08/31/16 06:40	08/31/16 14:43	EPA 3050B	1,6010C	PS
Cadmium, Total	ND		mg/kg	0.47	--	1	08/31/16 06:40	08/31/16 14:43	EPA 3050B	1,6010C	PS
Chromium, Total	19		mg/kg	0.47	--	1	08/31/16 06:40	08/31/16 14:43	EPA 3050B	1,6010C	PS
Lead, Total	6.8		mg/kg	2.3	--	1	08/31/16 06:40	08/31/16 14:43	EPA 3050B	1,6010C	PS
Mercury, Total	ND		mg/kg	0.08	--	1	08/30/16 09:00	08/30/16 15:10	EPA 7471B	1,7471B	BV
Selenium, Total	ND		mg/kg	0.94	--	1	08/31/16 06:40	08/31/16 14:43	EPA 3050B	1,6010C	PS
Silver, Total	ND		mg/kg	0.47	--	1	08/31/16 06:40	08/31/16 14:43	EPA 3050B	1,6010C	PS

Project Name: EVERSOURCE NH SRP
Lab Number: L1627010
Project Number: 1607530
Report Date: 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-04
Client ID: 1607530-B102(S3-S4)
Sample Location: NEWINGTON, NH
Matrix: Soil
Percent Solids: 79%

Date Collected: 08/26/16 11:00
Date Received: 08/29/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	12		mg/kg	0.49	--	1	08/31/16 06:40	08/31/16 14:47	EPA 3050B	1,6010C	PS
Barium, Total	31		mg/kg	0.49	--	1	08/31/16 06:40	08/31/16 14:47	EPA 3050B	1,6010C	PS
Cadmium, Total	ND		mg/kg	0.49	--	1	08/31/16 06:40	08/31/16 14:47	EPA 3050B	1,6010C	PS
Chromium, Total	18		mg/kg	0.49	--	1	08/31/16 06:40	08/31/16 14:47	EPA 3050B	1,6010C	PS
Lead, Total	8.9		mg/kg	2.4	--	1	08/31/16 06:40	08/31/16 14:47	EPA 3050B	1,6010C	PS
Mercury, Total	ND		mg/kg	0.08	--	1	08/30/16 09:00	08/30/16 15:12	EPA 7471B	1,7471B	BV
Selenium, Total	ND		mg/kg	0.98	--	1	08/31/16 06:40	08/31/16 14:47	EPA 3050B	1,6010C	PS
Silver, Total	ND		mg/kg	0.49	--	1	08/31/16 06:40	08/31/16 14:47	EPA 3050B	1,6010C	PS

Project Name: EVERSOURCE NH SRP
Lab Number: L1627010
Project Number: 1607530
Report Date: 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-05
Client ID: 1607530-B101(S1-S2)
Sample Location: NEWINGTON, NH
Matrix: Soil
Percent Solids: 84%

Date Collected: 08/26/16 11:45
Date Received: 08/29/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	7.4		mg/kg	0.47	--	1	08/31/16 06:40	08/31/16 15:48	EPA 3050B	1,6010C	PS
Barium, Total	28		mg/kg	0.47	--	1	08/31/16 06:40	08/31/16 15:48	EPA 3050B	1,6010C	PS
Cadmium, Total	ND		mg/kg	0.47	--	1	08/31/16 06:40	08/31/16 15:48	EPA 3050B	1,6010C	PS
Chromium, Total	14		mg/kg	0.47	--	1	08/31/16 06:40	08/31/16 15:48	EPA 3050B	1,6010C	PS
Lead, Total	5.7		mg/kg	2.4	--	1	08/31/16 06:40	08/31/16 15:48	EPA 3050B	1,6010C	PS
Mercury, Total	ND		mg/kg	0.08	--	1	08/30/16 09:00	08/30/16 15:19	EPA 7471B	1,7471B	BV
Selenium, Total	ND		mg/kg	0.94	--	1	08/31/16 06:40	08/31/16 15:48	EPA 3050B	1,6010C	PS
Silver, Total	ND		mg/kg	0.47	--	1	08/31/16 06:40	08/31/16 15:48	EPA 3050B	1,6010C	PS

Project Name: EVERSOURCE NH SRP
Lab Number: L1627010
Project Number: 1607530
Report Date: 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-06
Client ID: 1607530-B101(S3-S4)
Sample Location: NEWINGTON, NH
Matrix: Soil
Percent Solids: 81%

Date Collected: 08/26/16 12:00
Date Received: 08/29/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	5.6		mg/kg	0.48	--	1	08/31/16 06:40	08/31/16 15:51	EPA 3050B	1,6010C	PS
Barium, Total	33		mg/kg	0.48	--	1	08/31/16 06:40	08/31/16 15:51	EPA 3050B	1,6010C	PS
Cadmium, Total	ND		mg/kg	0.48	--	1	08/31/16 06:40	08/31/16 15:51	EPA 3050B	1,6010C	PS
Chromium, Total	16		mg/kg	0.48	--	1	08/31/16 06:40	08/31/16 15:51	EPA 3050B	1,6010C	PS
Lead, Total	4.6		mg/kg	2.4	--	1	08/31/16 06:40	08/31/16 15:51	EPA 3050B	1,6010C	PS
Mercury, Total	ND		mg/kg	0.08	--	1	08/30/16 09:00	08/30/16 15:21	EPA 7471B	1,7471B	BV
Selenium, Total	ND		mg/kg	0.96	--	1	08/31/16 06:40	08/31/16 15:51	EPA 3050B	1,6010C	PS
Silver, Total	ND		mg/kg	0.48	--	1	08/31/16 06:40	08/31/16 15:51	EPA 3050B	1,6010C	PS

Project Name: EVERSOURCE NH SRP **Lab Number:** L1627010

Project Number: 1607530 **Report Date:** 09/15/16

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-06 Batch: WG927131-1										
Mercury, Total	ND		mg/kg	0.08	--	1	08/30/16 09:00	08/30/16 14:37	1,7471B	BV

Prep Information

Digestion Method: EPA 7471B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-06 Batch: WG927532-1										
Arsenic, Total	ND		mg/kg	0.40	--	1	08/31/16 06:40	08/31/16 14:15	1,6010C	PS
Barium, Total	ND		mg/kg	0.40	--	1	08/31/16 06:40	08/31/16 14:15	1,6010C	PS
Cadmium, Total	ND		mg/kg	0.40	--	1	08/31/16 06:40	08/31/16 14:15	1,6010C	PS
Chromium, Total	ND		mg/kg	0.40	--	1	08/31/16 06:40	08/31/16 14:15	1,6010C	PS
Lead, Total	ND		mg/kg	2.0	--	1	08/31/16 06:40	08/31/16 14:15	1,6010C	PS
Selenium, Total	ND		mg/kg	0.80	--	1	08/31/16 06:40	08/31/16 14:15	1,6010C	PS
Silver, Total	ND		mg/kg	0.40	--	1	08/31/16 06:40	08/31/16 14:15	1,6010C	PS

Prep Information

Digestion Method: EPA 3050B

Lab Control Sample Analysis

Batch Quality Control

Project Name: EVERSOURCE NH SRP

Project Number: 1607530

Lab Number: L1627010

Report Date: 09/15/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-06 Batch: WG927131-2 SRM Lot Number: D089-540								
Mercury, Total	101		-		57-143	-		
Total Metals - Mansfield Lab Associated sample(s): 01-06 Batch: WG927532-2 SRM Lot Number: D089-540								
Arsenic, Total	100		-		80-120	-		
Barium, Total	93		-		83-117	-		
Cadmium, Total	95		-		82-117	-		
Chromium, Total	96		-		79-121	-		
Lead, Total	95		-		81-119	-		
Selenium, Total	90		-		78-121	-		
Silver, Total	97		-		75-125	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: EVERSOURCE NH SRP
Project Number: 1607530

Lab Number: L1627010
Report Date: 09/15/16

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-06 QC Batch ID: WG927131-4 QC Sample: L1626498-01 Client ID: MS Sample												
Mercury, Total	ND	0.144	0.18	**125**	Q	-	-		80-120	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-06 QC Batch ID: WG927532-4 QC Sample: L1627089-01 Client ID: MS Sample												
Arsenic, Total	1.7	9.93	10	84		-	-		75-125	-		20
Barium, Total	25	165	150	76		-	-		75-125	-		20
Cadmium, Total	ND	4.22	2.8	**66**	Q	-	-		75-125	-		20
Chromium, Total	3.5	16.5	14	**63**	Q	-	-		75-125	-		20
Lead, Total	3.3	42.2	30	**63**	Q	-	-		75-125	-		20
Selenium, Total	ND	9.93	7.8	78		-	-		75-125	-		20
Silver, Total	ND	24.8	21	85		-	-		75-125	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: EVERSOURCE NH SRP
Project Number: 1607530

Lab Number: L1627010
Report Date: 09/15/16

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-06 QC Batch ID: WG927131-3 QC Sample: L1626498-01 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/kg	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01-06 QC Batch ID: WG927532-3 QC Sample: L1627089-01 Client ID: DUP Sample						
Arsenic, Total	1.7	2.0	mg/kg	16		20
Barium, Total	25	29	mg/kg	15		20
Cadmium, Total	ND	ND	mg/kg	NC		20
Chromium, Total	3.5	4.4	mg/kg	**23**	Q	20
Lead, Total	3.3	3.6	mg/kg	9		20
Selenium, Total	ND	ND	mg/kg	NC		20
Silver, Total	ND	ND	mg/kg	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: EVERSOURCE NH SRP
Project Number: 1607530
Lab Number: L1627010
Report Date: 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-01
Client ID: 1607530-B103(S1-S2)
Sample Location: NEWINGTON, NH
Matrix: Soil
Date Collected: 08/26/16 09:25
Date Received: 08/29/16
Field Prep: Not Specified

Test Material Information

Source of Material: Unknown
Description of Material: Non-Metallic - Dry Soil
Particle Size: Fine
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/30/16 15:55	1,1030	AB

Project Name: EVERSOURCE NH SRP
Project Number: 1607530
Lab Number: L1627010
Report Date: 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-02
Client ID: 1607530-B103(S3-S4)
Sample Location: NEWINGTON, NH
Matrix: Soil
Date Collected: 08/26/16 09:55
Date Received: 08/29/16
Field Prep: Not Specified

Test Material Information

Source of Material: Unknown
Description of Material: Non-Metallic - Damp Soil
Particle Size: Medium
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/30/16 15:55	1,1030	AB

Project Name: EVERSOURCE NH SRP
Project Number: 1607530
Lab Number: L1627010
Report Date: 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-03
Client ID: 1607530-B102(S1-S2)
Sample Location: NEWINGTON, NH
Matrix: Soil
Date Collected: 08/26/16 10:45
Date Received: 08/29/16
Field Prep: Not Specified

Test Material Information

Source of Material: Unknown
Description of Material: Non-Metallic - Dry Clay
Particle Size: Medium
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/30/16 15:55	1,1030	AB

Project Name: EVERSOURCE NH SRP
Project Number: 1607530
Lab Number: L1627010
Report Date: 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-04
Client ID: 1607530-B102(S3-S4)
Sample Location: NEWINGTON, NH
Matrix: Soil
Date Collected: 08/26/16 11:00
Date Received: 08/29/16
Field Prep: Not Specified

Test Material Information

Source of Material: Unknown
Description of Material: Non-Metallic - Wet Clay
Particle Size: Medium
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/30/16 15:55	1,1030	AB

Project Name: EVERSOURCE NH SRP
Project Number: 1607530
Lab Number: L1627010
Report Date: 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-05
Client ID: 1607530-B101(S1-S2)
Sample Location: NEWINGTON, NH
Matrix: Soil
Date Collected: 08/26/16 11:45
Date Received: 08/29/16
Field Prep: Not Specified

Test Material Information

Source of Material: Unknown
Description of Material: Non-Metallic - Damp Soil
Particle Size: Medium
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/30/16 23:45	1,1030	SB

Project Name:	EVERSOURCE NH SRP	**Lab Number:**	L1627010
Project Number:	1607530	**Report Date:**	09/15/16

SAMPLE RESULTS

Lab ID:	L1627010-06	Date Collected:	08/26/16 12:00
Client ID:	1607530-B101(S3-S4)	Date Received:	08/29/16
Sample Location:	NEWINGTON, NH	Field Prep:	Not Specified
Matrix:	Soil		

Test Material Information

Source of Material:	Unknown
Description of Material:	Non-Metallic - Damp Soil
Particle Size:	Medium
Preliminary Burning Time (sec):	120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/30/16 23:45	1,1030	SB

Project Name: EVERSOURCE NH SRP
Project Number: 1607530
Lab Number: L1627010
Report Date: 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-01
Client ID: 1607530-B103(S1-S2)
Sample Location: NEWINGTON, NH
Matrix: Soil

Date Collected: 08/26/16 09:25
Date Received: 08/29/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Specific Conductance @ 25 C	ND		umhos/cm	10	--	1	-	08/30/16 19:35	1,9050A	AS
Solids, Total	93.3		%	0.100	NA	1	-	08/30/16 16:09	121,2540G	RI
pH (H)	5.7		SU	-	NA	1	-	08/30/16 01:30	1,9045D	MC
Cyanide, Reactive	ND		mg/kg	10	--	1	08/30/16 22:05	08/30/16 23:01	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	08/30/16 22:05	08/30/16 22:53	1,7.3	TL
Oxidation/Reduction Potential	170		mv	-	NA	1	-	08/30/16 02:19	68,1498	MC

Project Name: EVERSOURCE NH SRP
Project Number: 1607530
Lab Number: L1627010
Report Date: 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-02
Client ID: 1607530-B103(S3-S4)
Sample Location: NEWINGTON, NH
Matrix: Soil
Date Collected: 08/26/16 09:55
Date Received: 08/29/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Specific Conductance @ 25 C	44		umhos/cm	10	--	1	-	08/30/16 19:35	1,9050A	AS
Solids, Total	92.4		%	0.100	NA	1	-	08/30/16 16:09	121,2540G	RI
pH (H)	7.0		SU	-	NA	1	-	08/30/16 01:30	1,9045D	MC
Cyanide, Reactive	ND		mg/kg	10	--	1	08/30/16 22:05	08/30/16 23:01	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	08/30/16 22:05	08/30/16 22:53	1,7.3	TL
Oxidation/Reduction Potential	150		mv	-	NA	1	-	08/30/16 02:19	68,1498	MC

Project Name: EVERSOURCE NH SRP
Project Number: 1607530
Lab Number: L1627010
Report Date: 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-03
Client ID: 1607530-B102(S1-S2)
Sample Location: NEWINGTON, NH
Matrix: Soil
Date Collected: 08/26/16 10:45
Date Received: 08/29/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Specific Conductance @ 25 C	ND		umhos/cm	10	--	1	-	08/30/16 19:35	1,9050A	AS
Solids, Total	83.6		%	0.100	NA	1	-	08/30/16 16:09	121,2540G	RI
pH (H)	6.3		SU	-	NA	1	-	08/30/16 01:30	1,9045D	MC
Cyanide, Reactive	ND		mg/kg	10	--	1	08/30/16 22:05	08/30/16 23:01	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	08/30/16 22:05	08/30/16 22:53	1,7.3	TL
Oxidation/Reduction Potential	170		mv	-	NA	1	-	08/30/16 02:19	68,1498	MC

Project Name: EVERSOURCE NH SRP
Project Number: 1607530
Lab Number: L1627010
Report Date: 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-04
Client ID: 1607530-B102(S3-S4)
Sample Location: NEWINGTON, NH
Matrix: Soil
Date Collected: 08/26/16 11:00
Date Received: 08/29/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Specific Conductance @ 25 C	28		umhos/cm	10	--	1	-	08/30/16 19:35	1,9050A	AS
Solids, Total	79.2		%	0.100	NA	1	-	08/30/16 16:09	121,2540G	RI
pH (H)	7.4		SU	-	NA	1	-	08/30/16 01:30	1,9045D	MC
Cyanide, Reactive	ND		mg/kg	10	--	1	08/30/16 22:05	08/30/16 23:01	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	08/30/16 22:05	08/30/16 22:53	1,7.3	TL
Oxidation/Reduction Potential	190		mv	-	NA	1	-	08/30/16 02:19	68,1498	MC

Project Name: EVERSOURCE NH SRP
Project Number: 1607530
Lab Number: L1627010
Report Date: 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-05
Client ID: 1607530-B101(S1-S2)
Sample Location: NEWINGTON, NH
Matrix: Soil

Date Collected: 08/26/16 11:45
Date Received: 08/29/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Specific Conductance @ 25 C	ND		umhos/cm	10	--	1	-	08/30/16 19:35	1,9050A	AS
Solids, Total	84.2		%	0.100	NA	1	-	08/30/16 16:09	121,2540G	RI
pH (H)	6.2		SU	-	NA	1	-	08/30/16 01:30	1,9045D	MC
Cyanide, Reactive	ND		mg/kg	10	--	1	08/30/16 22:05	08/30/16 23:02	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	08/30/16 22:05	08/30/16 22:54	1,7.3	TL
Oxidation/Reduction Potential	180		mv	-	NA	1	-	08/30/16 02:19	68,1498	MC

Project Name: EVERSOURCE NH SRP
Project Number: 1607530
Lab Number: L1627010
Report Date: 09/15/16

SAMPLE RESULTS

Lab ID: L1627010-06
Client ID: 1607530-B101(S3-S4)
Sample Location: NEWINGTON, NH
Matrix: Soil
Date Collected: 08/26/16 12:00
Date Received: 08/29/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Specific Conductance @ 25 C	ND		umhos/cm	10	--	1	-	08/30/16 19:35	1,9050A	AS
Solids, Total	80.9		%	0.100	NA	1	-	08/30/16 16:09	121,2540G	RI
pH (H)	6.4		SU	-	NA	1	-	08/30/16 01:30	1,9045D	MC
Cyanide, Reactive	ND		mg/kg	10	--	1	08/30/16 22:05	08/30/16 23:02	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	08/30/16 22:05	08/30/16 22:54	1,7.3	TL
Oxidation/Reduction Potential	170		mv	-	NA	1	-	08/30/16 02:19	68,1498	MC

Project Name: EVERSOURCE NH SRP
Project Number: 1607530
Lab Number: L1627010
Report Date: 09/15/16

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01-06 Batch: WG927398-1										
Cyanide, Reactive	ND		mg/kg	10	--	1	08/30/16 22:05	08/30/16 23:00	1,7.3	TL
General Chemistry - Westborough Lab for sample(s): 01-06 Batch: WG927400-1										
Sulfide, Reactive	ND		mg/kg	10	--	1	08/30/16 22:05	08/30/16 22:52	1,7.3	TL

Lab Control Sample Analysis

Batch Quality Control

Project Name: EVERSOURCE NH SRP

Project Number: 1607530

Lab Number: L1627010

Report Date: 09/15/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-06 Batch: WG927110-1								
pH	100		-		99-101	-		
General Chemistry - Westborough Lab Associated sample(s): 01-06 Batch: WG927111-1								
Oxidation/Reduction Potential	98		-		90-110	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-06 Batch: WG927398-2								
Cyanide, Reactive	48		-		30-125	-		40
General Chemistry - Westborough Lab Associated sample(s): 01-06 Batch: WG927400-2								
Sulfide, Reactive	98		-		60-125	-		40
General Chemistry - Westborough Lab Associated sample(s): 01-06 Batch: WG927422-1								
Specific Conductance	100		-		99-101	-		

Lab Duplicate Analysis
Batch Quality Control

Project Name: EVERSOURCE NH SRP
Project Number: 1607530

Lab Number: L1627010
Report Date: 09/15/16

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG927110-2 QC Sample: L1627010-01 Client ID: 1607530-B103(S1-S2)						
pH (H)	5.7	5.7	SU	0		5
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG927111-2 QC Sample: L1627010-01 Client ID: 1607530-B103(S1-S2)						
Oxidation/Reduction Potential	170	170	mv	0		20
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG927364-1 QC Sample: L1627010-01 Client ID: 1607530-B103(S1-S2)						
Solids, Total	93.3	92.4	%	1		20
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG927398-3 QC Sample: L1627028-01 Client ID: DUP Sample						
Cyanide, Reactive	ND	ND	mg/kg	NC		40
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG927400-3 QC Sample: L1627028-01 Client ID: DUP Sample						
Sulfide, Reactive	ND	ND	mg/kg	NC		40
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG927422-2 QC Sample: L1627026-01 Client ID: DUP Sample						
Specific Conductance	74	97	umhos/cm	**27**	Q	20

Project Name: EVERSOURCE NH SRP
Project Number: 1607530

Lab Number: L1627010
Report Date: 09/15/16

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: 08/29/2016 22:27

Cooler Information Custody Seal

Cooler	
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1627010-01A	Vial MeOH preserved	A	N/A	2.4	Y	Absent	8260H(14)
L1627010-01B	Vial water preserved	A	N/A	2.4	Y	Absent	8260H(14)
L1627010-01C	Vial water preserved	A	N/A	2.4	Y	Absent	8260H(14)
L1627010-01D	Metals Only - Glass 60mL/2oz unp	A	N/A	2.4	Y	Absent	AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),PB-TI(180),SE-TI(180),HG-T(28),CD-TI(180)
L1627010-01E	Glass 60mL/2oz unpreserved	A	N/A	2.4	Y	Absent	8270TCL(14),IGNIT-1030(14),ORP-9045(1),REACTS(14),PCB-8082(14),TS(7),PH-9045(1),REACTCN(14),TPH-DRO-D(14),COND-9050(28)
L1627010-01F	Glass 120ml/4oz unpreserved	A	N/A	2.4	Y	Absent	8270TCL(14),IGNIT-1030(14),ORP-9045(1),REACTS(14),PCB-8082(14),TS(7),PH-9045(1),REACTCN(14),TPH-DRO-D(14),COND-9050(28)
L1627010-01G	Glass 500ml/16oz unpreserved	A	N/A	2.4	Y	Absent	8270TCL(14),IGNIT-1030(14),ORP-9045(1),REACTS(14),PCB-8082(14),TS(7),PH-9045(1),REACTCN(14),TPH-DRO-D(14),COND-9050(28)
L1627010-01H	Plastic 250ml unpreserved	B	N/A	3.1	Y	Absent	SUB-537()
L1627010-01X	Glass 120ml/4oz unpreserved/No H	A	N/A	2.4	Y	Absent	HEXCR-RELOG()
L1627010-02A	Vial MeOH preserved	A	N/A	2.4	Y	Absent	8260H(14)
L1627010-02B	Vial water preserved	A	N/A	2.4	Y	Absent	8260H(14)
L1627010-02C	Vial water preserved	A	N/A	2.4	Y	Absent	8260H(14)
L1627010-02D	Metals Only - Glass 60mL/2oz unp	A	N/A	2.4	Y	Absent	AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),PB-TI(180),SE-TI(180),HG-T(28),CD-TI(180)

