DES Waste Management Division
29 Hazen Drive PO Box 95
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PHASE II ENVIRONMENTAL SITE ASSESSMENT
FORMER L.W. PACKARD MILL – MAIN MILL BUILDING

Hill Street, Lot 17-4-16
Ashland, New Hampshire

NHDES Site No. 200009045
NHDES Project No. 36187

Prepared For:
New Hampshire Department of Environmental Services
Brownfields Program – Hazardous Waste Remediation Bureau
29 Hazen Drive, PO Box 95
(603) 271-2183
Ms. Kate Emma Schlosser, P.E.

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March 16, 2018
File No. 70702.00

Elizabeth Reese

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Nobis
Engineering a Sustainable Future

March 16, 2018
File No. 70702.00

Ms. Kate Emma Schlosser, P.E.
New Hampshire Department of Environmental Services
Brownfields Program – Hazardous Waste Remediation Bureau
29 Hazen Drive
Concord, NH 03302-0095

Re: Phase II Environmental Site Assessment
Former L.W. Packard Mill – Main Mill Building
Hill Street, Lot 17-4-16
Ashland, New Hampshire
NHDES Site No. 200009045, Project No. 36187

Dear Ms. Schlosser:

Nobis Engineering, Inc. (Nobis) is pleased to submit this Phase II Environmental Site Assessment (ESA) of the Main Mill Building, Lot 17-4-16 of the Former L.W. Packard Mill ("the Site"), located in Ashland, New Hampshire. This work will be completed as an assignment under the New Hampshire Department of Environmental Services (NHDES) *Site Investigation, Remediation Design, Implementation Oversight at Petroleum and Hazardous Waste Sites, CERLCA and Brownfields Projects* Contract with Nobis. This report is subject to the limitations in Appendix A.

Thank you for the opportunity to be of service to you. Please do not hesitate to contact us if you have any questions.

Very truly yours,

NOBIS ENGINEERING, INC.

Lori A. L. Cox
for Nicolas Zanchi, EIT
Staff Engineer

Joshua Stewart
Project Scientist

Clarence "Tim" Andrews
Sr. Project Manager
Director of Environmental Services

Attachments

cc: Mr. Alan Peterson, USEPA

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1.0 INTRODUCTION

Nobis Engineering, Inc. (Nobis) is pleased to provide the Lakes Region Planning Commission (LRPC) Brownfields Program with this Phase II Environmental Site Assessment (Phase II ESA) report for the former L.W. Packard Mill (target property) located at 1 Hill Avenue in Ashland, New Hampshire. This work was performed as described in our "Work Scope and Budget Phase II Environmental Site Assessment" dated June 14, 2017 as approved by the New Hampshire Department of Environmental Services (NHDES) on June 29, 2017, as well as subsequent Budget Estimate Change Order #1 dated September 20, 2017. The field activities and laboratory analyses were completed in general accordance with the Field Task Work Plan and Site-Specific Quality Assurance Project Plan Addendum - Final (RFA 16002, Former LW Packard), prepared by Nobis and approved by NHDES and United States Environmental Protection Agency (USEPA) September 1 and 5, 2017, respectively. This report is subject to the limitations in Appendix A.

1.1 Purpose

The purpose of this study was to:

- Collect supplemental information to address target property-specific Recognized Environmental Condition (RECs) identified by Credere Associates, LLC (Credere) during the completion of a Phase I ESA of the target property and surrounding area in July 2015[1]; and
- Determine whether historical practices at the former mill have impacted the soil and groundwater in the vicinity of the mill.

2.0 SITE DESCRIPTION

2.1 Target Property

The target property consists of a developed ±0.94-acre parcel located at 1 Hill Avenue in Ashland, New Hampshire identified by the town of Ashland on Tax Map 17 as Lot 4-16. The parcel is improved with a 47,317± square-foot mill building which includes a former dye house and

[1] "Phase I Environmental Site Assessment, L.W. Packard Mill (Lots 4-16 and 7-7), 1 Hill Avenue and Mechanic Street, Ashland, NH, NHDES Site No. 200009045" prepared by Credere Associates, LLC of Westbrook, ME dated July 23, 2015.

wastewater treatment area. The 47,317± square-foot Main Mill Building is a portion of the larger L.W. Packard Mill complex. Historical documentation indicates the L.W. Packard Mill complex was initially constructed circa 1840. The dye house and wastewater treatment area have existed since at least 1892 with further additions to the mill building occurring in 1941. The Main Mill Building is currently vacant while the western portion of the mill complex is utilized by other businesses. No private water supplies or septic systems currently serve the mill complex. The target property is served by a public water supply, however, service to the property is not currently active.

The site Locus Plan is provided as Figure 1, and a Site Plan depicting the general site layout and features is provided as Figure 2.

2.2 Site Vicinity General Characteristics

The subject site is located within an Industrial – Commercial (IC) district, as defined by the Town of Ashland's 2017 Zoning Ordinance. Properties in the vicinity of the site are serviced by a public water supply and municipal sewer system. The adjoining properties are generally residential in nature. Topography of the target property is generally sloping to the south and southeast toward the Squam River. The Squam River flows to the west, where it ultimately joins the Pemigewasset River.

Based on site observations and review of the Ashland, New Hampshire, United States Geological Survey (USGS) Topographic Map, elevation at the site is approximately 520 feet above the National Geodetic Vertical Datum (NGVD) of 1929.

2.3 Site Use Summary

The L.W. Packard Mill complex has historically been used for textile manufacturing, leather board manufacturing, and electricity generation. Initial construction of the facility began in 1840 with subsequent additions occurring throughout the 1900s. After the mill closed in 1999, the complex was subdivided and sold to different entities. The portion of the mill which is the subject of this assessment has remained vacant since that time. The Main Mill Building is currently under consideration for redevelopment by the Town of Ashland.

2.4 Previous Environmental Reports

According to a 2015 Phase I ESA prepared by Credere, the mill regularly discharged hazardous dies and process wastewater directly into the Squam River, which runs underneath the building. The mill's floor drains were not managed by a wastewater collection system until 1968 or 1969 when the mill was first connected to the Town of Ashland's newly-constructed sewer system. The mill's central wastewater collection system fed into a pretreatment tank beneath the dye house prior to discharging to the town's sewer system. The mill building is also constructed such that the basement can be opened to allow the Squam River to flow through the wastewater pretreatment area during periods of high water.

Credere's 2015 ESA noted the former presence of a 40,000-gallon underground storage tank (UST) and two 20,000-gallon USTs, all of which contained No. 6 fuel oil, at the adjacent Map 17 Lot 7-7 parcel. The former USTs were utilized by the mill complex's boiler house, located on the Lot 7-7 parcel. During a 1988 tank closure for the three USTs, impacted soil was identified and removed from beneath the two 20,000-gallon tanks. Free-phase petroleum product was subsequently observed in groundwater beneath the boiler house and a groundwater management permit (GMP) was issued for the site by the New Hampshire Department of Environmental Services (NHDES). Groundwater monitoring results from a 2012 monitoring round continued to report exceedances of New Hampshire Ambient Groundwater Quality Standards (AGQS)[2] and measurable petroleum product in the monitoring well within the Boiler Building.

Recognized Environmental Conditions (RECs) were identified by Credere in association with both the above-mentioned findings. Credere recommended the completion of a Phase II ESA to investigate potentially impacted soils and groundwater beneath the Main Mill Building at the L.W. Packard Mill complex.

3.0 SCOPE OF SERVICES

The findings of the Phase I ESA identified the potential for impacted soil and groundwater at the target property as a result of historical wastewater discharges to the environment beneath the Main Mill Building's dye house and documented petroleum contamination at the adjacent Map 17

[2] New Hampshire Code of Administrative Rules, Chapter Env-Or 600, Contaminated Site Management, Table 600-1, revised June 1, 2015.

Lot 7-7 parcel. The intent of this Phase II ESA was to determine whether historical practices at the former mill have impacted the soil and groundwater in the vicinity of the mill. Investigations were conducted through the installation of shallow soil borings and bedrock boreholes completed as monitoring well installations, followed by groundwater sampling and analysis.

In support of completion of the Phase II ESA, the following tasks were performed:

Initial Site Visit and Work Scope Development

Nobis visited the site with NHDES and representatives of the Town of Ashland prior to the preparation of a work scope and budget spreadsheet which was reviewed and approved by NHDES. The work scope development process also included soliciting prices from:

- a drilling subcontractor;
- a subcontracted laboratory; and
- a waste disposal subcontractor.

This task was approved using Nobis' accepted pre-approved budget per Work Scope Approval #1 issued December 26, 2016. A budget spreadsheet for the Phase II ESA was submitted, providing task line item details.

SSQAPP Preparation

Based on the information gathered during the initial site visit, Nobis prepared and submitted to the NHDES and United States Environmental Protection Agency (USEPA) a Field Task Work Plan (FTWP) and Site-Specific Quality Assurance Project Plan Addendum (SSQAPPA), which described the quality control (QC) and quality assurance (QA) protocols and other technical procedures followed during implementation of the work to ensure that the results meet the stated performance criteria. The FTWP/SSQAPPA was based on Nobis' Generic Quality Assurance Project Plan (Generic QAPP), Revision 3 (RFA #16002) as approved by USEPA on January 27, 2017 and NHDES on April 21, 2017, and refers to standard operating procedures for Nobis and Nobis' subcontractors.

HASP / Dig-Safe

Prior to conducting site work, Nobis prepared a site-specific health and safety plan for all on-site activities in accordance with Occupational Safety and Health Administration (OSHA) requirements.

Nobis visited the site to confirm access to areas proposed for subsurface investigation and pre-marked the site to satisfy the requirements for DigSafe utility clearance.

Overburden and Bedrock Investigations

Nobis and a drilling subcontractor completed the performance of three overburden soil test borings at exterior locations of the mill building, and four soil test borings within the interior footprint of the mill building. All seven soil test borings were finished as monitoring well installations. Refer to Figure 2 for subsurface investigation locations.

The three exterior overburden boring/monitoring well installations were performed in areas around the mill building where shipments of materials and chemicals most likely entered or exited the building (i.e. loading dock areas). The overburden borings/monitoring well installations were performed to assess subsurface soil and groundwater conditions in these areas. Soil samples were collected continuously to the boring termination depths, where feasible. All overburden soil borings were completed as 2-inch diameter polyvinyl chloride (PVC) wells installed to depths of up to 18 feet (ft) below ground surface (bgs) and were completed with flush-mounted road-boxes set at the ground surface.

Four interior borings were performed in areas within the mill building proximal to the former dye house and wastewater treatment area of the mill. The interior borings required coring of concrete to access the locations beneath the mill building's foundation. All four interior borings were proposed as open-bedrock boreholes. Sampling in overburden material was to be performed continuously to the bedrock surface where feasible, and completed by seating a permanent well casing into the bedrock and coring 25 feet into the bedrock. The wells were to be completed with permanent casing with locking caps. Some modifications were made to this plan during the performance of field activities, with approval from NHDES. These modifications are discussed in Section 4.1.

Soil samples collected from overburden drilling were screened in the field for total volatile organic compounds (VOCs) using a photoionization detector (PID). One soil sample from each of the seven borings was selected for laboratory analysis based on PID readings and field observations. The selected samples were submitted to a State-certified laboratory (as identified in the SSQAPPA) for the following analyses:

- VOCs per EPA Method 8260B;
- Semi volatile organic compounds (SVOCs) per EPA Method 8270;
- Total petroleum hydrocarbons (TPH) per EPA Method 8015 (diesel-range organics);
- Polychlorinated biphenyls (PCBs) per EPA Method 8082;
- 13 Priority Pollutant Metals; and
- Pesticides per EPA Method 8081.

In accordance with the SSQAPPA prepared for the site, QA/QC samples submitted for laboratory analysis included one trip blank for VOCs and one duplicate for each analysis proposed.

Following well installation, the overburden wells were developed by purging a minimum of five well volumes using disposable bailers.

No investigation derived waste (IDW) was containerized for off-site disposal during the performance of this Phase II ESA. All excess soil cuttings and well purge water was disposed of on-site.

<u>One Round of Groundwater Monitoring</u>

After a minimum of two weeks following well installation, groundwater samples were collected from each well location. Groundwater sampling was performed using the EPA low-flow/low stress sampling methodology. The collected groundwater samples were submitted to a State-certified laboratory for the following analyses:

- VOCs per EPA Method 8260B;
- SVOCs per EPA Method 8270;
- PCBs per EPA Method 8082;
- 13 Priority Pollutant Metals;
- Pesticides per EPA Method 8081; and
- Per- and Polyfluoroalkyl substances (PFAS; 2 locations only).

In accordance with the SSQAPPA prepared for the site, QA/QC samples submitted for laboratory analysis included one trip blank for VOCs and PFAS and one duplicate for each analysis proposed. Groundwater levels were measured at each well location prior to the collection of groundwater samples.

Following groundwater sample collection, a survey of reference elevations was conducted by Nobis to allow for the collection of groundwater elevation data. No additional topographic survey effort was included in this work scope.

No IDW was containerized for off-site disposal during the performance of this Phase II ESA. All excess well purge water was disposed of on-site.

Phase II ESA Report Preparation

Nobis performed an assessment of soil/groundwater contamination present and the site hydrogeologic conditions, including an assessment of subsurface stratigraphy and distribution of contaminants, groundwater flow directions and groundwater quality, and the potential impact to nearby receptors. The report includes a description of activities performed and provides recommendations for additional monitoring activities. Laboratory data is summarized in tables and sample locations are shown on the attached figures. A discussion of QA/QC is included.

4.0 SUBSURFACE EXPLORATIONS AND SOIL FIELD SCREENING

4.1 Soil Test Boring and Monitoring Wells

Between September 7 and 21, 2017, a total of seven soil test borings were performed at the subject site (NB-1 through NB-5, NBR-1, and NBR-2) and completed as monitoring wells. Borings NB-1 through NB-5 were completed as overburden monitoring wells terminated within the overburden or at the bedrock interface and finished with 2-inch PVC monitoring wells set in a flush-mounted road-box. Borings NBR-1 and NBR-2 were completed as shallow bedrock open boreholes with a permanent steel casing installed into the borehole and grouted into the top of the bedrock surface. Borings NB-1 through NB-3 were advanced on the exterior of the Main Mill Building, while the remaining borings were advanced through the concrete slab in the interior of the building. The test borings were performed by New England Boring Contractors, Inc. of Derry,

New Hampshire utilizing drive and wash drilling techniques with oversight by Nobis. Soil samples were collected using a 2-inch outside diameter (OD) split-spoon sampler. The borings were advanced to depths ranging from ±14 feet to ±34.5 feet below site grade. The boring locations on the exterior of the building were selected based on areas around the mill building where shipments of materials and chemicals most likely entered or exited the building. Interior boring locations were selected proximal to the former dye house and wastewater treatment area of the mill. Borings NB-1 through NB-5 were all terminated within the overburden or at the bedrock surface at depths ranging from ±14 feet to ±33 feet bgs. Borings/monitoring wells NB-1 through NB-3 were completed with flush-mounted road-boxes set in the existing pavement or soil. Borings/monitoring wells NB-4 and NB-5 were completed with flush-mounted road-boxes set in the concrete floor slab of the building.

All four interior borings were originally intended as shallow bedrock open-borehole explorations due to the expected shallow, or non-existent, depth of overburden material between the concrete building slab and bedrock surface; however, during drilling activities, both NB-4 and NB-5 were observed to have overburden depths greater than 20 feet before encountering bedrock and groundwater levels which would allow for sufficient overburden groundwater collection for laboratory analyses. With approval from NHDES, Nobis completed borings NB-4 and NB-5 as overburden monitoring wells. Wells NBR-1 and NBR-2 were completed as shallow open-bedrock boreholes and monitoring wells as originally proposed in the scope of work. Both bedrock borings were completed by seating and grouting permanent well casing into the bedrock surface and coring 25 feet into the bedrock.

The locations of the borings and monitoring wells relative to existing structures were measured for inclusion on the site plan. Monitoring well reference points (the top of the PVC riser or steel casing) were surveyed relative to an arbitrarily-assigned datum of 100.00 feet at a temporary bench mark (TBM) established at the top of a corner of the concrete building foundation and transformer pad adjacent to monitoring well NB-3. Following drilling activities and well installations, all of the new monitoring wells were developed using a pre-cleaned high density polyethylene (HDPE) disposable bailer. Overburden wells were developed by purging five standing well volumes while bedrock wells were developed by purging 20 gallons from each well. Monitoring well NB-1 was dry at the time the wells were developed and during subsequent site visits. The five overburden wells were completed with protective flush-mounted road-boxes and

bedrock wells were completed with a permanent casing and locking cap. The locations of the soil test borings and monitoring wells are shown on Figures 2 through 4.

No IDW was containerized for off-site disposal during the performance of this Phase II ESA. All excess soil cuttings and well purge water was disposed of on-site.

Refer to section 6.0 of this report for a discussion of the site geology and hydrogeology.

Logs of the test borings and monitoring well construction are included in Appendix B.

4.2 Field Screening of Soil Samples

Soil samples collected from the borings were screened in the field for total concentrations of VOCs using a handheld PID equipped with a 10.6 eV lamp. The PID responds to most VOCs but does not register methane or natural components of air such as oxygen, nitrogen, or carbon dioxide. The PID has a detection limit of approximately 1 part per million by volume (ppmv), referenced to an isobutylene-in-air standard. Field screening indicated that total concentrations of VOCs in the soil samples ranged from less than 1 ppmv to ±54 ppmv. One soil sample from each of the seven borings was selected for laboratory analysis based on PID screenings and field observations.

The results of field screening for total VOCs are summarized on Table 1 and the included boring logs. The soil screening procedures are described in Appendix C.

4.3 Soil Analytical Results

Based on field screening and observed conditions, a total of seven soil samples and one duplicate were collected from borings NB-1 through NB-5, NBR-1, and NBR-2 and submitted to Eastern Analytical, Inc. (EAI) of Concord, New Hampshire for laboratory analyses of VOCs per EPA Method 8260C including preservation by EPA Method 5035, TPH (diesel-range organics [DRO]) per EPA Method 8015C, SVOCs per EPA Method 8270D, pesticides per EPA Method 8081B, PCBs per EPA Method 8082A, and 13 priority pollutant metals per EPA Method 6020.

One trip blank was submitted for laboratory analysis of VOCs. One duplicate sample collected from the NB-2 boring was submitted for laboratory analysis for each analytical methodology utilized.

The laboratory results were compared to the Env-Or 600 Soil Remediation Standards[3] (SRS). Analytical results for soil samples indicated the following:

NB-1, S-4, 6-8'

VOCs, PCBs, and pesticides were not present in the NB-1 soil sample at concentrations above the laboratory reporting limits. Where detected, TPH-DRO, SVOCs, and metals concentrations did not exceed applicable SRS.

NB-2, S-5, 8-9.25' and Field Duplicate (FD-1)

VOCs, PCBs, and pesticides were not present in the NB-2 soil sample at concentrations above the laboratory reporting limits. Where detected, TPH-DRO, SVOCs, and metals concentrations did not exceed applicable SRS.

NB-3, S-3, 4-6'

VOCs, SVOCs, PCBs, and pesticides were not present in the NB-3 soil sample at concentrations above the laboratory reporting limits. Where detected, TPH-DRO and metals concentrations did not exceed applicable SRS.

NB-4, S-12, 22-24'

VOCs, SVOCs, PCBs, TPH-DRO, and pesticides were not present in the NB-4 soil sample at concentrations above the laboratory reporting limits. Where detected metals concentrations did not exceed applicable SRS.

NB-5, S-2, 3-5'

VOCs, PCBs, and pesticides were not present in the NB-5 soil sample at concentrations above the laboratory reporting limits. Where detected, TPH-DRO, SVOCs, and metals concentrations did not exceed applicable SRS.

[3] New Hampshire Code of Administrative Rules, Chapter Env-Or 600, Soil Remediation Standards, Table 600-2, revised June 1, 2015.

NBR-1, S-3, 6-8'

VOCs, PCBs, and pesticides were not present in the NBR-1 soil sample at concentrations above the laboratory reporting limits. Where detected, TPH-DRO, SVOCs, and metals concentrations did not exceed applicable SRS.

NBR-2, S-1, 14.5-15.5'

Arsenic (12 ppm) was detected at a concentration exceeding the applicable SRS of 11 ppm. Where detected, reported concentrations of VOCs, SVOCs, TPH-DRO, and other metals did not exceed applicable SRS. PCBs and pesticides were not detected in the NBR-2 soil sample at the laboratory reporting limits.

The soil data are summarized in Tables 1 through 4 and a copy of the laboratory analytical reports are included in Appendix F. A discussion of QA/QC and data usability is included in Appendix D.

5.0 GROUNDWATER SAMPLE COLLECTION AND ANALYSES

5.1 Groundwater Sample Collection

On October 20, 2017 Nobis was on-site to collect groundwater samples from the newly-installed monitoring wells. Samples were collected from exterior overburden monitoring wells NB-2 and NB-3. Nobis returned to the site to collect the remaining samples on October 23, 2017; however, due to a significant precipitation event, the monitoring wells intended for sampling were observed to be inundated with groundwater as a result of significant overburden recharge. Therefore, with approval from NHDES, Nobis postponed sampling until groundwater conditions stabilized and sampling was more representative of ambient conditions. Sampling was delayed several weeks as a result of consecutive weather events. Nobis was finally able to return the site on November 27 and 28, 2017 to collect the remaining groundwater samples from the interior wells. Upon later receipt of the analytical results from the samples, Nobis observed that the NB-2 and NB-3 samples were not analyzed for PCBs. Additional samples were collected from these wells on December 8, 2017 for PCB analyses.

Groundwater sample collection at the target property was performed using EPA low-flow/low stress sampling methodology. All groundwater samples from the target property were submitted to EAI for laboratory analyses of VOCs per EPA Method 8260C including preservation by EPA Method 5035, TPH-DRO per EPA Method 8015C, SVOCs per EPA Method 8270D, pesticides

per EPA Method 8081B, PCBs per EPA Method 8082A, and 13 priority pollutant metals per EPA Method 6020. Groundwater samples were also collected for PFAS analyses from monitoring wells NB-5 and NBR-2 only. Trip blanks for VOCs were submitted for laboratory analysis with the October 20 and November 27-28 samples. One trip blank and one field blank were submitted along with the PFAS samples collected on November 27, 2017. One field duplicate sample collected from the NB-5 monitoring well was submitted for laboratory analysis for each analytical methodology utilized.

Monitoring well NB-1 was observed to be dry during each visit to the property to collect groundwater samples. As a result, no groundwater samples were collected from NB-1.

5.2 Groundwater Analytical Results

The laboratory results were compared to NHDES AGQS and NHDES Vapor Intrusion Guidance[4] GW-2 standards (vapor intrusion threshold).

Analytical results for groundwater samples indicated the following:

NB-2

VOCs, SVOCs, PCBs, and pesticides were not present in the NB-2 groundwater sample at concentrations above the laboratory reporting limits. Where detected, metals concentrations did not exceed applicable AGQS.

NB-3

VOCs, SVOCs, PCBs, and pesticides were not present in the NB-3 groundwater sample at concentrations above the laboratory reporting limits. Where detected, metals concentrations did not exceed applicable AGQS.

NB-4

PCBs and pesticides were not present in the NB-4 groundwater sample at concentrations above the laboratory reporting limits. Where detected, VOCs, SVOCs, and metals concentrations did not exceed applicable AGQS.

[4] NHDES Vapor Intrusion Guidance, revised February 7, 2013.

NB-5

VOCs, SVOCs, PCBs, and pesticides were not present in the NB-5 groundwater sample at concentrations above the laboratory reporting limits. Where detected, metals and PFAS concentrations did not exceed applicable AGQS.

The reported total PFAS concentration for the regulated compounds perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (CAS # 1763-23-1) (PFOS) was 44.77 parts per trillion (ppt) in the NB-5 groundwater sample (48.77 ppt in the associated duplicate sample), below the AGQS of 70 ppt.

NBR-1

SVOCs, PCBs, and pesticides were not present in the NBR-1 groundwater sample at concentrations above the laboratory reporting limits. Where detected, VOCs and metals concentrations did not exceed applicable AGQS.

NBR-2

SVOCs, PCBs, pesticides, and PFAS were not present in the NBR-2 groundwater sample at concentrations above the laboratory reporting limits. Where detected, VOCs and metals concentrations did not exceed applicable AGQS.

The groundwater data is summarized in Tables 5 through 10. Groundwater purge logs are provided in Appendix E and laboratory reports are provided in Appendix F. A discussion of QA/QC and data usability is included in Appendix D.

6.0 SITE GEOLOGY AND HYDROGEOLOGY

6.1 Site Geology

Overburden soils encountered in the test borings were visually classified in the field in accordance with the Modified Burmister soil classification system. Soils encountered in soil test borings generally consisted of:

- Loose sand with varying amounts of silt and gravel and pieces of metal, brick, and coal slag interpreted as fill.
- Loose to very dense sand with varying amounts of silt and gravel.

- Bedrock was encountered at depths ranging from approximately 9.3 to 18.5 feet bgs in exterior test borings and approximately 6.8 feet to greater than 24 feet below the concrete floor slabs in test borings on the interior of the mill building.

According to the 1997 Bedrock Geologic Map[5] of New Hampshire, bedrock in the vicinity of the target property is classified as Early Devonian Kinsman Granodiorite (Dk2x) [Kinsman Quartz Monzonite of Billings, 1955]. It is described as foliated granite, granodiorite, tonalite, and minor quartz diorite with large megacrysts of potassium feldspar characteristic and garnet locally abundant.

Fill materials were observed at boring locations NB-1 (metal and brick fragments), NB-3 (coal slag), NB-5 (brick fragments), and NBR-2 (wood fragments with a strong creosote-like odor).

6.2 Site Hydrogeology

Nobis recorded groundwater level measurements in all on-site wells prior to sample collection on November 27, 2017 using a Solinst electronic water level indicator. Groundwater levels in the monitoring wells ranged from ±12.1 feet below the well reference point (top of PVC) in NB-4 to artesian conditions in NBR-1. The static groundwater levels infer a general southwesterly groundwater flow beneath the property. Measured groundwater level data are presented in Table 5. Inferred groundwater elevation contours and flow directions are shown on Figure 4.

Fluctuations in groundwater levels and transport direction will occur due to variations in precipitation, surface runoff, temperature, seasonal fluctuations, and other factors not encountered during this study. Local groundwater flow anomalies may also exist due to the influence of buildings, paved areas and localized topography.

7.0 CONCEPTUAL MODEL

Based on the results of this investigation, Nobis has developed conceptual models to identify the nature and extent of soil contamination and groundwater contamination in the site study area.

[5] "Bedrock Geologic Map of New Hampshire", J. Lyons, W. Bothner, et al., 1997, sheet 1.

Analytical results were compared to applicable regulatory standards and risk-based standards set forth in the Risk Characterization and Management Policy (RCMP)[6].

The target property consists of a developed ±0.94-acre parcel located at 1 Hill Avenue in Ashland, New Hampshire. The parcel is improved with a 47,317± square-foot main mill building which is part of the surrounding L.W. Packard Mill complex. The mill building is reported to have regularly discharged hazardous process wastewater directly into the Squam River for a number of years prior to its connection to the Town of Ashland's municipal sewer system in 1968-1969, and the building is constructed such that the river may flow through the wastewater treatment area during periods of high water. Petroleum-contaminated soil and groundwater were also documented on the adjacent Boiler Building (Lot 7-7) parcel during the 1988 closure of a 40,000-gallon UST and two 20,000-gallon USTs, all containing No. 6 fuel oil. Groundwater monitoring results on the adjacent parcel continued to indicate free-phase petroleum product and exceedance of AGQS during the last monitoring round in 2012.

7.1 Soil Contamination Model

Nobis compared soil analytical results from the samples collected during the September 2017 test borings to NHDES SRS. The only exceedance of SRS from analyzed soil samples was for arsenic in the sample collected from NBR-2 at 14.5 to 15.5 feet below the top of the upper floor slab, or approximately 5.8 to 6.8 below the lower floor slab. This sample was collected from a sandy zone just below an area of fill materials which was noted during drilling to have pieces of wood and a strong creosote-like odor. These potential fill materials observed below the concrete floor slab are a possible source of the SRS exceedance and elevated TPH concentration (200 ppm) and petroleum VOC signature observed in the sample collected from NBR-2. These observations appear to be confined to this discreet location and were not encountered in other test borings. As discussed below, there are no apparent groundwater impacts related to this limited area of apparent fill material. As this location is currently contained beneath the building footprint and the presence of contamination is does not appear to be impacting groundwater quality, these soils would be classified as RCMP Category S-3. The Category S-3 value for arsenic is 47 ppm;

[6] "Risk Characterization and Management Policy" prepared by the New Hampshire Department of Environmental Services, dated January 15, 1998 (updates to Method 1 Groundwater Standards, February 2013).

therefore this exceedance could be mitigated with an activity and use restriction (AUR) as opposed to active remediation.

Test borings NB-1 and NB-2, which are the closest borings to the adjacent Boiler Building (Lot 7-7) parcel, did not identify the presence of any soil contamination at concentrations exceeding SRS; however, elevated concentrations of TPH were reported were in the sample collected from NB-1 (120 ppm) which could be related to the migration of petroleum contamination onto the target property related to known upgradient contamination sources.

7.2 Groundwater Contamination Model

Analytical results for groundwater samples collected from monitoring wells NB-2 through NB-5, NBR-1, and NBR-2 did not indicate the presence of any contaminants at concentrations exceeding AGQS. Although some VOCs, SVOCs, and PFAS were detected in wells NB-4, NB-5, NBR-1, and NBR-2, the concentrations do not appear to represent a major release of petroleum products or hazardous substances. The presence of the chlorinated solvent 1,1-dichloroethane (1,1-DCA) reported in both open bedrock borings (9 ppb, NBR-1; 7 ppb, NBR-2) suggests that potential influence from the historical textile mill activities exists, but the concentrations are well below standards and no other VOCs were present above laboratory detection limits.

Based on the results of the groundwater analytical data and field observations, petroleum contamination documented on the adjacent Boiler Building (Lot 7-7) parcel to the east does not appear to have migrated onto the target property; however, it is noted that no groundwater data from monitoring well NB-1, which is located closest to reported upgradient petroleum impacts and where a TPH signature was reported in soil analytical results, is available for assessment.

Total PFAS compounds were detected in groundwater collected from monitoring well NB-5 at a concentration of 44.72 ppt, below the AGQS of 70 ppt. The origin of PFAS compounds is not identified; however it is likely that historical activities at the site treating textiles could be a possible source. No PFAS compounds were present at concentrations above laboratory reporting limits in the bedrock sample collected from NBR-2. Additional groundwater sampling would be necessary to evaluate possible sources of PFAS in overburden groundwater beneath the site.

7.3 Vapor Intrusion Model

Based on depths to groundwater of ±12.1 feet or less below site grade, if GW-2 standards were exceeded within 30 feet of site buildings the potential for a vapor intrusion pathway might require evaluation. The only two VOC compounds detected in groundwater at the L.W. Packard Mill site were benzene (1 ppb, NB-4) and 1,1-dichloroethane (9 ppb, NBR-1; 7 ppb, NBR-2). These concentrations are well below the applicable GW-2 standards of 2,900 ppb for benzene and 130 ppb for 1,1-dichloroethane. As a result, evaluation of potential vapor intrusion pathways is unwarranted at this time.

7.4 Site Status

Based on the data collected for this Phase II ESA, it is apparent that:

- PCBs and pesticides were not detected in soil at the target property.
- Where detected, VOCs, SVOCs, and TPH are present in soils at the target property at concentrations not exceeding SRS.
- Arsenic was present in one soil sample (NBR-2, 12 ppm) at a concentration exceeding the applicable SRS of 11 ppm. No other metals were detected in soils at the target property at concentrations exceeding SRS.
- PCBs and pesticides were not detected in groundwater at the target property. Where detected, Where detected, VOCs, SVOCs, and metals concentrations did not exceed AGQS in groundwater.

- Documented petroleum contamination at the adjacent Boiler Building (Lot 7-7) property does not appear to have migrated onto the target property at concentrations exceeding applicable standards.
- Total PFAS compounds were detected in groundwater collected from overburden monitoring well NB-5 at a concentration below the AGQS. The origin of PFAS compounds is not identified; however it is likely that historical activities at the site treating textiles could be a possible source. Based on groundwater sampling results, it does not appear that PFAS has migrated into shallow bedrock beneath the site.

Based on the data collected for this Phase II ESA, low levels of petroleum-related VOCs and SVOCs are present in soils and overburden groundwater at the target property, with an exceedance of SRS for arsenic detected in one soil sample. Low levels of chlorinated solvents were also detected in bedrock groundwater beneath the building. At this time, no further remedial efforts appear to be warranted.

8.0 CONCLUSIONS AND RECOMMENDATIONS

8.1 Conclusions

Based on the data collected during the Phase II ESA that included collection and analysis of soil and groundwater samples, Nobis concludes the following:

- The target property consists of a developed ±0.94-acre parcel. The parcel is improved with a 47,317± square-foot Main Mill Building containing a former dye house and wastewater pretreatment area. The property is identified on Town of Ashland Assessors' Map 17 as Lot 4-16.
- The target property is serviced by a municipal water supply and sewer system. Service to the property is not currently active.
- Historical documentation identified the potential for soil and groundwater contamination at the target property due to former hazardous process wastewater discharges from mill activities and an open building design which can allow the Squam River to flow the wastewater pretreatment area during periods of high water.
- A total of seven soil test borings were performed at the target property (NB-1 through NB-5, NBR-1, and NBR-2) and completed as monitoring wells. Borings NB-1 through NB-5 were completed as overburden borings/monitoring wells while NBR-1 and NBR-2 were completed as open bedrock boreholes/monitoring wells.
- One soil sample was collected from each soil boring and submitted for laboratory analysis of VOCs, TPH - DRO, SVOCs, PCBs, Pesticides, and metals.
- Arsenic was detected in the sample collected from NBR-2 at a depth of approximately 5.8 to 6.8 below the lower floor slab at a concentration of 12 ppm, exceeding the applicable SRS of 11 ppm. The soil sample location of this exceedance meets the definition of RCMP Category S-3, since it is within the building footprint and is otherwise inaccessible. The

S-3 concentration for arsenic is 47 ppm, therefore mitigation of this concentration of arsenic could be addressed with an AUR as opposed to active remediation.

- Arsenic impacts to the soil identified at NBR-2 may be attributed to the presence of fill materials below the lower floor slab in this area. Observed fill materials included boulders and wood fragments with a strong creosote-like odor.
- Groundwater samples were collected from all newly-installed monitoring wells except NB-1 (observed to be dry during multiple visits) and submitted for analysis of VOCs, SVOCs, PCBs, pesticides, and metals. NB-1 was found to be dry during sample collection. Samples from NB-5 and NBR-2 were also submitted for PFAS analyses.
- The static groundwater levels infer a general southwesterly groundwater flow beneath the property, toward the Squam River.
- Where detected, VOCs, SVOCs, PFAS, and metals concentrations did not exceed AGQS. PCBs and pesticides were not detected in the groundwater samples.
- Low-level concentrations of benzene (1 ppb) and 1,1-DCA (9 ppb, 7 ppb) were detected in groundwater samples collected from NB-4, NBR-1, and NBR-2, respectively. The presence of these compounds could be attributed to historical activities at the target property; however, the low-level concentrations reported do not appear to warrant additional groundwater sampling for VOCs at target property.
- Based on reported groundwater VOCs concentrations investigation of a vapor intrusion pathway to the building on the target property is not warranted.
- A 1988 UST closure on the adjacent Lot 7-7 parcel led to the discovery of petroleum-contaminated soil and groundwater. Impacted soil was removed from beneath the USTs and a GMP was issued for the site. The last monitoring round performed in 2012 continued to report free-phase petroleum product and exceedances of AGQS on-site. Soil and groundwater analytical results obtained during the performance of this Phase II ESA do not indicate the migration of petroleum contamination onto the target property from the adjacent Boiler Building (Lot 7-7) property.
- Total PFAS was detected in the overburden groundwater sample analyzed but not in the bedrock groundwater sample. While the total concentration in the overburden is below AGQS, it is not clear if the detection of PFAS compounds represents a potential on-site

source or not. Based on historical site activities, it is likely compounds were utilized in historical processes that contained PFAS compounds.

8.2 Recommendations

Based on the observations during the field work and data collected during the Phase II ESA, Nobis recommends the following:

- If future redevelopment of the target property involves the demolition or disturbance of the concrete floor slab proximal to NBR-2, further investigation of arsenic in soils beneath the floor slab should be evaluated and soils should be excavated and disposed of at an appropriate facility. ; alternatively, under RCMP Category S-3 classification, these soils can be managed in place using an AUR. If feasible, removal and disposal of impacted soils would be the desired option as there would be no use restriction on the property due to the presence of impacted soils.
- Given the limited sampling conducted to date, further evaluation of the presence of PFAS in overburden groundwater should be considered to rule out potential on-site sources.
- No further investigation at the target property appear to be warranted at this time.

TABLES

TABLE 1
SUMMARY OF SOIL VOC AND TPH ANALYSES
L.W. Packard Mill
Hill Avenue
Ashland, New Hampshire
NHDES Site 200009045 / Project 36187

Soil Remediation Standards				Benzene	Toluene	Ethylbenzene	Xylenes (Total)	MtBE	Naphthalene	Isopropylbenzene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	n-Propylbenzene	p-Isopropyltoluene	n-Butylbenzene	sec-Butylbenzene	tert-Butylbenzene	Trichloroethylene	Tetrachloroethylene	Other 8260B VOCs	TPH - Fuel Oil
Env-Or 600 Table 600-2				0.3	100	140	500	0.2	5	330	130	96	85	3,400	110	130	100	0.8	2	Varies	10,000
RCMP Category S-3				0.3	100	140	1,500	0.2	5	330	130	96	85	3,400	110	130	100	0.8	2	Varies	10,000
Sample	**Sample Depth (ft.)**	**PID Reading (ppm)**	**Date**																		
NB-1 S-4	6-8	0.5	9/19/2017	<0.06	<0.06	<0.06	<0.12	<0.1	<0.1	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	ND	120
NB-2 S-5	8-9.25	0.5	9/19/2017	<0.06	<0.06	<0.06	<0.12	<0.1	<0.1	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	ND	18
FD-1 (NB-2 S-5)	8-9.25	0.5	9/19/2017	<0.06	<0.06	<0.06	<0.12	<0.1	<0.1	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	ND	9.6
NB-3 S-3	4-6	0.5	9/7/2017	<0.05	<0.05	<0.05	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ND	11
NB-4 S-12	22-24	0.3	9/11/2017	<0.05	<0.05	<0.05	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ND	<8
NB-5 S-2[9]	3-5	0.5	9/11/2017	<0.05	<0.05	<0.05	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ND	22
NBR-1 S-3	6-8	0.0	9/15/2017	<0.05	<0.05	<0.05	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.099[7]	13
NBR-2 S-1	14.5-15.5 (5.8-6.8)[10]	54.0	9/14/2017	<0.06	<0.06	0.11	4.7	<0.1	0.3	1.6	15	6.1	3.7	1.2	1.1	0.26	<0.06	<0.06	<0.06	ND	200

Notes:
1. All samples were collected by Nobis Engineering, Inc. on the dates indicated.
2. All concentrations reported in parts per million (ppm), equivalent to mg/Kg, except where indicated.
3. "<" indicates that the parameter was not detected at the specified reporting limit, "x". Concentrations in **Bold** indicate exceedances of applicable SRS.
4. The analyses were performed by Eastern Analytical, Inc. of Concord, New Hampshire by EPA Method 8260C for VOCs and EPA Method 8015C for TPH as Fuel Oil.
5. Env-Or 600 Soil Remediation Standards are referenced in New Hampshire Code of Administrative Rules Part Env-Or 600, revised June 1, 2015.
6. Compounds not listed in this table were not detected above laboratory reporting limits in the samples analyzed.
7. The other VOC detected is acetophenone. There is no Soil Remediation Standard for acetophenone.
8. Field duplicate FD-1 was collected from 8-9.25 feet at the NB-2 boring location.
9. Boring NB-5 was renamed from NBR-4. Data is identified as NBR-4 on the laboratory-issued analytical report.
10. Sample collection depth in NBR-2 S-1 was referenced to top of drill casing, depth relative to foundation floor indicated in parentheses.