*Values in parentheses indicate holding time in days

Project Name: EVERSOURCE NH SRP
Project Number: 1607530

Lab Number: L1627010
Report Date: 09/15/16

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1627010-02E	Glass 60mL/2oz unpreserved	A	N/A	2.4	Y	Absent	8270TCL(14),IGNIT-1030(14),ORP-9045(1),REACTS(14),PCB-8082(14),TS(7),PH-9045(1),REACTCN(14),TPH-DRO-D(14),COND-9050(28)
L1627010-02F	Glass 120ml/4oz unpreserved	A	N/A	2.4	Y	Absent	8270TCL(14),IGNIT-1030(14),ORP-9045(1),REACTS(14),PCB-8082(14),TS(7),PH-9045(1),REACTCN(14),TPH-DRO-D(14),COND-9050(28)
L1627010-02G	Glass 500ml/16oz unpreserved	A	N/A	2.4	Y	Absent	8270TCL(14),IGNIT-1030(14),ORP-9045(1),REACTS(14),PCB-8082(14),TS(7),PH-9045(1),REACTCN(14),TPH-DRO-D(14),COND-9050(28)
L1627010-02H	Plastic 250ml unpreserved	B	N/A	3.1	Y	Absent	SUB-537()
L1627010-02X	Glass 120ml/4oz unpreserved/No H	A	N/A	2.4	Y	Absent	HEXCR-RELOG()
L1627010-03A	Vial MeOH preserved	A	N/A	2.4	Y	Absent	8260H(14)
L1627010-03B	Vial water preserved	A	N/A	2.4	Y	Absent	8260H(14)
L1627010-03C	Vial water preserved	A	N/A	2.4	Y	Absent	8260H(14)
L1627010-03D	Metals Only - Glass 60mL/2oz unp	A	N/A	2.4	Y	Absent	AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),PB-TI(180),SE-TI(180),HG-T(28),CD-TI(180)
L1627010-03E	Glass 60mL/2oz unpreserved	A	N/A	2.4	Y	Absent	8270TCL(14),IGNIT-1030(14),ORP-9045(1),REACTS(14),PCB-8082(14),TS(7),PH-9045(1),REACTCN(14),TPH-DRO-D(14),COND-9050(28)
L1627010-03F	Glass 120ml/4oz unpreserved	A	N/A	2.4	Y	Absent	8270TCL(14),IGNIT-1030(14),ORP-9045(1),REACTS(14),PCB-8082(14),TS(7),PH-9045(1),REACTCN(14),TPH-DRO-D(14),COND-9050(28)
L1627010-03G	Glass 500ml/16oz unpreserved	A	N/A	2.4	Y	Absent	8270TCL(14),IGNIT-1030(14),ORP-9045(1),REACTS(14),PCB-8082(14),TS(7),PH-9045(1),REACTCN(14),TPH-DRO-D(14),COND-9050(28)
L1627010-03H	Plastic 250ml unpreserved	B	N/A	3.1	Y	Absent	SUB-537()
L1627010-03X	Glass 120ml/4oz unpreserved/No H	A	N/A	2.4	Y	Absent	HEXCR-RELOG()
L1627010-04A	Vial MeOH preserved	A	N/A	2.4	Y	Absent	8260H(14)
L1627010-04B	Vial water preserved	A	N/A	2.4	Y	Absent	8260H(14)
L1627010-04C	Vial water preserved	A	N/A	2.4	Y	Absent	8260H(14)

*Values in parentheses indicate holding time in days

Project Name: EVERSOURCE NH SRP
Project Number: 1607530

Lab Number: L1627010
Report Date: 09/15/16

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1627010-04D	Metals Only - Glass 60mL/2oz unp	A	N/A	2.4	Y	Absent	AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),PB-TI(180),SE-TI(180),HG-T(28),CD-TI(180)
L1627010-04E	Glass 60mL/2oz unpreserved	A	N/A	2.4	Y	Absent	8270TCL(14),IGNIT-1030(14),ORP-9045(1),REACTS(14),PCB-8082(14),TS(7),PH-9045(1),REACTCN(14),TPH-DRO-D(14),COND-9050(28)
L1627010-04F	Glass 120ml/4oz unpreserved	A	N/A	2.4	Y	Absent	8270TCL(14),IGNIT-1030(14),ORP-9045(1),REACTS(14),PCB-8082(14),TS(7),PH-9045(1),REACTCN(14),TPH-DRO-D(14),COND-9050(28)
L1627010-04G	Glass 500ml/16oz unpreserved	A	N/A	2.4	Y	Absent	8270TCL(14),IGNIT-1030(14),ORP-9045(1),REACTS(14),PCB-8082(14),TS(7),PH-9045(1),REACTCN(14),TPH-DRO-D(14),COND-9050(28)
L1627010-04H	Plastic 250ml unpreserved	B	N/A	3.1	Y	Absent	SUB-537()
L1627010-04X	Glass 120ml/4oz unpreserved/No H	A	N/A	2.4	Y	Absent	HEXCR-RELOG()
L1627010-05A	Vial MeOH preserved	A	N/A	2.4	Y	Absent	8260H(14)
L1627010-05B	Vial water preserved	A	N/A	2.4	Y	Absent	8260H(14)
L1627010-05C	Vial water preserved	A	N/A	2.4	Y	Absent	8260H(14)
L1627010-05D	Metals Only - Glass 60mL/2oz unp	A	N/A	2.4	Y	Absent	AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),PB-TI(180),SE-TI(180),HG-T(28),CD-TI(180)
L1627010-05E	Glass 60mL/2oz unpreserved	A	N/A	2.4	Y	Absent	8270TCL(14),IGNIT-1030(14),ORP-9045(1),REACTS(14),PCB-8082(14),TS(7),PH-9045(1),REACTCN(14),TPH-DRO-D(14),COND-9050(28)
L1627010-05F	Glass 120ml/4oz unpreserved	A	N/A	2.4	Y	Absent	8270TCL(14),IGNIT-1030(14),ORP-9045(1),REACTS(14),PCB-8082(14),TS(7),PH-9045(1),REACTCN(14),TPH-DRO-D(14),COND-9050(28)
L1627010-05G	Glass 500ml/16oz unpreserved	A	N/A	2.4	Y	Absent	8270TCL(14),IGNIT-1030(14),ORP-9045(1),REACTS(14),PCB-8082(14),TS(7),PH-9045(1),REACTCN(14),TPH-DRO-D(14),COND-9050(28)
L1627010-05H	Plastic 250ml unpreserved	B	N/A	3.1	Y	Absent	SUB-537()
L1627010-05X	Glass 120ml/4oz unpreserved/No H	A	N/A	2.4	Y	Absent	HEXCR-RELOG()
L1627010-06A	Vial MeOH preserved	A	N/A	2.4	Y	Absent	8260H(14)

*Values in parentheses indicate holding time in days

Project Name: EVERSOURCE NH SRP
Project Number: 1607530

Lab Number: L1627010
Report Date: 09/15/16

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1627010-06B	Vial water preserved	A	N/A	2.4	Y	Absent	8260H(14)
L1627010-06C	Vial water preserved	A	N/A	2.4	Y	Absent	8260H(14)
L1627010-06D	Metals Only - Glass 60mL/2oz unp	A	N/A	2.4	Y	Absent	AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),PB-TI(180),SE-TI(180),HG-T(28),CD-TI(180)
L1627010-06E	Glass 60mL/2oz unpreserved	A	N/A	2.4	Y	Absent	8270TCL(14),IGNIT-1030(14),ORP-9045(1),REACTS(14),PCB-8082(14),TS(7),PH-9045(1),REACTCN(14),TPH-DRO-D(14),COND-9050(28)
L1627010-06F	Glass 120ml/4oz unpreserved	A	N/A	2.4	Y	Absent	8270TCL(14),IGNIT-1030(14),ORP-9045(1),REACTS(14),PCB-8082(14),TS(7),PH-9045(1),REACTCN(14),TPH-DRO-D(14),COND-9050(28)
L1627010-06G	Glass 500ml/16oz unpreserved	A	N/A	2.4	Y	Absent	8270TCL(14),IGNIT-1030(14),ORP-9045(1),REACTS(14),PCB-8082(14),TS(7),PH-9045(1),REACTCN(14),TPH-DRO-D(14),COND-9050(28)
L1627010-06H	Plastic 250ml unpreserved	B	N/A	3.1	Y	Absent	SUB-537()
L1627010-06X	Glass 120ml/4oz unpreserved/No H	A	N/A	2.4	Y	Absent	HEXCR-RELOG()

*Values in parentheses indicate holding time in days

Project Name:	EVERSOURCE NH SRP	**Lab Number:**	L1627010
Project Number:	1607530	**Report Date:**	09/15/16

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

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

Terms

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

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

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the

Report Format: Data Usability Report

Project Name:	EVERSOURCE NH SRP	**Lab Number:**	L1627010
Project Number:	1607530	**Report Date:**	09/15/16

Data Qualifiers

reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

Project Name:	EVERSOURCE NH SRP	**Lab Number:**	L1627010
Project Number:	1607530	**Report Date:**	09/15/16

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

68 Annual Book of ASTM (American Society for Testing and Materials) Standards following extraction by SW-846 EPA Method 9045C under the requirements of MADEP BWSC, WSC-CAM-VIB. August 2004.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

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

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

Certification Information

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

Westborough Facility
EPA 624: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethy benzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 300: DW: Bromide
EPA 6860: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: ***EPA 3050B***

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

Westborough Facility:

Drinking Water
EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF**.

Mansfield Facility:

Drinking Water
EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1** Hg.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

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

08/29/16 L1627010

Chain-of-Custody Record

Laboratory: Alpha

Laboratory Job # (Lab use only)

GEI Consultants
400 Unicorn Park Drive
Woburn, MA 01801
PH: 781.721.4000
FX: 781.721.4073

Project Information

Project Name: Eversource NH SRP
Project Location: Newington, NH
Project Number: 1607530
Project Manager: Mike Sabulis
(office: 781-721-4114) (cell: 508-633-9544)

Page 1 of 1

Send Report to: Jess Englehart
Send EDD to: labdata@geiconsultants.com

MCP PRESUMPTIVE CERTAINTY REQUIRED -- YES NO

If Yes, Are MCP Analytical Methods Required? **YES** NO NA
If Yes, Are Drinking Water Samples Submitted? YES **NO** NA
If Yes, Have You Met Minimum Field QC Requirements? **YES** NO **NA**

Sample Handling

Samples Field Filtered: YES NO **NA**

Sampled Shipped With Ice: **YES** NO

Lab Sample Number	GEI Sample ID	Collection Date	Collection Time	Matrix	No. of Bottles	Sampler(s) Initials	Preservative: MeOH	Analysis: VOC	SVOCs	TPH (8100M)	PCBs	RCRA 8Metals + TCLP (if necessary)*	Cond/Corr/Ignitability	Sulfide+Cyanide Reactivity	Hex Cr w/ pH and redox (if necessary)**	Sample Specific Remarks
	1607530-B103(S1-S2)	8/26/16	0925	SO	8	MEG	-	X	X	X	X	X	X	X	X	
	-B103(S3-S4)	"	0953	"	"	"	-	"	"	"	"	"	"	"	"	
	B102(S1-S2)	"	1045	"	"	"	-	"	"	"	"	"	"	"	"	
	B102(S3-S4)	"	1100	"	"	"	-	"	"	"	"	"	"	"	"	
	B101(S1-S2)	"	1145	"	"	"	-	"	"	"	"	"	"	"	"	
	B101(S3-S4)	"	1200	"	"	"	-	"	"	"	"	"	"	"	"	

MCP Level Needed: GEI requires the most stringent Method 1 MCP standard be met for all analytes whenever possible.

Relinquished by sampler: (signature)	Date:	Time:	Received by: (signature)
1. Molly Green	8/27/16	14:50	1. GEI fridge
Relinquished by: (signature)	Date:	Time:	Received by: (signature)
2. GEI Fridge	8/29/16	1120	2. T Gelehart
Relinquished by: (signature)	Date:	Time:	Received by: (signature)
3. T Gelehart	8/29/16	1120	3. [signature] GEI
Relinquished by: (signature)	Date:	Time:	Received by: (signature)
4. [signature] GEI	8/29/16	17:20	4. [signature]

Turnaround Time (Business days):

Normal _X_ Other ____
10-Day ____ 7-Day ____
5-Day ____ 3-Day ____

Before submitting rush turnaround samples, you **must** notify the laboratory to confirm that the TAT can be achieved.

Additional Requirements/Comments/Remarks:

*Please run TCLP on analyses that exceed 20x rule.
**Please run Hex Cr if total Cr exceeds 100ppm. Please run ORP ASAP as it has a 24-hr hold time.

08/29/16 L1627010

Chain-of-Custody Record

Laboratory: Alpha

Laboratory Job # (Lab use only)

GEI Consultants
400 Unicorn Park Drive
Woburn, MA 01801
PH: 781.721.4000
FX: 781.721.4073

Project Information

Project Name: Eversource NH SRP
Project Location: Newington, NH
Project Number: 1607530
Project Manager: Mike Sabulis
(office: 781-721-4114) (cell: 508-633-9544)

Send Report to: Jess Englehart
Send EDD to: labdata@geiconsultants.com

Preservative

–	–							

Analysis

Sample Handling

Samples Field Filtered
YES NO **NA**

Sampled Shipped With Ice
YES NO

MCP PRESUMPTIVE CERTAINTY REQUIRED -- YES NO

If Yes, Are MCP Analytical Methods Required? **YES** NO NA
If Yes, Are Drinking Water Samples Submitted? YES **NO** NA
If Yes, Have You Met Minimum Field QC Requirements? **YES** NO **NA**

Lab Sample Number	GEI Sample ID	Collection Date	Collection Time	Matrix	No. of Bottles	Sampler(s) Initials	PFOS	PFOA	Sample Specific Remarks
	1607530-B103(S1-S2)	8/26/16	0925	SO	1	MEG	X	X	
	B103(S3-S4)	"	0955	"	"	"	"	"	
	B102(S1-S2)	"	1045	"	"	"	"	"	
	B102(S3-S4)	"	1100	"	"	"	"	"	
	B101(S1-S2)	"	1145	"	"	"	"	"	
	B101(S3-S4)	↓	1200	↓	↓	↓	↓	↓	

MCP Level Needed: GEI requires the most stringent Method 1 MCP standard be met for all analytes whenever possible.

Turnaround Time (Business days):

Normal _X__ Other ____
10-Day ____ 7-Day ____
5-Day ____ 3-Day ____

Before submitting rush turnaround samples, you **must** notify the laboratory to confirm that the TAT can be achieved.

Relinquished by sampler: (signature)	Date:	Time:	Received by: (signature)
1. Molly Green	8/27/16	14:50	1. GEI Fridge
Relinquished by: (signature)	Date:	Time:	Received by: (signature)
2. GEI Fridge	8/29/16	1120	2. JGilhart
Relinquished by: (signature)	Date:	Time:	Received by: (signature)
3. JGilhart	8/29/16	1120	3. Chris Hayes ABC
Relinquished by: (signature)	Date:	Time:	Received by: (signature)
4. Chris Hayes ABC	8/29/16	17:20	4. [illegible]

Additional Requirements/Comments/Remarks:

September 15, 2016

Vista Work Order No. 1601099

Ms. Karyn Raymond
Alpha Analytical Laboratory
8 Walkup Drive
Westborough, MA 01581

Dear Ms. Raymond,

Enclosed are the amended results for the sample set received at Vista Analytical Laboratory on August 31, 2016. This sample set was analyzed on a rush turn-around time. The SDG Number is L1627010.

Vista Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at mmaier@vista-analytical.com.

Thank you for choosing Vista as part of your analytical support team.

Sincerely,

Karen Lopez for

Martha Maier
Laboratory Director

Vista Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAP for those applicable test methods. Results relate only to the samples as received by the laboratory. This report should not be reproduced except in full without the written approval of Vista.

SDG Number L1627010
Vista Work Order No. 1601099
Case Narrative

Sample Condition on Receipt:

Six soil samples were received in good condition and within the method temperature requirements. The samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology. This report was amended to reflect Alpha job number L1627010 rather than L1626010.

Analytical Notes:

Modified EPA Method 537

The samples were extracted and analyzed for PFOA and PFOS using Modified EPA Method 537. The results include both linear and branched isomers.

Holding Times

The samples were extracted and analyzed within the method hold times.

Quality Control

The Initial Calibration and Continuing Calibration Verifications met the acceptance criteria.

A Method Blank and Ongoing Precision and Recovery (OPR) sample were extracted and analyzed with the preparation batch. No analytes were detected in the Method Blank above the Reporting Limit. The OPR recoveries were within the method acceptance criteria.

The recoveries of all internal standards in the QC and field samples were within the acceptance criteria.

TABLE OF CONTENTS

Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1601099-01	1607530-B103(S1-S2)	26-Aug-16 09:25	31-Aug-16 09:33	HDPE Jar, 4 oz
1601099-02	1607530-B103(S3-S4)	26-Aug-16 09:55	31-Aug-16 09:33	HDPE Jar, 4 oz
1601099-03	1607530-B102(S1-S2)	26-Aug-16 10:45	31-Aug-16 09:33	HDPE Jar, 4 oz
1601099-04	1607530-B102(S3-S4)	26-Aug-16 11:00	31-Aug-16 09:33	HDPE Jar, 4 oz
1601099-05	1607530-B101(S1-S2)	26-Aug-16 11:45	31-Aug-16 09:33	HDPE Jar, 4 oz
1601099-06	1607530-B101(S3-S4)	26-Aug-16 12:00	31-Aug-16 09:33	HDPE Jar, 4 oz

Vista Project: 1601099

ANALYTICAL RESULTS

Sample ID: Method Blank **VAL - PFAS**

Matrix:	Solid	QC Batch:	B6I0041	Lab Sample:	B6I0041-BLK1
Sample Size:	1.00 g	Date Extracted:	08-Sep-2016 14:54	Date Analyzed:	12-Sep-16 19:47 Column: BEH C18 Analyst: AC

Analyte	Conc. (ng/g)	RL	Qualifiers
PFOA	ND	2.00	
PFOS	ND	2.00	

	Labeled Standard	%R	LCL-UCL	Qualifiers
IS	13C2-PFOA	124	60 - 150	
IS	13C8-PFOS	109	60 - 150	

RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit
The results are reported in dry weight
The sample size is reported in wet weight
Results reported to RL
When reported, PFBS, PFHxS and PFOS include both linear and branched isomers Only the linear isomer is reported for all other analytes

Sample ID: OPR **VAL - PFAS**

Matrix:	Solid	QC Batch:	B6I0041	Lab Sample:	B6I0041-BS1
Sample Size:	1.00 g	Date Extracted:	08-Sep-2016 14:54	Date Analyzed:	12-Sep-16 18:56 Column: BEH C18 Analyst: AC

Analyte	Amt Found (ng/g)	Spike Amt	%R	Limits
PFOA	9.89	10.0	98.9	70 - 130
PFOS	10.7	10.0	107	70 - 130

	Labeled Standard	%R	LCL-UCL
IS	13C2-PFOA	123	60 - 150
IS	13C8-PFOS	105	60 - 150

LCL-UCL - Lower control limit - upper control limit

Sample ID: 1607530-B103(S1-S2) VAL - PFAS

Client Data
Name: Alpha Analytical Laboratory
Project:
Date Collected: 26-Aug-2016 9:25

Sample Data
Matrix: Soil
Sample Size: 1.46 g
% Solids: 71.0

Laboratory Data
Lab Sample: 1601099-01 Date Received: 31-Aug-2016 9:33
QC Batch: B6I0041 Date Extracted: 08-Sep-2016 14:54
Date Analyzed: 13-Sep-16 02:56 Column: BEH C18 Analyst: AC

Analyte	Conc. (ng/g)	RL	Qualifiers
PFOA	ND	1.93	
PFOS	ND	1.93	

	Labeled Standard	%R	LCL-UCL	Qualifiers
IS	13C2-PFOA	137	60 - 150	
IS	13C8-PFOS	76.3	60 - 150	

RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit
The results are reported in dry weight
The sample size is reported in wet weight
Results reported to RL
When reported, PFBS, PFHxS and PFOS include both linear and branched isomers Only the linear isomer is reported for all other analytes

Sample ID: 1607530-B103(S3-S4) VAL - PFAS

Client Data
Name: Alpha Analytical Laboratory
Project:
Date Collected: 26-Aug-2016 9:55

Sample Data
Matrix: Soil
Sample Size: 1.23 g
% Solids: 80.4

Laboratory Data
Lab Sample: 1601099-02 Date Received: 31-Aug-2016 9:33
QC Batch: B6I0041 Date Extracted: 08-Sep-2016 14:54
Date Analyzed: 13-Sep-16 03:09 Column: BEH C18 Analyst: AC

Analyte	Conc. (ng/g)	RL	Qualifiers
PFOA	ND	2.02	
PFOS	ND	2.02	

	Labeled Standard	%R	LCL-UCL	Qualifiers
IS	13C2-PFOA	130	60 - 150	
IS	13C8-PFOS	81.7	60 - 150	

RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit
The results are reported in dry weight
The sample size is reported in wet weight
Results reported to RL
When reported, PFBS, PFHxS and PFOS include both linear and branched isomers Only the linear isomer is reported for all other analytes

Sample ID: 1607530-B102(S1-S2) VAL - PFAS

Client Data
Name: Alpha Analytical Laboratory
Project:
Date Collected: 26-Aug-2016 10:45

Sample Data
Matrix: Soil
Sample Size: 1.37 g
% Solids: 75.0

Laboratory Data
Lab Sample: 1601099-03 Date Received: 31-Aug-2016 9:33
QC Batch: B6I0041 Date Extracted: 08-Sep-2016 14:54
Date Analyzed: 13-Sep-16 03:21 Column: BEH C18 Analyst: AC

Analyte	Conc. (ng/g)	RL	Qualifiers
PFOA	ND	1.95	
PFOS	ND	1.95	

	Labeled Standard	%R	LCL-UCL	Qualifiers
IS	13C2-PFOA	150	60 - 150	
IS	13C8-PFOS	99.6	60 - 150	

RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit
The results are reported in dry weight
The sample size is reported in wet weight
Results reported to RL
When reported, PFBS, PFHxS and PFOS include both linear and branched isomers Only the linear isomer is reported for all other analytes

Sample ID: 1607530-B102(S3-S4) VAL - PFAS

Client Data		Sample Data		Laboratory Data			
Name:	Alpha Analytical Laboratory	Matrix:	Soil	Lab Sample:	1601099-04	Date Received:	31-Aug-2016 9:33
Project:		Sample Size:	1.36 g	QC Batch:	B6I0041	Date Extracted:	08-Sep-2016 14:54
Date Collected:	26-Aug-2016 11:00	% Solids:	75.3	Date Analyzed:	13-Sep-16 03:34 Column: BEH C18 Analyst: AC		

Analyte	Conc. (ng/g)	RL	Qualifiers
PFOA	ND	1.95	
PFOS	ND	1.95	

	Labeled Standard	%R	LCL-UCL	Qualifiers
IS	13C2-PFOA	141	60 - 150	
IS	13C8-PFOS	108	60 - 150	

RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit
The results are reported in dry weight
The sample size is reported in wet weight
Results reported to RL
When reported, PFBS, PFHxS and PFOS include both linear and branched isomers Only the linear isomer is reported for all other analytes

Sample ID: 1607530-B101(S1-S2) VAL - PFAS

Client Data
Name: Alpha Analytical Laboratory
Project:
Date Collected: 26-Aug-2016 11:45

Sample Data
Matrix: Soil
Sample Size: 1.38 g
% Solids: 74.1

Laboratory Data
Lab Sample: 1601099-05 Date Received: 31-Aug-2016 9:33
QC Batch: B6I0041 Date Extracted: 08-Sep-2016 14:54
Date Analyzed: 13-Sep-16 03:47 Column: BEH C18 Analyst: AC

Analyte	Conc. (ng/g)	RL	Qualifiers
PFOA	ND	1.96	
PFOS	ND	1.96	

	Labeled Standard	%R	LCL-UCL	Qualifiers
IS	13C2-PFOA	135	60 - 150	
IS	13C8-PFOS	103	60 - 150	

RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit
The results are reported in dry weight
The sample size is reported in wet weight
Results reported to RL
When reported, PFBS, PFHxS and PFOS include both linear and branched isomers Only the linear isomer is reported for all other analytes

Sample ID: 1607530-B101(S3-S4) VAL - PFAS

Client Data		Sample Data		Laboratory Data			
Name:	Alpha Analytical Laboratory	Matrix:	Soil	Lab Sample:	1601099-06	Date Received:	31-Aug-2016 9:33
Project:		Sample Size:	1.30 g	QC Batch:	B6I0041	Date Extracted:	08-Sep-2016 14:54
Date Collected:	26-Aug-2016 12:00	% Solids:	78.5	Date Analyzed:	13-Sep-16 03:59 Column: BEH C18 Analyst: AC		

Analyte	Conc. (ng/g)	RL	Qualifiers
PFOA	ND	1.96	
PFOS	ND	1.96	

	Labeled Standard	%R	LCL-UCL	Qualifiers
IS	13C2-PFOA	148	60 - 150	
IS	13C8-PFOS	98.0	60 - 150	

RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit
The results are reported in dry weight
The sample size is reported in wet weight
Results reported to RL
When reported, PFBS, PFHxS and PFOS include both linear and branched isomers Only the linear isomer is reported for all other analytes

DATA QUALIFIERS & ABBREVIATIONS

B	**This compound was also detected in the method blank.**
D	**Dilution**
E	**The associated compound concentration exceeded the calibration range of the instrument.**
H	**Recovery and/or RPD was outside laboratory acceptance limits.**
I	**Chemical Interference**
J	**The amount detected is below the Reporting Limit/LOQ.**
*****	**See Cover Letter**
Conc.	**Concentration**
NA	**Not applicable**
ND	**Not Detected**
TEQ	**Toxic Equivalency**

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

CERTIFICATIONS

Accrediting Authority	Certificate Number
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Department of Health	E87777
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2014022
Nevada Division of Environmental Protection	CA004132015-1
New Jersey Department of Environmental Protection	CA003
New York Department of Health	11411
Oregon Laboratory Accreditation Program	4042-004
Pennsylvania Department of Environmental Protection	012
South Carolina Department of Health	87002001
Texas Commission on Environmental Quality	T104704189-15-6
Virginia Department of General Services	7923
Washington Department of Ecology	C584
Wisconsin Department of Natural Resources	998036160

Current certificates and lists of licensed parameters are located in the Quality Assurance office and are available upon request

NELAP Accredited Test Methods

MATRIX: Air	
Description of Test	**Method**
Determination of Polychlorinated p-Dioxins & Polychlorinated Dibenzofurans	EPA 23

MATRIX: Biological Tissue	
Description of Test	**Method**
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Drinking Water	
Description of Test	**Method**
2,3,7,8-Tetrachlorodibenzo- p-dioxin (2,3,7,8-TCDD) GC/HRMS	EPA 1613
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537

MATRIX: Non-Potable Water	
Description of Test	**Method**
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Dioxin by GC/HRMS	EPA 613
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Solids	
Description of Test	**Method**
Tetra-Octa Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope	EPA 1613B

Dilution GC/HRMS	
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

SUB UPS: Vista Labs (CA)

1601099 1.6°C

CHAIN OF CUSTODY

PAGE OF

Date Rec'd in Lab: 8/31/16

ALPHA Job #: L1627010

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Project Information

Project Name:

Project Location: NH

Project #:

Project Manager: Karyn Raymond

ALPHA Quote #: 380

Report Information Data Deliverables

☐ FAX ☐ EMAIL

☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

☐ Yes ☐ No Are MCP Analytical Methods Required?

☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Client Information

Client: Alpha Analytical Lab

Address: 8 Walkup Drive

Westborough, Ma 01581

Phone: 508-898-9220

Fax:

Email: subreports@alphalab.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

14 Day TAT

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

Please reference Alpha Job #L1627010 on this report.

537-PFOA and PFOS only

ANALYSIS

537

SAMPLE HANDLING

Filtration

☐ Done

☐ Not Needed

☐ Lab to do

Preservation

☐ Lab to do

(Please specify below)

Sample Specific Comments

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	537												TOTAL # BOTTLES
	1607530-B103(S1-S2)	8/26/16	09:25	Soil		X												1
	1607530-B103(S3-S4)	8/26/16	09:55	Soil		X												1
	1607530-B102(S1-S2)	8/26/16	10:45	Soil		X												1
	1607530-B102(S3-S4)	8/26/16	11:00	Soil		X												1
	1607530-B101(S1-S2)	8/26/16	11:45	Soil		X												1
	1607530-B101(S3-S4)	8/26/16	12:00	Soil		X												1

Container Type	P		-	-	-	-	-	-	-	-	-	-
Preservative	A		-	-	-	-	-	-	-	-	-	-

PLEASE ANSWER QUESTIONS ABOVE!

S YOUR PROJECT
MA MCP or CT RCP?

FORM NO: 01-01(I)
rev. 30-JUL-07)

Relinquished By:	Date/Time	Received By:	Date/Time
AAK	8/30/16		08/31/16 0935

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

SAMPLE LOG-IN CHECKLIST

Vista Analytical Laboratory

Vista Project #: 1601099 **TAT** Std

Samples Arrival:	**Date/Time** 08/31/16 0933	**Initials:** BLB	**Location:** WR-2 **Shelf/Rack:** NA
Logged In:	**Date/Time** 09/01/16 1235	**Initials:** BLB	**Location:** WR-2 **Shelf/Rack:** A5

Delivered By:	FedEx	(UPS)	On Trac	DHL	Hand Delivered	Other
Preservation:	(Ice)	Blue Ice	Dry Ice	None		
Temp °C: 1.9 (uncorrected)	**Time:**		**Thermometer ID:** IR-1		
Temp °C: 1.6 (corrected)	**Probe used:** Yes☐ No☐				

	YES	NO	NA
Adequate Sample Volume Received?			
Holding Time Acceptable?			
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?			✓
Shipping Documentation Present?	✓		
Airbill — Trk # 1Z E30654019384 2982	✓		
Sample Container Intact?			
Sample Custody Seals Intact?	✓		
Chain of Custody / Sample Documentation Present?	✓		
COC Anomaly/Sample Acceptance Form completed?			

If Chlorinated or Drinking Water Samples, Acceptable Preservation?					
$Na_2S_2O_3$ Preservation Documented?		COC	Sample Container	None	
Shipping Container	Vista	(Client)	Retain	(Return)	Dispose

Comments:

BLA 08/23/2016

September 15, 2016

Vista Work Order No. 1601114

Ms. Karyn Raymond
Alpha Analytical Laboratory
8 Walkup Drive
Westborough, MA 01581

Dear Ms. Raymond,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on September 03, 2016. This sample set was analyzed on a rush turn-around time. The SDG Number is L1627653.

Vista Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at mmaier@vista-analytical.com.

Thank you for choosing Vista as part of your analytical support team.

Sincerely,

Martha Maier
Laboratory Director

Vista Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAP for those applicable test methods. Results relate only to the samples as received by the laboratory. This report should not be reproduced except in full without the written approval of Vista.

SDG Number L1627653
Vista Work Order No. 1601114
Case Narrative

Sample Condition on Receipt:

Three water samples were received in good condition and within the method temperature requirements. The samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology.

Analytical Notes:

Modified EPA Method 537

The samples were extracted and analyzed for PFOA and PFOS using Modified EPA Method 537. The results include both linear and branched isomers.

Holding Times

The samples were extracted and analyzed within the method hold times.

Quality Control

The Initial Calibration and Continuing Calibration Verifications met the acceptance criteria.

A Method Blank and Ongoing Precision and Recovery (OPR) sample were extracted and analyzed with the preparation batch. No analytes were detected in the Method Blank above the Reporting Limit. The OPR recoveries were within the method acceptance criteria.

The recoveries of all internal standards in the QC and field samples were within the acceptance criteria.

TABLE OF CONTENTS

Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1601114-01	1607530-B101 (MW)	01-Sep-16 10:00	03-Sep-16 09:45	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
1601114-02	1607530-B102 (MW)	01-Sep-16 10:10	03-Sep-16 09:45	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
1601114-03	1607530-SW1	01-Sep-16 10:35	03-Sep-16 09:45	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL

ANALYTICAL RESULTS

Sample ID: Method Blank			Modified EPA Method 537
Matrix: Aqueous Sample Size: 0.125 L	QC Batch: B6I0058 Date Extracted: 13-Sep-2016 7:28	Lab Sample: B6I0058-BLK1 Date Analyzed: 13-Sep-16 17:52 Column: BEH C18 Analyst: AC	

Analyte	Conc. (ng/L)	RL	Qualifiers
PFOA	ND	8.00	
PFOS	ND	8.00	

	Labeled Standard	%R	LCL-UCL	Qualifiers
IS	13C2-PFOA	92.7	60 - 150	
IS	13C8-PFOS	88.3	60 - 150	

RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit
Results reported to RL
When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers Only the linear isomer is reported for all other analytes

Sample ID: OPR

Modified EPA Method 537

Matrix:	Aqueous	QC Batch:	B6I0058	Lab Sample:	B6I0058-BS1
Sample Size:	0.125 L	Date Extracted:	13-Sep-2016 7:28	Date Analyzed:	13-Sep-16 17:14 Column: BEH C18 Analyst: AC

Analyte	Amt Found (ng/L)	Spike Amt	%R	Limits
PFOA	73.9	80.0	92.4	70 - 130
PFOS	79.1	80.0	98.9	70 - 130

	Labeled Standard	%R	LCL-UCL
IS	13C2-PFOA	104	60 - 150
IS	13C8-PFOS	90.7	60 - 150

LCL-UCL - Lower control limit - upper control limit

Sample ID: 1607530-B101 (MW)

Modified EPA Method 537

Client Data		Sample Data		Laboratory Data			
Name:	Alpha Analytical Laboratory	Matrix:	Water	Lab Sample:	1601114-01	Date Received:	03-Sep-2016 9:45
Project:		Sample Size:	0.127 L	QC Batch:	B6I0058	Date Extracted:	13-Sep-2016 7:28
Date Collected:	01-Sep-2016 10:00			Date Analyzed:	13-Sep-16 18:18	Column: BEH C18	Analyst: AC

Analyte	Conc. (ng/L)	RL	Qualifiers
PFOA	ND	7.86	
PFOS	ND	7.86	

	Labeled Standard	%R	LCL-UCL	Qualifiers
IS	13C2-PFOA	117	60 - 150	
IS	13C8-PFOS	68.2	60 - 150	

RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit
Results reported to RL
When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers
Only the linear isomer is reported for all other analytes

Sample ID: 1607530-B102 (MW)

Modified EPA Method 537

Client Data		Sample Data		Laboratory Data			
Name:	Alpha Analytical Laboratory	Matrix:	Water	Lab Sample:	1601114-02	Date Received:	03-Sep-2016 9:45
Project:		Sample Size:	0.125 L	QC Batch:	B6I0058	Date Extracted:	13-Sep-2016 7:28
Date Collected:	01-Sep-2016 10:10			Date Analyzed:	13-Sep-16 18:30	Column: BEH C18	Analyst: AC

Analyte	Conc. (ng/L)	RL	Qualifiers
PFOA	11.2	8.01	
PFOS	16.1	8.01	

	Labeled Standard	%R	LCL-UCL	Qualifiers
IS	13C2-PFOA	101	60 - 150	
IS	13C8-PFOS	88.9	60 - 150	

RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit
Results reported to RL
When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers
Only the linear isomer is reported for all other analytes

Sample ID: 1607530-SW1

Modified EPA Method 537

Client Data		Sample Data		Laboratory Data			
Name:	Alpha Analytical Laboratory	Matrix:	Water	Lab Sample:	1601114-03	Date Received:	03-Sep-2016 9:45
Project:		Sample Size:	0.123 L	QC Batch:	B6I0058	Date Extracted:	13-Sep-2016 7:28
Date Collected:	01-Sep-2016 10:35			Date Analyzed:	13-Sep-16 18:43 Column: BEH C18 Analyst: AC		
					14-Sep-16 10:33 Column: BEH C18 Analyst: AC		

Analyte	Conc. (ng/L)	RL	Qualifiers
PFOA	842	8.12	
PFOS	2910	40.6	D

	Labeled Standard	%R	LCL-UCL	Qualifiers
IS	13C2-PFOA	101	60 - 150	
IS	13C8-PFOS	95.4	60 - 150	D

RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit
Results reported to RL
When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers
Only the linear isomer is reported for all other analytes

DATA QUALIFIERS & ABBREVIATIONS

B	**This compound was also detected in the method blank.**
D	**Dilution**
E	**The associated compound concentration exceeded the calibration range of the instrument.**
H	**Recovery and/or RPD was outside laboratory acceptance limits.**
I	**Chemical Interference**
J	**The amount detected is below the Reporting Limit/LOQ.**
*****	**See Cover Letter**
Conc.	**Concentration**
NA	**Not applicable**
ND	**Not Detected**
TEQ	**Toxic Equivalency**

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

CERTIFICATIONS

Accrediting Authority	Certificate Number
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Department of Health	E87777
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2014022
Nevada Division of Environmental Protection	CA004132015-1
New Jersey Department of Environmental Protection	CA003
New York Department of Health	11411
Oregon Laboratory Accreditation Program	4042-004
Pennsylvania Department of Environmental Protection	012
South Carolina Department of Health	87002001
Texas Commission on Environmental Quality	T104704189-15-6
Virginia Department of General Services	7923
Washington Department of Ecology	C584
Wisconsin Department of Natural Resources	998036160

Current certificates and lists of licensed parameters are located in the Quality Assurance office and are available upon request

NELAP Accredited Test Methods

MATRIX: Air	
Description of Test	**Method**
Determination of Polychlorinated p-Dioxins & Polychlorinated Dibenzofurans	EPA 23

MATRIX: Biological Tissue	
Description of Test	**Method**
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Drinking Water	
Description of Test	**Method**
2,3,7,8-Tetrachlorodibenzo- p-dioxin (2,3,7,8-TCDD) GC/HRMS	EPA 1613
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537

MATRIX: Non-Potable Water	
Description of Test	**Method**
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Dioxin by GC/HRMS	EPA 613
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Solids	
Description of Test	**Method**
Tetra-Octa Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope	EPA 1613B

Dilution GC/HRMS	
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

SUB UPS: VISTA-CA

1601114 0.5°C

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Alpha Analytical Lab
Address: 8 Walkup Drive
Westborough, Ma 01581
Phone: 508-898-9220
Fax:
Email: subreports@alphalab.com
☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name:
Project Location: MA
Project #:
Project Manager: Karyn Raymond
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)
14 Day
Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:
Please reference Alpha Job #L1627653 on this report.

Date Rec'd in Lab:

ALPHA Job #: L1627653

Report Information ☐ FAX ☐ ADEx
Data Deliverables ☐ EMAIL ☐ Add'l Deliverables
Billing Information ☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

☐ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

ANALYSIS

537-PFOA/PFOS Only

SAMPLE HANDLING
Filtration
☐ Done
☐ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Sample Specific Comments

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	537-PFOA/PFOS Only	TOTAL # BOTTLES
	1607530-B101 (MW)	9/1/16	10:00	WATER		X	2
	1607530-B102 (MW)	9/1/16	10:10	WATER		X	2
	1607530-SW1	9/1/16	10:35	WATER		X	2

Container Type	Pla		-	-	-	-	-	-	-	-	-	-	
Preservative	NA		-	-	-	-	-	-	-	-	-	-	

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP or CT RCP?

FORM NO. 01-01(I) (rev. 30-JUL-07)

Relinquished By:	Date/Time	Received By:	Date/Time
	9/2/16		09/6 09:45

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

SAMPLE LOG-IN CHECKLIST

Vista Analytical Laboratory

Vista Project #: 1601114 **TAT** 14

Samples Arrival:	**Date/Time** 9/8/16 09:45	**Initials:** WL	**Location:** WR2 **Shelf/Rack:** NA
Logged In:	**Date/Time** 09/08/16 1325	**Initials:** RAS	**Location:** WR-2 **Shelf/Rack:** F 6

Delivered By:	FedEx	UPS	On Trac	DHL	Hand Delivered	Other
Preservation:	Ice	Blue Ice		Dry Ice	None	

Temp °C: 0.0 (uncorrected)	**Time:** 09:50	**Thermometer ID:** IR-1
Temp °C: 0.5 (corrected)	**Probe used:** Yes☐ No☑	

	YES	NO	NA
Adequate Sample Volume Received?	✓		
Holding Time Acceptable?	✓		
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?			✓
Shipping Documentation Present?	✓		
Airbill Trk # 1ZE30654449471587	✓		
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Chain of Custody / Sample Documentation Present?	✓		
COC Anomaly/Sample Acceptance Form completed?		✓	
If Chlorinated or Drinking Water Samples, Acceptable Preservation?			✓

$Na_2S_2O_3$ Preservation Documented?		COC	Sample Container	None	
Shipping Container	Vista	Client	Retain	Return	Dispose

Comments:

BLA 08/23/2016

Chain-of-Custody Record

Laboratory: Alpha

Laboratory Job # (Lab use only) L1627653

GEI Consultants

400 Unicorn Park Drive
Woburn, MA 01801
PH: 781.721.4000
FX: 781.721.4073

Project Information

Project Name: Eversource NH SRP

Project Location: Newington, NH

Project Number: 1607530

Project Manager: Mike Sabulis
(office: 781-721-4114) (cell: 508-633-9544)

Send Report to: Jess Englehart

Send EDD to: labdata@geiconsultants.com

MCP PRESUMPTIVE CERTAINTY REQUIRED -- **YES** NO

If Yes, Are MCP Analytical Methods Required? **YES** NO NA

If Yes, Are Drinking Water Samples Submitted? YES **NO** NA

If Yes, Have You Met Minimum Field QC Requirements? **YES** NO **NA**

Preservative

Analysis

Sample Handling

Samples Field Filtered
YES NO **NA**

Sampled Shipped With Ice
YES NO

Lab Sample Number	GEI Sample ID	Collection Date	Collection Time	Matrix	No. of Bottles	Sampler(s) Initials	PFOS	PFOA	Sample Specific Remarks
27653-01	1607530-B101(MW)	9/1/2016	10:00	water	2	CRC	x	x	
02	1607530-B102(MW)	9/1/2016	10:10	water	2	MEG	x	x	
03	1607530-SW1	9/1/2016	10:35	water	2	CRC	x	x	

MCP Level Needed: GEI requires the most stringent Method 1 MCP standard be met for all analytes whenever possible.

	Relinquished by sampler: (signature)	Date:	Time:	Received by: (signature)
1.	Molly E Green	9/1/16	12:53	GEI Sample Fridge
2.	GEI Fridge	9/2/16	9:56	Sabrina Cook
3.	Sabrina Cook	9/2/16	9:57	[illegible] 9-2-16 9:56
4.	[illegible] ARL	9-2-16	13:40	[illegible]

Turnaround Time (Business days):

Normal _X_ Other ____

10-Day ____ 7-Day ____

5-Day ____ 3-Day ____

Before submitting rush turnaround samples, you **must** notify the laboratory to confirm that the TAT can be achieved.