TABLE 2
SUMMARY OF SOIL SVOC AND PESTICIDE ANALYSES
L.W. Packard Mill
Hill Avenue
Ashland, New Hampshire
NHDES Site 200009045 / Project 36187

Soil Remediation Standards			Naphthalene	Acenaphthene	Fluorene	Anthracene	Phenanthrene	Pyrene	Benzo[a]anthracene	Chrysene	Benzo[b]fluoranthene	Benzo[k]fluoranthene	Benzo[a]pyrene	Benzo[g,h,i]perylene	Indeno[1,2,3-cd]pyrene	Dibenz[a,h]anthracene	Fluoranthene	Acetophenone	1-Methylnaphthalene	2-Methylnaphthalene	Total Pesticides
Env-Or 600 Table 600-2			5	340	77	1,000	ns	720	1	120	1	12	0.7	ns	1	0.7	960	ns	ns	96	varies
RCMP Category S-3			5	340	77	5,000	ns	5,000	52	5,200	52	520	5	ns	52	5	5,000	ns	ns	100	varies
Sample Location	**Sample Depth (ft.)**	**Date**																			
NB-1 S-4	6-8	9/19/2017	<0.08	<0.08	<0.08	<0.08	0.13	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	0.12	0.13	ND
NB-2 S-5	8-9.25	9/19/2017	<0.08	<0.08	<0.08	<0.08	<0.08	0.16	0.099	0.097	0.11	<0.08	0.090	<0.08	<0.08	<0.08	0.18	<0.08	<0.08	<0.08	ND
FD-1 (NB-2 S-5)	8-9.25	9/19/2017	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	ND
NB-3 S-3	4-6	9/7/2017	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	ND
NB-4 S-12	22-24	9/11/2017	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	ND
NB-5 S-2[9]	3-5	9/11/2017	<0.08	<0.08	<0.08	<0.08	0.35	0.54	0.24	0.29	0.29	0.10	0.22	0.16	0.15	<0.08	0.50	<0.08	<0.08	<0.08	ND
NBR-1 S-3	6-8	9/15/2017	<0.08	<0.08	<0.08	<0.08	<0.08	0.19	0.12	0.11	0.14	<0.08	0.11	<0.08	<0.08	<0.08	0.22	0.099	<0.08	<0.08	ND
NBR-2 S-1	14.5-15.5 (5.8-6.8)[10]	9/14/2017	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	0.081	<0.08	<0.08	<0.08	ND

Notes:
1. All samples were collected by Nobis Engineering, Inc. on the dates indicated.
2. All concentrations reported in parts per million (ppm), equivalent to mg/Kg, except where indicated.
3. "<" indicates that the parameter was not detected at the specified reporting limit, "x". Concentrations in **Bold** indicate exceedances of applicable SRS.
4. "ns" indicates that no standard is established.
5. The analyses were performed by Eastern Analytical, Inc. of Concord, New Hampshire by EPA Method 8270D for SVOCs and EPA Method 8081B for pesticides.
5. Env-Or 600 Soil Remediation Standards referenced in New Hampshire Code of Administrative Rules Part Env-Or 600, Table 600-2, adopted on February 1, 2007 and most recently revised on June 1, 2015.
7. Compounds not listed in this table were not detected above laboratory reporting limits in the samples analyzed.
8. Field duplicate FD-1 was collected from 8-9.25 feet at the NB-2 boring location.
9. Boring NB-5 was renamed from NBR-4. Data is identified as NBR-4 on the laboratory-issued analytical report.
10. Sample collection depth in NBR-2 S-1 was referenced to top of drill casing, depth relative to foundation floor indicated in parentheses.

TABLE 3
SUMMARY OF SOIL PCB ANALYSES
L.W. Packard Mill
Hill Avenue
Ashland, New Hampshire
NHDES Site 200009045 / Project 36187

Soil Remediation Standards			PCB-1016	PCB-1221	PCB-1232	PCB-1242	PCB-1248	PCB-1254	PCB-1260	PCB-1262	PCB-1268	Total Polychlorinated Biphenyls
Env-Or 600 Table 600-2			ns	ns	ns	ns	ns	ns	ns	ns	ns	1
RCMP Category S-3			ns	ns	ns	ns	ns	ns	ns	ns	ns	25
Sample	**Sample Depth (ft.)**	**Date**										
NB-1 S-4	6-8	9/19/2017	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.18
NB-2 S-5	8-9.25	9/19/2017	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.18
FD-1 (NB-2 S-5)	8-9.25	9/19/2017	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.18
NB-3 S-3	4-6	9/7/2017	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.18
NB-4 S-12	22-24	9/11/2017	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.18
NB-5 S-2[8]	3-5	9/11/2017	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.18
NBR-1 S-3	6-8	9/15/2017	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.18
NBR-2 S-1	14.5-15.5 (5.8-6.8)[9]	9/14/2017	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.18

Notes:
1. All samples were collected by Nobis Engineering, Inc. on the dates indicated.
2. All concentrations reported in parts per million (ppm), equivalent to mg/Kg, except where indicated.
3. "<" indicates that the parameter was not detected at the specified reporting limit, "x". Concentrations in **Bold** indicate exceedances of applicable SRS.
4. The analyses were performed by Eastern Analytical, Inc. of Concord, New Hampshire by EPA Method 8082A for PCBs.
5. Env-Or 600 Soil Remediation Standards are referenced in New Hampshire Code of Administrative Rules Part Env-Or 600, revised June 1, 2015.
6. Compounds not listed in this table were not detected above laboratory reporting limits in the samples analyzed.
7. Field duplicate FD-1 was collected from 8-9.25 feet at the NB-2 boring location.
8. Boring NB-5 was renamed from NBR-4. Data is identified as NBR-4 on the laboratory-issued analytical report.
9. Sample collection depth in NBR-2 S-1 was referenced to top of drill casing, depth relative to foundation floor indicated in parentheses.

TABLE 4
SUMMARY OF SOIL METALS ANALYSES
L.W. Packard Mill
Hill Avenue
Ashland, New Hampshire
NHDES Site 200009045 / Project 36187

Soil Remediation Standards			Antimony	Arsenic	Beryllium	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
Env-Or 600 Table 600-2			9	11	12	33	1,000	ns	400	7	400	180	89	10	1,000
RCMP Category S-3			74	47	100	280	5,000	ns	400	52	3,100	1,600	690	10	5,000
Sample	**Sample Depth (ft.)**	**Date**													
NB-1 S-4	6-8	9/19/2017	<0.5	3.4	0.5	<0.5	7.8	6.5	51	<0.1	5.6	<0.5	<0.5	<0.5	49
NB-2 S-5	8-9.25	9/19/2017	<0.5	1.3	<0.5	<0.5	4.4	3.6	2.7	<0.1	3.1	<0.5	<0.5	<0.5	27
FD-1 (NB-2 S-5)	8-9.25	9/19/2017	<0.5	1.4	<0.5	<0.5	4.9	3.5	2.9	<0.1	3.2	<0.5	<0.5	<0.5	24
NB-3 S-3	4-6	9/7/2017	<0.5	2.0	0.6	<0.5	7.2	4.9	12	<0.1	4.2	0.6	<0.5	<0.5	30
NB-4 S-12	22-24	9/11/2017	<0.5	2.6	<0.5	<0.5	4.5	5.3	2.3	<0.1	5.7	<0.5	<0.5	<0.5	12
NB-5 S-2[8]	3-5	9/11/2017	<0.5	2.8	0.5	<0.5	45	24	20	0.6	8.8	<0.5	<0.5	<0.5	57
NBR-1 S-3	6-8	9/15/2017	<0.5	2.9	<0.5	<0.5	9.3	15	5.4	<0.1	6.7	<0.5	<0.5	<0.5	32
NBR-2 S-1	14.5-15.5 (5.8-6.8)[9]	9/14/2017	<0.5	**12**	1.3	<0.5	67	63	20	<0.1	34	<0.5	<0.5	<0.5	120

Notes:
1. All samples were collected by Nobis Engineering, Inc. on the dates indicated.
2. All concentrations reported in parts per million (ppm), equivalent to mg/Kg, except where indicated.
3. "<" indicates that the parameter was not detected at the specified reporting limit, "x". Concentrations in **Bold** indicate exceedances of applicable SRS.
4. The analyses were performed by Eastern Analytical, Inc. of Concord, New Hampshire by EPA Method 6020 for metals.
5. Env-Or 600 Soil Remediation Standards are referenced in New Hampshire Code of Administrative Rules Part Env-Or 600, revised June 1, 2015.
6. Compounds not listed in this table were not detected above laboratory reporting limits in the samples analyzed.
7. Field duplicate FD-1 was collected from 8-9.25 feet at the NB-2 boring location.
8. Boring NB-5 was renamed from NBR-4. Data is identified as NBR-4 on the laboratory-issued analytical report.
9. Sample collection depth in NBR-2 S-1 was referenced to top of drill casing, depth relative to foundation floor indicated in parentheses.

TABLE 5
SUMMARY OF GROUNDWATER ELEVATION DATA
L.W. Packard Mill
Hill Avenue
Ashland, New Hampshire
NHDES Site 200009045 / Project 36187

Well No.	Reference Elevation	Date	Depth to Groundwater (ft.)	Groundwater Elevation (ft.)
NBR-1	101.94	11/27/2017	0.00	101.94
NBR-2	101.70	11/27/2017	9.17	92.53
NB-1	118.53	10/20/2017 11/27/2017	dry dry	<100.11 <100.11
NB-2	114.55	10/20/2017 11/27/2017	11.31 10.85	103.24 103.70
NB-3	95.63	10/20/2017 11/27/2017	10.31 9.47	85.32 86.16
NB-4	101.35	11/27/2017	12.10	89.25
NB-5	92.26	11/27/2017	4.96	87.30

Notes:

1. Well elevations are referenced to the top of the well PVC pipe or top of steel well casing where no PVC well is present. Reference elevations are based on an arbitrary datum of 100.00 feet established on the corner of the concrete building foundation/transformer pad adjacent to monitoring well NB-3.

2. Groundwater level measurements were obtained by Nobis Engineering, Inc. using a Solinst electronic water level indicator.

TABLE 6
SUMMARY OF GROUNDWATER VOC ANALYSES
L.W. Packard Mill
Hill Avenue
Ashland, New Hampshire
NHDES Site 200009045 / Project 36187

NHDES Groundwater Standards		Benzene	Toluene	Ethylbenzene	Xylenes (Total)	Naphthalene	Methyl tert-Butyl Ether (MtBE)	tert-Butyl Alcohol (tBA)	tert-Amyl Methyl Ether (tAME)	Isopropylbenzene	n-Butylbenzene	sec-Butylbenzene	tert-Butylbenzene	p-Isopropyltoluene	n-Propylbenzene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Trichloroethene (TCE)	Tetrachloroethene (PCE)	1,1-Dichloroethane (1,1-DCA)
AGQS		5	1,000	700	10,000	20	13	40	140	800	260	260	260	260	260	330	330	5	5	81
GW-2		2,900	50,000	1,500	17,000	1,700	2,600	ns	ns	ns	ns	ns	ns	ns	ns	1300	ns	20	240	130
Location	**Date**																			
NB-1	10/20/2017	Well Dry - No Sample Collected																		
NB-2	10/20/2017	<1	<1	<1	<2	<5	<1	<30	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
NB-3	10/20/2017	<1	<1	<1	<2	<5	<1	<30	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
NB-4	11/28/2017	1	<1	<1	<2	<5	<1	<30	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
NB-5	11/27/2017	<1	<1	<1	<2	<5	<1	<30	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
FD-1 (NB-5)	11/27/2017	<1	<1	<1	<2	<5	<1	<30	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
NBR-1	11/28/2017	<1	<1	<1	<2	<5	<1	<30	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	9
NBR-2	11/27/2017	<1	<1	<1	<2	<5	<1	<30	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	7

Notes:
1. All samples were collected by Nobis Engineering, Inc. on the dates indicated.
2. All concentrations are reported in µg/L, equivalent to parts per billion (ppb), except where indicated.
3. "<X" indicates that the parameter was not detected at the specified reporting limit X. Concentrations in **Bold** indicate exceedances of applicable AGQS. Underlined values indicate exceedances of applicable GW-2 standards. "ns" indicates that no standard is established for the compound. "NA" indicates the parameter was not analyzed.
4. The analyses were performed by Eastern Analytical, Inc. of Concord, New Hampshire by EPA Method 8260C for VOCs.
5. AGQS refers to the Ambient Groundwater Quality Standards referenced in New Hampshire Code of Administrative Rules Part Env-Or 600 revised June 1, 2015. GW-2 standards are referenced in the New Hampshire Department of Environmental Services' Vapor Intrusion Guidance updated February 7, 2013.
6. Compounds not listed in this table were not detected above laboratory reporting limits in the samples analyzed.
7. Field duplicate FD-1 was collected from monitoring well NB-5.

TABLE 7
SUMMARY OF GROUNDWATER SVOC AND PESTICIDE ANALYSES
L.W. Packard Mill
Hill Avenue
Ashland, New Hampshire
NHDES Site 200009045 / Project 36187

NHDES Groundwater Standards		Naphthalene	2-Methylnaphthalene	1-Methylnaphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo[a]anthracene	Chrysene	Benzo[b]fluoranthene	Benzo[k]fluoranthene	Benzo[a]pyrene	Indeno[1,2,3-cd]pyrene	Dibenz[a,h]anthracene	Benzo[g,h,i]perylene	Total Pesticides
AGQS		20	280	160	420	420	280	210	2100	280	210	0	5	0.1	0.5	0.2	0.1	ns	210	varies
GW-2		1,700	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
Location	**Date**																			
NB-1	10/20/2017	Well Dry - No Sample Collected																		
NB-2	10/20/2017	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ND
NB-3	10/20/2017	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ND
NB-4	11/28/2017	<0.1	<0.1	<0.1	<0.1	<0.1	0.13	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ND
NB-5	11/27/2017	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ND
FD-1 (NB-5)	11/27/2017	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ND
NBR-1	11/28/2017	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ND
NBR-2	11/27/2017	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ND

Notes:
1. All samples were collected by Nobis Engineering, Inc. on the dates indicated.
2. All concentrations are reported in µg/L, equivalent to parts per billion (ppb), except where indicated.
3. "<X" indicates that the parameter was not detected at the specified reporting limit X. Concentrations in **Bold** indicate exceedances of applicable AGQS. Underlined values indicate exceedances of applicable GW-2 standards. "ns" indicates that no standard is established for the compound. "NA" indicates the parameter was not analyzed. "ND" indicates the parameter was not detected.
4. The analyses were performed by Eastern Analytical, Inc. of Concord, New Hampshire by EPA Method 8270D for SVOCs and EPA Method 8081B for pesticides.
5. AGQS refers to the Ambient Groundwater Quality Standards referenced in New Hampshire Code of Administrative Rules Part Env-Or 600 revised June 1, 2015. GW-2 standards are referenced in the New Hampshire Department of Environmental Services' Vapor Intrusion Guidance updated February 7, 2013.
6. Compounds not listed in this table were not detected above laboratory reporting limits in the samples analyzed.
7. Field duplicate FD-1 was collected from monitoring well NB-5.

TABLE 8
SUMMARY OF GROUNDWATER PCB ANALYSES
L.W. Packard Mill
Hill Avenue
Ashland, New Hampshire
NHDES Site 200009045 / Project 36187

NHDES Groundwater Standards		PCB-1016	PCB-1221	PCB-1232	PCB-1242	PCB-1248	PCB-1254	PCB-1260	PCB-1262	PCB-1268	Total Polychlorinated Biphenyls
AGQS		ns	ns	ns	ns	ns	ns	ns	ns	ns	0.5
GW-2		ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
Location	**Date**										
NB-1	12/8/2017	Well Dry - No Sample Collected									
NB-2	12/8/2017	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.8
NB-3	12/8/2017	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.8
NB-4	11/28/2017	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.8
NB-5	11/27/2017	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.8
FD-1 (NB-5)	11/27/2017	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.8
NBR-1	11/28/2017	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.8
NBR-2	11/27/2017	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.8

Notes:
1. All samples were collected by Nobis Engineering, Inc. on the dates indicated.
2. All concentrations are reported in µg/L, equivalent to parts per billion (ppb), except where indicated.
3. "<X" indicates that the parameter was not detected at the specified reporting limit X. Concentrations in **Bold** indicate exceedances of applicable AGQS. Underlined values indicate exceedances of applicable GW-2 standards. "ns" indicates that no standard is established for the compound. "NA" indicates the parameter was not analyzed.
4. The analyses were performed by Eastern Analytical, Inc. of Concord, New Hampshire by EPA Method 8082A for PCBs.
5. AGQS refers to the Ambient Groundwater Quality Standards referenced in New Hampshire Code of Administrative Rules Part Env-Or 600 revised June 1, 2015. GW-2 standards are referenced in the New Hampshire Department of Environmental Services' Vapor Intrusion Guidance updated February 7, 2013.
6. Compounds not listed in this table were not detected above laboratory reporting limits in the samples analyzed.
7. Field duplicate FD-1 was collected from monitoring well NB-5.

TABLE 9
SUMMARY OF GROUNDWATER METALS ANALYSES
L.W. Packard Mill
Hill Avenue
Ashland, New Hampshire
NHDES Site 200009045 / Project 36187

NHDES Groundwater Standards		Antimony	Arsenic	Beryllium	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
AGQS		6	10	4	5	100	1,300	15	2	100	50	100	2	ns
Location	**Date**													
NB-1	10/20/2017	Well Dry - No Sample Collected												
NB-2	10/20/2017	2	2	<1	<1	<1	2	<1	<0.1	4	1	<1	<1	5
NB-3	10/20/2017	<1	<1	<1	<1	<1	2	<1	<0.1	2	2	<1	<1	9
NB-4	11/28/2017	<1	<1	<1	<1	<1	6	<1	<0.1	3	<1	<1	<1	20
NB-5	11/27/2017	<1	<1	<1	<1	5	4	<1	0.2	1	<1	<1	<1	12
FD-1 (NB-5)	11/27/2017	<1	<1	<1	<1	5	3	<1	0.2	1	<1	<1	<1	8
NBR-1	11/28/2017	<1	1	<1	<1	<1	3	<1	<0.1	<1	<1	<1	<1	<5
NBR-2	11/27/2017	<1	<1	<1	<1	<1	3	<1	<0.1	<1	<1	<1	<1	<5

Notes:
1. All samples were collected by Nobis Engineering, Inc. on the dates indicated.
2. All concentrations are reported in µg/L, equivalent to parts per billion (ppb), except where indicated.
3. "<X" indicates that the parameter was not detected at the specified reporting limit X. Concentrations in **Bold** indicate exceedances of applicable AGQS. Underlined values indicate exceedances of applicable GW-2 standards. "ns" indicates that no standard is established for the compound. "NA" indicates the parameter was not analyzed.

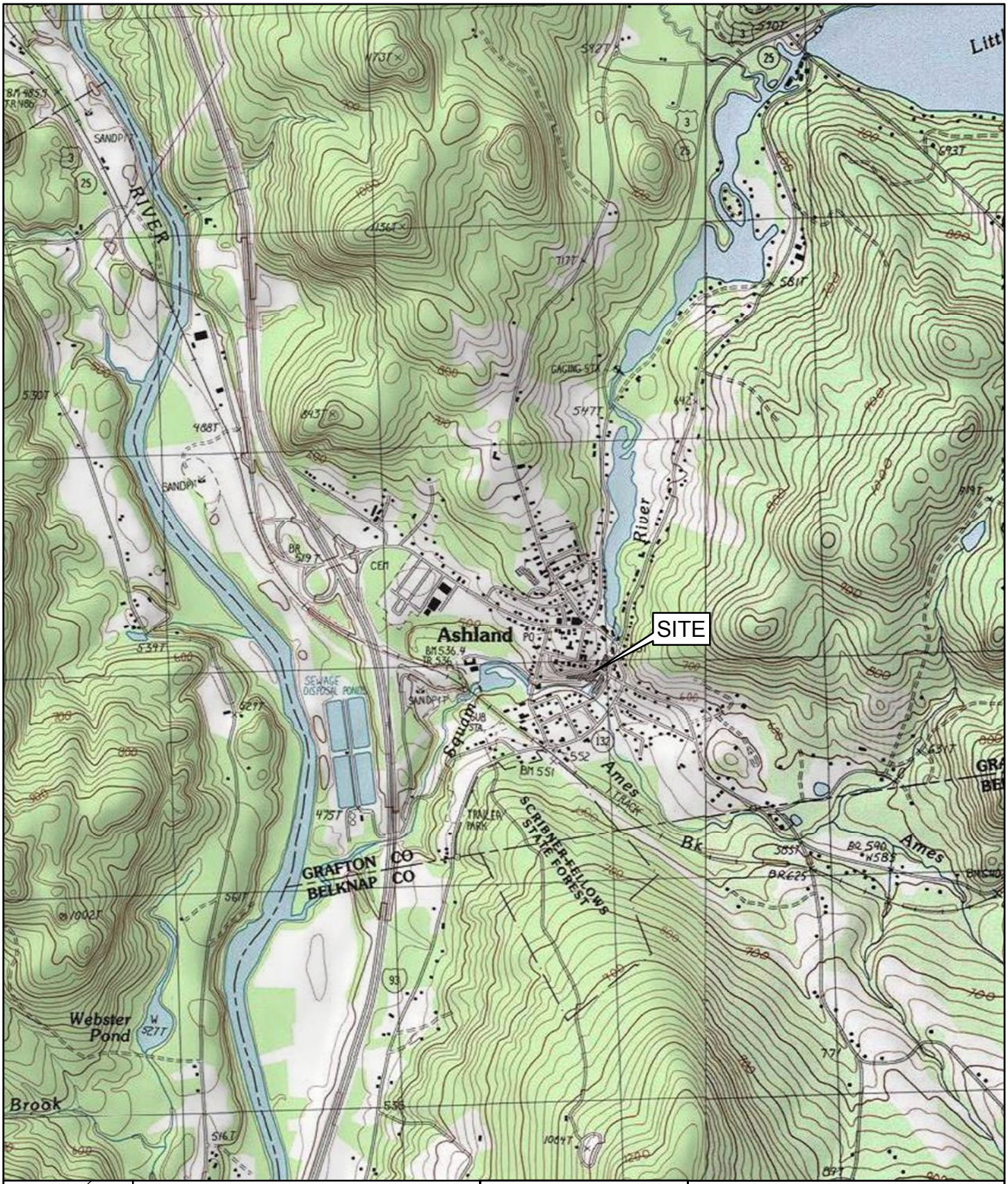
4. The analyses were performed by Eastern Analytical, Inc. of Concord, New Hampshire by EPA Method 200.8 for Metals.
5. AGQS refers to the Ambient Groundwater Quality Standards referenced in New Hampshire Code of Administrative Rules Part Env-Or 600 revised June 1, 2015.
6. Compounds not listed in this table were not detected above laboratory reporting limits in the samples analyzed.
7. Field duplicate FD-1 was collected from monitoring well NB-5.

TABLE 10
SUMMARY OF GROUNDWATER PFAS ANALYSES
L.W. Packard Mill
Hill Avenue
Ashland, New Hampshire
NHDES Site 200009045 / Project 36187

NHDES Groundwater Standards		PFPeA	PFHxA	PFHpA	PFOA	PFOS	Total PFOA & PFOS
AGQS		ns	ns	ns	70	70	70
Location	**Date**						
NB-5	11/27/2017	7.06	8.05	20.4	39.7	5.02	44.72
FD-1 (NB-5)	11/27/2017	6.61	8.84	21.3	44.4	4.37	48.77
NBR-2	11/27/2017	<4.20	<4.20	<4.20	<4.20	<4.20	<8.40

Notes:
1. All samples were collected by Nobis Engineering, Inc. on the dates indicated.
2. All concentrations are reported in ng/L, equivalent to parts per trillion (ppt), except where indicated.
3. "<X" indicates that the parameter was not detected at the specified reporting limit X. Concentrations in **Bold** indicate exceedances of applicable AGQS. Underlined values indicate exceedances of applicable GW-2 standards. "ns" indicates that no standard is established for the compound. "NA" indicates the parameter was not analyzed.
4. The analyses were performed by Vista Analytical Laboratory of El Dorado Hills, California for Eastern Analytical, Inc. of Concord, New Hampshire by EPA Method 537 for PFAS.
5. AGQS refers to the Ambient Groundwater Quality Standards referenced in New Hampshire Code of Administrative Rules Part Env-Or 600 revised June 1, 2015.
6. Compounds not listed in this table were not detected above laboratory reporting limits in the samples analyzed.
7. Field duplicate FD-1 was collected from monitoring well NB-5.

FIGURES



USGS Topographic Map
Ashland, New Hampshire
1987

0 1,000 2,000 4,000

Feet1 inch = 2,000 feet

N

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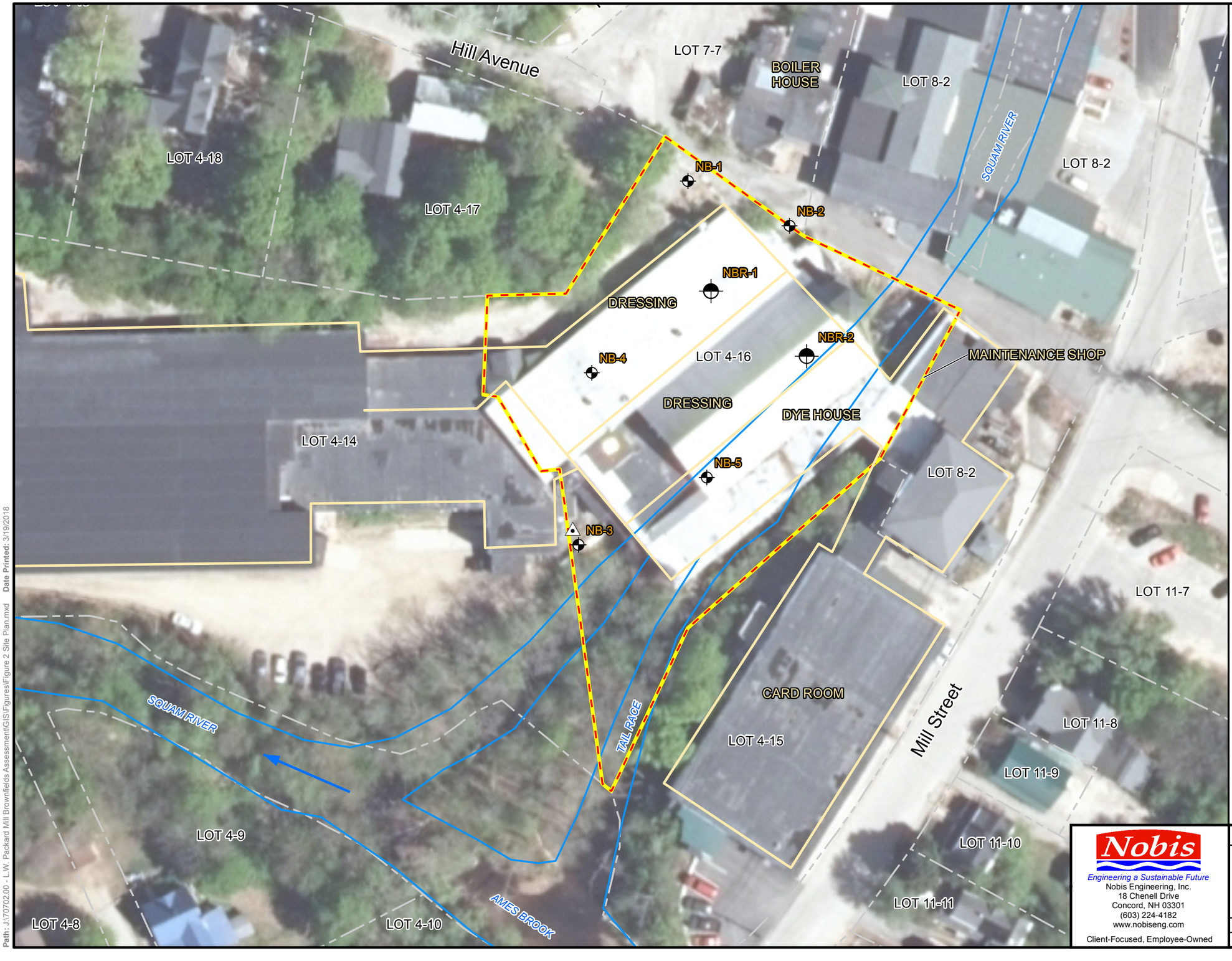
Client-Focused, Employee-Owned

FIGURE 1

LOCUS PLAN
L.W. PACKARD MILL
HILL AVENUE
ASHLAND, NEW HAMPSHIRE

PREPARED BY: NZ	CHECKED BY: TA
PROJECT NO. 70702.00	DATE: MARCH 2018

Path: J:\70702.00 - L.W. Packard Mill Brownfields Assessment\GIS\Figures\Figure 1 Locus Plan.mxd **Date Printed:** 3/19/2018



Notes:

1. Site Plan was developed from several sources including, City of Ashland Tax Map 17 and observations made by Nobis Engineering, Inc. Aerial photograph provided by New Hampshire GRANIT.

2. A temporary benchmark with an arbitrary elevation of 100.00 feet was established on the corner of the concrete building foundation/transformer pad adjacent to NB-3.

3. Locations of site features depicted hereon are approximate and given for illustrative purposes only.

Legend

- Temporary Benchmark (TBM)
- Shallow Bedrock Monitoring Well
- Overburden Monitoring Well
- Building Features
- Property Boundary
- Edge of Waterbody
- Site Boundary

0 25 50 100

Feet

1 inch = 50 feet

N

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FIGURE 2

SITE PLAN
L.W. PACKARD MILL
HILL AVENUE
ASHLAND, NEW HAMPSHIRE

PREPARED BY: NZ	CHECKED BY: TA
PROJECT NO. 70702.00	DATE: MARCH 2018

Path: J:\70702.00 - L.W. Packard Mill Brownfields Assessment\GIS\Figures\Figure 2 Site Plan.mxd **Date Printed:** 3/19/2018

NBR-1, S-3, 6-8'	
Date	9/15/2017
TPH - DRO	<SRS
VOCs	ND
SVOCs	<SRS
PCBs	ND
Pesticides	ND
Metals	<SRS

NB-1, S-4, 6-8'	
Date	9/19/2017
TPH - DRO	<SRS
VOCs	ND
SVOCs	<SRS
PCBs	ND
Pesticides	ND
Metals	<SRS

NB-2, S-5, 8-9.25'	
Date	9/19/2017
TPH - DRO	<SRS
VOCs	ND
SVOCs	<SRS
PCBs	ND
Pesticides	ND
Metals	<SRS

NB-4, S-12, 22-24'	
Date	9/11/2017
TPH - DRO	ND
VOCs	ND
SVOCs	ND
PCBs	ND
Pesticides	ND
Metals	<SRS

NBR-2, S-1, 14.5-15.5' (5.3-6.3' bgs)	
Date	9/14/2017
TPH - DRO	<SRS
VOCs	<SRS
SVOCs	<SRS
PCBs	ND
Pesticides	ND
Metals	
Arsenic	**12**

NB-3, S-3, 4-6'	
Date	9/7/2017
TPH - DRO	<SRS
VOCs	ND
SVOCs	ND
PCBs	ND
Pesticides	ND
Metals	<SRS

NB-5, S-2, 3-5' (3-5' bgs)	
Date	9/11/2017
TPH - DRO	<SRS
VOCs	ND
SVOCs	<SRS
PCBs	ND
Pesticides	ND
Metals	<SRS

Notes:

1. Site Plan was developed from several sources including, City of Ashland Tax Map 17 and observations made by Nobis Engineering, Inc. Aerial photograph provided by New Hampshire GRANIT.

2. A temporary benchmark with an arbitrary elevation of 100.00 feet was established on the corner of the concrete building foundation/transformer pad adjacent to NB-3.

3. Contaminate concentrations are given in parts per million (ppm). **Bold** values indicate an exceedance of New Hampshire Soil Remediation Standards (SRS).

4. Locations of site features depicted hereon are approximate and given for illustrative purposes only.

Legend

- Temporary Benchmark (TBM)
- Shallow Bedrock Monitoring Well
- Overburden Monitoring Well
- Building Features
- Property Boundary
- Edge of Waterbody
- Site Boundary

0 25 50 100

Feet

1 inch = 50 feet

N

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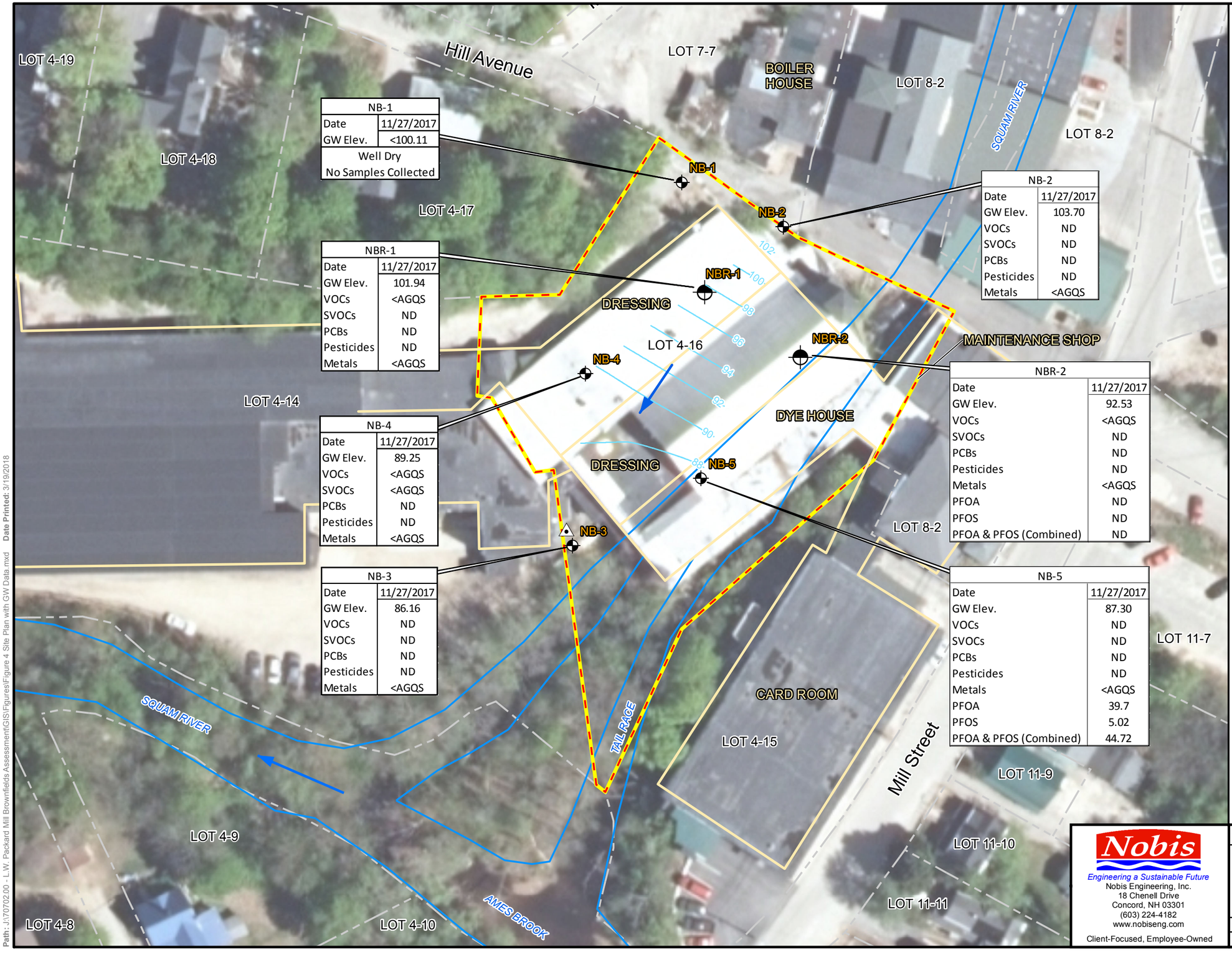
FIGURE 3

SITE PLAN WITH SOIL DATA
L.W. PACKARD MILL
HILL AVENUE
ASHLAND, NEW HAMPSHIRE

PREPARED BY: NZ	CHECKED BY: TA
PROJECT NO. 70702.00	DATE: MARCH 2018

Path: J:\70702.00 - L.W. Packard Mill Brownfields Assessment\GIS\Figures\Figure 3 Site Plan with Soil Data.mxd **Date Printed:** 3/19/2018



NB-1	
Date	11/27/2017
GW Elev.	<100.11
Well Dry No Samples Collected	

NB-2	
Date	11/27/2017
GW Elev.	103.70
VOCs	ND
SVOCs	ND
PCBs	ND
Pesticides	ND
Metals	<AGQS

NBR-1	
Date	11/27/2017
GW Elev.	101.94
VOCs	<AGQS
SVOCs	ND
PCBs	ND
Pesticides	ND
Metals	<AGQS

NBR-2	
Date	11/27/2017
GW Elev.	92.53
VOCs	<AGQS
SVOCs	ND
PCBs	ND
Pesticides	ND
Metals	<AGQS
PFOA	ND
PFOS	ND
PFOA & PFOS (Combined)	ND

NB-4	
Date	11/27/2017
GW Elev.	89.25
VOCs	<AGQS
SVOCs	<AGQS
PCBs	ND
Pesticides	ND
Metals	<AGQS

NB-3	
Date	11/27/2017
GW Elev.	86.16
VOCs	ND
SVOCs	ND
PCBs	ND
Pesticides	ND
Metals	<AGQS

NB-5	
Date	11/27/2017
GW Elev.	87.30
VOCs	ND
SVOCs	ND
PCBs	ND
Pesticides	ND
Metals	<AGQS
PFOA	39.7
PFOS	5.02
PFOA & PFOS (Combined)	44.72

Notes:

1. Site Plan was developed from several sources including, City of Ashland Tax Map 17 and observations made by Nobis Engineering, Inc. Aerial photograph provided by New Hampshire GRANIT.

2. A temporary benchmark with an arbitrary elevation of 100.00 feet was established on the corner of the concrete building foundation/transformer pad adjacent to NB-3.

3. Groundwater contours were generated by ESRI Spatial Analyst version 10.5.1 using natural neighbor method. Other interpretations are possible. Bedrock groundwater elevations measured in monitoring wells NBR-1 and NBR-2 were not included in the generation of groundwater contours.

4. PFOA and PFOS concentrations are given in parts per trillion (ppt); all other contaminant concentrations are given in parts per billion (ppb). **Bold** values indicate an exceedance of New Hampshire Ambient Groundwater Quality Standards (AGQS).

5. Locations of site features depicted hereon are approximate and given for illustrative purposes only.

Legend

- Temporary Benchmark (TBM)
- Shallow Bedrock Monitoring Well
- Overburden Monitoring Well
- Groundwater Elevation Contour (11/27/17)
- Inferred Groundwater Flow Direction (11/27/17)
- Building Features
- Property Boundary
- Edge of Waterbody
- Site Boundary

0 25 50 100

Feet

1 inch = 50 feet

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FIGURE 4

SITE PLAN WITH GROUNDWATER DATA
L.W. PACKARD MILL
HILL AVENUE
ASHLAND, NEW HAMPSHIRE

PREPARED BY: NZ	CHECKED BY: TA
PROJECT NO. 70702.00	DATE: MARCH 2018

Path: J:\70702.00 - L.W. Packard Mill Brownfields Assessment\GIS\Figures\Figure 4 Site Plan with GW Data.mxd Date Printed: 3/19/2018

APPENDICES

APPENDIX A

LIMITATIONS

1) These environmental services were performed in accordance with generally accepted practices of other consultants undertaking similar assessments at the same time and in the same geographical area. The results of this assessment are based on our professional judgment and are not scientific certainties. Specifically, Nobis Engineering, Inc. does not and cannot represent that the site contains no hazardous wastes, oil or other latent conditions beyond those observed during this assessment. No other warranty, express or implied, is made.

2) The observations and conclusions presented in this report were made solely on the basis of conditions described in the report and not on scientific tasks or procedures beyond the scope of described services or the budgetary and time constraints imposed by the client.

3) Observations were made of the site as indicated in this report. Where access to portions of the site was unavailable or limited, Nobis Engineering, Inc. renders no opinion as to the presence of hazardous wastes or the presence of indirect evidence of hazardous wastes in that portion of the site.

4) No property boundary, site feature or topographic surveys of the site were performed by Nobis Engineering, Inc. unless specifically indicated in the text of the report.

5) No sampling or testing was performed for the presence of dioxins, furans, herbicides, radon, or urea-formaldehyde at the target property unless specifically indicated in the text of the report.