Additional Requirements/Comments/Remarks:

ANALYTICAL REPORT

Lab Number:	L1718562
Client:	GEI Consultants 400 Unicorn Park Drive Woburn, MA 01801
ATTN:	Mike Sabulis
Phone:	(781) 721-4114
Project Name:	EVERSOURCE NH SRP
Project Number:	1607530
Report Date:	06/21/17

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

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: EVERSOURCE NH SRP
Project Number: 1607530

Lab Number: L1718562
Report Date: 06/21/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1718562-01	1607530-B101(MW)	WATER	NEWINGTON, NH	06/02/17 15:15	06/06/17
L1718562-02	1607530-B102(MW)	WATER	NEWINGTON, NH	06/02/17 12:45	06/06/17
L1718562-03	1607530-B103(MW)	WATER	NEWINGTON, NH	06/02/17 17:40	06/06/17
L1718562-04	1607530-FB	WATER	NEWINGTON, NH	06/02/17 15:15	06/06/17

Project Name: EVERSOURCE NH SRP
Project Number: 1607530
Lab Number: L1718562
Report Date: 06/21/17

Case Narrative

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

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

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

Please contact Client Services at 800-624-9220 with any questions.

Project Name: EVERSOURCE NH SRP
Project Number: 1607530
Lab Number: L1718562
Report Date: 06/21/17

Case Narrative (continued)

Semivolatile Organics

WG1012571-3 LCSD: The internal standard (IS) response for 13C2-PFOA was below the acceptance criteria when compared to the continuing calibration, but within criteria when compared to the initial calibration. Target analytes recovered within critera, therefore no further action was taken.

The WG1012571-4 Laboratory Duplicate RPD, performed on L1718562-01, is above the acceptance criteria for perfluorooctanesulfonic acid (pfos) (36%); however, the sample and duplicate results are less than five times the reporting limit. Therefore, the RPD is valid.

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

Authorized Signature: Susan E O'Neil Susan O' Neil

Title: Technical Director/Representative Date: 06/21/17

ORGANICS

SEMIVOLATILES

Project Name: EVERSOURCE NH SRP
Project Number: 1607530
Lab Number: L1718562
Report Date: 06/21/17

SAMPLE RESULTS

Lab ID: L1718562-01
Client ID: 1607530-B101(MW)
Sample Location: NEWINGTON, NH

Matrix: Water
Analytical Method: 122,537
Analytical Date: 06/20/17 18:56
Analyst: AR

Date Collected: 06/02/17 15:15
Date Received: 06/06/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 06/13/17 10:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	2.48		ng/l	1.78	--	1
Perfluorooctanesulfonic Acid (PFOS)	3.05		ng/l	1.78	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	102		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	127		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	97		70-130

Project Name: EVERSOURCE NH SRP
Lab Number: L1718562
Project Number: 1607530
Report Date: 06/21/17

SAMPLE RESULTS

Lab ID: L1718562-02
Client ID: 1607530-B102(MW)
Sample Location: NEWINGTON, NH

Matrix: Water
Analytical Method: 122,537
Analytical Date: 06/20/17 19:15
Analyst: AR

Date Collected: 06/02/17 12:45
Date Received: 06/06/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 06/13/17 10:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	7.11		ng/l	1.85	--	1
Perfluorooctanesulfonic Acid (PFOS)	14.2		ng/l	1.85	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	83		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	72		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	74		70-130

Project Name: EVERSOURCE NH SRP
Lab Number: L1718562
Project Number: 1607530
Report Date: 06/21/17

SAMPLE RESULTS

Lab ID: L1718562-03
Client ID: 1607530-B103(MW)
Sample Location: NEWINGTON, NH

Matrix: Water
Analytical Method: 122,537
Analytical Date: 06/20/17 19:33
Analyst: AR

Date Collected: 06/02/17 17:40
Date Received: 06/06/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 06/13/17 10:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.85	--	1
Perfluorooctanesulfonic Acid (PFOS)	1.87		ng/l	1.85	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	77		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	85		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	86		70-130

Project Name: EVERSOURCE NH SRP
Lab Number: L1718562
Project Number: 1607530
Report Date: 06/21/17

SAMPLE RESULTS

Lab ID: L1718562-04
Client ID: 1607530-FB
Sample Location: NEWINGTON, NH

Matrix: Water
Analytical Method: 122,537
Analytical Date: 06/20/17 18:47
Analyst: AR

Date Collected: 06/02/17 15:15
Date Received: 06/06/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 06/13/17 10:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.78	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.78	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	87		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	97		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	98		70-130

Project Name: EVERSOURCE NH SRP
Project Number: 1607530
Lab Number: L1718562
Report Date: 06/21/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537
Analytical Date: 06/20/17 18:38
Analyst: AR

Extraction Method: EPA 537
Extraction Date: 06/13/17 10:00

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab for sample(s): 01-04 Batch: WG1012571-1					
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	96		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	116		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	99		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: EVERSOURCE NH SRP

Project Number: 1607530

Lab Number: L1718562

Report Date: 06/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab Associated sample(s): 01-04 Batch: WG1012571-2 WG1012571-3								
Perfluorooctanoic Acid (PFOA)	94		108		70-130	14		30
Perfluorooctanesulfonic Acid (PFOS)	86		110		70-130	24		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	95		111		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	98		112		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	92		122		70-130

Matrix Spike Analysis

Batch Quality Control

Project Name: EVERSOURCE NH SRP

Project Number: 1607530

Lab Number: L1718562

Report Date: 06/21/17

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1012571-5 QC Sample: L1718562-02 Client ID: 1607530-B102(MW)												
Perfluorooctanoic Acid (PFOA)	7.11	463	454	96		-	-		70-130	-		30
Perfluorooctanesulfonic Acid (PFOS)	14.2	428	444	100		-	-		70-130	-		30

Surrogate	*MS % Recovery*	*MS Qualifier*	*MSD % Recovery*	*MSD Qualifier*	*Acceptance Criteria*
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	86				70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	90				70-130
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	94				70-130

Lab Duplicate Analysis
Batch Quality Control

Project Name: EVERSOURCE NH SRP
Project Number: 1607530

Lab Number: L1718562
Report Date: 06/21/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1012571-4 QC Sample: L1718562-01 Client ID: 1607530-B101(MW)						
Perfluorooctanoic Acid (PFOA)	2.48	2.24	ng/l	10		30
Perfluorooctanesulfonic Acid (PFOS)	3.05	2.13	ng/l	**36**	Q	30

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	102		88		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	127		104		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	97		88		70-130

Project Name: EVERSOURCE NH SRP
Project Number: 1607530

Lab Number: L1718562
Report Date: 06/21/17

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1718562-01A	3 Plastic Trizma/1 Plastic/1 H20+Trizma	A	NA		3.7	Y	Absent		A2-537-PFOA/PFOS(14)
L1718562-01B	3 Plastic Trizma/1 Plastic/1 H20+Trizma	A	NA		3.7	Y	Absent		A2-537-PFOA/PFOS(14)
L1718562-01C	3 Plastic Trizma/1 Plastic/1 H20+Trizma	A	NA		3.7	Y	Absent		A2-537-PFOA/PFOS(14)
L1718562-02A	3 Plastic Trizma/1 Plastic/1 H20+Trizma	A	NA		3.7	Y	Absent		A2-537-PFOA/PFOS(14)
L1718562-02B	3 Plastic Trizma/1 Plastic/1 H20+Trizma	A	NA		3.7	Y	Absent		A2-537-PFOA/PFOS(14)
L1718562-02C	3 Plastic Trizma/1 Plastic/1 H20+Trizma	A	NA		3.7	Y	Absent		A2-537-PFOA/PFOS(14)
L1718562-03A	3 Plastic Trizma/1 Plastic/1 H20+Trizma	A	NA		3.7	Y	Absent		A2-537-PFOA/PFOS(14)
L1718562-03B	3 Plastic Trizma/1 Plastic/1 H20+Trizma	A	NA		3.7	Y	Absent		A2-537-PFOA/PFOS(14)
L1718562-03C	3 Plastic Trizma/1 Plastic/1 H20+Trizma	A	NA		3.7	Y	Absent		A2-537-PFOA/PFOS(14)
L1718562-04A	3 Plastic Trizma/1 Plastic/1 H20+Trizma	A	NA		3.7	Y	Absent		A2-537-PFOA/PFOS(14)

*Values in parentheses indicate holding time in days

Project Name:	EVERSOURCE NH SRP	**Lab Number:**	L1718562
Project Number:	1607530	**Report Date:**	06/21/17

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

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

Terms

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

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

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

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

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

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related

Report Format: Data Usability Report

Project Name:	EVERSOURCE NH SRP	**Lab Number:**	L1718562
Project Number:	1607530	**Report Date:**	06/21/17

Data Qualifiers

projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

REFERENCES

122 Determination of Selected Perfluorintated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). EPA Method 537, EPA/600/R-08/092. Version 1.1, September 2009.

LIMITATION OF LIABILITIES

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

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

Certification Information

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

Westborough Facility
EPA 624: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 300: DW: Bromide
EPA 6860: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

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

Westborough Facility:

Drinking Water
EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.**

Mansfield Facility:

Drinking Water
EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1** Hg.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

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

Chain-of-Custody Record

Laboratory: Alpha

Laboratory Job # (Lab use only) L1718562

GEI Consultants
400 Unicorn Park Drive
Woburn, MA 01801
PH: 781.721.4000
FX: 781.721.4073

Project Information

Project Name: Eversource NH SRP
Project Location: Newington, NH
Project Number: 1607530
Project Manager: Mike Sabulis
(office: 781-721-4114) (cell: 508-633-9544)

Send Report to: Jess Englehart
Send EDD to: labdata@geiconsultants.com

MCP PRESUMPTIVE CERTAINTY REQUIRED -- **YES** NO

If Yes, Are MCP Analytical Methods Required? **YES** NO NA
If Yes, Are Drinking Water Samples Submitted? YES **NO** NA
If Yes, Have You Met Minimum Field QC Requirements? **YES** NO **NA**

Preservative

Analysis

Sample Handling

Samples Field Filtered
YES NO **NA**

Sampled Shipped With Ice
YES NO

Lab Sample Number	GEI Sample ID	Collection Date	Collection Time	Matrix	No. of Bottles	Sampler(s) Initials	PFOS	PFOA	Sample Specific Remarks
18562.01	1607530-B101(MW)	6/2/2017	1515	water	3	JAW	x	x	
.02	1607530-B102(MW)	6/2/2017	1245	water	3	JAW	x	x	
.03	1607530-B103(MW)	6/2/2017	1740	water	3	JAW	x	x	
.04	1607530-FB	6/2/2017	1515	water	1	JAW	x	x	Field Blank

MCP Level Needed: GEI requires the most stringent Method 1 MCP standard be met for all analytes whenever possible.

Relinquished by sampler: (signature)	Date:	Time:	Received by: (signature)
1.	6/2/17	2010	1. Sample Fridge
Relinquished by: (signature)	Date:	Time:	Received by: (signature)
2. Sample fridge	6/6	1132	2.
Relinquished by: (signature)	Date:	Time:	Received by: (signature)
3.	6/6	1133	3.
Relinquished by: (signature)	Date:	Time:	Received by: (signature)
4. ADC	6-6-17	17:40	4.

Turnaround Time (Business days):

Normal _X__ Other ____
10-Day ____ 7-Day ____
5-Day ____ 3-Day ____

Before submitting rush turnaround samples, you **must** notify the laboratory to confirm that the TAT can be achieved.

Additional Requirements/Comments/Remarks:

6/7/17 4:45 6/7/17 04:45

Appendix D

Groundwater Model Description

NEWINGTON NH – SRP INSTALLATION
DEWATERING FLOW ESTIMATE FOR INSTALLATION TRENCH
GW MODFLOW MODEL DESCRIPTION

Objective:

A trench excavation for a 115 kV transmission main installation is proposed across a farm field. Objective is to estimate dewatering rates to maintain dry excavation for utility trench.

Method:

Three-dimensional MODFLOW groundwater model used that directly outputs flow rate. Visual MODFLOW ® is a graphical user interface that runs the industry standard USGS MODFLOW code solving the groundwater continuity equation.

Assumptions:

Groundwater flow into excavations was modeled as steady state flow, assuming excavation open to full depth. Model space is shown on Figure 1. The model extends downward to elevation +10 ft. NAVD, which corresponds to an approximate 50 – 65-ft. aquifer thickness with impermeable base.

The water table aquifer is of relatively large extent such that a steady state cone of depression from dewatering is not expected to extend to the aquifer boundary during the dewatering period. The model therefore represents partial drawdown. For predictive model, the modeled east and west trench segments were boxed in with head boundaries relatively close to the trenches (40 ft.) to represent assumed extent of aquifer influence from temporary dewatering (Figure 2). A close head boundary provides a higher, more conservative flow rate estimate than infinite-extent assumptions. In a sensitivity analysis, moving the head boundary closer to the excavation (20 feet) resulted in a 30% increase in estimated flow. As the sensitivity prediction is within an order of magnitude, head boundary distance is not considered significant in this range.

Soil data: Soil borings indicate the water table aquifer is comprised of fine-grained alluvium, with occasional thin sand lenses. Hydraulic conductivity testing was performed at two locations, where values of 0.06 and 0.22 ft./day were estimated for monitoring wells in the western and eastern project areas, respectively. Hydraulic conductivity zones are shown on Figure 1.

The predictive model was run using dry and wet weather water table conditions. Depths to water in

Method:

Dewatering rates were estimated assuming a 25-foot trench length open at a time, with 5-foot width. Two trench lengths were modeled separately, representing the two soil conductivity zones, where shown on Figure 2. The computational grid is also shown on Figure 2. The model contains 61 vertical layers for discretization of vertical flow.

Method (continued):

The model was bounded to include the full run of trench. Constant head cells were assigned within trench segments assuming sumps control water level. Both segments were boxed in with head boundaries approximately 40 feet from the trench (Figure 2), assuming a cone of influence would not extend very far during the period of open excavation. Head boundaries were assigned the elevations shown on Figure 3. The head boundaries create two separate model domains for each segment.

Site-specific elevations and the head boundary enclosures were used for reference purposes as shown on Figure 2. A 25-foot trench segment two feet below water table in soil of similar hydraulic conductivity would yield similar results. Similarly, smaller models the size of the head boundary enclosures would yield similar results.

For both trench segments, dewatering estimates were computed with and without inclusion of an approximately 6-inch sand seam (hydraulic conductivity = 5 ft./d) about a foot above excavation base.

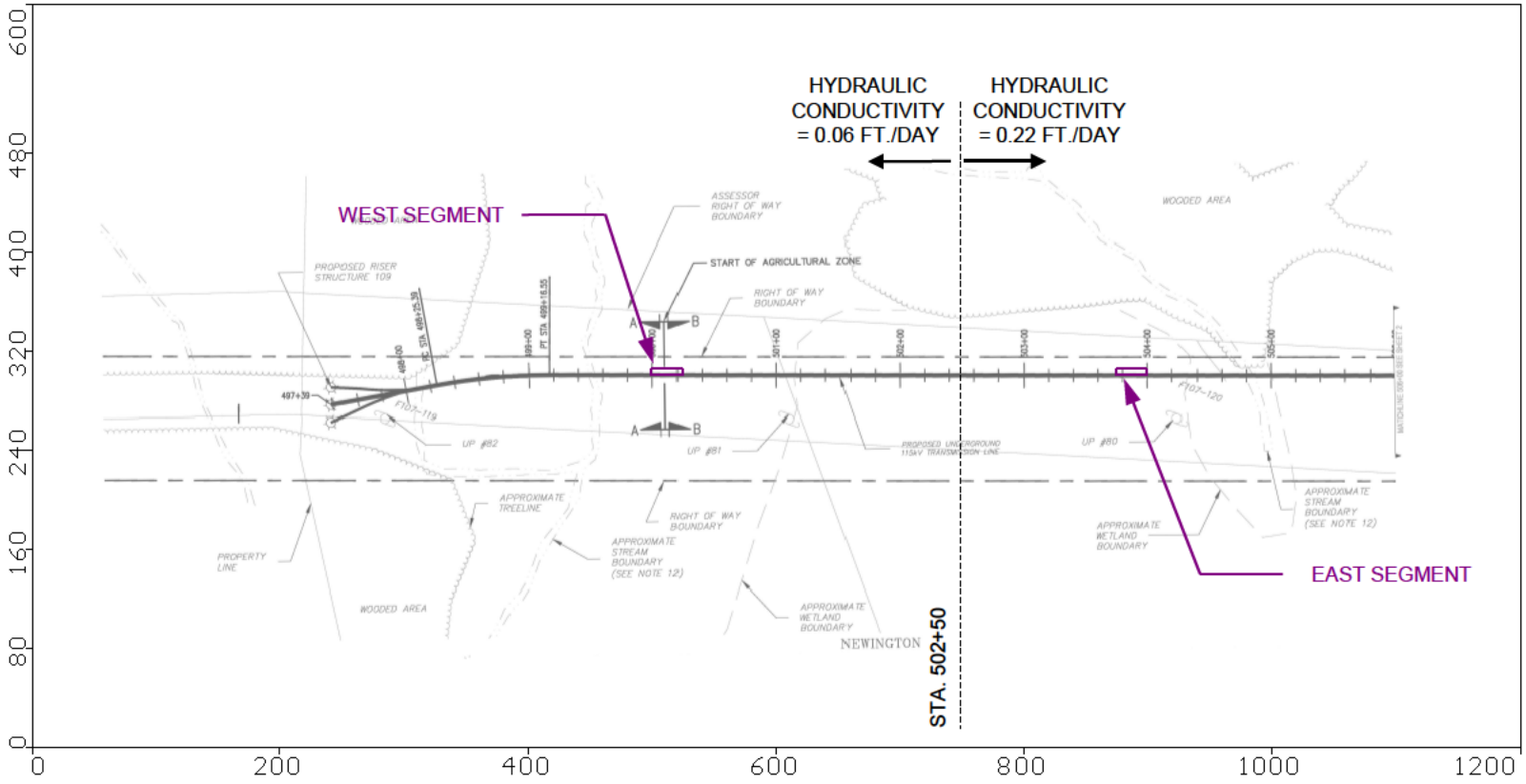
Results:

Results shown and tabulated on Figure 4. Comparatively, predicted rates increase disproportionately higher with the sand seam assumption in the east segment.

Limitations:

Model simulations represent seepage from soil strata represented as uniform, homogeneous, and isotropic. The soil properties modeled are represented by two borings and two hydraulic conductivity test results, which is a relatively low data density. Flow rate estimates may vary with additional information. Actual variability encountered may result in dewatering rates different than those predicted.

Potential water sources not modeled may also need to be considered for planning purposes, including but not limited to free drainage from soil while being excavated, storm runoff, channeling from high conductivity zones or other hydraulic connections to surface water, and subsurface features with contained or perched water.



0 100 200

SCALE, FEET

BASE PLAN SOURCE:
"115kV F107 UNDERGROUND TRANSMISSION LINE",
PLAN AND PROFILE VIEW, REVISION 7, 6/24/16

TRANSMISSION MAIN TRENCH DEWATERING
SEACOAST RELIABILITY PROJECT
NEWINGTON, NEW HAMPSHIRE

EVERSOURCE ENERGY

GEI Consultants

MODEL SPACE

Project 1607530 | June 2017 | Figure 1

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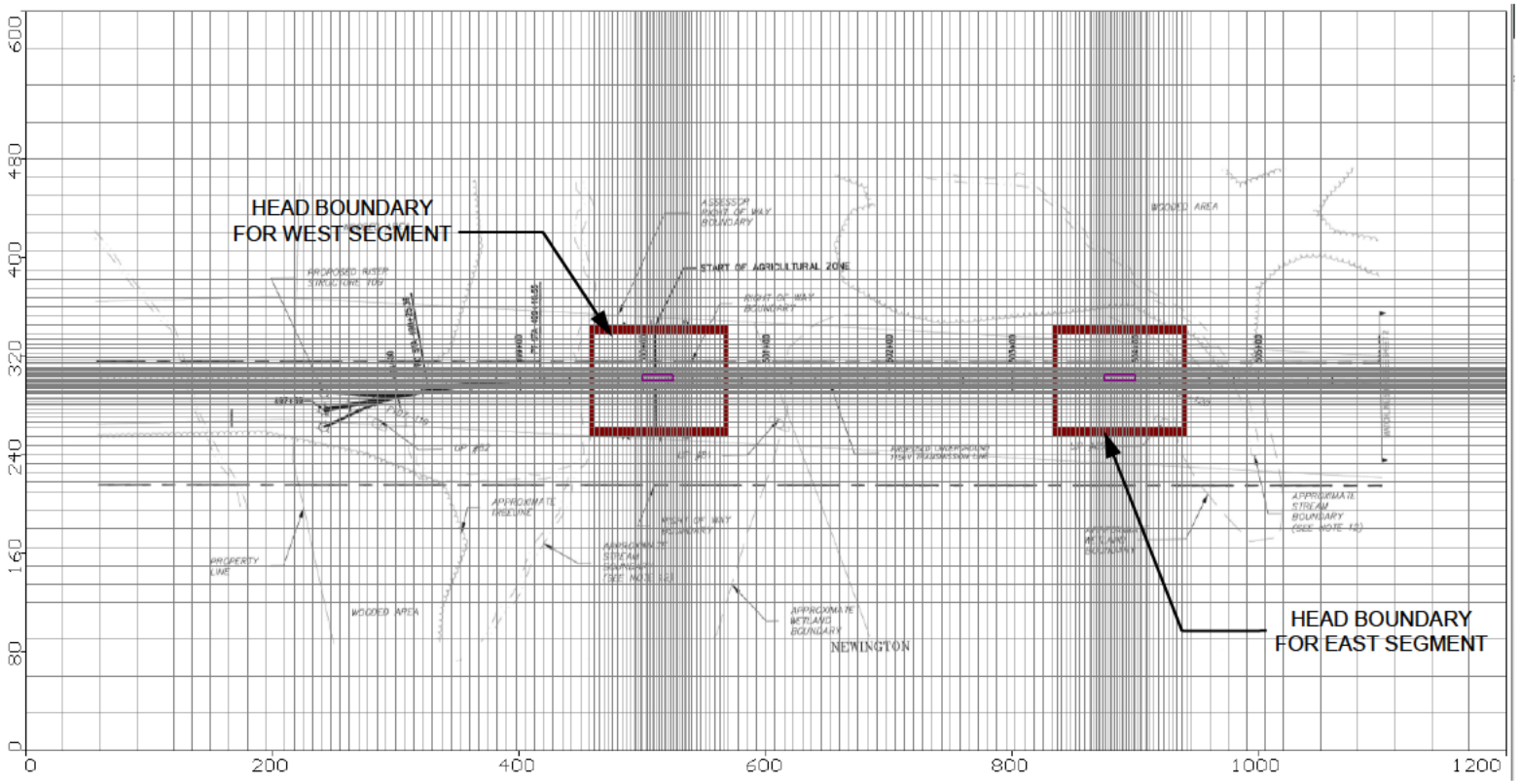


LEGEND

- MODEL COMPUTATIONAL GRID
- MODELED TRENCH SEGMENT
- MODELED CONSTANT-HEAD BOUNDARY LOCATION

0 100 200

SCALE, FEET

N

BASE PLAN SOURCE:
"115kV F107 UNDERGROUND TRANSMISSION LINE",
PLAN AND PROFILE VIEW, REVISION 7, 6/24/16

TRANSMISSION MAIN TRENCH DEWATERING
SEACOAST RELIABILITY PROJECT
NEWINGTON, NEW HAMPSHIRE

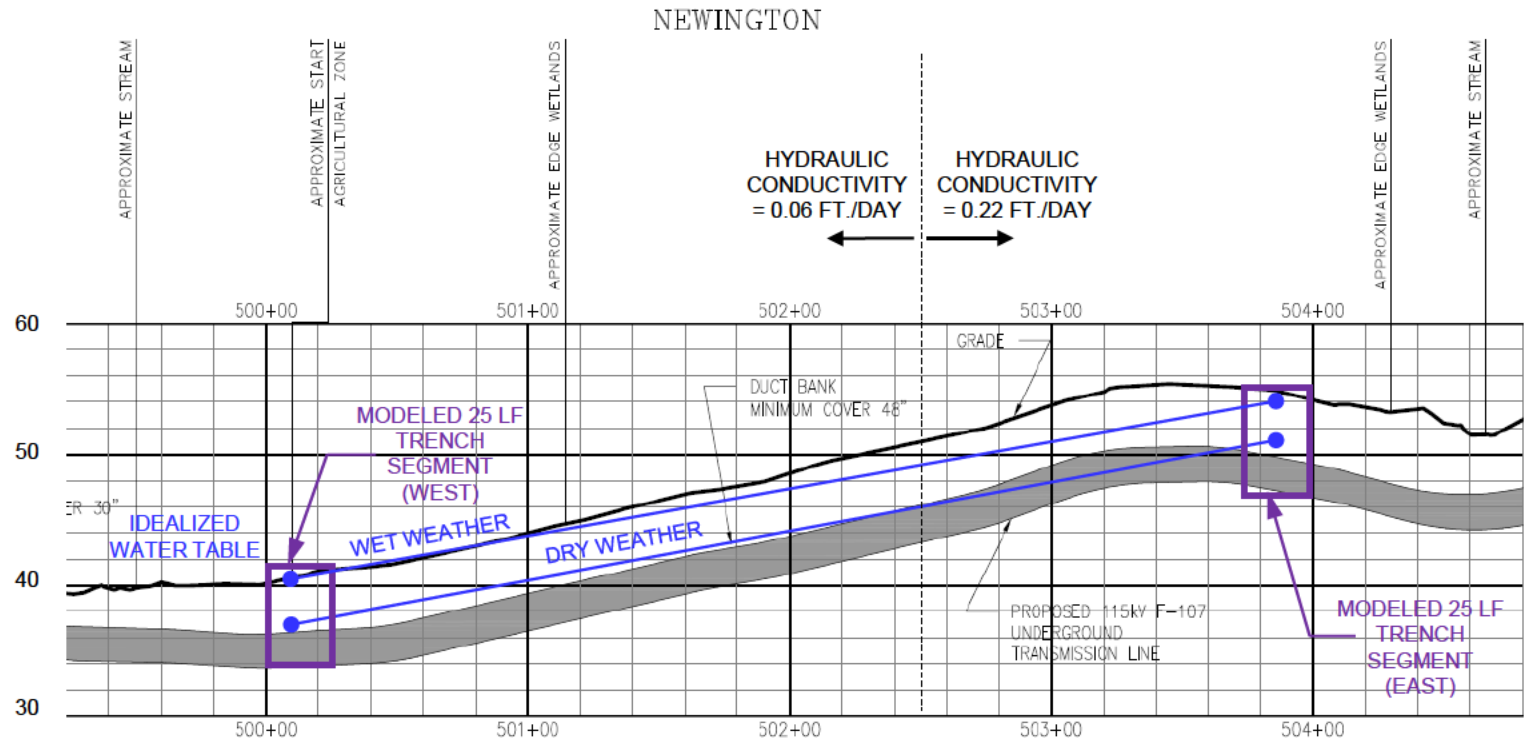
EVERSOURCE ENERGY

GEI Consultants

COMPUTATIONAL GRID

Project 1607530 | June 2017 | Figure 2

H \TECH\project\Figures.pptx



EAST – WEST CROSS SECTION ALONG TRENCH

LEGEND

- WATER TABLE ELEVATION USED IN MODEL FOR RESPECTIVE TRENCH SEGMENT. WEST USES MW101, EAST USES MW102.
- IDEALIZED WATER TABLE

0 100 200

SCALE, FEET

DRAWING SOURCE:
"115kV F107 UNDERGROUND TRANSMISSION LINE", PLAN AND PROFILE VIEW, REVISION 7, 6/24/16

TRANSMISSION MAIN TRENCH DEWATERING
SEACOAST RELIABILITY PROJECT
NEWINGTON, NEW HAMPSHIRE

EVERSOURCE ENERGY

GEI Consultants

IDEALIZED WATER TABLE PROFILE

Project 1607530 | June 2017 | Figure 3

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RESULTS SUMMARY

		LOW GROUNDWATER		HIGH GROUNDWATER	
Trench Segment	**Units**	**West**	**East**	**West**	**East**
Station	Ft.	500+00 to 500+25	503+75 to 504+00	500+00 to 500+25	503+75 to 504+00
Assumed Ground Surface	Ft.	41	55	41	55
Static Depth to Water (a)	Ft.	4.8	3.8	0.83	1.12
Static GW elev	ft. NAVD	37	51	40.2	54
Depth of Trench	Ft.	7	8	7	8
Drawdown	Ft.	3	4	6.2	7
Hyd. Conductivity	ft./day	0.06	0.22	0.06	0.22
Target GW elev	ft. NAVD	34	47	34	47
Dewatering Rate - no sand seam	gpd	45	486	104	942
Dewatering Rate - with sand seam	gpd	82	770	187	1466

a. Depth below ground surface at MW101 (west segment) or MW102 (east segment).

COMPUTED WATER TABLE ELEVATIONS
DEWATERING AT STEADY STATE
HIGH GROUNDWATER WITH SAND SEAM

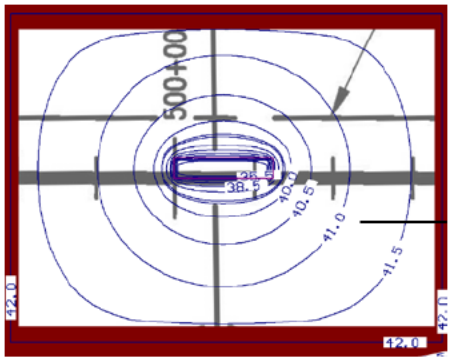
0 30 60

SCALE, FEET

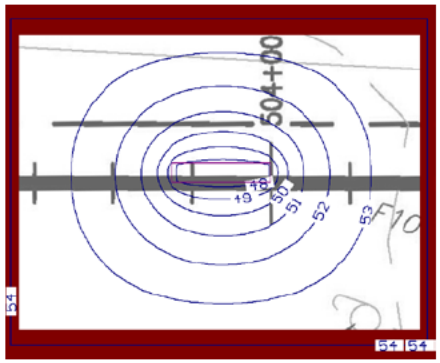
LEGEND

1.0 — MODEL-CALCULATED GROUNDWATER ELEVATION CONTOUR (FT.)

HEAD BOUNDARY



WEST SEGMENT



EAST SEGMENT

TRANSMISSION MAIN TRENCH DEWATERING
SEACOAST RELIABILITY PROJECT
NEWINGTON, NEW HAMPSHIRE

EVERSOURCE ENERGY

GEI Consultants

DEWATERING ESTIMATE AND DRAWDOWN PLOTS

Project 1607530 | June 2017 | Figure 4

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Appendix B

Pease Area of Special Notice Documents

DEPARTMENT OF THE AIR FORCE
AIR FORCE CIVIL ENGINEER CENTER

11 Aug 17

Jared Sheehan
Pease Development Authority
55 International Drive
Portsmouth, NH 03801

Re: Area of Special Notice for Eversource Utility Easement – May 23, 2017

Dear Jared.

With regard to the subject Area of Special Notice (ASN) request, the Air Force (AF) reviewed the information provided in order to identify potential impact to ongoing AF remedial activities. As noted in your request, segments of the project area east of Arboretum Drive are located within two Groundwater Management Zones (GMZ): the Landfill 5 GMZ and the Site 13 GMZ. Additionally, Air Force delineation efforts have identified perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) in groundwater originating from the former Pease Air Force Base. Two figures are attached to this letter depicting presumed extent of combined PFOS + PFOA concentrations in overburden and bedrock units. As you can see, there are areas where the proposed work is likely to encounter PFOS + PFOA at concentrations greater than the New Hampshire Department of Environmental Services (NH DES) Ambient Groundwater Quality Standards (AGQS). Saturated soils may also contain PFOS or PFOA due to the presence of these chemicals in the groundwater. The contractor must follow NH DES requirements for managing contaminated groundwater and soils in these areas. Please note the Air Force operated treatment system at Site 8 is not available to treat water generated by this activity. Otherwise, the AF concurs with the work as presented in the ASN letter. Please feel free to contact me at (207) 328-7109 x7 or by email at Peter.Forbes@us.af.mil if you have any questions

Peter W. Forbes

PETER W. FORBES, GS-13
Environmental Program Manager

2 Attachments:
1. Extent of PFOS + PFOA Concentration in Overburden Groundwater above AGQS
2. Extent of PFOS + PFOA Concentration in Bedrock Groundwater above AGQS

Jared Sheehan

From: Hilton, Scott <Scott.Hilton@des.nh.gov>
Sent: Wednesday, August 09, 2017 5:34 PM
To: Comstock, Gregg; Pelletier, Rene; Wiggin, Dori; Mauck, Ridge
Cc: Locker, Mitch; Jared Sheehan; FORBES, PETER W GS-13 USAF HAF AFCEC/CIBE; 'Daly, Michael'; Mongeon, Robin; Sandin, Peter
Subject: Eversource Seacoast Reliability Project
Attachments: PFOS+PFOA in Bedrock GW above AGQS.PDF; PFOS+PFOA in Overburden GW above AGQS.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Gregg

The Waste Management Division, DOD Sites Section has completed reviewing the Eversource Seacoast Reliability Project Soil and Groundwater Management Plan (Plan) as it pertains to proposed construction work in areas of Newington and the Pease Tradeport potentially impacted with PFC's or other contamination from past Air Force activities at the Former Pease AFB.

Comments.

1) The Frink Farm Property Soil and Groundwater Management Plan is located in Appendix A and was developed based upon specific boring and sampling work undertaken to better understand the conditions at the site. The data Eversource collected supports their proposed soil and groundwater management approach. It appears groundwater generated from the Knights Brook crossing area will be assumed to be contaminated with PFCs and will be treated either on or offsite and discharged under an applicable permit program . Given the PFC contamination associated with the Knights Brook area, these measures are appropriate. In the report's discussion of this dewatering and treatment location we note a discrepancy between the alignment station numbers between the "Project Area Plan" and the "Cross Section Knights Brook Tributary" and could not verify the exact area where groundwater treatment will be implemented. As an example HA-1 in the Project Area Plan is located at station 498+78.61, however in the Knights Brook Cross Section HA-1 is located at 497+60.5. This discrepancy needs to be clarified so the assumed area needing treatment can be verified.

2) Work outside the Frink property is addressed in the general Plan. On page 4, the Dewatering Section states that "We have assumed that groundwater generated during dewatering is acceptable for recharge within the Project Area." There does not appear to be any discussion regarding sampling procedures for the generated water to determine if contaminants are present above the AGQS and if treatment is needed. The Air Force has developed the attached PFC groundwater contamination maps for bedrock and overburden groundwater. The location of the Eversource work is also shown on the maps. While the maps are preliminary, and a GMZ has not been finalized, it is evident that nearly all of the Eversource work locations are within or near the inferred AGQS PFC groundwater contamination boundary and under these circumstances Eversource needs to include in the Plan a water sampling and testing program to determine the appropriate method of handling generated water.

3) Eversource should contact the Air Force to determine if water treatment at the Site 8 plant is an option as described in the Plan.

4) An Area of Special Notice approval from the Air Force/PDA is needed for work being conducted on the Pease Tradeport property. These comments do not supersede the ASN requirements and procedures. In addition to the PFC contamination, several of the Eversource excavations appear to be located within or on the established GMZ boundary of 2 Pease contaminated sites; Landfill 5 and the BFSA. Any excavation dewatering in these GMZ areas should also be sampled for metals and VOC's.

5) While our review focused on Pease related contamination, Eversource should evaluate if other contamination related to the past maintenance of powerlines could be associated with the soils or groundwater and if so this should be addressed in the Plan. For example past herbicide use should be examined, one concern would be the transport of potentially contaminated soils to off-site locations.

If you have any questions regarding these comments please give me a call.

Thanks
Scott

Scott Hilton
Waste Management Division
DOD Sites Section
603-559-1512

From: Comstock, Gregg
Sent: Tuesday, August 01, 2017 2:59 PM
To: Hilton, Scott; Locker, Mitch
Cc: Wiggin, Dori; Mauck, Ridge; Pelletier, Rene
Subject: SRP Soil and GW Mgmnt Plan

Hi Scott and Mitch:
Please review the Soil and Groundwater Management Plan for the Eversource Seacoast Reliability Project which is before the Site Evaluation Committee (SEC).

Please let Ridge, Dori and I know by August 15th if you have any comments. If that date doesn't work for you, please let me know when you think can get to it.

Thank you gents.
Best,
Gregg

Gregg Comstock, P.E.
Supervisor, Water Quality Planning Section
NH Department of Environmental Services, Watershed Management Bureau
29 Hazen Drive, PO Box 95
Concord, NH 03302-0095
603-271-2983
gregg.comstock@des.nh.gov

SYMBOL KEY

- Combined PFOS+PFOA Concentration > 0.07 µg/L
- (Dashed where Inferred)

Bedrock Groundwater

PFOS+PFOA in µg/L:

- ND
- >ND to < 0.07
- 0.07 to < 7
- 7 to < 70
- > 70

Residential Wells

PFOS+PFOA in µg/L:

- 0.7 to < 7
- 0.07 to < 0.7
- >ND to < 0.07
- ND

- Eversource Utility Easement
- Direct Embed
- Drilled Pier
- Modeled Groundwater Elevation Contours
- Surface Water Bodies
- Air Force National Guard / Army National Guard Boundary
- Installation Boundary

Air Force Civil Engineer Center
2261 Hughes Avenue
Building 171, Ste 155
JBSA Lackland, Texas 78236

Extent of PFOS + PFOA Concentration in Bedrock Groundwater above AGQS

Former Pease Air Force Base, Portsmouth, New Hampshire

0 150 300 600 900 1,200 1,500 Meters

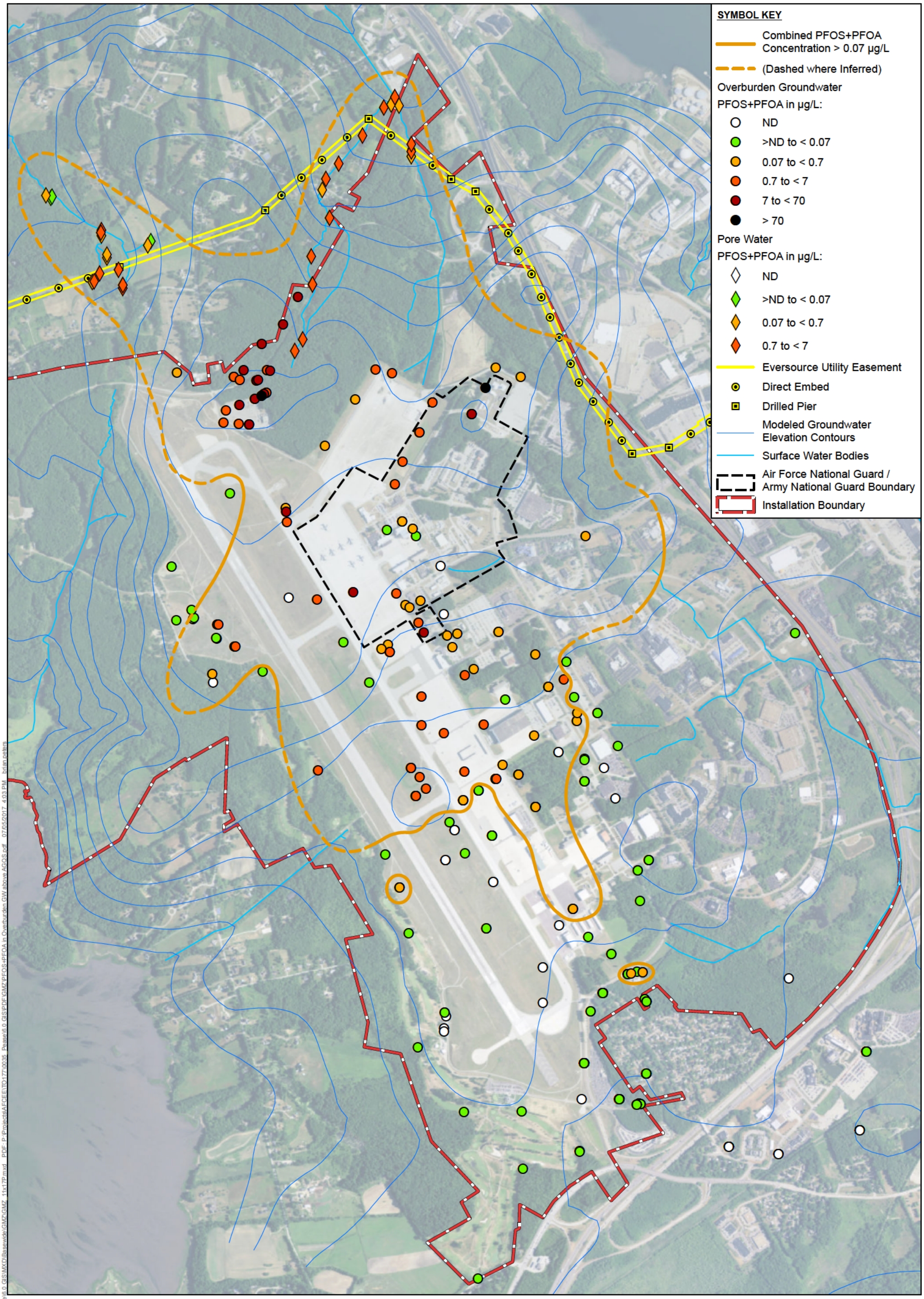
0 750 1,500 3,000 4,500 6,000 Feet

N

NOTES:
-Aerial Imagery obtained through ESRI Online Services

7/5/2017	Rev:	GMZ_11x17P
Drawn: BRP	Chk: RS	PROJ: 775361201

Document: P:\Projects\AFCEE\TO177\0035_Pease\6.0 GIS\MXD\Basewide\GMZ\GMZ_11x17P.mxd PDF: P:\Projects\AFCEE\TO177\0035_Pease\6.0 GIS\PDF\GMZ\PFOS+PFOA in Bedrock GW above AGQS.pdf 07/05/2017 4:03 PM brian.peters



Air Force Civil Engineer Center
2261 Hughes Avenue
Building 171, Ste 155
JBSA Lackland, Texas 78236

Extent of PFOS + PFOA Concentration in Overburden Groundwater above AGQS

Former Pease Air Force Base, Portsmouth, New Hampshire

0 150 300 600 900 1,200 1,500 Meters
0 750 1,500 3,000 4,500 6,000 Feet

N

NOTES:
-Aerial Imagery obtained through ESRI Online Services

7/5/2017	Rev:	GMZ_11x17P
Drawn: BRP	Chk: RS	PROJ: 775361201

Document: P:\Projects\AFCEE\TO177\0035_Pease\6.0 GIS\MXD\Basewide\GMZ\GMZ_11x17P.mxd PDF: P:\Projects\AFCEE\TO177\0035_Pease\6.0 GIS\PDF\GMZ\PFOS+PFOA in Overburden GW above AGQS.pdf 07/05/2017 4:03 PM brian.peters

S:\FED PROJECTS\AFCEE-1370710\DO 01 - Pease\PEASE AFB\Basewide\Property Transfer\LUC-IC Plan\LUC-01.dwg

REVISION	DESCRIPTION	DATE	BY
1	Combined PDA basemap of current conditions w/ AF Parcel boundaries. Added "Excepted Parcels", "Use Restriction Zones", and "GMZ Boundaries".	9/5/01	V.E.N.
2	Revisions per electronic mail request dated 1/7/02 (i.e. Site 49 GMZ boundary, Zone 3 URZ, etc.)	1/23/02	V.E.N.
3	Revisions to Zone 3 GMZ and Site 49 URZ	6/18/02	V.E.N.
4	Revisions to Zone 3 and Site 49 Excepted Parcel Areas	9/30/02	V.E.N.
5	Revisions Site 49 Excepted Parcel Areas	3/25/04	V.E.N.
6	General Revisions	1/6/06	V.E.N.