6) Chemical analyses have been performed for specific parameters during this assessment, as described in the text of the report. Additional chemical constituents not searched for during the current study may be present in soil and/or groundwater at the site. In addition, where such analyses have been conducted by an outside laboratory, Nobis Engineering, Inc. has relied upon the data provided and has not conducted an independent evaluation of the reliability of these data.

7) This report has been prepared for the exclusive use of the New Hampshire Department of Environmental Services, US Environmental Protection Agency, and Town of Ashland, solely for use in an environmental evaluation of the site. This report shall not, in whole or in part, be conveyed to any other party, other than the identified users without prior written consent of Nobis Engineering, Inc.

APPENDIX B

BORING LOG

Nobis — Engineering a Sustainable Future

Project: L.W. Packard Mill

Location: Ashland, NH

Nobis Project No.: 70702.00

Boring No.: **NB-1**

Boring Location: See Site Plan

Checked by:

Date Start: September 19, 2017

Date Finish: September 19, 2017

Contractor: New England Boring Contractors

Driller: P. Lebossier

Nobis Rep.: R. Rizza

Rig Type / Model: SS-15

Hammer Type: Automatic Hammer

Hammer Hoist: Hydraulic

Ground Surface Elev.:

Datum:

	Drilling Method	Sampler
Type	Casing	Split-Spoon
Size ID (in.)	4	1-3/8
Advancement	Drive and Wash	140-lb Hammer

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
09/20/17	08:00	Not Encountered		18.45	
11/27/17	10:00	Not Encountered		18.42	

Depth (ft.)	Sample Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	PID (ppm)	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	Sample Description and Remarks (Classification System: Modified Burmister)	Notes
	S-1	10	0-2	4						
1				7						
				6	0.0					
2				2						
	S-2	12	2-4	2					S-2A (6"): Loose, dark brown/yellow, fine to medium SAND, little Silt, trace coarse Sand, trace coarse Gravel, very few pieces of metal, plant roots, and brick fragments. Dry. (FILL).	
3				4						
				4	0.0			FILL		
4				6					S-2B (6"): Loose, tan, fine SAND, trace Silt. Dry.	
	S-3	19	4-6	2					S-3: Loose, tan, fine SAND, trace medium Sand, trace Silt. Dry.	
5				2						
				3	0.0					
6				3						
	S-4	24	6-8	5					S-4A (4"): Loose, tan, fine SAND, trace Silt. Dry.	1
7				4					S-4B (6"): Loose, dark brown, fine to medium SAND, little Silt, trace coarse Sand, several medium-particle to fine fragment sized pieces of coal slag. Dry. (FILL).	
				4	0.5					
8				5					S-4C (14"): Loose, tan, fine SAND, trace medium Sand, trace Silt. Dry.	
	S-5	11	8-10	8					S-5: Medium dense, tan, fine SAND, trace Silt. Moist.	
9				6						
				6	0.1					
10				5						
	S-6	15	10-12	6					S-6: Medium dense, tan, fine SAND, trace Silt. Moist.	
11				6						
				8	0.1					
12				8						
	S-7	11	12-14	60					S-7A (4"): Tan, fine SAND, trace Silt, trace coarse Gravel. Wet.	
13				100				SAND		
				100/3"	0.4				S-7B (7"): Brown, fine SAND, little medium to coarse Sand, trace Silt, little coarse Gravel, trace fine Gravel. Wet.	2 3
14										
15										
16										
	S-8	6	16-18	8					S-8: Very dense, tan/olive, fine SAND, some Silt, trace roack at 4-6". Wet. Possible top of bedrock.	
17				16						
				50	0.4					
18				50/2"						
19								BEDROCK		
									Boring terminated at 19 feet on refusal.	4
20										

WELL DETAIL: Flush-Mount Roadbox; Sand; Bentonite; Filter Sand; 15' Screen

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

1) Collected laboratory sample from 6-8' at 1130.
2) Rolled through rock from 13'3" to 16' bgs.
3) 4" casing to 13'3" bgs.
4) Rolled to 19'; cuttings look the same as 11-14' at NB-2.

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BORING LOG

Nobis — Engineering a Sustainable Future

Project: L.W. Packard Mill

Location: Ashland, NH

Nobis Project No.: 70702.00

Boring No.: **NB-2**

Boring Location: See Site Plan

Checked by:

Date Start: September 19, 2017

Date Finish: September 19, 2017

Contractor: New England Boring Contractors

Driller: P. Lebossier

Nobis Rep.: R. Rizza

Rig Type / Model: SS-15

Hammer Type: Automatic Hammer

Hammer Hoist: Hydraulic

Ground Surface Elev.:

Datum:

	Drilling Method	Sampler
Type	Casing	Split-Spoon
Size ID (in.)	4	1-3/8
Advancement	Drive and Wash	140-lb Hammer

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▽ 09/20/17	08:00	10.98			
▼ 11/27/17	10:00	10.85			

Depth (ft.)	Sample Info: Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	PID (ppm)	Ground Water	Lithology: Graphic	Lithology: Stratum Elev. / Depth (ft.)	Sample Description and Remarks (Classification System: Modified Burmister)	Well Detail	Notes
1	S-1	13	0-2	2 4					S-1B (10"): Loose, tan, fine SAND, trace Silt. Dry.	Flush-Mount Roadbox	1
2				4 4	0.4					Sand	
3	S-2	17	2-4	6 8					S-2: Medium dense, tan, fine SAND, trace Silt. Dry.	Bentonite	
4				6 6	0.4						
5	S-3	20	4-6	3 3				SAND	S-3: Medium dense, tan, fine SAND, trace Silt. Dry.		
6				3 3	0.4						
7	S-4	15	6-8	6 5					S-4: Medium dense, tan, fine SAND, trace Silt. Dry.		
8				5 4	0.5						
9	S-5	8	8-10	6 6					S-5: Tan, fine SAND, trace medium Sand, trace Silt. Dry.	Filter Sand	2
10				50/3"	0.5					10' Screen	
11						▼			Switched to roller bit at 9'3". Cuttings from 9'3" to 11' bgs were dark gray, very similar to bedrock cuttings observed inside building.		
12								BEDROCK			
13									From 11' to 14' cuttings were brown/orange, maybe a large bedrock fracture.		
14											
15	S-6	0	14-16	50/0"					S-6: No recovery. Boring terminated at 14 feet on refusal.		
16											
17											
18											
19											
20											

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

1) Asphalt 3" thick
2) Laboratory sample collected from S-5 8'-9'3" at 0900. Collected field duplicate FD-1 from same location (S-5 8'-9'3") at 0930.

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BORING LOG

Nobis — Engineering a Sustainable Future

Project: L.W. Packard Mill

Location: Ashland, NH

Nobis Project No.: 70702.00

Boring No.: **NB-3**

Boring Location: See Site Plan

Checked by:

Date Start: September 7, 2017

Date Finish: September 7, 2017

Contractor: New England Boring Contractors

Driller: B. Raiche

Nobis Rep.: J. Stewart

Rig Type / Model: Simco M-2

Hammer Type: Donut Hammer

Hammer Hoist: Rope & Cathead

Ground Surface Elev.:

Datum:

	Drilling Method	Sampler
Type	Casing	Split-Spoon
Size ID (in.)	4	1-3/8
Advancement	Drive and Wash	140-lb Hammer

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▽ 09/07/17	11:20	5.9			15 Minutes
▼ 11/27/17	10:00	9.47			

Depth (ft.)	Sample Info: Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	PID (ppm)	Ground Water	Lithology: Graphic	Lithology: Stratum Elev. / Depth (ft.)	Sample Description and Remarks (Classification System: Modified Burmister)	Well Detail	Notes
1	S-1	8	0-2	2 3					S-1B (3"): Brown, fine SAND, little Silt, trace fine Gravel, some asphalt-like fragments at 6-8". Moist.	Flush-Mount Roadbox; Sand	
2				7 8	0.1						
3	S-2	8	2-4	6 3	0.2				S-2: Dark brown, fine SAND, little Silt, trace medium to coarse Sand. Moist.	Bentonite	
4				2 3	0.2						
5	S-3	7	4-6	2 2	0.1				S-3: Tan, fine SAND, trace Silt. Moist.		1
6				3 13	0.5	▽		SAND			
7	S-4	5	6-8	7 4	0.5				S-4: Brown, fine SAND, some Silt, little coarse Gravel, trace medium to coarse Sand. Wet.		
8				4 8	0.4						
9	S-5	6.5	8-10	8 7	0.4				S-5A (3"): Brown, fine to medium SAND, trace Silt. Wet. Wash from above. S-5B (2"): Tan, fine SAND & SILT. Wet. S-5C (1"): Tan, fine SAND, little Silt. Wet.	Filter Sand; 10' Screen	
10				24 11	0.5	▼					
11	S-6	5	10-12	8 20	0.5				S-6A (2"): Brown, fine to coarse SAND, trace Silt. Wet. Wash from above.		
12				25 25	0.6			SAND AND GRAVEL	S-6B (2"): Brown, fine SAND and coarse Gravel, little Silt, trace medium to coarse Sand. Wet. S-6C (1"): Brown/red, fine SAND and coarse Gravel, little Silt, trace medium to coarse Sand. Wet.		
13	S-7	22	12-14	15 22	0.6				S-7A (6"): Brown, fine to coarse SAND, trace Silt, trace fine Gravel. Wet. Possible wash from above.		
14				24 20	0.6			SAND	S-7B (6"): Brown/red, fine to medium SAND, some coarse Gravel, little Silt. Wet.		
15					0.6				Boring terminated at 14 feet.		2
16											
17											
18											
19											
20											

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

1) Collected laboratory sample from 4-6' bgs at 0945.
2) Bedrock not encountered at termination depth.

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BORING LOG

Nobis — Engineering a Sustainable Future

Project: L.W. Packard Mill
Location: Ashland, NH
Nobis Project No.: 70702.00

Boring No.: NB-4
Boring Location: See Site Plan
Checked by:
Date Start: September 7, 2017
Date Finish: September 11, 2017

Contractor: New England Boring Contractors
Driller: B. Raiche
Nobis Rep.: J. Stewart

Rig Type / Model: Simco M-2
Hammer Type: Donut Hammer
Hammer Hoist: Rope & Cathead

Ground Surface Elev.:
Datum:

	Drilling Method	Sampler
Type	Casing	Split-Spoon
Size ID (in.)	4	1-3/8
Advancement	Drive and Wash	140-lb Hammer

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▽ 09/11/17	09:42	13	24		15 Minutes
▼ 11/27/17	10:00	12.10			

Depth (ft.)	Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	PID (ppm)	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	WELL DETAIL	NOTES
0									Cored through 5.5" concrete floor slab.	Flush-Mount Roadbox in Concrete Floor Slab	
1	S-1	9.5	0-2	7 11					S-1A (2"): Brown, fine to medium SAND, little coarse Sand, trace Silt. Wet. S-1B (6"): Brown/black, fine to medium SAND, some Silt, trace fine Gravel. Moist.		
2				13 18	0.7				S-1C (1"): Tan, fine SAND, little Silt. Moist. S-2A (1"): Wet. Sluff from above.	Soil Cuttings	
3	S-2	10.5	2-4	9 7	0.7			SAND	S-2B (10"): Tan, fine SAND, little Silt. Moist.		
4				7 6	0.5						
5	S-3	11	4-6	3 5	0.5				S-3: Brown, fine SAND, little Silt, rock fragment at top of sample. Moist.		
6				5 23	0.0					Bentonite	
7	S-4	14	6-8	22 116	0.0			SAND AND GRAVEL	S-4: Brown, fine SAND and coarse Gravel, little Silt, trace medium to coarse Sand. Moist. Drove spoon through several rocks.		
8				57 64	0.2						
9	S-5	15	8-10	50 110	0.2				S-5: Brown, fine to medium SAND, some Silt, some coarse Gravel, little coarse Sand. Moist.		
10				65 67	0.2						
11	S-6	10	10-12	82 74	0.2				S-6: Brown, fine SAND, some Silt, little coarse Gravel, little medium to coarse Sand. Moist.		
12				65 52	0.3						
13	S-7	10	12-14	27 23	0.3	▼ ▽			S-7: Brown, fine SAND, trace Silt. Wet.		
14				23 30	0.3						
15	S-8	12	14-16	30 37	0.3				S-8A (10"): Brown, fine SAND, trace Silt, trace medium Sand. Wet. S-8B (2"): Gray, fine to medium SAND, trace Silt. Wet.	Filter Sand	
16				40 54				SAND			
17	S-9	10	16-18	49 42	0.3				S-9A (4"): Gray, fine SAND, trace Silt. Wet. S-9B (6"): Brown, fine to medium SAND, trace Silt. Wet.	14' Screen	
18				35 37	0.3						
19	S-10	13	18-20	35 54	0.3				S-10A (4"): Gray, fine to medium SAND, trace Silt. Wet. S-10B (1"): Brown, fine to coarse SAND, little Silt. Wet. S-10C (8"): Gray, fine SAND, little Silt. Wet.		
20				50 48	0.3						
21	S-11	12	20-22	28 40	0.3				S-11: Brown, fine SAND, little Silt. Wet.		
22				55 58	0.3						
23	S-12	16	22-24	31 40	0.3				S-12: Brown, fine SAND, little Silt. Wet.		2
24				54 91	0.3						
					0.3				Boring terminated at 24 feet.		3

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:
1) Boring/Monitoring well was initially scoped as bedrock open-borehole NBR-3. Boring was renamed to NB-4 after being installed as an overburden well.
2) Collected laboratory sample from 22-24' bgs at 0945 on 9/11/17.
3) Bedrock not encountered at termination depth.

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BORING LOG

Nobis — Engineering a Sustainable Future

Project: L.W. Packard Mill
Location: Ashland, NH
Nobis Project No.: 70702.00

Boring No.: NB-5
Boring Location: See Site Plan
Checked by:
Date Start: September 8, 2017
Date Finish: September 14, 2017

Contractor: New England Boring Contractors
Driller: B. Raiche
Nobis Rep.: J. Stewart/R. Rizza

Rig Type / Model: Simco M-2
Hammer Type: Donut Hammer
Hammer Hoist: Rope & Cathead

Ground Surface Elev.:
Datum:

	Drilling Method	Sampler
Type	Casing	Split-Spoon
Size ID (in.)	4	1-3/8
Advancement	Drive and Wash	140-lb Hammer

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▽ 09/13/17	07:30	14.18			
▼ 11/27/17	10:00	13.82			

Depth (ft.)	Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	PID (ppm)	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	WELL DETAIL	NOTES
1								CONCRETE SLAB	Cored through 6" thick concrete floor slab of first floor.	Flush-Mount Roadbox in Concrete Floor Slab; Filter Sand; Bentonite	2
2											
3											
4											
5											
6									Void space between bottom of upper floor and top of lower floor encountered from 0.5' to 8.3'..		
7											
8										Filter Sand 10' Screen	
9											
10								CONCRETE SLAB	Cored through basement concrete floor slab. Top of basement floor measured 8'10" below top of first floor slab. Basement slab measured 13" thick.		
11	S-1	5	10-12	8 2					S-1: Brown/black, fine to medium SAND, little Silt, little coarse Sand, trace fine to coarse Gravel. Moist. Started spoon 10' below top of first floor slab.		
12				1 1	0.5						
13	S-2	6	12-14	1 6				SAND	S-2A (3"): Dark gray, fine to medium SAND, trace Silt. Moist.		
14				44 20	0.5	▼ ▽			S-2B (3"): Brown/red, fine to medium SAND, some fine Gravel, little Silt. Moist. Spoon possibly driven through a brick or stained soil.		
15											
16	S-3	4	15-17	69 100/3"					S-3: Brown, coarse GRAVEL and fine to medium Sand, some Silt, little coarse Sand. Wet.		
17					0.5			GRAVEL & SAND			
18											
19	S-4	7.5	18-20	15 8				SAND	S-4A (4"): Medium dense, brown, fine to coarse SAND, trace Silt. Wet.		
20				6 5	0.0				S-4B (4"): Tan, fine to medium SAND, little Silt. Wet.		

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:
1) Boring/Monitoring well was initially scoped as bedrock open-borehole NBR-4. Boring was renamed to NB-5 after being installed as an overburden well.
2) Collected laboratory sample from 3-5' bgs at 1545 on 9/11/17. Sample ID is NBR-4.

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BORING LOG

Nobis — Engineering a Sustainable Future

Project: L.W. Packard Mill

Location: Ashland, NH

Nobis Project No.: 70702.00

Boring No.: **NB-5**

Boring Location: See Site Plan

Checked by:

Date Start: September 8, 2017

Date Finish: September 14, 2017

Contractor: New England Boring Contractors

Driller: B. Raiche

Nobis Rep.: J. Stewart/R. Rizza

Rig Type / Model: Simco M-2

Hammer Type: Donut Hammer

Hammer Hoist: Rope & Cathead

Ground Surface Elev.:

Datum:

	Drilling Method	Sampler
Type	Casing	Split-Spoon
Size ID (in.)	4	1-3/8
Advancement	Drive and Wash	140-lb Hammer

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▽ 09/13/17	07:30	14.18			
▼ 11/27/17	10:00	13.82			

Depth (ft.)	Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	PID (ppm)	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	WELL DETAIL	NOTES
	S-5	9	20-22	4					S-5: Very dense, tan, fine SAND, little Silt, trace rock fragments at 7-9". Wet.		
21				5							
				60	0.0						
22				39							
	S-6	6	22-24	24				SAND	S-6: Very dense, tan, fine SAND, little Silt, trace medium to coarse Sand, trace coarse Gravel. Wet.	Backfilled Borehole	
23				49							
				67	0.1						
24				32							
25											
	S-7	10	25-27	25				COBBLE	Drilled through a cobble at 25'-25'10". Sand below 25'10".		
26				24							
				26							
27				24							
28									S-7: Dense, tan, fine SAND, trace Silt, trace medium Sand, trace fine Gravel. Wet.		
					0.2						
29								SAND			
30											
31											
32											
33								BEDROCK	Presumed bedrock encountered at 32' below top of upper floor, or 22' below bottom of lower floor. NEBC rolled 1' into rock to confirm bedrock. Observed gray and white quartz and black minerals in drive and wash cuttings. Boring terminated at 33 feet.		
34											
35											
36											
37											
38											
39											
40											

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

1) Boring/Monitoring well was initially scoped as bedrock open-borehole NBR-4. Boring was renamed to NB-5 after being installed as an overburden well.
2) Collected laboratory sample from 3-5' bgs at 1545 on 9/11/17. Sample ID is NBR-4.

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BORING LOG

Nobis — Engineering a Sustainable Future

Project: L.W. Packard Mill

Location: Ashland, NH

Nobis Project No.: 70702.00

Boring No.: **NBR-1**

Boring Location: See Site Plan

Checked by:

Date Start: September 15, 2017

Date Finish: September 21, 2017

Contractor: New England Boring Contractors

Driller: B. Raiche

Nobis Rep.: R. Rizza

Rig Type / Model: Simco M-2

Hammer Type: Donut Hammer

Hammer Hoist: Rope & Cathead

Ground Surface Elev.:

Datum:

	Drilling Method	Sampler
Type	Casing	Split-Spoon
Size ID (in.)	3	1-3/8
Advancement	Drive and Wash	140-lb Hammer

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▽ 09/21/17	14:50	10.76	10	33.33	10 Minutes
▼ 11/27/17	10:00	0.00			

Depth (ft.)	Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	PID (ppm)	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	WELL DETAIL	NOTES
0						▼				Permanent Casing with Locking Cover	
1	S-1	12	0-2	5 8				CONCRETE SLAB	Concrete floor slab. S-1: Medium dense, brown, fine SAND, little Silt. Dry.		
2				12 13	0.2						
3	S-2	11	2-4	9 9					S-2: Dense, tan, fine to medium SAND, trace Silt, trace coarse Sand, trace fine and coarse Gravel. Moist.		
4				34 19	0.0			SAND	No split spoon at 4-6' because of casing depth. NEBC asked if they could skip 4-6' because they did not have a 1' piece of casing.	Grout	
5											
6											
7	S-3	10	6-8	36 25					S-3A (4"): Very dense, dark brown, fine to medium SAND, little Silt, little fine and coarse Gravel. Wet. S-3B (6"): Very dense, tan, fine SAND, little Silt, little medium Sand, trace coarse Sand, trace fine and coarse Gravel. Wet.		1
8				37 50	0.0						2
9											
10											
11						▽			4" permanent casing grouted in place to 10' below top of upper floor. NX rock core barrel used from 10' to 33.33' below top of upper floor.		
12											
13											
14								BEDROCK			
15											
16											
17											
18											
19											

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

1) Collected laboratory sample from 6-8' at 1515 on 9/15/17. Sample ID: NBR-1 S-3 6-8'
2) Bedrock encountered at 7'8". Advanced 4" roller bit to 10' in presumed bedrock.

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BORING LOG

Nobis
Engineering a Sustainable Future

Project: L.W. Packard Mill
Location: Ashland, NH
Nobis Project No.: 70702.00

Boring No.: NBR-1
Boring Location: See Site Plan
Checked by:
Date Start: September 15, 2017
Date Finish: September 21, 2017

Contractor: New England Boring Contractors
Driller: B. Raiche
Nobis Rep.: R. Rizza

Rig Type / Model: Simco M-2
Hammer Type: Donut Hammer
Hammer Hoist: Rope & Cathead

Ground Surface Elev.:
Datum:

	Drilling Method	Sampler
Type	Casing	Split-Spoon
Size ID (in.)	3	1-3/8
Advancement	Drive and Wash	140-lb Hammer

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▽ 09/21/17	14:50	10.76	10	33.33	10 Minutes
▼ 11/27/17	10:00	0.00			

Depth (ft.)	SAMPLE INFORMATION: Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	PID (ppm)	Ground Water	LITHOLOGY: Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	WELL DETAIL	NOTES
20											
21											
22										Open Bedrock Borehole	
23											
24											
25											
26											
27								BEDROCK			
28											
29											
30											
31											
32											
33											
34									Boring terminated at 33.33 feet.		
35											
36											
37											
38											
39											

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:
1) Collected laboratory sample from 6-8' at 1515 on 9/15/17. Sample ID: NBR-1 S-3 6-8'
2) Bedrock encountered at 7'8". Advanced 4" roller bit to 10' in presumed bedrock.

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BORING LOG

Nobis — Engineering a Sustainable Future

Project: L.W. Packard Mill

Location: Ashland, NH

Nobis Project No.: 70702.00

Boring No.: **NBR-2**

Boring Location: See Site Plan

Checked by:

Date Start: September 14, 2017

Date Finish: September 20, 2017

Contractor: New England Boring Contractors

Driller: B. Raiche

Nobis Rep.: R. Rizza

Rig Type / Model: Simco M-2

Hammer Type: Donut Hammer

Hammer Hoist: Rope & Cathead

Ground Surface Elev.:

Datum:

	Drilling Method	Sampler
Type	Casing	Split-Spoon
Size ID (in.)	3	1-3/8
Advancement	Drive and Wash	140-lb Hammer

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▽ 09/21/17	07:20	11.08	18	43.21	20 Hours
▼ 11/27/17	10:00	9.17			

Depth (ft.)	SAMPLE INFORMATION Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	PID (ppm)	Ground Water	LITHOLOGY Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	WELL DETAIL	NOTES
0										◄Permanent Casing with Locking Cover	
1								CONCRETE SLAB	Cored through 11" thick concrete floor slab of upper floor.		
2											
3											
4											
5									Void space between top of upper floor and top of lower floor measured 8'3".		
6											
7											
8											
9								CONCRETE SLAB	Cored through 5" thick concrete floor slab of lower floor.		
10						▼		BOULDERS & WOOD			
11						▽			35" void space below lower floor slab was observed to be filled with boulders and wood.		
12											
13								FILL	NEBC advanced 6" casing to 14.5' and washed out boring to 14.5'. Wash water was dark gray with wood fragments and a strong creosote-like odor.		
14											
15	S-1	6	14.5-16.5	8	54.0			SAND	S-1A (3"): Very dense, gray, fine to medium SAND, trace Silt. Wet.		1
16				100 50/0.5"					S-1B (3"): Very dense, brown/gray, fine SAND, little Silt, little medium Sand, trace coarse Sand, trace coarse Gravel. Wet.	◄Grout	
17									Encountered presumed bedrock at 15.5' below top of upper floor.		
18									Advanced 6" roller bit to 17' then switched to 5" roller bit and advanced to 20'. Installed permanent 4" casing to 18' below top of upper floor.		
19											
20								BEDROCK			
21											
22											
23											
24											

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

1) Collected laboratory sample from 14.5-15.5' at 1150 on 9/14/17. Sample ID: NBR-2 S-1 14.5-15.5'

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BORING LOG

Nobis
Engineering a Sustainable Future

Project: L.W. Packard Mill
Location: Ashland, NH
Nobis Project No.: 70702.00

Boring No.: **NBR-2**
Boring Location: See Site Plan
Checked by:
Date Start: September 14, 2017
Date Finish: September 20, 2017

Contractor: New England Boring Contractors
Driller: B. Raiche
Nobis Rep.: R. Rizza

Rig Type / Model: Simco M-2
Hammer Type: Donut Hammer
Hammer Hoist: Rope & Cathead

Ground Surface Elev.:
Datum:

	Drilling Method	Sampler
Type	Casing	Split-Spoon
Size ID (in.)	3	1-3/8
Advancement	Drive and Wash	140-lb Hammer

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▽ 09/21/17	07:20	11.08	18	43.21	20 Hours
▼ 11/27/17	10:00	9.17			

Depth (ft.)	SAMPLE INFORMATION: Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	PID (ppm)	Ground Water	LITHOLOGY: Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	WELL DETAIL	NOTES
25									Advanced 5" roller bit to 26' then switched to NX rock core barrel. Advanced NX rock core barrel to 43.21' below top of upper floor.		
26											
27											
28											
29											
30											
31										Open Bedrock Borehole	
32											
33											
34								BEDROCK			
35											
36											
37											
38											
39											
40											
41											
42											
43											
44									Boring terminated at 43.21 feet.		
45											
46											
47											
48											
49											

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:
1) Collected laboratory sample from 14.5-15.5' at 1150 on 9/14/17. Sample ID: NBR-2 S-1 14.5-15.5'

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

APPENDIX C

FIELD PROCEDURES

Test Borings

The test borings were performed using drive and wash drilling techniques to advance through overburden material and utilized a tri-cone roller bit and/or NX rock coring barrel for advancement into bedrock. Overburden test borings were terminated based on field observations at a predetermined depth of at the bedrock surface. Open bedrock boreholes were terminated at a depth of 25 feet below the bedrock surface. Soil samples were obtained using a standard 2-inch outside diameter split spoon sampler. Soil samples collected during drilling were placed in glass 8-ounce glass jars supplied by the drillers and sealed with aluminum foil per EPA jar headspace screening methods and/or resealable plastic bags.

Field Soil Sample Collection and Total Organic Vapor Screening

Soil samples were collected directly from select split barrel samplers using a new disposable plastic syringe and/or new nitrile disposable gloves and placed in driller supplied glass jars and/or resealable bags. Each soil sample selected for screening was allowed to sit undisturbed for a select period of time (pending weather conditions) before TOV screening was completed. TOV field screening of soil samples was completed using a MiniRae Model 2000 Photoionization Detector (PID) equipped with a 10.6 electron volt (eV) lamp. The PID was calibrated to an isobutylene-in-air span gas and set to applicable response factors of 0.54 parts per million by volume (ppmv) for benzene and 0.43 ppmv for trichloroethylene (TCE).

Groundwater Monitoring Well Installation

Groundwater monitoring wells were installed upon completion of each test boring. Overburden monitoring wells consists of 2-inch I.D. Schedule 40 PVC well screen and riser pipe. The monitoring well screen consisted of 0.010-inch machine-slotted sections of PVC pipe. The threaded PVC monitoring well sections were joined by threaded connection without the use of cement or glue. Clean filter sand was placed surrounding the monitoring well screen. An approximately one-foot to two-foot thick bentonite seal was placed above the filter sand to limit the potential infiltration of water along the monitoring well. Formation material was then backfilled into the borehole to the ground surface. Each monitoring well was completed with an 8-inch traffic-rated flush-mounted road box set within new concrete seals to protect the monitoring well from road traffic, tampering and vandalism. Open bedrock monitoring wells were installed by seating a permanent steel casing into the bedrock surface and grouting the casing in place. Stand-pipe covers were installed on the top of the steel casing and padlocks were provided to

secure the wells. Details of the monitoring well construction are included on the boring logs in the appendices.

Groundwater Monitoring Well Development

Once monitoring well installation was complete, overburden monitoring wells were developed by purging at least five times the standing volume of water in the wells using a pre-cleaned high density polyethylene (HDPE) disposable bailer. The purging of the water through the well screen assists in setting of the silica sand pack and removing potentially stagnant water from the monitoring well. In addition, fines accumulated in the bottom of the monitoring well and from the surrounding sand pack annulus are removed which in turn allows a fresh influx of groundwater from the surrounding geologic formation, thereby providing a more representative groundwater sample.

Groundwater Sample Collection Procedures

Static groundwater levels were measured in each monitoring well prior to sample collection using a Solinst electronic water level indicator.

Geochemical data and natural attenuation parameters were collected in general accordance with the EPA EQASOP-GW 001 Region 1 EPA *Low Stress (Low Flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells* and generally accepted practices for environmental sample collection. Water quality meters with flow-through cells, separate turbidity meters, peristaltic pumps, and appropriate tubing were used to purge the monitoring wells, collect aquifer stabilization data, and groundwater samples. Prior to use, the instruments were calibrated in accordance with the manufacturer's guidelines. Sample volumes collected for metals analyses were filtered in the field to <0.45 µm. Groundwater samples collected for PFAS analysis were collected in accordance with the NHDES PFAS Sample Collection Guidance document.

The samples were collected into appropriate laboratory supplied pre-preserved sample containers, placed on ice during transportation \and delivery to the laboratory under proper chain-of-custody procedures.

APPENDIX D

DISCUSSION OF QUALITY ASSURANCE AND QUALITY CONTROL

Nobis Engineering, Inc. (Nobis) provides this summary of quality assurance and quality control considerations regarding field activities and laboratory analyses related to the Phase II Environmental Site Assessment performed at the L.W. Packard Mill site in Ashland, New Hampshire, as presented in this report.

FIELD QUALITY CONTROL – SOIL AND GROUNDWATER SAMPLES

Field Equipment Blanks

Nobis prepared and submitted to the New Hampshire Department of Environmental Services (NHDES) and United States Environmental Protection Agency (USEPA) a Field Task Work Plan (FTWP) and Site-Specific Quality Assurance Project Plan Addendum (SSQAPPA), which described the quality control (QC) and quality assurance (QA) protocols and other technical procedures followed during implementation of the work to ensure that the results meet the stated performance criteria. The FTWP/SSQAPPA was based on Nobis' Generic Quality Assurance Project Plan (Generic QAPP), Revision 3 (RFA #16002) as approved by USEPA on January 27, 2017 and NHDES on April 21, 2017, and refers to standard operating procedures for Nobis and Nobis' subcontractors.

In accordance with the approved FTWP/SSQAPPA, soil and groundwater equipment blanks were not submitted during the study since disposable sampling equipment was utilized for sample collection. The soil samples were collected directly from cleaned split spoon samplers with disposable plastic syringes or transferred into appropriate sample jars using disposable plastic scoop.

The groundwater samples were collected via low flow sampling methodology utilizing nondedicated disposable high-density polyethylene (HDPE) tubing. Monitoring equipment (i.e. water level meter) was decontaminated with an Alconox wash and was rinsed with deionized water prior to a methanol rinse followed by second deionized water rinse prior to relocating.

Trip Blank

Eastern Analytical, Inc. (Eastern) supplied trip blank samples, which accompanied the soil samples and groundwater sampling program. The trip blanks were submitted for volatile organic

compound (VOCs) analysis per EPA Method 8260C. The soil sample trip blank vial contained methanol as used to preserve soil samples per EPA Method 5035. An extract was taken from the methanol and analyzed for VOCs in soil. The groundwater trip blank contained laboratory-grade water preserved with hydrochloric acid and was analyzed for VOCs. No VOCs were detected in the trip blank samples.

Duplicate Samples

Duplicate analyses for each analytical parameter were performed on one (1) soil sample (NB-2 S-5) and one (1) groundwater sample (NB-5). The relative percent difference (RPD) calculations (where possible) are discussed per matrix.

The RPD calculation used is:

$$RPD = \frac{\text{Sample Concentration} - \text{Duplicate Concentration}}{\text{Mean Concentration}} \times 100\%$$

If a compound was not detected above the laboratory detection limit in one (1) of the samples, half of the detection limit was used in the calculation.

Soil Samples

Analytical results for TPH in the NB-2 S-5 sample and associated duplicate sample FD-1 indicated the following detections:

Compound	Sample (mg/kg) NB-2 S-5	Duplicate (mg/kg) FD-1	RPD (%)
TPH - DRO	18	9.6	61

Analytical results for SVOCs in the NB-2 S-5 soil sample and associated duplicate sample FD-1 indicated the following detections:

Compound	Sample (mg/kg) NB-2 S-5	Duplicate (mg/kg) FD-1	RPD (%)

Benzo[a]anthracene	0.099	<0.08	85
Benzo[b]fluoranthene	0.11	<0.08	93
Benzo[a]pyrene	0.090	<0.08	77
Chrysene	0.097	<0.08	83
Fluoranthene	0.18	<0.08	127
Pyrene	0.16	<0.08	120

*If a compound was not detected in one sample, half the detection limit was used for the calculation of RPD.

Analytical results for metals in the NB-2 S-5 soil sample and associated duplicate sample FD-1 indicated the following detections:

Compound	Sample (mg/kg) NB-2 S-5	Duplicate (mg/kg) FD-1	RPD (%)
Arsenic	1.3	1.4	7
Chromium	4.4	4.9	11
Copper	3.6	3.5	3
Lead	2.7	2.9	7
Nickel	3.1	3.2	3
Zinc	27	24	12

Analytical results for VOCs, pesticides and PCBs in the NB-2 S-5 sample indicated that no compounds were detected; the RPDs were not calculated for these analyses.

A number of the RPDs calculated for soil analytical results exceed the 50% limit that is considered acceptable. Although RPD values for soil analyses are outside the acceptable range, these RPDs are consistent with sample heterogeneity. Based on the low-level detections observed, the results do not impact the outcome or validity of the findings and recommendation based on the data.

Groundwater Samples

Analytical results for metals in the NB-5 groundwater sample and associated duplicate sample FD-1 indicated the following detections:

Parameter	Sample Result (µg/l) NB-5	Duplicate Result(µg/l) FD-1	RPD %
Chromium	5	5	0
Copper	4	2	29
Mercury	0.2	0.2	0
Nickel	1	1	0
Zinc	12	8	40

Analytical results for PFAS in the NB-5 groundwater sample and associated duplicate sample FD-1 indicated the following detections:

Parameter	Sample Result (µg/l) NB-5	Duplicate Result(µg/l) FD-1	RPD %
PFOA	39.7	44.4	11
PFOS	5.02	4.37	14

Analytical results for VOCs, SVOCs, pesticides, and PCBs in the NB-5 samples indicated that no parameters were detected; the RPDs were not calculated for these analyses.

The RPD calculated for the analytical results for zinc exceeds the 30% limit that is considered acceptable. No exceedances of AGQS were reported for the NB-5 sample. Although RPD values for zinc analyses are outside the acceptable range, the low-level detections observed in the results in comparison to assessment standards and groundwater quality criteria do not impact the outcome or validity of the findings and recommendation based on the data.

SUMMARY OF DATA VALIDATION

Based on the data collected, it is Nobis' opinion the data is useable to meet site data quality objectives. The analytical laboratories provided data to assist Nobis and NHDES to assess the laboratory quality control for the laboratory analyses performed per matrix. Nobis reviewed the laboratory analytical data provided by Eastern Analytical, Inc., including laboratory surrogate recoveries and acceptance limits, and the laboratory narratives, and found it to be complete and useable by Nobis for the sampling work. In accordance with the FTWP/SSQAPP, data validation

was limited to a completeness check for the data, an assessment of relative percent differences for duplicate samples and a review of the laboratory quality control data, as described.

APPENDIX E

Low-Flow Test Report:

Test Date / Time: 2017-10-20 12:53:58
Project: L.W. Packard Mill
Operator Name: N. Zanchi

Location Name: NB-2 **Latitude:** **Longitude:** **Well Diameter: 2 IN** **Casing Type: PVC** **Screen Length: 10 FT** **Top of Screen: 4 FT** **Total Depth: 14 FT** **Initial Depth to Water: 11.31 FT**	**Pump Type: Peristaltic** **Tubing Type: HDPE** **Tubing Inner Diameter:** **Tubing Length:** **Pump Intake From TOC: 12.5 FT** **Estimated Total Volume Pumped: 0.75 GAL** **Flow Cell Volume: 90 ML** **Final Flow Rate: 95 ML_PER_MIN** **Final Draw Down: 0.11 FT**	**Instrument Used: SmarTROLL MP** **Serial Number: 369370**

Test Notes:
Purge water is clear. No odor, sheen, or free product observed.

Weather Conditions:
Sunny, 55F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 0.3	
2017-10-20 12:53:58	00:00	6.81 pH	17.78 °C	235.52 µS/cm	9.44 mg/L		153.5 mV	11.31 ft	90.00 ml/min
2017-10-20 12:58:58	04:59	6.86 pH	14.84 °C	504.44 µS/cm	5.80 mg/L	5.89 NTU	81.3 mV	11.38 ft	85.00 ml/min
2017-10-20 13:03:58	09:59	6.93 pH	14.74 °C	508.67 µS/cm	5.87 mg/L	2.72 NTU	75.4 mV	11.39 ft	85.00 ml/min
2017-10-20 13:08:58	15:00	6.97 pH	14.66 °C	510.96 µS/cm	6.01 mg/L	1.34 NTU	74.6 mV	11.40 ft	90.00 ml/min
2017-10-20 13:13:58	19:59	6.99 pH	14.62 °C	512.47 µS/cm	6.02 mg/L	1.05 NTU	74.1 mV	11.41 ft	90.00 ml/min
2017-10-20 13:18:58	25:00	7.02 pH	14.62 °C	512.16 µS/cm	5.98 mg/L	0.42 NTU	73.9 mV	11.42 ft	95.00 ml/min
2017-10-20 13:23:58	29:59	7.04 pH	14.61 °C	510.57 µS/cm	6.05 mg/L	0.54 NTU	73.6 mV	11.42 ft	95.00 ml/min

Samples

Sample ID:	Description:
NB-2	Sampled at 1325.

Low-Flow Test Report:

Test Date / Time: 12/8/2017 12:36:24 PM
Project: L.W. Packard Mill
Operator Name: N. Zanchi

Location Name: NB-2 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 3.71 ft** **Total Depth: 13.71 ft** **Initial Depth to Water: 10.73 ft**	**Pump Type: Peristaltic** **Tubing Type: HDPE** **Pump Intake From TOC: 12 ft** **Estimated Total Volume Pumped: 1.3 gal** **Flow Cell Volume: 90 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 0.18 ft**	**Instrument Used: SmarTROLL MP** **Serial Number: 369135**

Test Notes:

Weather Conditions:
Cloudy, 35F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 0.3	
12/8/2017 12:36 PM	00:00	6.37 pH	7.33 °C	254.93 µS/cm	11.19 mg/L		156.5 mV	10.73 ft	100.00 ml/min
12/8/2017 12:41 PM	05:00	6.71 pH	9.23 °C	240.44 µS/cm	10.24 mg/L		90.6 mV	10.83 ft	100.00 ml/min
12/8/2017 12:46 PM	10:00	6.81 pH	9.49 °C	243.23 µS/cm	10.02 mg/L	0.02 NTU	86.0 mV	10.91 ft	100.00 ml/min
12/8/2017 12:51 PM	15:00	6.86 pH	9.56 °C	253.73 µS/cm	9.56 mg/L	0.02 NTU	84.3 mV	10.90 ft	100.00 ml/min
12/8/2017 12:56 PM	20:00	6.89 pH	9.48 °C	258.75 µS/cm	9.36 mg/L	0.02 NTU	83.5 mV	10.90 ft	100.00 ml/min
12/8/2017 1:01 PM	25:00	6.92 pH	9.67 °C	255.46 µS/cm	9.20 mg/L	0.02 NTU	82.9 mV	10.90 ft	100.00 ml/min
12/8/2017 1:06 PM	30:00	6.94 pH	9.57 °C	264.87 µS/cm	8.95 mg/L	0.02 NTU	82.3 mV	10.91 ft	100.00 ml/min
12/8/2017 1:11 PM	35:00	6.95 pH	9.45 °C	271.20 µS/cm	8.75 mg/L	0.02 NTU	81.5 mV	10.91 ft	100.00 ml/min
12/8/2017 1:16 PM	40:00	6.95 pH	9.31 °C	282.76 µS/cm	8.73 mg/L	0.02 NTU	81.5 mV	10.91 ft	100.00 ml/min
12/8/2017 1:21 PM	45:00	6.96 pH	9.35 °C	285.19 µS/cm	8.61 mg/L	0.02 NTU	81.0 mV	10.91 ft	100.00 ml/min
12/8/2017 1:26 PM	50:00	6.97 pH	9.30 °C	285.93 µS/cm	8.68 mg/L	0.02 NTU	81.0 mV	10.91 ft	100.00 ml/min

Samples

Sample ID:	Description:
NB-2	Sampled at 1325.