PARCEL ID	CONV. TYPE	PROPERTY RECIPIENT	ACRES
L,M	FAT	U.S. FISH AND WILDLIFE SERVICE	1054.00
J	PBC	STATE OF NEW HAMPSHIRE, DEPT OF TRANSPORTATION	19.19
F	PBC	PEASE DEVELOPMENT AUTHORITY	151.88
OLD STONE SCHOOL	S	TOWN OF NEWINGTON	1.41
A (PARTIAL)	PBC	PEASE DEVELOPMENT AUTHORITY	1160.5
C	PBC	PEASE DEVELOPMENT AUTHORITY	171.0
D	PBC	PEASE DEVELOPMENT AUTHORITY	75.00
E	PBC	PEASE DEVELOPMENT AUTHORITY	165.00
G	PBC	PEASE DEVELOPMENT AUTHORITY	150.00
G.1	PBC	PEASE DEVELOPMENT AUTHORITY	35.00
H	PBC	PEASE DEVELOPMENT AUTHORITY	400.00
I	PBC	PEASE DEVELOPMENT AUTHORITY	202.00
I.1	PBC	PEASE DEVELOPMENT AUTHORITY	184.00
K	PBC	PEASE DEVELOPMENT AUTHORITY	260.00
McINTYRE ROAD	S	TOWN OF NEWINGTON	8.30
B	NONE	AIR FORCE RETAINED	218.00

north

Newington Town Forest

K

LF-5 GMZ

SITE 8 GMZ

FDTA-2 Site 8

CRD-1 Site 9

CRD-1 URZ

CRD-1 GMZ

SITE 8 URZ

Site 8 Recharge Trench

LANDFILL 5 URZ

Landfill 5 Site 5

I_1

SITE 13 GMZ

BFSA Site 13

BFSA URZ

UPLAND EASEMENTS

M

B

NH ANG

J

LF-1 GMZ

FLRS URZ

SITE 49 URZ

SITE 49 GMZ

Site 49

LANDFILL 1 URZ

ZONE 2 URZ

FDTA-1 Site 7

LF-1 Site 1

D

I

Motor Pool Site 72 (UST)

Bldg 234 Site 73

SITE 72 URZ

ASBESTOS BURIAL SITE

BA-1 Site 22

LFTS Site 10

Bldg 136 Site 81 (UST)

ZONE 3 URZ

SITE 72 GMZ

L

ZONE 2 GMZ

SITE 81 GMZ

A

Bldg 229 Site 33

Bldg 226 Site 35

BA-2 Site 37

SITE 32 URZ

C

H

Bldg 227 Site 39

Bldg 119 Site 36

ZONE 3 GMZ

APPROXIMATE WETLAND PROTECTION ZONE

SITE 16 URZ

E

Haven Well

Bldg 113 Site 32

PCB Spill Site 16 (UST/IRP)

JETC Site 34

CRD-2 URZ

ASBESTOS BURIAL SITE

FLRS GMZ

CRD-2 Site 17

CRD-2 GMZ

G_1

WETLAND PROTECTION ZONE

LF-6 Site 6

LF-6 GMZ

Grafton Ditch Site 20

Zone 3 Recharge Trench

SITE 45 URZ

G

Harrison Well

OJETS Site 45

SITE 45 GMZ

F

Smith Well

MIDDLE MARKER

LEGEND

BA	BURN AREA
BFSA	BULK FUEL STORAGE AREA
CRD	CONSTRUCTION RUBBLE DUMP
FAT	FEDERAL AGENCY TRANSFER
FDTA	FIRE DEPARTMENT TRAINING AREA
FLRS	FLIGHTLINE REFUELING SYSTEM
GMZ	GROUNDWATER MANAGEMENT ZONE
JETC	JET ENGINE TEST CELL
LF	LANDFILL
LFTS	LEADED FUEL TANK SLUDGE AREA
OJETS	OLD JET ENGINE TEST STAND
PBC	PUBLIC BENEFIT CONVEYANCE
PCB	POLYCHLORINATED BIPHENYL
S	STATUTE
UST	UNDERGROUND STORAGE TANK
URZ	USE RESTRICTION ZONE

- GMZ BOUNDARY
- RECHARGE TRENCH
- USE RESTRICTION ZONE
- WETLAND RESTORATION/PRESERVATION AREA
- NEWINGTON TOWN FOREST
- ASBESTOS BURIAL SITE
- STREAM/DITCH
- BASE BOUNDARY
- A PARCEL IDENTIFICATION

800 0 800 1600

SCALE IN FEET
1"=800'

FORMER PEASE AFB, NEW HAMPSHIRE

INSTITUTIONAL CONTROLS MAP

MWH

DATE

JANUARY 13, 2006

certain environmental conditions, the Grantor shall not be liable for any latent or patent defects in the Property, except to the extent required by applicable law.

VI. NOTICES AND COVENANTS RELATED TO SECTION 120(h)(3) OF THE COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND LIABILITY ACT (CERCLA), AS AMENDED, (42 U.S.C. §9620(h)(3)).

A. Pursuant to section 120(h)(3)(A)(i) of CERCLA, the following is notice of hazardous substances on the Property, and a description of remedial action taken by the Grantor concerning the Property.

1. The Grantor has made a complete search of its files and records. Exhibit B contains a table with the name of hazardous substances stored for one year or more, or known to have been released or disposed of, on the Property; the quantity in kilograms and pounds of the hazardous substance stored for one year or more, or known to have been released, or disposed of, on the Property; and the date(s) on which such storage, release, or disposal took place.

2. A description of the remedial action(s) taken by the Grantor on the Property regarding hazardous substances is contained in Exhibit B.

3. Pursuant to section 120(h)(3)(A)(ii) of CERCLA, the United States covenants and warrants:

(a) that all remedial action necessary to protect human health and the environment with respect to hazardous substances remaining on the Property has been taken before the date of this Deed; and

(b) any additional remedial action found to be necessary after the date of this Deed for contamination on the Property existing prior to the date of this Deed will be conducted by the United States.

This warranty will not apply in any case in which any grantee of the Property, or any part thereof, is a potentially responsible party under CERCLA with respect to the Property before the date on which such grantee acquired its interest in the Property, or is a potentially responsible party as a result of an act or omission affecting the Property. For the purposes of this warranty, the phrase "remedial action necessary" does not include any performance by the United States, or payment to the Grantee from the United States, for additional remedial action that is required to facilitate use of the Property for uses and activities prohibited by those environmental use restrictive covenants set forth in section VI.B. below, as may be modified or released pursuant to section VI.C.

4. The United States has reserved a no-cost right of access to the Property in the Reservation section of this Deed in order to perform any remedial or corrective action as required by CERCLA section 120(h)(3)(A)(iii).

NOTICE

BREACH OF ANY ENVIRONMENTAL USE RESTRICTIVE COVENANT IN SECTION VI.B. BELOW, MAY AFFECT THE FOREGOING WARRANTY

B. Environmental Use Restrictive Covenants

1. For purposes of the environmental use restrictive covenants in this section, the term "Property" includes any part of the Property specifically described on Exhibit A to this Deed to which one or more of these environmental restrictive covenants may apply.

2. The following environmental use restrictive covenants are being created to protect human health and the environment with regard to residual contamination remaining on the property and are a component of the remedial action referred to in Section A.2 above:

(a) The groundwater within the areas described in Exhibit C as "Groundwater Management Zones" (hereafter GMZs) is contaminated with chlorinated volatile organic compounds, petroleum related hydrocarbons, or other substances deemed potentially harmful to human health. In order to protect the public and site personnel (from exposure to the contaminants), and to protect the integrity of the Grantor's remedial activities and systems, and to prevent interference with such remedial activities, subject to paragraph VI.C. below, the Grantee is prohibited from installing a well within a GMZ except for the purpose of determining or monitoring groundwater quality or quantity.. In addition, subject to paragraph VI.C. below and subparagraphs (b) and (c) below, in those areas on the Property located outside the GMZs described in Exhibit C, the Grantee is prohibited from extracting any groundwater, injecting water into the ground or applying surface water in a manner that causes the migration of any contaminated groundwater in excess of ambient groundwater quality standards to a point beyond the applicable GMZ. Nothing contained in this section shall prohibit the Grantee from creating new drinking water supply wells to replace in kind drinking water supply wells existing on the Property on or before the date hereof, namely, the Smith Well, the Harrison Well, and the Haven Well.

(b) The Grantee may extract groundwater from the Smith and Harrison wells, and any replacement thereof, up to the sustainable yield for each well. With respect to the so-called Haven Well, or any replacement thereof, the Grantee shall not exceed the water consumption rates through the year 2010, which are described in Exhibit D hereto. Notwithstanding the foregoing limitations, the Grantor may grant exceptions to the pumping limits referred to in Exhibit D upon the written request of the Grantee. The Grantee shall bear all costs whatsoever in obtaining approval to exceed these pumping limitations.

(1). The Grantor shall release the pumping restrictions on the so-called Haven Well, or any replacement thereof, if at any time the Grantor determines such restriction is no longer needed. If at the end of the period described in Exhibit D, the Grantor determines a limitation on use of the Haven Well or any replacement is still required, the Grantee shall be limited to use of the Haven Well and/or replacement up to the limits authorized in the year 2010.

(2). During the period of the restriction described in paragraph 2(b) above, the Grantee shall consult with the Grantor at least annually regarding the usage of the Haven Well, or any such replacement well, and its potential to move contamination from various plumes within the well's zone of influence. The foregoing consultation shall occur during March, prior to the Grantee's peak water demand season. This requirement to consult with the Grantor may be waived upon the Grantee obtaining the written approval of the Grantor.

(3). As long as the Grantee is operating within the limits authorized under either Exhibit D or paragraph VIB2(b)(1) of the deed, the Grantor shall operate a treatment plant to address any contaminated groundwater extracted from the Haven Well. Notwithstanding the foregoing, the Grantor will not be responsible for the cost of operating the treatment plant if the Grantee extracts water in excess of the pumping restrictions contained in this deed and such excess withdrawal is the sole reason that operation of the treatment plant is required.

(c) The surface and subsurface soils within the areas described in Exhibit C as "Use Restriction Zones" (hereafter URZs) are contaminated with chlorinated volatile organic compounds, petroleum related hydrocarbons, or other substances deemed potentially harmful to human health. In order to prevent direct exposure to and protect the public and site personnel (from exposure to the contaminants), and to protect the integrity of the Grantor's remedial activities, and to prevent interference with such remedial activities, subject to paragraph VI.C. below, the Grantee is prohibited from using any portion of the Property within the URZs for residential use, childcare centers, playgrounds, athletic fields, or elementary or secondary schools. The Grantee is also prohibited from any digging, excavation, or construction within the URZs unless the Grantee obtains approval from the Grantor as provided in the Memorandum of Understanding between the Pease Development Authority and the U.S. Air Force attached hereto as Exhibit E or paragraph V.C. below in the event this restriction may be released.

(d) In order to protect the integrity of the Grantor's remedies with respect to the URZs described as Construction Rubble Dump 1 (CRD-1 Site 9) Construction Rubble Dump 2 (CRD – 2 Site 17), and Landfill 5 (Site 5), as described in Exhibit C, the Grantee shall take no action that impacts the integrity of the landfill cover system at these URZs. Such prohibited activities include but are not limited to use of ATV or other similar vehicles, excavation or other activities that lead to erosion or damage of the landfill cover system.

(e) The Grantee covenants not to disturb, move, damage, mar, tamper with, interfere with, obstruct, or impede any monitoring wells, treatment facilities, piping, and other facilities associated with any environmental investigation, response action or other corrective action on the Property. The Grantee covenants not to disturb buried asbestos-containing material (ACM) or associated cover material in the ACM Zones described on Exhibit C without the prior written approval of the NHDES Waste Management Division.

3. It is the intent of the Grantor and the Grantee that the Environmental Use Restrictive Covenants in this section bind the Grantee and shall run with the land. It is also the intent of the Grantor and the Grantee that the Grantor will retain the right to enforce any restrictive covenant in this section through the chain of title, in addition to any State law that requires the State

to enforce any restrictive covenant in this section. The Grantee covenants to insert all of this section in any deed to the Property that it delivers.

C. Release of Environmental Use Restrictive Covenants.

1. The Grantee may request from the United States a modification or release of one or more of the environmental use restrictive covenants in whole or in part in this section, subject to the notification and concurrence or approval of the NHDES and EPA Region 1. In the event the request of the Grantee for modification or release is approved by the United States, NHDES, and EPA Region 1, the United States agrees to modify or release the covenant (the "Covenant Release") giving rise to such environmental use restriction in whole or in part. The Grantee understands and agrees that all costs associated with the Covenant Release shall be the sole responsibility of the Grantee, without any cost whatsoever to the United States. The United States shall deliver to the Grantee in recordable form the Covenant Release. The execution of the Covenant Release by the United States shall modify or release the environmental use restrictive covenant with respect to the Property in the Covenant Release.

2. In the event that the environmental use restrictive covenants contained in this section are no longer necessary, the United States will record any appropriate document modifying or removing such use restrictions, as appropriate.

VII. OTHER COVENANTS

A. Airport Obligations. By the acceptance of this Deed or any rights hereunder, the Grantee, for itself, its successors and assigns, agrees that the transfer of all the Property transferred by this Deed, is accepted subject to the following terms, restrictions, reservations, covenants, and conditions set forth in subparagraphs 1 and 2 of this paragraph, which shall run with the land, provided that the Property transferred hereby may be successively transferred only with the proviso that, unless otherwise approved by the Federal Aviation Administration (FAA), any such subsequent transferee assumes all of the obligations upon the Grantee by the provisions of this Deed:

1. That, except as provided in subparagraph 1 of the below paragraph B, the property transferred by this instrument shall be used for public airport purposes for the use and benefit of the public, on fair and reasonable terms and without unjust discrimination and without grant or exercise for any exclusive right for use of the airport within the meaning of the term "exclusive right" as used in subparagraph 3 of the below paragraph B. As used in this instrument, the term "airport" shall be deemed to include all land, buildings, structures, improvements and equipment used for public airport purposes.

2. That, except as provided in subparagraph 1 of the below paragraph B, the entire landing area, as defined in 49 U.S.C. 40102(28) and Federal Aviation Regulations pertaining thereto, and all structures, improvements, facilities and equipment in which this Deed transfers any interest shall be maintained for the use and benefit of the public at all times in safe and serviceable condition,

Appendix C

Contractor Means & Methods Summary

Appendix C-1 Soil and Groundwater Management Plan for Construction of Structures from the Crossings Mall in Newington East to the Portsmouth Substation – May 3, 2019

Appendix C-2 Construction Dewatering Plan Details for Dewatering at Three Locations Requiring an EPA NPDES Dewatering or Remediation General Permit for Discharge to Surface Water Bodies.

Appendix C-3 Excavation and Stockpile Management Plan

Appendix C-4 Supplemental Information - Soil and Groundwater Management at the Frink Farm Property

Appendix C-1

Soil and Groundwater Management Plan for Construction of Structures from the Crossings Mall in Newington East to the Portsmouth Substation – May 3, 2019

EVERSOURCE

Soil and Groundwater Management Plan for Construction of Structures from the Crossings Mall in Newington East to the Portsmouth Substation

Seacoast Reliability Project – SEC Docket #2015-04

May 3, 2019

Pursuant to NHDES Wetlands Condition 38 in the NH Site Evaluation Committee *Order and Certificate of Site and Facility with Conditions* issued on January 31, 2019, in lieu of final approval of the SRP Soil and Groundwater Management Plan dated July 18, 2018, and in order to meet outage schedule requirements for a May 6, 2019 work start, Eversource requests that the following protocol be reviewed and approved by the Department for management of soils and groundwater resulting from the installation of Structures located within the Crossings Mall, adjacent Woodbury Avenue, and east within the ROW to Portsmouth Substation. Specifically, this request is for structure locations F-107 131/138 through F-107 144/151 and E-194 10/7 through E-194 7/4. (Refer to the attached Environmental Maps Sheets 29, 30 and 31). Eversource's contractor, JCR Construction and their environmental consultant, GZA, propose to use Roll Off Trailers (roll offs) for temporary storage of soils. This will allow for containment of soil resulting from drilling and excavation activities without placement of soil on the ground in these areas. The soils will be sampled while contained in the roll offs, consistent with disposal facility requirements, then loaded on trucks for eventual transport and disposal at a designated facility in accordance with all applicable laws and regulations.

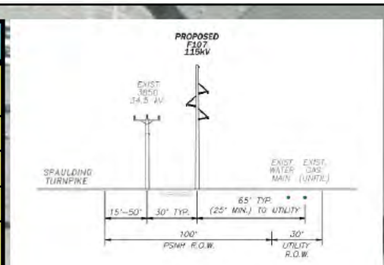
Eversource proposes the following general procedure to manage soils in this section of the ROW:

- Roll-offs will be positioned adjacent to the drilling location for loading. Once loaded, roll offs may be repositioned within the ROW corridor.
- Roll offs will be lined and water tight in order to be prepared for saturated soils, as needed.
- Polyethylene sheeting will be placed on the ground surface within the work area, so that spillage from drill bits and excavator buckets will be contained on polyethylene sheeting for transfer into the roll off, as needed.
- At structure locations where there is suitable area in the ROW to reuse unsaturated soils (soils that would not be impacted by a potential zone of groundwater contamination), these soils will be initially placed on polyethylene sheeting and field screened with a photoionization detector (PID) and inspected for visual and/or olfactory evidence of contamination. If there is visual, olfactory or PID screening evidence of contamination, these soils will be placed into the roll-off containers along with saturated soils for characterization and offsite disposal.
- Where there is not the opportunity for reuse of clean unsaturated soils within the ROW, unsaturated (above water table) and saturated soils will be placed into separate roll offs.
- Saturated soils will be dewatered prior to disposal and consistent with facility requirements.
- Eversource contractors will coordinate activities so that soils from each Structure/work location are contained within the same roll-offs.
- It is estimated, based on anticipated quantities in this area, that 20 – 25 roll offs will be required for soil storage.
- All roll offs will be stored within the Eversource ROW and covered each day after use.

If dewatering of drilling excavations and/or soil dewatering is needed, a vacuum truck will be used to recover groundwater from these processes, which will be transported off site and disposed of at a treatment facility in accordance with all applicable laws are regulations.

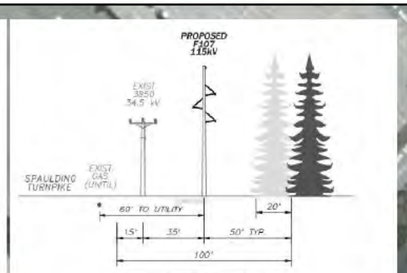
At the completion of these activities a report that documents the storage, sampling and disposal of soil and recovery and disposal of groundwater will be provided to the Department.

Wetland ID	Impact Type	Area (Sq. Ft.)
NW1 (PEM1/SS1)	Permanent (Str. F107-135)	20
NW1 (PEM1/SS1)	Temporary	6583
NW3 (PEM1/SS1)	Temporary	1256
NW3 (PEM1/SS1)	Temporary	4885
NW3 (PEM1/SS1)	Permanent (Str. F107-133)	20
NW43 (PEM1E)	Temporary	4101
NW43 (PEM1E)	Permanent (Str. F107-138)	0
NW45 (PEM1/SS1B)	Temporary	14112



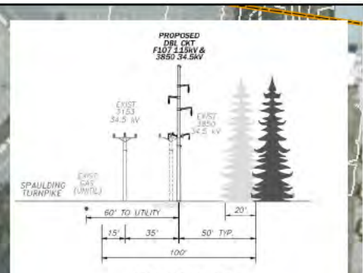
SECTION 27

PROPOSED F107 SINGLE CIRCUIT ARBORETUM DRIVE TO R.O.W. REDUCTION
STR. 129 – STR. 132
(2500' ±)



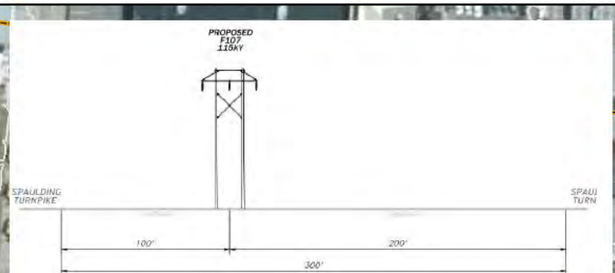
SECTION 28

PROPOSED F107 SINGLE CIRCUIT R.O.W. REDUCTION TO LINE 3850 TAP
STR. 133 – STR. 135
(850' ±)



SECTION 29

PROPOSED 3850/F107 DOUBLE CIRCUIT LINE 3153 ENTERS R.O.W. TO SPAULDING TURNPIKE CROSSING
STR. 135 – STR. 137
(700' ±)



SECTION 30

PROPOSED F107 SINGLE CIRCUIT SPAULDING TURNPIKE CROSSING TO LINE E194 CROSSING
STR. 138 – STR. 140
(1500' ±)

LL# 423.06
J.C. Penney Co. Inc.

LL# 424.05
Owner to be Determined

LL# 424
Sbaf Running
Fox, Inc C/O Keypoint Partners, LLC

LL#

Matchline 29

Matchline 28

Spaulding Tpke NB Exit 1 On ramp (Gosling Rd)

Spaulding Tpke N

Spaulding Tpke S

Spaulding Tpke SB Exit 1 Off ramp (Gosling Rd)

LL# 438.04
Town of Newington

LL# 438
Pease Development Au hority

Arboretum Dr

NW100 PEM1E

NS107 R4SB4

NW43 PEM1E

NW3 PEM1/SS1

NW1 PEM1/SS1

NW45 PEM1/SS1B

NHDOT LAROW

NS5 n/a

F107-125
F107-132
F107-126
F107-133
F107-127
F107-134
F107-128
F107-135
F107-129
F107-136
F107-130
F107-137
F107-131
F107-138

Parcel boundary and owner data were acquired from municipal databases as of October 2017.

The boundaries for the historic sites are from GRANIT. For a more precise depic ion of historic site boundaries see the NH DHR Project Area Form in Appendix 10.

Service Layer Credits: Copyright:© 2014 Esri, granit.edu aerial photos 2015.

Date : 7/25/2018

Project No: 22860.003

Drawn By: dpeletier

- Approximate Parcel Boundary
- PSNH Fee Area
- Project Corridor
- Work Pad

Roads
- Local
- Not Maintained
- Private
- State
- Railroad
- Access Road
- Access Rd. Pending Owner Approval

- Existing Str (Remain)
- Existing Str (Removed/Modified)
- Underground Cable
- Silt Curtain
- Silt Fence, Hay Bale, Erosion Control Mix Berm
- Straw Wattle
- Wetland
- Prime Wetland
- Wetland Impact (PERM)
- Wetland Impact (TEMP)
- Town Boundary

- Stream Centerline
- Stream Top of Bank
- Temporary Culvert
- Stonewall alignment
- Temporary Mat Bridge
- NH DOT Right-of-way
- Historical Sites
- Designated River Buffer 250'
- Conservation Lands
- 100 Year Floodplain
- F107-107 Permitting Structure #s
- F107-107 Construction Structure #s
- DW56 PSS1 Wetland Number & Cover Type

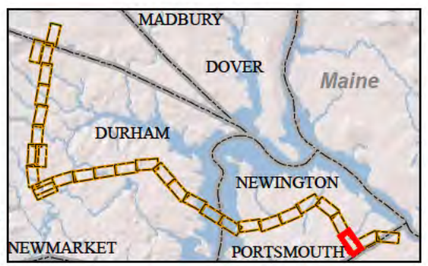
- <all other values>

Structures
- Direct Embed
- Drilled Pier
- Relocated Distribution
- Steep Slope BMPs
- Tree Clearing
- Stream Buffer
- 2ft Contour
- Tidal Buffer Zone
- Highest Observable Tide Line/Reference Line (4ft Contour)
- Mean Lower Low Water

N W E S

0 75 150 300 Feet

1 inch = 150 feet



EVERSOURCE ENERGY

NORMANDEAU ASSOCIATES
Environmental Consultants

Seacoast Reliability Project

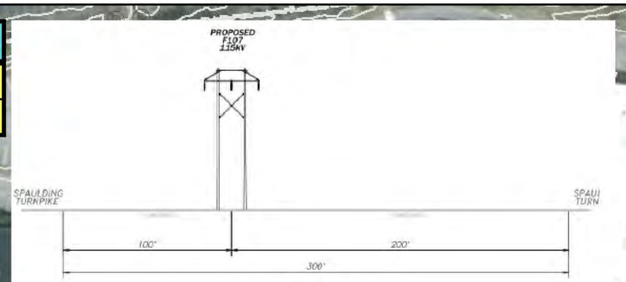
Revised Environmental Maps

STATE OF NEW HAMPSHIRE
SARAH D. ALLEN
No. 083
CERTIFIED WETLAND SCIENTIST

7/16/18

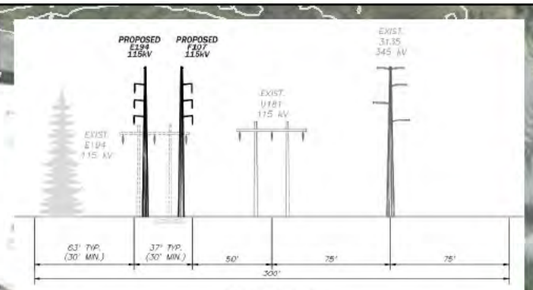
Path: J:\Projects\PSNH_F107\MXD\SRP_MapSet_Supplement4.mxd

Wetland ID	Impact Type	Area (Sq. Ft.)
NW42 (PEM1/UB1E)	Temporary	765
NW43 (PEM1E)	Temporary	4101



SECTION 30

PROPOSED F107 SINGLE CIRCUIT SPAULDING TURNPIKE CROSSING TO LINE E194 CROSSING
STR. 138 – STR. 140
(1500' ±)



SECTION 31

PROPOSED F107 SINGLE CIRCUIT
E194 CROSSING TO 3135 CROSSING
STR. 141 – STR. 144
(2100' ±)

LL# 424.05
LL# 424.06
LL# 439.01 FCPT Restaurant Properties, LLC
LL# 424.09 2061 Woodbury Avenue, LLC
LL# 439 Realty Income Corporation C/O Ntw LLC, Marvin Poer & Co.
LL# 446.01 TD Bank-AKA Bank of NH (banknorth), Facili
LL# 424.11 Town of Newington
LL# 446.02 Dilorenzo Real Estate, LLC
Woodbury Ave
LL# 424 Sbaf Running Fox, Inc C/O Keypoint Partners, LLC
LL# 424 Sbaf Running Fox, Inc C/O Keypoint Partners, LLC
LL# 446 Dilorenzo Real Estate, LLC
E194-8
F107-136
E194-9
F107-135
E194-6
F107-142
NW42 PEM1/UB1E
NW41 PEM1E
NW39 PEM1/SS1E
LL# 443 Rpi Newington Realty LLC
E194-10
F107-134
E194-7
F107-141
F107-133
F107-140
F107-132
F107-139
NW43 PEM1E
NH-DOT LAROW
LL#
LL# 438.04 Town of Newington
LL# 440 Toys 'R' Us
LL# 441 Sbaf Running Fox, Inc C/O Keypoint Partners, LLC

Parcel boundary and owner data were acquired from municipal databases as of October 2017.

The boundaries for the historic sites are from GRANIT. For a more precise depic ion of historic site boundaries see the NH DHR Project Area Form in Appendix 10.

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Date : 7/25/2018
Drawn By: dpelletier
Project No: 22860.003

- Approximate Parcel Boundary
- PSNH Fee Area
- Project Corridor
- Work Pad

Roads
- Local
- Not Maintained
- Private
- State
- Railroad
- Access Road
- Access Rd. Pending Owner Approval

- Existing Str (Remain)
- Existing Str (Removed/Modified)
- Underground Cable
- Silt Curtain
- Silt Fence, Hay Bale, Erosion Control Mix Berm
- Straw Wattle
- Wetland
- Prime Wetland
- Wetland Impact (PERM)
- Wetland Impact (TEMP)
- Town Boundary

- Stream Centerline
- Stream Top of Bank
- Temporary Culvert
- Stonewall alignment
- Temporary Mat Bridge
- NH DOT Right-of-way
- Historical Sites
- Designated River Buffer 250'
- Conservation Lands
- 100 Year Floodplain
- F107-107 Permitting Structure #s
- F107-107 Construction Structure #s
- DW56 PSS1 Wetland Number & Cover Type

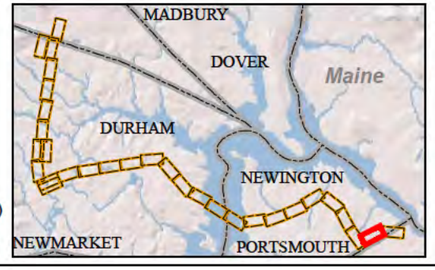
- <all other values>

Structures
- Direct Embed
- Drilled Pier
- Relocated Distribution
- Steep Slope BMPs
- Tree Clearing
- Stream Buffer
- 2ft Contour
- Tidal Buffer Zone
- Highest Observable Tide Line/Reference Line (4ft Contour)
- Mean Lower Low Water

N W E S

0 75 150 300 Feet

1 inch = 150 feet



EVERSOURCE ENERGY

Seacoast Reliability Project

Revised Environmental Maps

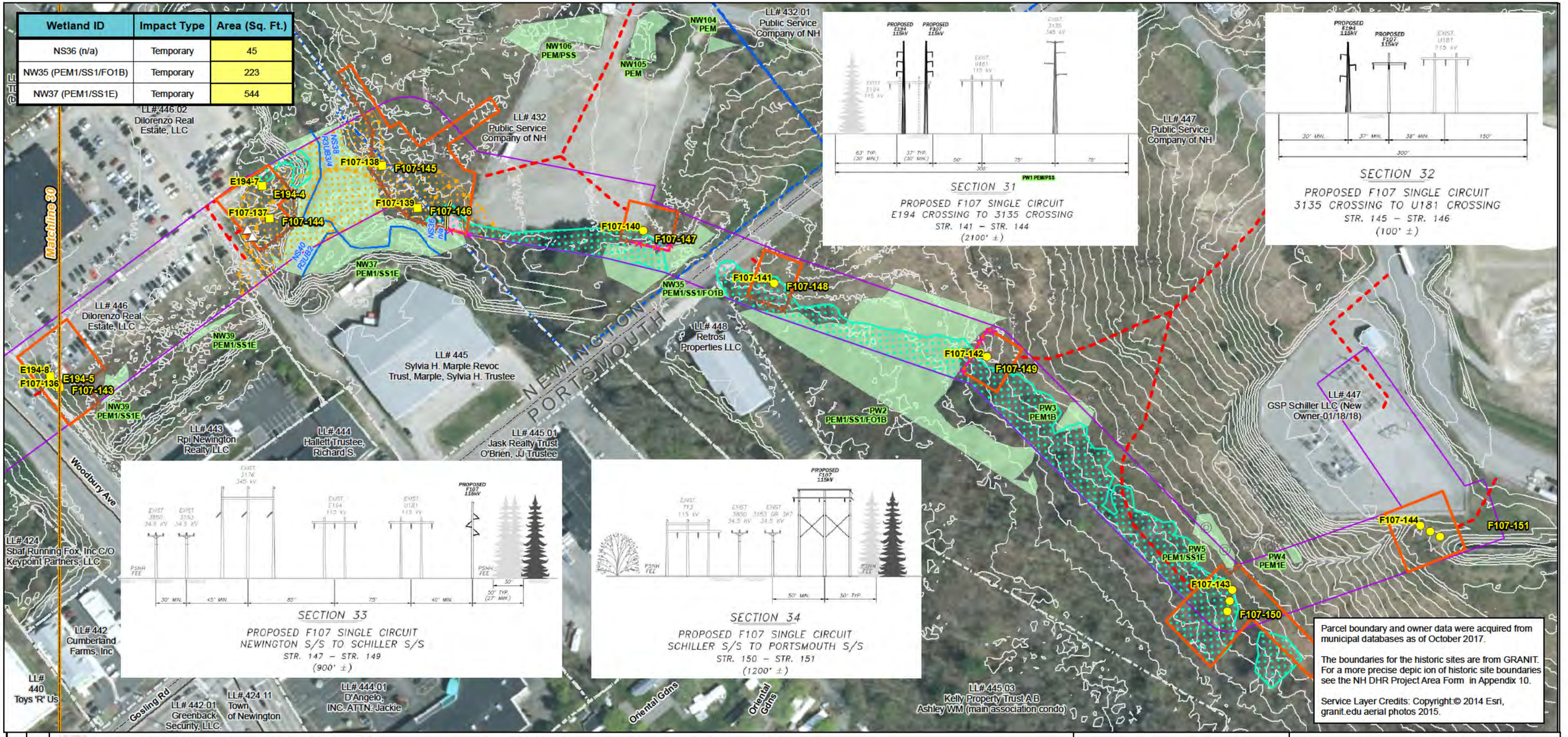
NORMANDEAU ASSOCIATES
Environmental Consultants

STATE OF NEW HAMPSHIRE
SARAH D. ALLEN
No. 083
CERTIFIED WETLAND SCIENTIST

Path: J:\Projects\PSNH_F107\MXD\SRP_MapSet_Supplement4.mxd

7/16/18

Wetland ID	Impact Type	Area (Sq. Ft.)
NS36 (n/a)	Temporary	45
NW35 (PEM1/SS1/FO1B)	Temporary	223
NW37 (PEM1/SS1E)	Temporary	544



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- PSNH Fee Area
- Project Corridor
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- Wetland Impact (TEMP)
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- Stream Top of Bank
- Temporary Culvert
- Stonewall alignment
- Temporary Mat Bridge
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- F107-107 Construction Structure #s
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- Tidal Buffer Zone
- Highest Observable Tide Line/Reference Line (4ft Contour)
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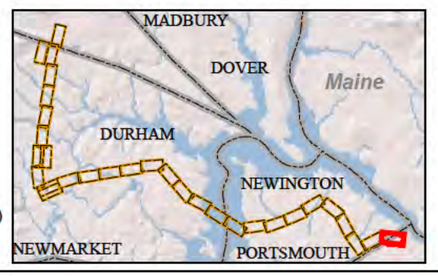
N W E S

0 75 150 300 Feet

1 inch = 150 feet



Date : 7/25/2018

Drawn By: dpelletier

Project No: 22860.003

EVERSOURCE ENERGY

Seacoast Reliability Project

Revised Environmental Maps

NORMANDEAU ASSOCIATES Environmental Consultants

STATE OF NEW HAMPSHIRE SARAH D. ALLEN No. 083 CERTIFIED WETLAND SCIENTIST

Path: J:\Projects\PSNH_F107\MXD\SRP_MapSet_Supplement4.mxd

7/16/18

Nelson, Kurt I

From: Comstock, Gregg <Gregg.Comstock@des.nh.gov>
Sent: Monday, May 6, 2019 12:46 PM
To: Nelson, Kurt I
Cc: Sandin, Peter; Adams, Collis; Price, David
Subject: Proposed Soil & GW Plan for Crossings Mall to Portsmouth SS East of Spaulding Turnpike
Attachments: 20190503 Soil & GW Mgmt Crossings to Portsmouth SS_rev2.pdf

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Kurt,

The document listed below (and attached), submitted by Public Service Company of New Hampshire (d/b/a Eversource Energy) pursuant to NHDES Wetlands Condition 38 In the NH Site Evaluation Committee *Order and Certificate of Site and Facility with Conditions* issued on January 31, 2019, which covers work associated with installation of structures on the east side of Spaulding Turnpike (see the plan for specific structure numbers), is acceptable to the New Hampshire Department of Environmental Services (NHDES) Watershed Management Bureau (WMB) whose review focused on compliance with state surface water quality standards (Env-Wq 1700).

Soil and Groundwater Management Plan for Construction of Structures from the Crossings Mall in Newington East to the Portsmouth Substation
Seacoast Reliability Project – SEC Docket #2015-04
May 3, 2019

According to Peter Sandin, the NHDES Waste Management Division anticipates follow-on coordination between project stakeholders regarding the management of soils and groundwater associated with those sections of the project that are on the former Pease Air Force Base or where investigation has documented contaminants associated with the base may be present.

Regards,
Gregg

Gregg Comstock, P.E.
Supervisor, Water Quality Planning Section
Watershed Management Bureau
Water Division, NH Department of Environmental Services
29 Hazen Drive, P.O. Box 95
Concord, NH 03302-0095
Phone: (603) 271-2983
Email: gregg.comstock@des.nh.gov

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From: Nelson, Kurt I <kurt.nelson@eversource.com>
Sent: Friday, May 3, 2019 11:33 AM
To: Comstock, Gregg <Gregg.Comstock@des.nh.gov>
Cc: Sandin, Peter <Peter.Sandin@des.nh.gov>
Subject: RE: Proposed Soil & GW protocol for Crossings Mall to Portsmouth SS

Here is the updated version as requested.

From: Comstock, Gregg <Gregg.Comstock@des.nh.gov>
Sent: Friday, May 3, 2019 11:22 AM
To: Nelson, Kurt I <kurt.nelson@eversource.com>
Cc: Sandin, Peter <Peter.Sandin@des.nh.gov>
Subject: RE: Proposed Soil & GW protocol for Crossings Mall to Portsmouth SS

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Appendix C-2

Construction Dewatering Plan Details for Dewatering at Three Locations Requiring an EPA Dewatering or Remediation General Permit for Discharge to Surface Water Bodies.

CONSTRUCTION DEWATERING PLAN

Seacoast Reliability Project
Eversource Energy
Newington, New Hampshire

GZA has prepared this Construction Dewatering Plan to describe procedures for management of potentially contaminated groundwater generated during excavation and drilling activities associated with the proposed Seacoast Reliability Project, F107 transmission line (SRP) through Newington, New Hampshire. The proposed transmission line construction consists of overhead structures with drilled or excavated foundation and underground alignment sections installed by jacking methods or direct bury. The project alignment passes north and east of the former Pease Air Force Base where historic releases of perflourinated compounds (PFCs) as well as petroleum and chlorinated solvents have occurred. This Construction Dewatering Plan applies to construction of the SRP in Newington, east of Little Bay from Gundalow Landing to the Portsmouth Substation.

To assist with the on-site management, discharge, and disposal of groundwater generated from the SRP construction in Newington, GZA has been retained by JCR Construction (overhead alignment contractor) and McCourt Construction Company (underground alignment contractor). GZA will be on-site during construction work related to potentially contaminated soil and groundwater to assist the Contractors with dewatering activities.

Below is a general outline of the approach to dewatering, field treatment, discharges to surface water and disposal:

Dewatering Approach

Eversource anticipates encountering groundwater in some locations during the installation of structures for the construction of the Seacoast Reliability Project. In order to manage groundwater and work in the dry during construction, groundwater may be pumped from drilled holes or excavations. Also, it is anticipated that saturated soils will need to be dewatered while in stockpiles or roll off containers, prior to off-site disposal. The following procedures will be used for dewatering during construction:

- Groundwater generated from excavations will be limited to the extent possible by construction sequencing,
- As needed, groundwater will be pumped from drilled holes, excavations, stockpiles and roll off containers using traditional pumps or vacuum trucks,
- Groundwater generated during dewatering activities outside of areas with approved discharge permits will be collected into vacuum trucks or water totes and staged in frac tanks for settling and disposal characterization sampling. Pending licensed facility approvals, the collected groundwater will be transported off-site for disposal at an approved facility,
- Polyethylene sheeting (minimum 6-mil) will be placed on the ground surface where saturated soils are transferred with drilling and excavation equipment into trucks and roll-offs, in order to capture small amount of saturated soils and groundwater,
- Slurry-tight trucks and roll-offs will be utilized to transport soils to stockpile staging area, to contain water during transport,

- An impervious soil stockpile pad will be utilized to stage saturated soil and dewatering will occur via gravity within these staging areas. As water seeps from the stockpile within the impervious pad, water will be pumped into holding tanks. See details for stockpile management and pad construction in **Attachment C-3 Excavation & Stockpile Management Plan.**
- In locations where larger quantities of groundwater is anticipated to be pumped, Eversource has or will obtain permit authorization from Environmental Protection Agency (EPA) for discharges to surface water. NPDES Dewatering and Remediation General Permit applications and permits received to date have been provided to NHDES as part of their review of the Soil and Groundwater Management Plan. For an added level of protection of the receiving surface water and consistent with discussions with NHDES, Eversource has elected to add pre-treatment of groundwater for PFCs using carbon filtration at the Frink and Gundalow Landing sites in Newington where PFC concentrations have been detected in groundwater. EPA permits and treatment are described below:
    - **Getchell Property**– Eversource has obtained NPDES Dewatering General Permit No. MAG070471 for groundwater discharges during construction at this location at the west shore of Little Bay in Durham. Groundwater will be pre-treated for sediment removal using a holding tanks for settling larger suspended solids and discharging to dewatering bags for filtration of finer sediment. Following appropriate residence time for treatment, the water will be sampled consistent with RGP requirements prior to discharge into Little Bay.
    - **Gundalow Landing** - Eversource has obtained NPDES Dewatering General Permit Permit No. MAG070464 for groundwater discharges during construction at this location. Groundwater will be pre-treated for sediment removal using holding tanks for settling larger suspended solids and discharging to dewatering bags for filtration of finer sediment. At the Gundalow Landing site, water will be pumped into a second holding tank where it will be treated for PFCs using a carbon filter system. Refer to the Remediation General Permit Addendum dated June 27, 2019 for the Frink Farm property for treatment system information provided by the dewatering subcontractor, Lockwood Remediation Technologies (Lockwood), which will similarly be employed at the Gundalow Landing site. Following appropriate residence time for treatment, the water will be sampled consistent with RGP requirements prior to discharge into Little Bay. Lockwood estimates a holding time of approximately 20 minutes and a 90 to 95% performance efficiency for the carbon vessels.

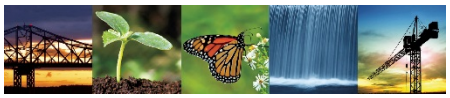
      Discharge from the treatment system shall be through an approximately 4 to 6-inch diameter hose that shall be positioned within the impact area associated with the Little Bay submarine cable installation as shown on the project environmental maps with the discharge located beyond the mudflats into the channel of Little Bay, approximately 450 to 500 feet from shore. The discharge point shall be placed in a fixed position within the water column, approximately 2 feet above the bottom in the channel of Little Bay. The discharge will be periodically monitored to ensure its positioning.
    - **Frink Farm** - Groundwater generated during dewatering in the area of Frink Farm will be discharged onsite under a NPDES Remediation General Permit (Permit Pending). Groundwater will be pre-treated for sediment removal using holding tanks for settling larger suspended solids and discharging to dewatering bags for filtration of finer sediment. Water will be pumped into a second holding tank where it will be treated for PFCs using a carbon filter system. Refer to the Remediation General Permit Addendum dated June 27, 2019 for the Frink Farm property for treatment system information provided by the dewatering subcontractor, Lockwood. Following

appropriate residence time for treatment, the water will be sampled consistent with RGP requirements prior to discharge into Knights Brook. Lockwood estimates a holding time of approximately 20 minutes and a 90 to 95% performance efficiency for the carbon vessels. Additionally, confirmatory PFC samples shall be collected from the effluent and shall be no greater than concentrations of PFCs in Knights Brook just upstream of the discharge.

- Eversource has conducted geotechnical borings throughout the project area. Soil conditions throughout the Newington area typically consist of silts and clay with low transmissivity of groundwater in upper soil strata. Artesian conditions were not encountered at any boring location. In the event, however, that significantly higher than anticipated groundwater flow rates are observed resulting in artesian conditions, where groundwater maybe discharged to the ground surface, Eversource will immediately stop excavation activities, notify and consult NHDES, and implement appropriate mitigation measures. Containment measures such as backfilling or grouting the excavation and/or installing casing may be implemented. Eversource will consult with NHDES to ensure that measures to sufficiently increase dewatering capacity are implemented prior to recommencing with the excavation if an event of this nature were to occur.

Appendix C-3

Excavation and Stockpile Management Plan



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EXCAVATION & STOCKPILE MANAGEMENT PLAN

Seacoast Reliability Project
Eversource Energy
Newington, New Hampshire

GZA has prepared this Excavation & Stockpile Management Plan (E&S Plan) to describe procedures for management of potentially contaminated soil generated during excavation and drilling activities associated with the proposed Seacoast Reliability Project (SRP), F107 transmission line through Newington, New Hampshire. The proposed transmission line construction consists of overhead structures with drilled or excavated foundations and underground alignment sections installed by jacking methods or direct burial. The project alignment passes north and east of the former Pease Air Force Base where historic releases of perflourinated compounds (PFCs) as well as petroleum and chlorinated solvents have occurred. This E&S Plan applies to construction of the SRP in Newington, east of Little Bay from Gundalow Landing to the Portsmouth Substation.