Low-Flow Test Report:

Test Date / Time: 2017-10-20 10:57:32
Project: L.W. Packard Mill
Operator Name: N. Zanchi

Location Name: NB-3 **Latitude:** **Longitude:** **Well Diameter: 2 IN** **Casing Type: PVC** **Screen Length:** **Top of Screen:** **Total Depth: 13.7 FT** **Initial Depth to Water: 10.31 FT**	**Pump Type: Peristaltic** **Tubing Type: HDPE** **Tubing Inner Diameter:** **Tubing Length:** **Pump Intake From TOC: 12 FT** **Estimated Total Volume Pumped: 1.25 GAL** **Flow Cell Volume: 90 ML** **Final Flow Rate: 95 ML_PER_MIN** **Final Draw Down: 0.03 FT**	**Instrument Used: SmarTROLL MP** **Serial Number: 369370**

Test Notes:
Purge water is clear. No odor, sheen, or free product.

Weather Conditions:
Sunny, 55F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 0.3	
2017-10-20 10:57:32	00:00	8.54 pH	16.14 °C	498.67 µS/cm	9.99 mg/L		113.2 mV	10.31 ft	90.00 ml/min
2017-10-20 11:02:32	04:59	8.14 pH	13.26 °C	511.12 µS/cm	5.94 mg/L	38.20 NTU	84.2 mV	10.33 ft	100.00 ml/min
2017-10-20 11:07:32	09:59	7.73 pH	13.11 °C	511.59 µS/cm	6.11 mg/L	24.10 NTU	85.7 mV	10.34 ft	100.00 ml/min
2017-10-20 11:12:32	14:59	7.43 pH	13.12 °C	508.69 µS/cm	6.25 mg/L	17.20 NTU	87.0 mV	10.34 ft	95.00 ml/min
2017-10-20 11:17:32	19:59	7.21 pH	13.12 °C	509.94 µS/cm	6.35 mg/L	9.59 NTU	87.5 mV	10.34 ft	95.00 ml/min
2017-10-20 11:22:32	25:00	7.05 pH	13.03 °C	509.32 µS/cm	6.37 mg/L	7.82 NTU	87.7 mV	10.34 ft	95.00 ml/min
2017-10-20 11:27:32	30:00	6.93 pH	12.96 °C	510.20 µS/cm	6.33 mg/L	4.48 NTU	88.4 mV	10.34 ft	95.00 ml/min
2017-10-20 11:32:32	34:59	6.84 pH	13.03 °C	510.02 µS/cm	6.37 mg/L	4.59 NTU	88.1 mV	10.34 ft	95.00 ml/min
2017-10-20 11:37:32	39:59	6.77 pH	13.01 °C	509.62 µS/cm	6.40 mg/L	4.08 NTU	89.4 mV	10.34 ft	95.00 ml/min
2017-10-20 11:42:32	44:59	6.68 pH	13.05 °C	508.50 µS/cm	6.35 mg/L	2.40 NTU	89.2 mV	10.34 ft	95.00 ml/min
2017-10-20 11:47:32	49:59	6.63 pH	13.07 °C	509.17 µS/cm	6.39 mg/L	2.79 NTU	89.4 mV	10.34 ft	95.00 ml/min
2017-10-20 11:52:32	54:59	6.59 pH	13.03 °C	507.92 µS/cm	6.47 mg/L	2.57 NTU	92.1 mV	10.34 ft	95.00 ml/min

Samples

Sample ID:	Description:
NB-3	Sampled at 1155.

Low-Flow Test Report:

Test Date / Time: 12/8/2017 11:11:12 AM
Project: L.W. Packard Mill
Operator Name: N. Zanchi

Location Name: NB-3 **Well Diameter: 2 in** **Casing Type: PVC** **Total Depth: 13.63 ft** **Initial Depth to Water: 10.01 ft**	**Pump Type: Peristaltic** **Tubing Type: HDPE** **Pump Intake From TOC: 12 ft** **Estimated Total Volume Pumped: 1.3 gal** **Flow Cell Volume: 90 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 0.02 ft**	**Instrument Used: SmarTROLL MP** **Serial Number: 369135**

Test Notes:
Geotech turbidity meter read 0.02 NTU for every sample after recalibrating multiple times. Purge water was very clear, but meter may have poor accuracy for low-level readings.

Weather Conditions:
Sunny, 40F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 0.3	
12/8/2017 11:11 AM	00:00	7.91 pH	9.35 °C	467.52 µS/cm	8.43 mg/L		197.8 mV	10.01 ft	100.00 ml/min
12/8/2017 11:16 AM	05:00	7.29 pH	8.62 °C	503.77 µS/cm	5.26 mg/L		104.8 mV	10.03 ft	100.00 ml/min
12/8/2017 11:21 AM	10:00	6.97 pH	8.78 °C	541.25 µS/cm	5.33 mg/L	0.02 NTU	100.3 mV	10.03 ft	100.00 ml/min
12/8/2017 11:26 AM	15:00	6.76 pH	8.44 °C	539.02 µS/cm	5.40 mg/L	0.02 NTU	97.5 mV	10.03 ft	100.00 ml/min
12/8/2017 11:31 AM	20:00	6.57 pH	8.19 °C	557.19 µS/cm	5.72 mg/L	0.02 NTU	96.3 mV	10.03 ft	100.00 ml/min
12/8/2017 11:36 AM	25:00	6.45 pH	8.61 °C	551.44 µS/cm	5.66 mg/L	0.02 NTU	96.2 mV	10.03 ft	100.00 ml/min
12/8/2017 11:41 AM	30:00	6.35 pH	8.63 °C	587.44 µS/cm	6.15 mg/L	0.02 NTU	96.0 mV	10.03 ft	100.00 ml/min
12/8/2017 11:46 AM	35:00	6.29 pH	8.64 °C	561.19 µS/cm	5.82 mg/L	0.02 NTU	95.7 mV	10.03 ft	100.00 ml/min
12/8/2017 11:51 AM	40:00	6.26 pH	8.21 °C	562.39 µS/cm	5.83 mg/L	0.02 NTU	95.6 mV	10.03 ft	100.00 ml/min
12/8/2017 11:56 AM	45:00	6.24 pH	8.22 °C	565.82 µS/cm	5.86 mg/L	0.02 NTU	95.0 mV	10.03 ft	100.00 ml/min
12/8/2017 12:01 PM	50:00	6.22 pH	8.39 °C	570.15 µS/cm	6.07 mg/L	0.02 NTU	94.7 mV	10.03 ft	100.00 ml/min

Samples

Sample ID:	Description:
NB-3	Sampled at 1200.

Low-Flow Test Report:

Test Date / Time: 11/28/2017 8:26:56 AM
Project: L.W. Packard Mill
Operator Name: N. Zanchi

Location Name: NB-4 **Well Diameter: 2 in** **Casing Type: PVC** **Total Depth: 22.18 ft** **Initial Depth to Water: 12.18 ft**	**Pump Type: Peristaltic** **Tubing Type: HDPE** **Pump Intake From TOC: 17.5 ft** **Estimated Total Volume Pumped: 1.8 gal** **Flow Cell Volume: 90 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 0.04 ft**	**Instrument Used: SmarTROLL MP** **Serial Number: 369135**

Test Notes:
Purge water is clear. No odor, sheen, or free product observed.

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 0.3	
11/28/2017 8:26 AM	00:00	8.89 pH	7.59 °C	1,821.1 µS/cm	0.98 mg/L		103.0 mV	12.18 ft	100.00 ml/min
11/28/2017 8:31 AM	05:00	8.33 pH	8.57 °C	1,781.2 µS/cm	0.51 mg/L		96.6 mV	12.21 ft	100.00 ml/min
11/28/2017 8:36 AM	10:00	7.79 pH	8.92 °C	1,764.9 µS/cm	0.44 mg/L		104.3 mV	12.21 ft	100.00 ml/min
11/28/2017 8:41 AM	15:00	7.31 pH	9.07 °C	1,751.2 µS/cm	0.40 mg/L		108.6 mV	12.21 ft	100.00 ml/min
11/28/2017 8:46 AM	20:00	6.91 pH	9.16 °C	1,764.7 µS/cm	0.36 mg/L	0.68 NTU	111.5 mV	12.22 ft	100.00 ml/min
11/28/2017 8:51 AM	25:00	6.60 pH	9.44 °C	1,756.1 µS/cm	0.35 mg/L	0.55 NTU	112.7 mV	12.22 ft	100.00 ml/min
11/28/2017 8:56 AM	30:00	6.38 pH	9.54 °C	1,757.0 µS/cm	0.31 mg/L	0.46 NTU	113.2 mV	12.22 ft	100.00 ml/min
11/28/2017 9:01 AM	35:00	6.23 pH	9.59 °C	1,749.3 µS/cm	0.32 mg/L	0.61 NTU	112.5 mV	12.22 ft	100.00 ml/min
11/28/2017 9:06 AM	40:00	6.13 pH	9.54 °C	1,749.3 µS/cm	0.33 mg/L	0.46 NTU	111.6 mV	12.22 ft	100.00 ml/min
11/28/2017 9:11 AM	45:00	6.06 pH	9.54 °C	1,748.5 µS/cm	0.33 mg/L	0.74 NTU	111.0 mV	12.22 ft	100.00 ml/min
11/28/2017 9:16 AM	50:00	6.01 pH	9.53 °C	1,740.7 µS/cm	0.33 mg/L	0.46 NTU	110.7 mV	12.22 ft	100.00 ml/min
11/28/2017 9:21 AM	55:00	5.97 pH	9.57 °C	1,733.2 µS/cm	0.33 mg/L	0.62 NTU	110.4 mV	12.22 ft	100.00 ml/min

Samples

Sample ID:	Description:

NB-4	Sampled at 0925.

Low-Flow Test Report:

Test Date / Time: 11/27/2017 11:27:01 AM
Project: L.W. Packard Mill
Operator Name: N. Zanchi

Location Name: NB-5 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 3 ft** **Total Depth: 11.89 ft** **Initial Depth to Water: 4.97 ft**	**Pump Type: Peristaltic** **Tubing Type: HDPE** **Pump Intake From TOC: 8.5 ft** **Estimated Total Volume Pumped: 2.7 gal** **Flow Cell Volume: 90 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 0.23 ft**	**Instrument Used: SmarTROLL MP** **Serial Number: 369135**

Test Notes:
Purge water is clear. No odor, sheen, or free product observed.

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 0.3	
11/27/2017 11:27 AM	00:00	7.37 pH	7.00 °C	1,136.1 µS/cm	5.09 mg/L		20.5 mV	4.97 ft	100.00 ml/min
11/27/2017 11:32 AM	05:00	7.04 pH	8.06 °C	385.07 µS/cm	6.31 mg/L		11.2 mV	5.01 ft	100.00 ml/min
11/27/2017 11:37 AM	10:00	6.89 pH	8.19 °C	336.65 µS/cm	6.57 mg/L		22.2 mV	5.01 ft	100.00 ml/min
11/27/2017 11:42 AM	15:00	6.76 pH	8.11 °C	381.89 µS/cm	6.14 mg/L		24.1 mV	5.02 ft	100.00 ml/min
11/27/2017 11:47 AM	20:00	6.87 pH	8.06 °C	222.86 µS/cm	7.06 mg/L	10.50 NTU	27.9 mV	5.03 ft	100.00 ml/min
11/27/2017 11:52 AM	25:00	6.89 pH	8.04 °C	159.73 µS/cm	7.54 mg/L	7.80 NTU	38.6 mV	5.04 ft	100.00 ml/min
11/27/2017 11:57 AM	30:00	6.86 pH	8.00 °C	144.01 µS/cm	7.66 mg/L	4.96 NTU	45.5 mV	5.06 ft	100.00 ml/min
11/27/2017 12:02 PM	35:00	6.84 pH	8.02 °C	136.64 µS/cm	7.55 mg/L	3.46 NTU	51.2 mV	5.08 ft	100.00 ml/min
11/27/2017 12:07 PM	40:00	6.78 pH	8.01 °C	142.81 µS/cm	7.35 mg/L	2.95 NTU	54.8 mV	5.10 ft	100.00 ml/min
11/27/2017 12:12 PM	45:00	6.76 pH	8.02 °C	140.79 µS/cm	7.28 mg/L	2.87 NTU	56.7 mV	5.11 ft	100.00 ml/min
11/27/2017 12:17 PM	50:00	6.81 pH	8.02 °C	109.89 µS/cm	7.62 mg/L	2.45 NTU	67.0 mV	5.14 ft	100.00 ml/min
11/27/2017 12:22 PM	55:00	6.79 pH	7.90 °C	108.08 µS/cm	7.70 mg/L	1.93 NTU	72.7 mV	5.15 ft	100.00 ml/min
11/27/2017 12:27 PM	01:00:00	6.75 pH	7.80 °C	111.83 µS/cm	7.68 mg/L	1.53 NTU	73.6 mV	5.16 ft	100.00 ml/min
11/27/2017 12:32 PM	01:05:00	6.72 pH	7.80 °C	114.80 µS/cm	7.50 mg/L	2.52 NTU	74.0 mV	5.16 ft	100.00 ml/min
11/27/2017 12:37 PM	01:10:00	6.69 pH	7.82 °C	124.13 µS/cm	7.16 mg/L	1.73 NTU	74.4 mV	5.17 ft	100.00 ml/min

11/27/2017 12:42 PM	01:15:00	6.67 pH	7.82 °C	129.67 µS/cm	6.95 mg/L	1.54 NTU	73.7 mV	5.18 ft	100.00 ml/min
11/27/2017 12:47 PM	01:20:00	6.63 pH	7.87 °C	136.88 µS/cm	6.75 mg/L	1.14 NTU	74.7 mV	5.18 ft	100.00 ml/min
11/27/2017 12:52 PM	01:25:00	6.62 pH	7.87 °C	137.54 µS/cm	6.69 mg/L	1.10 NTU	74.9 mV	5.19 ft	100.00 ml/min
11/27/2017 12:57 PM	01:30:00	6.60 pH	7.91 °C	140.94 µS/cm	6.56 mg/L	1.00 NTU	75.2 mV	5.20 ft	100.00 ml/min

Samples

Sample ID:	Description:
NB-5	Sampled at 1300. Field dup. FD-1 collected at 1310.

Low-Flow Test Report:

Test Date / Time: 11/28/2017 10:12:53 AM
Project: L.W. Packard Mill
Operator Name: N. Zanchi

Location Name: NBR-1 **Well Diameter: 4 in** **Casing Type: Steel** **Screen Length: 23 ft** **Top of Screen: 10 ft** **Total Depth: 33.58 ft** **Initial Depth to Water: 0 ft**	**Pump Type: Peristaltic** **Tubing Type: HDPE** **Pump Intake From TOC: 22 ft** **Estimated Total Volume Pumped: 500 ml** **Flow Cell Volume: 90 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 0.22 ft**	**Instrument Used: SmarTROLL MP** **Serial Number: 369135**

Test Notes:
Well is a bedrock well with a casing set to approximately 10' below top of concrete floor slab. The well is artesian wih a steady drip overflowing from the top of the casing.

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 0.3	
11/28/2017 10:12 AM	00:00	6.75 pH	6.48 °C	552.33 µS/cm	0.39 mg/L		-94.7 mV	0.00 ft	100.00 ml/min
11/28/2017 10:17 AM	05:00	6.87 pH	7.59 °C	530.87 µS/cm	0.27 mg/L	4.93 NTU	-106.3 mV	0.22 ft	100.00 ml/min

Samples

Sample ID:	Description:
NBR-1	Sampled at 1020.

Low-Flow Test Report:

Test Date / Time: 11/27/2017 2:36:51 PM
Project: L.W. Packard Mill
Operator Name: N. Zanchi

Location Name: NBR-2 **Well Diameter: 4 in** **Casing Type: Steel** **Screen Length: 25.5 ft** **Top of Screen: 18 ft** **Total Depth: 43.49 ft** **Initial Depth to Water: 9.22 ft**	**Pump Type: Peristaltic** **Tubing Type: HDPE** **Pump Intake From TOC: 31 ft** **Estimated Total Volume Pumped: 1.75 gal** **Flow Cell Volume: 90 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 1.88 ft**	**Instrument Used: SmarTROLL MP** **Serial Number: 369135**

Test Notes:
Purge water is clear. No odor, sheen, or free product.

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 0.3	
11/27/2017 2:36 PM	00:00	10.84 pH	5.41 °C	695.74 µS/cm	1.49 mg/L		1.2 mV	9.22 ft	100.00 ml/min
11/27/2017 2:41 PM	05:00	11.47 pH	6.52 °C	683.53 µS/cm	1.00 mg/L		40.1 mV	9.48 ft	100.00 ml/min
11/27/2017 2:46 PM	10:00	11.58 pH	7.51 °C	685.37 µS/cm	0.67 mg/L		44.2 mV	9.67 ft	100.00 ml/min
11/27/2017 2:51 PM	15:00	11.66 pH	7.90 °C	674.62 µS/cm	0.59 mg/L		47.0 mV		100.00 ml/min
11/27/2017 2:56 PM	20:00	11.69 pH	8.07 °C	677.42 µS/cm	0.54 mg/L	24.00 NTU	48.5 mV	10.10 ft	100.00 ml/min
11/27/2017 3:01 PM	25:00	11.73 pH	8.16 °C	671.62 µS/cm	0.52 mg/L	26.50 NTU	50.0 mV	10.29 ft	100.00 ml/min
11/27/2017 3:06 PM	30:00	11.75 pH	8.15 °C	685.04 µS/cm	0.52 mg/L	15.60 NTU	50.6 mV	10.50 ft	100.00 ml/min
11/27/2017 3:11 PM	35:00	11.78 pH	8.19 °C	673.93 µS/cm	0.51 mg/L	13.30 NTU	51.5 mV	10.68 ft	100.00 ml/min
11/27/2017 3:16 PM	40:00	11.81 pH	7.94 °C	679.51 µS/cm	0.53 mg/L	15.60 NTU	52.3 mV	10.80 ft	100.00 ml/min
11/27/2017 3:21 PM	45:00	11.83 pH	7.87 °C	680.04 µS/cm	0.53 mg/L	10.70 NTU	52.7 mV	10.92 ft	100.00 ml/min
11/27/2017 3:26 PM	50:00	11.83 pH	7.88 °C	684.30 µS/cm	0.53 mg/L	11.60 NTU	53.0 mV	11.10 ft	100.00 ml/min
11/27/2017 3:31 PM	55:00	11.85 pH	7.74 °C	679.60 µS/cm	0.54 mg/L	11.50 NTU	53.6 mV	11.10 ft	100.00 ml/min

Samples

Sample ID:	Description:

NBR-2	Sampled at 1535.

APPENDIX F

Eastern Analytical, Inc.
professional laboratory and drilling services

Tim Andrews
Nobis Engineering
18 Chenell Drive
Concord , NH 03301

ACCREDITED IN ACCORDANCE WITH nelac

Subject: Laboratory Report

Eastern Analytical, Inc. ID:	173353
Client Identification:	L.W. Packard Mill / 70702.00
Date Received:	9/12/2017

Dear Mr. Andrews :

Enclosed please find the laboratory report for the above identified project. All analyses were performed in accordance with our QA/QC Program. Unless otherwise stated, holding times, preservation techniques, container types, and sample conditions adhered to EPA Protocol. Samples which were collected by Eastern Analytical, Inc. (EAI) were collected in accordance with approved EPA procedures. Eastern Analytical, Inc. certifies that the enclosed test results meet all requirements of NELAP and other applicable state certifications. Please refer to our website at www.eailabs.com for a copy of our NELAP certificate and accredited parameters.

The following standard abbreviations and conventions apply to all EAI reports:

Solid samples are reported on a dry weight basis, unless otherwise noted
< : "less than" followed by the reporting limit
> : "greater than" followed by the reporting limit
%R : % Recovery

Eastern Analytical Inc. maintains certification in the following states: Connecticut (PH-0492), Maine (NH005), Massachusetts (M-NH005), New Hampshire/NELAP (1012), Rhode Island (269) and Vermont (VT1012).

The following information is contained within this report: Sample Conditions summary, Analytical Results/Data, Quality Control data (if requested) and copies of the Chain of Custody. This report may not be reproduced except in full, without the the written approval of the laboratory.

If you have any questions regarding the results contained within, please feel free to directly contact me or the chemist(s) who performed the testing in question. Unless otherwise requested, we will dispose of the sample(s) 30 days from the sample receipt date.

We appreciate this opportunity to be of service and look forward to your continued patronage.

Sincerely,

Lorraine Olashaw, Lab Director | 9.18.17 Date | 10 # of pages (excluding cover letter)

SAMPLE CONDITIONS PAGE

EAI ID#: **173353**

Client: **Nobis Engineering**

Client Designation: **L.W. Packard Mill / 70702.00**

Temperature upon receipt (°C): 7.7 **Received on ice or cold packs (Yes/No): Y**

Acceptable temperature range (°C): 0-6

Lab ID	Sample ID	Date Received	Date Sampled	Sample Matrix	% Dry Weight	Exceptions/Comments (other than thermal preservation)
173353.01	Trip Blank	9/12/17	9/7/17	soil	100.0	Adheres to Sample Acceptance Policy
173353.02	NB-3 4'-6'	9/12/17	9/7/17	soil	82.8	Adheres to Sample Acceptance Policy
173353.03	NB-4 22'-24'	9/12/17	9/11/17	soil	82.8	Adheres to Sample Acceptance Policy
173353.04	NBR-4 3'-5'	9/12/17	9/11/17	soil	86.2	Adheres to Sample Acceptance Policy

Samples were properly preserved and the pH measured when applicable unless otherwise noted. Analysis of solids for pH, Flashpoint, Ignitability, Paint Filter, Corrosivity, Conductivity and Specific Gravity are reported on an "as received" basis.
Immediate analyses, pH, Total Residual Chlorine, Dissolved Oxygen and Sulfite, performed at the laboratory were run outside of the recommended 15 minute hold time.

All results contained in this report relate only to the above listed samples.

References include:

1) EPA 600/4-79-020, 1983
2) Standard Methods for Examination of Water and Wastewater,20th Edition, 1998 and 22nd Edition, 2012
3) Test Methods for Evaluating Solid Waste SW 846 3rd Edition including updates IVA and IVB
4) Hach Water Analysis Handbook, 2nd edition, 1992

LABORATORY REPORT

EAI ID#: **173353**

Client: **Nobis Engineering**

Client Designation: **L.W. Packard Mill / 70702.00**

Sample ID:	Trip Blank	NB-3 4'-6'	NB-4 22'-24'	NBR-4 3'-5'
Lab Sample ID:	173353.01	173353.02	173353.03	173353.04
Matrix:	soil	soil	soil	soil
Date Sampled:	9/7/17	9/7/17	9/11/17	9/11/17
Date Received:	9/12/17	9/12/17	9/12/17	9/12/17
Units:	mg/kg	mg/kg	mg/kg	mg/kg
Date of Analysis:	9/14/17	9/14/17	9/14/17	9/14/17
Analyst:	BML	BML	BML	BML
Method:	8260C	8260C	8260C	8260C
Dilution Factor:	1	1	1	1
Dichlorodifluoromethane	< 0.1	< 0.1	< 0.1	< 0.1
Chloromethane	< 0.1	< 0.1	< 0.1	< 0.1
Vinyl chloride	< 0.1	< 0.1	< 0.1	< 0.1
Bromomethane	< 0.2	< 0.2	< 0.2	< 0.2
Chloroethane	< 0.1	< 0.1	< 0.1	< 0.1
Trichlorofluoromethane	< 0.1	< 0.1	< 0.1	< 0.1
Diethyl Ether	< 0.05	< 0.05	< 0.05	< 0.05
Acetone	< 2	< 2	< 2	< 2
1,1-Dichloroethene	< 0.05	< 0.05	< 0.05	< 0.05
tert-Butyl Alcohol (TBA)	< 2	< 2	< 2	< 2
Methylene chloride	< 0.1	< 0.1	< 0.1	< 0.1
Carbon disulfide	< 0.1	< 0.1	< 0.1	< 0.1
Methyl-t-butyl ether(MTBE)	< 0.1	< 0.1	< 0.1	< 0.1
Ethyl-t-butyl ether(ETBE)	< 0.1	< 0.1	< 0.1	< 0.1
Isopropyl ether(DIPE)	< 0.1	< 0.1	< 0.1	< 0.1
tert-amyl methyl ether(TAME)	< 0.1	< 0.1	< 0.1	< 0.1
trans-1,2-Dichloroethene	< 0.05	< 0.05	< 0.05	< 0.05
1,1-Dichloroethane	< 0.05	< 0.05	< 0.05	< 0.05
2,2-Dichloropropane	< 0.05	< 0.05	< 0.05	< 0.05
cis-1,2-Dichloroethene	< 0.05	< 0.05	< 0.05	< 0.05
2-Butanone(MEK)	< 0.5	< 0.5	< 0.5	< 0.5
Bromochloromethane	< 0.05	< 0.05	< 0.05	< 0.05
Tetrahydrofuran(THF)	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	< 0.05	< 0.05	< 0.05	< 0.05
1,1,1-Trichloroethane	< 0.05	< 0.05	< 0.05	< 0.05
Carbon tetrachloride	< 0.05	< 0.05	< 0.05	< 0.05
1,1-Dichloropropene	< 0.05	< 0.05	< 0.05	< 0.05
Benzene	< 0.05	< 0.05	< 0.05	< 0.05
1,2-Dichloroethane	< 0.05	< 0.05	< 0.05	< 0.05
Trichloroethene	< 0.05	< 0.05	< 0.05	< 0.05
1,2-Dichloropropane	< 0.05	< 0.05	< 0.05	< 0.05
Dibromomethane	< 0.05	< 0.05	< 0.05	< 0.05
Bromodichloromethane	< 0.05	< 0.05	< 0.05	< 0.05
1,4-Dioxane	< 3	< 3	< 3	< 3
4-Methyl-2-pentanone(MIBK)	< 0.5	< 0.5	< 0.5	< 0.5
cis-1,3-Dichloropropene	< 0.05	< 0.05	< 0.05	< 0.05
Toluene	< 0.05	< 0.05	< 0.05	< 0.05
trans-1,3-Dichloropropene	< 0.05	< 0.05	< 0.05	< 0.05
1,1,2-Trichloroethane	< 0.05	< 0.05	< 0.05	< 0.05
2-Hexanone	< 0.1	< 0.1	< 0.1	< 0.1
Tetrachloroethene	< 0.05	< 0.05	< 0.05	< 0.05
1,3-Dichloropropane	< 0.05	< 0.05	< 0.05	< 0.05
Dibromochloromethane	< 0.05	< 0.05	< 0.05	< 0.05
1,2-Dibromoethane(EDB)	< 0.05	< 0.05	< 0.05	< 0.05
Chlorobenzene	< 0.05	< 0.05	< 0.05	< 0.05
1,1,1,2-Tetrachloroethane	< 0.05	< 0.05	< 0.05	< 0.05
Ethylbenzene	< 0.05	< 0.05	< 0.05	< 0.05

LABORATORY REPORT

EAI ID#: **173353**

Client: **Nobis Engineering**

Client Designation: **L.W. Packard Mill / 70702.00**

Sample ID:	Trip Blank	NB-3 4'-6'	NB-4 22'-24'	NBR-4 3'-5'
Lab Sample ID:	173353.01	173353.02	173353.03	173353.04
Matrix:	soil	soil	soil	soil
Date Sampled:	9/7/17	9/7/17	9/11/17	9/11/17
Date Received:	9/12/17	9/12/17	9/12/17	9/12/17
Units:	mg/kg	mg/kg	mg/kg	mg/kg
Date of Analysis:	9/14/17	9/14/17	9/14/17	9/14/17
Analyst:	BML	BML	BML	BML
Method:	8260C	8260C	8260C	8260C
Dilution Factor:	1	1	1	1
mp-Xylene	< 0.05	< 0.05	< 0.05	< 0.05
o-Xylene	< 0.05	< 0.05	< 0.05	< 0.05
Styrene	< 0.05	< 0.05	< 0.05	< 0.05
Bromoform	< 0.05	< 0.05	< 0.05	< 0.05
IsoPropylbenzene	< 0.05	< 0.05	< 0.05	< 0.05
Bromobenzene	< 0.05	< 0.05	< 0.05	< 0.05
1,1,2,2-Tetrachloroethane	< 0.05	< 0.05	< 0.05	< 0.05
1,2,3-Trichloropropane	< 0.05	< 0.05	< 0.05	< 0.05
n-Propylbenzene	< 0.05	< 0.05	< 0.05	< 0.05
2-Chlorotoluene	< 0.05	< 0.05	< 0.05	< 0.05
4-Chlorotoluene	< 0.05	< 0.05	< 0.05	< 0.05
1,3,5-Trimethylbenzene	< 0.05	< 0.05	< 0.05	< 0.05
tert-Butylbenzene	< 0.05	< 0.05	< 0.05	< 0.05
1,2,4-Trimethylbenzene	< 0.05	< 0.05	< 0.05	< 0.05
sec-Butylbenzene	< 0.05	< 0.05	< 0.05	< 0.05
1,3-Dichlorobenzene	< 0.05	< 0.05	< 0.05	< 0.05
p-Isopropyltoluene	< 0.05	< 0.05	< 0.05	< 0.05
1,4-Dichlorobenzene	< 0.05	< 0.05	< 0.05	< 0.05
1,2-Dichlorobenzene	< 0.05	< 0.05	< 0.05	< 0.05
n-Butylbenzene	< 0.05	< 0.05	< 0.05	< 0.05
1,2-Dibromo-3-chloropropane	< 0.05	< 0.05	< 0.05	< 0.05
1,3,5-Trichlorobenzene	< 0.05	< 0.05	< 0.05	< 0.05
1,2,4-Trichlorobenzene	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobutadiene	< 0.05	< 0.05	< 0.05	< 0.05
Naphthalene	< 0.1	< 0.1	< 0.1	< 0.1
1,2,3-Trichlorobenzene	< 0.05	< 0.05	< 0.05	< 0.05
4-Bromofluorobenzene (surr)	**97 %R**	**98 %R**	**99 %R**	**96 %R**
1,2-Dichlorobenzene-d4 (surr)	**103 %R**	**102 %R**	**102 %R**	**102 %R**
Toluene-d8 (surr)	**99 %R**	**102 %R**	**101 %R**	**99 %R**
1,2-Dichloroethane-d4 (surr)	**98 %R**	**100 %R**	**99 %R**	**99 %R**

LABORATORY REPORT

EAI ID#: **173353**

Client: **Nobis Engineering**

Client Designation: **L.W. Packard Mill / 70702.00**

Sample ID:	NB-3 4'-6'	NB-4 22'-24'	NBR-4 3'-5'
Lab Sample ID:	173353.02	173353.03	173353.04
Matrix:	soil	soil	soil
Date Sampled:	9/7/17	9/11/17	9/11/17
Date Received:	9/12/17	9/12/17	9/12/17
Units:	mg/kg	mg/kg	mg/kg
Date of Extraction/Preparation	9/13/17	9/13/17	9/13/17
Date of Analysis:	9/14/17	9/14/17	9/14/17
Analyst:	JMR	JMR	JMR
Method:	8270D	8270D	8270D
Dilution Factor:	1	1	1
alpha-Terpineol	< 0.4	< 0.4	< 0.4
Phenol	< 0.08	< 0.08	< 0.08
2-Chlorophenol	< 0.08	< 0.08	< 0.08
2,4-Dichlorophenol	< 0.08	< 0.08	< 0.08
2,4,5-Trichlorophenol	< 0.08	< 0.08	< 0.08
2,4,6-Trichlorophenol	< 0.08	< 0.08	< 0.08
Pentachlorophenol	< 0.4	< 0.4	< 0.4
2-Nitrophenol	< 0.4	< 0.4	< 0.4
4-Nitrophenol	< 0.4	< 0.4	< 0.4
2,4-Dinitrophenol	< 0.8	< 0.8	< 0.8
2-Methylphenol	< 0.08	< 0.08	< 0.08
3/4-Methylphenol	< 0.08	< 0.08	< 0.08
2,4-Dimethylphenol	< 0.08	< 0.08	< 0.08
4-Chloro-3-methylphenol	< 0.08	< 0.08	< 0.08
4,6-Dinitro-2-methylphenol	< 0.4	< 0.4	< 0.4
Benzoic Acid	< 4	< 4	< 4
N-Nitrosodimethylamine	< 0.08	< 0.08	< 0.08
n-Nitroso-di-n-propylamine	< 0.08	< 0.08	< 0.08
n-Nitrosodiphenylamine	< 0.08	< 0.08	< 0.08
bis(2-Chloroethyl)ether	< 0.08	< 0.08	< 0.08
bis(2-chloroisopropyl)ether	< 0.08	< 0.08	< 0.08
bis(2-Chloroethoxy)methane	< 0.08	< 0.08	< 0.08
1,3-Dichlorobenzene	< 0.08	< 0.08	< 0.08
Acetophenone	< 0.08	< 0.08	< 0.08
1,4-Dichlorobenzene	< 0.08	< 0.08	< 0.08
1,2-Dichlorobenzene	< 0.08	< 0.08	< 0.08
1,2,4-Trichlorobenzene	< 0.08	< 0.08	< 0.08
2-Chloronaphthalene	< 0.08	< 0.08	< 0.08
4-Chlorophenyl-phenylether	< 0.08	< 0.08	< 0.08
4-Bromophenyl-phenylether	< 0.08	< 0.08	< 0.08
Hexachloroethane	< 0.08	< 0.08	< 0.08
Hexachlorobutadiene	< 0.08	< 0.08	< 0.08
Hexachlorocyclopentadiene	< 0.4	< 0.4	< 0.4
Hexachlorobenzene	< 0.08	< 0.08	< 0.08
4-Chloroaniline	< 0.08	< 0.08	< 0.08
2,3-Dichloroaniline	< 0.08	< 0.08	< 0.08
2-Nitroaniline	< 0.4	< 0.4	< 0.4
3-Nitroaniline	< 0.4	< 0.4	< 0.4
4-Nitroaniline	< 0.4	< 0.4	< 0.4
Aniline	< 0.08	< 0.08	< 0.08
Benzyl alcohol	< 0.8	< 0.8	< 0.8
Nitrobenzene	< 0.08	< 0.08	< 0.08
Isophorone	< 0.08	< 0.08	< 0.08
2,4-Dinitrotoluene	< 0.4	< 0.4	< 0.4
2,6-Dinitrotoluene	< 0.4	< 0.4	< 0.4

LABORATORY REPORT

EAI ID#: **173353**

Client: **Nobis Engineering**

Client Designation: **L.W. Packard Mill / 70702.00**

Sample ID:	NB-3 4'-6'	NB-4 22'-24'	NBR-4 3'-5'
Lab Sample ID:	173353.02	173353.03	173353.04
Matrix:	soil	soil	soil
Date Sampled:	9/7/17	9/11/17	9/11/17
Date Received:	9/12/17	9/12/17	9/12/17
Units:	mg/kg	mg/kg	mg/kg
Date of Extraction/Preparation	9/13/17	9/13/17	9/13/17
Date of Analysis:	9/14/17	9/14/17	9/14/17
Analyst:	JMR	JMR	JMR
Method:	8270D	8270D	8270D
Dilution Factor:	1	1	1
Benzidine (estimated)	< 0.4	< 0.4	< 0.4
3,3'-Dichlorobenzidine	< 0.08	< 0.08	< 0.08
Pyridine	< 0.4	< 0.4	< 0.4
Azobenzene	< 0.08	< 0.08	< 0.08
Carbazole	< 0.08	< 0.08	< 0.08
Dimethylphthalate	< 0.08	< 0.08	< 0.08
Diethylphthalate	< 0.4	< 0.4	< 0.4
Di-n-butylphthalate	< 0.4	< 0.4	< 0.4
Butylbenzylphthalate	< 0.4	< 0.4	< 0.4
bis(2-Ethylhexyl)phthalate	< 0.4	< 0.4	< 0.4
Di-n-octylphthalate	< 0.4	< 0.4	< 0.4
Dibenzofuran	< 0.08	< 0.08	< 0.08
Naphthalene	< 0.08	< 0.08	< 0.08
2-Methylnaphthalene	< 0.08	< 0.08	< 0.08
1-Methylnaphthalene	< 0.08	< 0.08	< 0.08
Acenaphthylene	< 0.08	< 0.08	< 0.08
Acenaphthene	< 0.08	< 0.08	< 0.08
Fluorene	< 0.08	< 0.08	< 0.08
Phenanthrene	< 0.08	< 0.08	**0.35**
Anthracene	< 0.08	< 0.08	< 0.08
Fluoranthene	< 0.08	< 0.08	**0.50**
Pyrene	< 0.08	< 0.08	**0.54**
Benzo[a]anthracene	< 0.08	< 0.08	**0.24**
Chrysene	< 0.08	< 0.08	**0.29**
Benzo[b]fluoranthene	< 0.08	< 0.08	**0.29**
Benzo[k]fluoranthene	< 0.08	< 0.08	**0.10**
Benzo[a]pyrene	< 0.08	< 0.08	**0.22**
Indeno[1,2,3-cd]pyrene	< 0.08	< 0.08	**0.15**
Dibenz[a,h]anthracene	< 0.08	< 0.08	< 0.08
Benzo[g,h,i]perylene	< 0.08	< 0.08	**0.16**
n-Decane	< 0.4	< 0.4	< 0.4
n-Octadecane	< 0.4	< 0.4	< 0.4
2-Fluorophenol (surr)	**63 %R**	**54 %R**	**51 %R**
Phenol-d6 (surr)	**70 %R**	**59 %R**	**62 %R**
2,4,6-Tribromophenol (surr)	**85 %R**	**74 %R**	**86 %R**
Nitrobenzene-D5 (surr)	**70 %R**	**59 %R**	**58 %R**
2-Fluorobiphenyl (surr)	**78 %R**	**64 %R**	**69 %R**
p-Terphenyl-D14 (surr)	**76 %R**	**78 %R**	**82 %R**

LABORATORY REPORT

EAI ID#: **173353**

Client: **Nobis Engineering**

Client Designation: **L.W. Packard Mill / 70702.00**

Sample ID:	NB-3 4'-6'	NB-4 22'-24'	NBR-4 3'-5'
Lab Sample ID:	173353.02	173353.03	173353.04
Matrix:	soil	soil	soil
Date Sampled:	9/7/17	9/11/17	9/11/17
Date Received:	9/12/17	9/12/17	9/12/17
Units:	mg/kg	mg/kg	mg/kg
Date of Extraction/Prep:	9/13/17	9/13/17	9/13/17
Date of Analysis:	9/14/17	9/14/17	9/14/17
Analyst:	JMR	JMR	JMR
Method:	8015CDRO	8015CDRO	8015CDRO
Dilution Factor:	1	1	1
DRO (Diesel Range C10-C28)	**11**	< 8	**22**
p-Terphenyl-D14 (surr)	**61 %R**	**79 %R**	**70 %R**

LABORATORY REPORT

EAI ID#: **173353**

Client: **Nobis Engineering**

Client Designation: **L.W. Packard Mill / 70702.00**

Sample ID:	NB-3 4'-6'	NB-4 22'-24'	NBR-4 3'-5'
Lab Sample ID:	173353.02	173353.03	173353.04
Matrix:	soil	soil	soil
Date Sampled:	9/7/17	9/11/17	9/11/17
Date Received:	9/12/17	9/12/17	9/12/17
Units:	mg/kg	mg/kg	mg/kg
Date of Extraction/Prep:	9/13/17	9/13/17	9/13/17
Date of Analysis:	9/14/17	9/14/17	9/14/17
Analyst:	SG	SG	SG
Method:	8081B	8081B	8081B
Dilution Factor:	1	1	1
Aldrin	< 0.006	< 0.006	< 0.006
alpha-BHC	< 0.006	< 0.006	< 0.006
beta-BHC	< 0.006	< 0.006	< 0.006
Lindane(gamma-BHC)	< 0.006	< 0.006	< 0.006
delta-BHC	< 0.006	< 0.006	< 0.006
Chlordane	< 0.02	< 0.02	< 0.02
4,4'-DDT	< 0.006	< 0.006	< 0.006
4,4'-DDE	< 0.006	< 0.006	< 0.006
4,4'-DDD	< 0.006	< 0.006	< 0.006
Dieldrin	< 0.006	< 0.006	< 0.006
Endosulfan I	< 0.006	< 0.006	< 0.006
Endosulfan II	< 0.006	< 0.006	< 0.006
Endosulfan Sulfate	< 0.006	< 0.006	< 0.006
Endrin	< 0.006	< 0.006	< 0.006
Endrin Aldehyde	< 0.006	< 0.006	< 0.006
Endrin Ketone	< 0.006	< 0.006	< 0.006
Heptachlor	< 0.006	< 0.006	< 0.006
Heptachlor Epoxide	< 0.006	< 0.006	< 0.006
Methoxychlor	< 0.006	< 0.006	< 0.006
Toxaphene	< 0.06	< 0.06	< 0.06
TMX (surr)	**68 %R**	**74 %R**	**58 %R**
DCB (surr)	**57 %R**	**83 %R**	**63 %R**

Florisil clean-up was performed on the sample and associated batch QC.

LABORATORY REPORT

EAI ID#: **173353**

Client: **Nobis Engineering**

Client Designation: **L.W. Packard Mill / 70702.00**

Sample ID:	NB-3 4'-6'	NB-4 22'-24'	NBR-4 3'-5'
Lab Sample ID:	173353.02	173353.03	173353.04
Matrix:	soil	soil	soil
Date Sampled:	9/7/17	9/11/17	9/11/17
Date Received:	9/12/17	9/12/17	9/12/17
% Solid:	82.8	82.8	86.2
Units:	mg/kg	mg/kg	mg/kg
Date of Extraction/Prep:	9/13/17	9/13/17	9/13/17
Date of Analysis:	9/15/17	9/15/17	9/15/17
Analyst:	SG	SG	SG
Extraction Method:	3540C	3540C	3540C
Analysis Method:	8082A	8082A	8082A
Dilution Factor:	1	1	1
PCB-1016	< 0.02	< 0.02	< 0.02
PCB-1221	< 0.02	< 0.02	< 0.02
PCB-1232	< 0.02	< 0.02	< 0.02
PCB-1242	< 0.02	< 0.02	< 0.02
PCB-1248	< 0.02	< 0.02	< 0.02
PCB-1254	< 0.02	< 0.02	< 0.02
PCB-1260	< 0.02	< 0.02	< 0.02
PCB-1262	< 0.02	< 0.02	< 0.02
PCB-1268	< 0.02	< 0.02	< 0.02
TMX (surr)	**99 %R**	**101 %R**	**88 %R**
DCB (surr)	**76 %R**	**85 %R**	**80 %R**

Acid clean-up was performed on the samples and associated batch QC.

LABORATORY REPORT

EAI ID#: **173353**

Client: **Nobis Engineering**

Client Designation: **L.W. Packard Mill / 70702.00**

Sample ID:	NB-3 4'-6'	NB-4 22'-24'	NBR-4 3'-5'					
Lab Sample ID:	173353.02	173353.03	173353.04					
Matrix:	soil	soil	soil					
Date Sampled:	9/7/17	9/11/17	9/11/17					
Date Received:	9/12/17	9/12/17	9/12/17	**Analytical Matrix**	**Units**	**Date of Analysis**	**Method**	**Analyst**
Antimony	< 0.5	< 0.5	< 0.5	SolTotDry	mg/kg	9/13/17	6020	DS
Arsenic	**2.0**	**2.6**	**2.8**	SolTotDry	mg/kg	9/13/17	6020	DS
Beryllium	**0.6**	< 0.5	**0.5**	SolTotDry	mg/kg	9/13/17	6020	DS
Cadmium	< 0.5	< 0.5	< 0.5	SolTotDry	mg/kg	9/13/17	6020	DS
Chromium	**7.2**	**4.5**	**45**	SolTotDry	mg/kg	9/13/17	6020	DS
Copper	**4.9**	**5.3**	**24**	SolTotDry	mg/kg	9/13/17	6020	DS
Lead	**12**	**2.3**	**20**	SolTotDry	mg/kg	9/13/17	6020	DS
Mercury	< 0.1	< 0.1	**0.6**	SolTotDry	mg/kg	9/13/17	6020	DS
Nickel	**4.2**	**5.7**	**8.8**	SolTotDry	mg/kg	9/13/17	6020	DS
Selenium	**0.6**	< 0.5	< 0.5	SolTotDry	mg/kg	9/13/17	6020	DS
Silver	< 0.5	< 0.5	< 0.5	SolTotDry	mg/kg	9/13/17	6020	DS
Thallium	< 0.5	< 0.5	< 0.5	SolTotDry	mg/kg	9/13/17	6020	DS
Zinc	**30**	**12**	**57**	SolTotDry	mg/kg	9/13/17	6020	DS

Page 1 of 1

CHAIN-OF-CUSTODY RECORD

173353

BOLD FIELDS REQUIRED. PLEASE CIRCLE REQUESTED ANALYSIS.

*	SAMPLE I.D.	SAMPLING DATE/TIME *IF COMPOSITE, INDICATE BOTH START & FINISH DATE/TIME	MATRIX (SEE BELOW)	GRAB/*COMPOSITE	VOC: 524.2 BTEX; 524.2 MTBE ONLY; 8260 624 VTICs; 1,4 DIOXANE; 8021 BTEX HALOS; 8015 GRO MAVPH	SVOC: 8270 625 SVTICs EDB DBCP ABN A BN PAH; TPH8100 LI L2; 8015 DRO MAEPH; PEST 608 PCB 608 PCB 8082; PEST 8081; OIL & GREASE 1664 TPH 1664	TCLP: TCLP 1311 ABN METALS VOC PEST HERB	METALS: DISSOLVED METALS (LIST BELOW); TOTAL METALS (LIST BELOW)	INORGANICS: TS TSS TDS SPEC. CON.; BR CL F SO_4 NO_2 NO_3 NO_2NO_3; BOD CBOD T. ALK.; TKN NH_3 T. PHOS. O. PHOS.; pH T. RES. CHLORINE; COD PHENOLS TOC DOC; TOTAL CYANIDE TOTAL SULFIDE; REACTIVE CYANIDE REACTIVE SULFIDE FLASHPOINT IGNITABILITY	MICRO: TOTAL COLIFORM E. COLI FECAL COLIFORM; ENTEROCOCCI HETEROTROPHIC PLATE COUNT	OTHER: metals	# OF CONTAINERS	NOTES MEOH VIAL #
	Trip Blank	9-7-17/0800	TB	G	X									1
*	NB-3 4'-6'	9-7-17/0945	S	G	X	X			X	X				3
*	NB-4 22'-24'	9-11-17/0945	S	G	X	X			X	X				3
*	NBR-4 3'-5'	9-11-17/1545	S	G	X	X			X	X				3

MATRIX: A-AIR; S-SOIL; GW-GROUND WATER; SW-SURFACE WATER; DW-DRINKING WATER; WW-WASTE WATER

PRESERVATIVE: H-HCL; N-HNO_3; S-H_2SO_4; Na-NaOH; M-MEOH

PROJECT MANAGER: Tim Andrews

COMPANY: Nobis Engineering, Inc.

ADDRESS: 18 Chenell Drive

CITY: Concord **STATE:** NH **ZIP:** 03301

PHONE: 224-4182 **EXT.:**

FAX: 224-2507

E-MAIL: TAndrews@nobiseng.com

SITE NAME: E.W. Packard Mill

PROJECT #: 70702.00

STATE: (NH) MA ME VT **OTHER:**

REGULATORY PROGRAM: NPDES: RGP POTW STORMWATER OR GWP, OIL FUND, BROWNFIELD OR OTHER:

QUOTE #: **PO #:**

DATE NEEDED: Standard T.A.T.

QA/QC REPORTING LEVEL

A B C

OR

PRESUMPTIVE CERTAINTY

REPORTING OPTIONS

PRELIMS: YES OR NO

ELECTRONIC OPTIONS

(E-MAIL) (PDF) EQUIS EXCEL

TEMP. 7.7 °C

ICE? (YES) NO

SAMPLER(S):			
J. Stewart	9-12-17	1620	
RELINQUISHED BY:	**DATE:**	**TIME:**	**RECEIVED BY:**
RELINQUISHED BY:	**DATE:**	**TIME:**	**RECEIVED BY:**
RELINQUISHED BY:	**DATE:**	**TIME:**	**RECEIVED BY:**

METALS: 8 RCRA (13 PP) FE, MN PB, CU

OTHER METALS:

SAMPLES FIELD FILTERED? ☐ YES ☐ NO

NOTES: (IE: SPECIAL DETECTION LIMITS, BILLING INFO, IF DIFFERENT)

TPH by 8015 CDRO C10-C28

* site ID's per customer / Rich.

AOB 9/13/17

SITE HISTORY:

SUSPECTED CONTAMINATION:

FIELD READINGS:

Eastern Analytical, Inc.
professional laboratory and drilling services

Tim Andrews
Nobis Engineering
18 Chenell Drive
Concord , NH 03301

Subject: Laboratory Report

Eastern Analytical, Inc. ID: 173578
Client Identification: L.W. Packard Mill / 70702.00
Date Received: 9/18/2017

Dear Mr. Andrews :

Enclosed please find the laboratory report for the above identified project. All analyses were performed in accordance with our QA/QC Program. Unless otherwise stated, holding times, preservation techniques, container types, and sample conditions adhered to EPA Protocol. Samples which were collected by Eastern Analytical, Inc. (EAI) were collected in accordance with approved EPA procedures. Eastern Analytical, Inc. certifies that the enclosed test results meet all requirements of NELAP and other applicable state certifications. Please refer to our website at www.eailabs.com for a copy of our NELAP certificate and accredited parameters.

The following standard abbreviations and conventions apply to all EAI reports:

Solid samples are reported on a dry weight basis, unless otherwise noted
< : "less than" followed by the reporting limit
> : "greater than" followed by the reporting limit
%R : % Recovery

Eastern Analytical Inc. maintains certification in the following states: Connecticut (PH-0492), Maine (NH005), Massachusetts (M-NH005), New Hampshire/NELAP (1012), Rhode Island (269) and Vermont (VT1012).

The following information is contained within this report: Sample Conditions summary, Analytical Results/Data, Quality Control data (if requested) and copies of the Chain of Custody. This report may not be reproduced except in full, without the the written approval of the laboratory.

If you have any questions regarding the results contained within, please feel free to directly contact me or the chemist(s) who performed the testing in question. Unless otherwise requested, we will dispose of the sample(s) 30 days from the sample receipt date.

We appreciate this opportunity to be of service and look forward to your continued patronage.

Sincerely,

Lorraine Olashaw, Lab Director | 9.22.17 Date | 10 # of pages (excluding cover letter)

SAMPLE CONDITIONS PAGE

EAI ID#: **173578**

Client: **Nobis Engineering**

Client Designation: **L.W. Packard Mill / 70702.00**

Temperature upon receipt (°C): 3.1 **Received on ice or cold packs (Yes/No): Y**

Acceptable temperature range (°C): 0-6

Lab ID	Sample ID	Date Received	Date Sampled	Sample Matrix	% Dry Weight	Exceptions/Comments (other than thermal preservation)
173578.01	Trip Blank	9/18/17	9/14/17	soil	100.0	Adheres to Sample Acceptance Policy
173578.02	NBR-2 S-1 14.5-15.5	9/18/17	9/14/17	soil	82.2	Adheres to Sample Acceptance Policy
173578.03	NBR-1 S-3 6-8'	9/18/17	9/15/17	soil	85.7	Adheres to Sample Acceptance Policy

Samples were properly preserved and the pH measured when applicable unless otherwise noted. Analysis of solids for pH, Flashpoint, Ignitability, Paint Filter, Corrosivity, Conductivity and Specific Gravity are reported on an "as received" basis.
Immediate analyses, pH, Total Residual Chlorine, Dissolved Oxygen and Sulfite, performed at the laboratory were run outside of the recommended 15 minute hold time.
All results contained in this report relate only to the above listed samples.
References include:
1) EPA 600/4-79-020, 1983
2) Standard Methods for Examination of Water and Wastewater,20th Edition, 1998 and 22nd Edition, 2012
3) Test Methods for Evaluating Solid Waste SW 846 3rd Edition including updates IVA and IVB
4) Hach Water Analysis Handbook, 2nd edition, 1992

LABORATORY REPORT

EAI ID#: **173578**

Client: **Nobis Engineering**

Client Designation: **L.W. Packard Mill / 70702.00**

Sample ID:	Trip Blank	NBR-2 S-1 14.5-15.5	NBR-1 S-3 6 -8'
Lab Sample ID:	173578.01	173578.02	173578.03
Matrix:	soil	soil	soil
Date Sampled:	9/14/17	9/14/17	9/15/17
Date Received:	9/18/17	9/18/17	9/18/17
Units:	mg/kg	mg/kg	mg/kg
Date of Analysis:	9/20/17	9/20/17	9/20/17
Analyst:	BML	BML	BML
Method:	8260C	8260C	8260C
Dilution Factor:	1	1	1
Dichlorodifluoromethane	< 0.1	< 0.1	< 0.1
Chloromethane	< 0.1	< 0.1	< 0.1
Vinyl chloride	< 0.1	< 0.1	< 0.1
Bromomethane	< 0.2	< 0.2	< 0.2
Chloroethane	< 0.1	< 0.1	< 0.1
Trichlorofluoromethane	< 0.1	< 0.1	< 0.1
Diethyl Ether	< 0.05	< 0.06	< 0.05
Acetone	< 2	< 2	< 2
1,1-Dichloroethene	< 0.05	< 0.06	< 0.05
tert-Butyl Alcohol (TBA)	< 2	< 2	< 2
Methylene chloride	< 0.1	< 0.1	< 0.1
Carbon disulfide	< 0.1	< 0.1	< 0.1
Methyl-t-butyl ether(MTBE)	< 0.1	< 0.1	< 0.1
Ethyl-t-butyl ether(ETBE)	< 0.1	< 0.1	< 0.1
Isopropyl ether(DIPE)	< 0.1	< 0.1	< 0.1
tert-amyl methyl ether(TAME)	< 0.1	< 0.1	< 0.1
trans-1,2-Dichloroethene	< 0.05	< 0.06	< 0.05
1,1-Dichloroethane	< 0.05	< 0.06	< 0.05
2,2-Dichloropropane	< 0.05	< 0.06	< 0.05
cis-1,2-Dichloroethene	< 0.05	< 0.06	< 0.05
2-Butanone(MEK)	< 0.5	< 0.6	< 0.5
Bromochloromethane	< 0.05	< 0.06	< 0.05
Tetrahydrofuran(THF)	< 0.5	< 0.6	< 0.5
Chloroform	< 0.05	< 0.06	< 0.05
1,1,1-Trichloroethane	< 0.05	< 0.06	< 0.05
Carbon tetrachloride	< 0.05	< 0.06	< 0.05
1,1-Dichloropropene	< 0.05	< 0.06	< 0.05
Benzene	< 0.05	< 0.06	< 0.05
1,2-Dichloroethane	< 0.05	< 0.06	< 0.05
Trichloroethene	< 0.05	< 0.06	< 0.05
1,2-Dichloropropane	< 0.05	< 0.06	< 0.05
Dibromomethane	< 0.05	< 0.06	< 0.05
Bromodichloromethane	< 0.05	< 0.06	< 0.05
1,4-Dioxane	< 3	< 3	< 3
4-Methyl-2-pentanone(MIBK)	< 0.5	< 0.6	< 0.5
cis-1,3-Dichloropropene	< 0.05	< 0.06	< 0.05
Toluene	< 0.05	< 0.06	< 0.05
trans-1,3-Dichloropropene	< 0.05	< 0.06	< 0.05
1,1,2-Trichloroethane	< 0.05	< 0.06	< 0.05
2-Hexanone	< 0.1	< 0.1	< 0.1
Tetrachloroethene	< 0.05	< 0.06	< 0.05
1,3-Dichloropropane	< 0.05	< 0.06	< 0.05
Dibromochloromethane	< 0.05	< 0.06	< 0.05
1,2-Dibromoethane(EDB)	< 0.05	< 0.06	< 0.05
Chlorobenzene	< 0.05	< 0.06	< 0.05
1,1,1,2-Tetrachloroethane	< 0.05	< 0.06	< 0.05
Ethylbenzene	< 0.05	**0.11**	< 0.05

LABORATORY REPORT

EAI ID#: **173578**

Client: **Nobis Engineering**

Client Designation: **L.W. Packard Mill / 70702.00**

Sample ID:	Trip Blank	NBR-2 S-1 14.5-15.5	NBR-1 S-3 6 -8'
Lab Sample ID:	173578.01	173578.02	173578.03
Matrix:	soil	soil	soil
Date Sampled:	9/14/17	9/14/17	9/15/17
Date Received:	9/18/17	9/18/17	9/18/17
Units:	mg/kg	mg/kg	mg/kg
Date of Analysis:	9/20/17	9/20/17	9/20/17
Analyst:	BML	BML	BML
Method:	8260C	8260C	8260C
Dilution Factor:	1	1	1
mp-Xylene	< 0.05	**2.2**	< 0.05
o-Xylene	< 0.05	**2.5**	< 0.05
Styrene	< 0.05	< 0.06	< 0.05
Bromoform	< 0.05	< 0.06	< 0.05
IsoPropylbenzene	< 0.05	**1.6**	< 0.05
Bromobenzene	< 0.05	< 0.06	< 0.05
1,1,2,2-Tetrachloroethane	< 0.05	< 0.06	< 0.05
1,2,3-Trichloropropane	< 0.05	< 0.06	< 0.05
n-Propylbenzene	< 0.05	**3.7**	< 0.05
2-Chlorotoluene	< 0.05	< 0.06	< 0.05
4-Chlorotoluene	< 0.05	< 0.06	< 0.05
1,3,5-Trimethylbenzene	< 0.05	**6.1**	< 0.05
tert-Butylbenzene	< 0.05	< 0.06	< 0.05
1,2,4-Trimethylbenzene	< 0.05	**15**	< 0.05
sec-Butylbenzene	< 0.05	**0.26**	< 0.05
1,3-Dichlorobenzene	< 0.05	< 0.06	< 0.05
p-Isopropyltoluene	< 0.05	**1.2**	< 0.05
1,4-Dichlorobenzene	< 0.05	< 0.06	< 0.05
1,2-Dichlorobenzene	< 0.05	< 0.06	< 0.05
n-Butylbenzene	< 0.05	**1.1**	< 0.05
1,2-Dibromo-3-chloropropane	< 0.05	< 0.06	< 0.05
1,3,5-Trichlorobenzene	< 0.05	< 0.06	< 0.05
1,2,4-Trichlorobenzene	< 0.05	< 0.06	< 0.05
Hexachlorobutadiene	< 0.05	< 0.06	< 0.05
Naphthalene	< 0.1	**0.3**	< 0.1
1,2,3-Trichlorobenzene	< 0.05	< 0.06	< 0.05
4-Bromofluorobenzene (surr)	**97 %R**	**104 %R**	**99 %R**
1,2-Dichlorobenzene-d4 (surr)	**101 %R**	**93 %R**	**102 %R**
Toluene-d8 (surr)	**101 %R**	**100 %R**	**100 %R**
1,2-Dichloroethane-d4 (surr)	**101 %R**	**99 %R**	**99 %R**

NBR-2 S-1 14.5-15.5: Reporting limits are elevated due to the % solids content of the sample or the sample mass used for analysis.

The value(s) for n-Butylbenzene may be elevated due to non-target interference.

Client: **Nobis Engineering**

Client Designation: **L.W. Packard Mill / 70702.00**

Sample ID:	NBR-2 S-1 14.5-15.5	NBR-1 S-3 6 -8'
Lab Sample ID:	173578.02	173578.03
Matrix:	soil	soil
Date Sampled:	9/14/17	9/15/17
Date Received:	9/18/17	9/18/17
Units:	mg/kg	mg/kg
Date of Extraction/Preparation	9/19/17	9/19/17
Date of Analysis:	9/20/17	9/20/17
Analyst:	JMR	JMR
Method:	8270D	8270D
Dilution Factor:	1	1
alpha-Terpineol	< 0.4	< 0.4
Phenol	< 0.08	< 0.08
2-Chlorophenol	< 0.08	< 0.08
2,4-Dichlorophenol	< 0.08	< 0.08
2,4,5-Trichlorophenol	< 0.08	< 0.08
2,4,6-Trichlorophenol	< 0.08	< 0.08
Pentachlorophenol	< 0.4	< 0.4
2-Nitrophenol	< 0.4	< 0.4
4-Nitrophenol	< 0.4	< 0.4
2,4-Dinitrophenol	< 0.8	< 0.8
2-Methylphenol	< 0.08	< 0.08
3/4-Methylphenol	< 0.08	< 0.08
2,4-Dimethylphenol	< 0.08	< 0.08
4-Chloro-3-methylphenol	< 0.08	< 0.08
4,6-Dinitro-2-methylphenol	< 0.4	< 0.4
Benzoic Acid	< 4	< 4
N-Nitrosodimethylamine	< 0.08	< 0.08
n-Nitroso-di-n-propylamine	< 0.08	< 0.08
n-Nitrosodiphenylamine	< 0.08	< 0.08
bis(2-Chloroethyl)ether	< 0.08	< 0.08
bis(2-chloroisopropyl)ether	< 0.08	< 0.08
bis(2-Chloroethoxy)methane	< 0.08	< 0.08
1,3-Dichlorobenzene	< 0.08	< 0.08
Acetophenone	< 0.08	**0.099**
1,4-Dichlorobenzene	< 0.08	< 0.08
1,2-Dichlorobenzene	< 0.08	< 0.08
1,2,4-Trichlorobenzene	< 0.08	< 0.08
2-Chloronaphthalene	< 0.08	< 0.08
4-Chlorophenyl-phenylether	< 0.08	< 0.08
4-Bromophenyl-phenylether	< 0.08	< 0.08
Hexachloroethane	< 0.08	< 0.08
Hexachlorobutadiene	< 0.08	< 0.08
Hexachlorocyclopentadiene	< 0.4	< 0.4
Hexachlorobenzene	< 0.08	< 0.08
4-Chloroaniline	< 0.08	< 0.08
2,3-Dichloroaniline	< 0.08	< 0.08
2-Nitroaniline	< 0.4	< 0.4
3-Nitroaniline	< 0.4	< 0.4
4-Nitroaniline	< 0.4	< 0.4
Aniline	< 0.08	< 0.08
Benzyl alcohol	< 0.8	< 0.8
Nitrobenzene	< 0.08	< 0.08
Isophorone	< 0.08	< 0.08
2,4-Dinitrotoluene	< 0.4	< 0.4
2,6-Dinitrotoluene	< 0.4	< 0.4

LABORATORY REPORT

EAI ID#: **173578**

Client: **Nobis Engineering**

Client Designation: **L.W. Packard Mill / 70702.00**

Sample ID:	NBR-2 S-1 14.5-15.5	NBR-1 S-3 6 -8'
Lab Sample ID:	173578.02	173578.03
Matrix:	soil	soil
Date Sampled:	9/14/17	9/15/17
Date Received:	9/18/17	9/18/17
Units:	mg/kg	mg/kg
Date of Extraction/Preparation	9/19/17	9/19/17
Date of Analysis:	9/20/17	9/20/17
Analyst:	JMR	JMR
Method:	8270D	8270D
Dilution Factor:	1	1
Benzidine (estimated)	< 0.4	< 0.4
3,3'-Dichlorobenzidine	< 0.08	< 0.08
Pyridine	< 0.4	< 0.4
Azobenzene	< 0.08	< 0.08
Carbazole	< 0.08	< 0.08
Dimethylphthalate	< 0.08	< 0.08
Diethylphthalate	< 0.4	< 0.4
Di-n-butylphthalate	< 0.4	< 0.4
Butylbenzylphthalate	< 0.4	< 0.4
bis(2-Ethylhexyl)phthalate	< 0.4	< 0.4
Di-n-octylphthalate	< 0.4	< 0.4
Dibenzofuran	< 0.08	< 0.08
Naphthalene	< 0.08	< 0.08
2-Methylnaphthalene	< 0.08	< 0.08
1-Methylnaphthalene	< 0.08	< 0.08
Acenaphthylene	< 0.08	< 0.08
Acenaphthene	< 0.08	< 0.08
Fluorene	< 0.08	< 0.08
Phenanthrene	< 0.08	< 0.08
Anthracene	< 0.08	< 0.08
Fluoranthene	**0.081**	**0.22**
Pyrene	< 0.08	**0.19**
Benzo[a]anthracene	< 0.08	**0.12**
Chrysene	< 0.08	**0.11**
Benzo[b]fluoranthene	< 0.08	**0.14**
Benzo[k]fluoranthene	< 0.08	< 0.08
Benzo[a]pyrene	< 0.08	**0.11**
Indeno[1,2,3-cd]pyrene	< 0.08	< 0.08
Dibenz[a,h]anthracene	< 0.08	< 0.08
Benzo[g,h,i]perylene	< 0.08	< 0.08
n-Decane	< 0.4	< 0.4
n-Octadecane	< 0.4	< 0.4
2-Fluorophenol (surr)	**68 %R**	**65 %R**
Phenol-d6 (surr)	**75 %R**	**71 %R**
2,4,6-Tribromophenol (surr)	**94 %R**	**91 %R**
Nitrobenzene-D5 (surr)	**76 %R**	**73 %R**
2-Fluorobiphenyl (surr)	**85 %R**	**79 %R**
p-Terphenyl-D14 (surr)	**88 %R**	**80 %R**

LABORATORY REPORT

EAI ID#: **173578**

Client: **Nobis Engineering**

Client Designation: **L.W. Packard Mill / 70702.00**

Sample ID:	NBR-2 S-1 14.5-15.5	NBR-1 S-3 6 -8'
Lab Sample ID:	173578.02	173578.03
Matrix:	soil	soil
Date Sampled:	9/14/17	9/15/17
Date Received:	9/18/17	9/18/17
Units:	mg/kg	mg/kg
Date of Extraction/Prep:	9/20/17	9/20/17
Date of Analysis:	9/21/17	9/21/17
Analyst:	JMR	JMR
Method:	8015CDRO	8015CDRO
Dilution Factor:	1	1
DRO (Diesel Range C10-C28)	**200**	**13**
p-Terphenyl-D14 (surr)	**94 %R**	**83 %R**

LABORATORY REPORT

EAI ID#: **173578**

Client: **Nobis Engineering**

Client Designation: **L.W. Packard Mill / 70702.00**

Sample ID:	NBR-2 S-1 14.5 -15.5	NBR-1 S-3 6 -8'
Lab Sample ID:	173578.02	173578.03
Matrix:	soil	soil
Date Sampled:	9/14/17	9/15/17
Date Received:	9/18/17	9/18/17
Units:	mg/kg	mg/kg
Date of Extraction/Prep:	9/20/17	9/20/17
Date of Analysis:	9/25/17	9/25/17
Analyst:	SG	SG
Method:	8081B	8081B
Dilution Factor:	12	6
Aldrin	< 0.06	< 0.03
alpha-BHC	< 0.06	< 0.03
beta-BHC	< 0.06	< 0.03
Lindane(gamma-BHC)	< 0.06	< 0.03
delta-BHC	< 0.06	< 0.03
Chlordane	< 0.2	< 0.1
4,4'-DDT	< 0.06	< 0.03
4,4'-DDE	< 0.06	< 0.03
4,4'-DDD	< 0.06	< 0.03
Dieldrin	< 0.06	< 0.03
Endosulfan I	< 0.06	< 0.03
Endosulfan II	< 0.06	< 0.03
Endosulfan Sulfate	< 0.06	< 0.03
Endrin	< 0.06	< 0.03
Endrin Aldehyde	< 0.06	< 0.03
Endrin Ketone	< 0.06	< 0.03
Heptachlor	< 0.06	< 0.03
Heptachlor Epoxide	< 0.06	< 0.03
Methoxychlor	< 0.06	< 0.03
Toxaphene	< 0.6	< 0.3
TMX (surr)	**67 %R**	**63 %R**
DCB (surr)	**86 %R**	**78 %R**

Florisil clean-up was performed on the sample and associated batch QC. Detection limits elevated due to sample matrix. Endrin, 4,4'-DDT and Methoxychlor exhibited recovery below acceptance limits in the closing calibration verification. Sample matrix interference is suspected as batch QC was in control. These compounds were not detected in the sample.

LABORATORY REPORT

EAI ID#: **173578**

Client: **Nobis Engineering**

Client Designation: **L.W. Packard Mill / 70702.00**

Sample ID:	NBR-2 S-1 14.5-15.5	NBR-1 S-3 6 -8'
Lab Sample ID:	173578.02	173578.03
Matrix:	soil	soil
Date Sampled:	9/14/17	9/15/17
Date Received:	9/18/17	9/18/17
% Solid:	82.2	85.7
Units:	mg/kg	mg/kg
Date of Extraction/Prep:	9/20/17	9/20/17
Date of Analysis:	9/21/17	9/21/17
Analyst:	SG	SG
Extraction Method:	3540C	3540C
Analysis Method:	8082A	8082A
Dilution Factor:	1	1
PCB-1016	< 0.02	< 0.02
PCB-1221	< 0.02	< 0.02
PCB-1232	< 0.02	< 0.02
PCB-1242	< 0.02	< 0.02
PCB-1248	< 0.02	< 0.02
PCB-1254	< 0.02	< 0.02
PCB-1260	< 0.02	< 0.02
PCB-1262	< 0.02	< 0.02
PCB-1268	< 0.02	< 0.02
TMX (surr)	**88 %R**	**84 %R**
DCB (surr)	**70 %R**	**80 %R**

Acid clean-up was performed on the samples and associated batch QC.

LABORATORY REPORT

EAI ID#: **173578**

Client: **Nobis Engineering**

Client Designation: **L.W. Packard Mill / 70702.00**

Sample ID:	NBR-2 S-1 14.5 -15.5	NBR-1 S-3 6 -8'	Analytical Matrix	Units	Date of Analysis	Method	Analyst
Lab Sample ID:	173578.02	173578.03					
Matrix:	soil	soil					
Date Sampled:	9/14/17	9/15/17					
Date Received:	9/18/17	9/18/17					
Antimony	< 0.5	< 0.5	SolTotDry	mg/kg	9/20/17	6020	DS
Arsenic	**12**	**2.9**	SolTotDry	mg/kg	9/20/17	6020	DS
Beryllium	**1.3**	< 0.5	SolTotDry	mg/kg	9/20/17	6020	DS
Cadmium	< 0.5	< 0.5	SolTotDry	mg/kg	9/20/17	6020	DS
Chromium	**67**	**9.3**	SolTotDry	mg/kg	9/20/17	6020	DS
Copper	**63**	**15**	SolTotDry	mg/kg	9/20/17	6020	DS
Lead	**20**	**5.4**	SolTotDry	mg/kg	9/20/17	6020	DS
Mercury	< 0.1	< 0.1	SolTotDry	mg/kg	9/20/17	6020	DS
Nickel	**34**	**6.7**	SolTotDry	mg/kg	9/20/17	6020	DS
Selenium	< 0.5	< 0.5	SolTotDry	mg/kg	9/20/17	6020	DS
Silver	< 0.5	< 0.5	SolTotDry	mg/kg	9/20/17	6020	DS
Thallium	< 0.5	< 0.5	SolTotDry	mg/kg	9/20/17	6020	DS
Zinc	**120**	**32**	SolTotDry	mg/kg	9/20/17	6020	DS

Page 1 of 1

CHAIN-OF-CUSTODY RECORD

173578

BOLD FIELDS REQUIRED. PLEASE CIRCLE REQUESTED ANALYSIS.

SAMPLE I.D.	SAMPLING DATE /TIME *IF COMPOSITE, INDICATE BOTH START & FINISH DATE /TIME	MATRIX (SEE BELOW)	GRAB/*COMPOSITE	VOC: 524.2 524.2 BTEX	VOC: 524.2 MTBE ONLY	VOC: 624 8260 VTICS 1,4 DIOXANE	VOC: BTEX HALOS 8021	VOC: 8015 GRO MAVPH	SVOC: 625 8270 SVTICS A	SVOC: EDB DBCP BN PAH ABN	SVOC: TPH8100 LI L2	SVOC: 8015 DRO MAEPH	SVOC: PCB 608 PEST 608	SVOC: PCB 8082 PEST 8081	SVOC: OIL & GREASE 1664 TPH 1664	TCLP: TCLP 1311 VOC	TCLP: ABN METALS PEST HERB	METALS: DISSOLVED METALS (LIST BELOW)	METALS: TOTAL METALS (LIST BELOW)	INORGANICS: TS	INORGANICS: TSS	INORGANICS: TDS	INORGANICS: SPEC. CON.	INORGANICS: BR	INORGANICS: CL	INORGANICS: F	INORGANICS: SO_4	INORGANICS: NO_2	INORGANICS: NO_3	INORGANICS: NO_2NO_3	INORGANICS: BOD	INORGANICS: CBOD	INORGANICS: T. ALK.	INORGANICS: TKN	INORGANICS: NH_3	INORGANICS: T. PHOS.	INORGANICS: O. PHOS.	INORGANICS: PH	INORGANICS: T. RES. CHLORINE	INORGANICS: COD	INORGANICS: PHENOLS	INORGANICS: TOC	INORGANICS: DOC	INORGANICS: TOTAL CYANIDE	INORGANICS: TOTAL SULFIDE	INORGANICS: REACTIVE CYANIDE	INORGANICS: REACTIVE SULFIDE	INORGANICS: FLASHPOINT	INORGANICS: IGNITABILITY	MICRO: TOTAL COLIFORM	MICRO: E. COLI	MICRO: FECAL COLIFORM	MICRO: ENTEROCOCCI	MICRO: HETEROTROPHIC PLATE COUNT	OTHER: Metals	OTHER	OTHER	# OF CONTAINERS	NOTES MEOH VIAL #
Trip Blank	9-14-17/0800	TB	G			X																																											1	
NBR-2 S-1 14.5-15.5	9-14-17/1150	S	G			X			X			X	X																																				X			3	
NBR-1 S-3 6-8'	9-15-17/1515	S	G			X			X			X	X																																				X			3	

MATRIX: A-AIR; S-SOIL; GW-GROUND WATER; SW-SURFACE WATER; DW-DRINKING WATER; WW-WASTE WATER

PRESERVATIVE: H-HCL; N-HNO_3; S-H_2SO_4; Na-NaOH; M-MEOH

PROJECT MANAGER: Tim Andrews

COMPANY: Nobis Engineering, Inc.

ADDRESS: 18 Chenell Drive

CITY: Concord **STATE:** NH **ZIP:** 03301

PHONE: 224-4182 **EXT.:**

FAX: 224-2507

E-MAIL: TAndrews@nobiseng.com

SITE NAME: C.W. Packard Mill

PROJECT #: 70702.00

STATE: (NH) MA ME VT **OTHER:**

REGULATORY PROGRAM: NPDES: RGP POTW STORMWATER OR GWP, OIL FUND, BROWNFIELD OR OTHER:

QUOTE #: **PO #:**

DATE NEEDED: Standard TAT

QA/QC REPORTING LEVEL

A B C

OR

PRESUMPTIVE CERTAINTY

REPORTING OPTIONS

PRELIMS: YES OR NO

ELECTRONIC OPTIONS

(E-MAIL) (PDF) EQUIS EXCEL

TEMP. 3.1 °C

ICE? (YES) NO

SAMPLER(S): B. Bina

	DATE:	TIME:	RECEIVED BY:
RELINQUISHED BY:	9-18-17	16:55	
RELINQUISHED BY:			
RELINQUISHED BY:			

METALS: 8 RCRA (13 PP) FE, MN PB, CU

OTHER METALS:

SAMPLES FIELD FILTERED? ☐ YES ☐ NO

NOTES: (IE: SPECIAL DETECTION LIMITS, BILLING INFO, IF DIFFERENT)

SITE HISTORY:

SUSPECTED CONTAMINATION:

FIELD READINGS:

Eastern Analytical, Inc.
professional laboratory and drilling services
25 CHENELL DRIVE | CONCORD, NH 03301 | TEL: 603.228.0525 | 1.800.287.0525 | E-MAIL: CUSTOMERSERVICE@EASTERNANALYTICAL.COM | WWW.EASTERNANALYTICAL.COM

(WHITE: ORIGINAL GREEN: PROJECT MANAGER)

Eastern Analytical, Inc.
professional laboratory and drilling services

Tim Andrews
Nobis Engineering
18 Chenell Drive
Concord , NH 03301

Subject: Laboratory Report

Eastern Analytical, Inc. ID:	173638
Client Identification:	L.W. Packard Mill | 70702.00
Date Received:	9/19/2017

Dear Mr. Andrews :

Enclosed please find the laboratory report for the above identified project. All analyses were performed in accordance with our QA/QC Program. Unless otherwise stated, holding times, preservation techniques, container types, and sample conditions adhered to EPA Protocol. Samples which were collected by Eastern Analytical, Inc. (EAI) were collected in accordance with approved EPA procedures. Eastern Analytical, Inc. certifies that the enclosed test results meet all requirements of NELAP and other applicable state certifications. Please refer to our website at www.eailabs.com for a copy of our NELAP certificate and accredited parameters.

The following standard abbreviations and conventions apply to all EAI reports:
- Solid samples are reported on a dry weight basis, unless otherwise noted
- < : "less than" followed by the reporting limit
- > : "greater than" followed by the reporting limit
- %R : % Recovery

Eastern Analytical Inc. maintains certification in the following states: Connecticut (PH-0492), Maine (NH005), Massachusetts (M-NH005), New Hampshire/NELAP (1012), Rhode Island (269) and Vermont (VT1012).

The following information is contained within this report: Sample Conditions summary, Analytical Results/Data, Quality Control data (if requested) and copies of the Chain of Custody. This report may not be reproduced except in full, without the the written approval of the laboratory.

If you have any questions regarding the results contained within, please feel free to directly contact me or the chemist(s) who performed the testing in question. Unless otherwise requested, we will dispose of the sample(s) 30 days from the sample receipt date.

We appreciate this opportunity to be of service and look forward to your continued patronage.

Sincerely,

Jenne Scott for	9.27.17	10
Lorraine Olashaw, Lab Director	Date	# of pages (excluding cover letter)

SAMPLE CONDITIONS PAGE

EAI ID#: **173638**

Client: **Nobis Engineering**

Client Designation: **L.W. Packard Mill | 70702.00**

Temperature upon receipt (°C): 4.1 **Received on ice or cold packs (Yes/No): Y**

Acceptable temperature range (°C): 0-6

Lab ID	Sample ID	Date Received	Date Sampled	Sample Matrix	% Dry Weight	Exceptions/Comments (other than thermal preservation)
173638.01	Trip Blank	9/19/17	9/19/17	soil	100.0	Adheres to Sample Acceptance Policy
173638.02	NB-2 S-5 8-9'3"	9/19/17	9/19/17	soil	84.1	Adheres to Sample Acceptance Policy
173638.03	FD-1	9/19/17	9/19/17	soil	84.2	Adheres to Sample Acceptance Policy
173638.04	NB-1 S-4 6-8'	9/19/17	9/19/17	soil	90.9	Adheres to Sample Acceptance Policy

Samples were properly preserved and the pH measured when applicable unless otherwise noted. Analysis of solids for pH, Flashpoint, Ignitability, Paint Filter, Corrosivity, Conductivity and Specific Gravity are reported on an "as received" basis.
Immediate analyses, pH, Total Residual Chlorine, Dissolved Oxygen and Sulfite, performed at the laboratory were run outside of the recommended 15 minute hold time.

All results contained in this report relate only to the above listed samples.