To assist with the on-site management and disposal of soils generated from the SRP construction in Newington, GZA has been retained by JCR Construction (overhead alignment contractor) and McCourt Construction Company (underground alignment contractor). GZA will be on-site to assist the Contractors with soil management activities during subsurface construction work related to disturbance of potentially contaminated soil and groundwater. Details related to construction dewatering activities are provided in a separate attachment, **C-2 Construction Dewatering Plan**.

Below is a general outline of the soil management approach and details of the soil stockpile pad to be utilized throughout soil management activities:

<u>Soil Management Approach</u>

- Unsaturated overburden soils and existing ground surface will be protected from contact with groundwater.
- Saturated soils will be removed using traditional excavation and drilling equipment and techniques and transferred into slurry-tight dump trucks or roll-off containers. Stockpiling of saturated soils at the excavation locations will be avoided to the extent practicable. If required, temporary stockpiling at the excavation/drilling locations will only be conducted under strict control of the stockpile area including but not limited to lining the ground surface with minimum 2 layers of polyethylene sheeting (minimum 6-mil) with berms to prevent run-off.
- Polyethylene sheeting (minimum 6-mil) will be placed on the ground surface during transfer of saturated soils from the drilling and excavation equipment into trucks and roll-offs.
- Slurry-tight trucks and roll-offs will be utilized to transport soils to the stockpile staging area.

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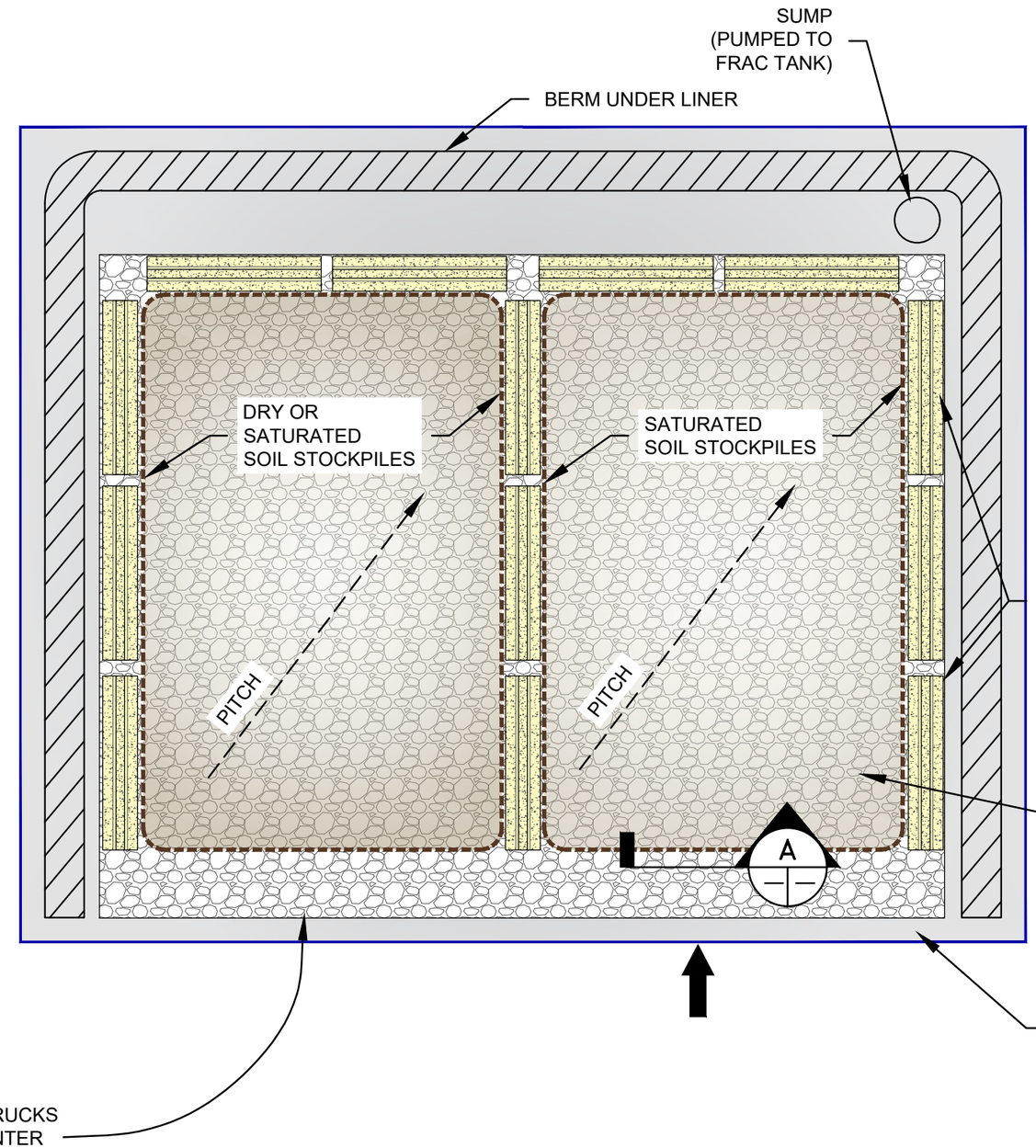
- An impervious soil stockpile pad will be utilized to stage soil for disposal characterization and dewatering prior to off-site transport. See Soil Stockpile Pad description below and attached **Figure 1 - Soil Management Stockpile Pad Details** for specifications on the soil stockpile pad construction.
- Unsaturated soils not suitable for reuse at the soil excavation area, will also be stockpiled on the soil management pad for disposal characterization sampling and off-site disposal.

Soil Stockpile Pad Details

- The soil management stockpile pad will be underlain with a seamless impervious liner.
- Unpaved surfaces will be prepared by filling (if required), grading and compacting a gravel surface to support the liner. The surface will be graded with positive drainage to allow installation of a sump. Paved surfaces will be swept of debris prior to placement of the liner.
- Sediment controls will be installed within nearby drains and around the soil stockpile area as warranted by existing site conditions.
- A bottom layer of non-woven geotextile will be installed over the prepared gravel/asphalt surface to protect the liner from puncture.
- A 20-mil seamless HDPE polyethylene liner will be installed under the footprint of the soil stockpile pad over the non-woven geotextile.
- A second layer of non-woven geotextile will be installed over the polyethylene liner for puncture protection.
- Gravel berms will be installed under the liner along the sides and downgradient end of pad to allow for the collection of water.
- A minimum of 4-inches of well-draining gravel will be installed over the non-woven geotextile and liner to protect the liner from truck and equipment activity and to act as a visual warning layer during stockpile management and soil loadout.
- Soils placed within the staging area will be segregated based on source area, field screening results, and saturation. Concrete jersey barriers or bin blocks will be installed to create bays for soil segregation.
- A sump will be installed at the low side/corner of the liner and collected water will be transferred into frac tanks for disposal characterization and off-site disposal at an approved facility.
- Stockpiled soils will be sampled and analyzed in accordance with licensed disposal facility acceptance criteria and will be transported off-site for disposal at an approved disposal facility.

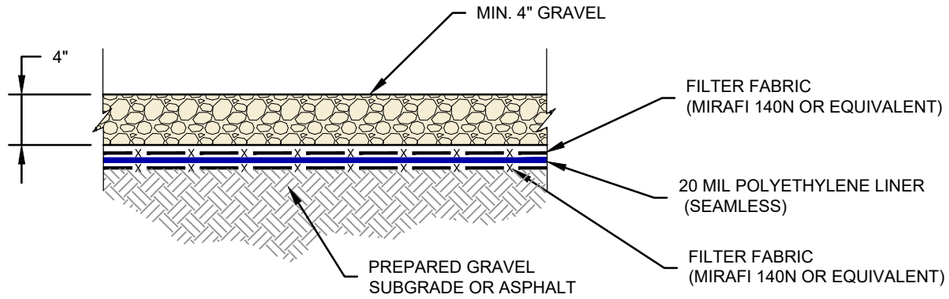
Attachments: Soil Management Stockpile Pad Detail

Figure 1 - Soil Management Stockpile Pad Details



SOIL MANAGEMENT STOCKPILE PAD (PLAN VIEW)

NOT TO SCALE



SOIL MANAGEMENT STOCKPILE PAD (CROSS SECTION A)

SCALE: 1"=1'-0"

0 6" 12" 24"

SCALE IN FEET 1" = 1'-0"

NO.	ISSUE/DESCRIPTION	BY	DATE

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SEACOAST RELIABILITY PROJECT - F107
SOIL AND GROUNDWATER MANAGEMENT
NEWINGTON, NEW HAMPSHIRE

SOIL MANAGEMENT STOCKPILE PAD DETAILS

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		PREPARED FOR: EVERSOURCE ENERGY	
PROJ MGR: RBC	REVIEWED BY: DZG	CHECKED BY: SMR	FIGURE 1
DESIGNED BY: DZG	DRAWN BY: CRB	SCALE: AS NOTED	
DATE: MAY, 2019	PROJECT NO. 04.0190967.00	REVISION NO. 0	SHEET NO. 1 OF 1

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Appendix C-4

Supplemental Information - Soil and Groundwater Management at the Frink Farm Property

EVERSOURCE ENERGY

13 Legends Drive
Hooksett, NH 03106

Supplemental Information
Soil and Groundwater Management at the Frink Farm property

Introduction

The methods detailed are consistent with and supplement the ***Updated Soil and Water Investigation and Management Plan Darius Frink Farm Newington, New Hampshire December 15, 2017*** that was prepared by GEI Consultants and was agreed to by Eversource and the Rockingham County Conservation District (RCCD) in a Memorandum of Understanding on January 24, 2018. For reference, the **Project Area Plan (Figure 2)** from the above reference Soil and Groundwater Management Plan is attached. In addition, updated groundwater elevation measurements are attached in Table 1 and updated analytical results for PFCs are provided in Table 2, attached.

Groundwater Management

Based on GEI's groundwater testing results, and a recent round of groundwater sampling conducted by GZA, an environmental firm working with Eversource's construction contractors, concentrations of Perfluorinated compounds (PFCs) in groundwater collected from monitoring wells 101(MW), 102(MW) and 103(MW) are less than current Ambient Groundwater Quality Standards (AGQS) and significantly less than the PFC concentrations currently present in surface water in Knights Brook Tributary. As shown in Table 2, some PFC compounds detected in 102(MW) between 2016 and 2019 do slightly exceed the newly proposed AGQS for the PFC compounds Perfluorohexanesulfonic Acid (PFHxS) and Pefluorooctane Sulfonate (PFOS).

As discussed in Appendix C-2, Eversource has applied for an EPA National Pollutant Discharge Elimination System (NPDES) Remediation General Permit (RGP) to discharge to the Knight's Brook Tributary. The NPDES RGP will require that dewatering effluent meet Surface Water Quality Standards defined by EPA prior to discharge to surface water. In addition, measures as requested by NHDES, which go above and beyond EPA requirements, will also be implemented as described in Appendix C-2.

As an alternative to discharge to Knights Brook Tributary, the contractor may choose to dewater to a temporary holding tank and to transport the groundwater to an offsite treatment facility.

Soil Management – Agricultural Field

Soil data collected from the agricultural field area between sample locations B101(MW) and B103(MW) show that there are no contaminants at levels of concern in soils and therefore, no potential to "spread" contamination in this area. Furthermore, in accordance with the ***Gove Soil Management Plan for Easement*** approved by the RCCD, to preserve agricultural integrity, it is Eversource's intent to:

- Side cast soils excavated from the trench in a windrow fashion
- Segregate top soil from the subsoil horizons
- Replace soils from whence they came in a manner that preserves the natural soil profile

Excess soil will not be reused in other locations on the Darius Frink Farm. As described in GEI's Soil and Water Management Plan, any excess soil will be transported offsite to an approved laydown area, sampled in a comprehensive manner for disposal characterization, and disposed of at a licensed disposal facility.

EVERSOURCE ENERGY

13 Legends Drive
Hooksett, NH 03106

Additional information regarding soil stockpiling and management at the soil laydown area is provided in Appendix C-3.

Soil Management – Knight's Brook Tributary Area

Eversource has conservatively assumed that all sediment/soil located between Station 497+00 and 500+25 is potentially impacted by PFCs. These stations conservatively bound the Knights Brook Tributary and its associated wetlands complex.

- Station 497+00, to the west, is near the riser structure location and is beyond the typical flood zone of Knight's Brook Tributary.

- Station 500+25, to the east, by Boring 101(MW), is a location where soil concentrations were not detected for PFCs and groundwater concentrations were less than current and proposed AGQS standards for PFCs.

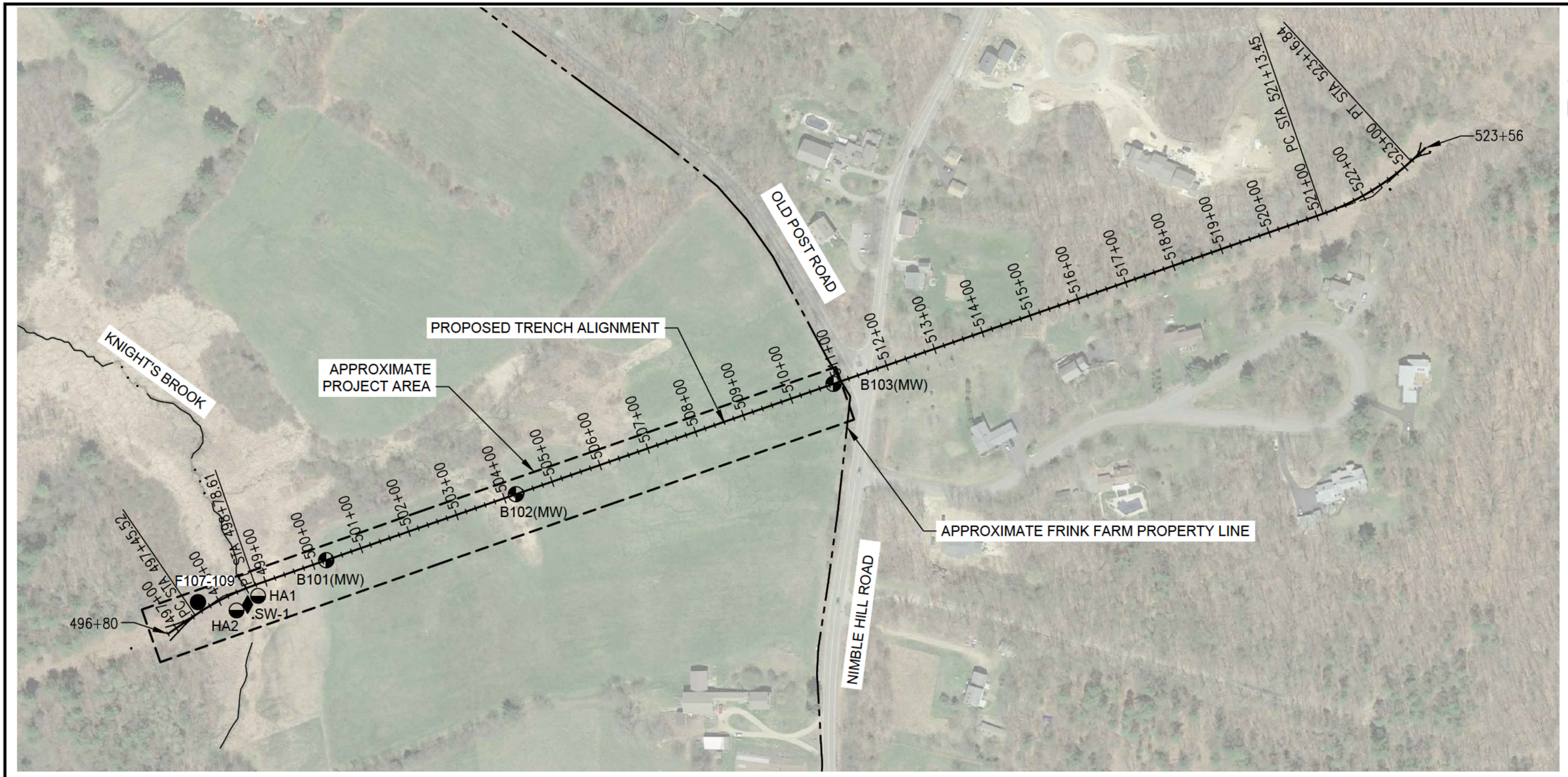
Soils in this area will be excavated in a similar fashion to the soils in the agricultural field to segregate soil horizons.

Native topsoil from this area will be used as backfill above the duct bank and thermal fill to replicate the upper soil profile in this area as required for proper wetlands restoration.

Excess soils from this area will remain temporarily stockpiled within this area until transported offsite for disposal or live loaded for offsite disposal. Stockpiles may need to be placed outside of the wetland boundary in uplands within the Station 497 +00 to 500+25 area.

All soil stockpiles will be promptly removed, not later than completion of the underground trench construction and before cable installation.

To prevent the accidental spread of soils to other areas of the property, signage will be posted to alert contractors that soils from the Station 497 +00 to 500+25 area shall not be placed elsewhere on the property.



LEGEND:

- MONITORING WELL INSTALLED BY GEI IN AUGUST 2016
- SURFACE WATER SAMPLE COLLECTED BY GEI IN SEPTEMBER 2016
- HAND AUGER BY GEI IN APRIL 2017
- BORING BY TERRACON IN SEPTEMBER 2016
- 498+00 — TRENCH ALIGNMENT AND STATION

NOTES:

1. LOCATIONS ARE APPROXIMATE.

0 200 400

SCALE: 1" = 200'

Soil and Water Investigation Darius Frink Farm Newington, New Hampshire	GEI Consultants	PROJECT AREA PLAN
Eversource Manchester, New Hampshire	Project 1607530	December 2017 Fig. 2

\\geiconsulta B:\Working\EVERSOURCE\1607530 - EVS-SRP NH\00_CAD\Design\Working\1607530 - Frink Farm Trench Dam Details Figure - F-2.dwg - 6/21/2017

Table 1. Water Level Measurements
Darius Frink Farm
Eversource NH Seacoast Reliability Project
Newington, New Hampshire

Well ID	August 26, 2016		August 29, 2016		September 1, 2016		September 15, 2016		April 7,2017		June 2, 2017		May 23, 2019	
	Depth to GW from Top of PVC (ft)	Depth to GW from Ground Surface (ft)	Depth to GW from Top of PVC (ft)	Depth to GW from Ground Surface (ft)	Depth to GW from Top of PVC (ft)	Depth to GW from Ground Surface (ft)	Depth to GW from Top of PVC (ft)	Depth to GW from Ground Surface (ft)	Depth to GW from Top of PVC (ft)	Depth to GW from Ground Surface (ft)	Depth to GW from Top of PVC (ft)	Depth to GW from Ground Surface (ft)	Depth to GW from Top of PVC (ft)	Depth to GW from Ground Surface (ft)
MW101	ND	ND	7.91	4.79	7.79	4.67	8.04	4.92	3.41	0.29	3.95	0.83	3.42	0.30
MW102	7.29	4.39	6.67	3.77	6.79	3.89	7.18	4.28	3.61	0.71	4.02	1.12	3.58	0.68
MW103	NM	NM	ND	ND	ND	ND	ND	ND	At ground surface		2.11	2.31	NM	NM

Notes:
1. ft = feet
2. GW = groundwater
3. NM = Not measured
4. ND = Not detected
5. May 23, 2019 water level measurements taken by GZA GeoEnvironmental of Bedford, New Hampshire.

Table 2. Laboratory Testing Results - Groundwater and Surface Water
Darius Frink Farm
Eversource NH Seacoast Reliability Project
Newington, New Hampshire

					Sample Location:	**B101(MW)**		**MW-B101**	**B102(MW)**		**MW-B102**	**B103(MW)**	**SW1**	**08-SG03-SW**	
					Company :	**GEI**	**GEI**	**GZA**	**GEI**	**GEI**	**GZA**	**GEI**	**GEI**	**USAF**	**USAF**
					Sample Date:	**09/01/2016**	**06/02/2017**	**05/14/2019**	**09/01/2016**	**06/02/2017**	**05/14/2019**	**06/02/2017**	**09/01/2016**	**03/12/2018**	**4/18/20149**
					Screen Interval:	**2-8'**	**2-8'**	**2-8'**	**2-7'**	**2-7'**	**2-7'**	**2-8'**	**NA**	**NA**	**NA**
Analyte	**Method**	**Units**	**Current NH AGQS**	**2019 Proposed NH AGQS**											
Perflourinated Compounds (PFCs)	537	ug/L													
Perfluorohexanesulfonic Acid (PFHxS)			NS	0.018		NT	NT	0.0098	NT	NT	*0.022*	NT	NT	***1.6***	***1.2***
Perfluorooctanoic Acid (PFOA)			0.07	0.012		< 0.00786	0.00248	<0.00174	0.0112	0.00711	0.00841	< 0.00185	***0.842***	***0.79***	***0.64***
Perfluorononanoic Acid (PFNA)			NS	0.011		NT	NT	<0.00174	NT	NT	<0.00178	NT	NT	0.0097	*0.011*
Perfluorooctane Sulfanate (PFOS)			0.07	0.015		< 0.00786	0.00305	0.00194	*0.0161*	0.0142	*0.0251*	0.00187	***2.91***	***2.3***	***2.6***
Total PFOA and PFOS			0.07	NS		ND	0.00553	0.00194	0.0273	0.02131	0.03351	0.00187	**3.752**	**3.09**	**3.24**

General Notes:
1. In general, analytes detected in at least one sample are reported here. For a complete list of analytes see the laboratory data sheets.
2. Only PFCs with applicable regulatory standards are reported here. For a complete list of analytes see the laboratory data sheets.
3. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
4. NH AGQS = New Hampshire Ambient Groundwater Quality Standards
5. NH AGQS for PFOA and PFOS from Emergency Rule 05-31-16 to Amend The New Hampshire Code of Administrative Rules Env-OR 603.03(b), eff 6-1-15
6. Values in bold exceed the current NH AGQS values.
7. Values in italics exceed the 2019 Proposed NH AGQS
8. NS = No NH AGQS Standard.
9 NT = Not Tested
10 ug/L = milligrams per liter.
11 umhos/cm = micromhos per centimeter.
12 GEI = GEI Consultants, Inc. of Woburn, MA
13 GZA = GZA GeoEnvironmental of Bedford, NH
14 USAF = United States Air Force