References include:

1) EPA 600/4-79-020, 1983
2) Standard Methods for Examination of Water and Wastewater,20th Edition, 1998 and 22nd Edition, 2012
3) Test Methods for Evaluating Solid Waste SW 846 3rd Edition including updates IVA and IVB
4) Hach Water Analysis Handbook, 2nd edition, 1992

LABORATORY REPORT

EAI ID#: **173638**

Client: **Nobis Engineering**

Client Designation: **L.W. Packard Mill | 70702.00**

Sample ID:	Trip Blank	NB-2 S-5 8 -9'3"	FD-1	NB-1 S-4 6-8'
Lab Sample ID:	173638.01	173638.02	173638.03	173638.04
Matrix:	soil	soil	soil	soil
Date Sampled:	9/19/17	9/19/17	9/19/17	9/19/17
Date Received:	9/19/17	9/19/17	9/19/17	9/19/17
Units:	mg/kg	mg/kg	mg/kg	mg/kg
Date of Analysis:	9/21/17	9/22/17	9/22/17	9/22/17
Analyst:	BML	BML	BML	BML
Method:	8260C	8260C	8260C	8260C
Dilution Factor:	1	1	1	1
Dichlorodifluoromethane	< 0.1	< 0.1	< 0.1	< 0.1
Chloromethane	< 0.1	< 0.1	< 0.1	< 0.1
Vinyl chloride	< 0.1	< 0.1	< 0.1	< 0.1
Bromomethane	< 0.2	< 0.2	< 0.2	< 0.3
Chloroethane	< 0.1	< 0.1	< 0.1	< 0.1
Trichlorofluoromethane	< 0.1	< 0.1	< 0.1	< 0.1
Diethyl Ether	< 0.05	< 0.06	< 0.06	< 0.06
Acetone	< 2	< 2	< 2	< 3
1,1-Dichloroethene	< 0.05	< 0.06	< 0.06	< 0.06
tert-Butyl Alcohol (TBA)	< 2	< 2	< 2	< 3
Methylene chloride	< 0.1	< 0.1	< 0.1	< 0.1
Carbon disulfide	< 0.1	< 0.1	< 0.1	< 0.1
Methyl-t-butyl ether(MTBE)	< 0.1	< 0.1	< 0.1	< 0.1
Ethyl-t-butyl ether(ETBE)	< 0.1	< 0.1	< 0.1	< 0.1
Isopropyl ether(DIPE)	< 0.1	< 0.1	< 0.1	< 0.1
tert-amyl methyl ether(TAME)	< 0.1	< 0.1	< 0.1	< 0.1
trans-1,2-Dichloroethene	< 0.05	< 0.06	< 0.06	< 0.06
1,1-Dichloroethane	< 0.05	< 0.06	< 0.06	< 0.06
2,2-Dichloropropane	< 0.05	< 0.06	< 0.06	< 0.06
cis-1,2-Dichloroethene	< 0.05	< 0.06	< 0.06	< 0.06
2-Butanone(MEK)	< 0.5	< 0.6	< 0.6	< 0.6
Bromochloromethane	< 0.05	< 0.06	< 0.06	< 0.06
Tetrahydrofuran(THF)	< 0.5	< 0.6	< 0.6	< 0.6
Chloroform	< 0.05	< 0.06	< 0.06	< 0.06
1,1,1-Trichloroethane	< 0.05	< 0.06	< 0.06	< 0.06
Carbon tetrachloride	< 0.05	< 0.06	< 0.06	< 0.06
1,1-Dichloropropene	< 0.05	< 0.06	< 0.06	< 0.06
Benzene	< 0.05	< 0.06	< 0.06	< 0.06
1,2-Dichloroethane	< 0.05	< 0.06	< 0.06	< 0.06
Trichloroethene	< 0.05	< 0.06	< 0.06	< 0.06
1,2-Dichloropropane	< 0.05	< 0.06	< 0.06	< 0.06
Dibromomethane	< 0.05	< 0.06	< 0.06	< 0.06
Bromodichloromethane	< 0.05	< 0.06	< 0.06	< 0.06
1,4-Dioxane	< 3	< 3	< 3	< 4
4-Methyl-2-pentanone(MIBK)	< 0.5	< 0.6	< 0.6	< 0.6
cis-1,3-Dichloropropene	< 0.05	< 0.06	< 0.06	< 0.06
Toluene	< 0.05	< 0.06	< 0.06	< 0.06
trans-1,3-Dichloropropene	< 0.05	< 0.06	< 0.06	< 0.06
1,1,2-Trichloroethane	< 0.05	< 0.06	< 0.06	< 0.06
2-Hexanone	< 0.1	< 0.1	< 0.1	< 0.1
Tetrachloroethene	< 0.05	< 0.06	< 0.06	< 0.06
1,3-Dichloropropane	< 0.05	< 0.06	< 0.06	< 0.06
Dibromochloromethane	< 0.05	< 0.06	< 0.06	< 0.06
1,2-Dibromoethane(EDB)	< 0.05	< 0.06	< 0.06	< 0.06
Chlorobenzene	< 0.05	< 0.06	< 0.06	< 0.06
1,1,1,2-Tetrachloroethane	< 0.05	< 0.06	< 0.06	< 0.06
Ethylbenzene	< 0.05	< 0.06	< 0.06	< 0.06

LABORATORY REPORT

EAI ID#: **173638**

Client: **Nobis Engineering**

Client Designation: **L.W. Packard Mill | 70702.00**

Sample ID:	Trip Blank	NB-2 S-5 8 -9'3"	FD-1	NB-1 S-4 6-8'
Lab Sample ID:	173638.01	173638.02	173638.03	173638.04
Matrix:	soil	soil	soil	soil
Date Sampled:	9/19/17	9/19/17	9/19/17	9/19/17
Date Received:	9/19/17	9/19/17	9/19/17	9/19/17
Units:	mg/kg	mg/kg	mg/kg	mg/kg
Date of Analysis:	9/21/17	9/22/17	9/22/17	9/22/17
Analyst:	BML	BML	BML	BML
Method:	8260C	8260C	8260C	8260C
Dilution Factor:	1	1	1	1
mp-Xylene	< 0.05	< 0.06	< 0.06	< 0.06
o-Xylene	< 0.05	< 0.06	< 0.06	< 0.06
Styrene	< 0.05	< 0.06	< 0.06	< 0.06
Bromoform	< 0.05	< 0.06	< 0.06	< 0.06
IsoPropylbenzene	< 0.05	< 0.06	< 0.06	< 0.06
Bromobenzene	< 0.05	< 0.06	< 0.06	< 0.06
1,1,2,2-Tetrachloroethane	< 0.05	< 0.06	< 0.06	< 0.06
1,2,3-Trichloropropane	< 0.05	< 0.06	< 0.06	< 0.06
n-Propylbenzene	< 0.05	< 0.06	< 0.06	< 0.06
2-Chlorotoluene	< 0.05	< 0.06	< 0.06	< 0.06
4-Chlorotoluene	< 0.05	< 0.06	< 0.06	< 0.06
1,3,5-Trimethylbenzene	< 0.05	< 0.06	< 0.06	< 0.06
tert-Butylbenzene	< 0.05	< 0.06	< 0.06	< 0.06
1,2,4-Trimethylbenzene	< 0.05	< 0.06	< 0.06	< 0.06
sec-Butylbenzene	< 0.05	< 0.06	< 0.06	< 0.06
1,3-Dichlorobenzene	< 0.05	< 0.06	< 0.06	< 0.06
p-Isopropyltoluene	< 0.05	< 0.06	< 0.06	< 0.06
1,4-Dichlorobenzene	< 0.05	< 0.06	< 0.06	< 0.06
1,2-Dichlorobenzene	< 0.05	< 0.06	< 0.06	< 0.06
n-Butylbenzene	< 0.05	< 0.06	< 0.06	< 0.06
1,2-Dibromo-3-chloropropane	< 0.05	< 0.06	< 0.06	< 0.06
1,3,5-Trichlorobenzene	< 0.05	< 0.06	< 0.06	< 0.06
1,2,4-Trichlorobenzene	< 0.05	< 0.06	< 0.06	< 0.06
Hexachlorobutadiene	< 0.05	< 0.06	< 0.06	< 0.06
Naphthalene	< 0.1	< 0.1	< 0.1	< 0.1
1,2,3-Trichlorobenzene	< 0.05	< 0.06	< 0.06	< 0.06
4-Bromofluorobenzene (surr)	**96 %R**	**97 %R**	**95 %R**	**95 %R**
1,2-Dichlorobenzene-d4 (surr)	**101 %R**	**101 %R**	**100 %R**	**101 %R**
Toluene-d8 (surr)	**102 %R**	**102 %R**	**101 %R**	**101 %R**
1,2-Dichloroethane-d4 (surr)	**99 %R**	**101 %R**	**101 %R**	**100 %R**

NB-2 S-5 8-9'3"; FD-1; NB-1 S-4 6-8': Reporting limits are elevated due to the % solids content of the sample or the sample mass used for analysis.

LABORATORY REPORT

EAI ID#: **173638**

Client: **Nobis Engineering**

Client Designation: **L.W. Packard Mill | 70702.00**

Sample ID:	NB-2 S-5 8-9'3"	FD-1	NB-1 S-4 6 -8'
Lab Sample ID:	173638.02	173638.03	173638.04
Matrix:	soil	soil	soil
Date Sampled:	9/19/17	9/19/17	9/19/17
Date Received:	9/19/17	9/19/17	9/19/17
Units:	mg/kg	mg/kg	mg/kg
Date of Extraction/Preparation	9/20/17	9/20/17	9/20/17
Date of Analysis:	9/21/17	9/21/17	9/21/17
Analyst:	JMR	JMR	JMR
Method:	8270D	8270D	8270D
Dilution Factor:	1	1	1
alpha-Terpineol	< 0.4	< 0.4	< 0.4
Phenol	< 0.08	< 0.08	< 0.08
2-Chlorophenol	< 0.08	< 0.08	< 0.08
2,4-Dichlorophenol	< 0.08	< 0.08	< 0.08
2,4,5-Trichlorophenol	< 0.08	< 0.08	< 0.08
2,4,6-Trichlorophenol	< 0.08	< 0.08	< 0.08
Pentachlorophenol	< 0.4	< 0.4	< 0.4
2-Nitrophenol	< 0.4	< 0.4	< 0.4
4-Nitrophenol	< 0.4	< 0.4	< 0.4
2,4-Dinitrophenol	< 0.8	< 0.8	< 0.7
2-Methylphenol	< 0.08	< 0.08	< 0.08
3/4-Methylphenol	< 0.08	< 0.08	< 0.08
2,4-Dimethylphenol	< 0.08	< 0.08	< 0.08
4-Chloro-3-methylphenol	< 0.08	< 0.08	< 0.08
4,6-Dinitro-2-methylphenol	< 0.4	< 0.4	< 0.4
Benzoic Acid	< 4	< 4	< 4
N-Nitrosodimethylamine	< 0.08	< 0.08	< 0.08
n-Nitroso-di-n-propylamine	< 0.08	< 0.08	< 0.08
n-Nitrosodiphenylamine	< 0.08	< 0.08	< 0.08
bis(2-Chloroethyl)ether	< 0.08	< 0.08	< 0.08
bis(2-chloroisopropyl)ether	< 0.08	< 0.08	< 0.08
bis(2-Chloroethoxy)methane	< 0.08	< 0.08	< 0.08
1,3-Dichlorobenzene	< 0.08	< 0.08	< 0.08
Acetophenone	< 0.08	< 0.08	< 0.08
1,4-Dichlorobenzene	< 0.08	< 0.08	< 0.08
1,2-Dichlorobenzene	< 0.08	< 0.08	< 0.08
1,2,4-Trichlorobenzene	< 0.08	< 0.08	< 0.08
2-Chloronaphthalene	< 0.08	< 0.08	< 0.08
4-Chlorophenyl-phenylether	< 0.08	< 0.08	< 0.08
4-Bromophenyl-phenylether	< 0.08	< 0.08	< 0.08
Hexachloroethane	< 0.08	< 0.08	< 0.08
Hexachlorobutadiene	< 0.08	< 0.08	< 0.08
Hexachlorocyclopentadiene	< 0.4	< 0.4	< 0.4
Hexachlorobenzene	< 0.08	< 0.08	< 0.08
4-Chloroaniline	< 0.08	< 0.08	< 0.08
2,3-Dichloroaniline	< 0.08	< 0.08	< 0.08
2-Nitroaniline	< 0.4	< 0.4	< 0.4
3-Nitroaniline	< 0.4	< 0.4	< 0.4
4-Nitroaniline	< 0.4	< 0.4	< 0.4
Aniline	< 0.08	< 0.08	< 0.08
Benzyl alcohol	< 0.8	< 0.8	< 0.7
Nitrobenzene	< 0.08	< 0.08	< 0.08
Isophorone	< 0.08	< 0.08	< 0.08
2,4-Dinitrotoluene	< 0.4	< 0.4	< 0.4
2,6-Dinitrotoluene	< 0.4	< 0.4	< 0.4

LABORATORY REPORT

EAI ID#: **173638**

Client: **Nobis Engineering**

Client Designation: **L.W. Packard Mill | 70702.00**

Sample ID:	NB-2 S-5 8-9'3"	FD-1	NB-1 S-4 6 -8'
Lab Sample ID:	173638.02	173638.03	173638.04
Matrix:	soil	soil	soil
Date Sampled:	9/19/17	9/19/17	9/19/17
Date Received:	9/19/17	9/19/17	9/19/17
Units:	mg/kg	mg/kg	mg/kg
Date of Extraction/Preparation	9/20/17	9/20/17	9/20/17
Date of Analysis:	9/21/17	9/21/17	9/21/17
Analyst:	JMR	JMR	JMR
Method:	8270D	8270D	8270D
Dilution Factor:	1	1	1
Benzidine (estimated)	< 0.4	< 0.4	< 0.4
3,3'-Dichlorobenzidine	< 0.08	< 0.08	< 0.08
Pyridine	< 0.4	< 0.4	< 0.4
Azobenzene	< 0.08	< 0.08	< 0.08
Carbazole	< 0.08	< 0.08	< 0.08
Dimethylphthalate	< 0.08	< 0.08	< 0.08
Diethylphthalate	< 0.4	< 0.4	< 0.4
Di-n-butylphthalate	< 0.4	< 0.4	< 0.4
Butylbenzylphthalate	< 0.4	< 0.4	< 0.4
bis(2-Ethylhexyl)phthalate	< 0.4	< 0.4	< 0.4
Di-n-octylphthalate	< 0.4	< 0.4	< 0.4
Dibenzofuran	< 0.08	< 0.08	< 0.08
Naphthalene	< 0.08	< 0.08	< 0.08
2-Methylnaphthalene	< 0.08	< 0.08	**0.13**
1-Methylnaphthalene	< 0.08	< 0.08	**0.12**
Acenaphthylene	< 0.08	< 0.08	< 0.08
Acenaphthene	< 0.08	< 0.08	< 0.08
Fluorene	< 0.08	< 0.08	< 0.08
Phenanthrene	< 0.08	< 0.08	**0.13**
Anthracene	< 0.08	< 0.08	< 0.08
Fluoranthene	**0.18**	< 0.08	< 0.08
Pyrene	**0.16**	< 0.08	< 0.08
Benzo[a]anthracene	**0.099**	< 0.08	< 0.08
Chrysene	**0.097**	< 0.08	< 0.08
Benzo[b]fluoranthene	**0.11**	< 0.08	< 0.08
Benzo[k]fluoranthene	< 0.08	< 0.08	< 0.08
Benzo[a]pyrene	**0.090**	< 0.08	< 0.08
Indeno[1,2,3-cd]pyrene	< 0.08	< 0.08	< 0.08
Dibenz[a,h]anthracene	< 0.08	< 0.08	< 0.08
Benzo[g,h,i]perylene	< 0.08	< 0.08	< 0.08
n-Decane	< 0.4	< 0.4	< 0.4
n-Octadecane	< 0.4	< 0.4	< 0.4
2-Fluorophenol (surr)	**64 %R**	**64 %R**	**59 %R**
Phenol-d6 (surr)	**68 %R**	**69 %R**	**66 %R**
2,4,6-Tribromophenol (surr)	**83 %R**	**84 %R**	**87 %R**
Nitrobenzene-D5 (surr)	**72 %R**	**71 %R**	**67 %R**
2-Fluorobiphenyl (surr)	**77 %R**	**78 %R**	**74 %R**
p-Terphenyl-D14 (surr)	**78 %R**	**81 %R**	**78 %R**

LABORATORY REPORT

EAI ID#: **173638**

Client: **Nobis Engineering**

Client Designation: **L.W. Packard Mill | 70702.00**

Sample ID:	NB-2 S-5 8-9'3"	FD-1	NB-1 S-4 6 -8'
Lab Sample ID:	173638.02	173638.03	173638.04
Matrix:	soil	soil	soil
Date Sampled:	9/19/17	9/19/17	9/19/17
Date Received:	9/19/17	9/19/17	9/19/17
Units:	mg/kg	mg/kg	mg/kg
Date of Extraction/Prep:	9/20/17	9/20/17	9/20/17
Date of Analysis:	9/21/17	9/21/17	9/21/17
Analyst:	JMR	JMR	JMR
Method:	8015CDRO	8015CDRO	8015CDRO
Dilution Factor:	1	1	1
DRO (Diesel Range C10-C28)	**18**	**9.6**	**120**
p-Terphenyl-D14 (surr)	**89 %R**	**87 %R**	**80 %R**

LABORATORY REPORT

EAI ID#: **173638**

Client: **Nobis Engineering**

Client Designation: **L.W. Packard Mill | 70702.00**

Sample ID:	NB-2 S-5 8-9'3"	FD-1 NB-1 S-4 6-8'	
Lab Sample ID:	173638.02	173638.03	173638.04
Matrix:	soil	soil	soil
Date Sampled:	9/19/17	9/19/17	9/19/17
Date Received:	9/19/17	9/19/17	9/19/17
Units:	mg/kg	mg/kg	mg/kg
Date of Extraction/Prep:	9/20/17	9/20/17	9/20/17
Date of Analysis:	9/25/17	9/25/17	9/25/17
Analyst:	SG	SG	SG
Method:	8081B	8081B	8081B
Dilution Factor:	6	6	11
Aldrin	< 0.03	< 0.03	< 0.05
alpha-BHC	< 0.03	< 0.03	< 0.05
beta-BHC	< 0.03	< 0.03	< 0.05
Lindane(gamma-BHC)	< 0.03	< 0.03	< 0.05
delta-BHC	< 0.03	< 0.03	< 0.05
Chlordane	< 0.1	< 0.1	< 0.2
4,4'-DDT	< 0.03	< 0.03	< 0.05
4,4'-DDE	< 0.03	< 0.03	< 0.05
4,4'-DDD	< 0.03	< 0.03	< 0.05
Dieldrin	< 0.03	< 0.03	< 0.05
Endosulfan I	< 0.03	< 0.03	< 0.05
Endosulfan II	< 0.03	< 0.03	< 0.05
Endosulfan Sulfate	< 0.03	< 0.03	< 0.05
Endrin	< 0.03	< 0.03	< 0.05
Endrin Aldehyde	< 0.03	< 0.03	< 0.05
Endrin Ketone	< 0.03	< 0.03	< 0.05
Heptachlor	< 0.03	< 0.03	< 0.05
Heptachlor Epoxide	< 0.03	< 0.03	< 0.05
Methoxychlor	< 0.03	< 0.03	< 0.05
Toxaphene	< 0.3	< 0.3	< 0.5
TMX (surr)	**71 %R**	**71 %R**	**73 %R**
DCB (surr)	**76 %R**	**77 %R**	**77 %R**

Florisil clean-up was performed on the sample and associated batch QC. Detection limits elevated due to sample matrix. Endrin, 4,4'-DDT and Methoxychlor exhibited recovery below acceptance limits in the closing calibration verification. Sample matrix interference is suspected as batch QC was in control. These compounds were not detected in the sample.

LABORATORY REPORT

EAI ID#: **173638**

Client: **Nobis Engineering**

Client Designation: **L.W. Packard Mill | 70702.00**

Sample ID:	NB-2 S-5 8 -9'3"	FD-1	NB-1 S-4 6 -8'
Lab Sample ID:	173638.02	173638.03	173638.04
Matrix:	soil	soil	soil
Date Sampled:	9/19/17	9/19/17	9/19/17
Date Received:	9/19/17	9/19/17	9/19/17
% Solid:	84.1	84.2	90.9
Units:	mg/kg	mg/kg	mg/kg
Date of Extraction/Prep:	9/20/17	9/20/17	9/20/17
Date of Analysis:	9/21/17	9/21/17	9/21/17
Analyst:	SG	SG	SG
Extraction Method:	3540C	3540C	3540C
Analysis Method:	8082A	8082A	8082A
Dilution Factor:	1	1	1
PCB-1016	< 0.02	< 0.02	< 0.02
PCB-1221	< 0.02	< 0.02	< 0.02
PCB-1232	< 0.02	< 0.02	< 0.02
PCB-1242	< 0.02	< 0.02	< 0.02
PCB-1248	< 0.02	< 0.02	< 0.02
PCB-1254	< 0.02	< 0.02	< 0.02
PCB-1260	< 0.02	< 0.02	< 0.02
PCB-1262	< 0.02	< 0.02	< 0.02
PCB-1268	< 0.02	< 0.02	< 0.02
TMX (surr)	**92 %R**	**88 %R**	**81 %R**
DCB (surr)	**72 %R**	**76 %R**	**64 %R**

Acid clean-up was performed on the samples and associated batch QC.

LABORATORY REPORT

EAI ID#: **173638**

Client: **Nobis Engineering**

Client Designation: **L.W. Packard Mill | 70702.00**

Sample ID:	NB-2 S-5 8-9'3"	FD-1	NB-1 S-4 6-8'					
Lab Sample ID:	173638.02	173638.03	173638.04					
Matrix:	soil	soil	soil					
Date Sampled:	9/19/17	9/19/17	9/19/17					
Date Received:	9/19/17	9/19/17	9/19/17	**Analytical Matrix**	**Units**	**Date of Analysis**	**Method**	**Analyst**
Antimony	< 0.5	< 0.5	< 0.5	SolTotDry	mg/kg	9/21/17	6020	DS
Arsenic	**1.3**	**1.4**	**3.4**	SolTotDry	mg/kg	9/21/17	6020	DS
Beryllium	< 0.5	< 0.5	**0.5**	SolTotDry	mg/kg	9/21/17	6020	DS
Cadmium	< 0.5	< 0.5	< 0.5	SolTotDry	mg/kg	9/21/17	6020	DS
Chromium	**4.4**	**4.9**	**7.8**	SolTotDry	mg/kg	9/21/17	6020	DS
Copper	**3.6**	**3.5**	**6.5**	SolTotDry	mg/kg	9/21/17	6020	DS
Lead	**2.7**	**2.9**	**51**	SolTotDry	mg/kg	9/21/17	6020	DS
Mercury	< 0.1	< 0.1	< 0.1	SolTotDry	mg/kg	9/21/17	6020	DS
Nickel	**3.1**	**3.2**	**5.6**	SolTotDry	mg/kg	9/21/17	6020	DS
Selenium	< 0.5	< 0.5	< 0.5	SolTotDry	mg/kg	9/21/17	6020	DS
Silver	< 0.5	< 0.5	< 0.5	SolTotDry	mg/kg	9/21/17	6020	DS
Thallium	< 0.5	< 0.5	< 0.5	SolTotDry	mg/kg	9/21/17	6020	DS
Zinc	**27**	**24**	**49**	SolTotDry	mg/kg	9/21/17	6020	DS

Page 1 of 1

CHAIN-OF-CUSTODY RECORD

173638

BOLD FIELDS REQUIRED. PLEASE CIRCLE REQUESTED ANALYSIS.

SAMPLE I.D.	SAMPLING DATE / TIME *IF COMPOSITE, INDICATE BOTH START & FINISH DATE / TIME	MATRIX (SEE BELOW)	GRAB/*COMPOSITE	VOC: 524.2 BTEX ONLY; 524.2 MTBE; 624 (8260) VTICS; 1,4 DIOXANE; 8021 BTEX HALOS; 8015 GRO MAVPH	SVOC: 625 (8270) SVTICS EDB DBCP; ABN A BN PAH; TPH8100 LI L2; 8015 DRO MAEPH; PEST 608 PCB 608 (PCB 8082); PEST 608 (8081)	OIL & GREASE 1664 TPH 1664	TCLP: TCLP 1311 VOC ABN METALS PEST HERB	METALS: DISSOLVED METALS (LIST BELOW); TOTAL METALS (LIST BELOW)	INORGANICS: TS TSS TDS SPEC. CON.; BR CL F SO_4 NO_2 NO_3 NO_2NO_3; BOD CBOD T. ALK.; TKN NH_3 T. PHOS. O. PHOS.; pH T. RES. CHLORINE; COD PHENOLS TOC DOC; TOTAL CYANIDE TOTAL SULFIDE; REACTIVE CYANIDE REACTIVE SULFIDE FLASHPOINT IGNITABILITY	MICRO: TOTAL COLIFORM E. COLI FECAL COLIFORM; ENTEROCOCCI HETEROTROPHIC PLATE COUNT	OTHER: Metals	# OF CONTAINERS	NOTES MEOH VIAL #
Trip Blank	9-19-17/0800	TB	G	X									1
NB-2 S-5 8-9'3"	1090	S		X	X	X	X					X	3
FD-1	1093			X	X	X	X					X	3
NB-1 S-4 6-8'	1130			X	X	X	X					X	3

MATRIX: A-AIR; S-SOIL; GW-GROUND WATER; SW-SURFACE WATER; DW-DRINKING WATER; WW-WASTE WATER

PRESERVATIVE: H-HCL; N-HNO_3; S-H_2SO_4; Na-NaOH; M-MEOH

PROJECT MANAGER: Tim Andrews
COMPANY: Mobis Engineering, Inc.
ADDRESS: 18 Chenell Drive
CITY: Concord **STATE:** NH **ZIP:** 03301
PHONE: 224-4182 **EXT.:**
FAX: 224-2507
E-MAIL: TAndrews@mobisenf.com
SITE NAME: L.W. Packard Mill
PROJECT #: 70702.00
STATE: (NH) MA ME VT **OTHER:**
REGULATORY PROGRAM: NPDES: RGP POTW STORMWATER OR GWP, OIL FUND, BROWNFIELD OR OTHER:
QUOTE #: **PO #:**

DATE NEEDED: Standard T.A.T.

QA/QC REPORTING LEVEL
A B C
OR
PRESUMPTIVE CERTAINTY

REPORTING OPTIONS
PRELIMS: YES OR NO

ELECTRONIC OPTIONS
(E-MAIL) (PDF) EQUIS EXCEL

TEMP. 4.1 °C
ICE? (YES) NO

SAMPLER(S): B. Rizza

RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:
B. Rizza	9/19/17	1700	

METALS: 8 RCRA (13 PP) FE, MN PB, CU
OTHER METALS:
SAMPLES FIELD FILTERED? ☐ YES ☐ NO
NOTES: (IE: SPECIAL DETECTION LIMITS, BILLING INFO, IF DIFFERENT)

SITE HISTORY:
SUSPECTED CONTAMINATION:
FIELD READINGS:

Eastern Analytical, Inc.
professional laboratory and drilling services
25 CHENELL DRIVE | CONCORD, NH 03301 | TEL: 603.228.0525 | 1.800.287.0525 | E-MAIL: CUSTOMERSERVICE@EASTERNANALYTICAL.COM | WWW.EASTERNANALYTICAL.COM

(WHITE: ORIGINAL GREEN: PROJECT MANAGER)

Eastern Analytical, Inc.

professional laboratory and drilling services

Tim Andrews
Nobis Engineering
18 Chenell Drive
Concord , NH 03301

ACCREDITED IN ACCORDANCE WITH nelac

Subject: Laboratory Report

Eastern Analytical, Inc. ID:	175059
Client Identification:	L.W. Packard Mill | 70702.00
Date Received:	10/25/2017

Dear Mr. Andrews :

Enclosed please find the laboratory report for the above identified project. All analyses were performed in accordance with our QA/QC Program. Unless otherwise stated, holding times, preservation techniques, container types, and sample conditions adhered to EPA Protocol. Samples which were collected by Eastern Analytical, Inc. (EAI) were collected in accordance with approved EPA procedures. Eastern Analytical, Inc. certifies that the enclosed test results meet all requirements of NELAP and other applicable state certifications. Please refer to our website at www.eailabs.com for a copy of our NELAP certificate and accredited parameters.

The following standard abbreviations and conventions apply to all EAI reports:

Solid samples are reported on a dry weight basis, unless otherwise noted
< : "less than" followed by the reporting limit
> : "greater than" followed by the reporting limit
%R : % Recovery

Eastern Analytical Inc. maintains certification in the following states: Connecticut (PH-0492), Maine (NH005), Massachusetts (M-NH005), New Hampshire/NELAP (1012), Rhode Island (269) and Vermont (VT1012).

The following information is contained within this report: Sample Conditions summary, Analytical Results/Data, Quality Control data (if requested) and copies of the Chain of Custody. This report may not be reproduced except in full, without the the written approval of the laboratory.

If you have any questions regarding the results contained within, please feel free to directly contact me or the chemist(s) who performed the testing in question. Unless otherwise requested, we will dispose of the sample(s) 30 days from the sample receipt date.

We appreciate this opportunity to be of service and look forward to your continued patronage.

Sincerely,

Lorraine Olashaw, Lab Director | 11.2.17 Date | 8 # of pages (excluding cover letter)

SAMPLE CONDITIONS PAGE

EAI ID#: **175059**

Client: **Nobis Engineering**

Client Designation: **L.W. Packard Mill | 70702.00**

Temperature upon receipt (°C): 7 **Received on ice or cold packs (Yes/No): Y**

Acceptable temperature range (°C): 0-6

Lab ID	Sample ID	Date Received	Date Sampled	Sample Matrix	% Dry Weight	Exceptions/Comments (other than thermal preservation)
175059.01	Trip Blank	10/25/17	10/20/17	aqueous		Adheres to Sample Acceptance Policy
175059.02	NB-3	10/25/17	10/20/17	aqueous		Adheres to Sample Acceptance Policy
175059.03	NB-2	10/25/17	10/20/17	aqueous		Adheres to Sample Acceptance Policy

Samples were properly preserved and the pH measured when applicable unless otherwise noted. Analysis of solids for pH, Flashpoint, Ignitability, Paint Filter, Corrosivity, Conductivity and Specific Gravity are reported on an "as received" basis.
Immediate analyses, pH, Total Residual Chlorine, Dissolved Oxygen and Sulfite, performed at the laboratory were run outside of the recommended 15 minute hold time.
All results contained in this report relate only to the above listed samples.
References include:
1) EPA 600/4-79-020, 1983
2) Standard Methods for Examination of Water and Wastewater,20th Edition, 1998 and 22nd Edition, 2012
3) Test Methods for Evaluating Solid Waste SW 846 3rd Edition including updates IVA and IVB
4) Hach Water Analysis Handbook, 2nd edition, 1992

LABORATORY REPORT

EAI ID#: **175059**

Client: **Nobis Engineering**

Client Designation: **L.W. Packard Mill | 70702.00**

Sample ID:	Trip Blank	NB-3	NB-2
Lab Sample ID:	175059.01	175059.02	175059.03
Matrix:	aqueous	aqueous	aqueous
Date Sampled:	10/20/17	10/20/17	10/20/17
Date Received:	10/25/17	10/25/17	10/25/17
Units:	ug/L	ug/L	ug/L
Date of Analysis:	10/26/17	10/26/17	10/26/17
Analyst:	BML	BML	BML
Method:	8260C	8260C	8260C
Dilution Factor:	1	1	1
Dichlorodifluoromethane	< 5	< 5	< 5
Chloromethane	< 2	< 2	< 2
Vinyl chloride	< 2	< 2	< 2
Bromomethane	< 2	< 2	< 2
Chloroethane	< 5	< 5	< 5
Trichlorofluoromethane	< 5	< 5	< 5
Diethyl Ether	< 5	< 5	< 5
Acetone	< 10	< 10	< 10
1,1-Dichloroethene	< 1	< 1	< 1
tert-Butyl Alcohol (TBA)	< 30	< 30	< 30
Methylene chloride	< 5	< 5	< 5
Carbon disulfide	< 2	< 2	< 2
Methyl-t-butyl ether(MTBE)	< 1	< 1	< 1
Ethyl-t-butyl ether(ETBE)	< 5	< 5	< 5
Isopropyl ether(DIPE)	< 5	< 5	< 5
tert-amyl methyl ether(TAME)	< 5	< 5	< 5
trans-1,2-Dichloroethene	< 1	< 1	< 1
1,1-Dichloroethane	< 1	< 1	< 1
2,2-Dichloropropane	< 1	< 1	< 1
cis-1,2-Dichloroethene	< 1	< 1	< 1
2-Butanone(MEK)	< 10	< 10	< 10
Bromochloromethane	< 1	< 1	< 1
Tetrahydrofuran(THF)	< 10	< 10	< 10
Chloroform	< 1	< 1	< 1
1,1,1-Trichloroethane	< 1	< 1	< 1
Carbon tetrachloride	< 1	< 1	< 1
1,1-Dichloropropene	< 1	< 1	< 1
Benzene	< 1	< 1	< 1
1,2-Dichloroethane	< 1	< 1	< 1
Trichloroethene	< 1	< 1	< 1
1,2-Dichloropropane	< 1	< 1	< 1
Dibromomethane	< 1	< 1	< 1
Bromodichloromethane	< 0.5	< 0.5	< 0.5
1,4-Dioxane	< 50	< 50	< 50
4-Methyl-2-pentanone(MIBK)	< 10	< 10	< 10
cis-1,3-Dichloropropene	< 0.5	< 0.5	< 0.5
Toluene	< 1	< 1	< 1
trans-1,3-Dichloropropene	< 0.5	< 0.5	< 0.5
1,1,2-Trichloroethane	< 1	< 1	< 1
2-Hexanone	< 10	< 10	< 10
Tetrachloroethene	< 1	< 1	< 1
1,3-Dichloropropane	< 1	< 1	< 1
Dibromochloromethane	< 1	< 1	< 1
1,2-Dibromoethane(EDB)	< 2	< 2	< 2
Chlorobenzene	< 1	< 1	< 1
1,1,1,2-Tetrachloroethane	< 1	< 1	< 1
Ethylbenzene	< 1	< 1	< 1

LABORATORY REPORT

EAI ID#: **175059**

Client: **Nobis Engineering**

Client Designation: **L.W. Packard Mill | 70702.00**

Sample ID:	Trip Blank	NB-3	NB-2
Lab Sample ID:	175059.01	175059.02	175059.03
Matrix:	aqueous	aqueous	aqueous
Date Sampled:	10/20/17	10/20/17	10/20/17
Date Received:	10/25/17	10/25/17	10/25/17
Units:	ug/L	ug/L	ug/L
Date of Analysis:	10/26/17	10/26/17	10/26/17
Analyst:	BML	BML	BML
Method:	8260C	8260C	8260C
Dilution Factor:	1	1	1
mp-Xylene	< 1	< 1	< 1
o-Xylene	< 1	< 1	< 1
Styrene	< 1	< 1	< 1
Bromoform	< 2	< 2	< 2
IsoPropylbenzene	< 1	< 1	< 1
Bromobenzene	< 1	< 1	< 1
1,1,2,2-Tetrachloroethane	< 1	< 1	< 1
1,2,3-Trichloropropane	< 0.5	< 0.5	< 0.5
n-Propylbenzene	< 1	< 1	< 1
2-Chlorotoluene	< 1	< 1	< 1
4-Chlorotoluene	< 1	< 1	< 1
1,3,5-Trimethylbenzene	< 1	< 1	< 1
tert-Butylbenzene	< 1	< 1	< 1
1,2,4-Trimethylbenzene	< 1	< 1	< 1
sec-Butylbenzene	< 1	< 1	< 1
1,3-Dichlorobenzene	< 1	< 1	< 1
p-Isopropyltoluene	< 1	< 1	< 1
1,4-Dichlorobenzene	< 1	< 1	< 1
1,2-Dichlorobenzene	< 1	< 1	< 1
n-Butylbenzene	< 1	< 1	< 1
1,2-Dibromo-3-chloropropane	< 2	< 2	< 2
1,3,5-Trichlorobenzene	< 1	< 1	< 1
1,2,4-Trichlorobenzene	< 1	< 1	< 1
Hexachlorobutadiene	< 0.5	< 0.5	< 0.5
Naphthalene	< 5	< 5	< 5
1,2,3-Trichlorobenzene	< 1	< 1	< 1
4-Bromofluorobenzene (surr)	**94 %R**	**93 %R**	**93 %R**
1,2-Dichlorobenzene-d4 (surr)	**102 %R**	**102 %R**	**102 %R**
Toluene-d8 (surr)	**99 %R**	**103 %R**	**101 %R**
1,2-Dichloroethane-d4 (surr)	**100 %R**	**100 %R**	**99 %R**

Vinyl chloride exhibited recovery outside acceptance limits in the Quality Control sample(s). The analyte(s) were not detected in the sample(s).

LABORATORY REPORT

EAI ID#: **175059**

Client: **Nobis Engineering**

Client Designation: **L.W. Packard Mill | 70702.00**

Sample ID:	NB-3	NB-2
Lab Sample ID:	175059.02	175059.03
Matrix:	aqueous	aqueous
Date Sampled:	10/20/17	10/20/17
Date Received:	10/25/17	10/25/17
Units:	ug/L	ug/L
Date of Extraction/Preparation	10/27/17	10/27/17
Date of Analysis:	10/27/17	10/27/17
Analyst:	JMR	JMR
Method:	8270D	8270D
Dilution Factor:	1	1
alpha-Terpineol	< 5	< 5
Phenol	< 1	< 1
2-Chlorophenol	< 1	< 1
2,4-Dichlorophenol	< 1	< 1
2,4,5-Trichlorophenol	< 1	< 1
2,4,6-Trichlorophenol	< 1	< 1
Pentachlorophenol	< 5	< 5
2-Nitrophenol	< 5	< 5
4-Nitrophenol	< 5	< 5
2,4-Dinitrophenol	< 10	< 10
2-Methylphenol	< 1	< 1
3/4-Methylphenol	< 1	< 1
2,4-Dimethylphenol	< 1	< 1
4-Chloro-3-methylphenol	< 1	< 1
4,6-Dinitro-2-methylphenol	< 5	< 5
Benzoic Acid	< 50	< 50
N-Nitrosodimethylamine	< 1	< 1
n-Nitroso-di-n-propylamine	< 1	< 1
n-Nitrosodiphenylamine	< 1	< 1
bis(2-Chloroethyl)ether	< 1	< 1
bis(2-chloroisopropyl)ether	< 1	< 1
bis(2-Chloroethoxy)methane	< 1	< 1
1,3-Dichlorobenzene	< 1	< 1
Acetophenone	< 1	< 1
1,4-Dichlorobenzene	< 1	< 1
1,2-Dichlorobenzene	< 1	< 1
1,2,4-Trichlorobenzene	< 1	< 1
2-Chloronaphthalene	< 1	< 1
4-Chlorophenyl-phenylether	< 1	< 1
4-Bromophenyl-phenylether	< 1	< 1
Hexachloroethane	< 1	< 1
Hexachlorobutadiene	< 1	< 1
Hexachlorocyclopentadiene	< 5	< 5
Hexachlorobenzene	< 1	< 1
4-Chloroaniline	< 1	< 1
2,3-Dichloroaniline	< 1	< 1
2-Nitroaniline	< 5	< 5
3-Nitroaniline	< 5	< 5
4-Nitroaniline	< 5	< 5
Aniline	< 1	< 1
Benzyl alcohol	< 10	< 10
Nitrobenzene	< 1	< 1
Isophorone	< 1	< 1
2,4-Dinitrotoluene	< 5	< 5
2,6-Dinitrotoluene	< 5	< 5

LABORATORY REPORT

EAI ID#: **175059**

Client: **Nobis Engineering**

Client Designation: **L.W. Packard Mill | 70702.00**

Sample ID:	NB-3	NB-2
Lab Sample ID:	175059.02	175059.03
Matrix:	aqueous	aqueous
Date Sampled:	10/20/17	10/20/17
Date Received:	10/25/17	10/25/17
Units:	ug/L	ug/L
Date of Extraction/Preparation	10/27/17	10/27/17
Date of Analysis:	10/27/17	10/27/17
Analyst:	JMR	JMR
Method:	8270D	8270D
Dilution Factor:	1	1
Benzidine (estimated)	< 5	< 5
3,3'-Dichlorobenzidine	< 1	< 1
Pyridine	< 5	< 5
Azobenzene	< 1	< 1
Carbazole	< 1	< 1
Dimethylphthalate	< 1	< 1
Diethylphthalate	< 5	< 5
Di-n-butylphthalate	< 5	< 5
Butylbenzylphthalate	< 5	< 5
bis(2-Ethylhexyl)phthalate	< 5	< 5
Di-n-octylphthalate	< 5	< 5
Dibenzofuran	< 1	< 1
Naphthalene	< 0.1	< 0.1
2-Methylnaphthalene	< 0.1	< 0.1
1-Methylnaphthalene	< 0.1	< 0.1
Acenaphthylene	< 0.1	< 0.1
Acenaphthene	< 0.1	< 0.1
Fluorene	< 0.1	< 0.1
Phenanthrene	< 0.1	< 0.1
Anthracene	< 0.1	< 0.1
Fluoranthene	< 0.1	< 0.1
Pyrene	< 0.1	< 0.1
Benzo[a]anthracene	< 0.1	< 0.1
Chrysene	< 0.1	< 0.1
Benzo[b]fluoranthene	< 0.1	< 0.1
Benzo[k]fluoranthene	< 0.1	< 0.1
Benzo[a]pyrene	< 0.1	< 0.1
Indeno[1,2,3-cd]pyrene	< 0.1	< 0.1
Dibenz[a,h]anthracene	< 0.1	< 0.1
Benzo[g,h,i]perylene	< 0.1	< 0.1
n-Decane	< 5	< 5
n-Octadecane	< 5	< 5
2-Fluorophenol (surr)	**40 %R**	**40 %R**
Phenol-d6 (surr)	**31 %R**	**30 %R**
2,4,6-Tribromophenol (surr)	**84 %R**	**87 %R**
Nitrobenzene-D5 (surr)	**72 %R**	**73 %R**
2-Fluorobiphenyl (surr)	**79 %R**	**82 %R**
p-Terphenyl-D14 (surr)	**84 %R**	**84 %R**

LABORATORY REPORT

EAI ID#: **175059**

Client: **Nobis Engineering**

Client Designation: **L.W. Packard Mill | 70702.00**

Sample ID:	NB-3	NB-2
Lab Sample ID:	175059.02	175059.03
Matrix:	aqueous	aqueous
Date Sampled:	10/20/17	10/20/17
Date Received:	10/25/17	10/25/17
Units:	ug/L	ug/L
Date of Extraction/Prep:	10/26/17	10/26/17
Date of Analysis:	10/27/17	10/27/17
Analyst:	SG	SG
Method:	8081B	8081B
Dilution Factor:	1	1
Aldrin	< 0.05	< 0.05
alpha-BHC	< 0.05	< 0.05
beta-BHC	< 0.05	< 0.05
Lindane(gamma-BHC)	< 0.05	< 0.05
delta-BHC	< 0.05	< 0.05
Chlordane	< 0.1	< 0.1
4,4'-DDT	< 0.05	< 0.05
4,4'-DDE	< 0.05	< 0.05
4,4'-DDD	< 0.05	< 0.05
Dieldrin	< 0.05	< 0.05
Endosulfan I	< 0.05	< 0.05
Endosulfan II	< 0.05	< 0.05
Endosulfan Sulfate	< 0.05	< 0.05
Endrin	< 0.05	< 0.05
Endrin Aldehyde	< 0.05	< 0.05
Endrin Ketone	< 0.05	< 0.05
Heptachlor	< 0.05	< 0.05
Heptachlor Epoxide	< 0.05	< 0.05
Methoxychlor	< 0.05	< 0.05
Toxaphene	< 0.5	< 0.5
TMX (surr)	**96 %R**	**97 %R**
DCB (surr)	**103 %R**	**98 %R**

LABORATORY REPORT

EAI ID#: **175059**

Client: **Nobis Engineering**

Client Designation: **L.W. Packard Mill | 70702.00**

Sample ID:	NB-3	NB-2	Analytical Matrix	Units	Date of Analysis	Method	Analyst
Lab Sample ID:	175059.02	175059.03					
Matrix:	aqueous	aqueous					
Date Sampled:	10/20/17	10/20/17					
Date Received:	10/25/17	10/25/17					
Antimony	< 0.001	**0.002**	AqDis	mg/L	10/27/17	200.8	DS
Arsenic	< 0.001	**0.002**	AqDis	mg/L	10/27/17	200.8	DS
Beryllium	< 0.001	< 0.001	AqDis	mg/L	10/27/17	200.8	DS
Cadmium	< 0.001	< 0.001	AqDis	mg/L	10/27/17	200.8	DS
Chromium	< 0.001	< 0.001	AqDis	mg/L	10/27/17	200.8	DS
Copper	**0.002**	**0.002**	AqDis	mg/L	10/27/17	200.8	DS
Lead	< 0.001	< 0.001	AqDis	mg/L	10/27/17	200.8	DS
Mercury	< 0.0001	< 0.0001	AqDis	mg/L	10/27/17	200.8	DS
Nickel	**0.002**	**0.004**	AqDis	mg/L	10/27/17	200.8	DS
Selenium	**0.002**	**0.001**	AqDis	mg/L	10/27/17	200.8	DS
Silver	< 0.001	< 0.001	AqDis	mg/L	10/27/17	200.8	DS
Thallium	< 0.001	< 0.001	AqDis	mg/L	10/27/17	200.8	DS
Zinc	**0.009**	**0.005**	AqDis	mg/L	10/27/17	200.8	DS

Page 1 of 1

Chain-of-Custody Record

175059

Bold Fields Required. Please Circle Requested Analysis.

Sample I.D.	Sampling Date / Time (*If Composite, Indicate Both Start & Finish Date / Time)	Matrix (see below)	Grab/*Composite	VOC: 524.2 / 524.2 BTEX / 524.2 MTBE only	VOC: 8260 (circled) / 624 / VTICs / 1,4 Dioxane	VOC: 8021 BTEX HALOS	VOC: 8015 GRO MAVPH	SVOC: 8270 / 625 / SVTICs / EDB / DBCP / ABN (circled) / A / BN / PAH	SVOC: TPH8100 LI L2	SVOC: 8015 DRO MAEPH	SVOC: PEST 608 / PCB 608 / PEST 8081 / PCB 8082 (circled)	SVOC: Oil & Grease 1664 / TPH 1664	TCLP: TCLP 1311 ABN Metals VOC Pest Herb	Metals: Dissolved Metals (list below)	Metals: Total Metals (list below)	TS TSS TDS Spec. Con.	Br Cl F SO_4 NO_2 NO_3 NO_3NO_2	BOD CBOD T. Alk.	TKN NH_3 T. Phos. O. Phos.	pH T. Res. Chlorine	COD Phenols TOC DOC	Total Cyanide Total Sulfide	Reactive Cyanide Reactive Sulfide Flashpoint Ignitability	Total Coliform E. Coli Fecal Coliform	Enterococci Heterotrophic Plate Count	Other	Other	Other	# of Containers	Notes MeOH Vial #
Trip Blank	10/20/17 0800	TB	G		X																								2	
NB-3	↓ 1155	GW	G		X			X			X			X															5	
NB-2	↓ 1325	GW	G		X			X			X			X															5	
Preservative					H									N																

Matrix: A-Air; S-Soil; GW-Ground Water; SW-Surface Water; DW-Drinking Water; WW-Waste water
Preservative: H-HCL; N-HNO_3; S-H_2SO_4; Na-NaOH; M-MEOH

Project Manager: Tim Andrews
Company: Nobis Engineering
Address: 18 Chenell Drive
City: Concord **State:** NH **Zip:** 03301
Phone: (603) 224-4182 **Ext.:**
Fax:
E-Mail: TAndrews@nobis eng.com
Site Name: L.W. Packard Mill
Project #: 70702.00
State: (NH circled) MA ME VT Other:
Regulatory Program: NPDES: RGP POTW Stormwater or GWP, Oil Fund, Brownfield or Other:
Quote #: **PO #:**

Date Needed: Standard TAT

Temp. 7° °C
Ice? (Yes circled) No

QA/QC Reporting Level A B C OR Presumptive Certainty

Reporting Options Prelims: Yes or No

Electronic Options (E-Mail circled) (PDF circled) Equis Excel

Sampler(s): N. Zanchi

Relinquished By	Date	Time	Received By
[signature]	10/30/17	1600	[signature]
[signature]	11/05/17	1230	[signature]

Metals: 8 RCRA (13 PP circled) Fe, Mn Pb, Cu
Other Metals:
Samples Field Filtered? ☒ Yes ☐ No
Notes: (ie: Special Detection Limits, Billing Info, If Different)
*

Site History:
Suspected Contamination:
Field Readings:

Eastern Analytical, Inc.
professional laboratory and drilling services

Tim Andrews
Nobis Engineering
18 Chenell Drive
Concord , NH 03301

ACCREDITED IN ACCORDANCE WITH nelac

Subject: Laboratory Report

Eastern Analytical, Inc. ID:	176437
Client Identification:	L.W. Packard Mill | 93002.00
Date Received:	11/29/2017

Dear Mr. Andrews :

Enclosed please find the laboratory report for the above identified project. All analyses were performed in accordance with our QA/QC Program. Unless otherwise stated, holding times, preservation techniques, container types, and sample conditions adhered to EPA Protocol. Samples which were collected by Eastern Analytical, Inc. (EAI) were collected in accordance with approved EPA procedures. Eastern Analytical, Inc. certifies that the enclosed test results meet all requirements of NELAP and other applicable state certifications. Please refer to our website at www.eailabs.com for a copy of our NELAP certificate and accredited parameters.

The following standard abbreviations and conventions apply to all EAI reports:

Solid samples are reported on a dry weight basis, unless otherwise noted
< : "less than" followed by the reporting limit
> : "greater than" followed by the reporting limit
%R : % Recovery

Eastern Analytical Inc. maintains certification in the following states: Connecticut (PH-0492), Maine (NH005), Massachusetts (M-NH005), New Hampshire/NELAP (1012), Rhode Island (269) and Vermont (VT1012).

The following information is contained within this report: Sample Conditions summary, Analytical Results/Data, Quality Control data (if requested) and copies of the Chain of Custody. This report may not be reproduced except in full, without the the written approval of the laboratory.

If you have any questions regarding the results contained within, please feel free to directly contact me or the chemist(s) who performed the testing in question. Unless otherwise requested, we will dispose of the sample(s) 30 days from the sample receipt date.

We appreciate this opportunity to be of service and look forward to your continued patronage.

Sincerely,

Lorraine Olashaw, Lab Director

1·16·18
Date

33
# of pages (excluding cover letter)

SAMPLE CONDITIONS PAGE

EAI ID#: **176437**

Client: **Nobis Engineering**

Client Designation: **L.W. Packard Mill | 93002.00**

Temperature upon receipt (°C): 2.5 **Received on ice or cold packs (Yes/No): Y**

Acceptable temperature range (°C): 0-6

Lab ID	Sample ID	Date Received	Date Sampled	Sample Matrix	% Dry Weight	Exceptions/Comments (other than thermal preservation)
176437.01	Trip Blank	11/29/17	11/27/17	aqueous		Adheres to Sample Acceptance Policy
176437.02	NB-5	11/29/17	11/27/17	aqueous		Adheres to Sample Acceptance Policy
176437.03	FD-1	11/29/17	11/27/17	aqueous		Adheres to Sample Acceptance Policy
176437.04	NBR-2	11/29/17	11/27/17	aqueous		Adheres to Sample Acceptance Policy
176437.05	NB-4	11/29/17	11/28/17	aqueous		Adheres to Sample Acceptance Policy
176437.06	Field Blank	11/29/17	11/28/17	aqueous		Adheres to Sample Acceptance Policy
176437.07	NBR-1	11/29/17	11/28/17	aqueous		Adheres to Sample Acceptance Policy

Samples were properly preserved and the pH measured when applicable unless otherwise noted. Analysis of solids for pH, Flashpoint, Ignitability, Paint Filter, Corrosivity, Conductivity and Specific Gravity are reported on an "as received" basis.
Immediate analyses, pH, Total Residual Chlorine, Dissolved Oxygen and Sulfite, performed at the laboratory were run outside of the recommended 15 minute hold time.

All results contained in this report relate only to the above listed samples.

References include:

1) EPA 600/4-79-020, 1983
2) Standard Methods for Examination of Water and Wastewater,20th Edition, 1998 and 22nd Edition, 2012
3) Test Methods for Evaluating Solid Waste SW 846 3rd Edition including updates IVA and IVB
4) Hach Water Analysis Handbook, 2nd edition, 1992

LABORATORY REPORT

EAI ID#: **176437**

Client: **Nobis Engineering**

Client Designation: **L.W. Packard Mill | 93002.00**

Sample ID:	Trip Blank	NB-5	FD-1	NBR-2	NB-4	NBR-1
Lab Sample ID:	176437.01	176437.02	176437.03	176437.04	176437.05	176437.07
Matrix:	aqueous	aqueous	aqueous	aqueous	aqueous	aqueous
Date Sampled:	11/27/17	11/27/17	11/27/17	11/27/17	11/28/17	11/28/17
Date Received:	11/29/17	11/29/17	11/29/17	11/29/17	11/29/17	11/29/17
Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Date of Analysis:	12/1/17	12/1/17	12/1/17	12/1/17	12/1/17	12/1/17
Analyst:	BAM	BAM	BAM	BAM	BAM	BAM
Method:	8260C	8260C	8260C	8260C	8260C	8260C
Dilution Factor:	1	1	1	1	1	1
Dichlorodifluoromethane	< 5	< 5	< 5	< 5	< 5	< 5
Chloromethane	< 2	< 2	< 2	< 2	< 2	< 2
Vinyl chloride	< 2	< 2	< 2	< 2	< 2	< 2
Bromomethane	< 2	< 2	< 2	< 2	< 2	< 2
Chloroethane	< 5	< 5	< 5	< 5	< 5	< 5
Trichlorofluoromethane	< 5	< 5	< 5	< 5	< 5	< 5
Diethyl Ether	< 5	< 5	< 5	< 5	< 5	< 5
Acetone	< 10	< 10	< 10	< 10	< 10	< 10
1,1-Dichloroethene	< 1	< 1	< 1	< 1	< 1	< 1
tert-Butyl Alcohol (TBA)	< 30	< 30	< 30	< 30	< 30	< 30
Methylene chloride	< 5	< 5	< 5	< 5	< 5	< 5
Carbon disulfide	< 2	< 2	< 2	< 2	< 2	< 2
Methyl-t-butyl ether(MTBE)	< 1	< 1	< 1	< 1	< 1	< 1
Ethyl-t-butyl ether(ETBE)	< 5	< 5	< 5	< 5	< 5	< 5
Isopropyl ether(DIPE)	< 5	< 5	< 5	< 5	< 5	< 5
tert-amyl methyl ether(TAME)	< 5	< 5	< 5	< 5	< 5	< 5
trans-1,2-Dichloroethene	< 1	< 1	< 1	< 1	< 1	< 1
1,1-Dichloroethane	< 1	< 1	< 1	**7**	< 1	**9**
2,2-Dichloropropane	< 1	< 1	< 1	< 1	< 1	< 1
cis-1,2-Dichloroethene	< 1	< 1	< 1	< 1	< 1	< 1
2-Butanone(MEK)	< 10	< 10	< 10	< 10	< 10	< 10
Bromochloromethane	< 1	< 1	< 1	< 1	< 1	< 1
Tetrahydrofuran(THF)	< 10	< 10	< 10	< 10	< 10	< 10
Chloroform	< 1	< 1	< 1	< 1	< 1	< 1
1,1,1-Trichloroethane	< 1	< 1	< 1	< 1	< 1	< 1
Carbon tetrachloride	< 1	< 1	< 1	< 1	< 1	< 1
1,1-Dichloropropene	< 1	< 1	< 1	< 1	< 1	< 1
Benzene	< 1	< 1	< 1	< 1	**1**	< 1
1,2-Dichloroethane	< 1	< 1	< 1	< 1	< 1	< 1
Trichloroethene	< 1	< 1	< 1	< 1	< 1	< 1
1,2-Dichloropropane	< 1	< 1	< 1	< 1	< 1	< 1
Dibromomethane	< 1	< 1	< 1	< 1	< 1	< 1
Bromodichloromethane	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,4-Dioxane	< 50	< 50	< 50	< 50	< 50	< 50
4-Methyl-2-pentanone(MIBK)	< 10	< 10	< 10	< 10	< 10	< 10
cis-1,3-Dichloropropene	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	< 1	< 1	< 1	< 1	< 1	< 1
trans-1,3-Dichloropropene	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2-Trichloroethane	< 1	< 1	< 1	< 1	< 1	< 1
2-Hexanone	< 10	< 10	< 10	< 10	< 10	< 10
Tetrachloroethene	< 1	< 1	< 1	< 1	< 1	< 1
1,3-Dichloropropane	< 1	< 1	< 1	< 1	< 1	< 1
Dibromochloromethane	< 1	< 1	< 1	< 1	< 1	< 1
1,2-Dibromoethane(EDB)	< 2	< 2	< 2	< 2	< 2	< 2
Chlorobenzene	< 1	< 1	< 1	< 1	< 1	< 1
1,1,1,2-Tetrachloroethane	< 1	< 1	< 1	< 1	< 1	< 1
Ethylbenzene	< 1	< 1	< 1	< 1	< 1	< 1

LABORATORY REPORT

EAI ID#: **176437**

Client: **Nobis Engineering**

Client Designation: **L.W. Packard Mill | 93002.00**

Sample ID:	Trip Blank	NB-5	FD-1	NBR-2	NB-4	NBR-1
Lab Sample ID:	176437.01	176437.02	176437.03	176437.04	176437.05	176437.07
Matrix:	aqueous	aqueous	aqueous	aqueous	aqueous	aqueous
Date Sampled:	11/27/17	11/27/17	11/27/17	11/27/17	11/28/17	11/28/17
Date Received:	11/29/17	11/29/17	11/29/17	11/29/17	11/29/17	11/29/17
Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Date of Analysis:	12/1/17	12/1/17	12/1/17	12/1/17	12/1/17	12/1/17
Analyst:	BAM	BAM	BAM	BAM	BAM	BAM
Method:	8260C	8260C	8260C	8260C	8260C	8260C
Dilution Factor:	1	1	1	1	1	1
mp-Xylene	< 1	< 1	< 1	< 1	< 1	< 1
o-Xylene	< 1	< 1	< 1	< 1	< 1	< 1
Styrene	< 1	< 1	< 1	< 1	< 1	< 1
Bromoform	< 2	< 2	< 2	< 2	< 2	< 2
IsoPropylbenzene	< 1	< 1	< 1	< 1	< 1	< 1
Bromobenzene	< 1	< 1	< 1	< 1	< 1	< 1
1,1,2,2-Tetrachloroethane	< 1	< 1	< 1	< 1	< 1	< 1
1,2,3-Trichloropropane	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
n-Propylbenzene	< 1	< 1	< 1	< 1	< 1	< 1
2-Chlorotoluene	< 1	< 1	< 1	< 1	< 1	< 1
4-Chlorotoluene	< 1	< 1	< 1	< 1	< 1	< 1
1,3,5-Trimethylbenzene	< 1	< 1	< 1	< 1	< 1	< 1
tert-Butylbenzene	< 1	< 1	< 1	< 1	< 1	< 1
1,2,4-Trimethylbenzene	< 1	< 1	< 1	< 1	< 1	< 1
sec-Butylbenzene	< 1	< 1	< 1	< 1	< 1	< 1
1,3-Dichlorobenzene	< 1	< 1	< 1	< 1	< 1	< 1
p-Isopropyltoluene	< 1	< 1	< 1	< 1	< 1	< 1
1,4-Dichlorobenzene	< 1	< 1	< 1	< 1	< 1	< 1
1,2-Dichlorobenzene	< 1	< 1	< 1	< 1	< 1	< 1
n-Butylbenzene	< 1	< 1	< 1	< 1	< 1	< 1
1,2-Dibromo-3-chloropropane	< 2	< 2	< 2	< 2	< 2	< 2
1,3,5-Trichlorobenzene	< 1	< 1	< 1	< 1	< 1	< 1
1,2,4-Trichlorobenzene	< 1	< 1	< 1	< 1	< 1	< 1
Hexachlorobutadiene	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	< 5	< 5	< 5	< 5	< 5	< 5
1,2,3-Trichlorobenzene	< 1	< 1	< 1	< 1	< 1	< 1
4-Bromofluorobenzene (surr)	**88 %R**	**89 %R**	**87 %R**	**86 %R**	**94 %R**	**86 %R**
1,2-Dichlorobenzene-d4 (surr)	**103 %R**	**102 %R**	**107 %R**	**104 %R**	**102 %R**	**108 %R**
Toluene-d8 (surr)	**94 %R**	**95 %R**	**95 %R**	**94 %R**	**96 %R**	**96 %R**
1,2-Dichloroethane-d4 (surr)	**107 %R**	**110 %R**	**111 %R**	**112 %R**	**109 %R**	**112 %R**

1,2,3-Trichlorobenzene exhibited recovery outside acceptance limits in the Quality Control sample(s). The analyte(s) were not detected in the sample(s).

LABORATORY REPORT

EAI ID#: **176437**

Client: **Nobis Engineering**

Client Designation: **L.W. Packard Mill | 93002.00**

Sample ID:	NB-5	FD-1	NBR-2	NB-4	NBR-1
Lab Sample ID:	176437.02	176437.03	176437.04	176437.05	176437.07
Matrix:	aqueous	aqueous	aqueous	aqueous	aqueous
Date Sampled:	11/27/17	11/27/17	11/27/17	11/28/17	11/28/17
Date Received:	11/29/17	11/29/17	11/29/17	11/29/17	11/29/17
Units:	ug/L	ug/L	ug/L	ug/L	ug/L
Date of Extraction/Preparation	11/29/17	11/29/17	11/29/17	11/29/17	11/29/17
Date of Analysis:	11/30/17	11/30/17	11/30/17	11/30/17	11/30/17
Analyst:	AR	AR	AR	AR	AR
Method:	8270D	8270D	8270D	8270D	8270D
Dilution Factor:	1	1	1	1	1
alpha-Terpineol	< 5	< 5	< 5	< 5	< 5
Phenol	< 1	< 1	< 1	< 1	< 1
2-Chlorophenol	< 1	< 1	< 1	< 1	< 1
2,4-Dichlorophenol	< 1	< 1	< 1	< 1	< 1
2,4,5-Trichlorophenol	< 1	< 1	< 1	< 1	< 1
2,4,6-Trichlorophenol	< 1	< 1	< 1	< 1	< 1
Pentachlorophenol	< 5	< 5	< 5	< 5	< 5
2-Nitrophenol	< 5	< 5	< 5	< 5	< 5
4-Nitrophenol	< 5	< 5	< 5	< 5	< 5
2,4-Dinitrophenol	< 10	< 10	< 10	< 10	< 10
2-Methylphenol	< 1	< 1	< 1	< 1	< 1
3/4-Methylphenol	< 1	< 1	< 1	< 1	< 1
2,4-Dimethylphenol	< 1	< 1	< 1	< 1	< 1
4-Chloro-3-methylphenol	< 1	< 1	< 1	< 1	< 1
4,6-Dinitro-2-methylphenol	< 5	< 5	< 5	< 5	< 5
Benzoic Acid	< 50	< 50	< 50	< 50	< 50
N-Nitrosodimethylamine	< 1	< 1	< 1	< 1	< 1
n-Nitroso-di-n-propylamine	< 1	< 1	< 1	< 1	< 1
n-Nitrosodiphenylamine	< 1	< 1	< 1	< 1	< 1
bis(2-Chloroethyl)ether	< 1	< 1	< 1	< 1	< 1
bis(2-chloroisopropyl)ether	< 1	< 1	< 1	< 1	< 1
bis(2-Chloroethoxy)methane	< 1	< 1	< 1	< 1	< 1
1,3-Dichlorobenzene	< 1	< 1	< 1	< 1	< 1
Acetophenone	< 1	< 1	< 1	< 1	< 1
1,4-Dichlorobenzene	< 1	< 1	< 1	< 1	< 1
1,2-Dichlorobenzene	< 1	< 1	< 1	< 1	< 1
1,2,4-Trichlorobenzene	< 1	< 1	< 1	< 1	< 1
2-Chloronaphthalene	< 1	< 1	< 1	< 1	< 1
4-Chlorophenyl-phenylether	< 1	< 1	< 1	< 1	< 1
4-Bromophenyl-phenylether	< 1	< 1	< 1	< 1	< 1
Hexachloroethane	< 1	< 1	< 1	< 1	< 1
Hexachlorobutadiene	< 1	< 1	< 1	< 1	< 1
Hexachlorocyclopentadiene	< 5	< 5	< 5	< 5	< 5
Hexachlorobenzene	< 1	< 1	< 1	< 1	< 1
4-Chloroaniline	< 1	< 1	< 1	< 1	< 1
2,3-Dichloroaniline	< 1	< 1	< 1	< 1	< 1
2-Nitroaniline	< 5	< 5	< 5	< 5	< 5
3-Nitroaniline	< 5	< 5	< 5	< 5	< 5
4-Nitroaniline	< 5	< 5	< 5	< 5	< 5
Aniline	< 1	< 1	< 1	< 1	< 1
Benzyl alcohol	< 10	< 10	< 10	< 10	< 10
Nitrobenzene	< 1	< 1	< 1	< 1	< 1
Isophorone	< 1	< 1	< 1	< 1	< 1
2,4-Dinitrotoluene	< 5	< 5	< 5	< 5	< 5
2,6-Dinitrotoluene	< 5	< 5	< 5	< 5	< 5

LABORATORY REPORT

EAI ID#: **176437**

Client: **Nobis Engineering**

Client Designation: **L.W. Packard Mill | 93002.00**

Sample ID:	NB-5	FD-1	NBR-2	NB-4	NBR-1
Lab Sample ID:	176437.02	176437.03	176437.04	176437.05	176437.07
Matrix:	aqueous	aqueous	aqueous	aqueous	aqueous
Date Sampled:	11/27/17	11/27/17	11/27/17	11/28/17	11/28/17
Date Received:	11/29/17	11/29/17	11/29/17	11/29/17	11/29/17
Units:	ug/L	ug/L	ug/L	ug/L	ug/L
Date of Extraction/Preparation	11/29/17	11/29/17	11/29/17	11/29/17	11/29/17
Date of Analysis:	11/30/17	11/30/17	11/30/17	11/30/17	11/30/17
Analyst:	AR	AR	AR	AR	AR
Method:	8270D	8270D	8270D	8270D	8270D
Dilution Factor:	1	1	1	1	1
Benzidine (estimated)	< 5	< 5	< 5	< 5	< 5
3,3'-Dichlorobenzidine	< 1	< 1	< 1	< 1	< 1
Pyridine	< 5	< 5	< 5	< 5	< 5
Azobenzene	< 1	< 1	< 1	< 1	< 1
Carbazole	< 1	< 1	< 1	< 1	< 1
Dimethylphthalate	< 1	< 1	< 1	< 1	< 1
Diethylphthalate	< 5	< 5	< 5	< 5	< 5
Di-n-butylphthalate	< 5	< 5	< 5	< 5	< 5
Butylbenzylphthalate	< 5	< 5	< 5	< 5	< 5
bis(2-Ethylhexyl)phthalate	< 5	< 5	< 5	< 5	< 5
Di-n-octylphthalate	< 5	< 5	< 5	< 5	< 5
Dibenzofuran	< 1	< 1	< 1	< 1	< 1
Naphthalene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylnaphthalene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1-Methylnaphthalene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	< 0.1	< 0.1	< 0.1	**0.13**	< 0.1
Phenanthrene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Pyrene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo[a]anthracene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo[b]fluoranthene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo[k]fluoranthene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo[a]pyrene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Indeno[1,2,3-cd]pyrene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenz[a,h]anthracene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo[g,h,i]perylene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
n-Decane	< 5	< 5	< 5	< 5	< 5
n-Octadecane	< 5	< 5	< 5	< 5	< 5
2-Fluorophenol (surr)	**35 %R**	**36 %R**	**36 %R**	**33 %R**	**34 %R**
Phenol-d6 (surr)	**27 %R**	**28 %R**	**27 %R**	**24 %R**	**26 %R**
2,4,6-Tribromophenol (surr)	**82 %R**	**81 %R**	**76 %R**	**84 %R**	**79 %R**
Nitrobenzene-D5 (surr)	**66 %R**	**68 %R**	**63 %R**	**64 %R**	**62 %R**
2-Fluorobiphenyl (surr)	**69 %R**	**70 %R**	**67 %R**	**67 %R**	**67 %R**
p-Terphenyl-D14 (surr)	**77 %R**	**76 %R**	**74 %R**	**71 %R**	**76 %R**

LABORATORY REPORT

EAI ID#: **176437**

Client: **Nobis Engineering**

Client Designation: **L.W. Packard Mill | 93002.00**

Sample ID:	NB-5	FD-1	NBR-2	NB-4	NBR-1
Lab Sample ID:	176437.02	176437.03	176437.04	176437.05	176437.07
Matrix:	aqueous	aqueous	aqueous	aqueous	aqueous
Date Sampled:	11/27/17	11/27/17	11/27/17	11/28/17	11/28/17
Date Received:	11/29/17	11/29/17	11/29/17	11/29/17	11/29/17
Units:	ug/L	ug/L	ug/L	ug/L	ug/L
Date of Extraction/Prep:	11/30/17	11/30/17	11/30/17	11/30/17	11/30/17
Date of Analysis:	11/30/17	11/30/17	11/30/17	11/30/17	11/30/17
Analyst:	SG	SG	SG	SG	SG
Method:	8081B	8081B	8081B	8081B	8081B
Dilution Factor:	1	1	1	1	1
Aldrin	< 0.06	< 0.05	< 0.05	< 0.05	< 0.05
alpha-BHC	< 0.06	< 0.05	< 0.05	< 0.05	< 0.05
beta-BHC	< 0.06	< 0.05	< 0.05	< 0.05	< 0.05
Lindane(gamma-BHC)	< 0.06	< 0.05	< 0.05	< 0.05	< 0.05
delta-BHC	< 0.06	< 0.05	< 0.05	< 0.05	< 0.05
Chlordane	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4,4'-DDT	< 0.06	< 0.05	< 0.05	< 0.05	< 0.05
4,4'-DDE	< 0.06	< 0.05	< 0.05	< 0.05	< 0.05
4,4'-DDD	< 0.06	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	< 0.06	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	< 0.06	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	< 0.06	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan Sulfate	< 0.06	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	< 0.06	< 0.05	< 0.05	< 0.05	< 0.05
Endrin Aldehyde	< 0.06	< 0.05	< 0.05	< 0.05	< 0.05
Endrin Ketone	< 0.06	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	< 0.06	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor Epoxide	< 0.06	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	< 0.06	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	< 0.6	< 0.5	< 0.5	< 0.5	< 0.5
TMX (surr)	**86 %R**	**82 %R**	**84 %R**	**62 %R**	**85 %R**
DCB (surr)	**86 %R**	**76 %R**	**58 %R**	**68 %R**	**73 %R**

LABORATORY REPORT

EAI ID#: **176437**

Client: **Nobis Engineering**

Client Designation: **L.W. Packard Mill | 93002.00**

Sample ID:	NB-5	FD-1	NBR-2	NB-4	NBR-1
Lab Sample ID:	176437.02	176437.03	176437.04	176437.05	176437.07
Matrix:	aqueous	aqueous	aqueous	aqueous	aqueous
Date Sampled:	11/27/17	11/27/17	11/27/17	11/28/17	11/28/17
Date Received:	11/29/17	11/29/17	11/29/17	11/29/17	11/29/17
Units:	ug/L	ug/L	ug/L	ug/L	ug/L
Date of Extraction/Prep:	11/30/17	11/30/17	11/30/17	11/30/17	11/30/17
Date of Analysis:	11/30/17	11/30/17	11/30/17	11/30/17	11/30/17
Analyst:	SG	SG	SG	SG	SG
Method:	8082A	8082A	8082A	8082A	8082A
Dilution Factor:	1	1	1	1	1
PCB-1016	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
PCB-1221	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
PCB-1232	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
PCB-1242	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
PCB-1248	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
PCB-1254	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
PCB-1260	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
PCB-1262	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
PCB-1268	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
TMX (surr)	**94 %R**	**93 %R**	**94 %R**	**88 %R**	**94 %R**
DCB (surr)	**99 %R**	**100 %R**	**66 %R**	**103 %R**	**85 %R**

Acid clean-up was performed on the samples and associated batch QC.

LABORATORY REPORT

EAI ID#: **176437**

Client: **Nobis Engineering**

Client Designation: **L.W. Packard Mill | 93002.00**

Sample ID:	NB-5	FD-1	NBR-2	NB-4					
Lab Sample ID:	176437.02	176437.03	176437.04	176437.05					
Matrix:	aqueous	aqueous	aqueous	aqueous					
Date Sampled:	11/27/17	11/27/17	11/27/17	11/28/17	**Analytical Matrix**	**Units**	**Date of Analysis**	**Method**	**Analyst**
Date Received:	11/29/17	11/29/17	11/29/17	11/29/17					
Antimony	< 0.001	< 0.001	< 0.001	< 0.001	AqDis	mg/L	11/30/17	200.8	DS
Arsenic	< 0.001	< 0.001	< 0.001	< 0.001	AqDis	mg/L	11/30/17	200.8	DS
Beryllium	< 0.001	< 0.001	< 0.001	< 0.001	AqDis	mg/L	11/30/17	200.8	DS
Cadmium	< 0.001	< 0.001	< 0.001	< 0.001	AqDis	mg/L	11/30/17	200.8	DS
Chromium	**0.005**	**0.005**	< 0.001	< 0.001	AqDis	mg/L	11/30/17	200.8	DS
Copper	**0.004**	**0.003**	**0.003**	**0.006**	AqDis	mg/L	11/30/17	200.8	DS
Lead	< 0.001	< 0.001	< 0.001	< 0.001	AqDis	mg/L	11/30/17	200.8	DS
Mercury	**0.0002**	**0.0002**	< 0.0001	< 0.0001	AqDis	mg/L	11/30/17	200.8	DS
Nickel	**0.001**	**0.001**	< 0.001	**0.003**	AqDis	mg/L	11/30/17	200.8	DS
Selenium	< 0.001	< 0.001	< 0.001	< 0.001	AqDis	mg/L	11/30/17	200.8	DS
Silver	< 0.001	< 0.001	< 0.001	< 0.001	AqDis	mg/L	11/30/17	200.8	DS
Thallium	< 0.001	< 0.001	< 0.001	< 0.001	AqDis	mg/L	11/30/17	200.8	DS
Zinc	**0.012**	**0.008**	< 0.005	**0.020**	AqDis	mg/L	11/30/17	200.8	DS

Sample ID:	NBR-1							
Lab Sample ID:	176437.07							
Matrix:	aqueous							
Date Sampled:	11/28/17	**Analytical Matrix**	**Units**	**Date of Analysis**	**Method**	**Analyst**		
Date Received:	11/29/17							
Antimony	< 0.001	AqDis	mg/L	11/30/17	200.8	DS		
Arsenic	**0.001**	AqDis	mg/L	11/30/17	200.8	DS		
Beryllium	< 0.001	AqDis	mg/L	11/30/17	200.8	DS		
Cadmium	< 0.001	AqDis	mg/L	11/30/17	200.8	DS		
Chromium	< 0.001	AqDis	mg/L	11/30/17	200.8	DS		
Copper	**0.003**	AqDis	mg/L	11/30/17	200.8	DS		
Lead	< 0.001	AqDis	mg/L	11/30/17	200.8	DS		
Mercury	< 0.0001	AqDis	mg/L	11/30/17	200.8	DS		
Nickel	< 0.001	AqDis	mg/L	11/30/17	200.8	DS		
Selenium	< 0.001	AqDis	mg/L	11/30/17	200.8	DS		
Silver	< 0.001	AqDis	mg/L	11/30/17	200.8	DS		
Thallium	< 0.001	AqDis	mg/L	11/30/17	200.8	DS		
Zinc	< 0.005	AqDis	mg/L	11/30/17	200.8	DS		

January 10, 2018

Vista Work Order No. 1701847

Ms. Jennifer Laramie
Eastern Analytical, Inc.
25 Chennell Drive
Concord, NH 03301

Dear Ms. Laramie,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on December 04, 2017. This sample set was analyzed on a standard turn-around time, under your Project Name '176437 / NH / 5042'.

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

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.

Vista Work Order No. 1701847
Case Narrative

Sample Condition on Receipt:

Five aqueous 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 a selected list of PFAS using Modified EPA Method 537. The results for PFHxS, PFOA and PFOS include both linear and branched isomers. Results for all other analytes include the linear isomers only.

Holding Times

The samples were originally extracted and analyzed within the method hold times. The samples required re-extractions; the re-extractions were performed outside the method hold time.

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
1701847-01	Trip Blank	27-Nov-17 08:00	04-Dec-17 09:31	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
1701847-02	NB-5	27-Nov-17 13:00	04-Dec-17 09:31	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
1701847-03	FD-1	27-Nov-17 13:10	04-Dec-17 09:31	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
1701847-04	NBR-2	27-Nov-17 15:35	04-Dec-17 09:31	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
1701847-05	Field Blank	28-Nov-17 09:55	04-Dec-17 09:31	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL

ANALYTICAL RESULTS

Sample ID: Method Blank — **Modified EPA Method 537**

Client Data

Name: Eastern Analytical, Inc.
Project: 176437 / NH / 5042
Matrix: Aqueous

Laboratory Data

Lab Sample: B7L0206-BLK1
Column: BEH C18

Analyte	Conc. (ng/L)	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	ND	2.00		B7L0206	29-Dec-17	0.250 L	10-Jan-18 05:26	1
PFPeA	ND	2.00		B7L0206	29-Dec-17	0.250 L	10-Jan-18 05:26	1
PFBS	ND	2.00		B7L0206	29-Dec-17	0.250 L	10-Jan-18 05:26	1
PFHxA	ND	2.00		B7L0206	29-Dec-17	0.250 L	10-Jan-18 05:26	1
PFHpA	ND	2.00		B7L0206	29-Dec-17	0.250 L	10-Jan-18 05:26	1
PFHxS	ND	2.00		B7L0206	29-Dec-17	0.250 L	10-Jan-18 05:26	1
6:2 FTS	ND	2.00		B7L0206	29-Dec-17	0.250 L	10-Jan-18 05:26	1
PFOA	ND	2.00		B7L0206	29-Dec-17	0.250 L	10-Jan-18 05:26	1
PFHpS	ND	2.00		B7L0206	29-Dec-17	0.250 L	10-Jan-18 05:26	1
PFOS	ND	2.00		B7L0206	29-Dec-17	0.250 L	10-Jan-18 05:26	1
PFNA	ND	2.00		B7L0206	29-Dec-17	0.250 L	10-Jan-18 05:26	1
PFDA	ND	2.00		B7L0206	29-Dec-17	0.250 L	10-Jan-18 05:26	1
8:2 FTS	ND	2.00		B7L0206	29-Dec-17	0.250 L	10-Jan-18 05:26	1
PFOSA	ND	2.00		B7L0206	29-Dec-17	0.250 L	10-Jan-18 05:26	1
PFDS	ND	2.00		B7L0206	29-Dec-17	0.250 L	10-Jan-18 05:26	1
PFUnA	ND	2.00		B7L0206	29-Dec-17	0.250 L	10-Jan-18 05:26	1
PFDoA	ND	2.00		B7L0206	29-Dec-17	0.250 L	10-Jan-18 05:26	1
MeFOSA	ND	10.0		B7L0206	29-Dec-17	0.250 L	10-Jan-18 05:26	1
MeFOSE	ND	10.0		B7L0206	29-Dec-17	0.250 L	10-Jan-18 05:26	1
PFTrDA	ND	2.00		B7L0206	29-Dec-17	0.250 L	10-Jan-18 05:26	1
EtFOSE	ND	10.0		B7L0206	29-Dec-17	0.250 L	10-Jan-18 05:26	1
EtFOSA	ND	10.0		B7L0206	29-Dec-17	0.250 L	10-Jan-18 05:26	1
PFTeDA	ND	2.00		B7L0206	29-Dec-17	0.250 L	10-Jan-18 05:26	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	101	60 - 130		B7L0206	29-Dec-17	0.250 L	10-Jan-18 05:26	1
13C3-PFPeA	IS	101	60 - 150		B7L0206	29-Dec-17	0.250 L	10-Jan-18 05:26	1
13C3-PFBS	IS	95.3	60 - 150		B7L0206	29-Dec-17	0.250 L	10-Jan-18 05:26	1
13C2-PFHxA	IS	99.8	70 - 130		B7L0206	29-Dec-17	0.250 L	10-Jan-18 05:26	1
13C4-PFHpA	IS	93.1	60 - 150		B7L0206	29-Dec-17	0.250 L	10-Jan-18 05:26	1
18O2-PFHxS	IS	109	60 - 130		B7L0206	29-Dec-17	0.250 L	10-Jan-18 05:26	1
13C2-6:2 FTS	IS	113	40 - 150		B7L0206	29-Dec-17	0.250 L	10-Jan-18 05:26	1
13C2-PFOA	IS	116	60 - 130		B7L0206	29-Dec-17	0.250 L	10-Jan-18 05:26	1
13C8-PFOS	IS	119	60 - 130		B7L0206	29-Dec-17	0.250 L	10-Jan-18 05:26	1
13C5-PFNA	IS	85.6	50 - 130		B7L0206	29-Dec-17	0.250 L	10-Jan-18 05:26	1
13C2-PFDA	IS	83.6	60 - 130		B7L0206	29-Dec-17	0.250 L	10-Jan-18 05:26	1
13C2-8:2 FTS	IS	66.6	40 - 150		B7L0206	29-Dec-17	0.250 L	10-Jan-18 05:26	1
13C8-PFOSA	IS	60.6	20 - 150		B7L0206	29-Dec-17	0.250 L	10-Jan-18 05:26	1
13C2-PFUnA	IS	72.8	60 - 130		B7L0206	29-Dec-17	0.250 L	10-Jan-18 05:26	1

Sample ID: Method Blank — **Modified EPA Method 537**

Client Data

Name: Eastern Analytical, Inc.
Project: 176437 / NH / 5042
Matrix: Aqueous

Laboratory Data

Lab Sample: B7L0206-BLK1
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFDoA	IS	74.4	30 - 130		B7L0206	29-Dec-17	0.250 L	10-Jan-18 05:26	1
d3-MeFOSA	IS	30.6	10 - 130		B7L0206	29-Dec-17	0.250 L	10-Jan-18 05:26	1
d7-MeFOSE	IS	45.1	10 - 150		B7L0206	29-Dec-17	0.250 L	10-Jan-18 05:26	1
d9-EtFOSE	IS	52.8	10 - 150		B7L0206	29-Dec-17	0.250 L	10-Jan-18 05:26	1
d5-EtFOSA	IS	30.5	10 - 150		B7L0206	29-Dec-17	0.250 L	10-Jan-18 05:26	1
13C2-PFTeDA	IS	60.8	20 - 150		B7L0206	29-Dec-17	0.250 L	10-Jan-18 05:26	1

RL - Reporting limit

LCL-UCL- Lower control limit - upper control limit
Results reported to RL.

When reported, 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**

Client Data

Name: Eastern Analytical, Inc.
Project: 176437 / NH / 5042
Matrix: Aqueous

Laboratory Data

Lab Sample: B7L0206-BS1
Column: BEH C18

Analyte	Amt Found (ng/L)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	36.6	40.0	91.5	70-130		B7L0206	29-Dec-17	0.250 L	10-Jan-18 04:41	1
PFPeA	36.4	40.0	91.1	70-130		B7L0206	29-Dec-17	0.250 L	10-Jan-18 04:41	1
PFBS	39.7	40.0	99.4	70-130		B7L0206	29-Dec-17	0.250 L	10-Jan-18 04:41	1
PFHxA	35.8	40.0	89.4	70-130		B7L0206	29-Dec-17	0.250 L	10-Jan-18 04:41	1
PFHpA	39.5	40.0	98.8	70-130		B7L0206	29-Dec-17	0.250 L	10-Jan-18 04:41	1
PFHxS	31.6	40.0	78.9	70-130		B7L0206	29-Dec-17	0.250 L	10-Jan-18 04:41	1
6:2 FTS	28.0	40.0	70.0	60-130		B7L0206	29-Dec-17	0.250 L	10-Jan-18 04:41	1
PFOA	35.6	40.0	89.0	70-130		B7L0206	29-Dec-17	0.250 L	10-Jan-18 04:41	1
PFHpS	34.4	40.0	86.0	60-130		B7L0206	29-Dec-17	0.250 L	10-Jan-18 04:41	1
PFOS	48.4	40.0	121	70-130		B7L0206	29-Dec-17	0.250 L	10-Jan-18 04:41	1
PFNA	42.5	40.0	106	70-130		B7L0206	29-Dec-17	0.250 L	10-Jan-18 04:41	1
PFDA	32.7	40.0	81.8	70-130		B7L0206	29-Dec-17	0.250 L	10-Jan-18 04:41	1
8:2 FTS	28.7	40.0	71.8	60-130		B7L0206	29-Dec-17	0.250 L	10-Jan-18 04:41	1
PFOSA	40.5	40.0	101	70-130		B7L0206	29-Dec-17	0.250 L	10-Jan-18 04:41	1
PFDS	39.2	40.0	97.9	60-130		B7L0206	29-Dec-17	0.250 L	10-Jan-18 04:41	1
PFUnA	36.2	40.0	90.4	70-130		B7L0206	29-Dec-17	0.250 L	10-Jan-18 04:41	1
PFDoA	29.6	40.0	74.1	70-130		B7L0206	29-Dec-17	0.250 L	10-Jan-18 04:41	1
MeFOSA	216	200	108	70-130		B7L0206	29-Dec-17	0.250 L	10-Jan-18 04:41	1
MeFOSE	199	200	99.7	70-130		B7L0206	29-Dec-17	0.250 L	10-Jan-18 04:41	1
PFTrDA	34.8	40.0	86.9	60-130		B7L0206	29-Dec-17	0.250 L	10-Jan-18 04:41	1
EtFOSE	203	200	101	70-130		B7L0206	29-Dec-17	0.250 L	10-Jan-18 04:41	1
EtFOSA	200	200	99.8	70-130		B7L0206	29-Dec-17	0.250 L	10-Jan-18 04:41	1
PFTeDA	36.5	40.0	91.4	70-130		B7L0206	29-Dec-17	0.250 L	10-Jan-18 04:41	1

Labeled Standards	Type	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	99.7	60- 130		B7L0206	29-Dec-17	0.250 L	10-Jan-18 04:41	1
13C3-PFPeA	IS	98.8	60- 150		B7L0206	29-Dec-17	0.250 L	10-Jan-18 04:41	1
13C3-PFBS	IS	94.4	60- 150		B7L0206	29-Dec-17	0.250 L	10-Jan-18 04:41	1
13C2-PFHxA	IS	95.4	70- 130		B7L0206	29-Dec-17	0.250 L	10-Jan-18 04:41	1
13C4-PFHpA	IS	97.6	60- 150		B7L0206	29-Dec-17	0.250 L	10-Jan-18 04:41	1
18O2-PFHxS	IS	99.9	60- 130		B7L0206	29-Dec-17	0.250 L	10-Jan-18 04:41	1
13C2-6:2 FTS	IS	81.7	40- 150		B7L0206	29-Dec-17	0.250 L	10-Jan-18 04:41	1
13C2-PFOA	IS	108	60- 130		B7L0206	29-Dec-17	0.250 L	10-Jan-18 04:41	1
13C8-PFOS	IS	96.6	60- 130		B7L0206	29-Dec-17	0.250 L	10-Jan-18 04:41	1
13C5-PFNA	IS	80.0	50- 130		B7L0206	29-Dec-17	0.250 L	10-Jan-18 04:41	1
13C2-PFDA	IS	96.7	60- 130		B7L0206	29-Dec-17	0.250 L	10-Jan-18 04:41	1

Sample ID: OPR — **Modified EPA Method 537**

Client Data				Laboratory Data			
Name:	Eastern Analytical, Inc.	Matrix:	Aqueous	Lab Sample:	B7L0206-BS1	Column:	BEH C18
Project:	176437 / NH / 5042						

Labeled Standards	Type	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-8:2 FTS	IS	68.1	40 - 150		B7L0206	29-Dec-17	0.250 L	10-Jan-18 04:41	1
13C8-PFOSA	IS	64.1	20 - 150		B7L0206	29-Dec-17	0.250 L	10-Jan-18 04:41	1
13C2-PFUnA	IS	98.8	60 - 130		B7L0206	29-Dec-17	0.250 L	10-Jan-18 04:41	1
13C2-PFDoA	IS	90.5	30 - 130		B7L0206	29-Dec-17	0.250 L	10-Jan-18 04:41	1
d3-MeFOSA	IS	34.4	10 - 130		B7L0206	29-Dec-17	0.250 L	10-Jan-18 04:41	1
d7-MeFOSE	IS	56.9	10 - 150		B7L0206	29-Dec-17	0.250 L	10-Jan-18 04:41	1
d9-EtFOSE	IS	60.9	10 - 150		B7L0206	29-Dec-17	0.250 L	10-Jan-18 04:41	1
d5-EtFOSA	IS	39.3	10 - 150		B7L0206	29-Dec-17	0.250 L	10-Jan-18 04:41	1
13C2-PFTeDA	IS	96.4	20 - 150		B7L0206	29-Dec-17	0.250 L	10-Jan-18 04:41	1

Sample ID: Trip Blank

Modified EPA Method 537

Client Data

Name: Eastern Analytical, Inc.
Project: 176437 / NH / 5042
Matrix: Aqueous
Date Collected: 27-Nov-17 08:00

Laboratory Data

Lab Sample: 1701847-01
Date Received: 04-Dec-17 09:31
Column: BEH C18

Analyte	Conc. (ng/L)	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	ND	4.18		B7L0206	29-Dec-17	0.120 L	10-Jan-18 09:32	1
PFPeA	ND	4.18		B7L0206	29-Dec-17	0.120 L	10-Jan-18 09:32	1
PFBS	ND	4.18		B7L0206	29-Dec-17	0.120 L	10-Jan-18 09:32	1
PFHxA	ND	4.18		B7L0206	29-Dec-17	0.120 L	10-Jan-18 09:32	1
PFHpA	ND	4.18		B7L0206	29-Dec-17	0.120 L	10-Jan-18 09:32	1
PFHxS	ND	4.18		B7L0206	29-Dec-17	0.120 L	10-Jan-18 09:32	1
6:2 FTS	ND	4.18		B7L0206	29-Dec-17	0.120 L	10-Jan-18 09:32	1
PFOA	ND	4.18		B7L0206	29-Dec-17	0.120 L	10-Jan-18 09:32	1
PFHpS	ND	4.18		B7L0206	29-Dec-17	0.120 L	10-Jan-18 09:32	1
PFOS	ND	4.18		B7L0206	29-Dec-17	0.120 L	10-Jan-18 09:32	1
PFNA	ND	4.18		B7L0206	29-Dec-17	0.120 L	10-Jan-18 09:32	1
PFDA	ND	4.18		B7L0206	29-Dec-17	0.120 L	10-Jan-18 09:32	1
8:2 FTS	ND	4.18		B7L0206	29-Dec-17	0.120 L	10-Jan-18 09:32	1
PFOSA	ND	4.18		B7L0206	29-Dec-17	0.120 L	10-Jan-18 09:32	1
PFDS	ND	4.18		B7L0206	29-Dec-17	0.120 L	10-Jan-18 09:32	1
PFUnA	ND	4.18		B7L0206	29-Dec-17	0.120 L	10-Jan-18 09:32	1
PFDoA	ND	4.18		B7L0206	29-Dec-17	0.120 L	10-Jan-18 09:32	1
MeFOSA	ND	20.9		B7L0206	29-Dec-17	0.120 L	10-Jan-18 09:32	1
MeFOSE	ND	20.9		B7L0206	29-Dec-17	0.120 L	10-Jan-18 09:32	1
PFTrDA	ND	4.18		B7L0206	29-Dec-17	0.120 L	10-Jan-18 09:32	1
EtFOSE	ND	20.9		B7L0206	29-Dec-17	0.120 L	10-Jan-18 09:32	1
EtFOSA	ND	20.9		B7L0206	29-Dec-17	0.120 L	10-Jan-18 09:32	1
PFTeDA	ND	4.18		B7L0206	29-Dec-17	0.120 L	10-Jan-18 09:32	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	90.9	60 - 130		B7L0206	29-Dec-17	0.120 L	10-Jan-18 09:32	1
13C3-PFPeA	IS	93.8	60 - 150		B7L0206	29-Dec-17	0.120 L	10-Jan-18 09:32	1
13C3-PFBS	IS	102	60 - 150		B7L0206	29-Dec-17	0.120 L	10-Jan-18 09:32	1
13C2-PFHxA	IS	85.3	70 - 130		B7L0206	29-Dec-17	0.120 L	10-Jan-18 09:32	1
13C4-PFHpA	IS	92.9	60 - 150		B7L0206	29-Dec-17	0.120 L	10-Jan-18 09:32	1
18O2-PFHxS	IS	94.3	60 - 130		B7L0206	29-Dec-17	0.120 L	10-Jan-18 09:32	1
13C2-6:2 FTS	IS	92.4	40 - 150		B7L0206	29-Dec-17	0.120 L	10-Jan-18 09:32	1
13C2-PFOA	IS	104	60 - 130		B7L0206	29-Dec-17	0.120 L	10-Jan-18 09:32	1
13C8-PFOS	IS	96.2	60 - 130		B7L0206	29-Dec-17	0.120 L	10-Jan-18 09:32	1
13C5-PFNA	IS	78.2	50 - 130		B7L0206	29-Dec-17	0.120 L	10-Jan-18 09:32	1
13C2-PFDA	IS	71.8	60 - 130		B7L0206	29-Dec-17	0.120 L	10-Jan-18 09:32	1
13C2-8:2 FTS	IS	57.7	40 - 150		B7L0206	29-Dec-17	0.120 L	10-Jan-18 09:32	1
13C8-PFOSA	IS	50.4	20 - 150		B7L0206	29-Dec-17	0.120 L	10-Jan-18 09:32	1
13C2-PFUnA	IS	74.8	60 - 130		B7L0206	29-Dec-17	0.120 L	10-Jan-18 09:32	1

Sample ID: Trip Blank — **Modified EPA Method 537**

Client Data

Name: Eastern Analytical, Inc.
Project: 176437 / NH / 5042
Matrix: Aqueous
Date Collected: 27-Nov-17 08:00

Laboratory Data

Lab Sample: 1701847-01
Date Received: 04-Dec-17 09:31
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFDoA	IS	79.6	30 - 130		B7L0206	29-Dec-17	0.120 L	10-Jan-18 09:32	1
d3-MeFOSA	IS	33.7	10 - 130		B7L0206	29-Dec-17	0.120 L	10-Jan-18 09:32	1
d7-MeFOSE	IS	47.0	10 - 150		B7L0206	29-Dec-17	0.120 L	10-Jan-18 09:32	1
d9-EtFOSE	IS	55.9	10 - 150		B7L0206	29-Dec-17	0.120 L	10-Jan-18 09:32	1
d5-EtFOSA	IS	37.1	10 - 150		B7L0206	29-Dec-17	0.120 L	10-Jan-18 09:32	1
13C2-PFTeDA	IS	81.4	20 - 150		B7L0206	29-Dec-17	0.120 L	10-Jan-18 09:32	1

RL - Reporting limit

LCL-UCL- Lower control limit - upper control limit
Results reported to RL.

When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: NB-5

Modified EPA Method 537

Client Data

Name: Eastern Analytical, Inc.
Project: 176437 / NH / 5042
Matrix: Aqueous
Date Collected: 27-Nov-17 13:00

Laboratory Data

Lab Sample: 1701847-02
Date Received: 04-Dec-17 09:31
Column: BEH C18

Analyte	Conc. (ng/L)	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	ND	4.37		B7L0206	29-Dec-17	0.114 L	10-Jan-18 09:43	1
PFPeA	7.06	4.37		B7L0206	29-Dec-17	0.114 L	10-Jan-18 09:43	1
PFBS	ND	4.37		B7L0206	29-Dec-17	0.114 L	10-Jan-18 09:43	1
PFHxA	8.05	4.37		B7L0206	29-Dec-17	0.114 L	10-Jan-18 09:43	1
PFHpA	20.4	4.37		B7L0206	29-Dec-17	0.114 L	10-Jan-18 09:43	1
PFHxS	ND	4.37		B7L0206	29-Dec-17	0.114 L	10-Jan-18 09:43	1
6:2 FTS	ND	4.37		B7L0206	29-Dec-17	0.114 L	10-Jan-18 09:43	1
PFOA	39.7	4.37		B7L0206	29-Dec-17	0.114 L	10-Jan-18 09:43	1
PFHpS	ND	4.37		B7L0206	29-Dec-17	0.114 L	10-Jan-18 09:43	1
PFOS	5.02	4.37		B7L0206	29-Dec-17	0.114 L	10-Jan-18 09:43	1
PFNA	ND	4.37		B7L0206	29-Dec-17	0.114 L	10-Jan-18 09:43	1
PFDA	ND	4.37		B7L0206	29-Dec-17	0.114 L	10-Jan-18 09:43	1
8:2 FTS	ND	4.37		B7L0206	29-Dec-17	0.114 L	10-Jan-18 09:43	1
PFOSA	ND	4.37		B7L0206	29-Dec-17	0.114 L	10-Jan-18 09:43	1
PFDS	ND	4.37		B7L0206	29-Dec-17	0.114 L	10-Jan-18 09:43	1
PFUnA	ND	4.37		B7L0206	29-Dec-17	0.114 L	10-Jan-18 09:43	1
PFDoA	ND	4.37		B7L0206	29-Dec-17	0.114 L	10-Jan-18 09:43	1
MeFOSA	ND	21.8		B7L0206	29-Dec-17	0.114 L	10-Jan-18 09:43	1
MeFOSE	ND	21.8		B7L0206	29-Dec-17	0.114 L	10-Jan-18 09:43	1
PFTrDA	ND	4.37		B7L0206	29-Dec-17	0.114 L	10-Jan-18 09:43	1
EtFOSE	ND	21.8		B7L0206	29-Dec-17	0.114 L	10-Jan-18 09:43	1
EtFOSA	ND	21.8		B7L0206	29-Dec-17	0.114 L	10-Jan-18 09:43	1
PFTeDA	ND	4.37		B7L0206	29-Dec-17	0.114 L	10-Jan-18 09:43	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	95.9	60 - 130		B7L0206	29-Dec-17	0.114 L	10-Jan-18 09:43	1
13C3-PFPeA	IS	99.4	60 - 150		B7L0206	29-Dec-17	0.114 L	10-Jan-18 09:43	1
13C3-PFBS	IS	115	60 - 150		B7L0206	29-Dec-17	0.114 L	10-Jan-18 09:43	1
13C2-PFHxA	IS	104	70 - 130		B7L0206	29-Dec-17	0.114 L	10-Jan-18 09:43	1
13C4-PFHpA	IS	92.5	60 - 150		B7L0206	29-Dec-17	0.114 L	10-Jan-18 09:43	1
18O2-PFHxS	IS	99.2	60 - 130		B7L0206	29-Dec-17	0.114 L	10-Jan-18 09:43	1
13C2-6:2 FTS	IS	89.4	40 - 150		B7L0206	29-Dec-17	0.114 L	10-Jan-18 09:43	1
13C2-PFOA	IS	86.6	60 - 130		B7L0206	29-Dec-17	0.114 L	10-Jan-18 09:43	1
13C8-PFOS	IS	77.8	60 - 130		B7L0206	29-Dec-17	0.114 L	10-Jan-18 09:43	1
13C5-PFNA	IS	83.9	50 - 130		B7L0206	29-Dec-17	0.114 L	10-Jan-18 09:43	1
13C2-PFDA	IS	94.6	60 - 130		B7L0206	29-Dec-17	0.114 L	10-Jan-18 09:43	1
13C2-8:2 FTS	IS	67.6	40 - 150		B7L0206	29-Dec-17	0.114 L	10-Jan-18 09:43	1
13C8-PFOSA	IS	69.5	20 - 150		B7L0206	29-Dec-17	0.114 L	10-Jan-18 09:43	1
13C2-PFUnA	IS	86.0	60 - 130		B7L0206	29-Dec-17	0.114 L	10-Jan-18 09:43	1

Sample ID: NB-5

Modified EPA Method 537

Client Data

Name: Eastern Analytical, Inc.
Project: 176437 / NH / 5042
Matrix: Aqueous
Date Collected: 27-Nov-17 13:00

Laboratory Data

Lab Sample: 1701847-02
Date Received: 04-Dec-17 09:31
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFDoA	IS	75.2	30 - 130		B7L0206	29-Dec-17	0.114 L	10-Jan-18 09:43	1
d3-MeFOSA	IS	39.0	10 - 130		B7L0206	29-Dec-17	0.114 L	10-Jan-18 09:43	1
d7-MeFOSE	IS	59.0	10 - 150		B7L0206	29-Dec-17	0.114 L	10-Jan-18 09:43	1
d9-EtFOSE	IS	74.7	10 - 150		B7L0206	29-Dec-17	0.114 L	10-Jan-18 09:43	1
d5-EtFOSA	IS	46.2	10 - 150		B7L0206	29-Dec-17	0.114 L	10-Jan-18 09:43	1
13C2-PFTeDA	IS	87.4	20 - 150		B7L0206	29-Dec-17	0.114 L	10-Jan-18 09:43	1

RL - Reporting limit

LCL-UCL- Lower control limit - upper control limit
Results reported to RL.

When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: FD-1

Modified EPA Method 537

Client Data

Name: Eastern Analytical, Inc.
Project: 176437 / NH / 5042
Matrix: Aqueous
Date Collected: 27-Nov-17 13:10

Laboratory Data

Lab Sample: 1701847-03
Date Received: 04-Dec-17 09:31
Column: BEH C18

Analyte	Conc. (ng/L)	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	ND	4.25		B7L0206	29-Dec-17	0.118 L	10-Jan-18 09:57	1
PFPeA	6.61	4.25		B7L0206	29-Dec-17	0.118 L	10-Jan-18 09:57	1
PFBS	ND	4.25		B7L0206	29-Dec-17	0.118 L	10-Jan-18 09:57	1
PFHxA	8.84	4.25		B7L0206	29-Dec-17	0.118 L	10-Jan-18 09:57	1
PFHpA	21.3	4.25		B7L0206	29-Dec-17	0.118 L	10-Jan-18 09:57	1
PFHxS	ND	4.25		B7L0206	29-Dec-17	0.118 L	10-Jan-18 09:57	1
6:2 FTS	ND	4.25		B7L0206	29-Dec-17	0.118 L	10-Jan-18 09:57	1
PFOA	44.4	4.25		B7L0206	29-Dec-17	0.118 L	10-Jan-18 09:57	1
PFHpS	ND	4.25		B7L0206	29-Dec-17	0.118 L	10-Jan-18 09:57	1
PFOS	4.37	4.25		B7L0206	29-Dec-17	0.118 L	10-Jan-18 09:57	1
PFNA	ND	4.25		B7L0206	29-Dec-17	0.118 L	10-Jan-18 09:57	1
PFDA	ND	4.25		B7L0206	29-Dec-17	0.118 L	10-Jan-18 09:57	1
8:2 FTS	ND	4.25		B7L0206	29-Dec-17	0.118 L	10-Jan-18 09:57	1
PFOSA	ND	4.25		B7L0206	29-Dec-17	0.118 L	10-Jan-18 09:57	1
PFDS	ND	4.25		B7L0206	29-Dec-17	0.118 L	10-Jan-18 09:57	1
PFUnA	ND	4.25		B7L0206	29-Dec-17	0.118 L	10-Jan-18 09:57	1
PFDoA	ND	4.25		B7L0206	29-Dec-17	0.118 L	10-Jan-18 09:57	1
MeFOSA	ND	21.2		B7L0206	29-Dec-17	0.118 L	10-Jan-18 09:57	1
MeFOSE	ND	21.2		B7L0206	29-Dec-17	0.118 L	10-Jan-18 09:57	1
PFTrDA	ND	4.25		B7L0206	29-Dec-17	0.118 L	10-Jan-18 09:57	1
EtFOSE	ND	21.2		B7L0206	29-Dec-17	0.118 L	10-Jan-18 09:57	1
EtFOSA	ND	21.2		B7L0206	29-Dec-17	0.118 L	10-Jan-18 09:57	1
PFTeDA	ND	4.25		B7L0206	29-Dec-17	0.118 L	10-Jan-18 09:57	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	94.5	60 - 130		B7L0206	29-Dec-17	0.118 L	10-Jan-18 09:57	1
13C3-PFPeA	IS	101	60 - 150		B7L0206	29-Dec-17	0.118 L	10-Jan-18 09:57	1
13C3-PFBS	IS	118	60 - 150		B7L0206	29-Dec-17	0.118 L	10-Jan-18 09:57	1
13C2-PFHxA	IS	97.2	70 - 130		B7L0206	29-Dec-17	0.118 L	10-Jan-18 09:57	1
13C4-PFHpA	IS	99.3	60 - 150		B7L0206	29-Dec-17	0.118 L	10-Jan-18 09:57	1
18O2-PFHxS	IS	91.8	60 - 130		B7L0206	29-Dec-17	0.118 L	10-Jan-18 09:57	1
13C2-6:2 FTS	IS	79.8	40 - 150		B7L0206	29-Dec-17	0.118 L	10-Jan-18 09:57	1
13C2-PFOA	IS	87.3	60 - 130		B7L0206	29-Dec-17	0.118 L	10-Jan-18 09:57	1
13C8-PFOS	IS	96.0	60 - 130		B7L0206	29-Dec-17	0.118 L	10-Jan-18 09:57	1
13C5-PFNA	IS	97.6	50 - 130		B7L0206	29-Dec-17	0.118 L	10-Jan-18 09:57	1
13C2-PFDA	IS	95.2	60 - 130		B7L0206	29-Dec-17	0.118 L	10-Jan-18 09:57	1
13C2-8:2 FTS	IS	97.3	40 - 150		B7L0206	29-Dec-17	0.118 L	10-Jan-18 09:57	1
13C8-PFOSA	IS	74.6	20 - 150		B7L0206	29-Dec-17	0.118 L	10-Jan-18 09:57	1
13C2-PFUnA	IS	80.9	60 - 130		B7L0206	29-Dec-17	0.118 L	10-Jan-18 09:57	1

Sample ID: FD-1 **Modified EPA Method 537**

Client Data

Name: Eastern Analytical, Inc.
Project: 176437 / NH / 5042
Matrix: Aqueous
Date Collected: 27-Nov-17 13:10

Laboratory Data

Lab Sample: 1701847-03
Date Received: 04-Dec-17 09:31
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFDoA	IS	84.4	30 - 130		B7L0206	29-Dec-17	0.118 L	10-Jan-18 09:57	1
d3-MeFOSA	IS	42.4	10 - 130		B7L0206	29-Dec-17	0.118 L	10-Jan-18 09:57	1
d7-MeFOSE	IS	79.3	10 - 150		B7L0206	29-Dec-17	0.118 L	10-Jan-18 09:57	1
d9-EtFOSE	IS	82.9	10 - 150		B7L0206	29-Dec-17	0.118 L	10-Jan-18 09:57	1
d5-EtFOSA	IS	47.9	10 - 150		B7L0206	29-Dec-17	0.118 L	10-Jan-18 09:57	1
13C2-PFTeDA	IS	110	20 - 150		B7L0206	29-Dec-17	0.118 L	10-Jan-18 09:57	1

RL - Reporting limit

LCL-UCL- Lower control limit - upper control limit
Results reported to RL.

When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: NBR-2

Modified EPA Method 537

Client Data

Name: Eastern Analytical, Inc.
Project: 176437 / NH / 5042
Matrix: Aqueous
Date Collected: 27-Nov-17 15:35

Laboratory Data

Lab Sample: 1701847-04
Date Received: 04-Dec-17 09:31
Column: BEH C18

Analyte	Conc. (ng/L)	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	ND	4.20		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:08	1
PFPeA	ND	4.20		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:08	1
PFBS	ND	4.20		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:08	1
PFHxA	ND	4.20		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:08	1
PFHpA	ND	4.20		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:08	1
PFHxS	ND	4.20		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:08	1
6:2 FTS	ND	4.20		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:08	1
PFOA	ND	4.20		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:08	1
PFHpS	ND	4.20		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:08	1
PFOS	ND	4.20		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:08	1
PFNA	ND	4.20		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:08	1
PFDA	ND	4.20		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:08	1
8:2 FTS	ND	4.20		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:08	1
PFOSA	ND	4.20		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:08	1
PFDS	ND	4.20		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:08	1
PFUnA	ND	4.20		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:08	1
PFDoA	ND	4.20		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:08	1
MeFOSA	ND	21.0		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:08	1
MeFOSE	ND	21.0		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:08	1
PFTrDA	ND	4.20		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:08	1
EtFOSE	ND	21.0		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:08	1
EtFOSA	ND	21.0		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:08	1
PFTeDA	ND	4.20		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:08	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	95.7	60 - 130		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:08	1
13C3-PFPeA	IS	92.7	60 - 150		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:08	1
13C3-PFBS	IS	103	60 - 150		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:08	1
13C2-PFHxA	IS	98.5	70 - 130		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:08	1
13C4-PFHpA	IS	90.9	60 - 150		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:08	1
18O2-PFHxS	IS	125	60 - 130		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:08	1
13C2-6:2 FTS	IS	80.0	40 - 150		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:08	1
13C2-PFOA	IS	87.1	60 - 130		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:08	1
13C8-PFOS	IS	79.4	60 - 130		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:08	1
13C5-PFNA	IS	67.4	50 - 130		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:08	1
13C2-PFDA	IS	80.9	60 - 130		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:08	1
13C2-8:2 FTS	IS	43.6	40 - 150		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:08	1
13C8-PFOSA	IS	72.6	20 - 150		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:08	1
13C2-PFUnA	IS	94.9	60 - 130		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:08	1

Sample ID: NBR-2

Modified EPA Method 537

Client Data

Name: Eastern Analytical, Inc.
Project: 176437 / NH / 5042
Matrix: Aqueous
Date Collected: 27-Nov-17 15:35

Laboratory Data

Lab Sample: 1701847-04
Date Received: 04-Dec-17 09:31
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFDoA	IS	70.3	30 - 130		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:08	1
d3-MeFOSA	IS	33.2	10 - 130		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:08	1
d7-MeFOSE	IS	63.2	10 - 150		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:08	1
d9-EtFOSE	IS	67.2	10 - 150		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:08	1
d5-EtFOSA	IS	37.2	10 - 150		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:08	1
13C2-PFTeDA	IS	86.0	20 - 150		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:08	1

RL - Reporting limit

LCL-UCL- Lower control limit - upper control limit
Results reported to RL.

When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: Field Blank

Modified EPA Method 537

Client Data

Name: Eastern Analytical, Inc.
Project: 176437 / NH / 5042
Matrix: Aqueous
Date Collected: 28-Nov-17 09:55

Laboratory Data

Lab Sample: 1701847-05
Date Received: 04-Dec-17 09:31
Column: BEH C18

Analyte	Conc. (ng/L)	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	ND	4.21		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:19	1
PFPeA	ND	4.21		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:19	1
PFBS	ND	4.21		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:19	1
PFHxA	ND	4.21		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:19	1
PFHpA	ND	4.21		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:19	1
PFHxS	ND	4.21		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:19	1
6:2 FTS	ND	4.21		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:19	1
PFOA	ND	4.21		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:19	1
PFHpS	ND	4.21		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:19	1
PFOS	ND	4.21		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:19	1
PFNA	ND	4.21		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:19	1
PFDA	ND	4.21		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:19	1
8:2 FTS	ND	4.21		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:19	1
PFOSA	ND	4.21		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:19	1
PFDS	ND	4.21		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:19	1
PFUnA	ND	4.21		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:19	1
PFDoA	ND	4.21		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:19	1
MeFOSA	ND	21.1		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:19	1
MeFOSE	ND	21.1		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:19	1
PFTrDA	ND	4.21		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:19	1
EtFOSE	ND	21.1		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:19	1
EtFOSA	ND	21.1		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:19	1
PFTeDA	ND	4.21		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:19	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	93.6	60 - 130		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:19	1
13C3-PFPeA	IS	110	60 - 150		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:19	1
13C3-PFBS	IS	110	60 - 150		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:19	1
13C2-PFHxA	IS	113	70 - 130		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:19	1
13C4-PFHpA	IS	100	60 - 150		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:19	1
18O2-PFHxS	IS	112	60 - 130		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:19	1
13C2-6:2 FTS	IS	95.3	40 - 150		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:19	1
13C2-PFOA	IS	94.4	60 - 130		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:19	1
13C8-PFOS	IS	73.0	60 - 130		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:19	1
13C5-PFNA	IS	76.9	50 - 130		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:19	1
13C2-PFDA	IS	115	60 - 130		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:19	1
13C2-8:2 FTS	IS	62.6	40 - 150		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:19	1
13C8-PFOSA	IS	55.0	20 - 150		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:19	1
13C2-PFUnA	IS	85.7	60 - 130		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:19	1

Sample ID: Field Blank — **Modified EPA Method 537**

Client Data

Name: Eastern Analytical, Inc.
Project: 176437 / NH / 5042
Matrix: Aqueous
Date Collected: 28-Nov-17 09:55

Laboratory Data

Lab Sample: 1701847-05
Date Received: 04-Dec-17 09:31
Column: BEH C18

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFDoA	IS	77.0	30 - 130		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:19	1
d3-MeFOSA	IS	38.6	10 - 130		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:19	1
d7-MeFOSE	IS	58.0	10 - 150		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:19	1
d9-EtFOSE	IS	59.2	10 - 150		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:19	1
d5-EtFOSA	IS	40.3	10 - 150		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:19	1
13C2-PFTeDA	IS	88.3	20 - 150		B7L0206	29-Dec-17	0.119 L	10-Jan-18 10:19	1

RL - Reporting limit

LCL-UCL- Lower control limit - upper control limit
Results reported to RL.

When reported, 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.
M	Estimated Maximum Possible Concentration. (CA Region 2 projects only)
*	See Cover Letter
Conc.	Concentration
NA	Not applicable
ND	Not Detected
TEQ	Toxic Equivalency
U	Not Detected (specific projects only)

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

CERTIFICATIONS

Accrediting Authority	Certificate Number
Alaska Department of Environmental Conservation	17-013
Arkansas Department of Environmental Quality	17-015-0
	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Department of Health	E87777-18
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2016026
Minnesota Department of Health	1322288
New Hampshire Environmental Accreditation Program	207717
New Jersey Department of Environmental Protection	CA003
New York Department of Health	11411
Oregon Laboratory Accreditation Program	4042-008
Pennsylvania Department of Environmental Protection	014
Texas Commission on Environmental Quality	T104704189-17-8
Virginia Department of General Services	9077
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.

CHAIN-OF-CUSTODY RECORD

eastern analytical
professional laboratory services

1701847 9.5°C

EAI ID# 176437 Page 1

Sample ID	Date Sampled	Matrix	aParameters	Sample Notes
Trip Blank	11/27/2017 8:00	aqueous	Subcontract - Perfluorinated Compounds EPA Method 537 (VAL)	
NB-5	11/27/2017 13:00	aqueous	Subcontract - Perfluorinated Compounds EPA Method 537 (VAL)	
FD-1	11/27/2017 13:10	aqueous	Subcontract - Perfluorinated Compounds EPA Method 537 (VAL)	
NBR-2	11/27/2017 15:35	aqueous	Subcontract - Perfluorinated Compounds EPA Method 537 (VAL)	

EAI ID# 176437 **Project State: NH**

Project ID: 5042

Company Vista Analytical Laboratory
Address 1104 Windfield Way
Address El Dorado Hills, CA 95762
Account #
Phone # (916) 673-1520
Fax Number

Results Needed by: Preferred date
QC Deliverables
☒ A ☐ A+ ☐ B ☐ B+ ☐ C ☐ P

Notes about project:
Email pdf of results and invoice to customerservice@eailabs.com.

NHDES 23 Compound List

PO #:47274 **EAI ID# 176437**

Please call prior to analyzing, if RUSH surcharges will be applied.

Samples Collected by: Chris Johnson 11/30/17 1530 UPS

Relinquished by	Date/Time	Received by
UPS	12/04/17 0943	[signature]
Relinquished by	Date/Time	Received by

Eastern Analytical, Inc. 25 Chenell Dr. Concord, NH 03301 Phone: (603)228-0525 1-800-287-0525 Fax: (603)228-4591

As a subcontract lab to EAI, you will defend, indemnify and hold Eastern Analytical, Inc., its officers, employees, and agents harmless from and against any and all liability, loss, expense or claims for injury or damages arising out of the performance against this chain of custody but only in proportion to and to the extent such liability, loss, expense, or claims for injury or damages are caused by or result from the negligent or intentional acts or omissions of you as a subcontract lab, your officers, agents or employees

CHAIN-OF-CUSTODY RECORD

eastern analytical
professional laboratory services

1701847

EAI ID# **176437**

31

Sample ID	Date Sampled	Matrix	aParameters	Sample Notes
Field Blank	11/28/2017 9:55	aqueous	Subcontract - Perfluorinated Compounds EPA Method 537 (VAL)	

EAI ID# **176437** Project State: NH

Project ID: 5042

Company Vista Analytical Laboratory
Address 1104 Windfield Way
Address El Dorado Hills, CA 95762
Account #
Phone # (916) 673-1520
Fax Number

Results Needed by: Preferred date

QC Deliverables

☒ A ☐ A+ ☐ B ☐ B+ ☐ C ☐ P

Notes about project:

Email pdf of results and invoice to customerservice@eailabs.com.

NHDES 23 Compound List

PO #: 47274 EAI ID# **176437**

Please call prior to analyzing, if RUSH surcharges will be applied.

Samples Collected by: Chris Johnson 11/30/17 1550 CES

Relinquished by	Date/Time	Received by
UPS		
		12/04/17 0943
Relinquished by	Date/Time	Received by

Vista Analytical Laboratory

Sample Log-in Checklist

Vista Work Order #: 1701847 **TAT** std

Samples Arrival:	**Date/Time** 12/04/17 0931	**Initials:** WWS	**Location:** WR-2 **Shelf/Rack:** N/a
Logged In:	**Date/Time** 12/05/17 1419	**Initials:** WWS	**Location:** WR-2 **Shelf/Rack:** E-2

Delivered By:	FedEx	(UPS)	On Trac	GSO	DHL	Hand Delivered	Other
Preservation:	(Ice) *		Blue Ice		Dry Ice		None

Temp °C: 9.5 (uncorrected)	**Time:** 0941 12/4/17 WWS	DT-3 WWS **Thermometer ID:** ~~IR-T~~ 12/04/17
Temp °C: 9.5 (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 # 1Z X46 599 01 9234 1196	✓		
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?						✓
Preservation Documented:	$Na_2S_2O_3$ WWS 12/05/17	(Trizma)	(None)	(Yes)	No	NA
Shipping Container	Vista	(Client)	Retain	(Return)	Dispose	

Comments: * ice was completely melted upon receival

Page 1 of 1

CHAIN-OF-CUSTODY RECORD

BOLD FIELDS REQUIRED. PLEASE CIRCLE REQUESTED ANALYSIS.

176437

SAMPLE I.D.	SAMPLING DATE / TIME *IF COMPOSITE, INDICATE BOTH START & FINISH DATE / TIME	MATRIX (SEE BELOW)	GRAB/*COMPOSITE	VOC: 524.2 BTEX; 524.2 MTBE ONLY; 524.2 (8260) 624 VTICS; 1,4 DIOXANE	VOC: 8021 BTEX HALOS	VOC: 8015 GRO MAVPH	SVOC: (8270) 625 SVTICS EDB DBCP; (ABN) A BN PAH	SVOC: TPH8100 LI L2	SVOC: 8015 DRO MAEPH	SVOC: PEST 608 PCB 608; (PEST 808) PCB 8082; OIL & GREASE 1664 TPH 1664	TCLP: TCLP 1311 VOC PEST; ABN METALS HERB	METALS: DISSOLVED METALS (LIST BELOW); TOTAL METALS (LIST BELOW)	INORGANICS: TS TSS TDS SPEC. CON.	INORGANICS: BR CL F SO4 NO2 NO3 NO2NO3	INORGANICS: BOD CBOD T. ALK.	INORGANICS: TKN NH3 T. PHOS. O. PHOS.	INORGANICS: pH T. RES. CHLORINE	INORGANICS: COD PHENOLS TOC DOC	INORGANICS: TOTAL CYANIDE TOTAL SULFIDE	INORGANICS: REACTIVE CYANIDE REACTIVE SULFIDE FLASHPOINT IGNITABILITY	MICRO: TOTAL COLIFORM E. COLI FECAL COLIFORM	MICRO: ENTEROCOCCI HETEROTROPHIC PLATE COUNT	OTHER: 537 PFAS	OTHER	OTHER	# OF CONTAINERS	NOTES MEOH VIAL #
Trip Blank	11/27/17 0800	TB	G		X																				X			4	
NB-5	1300	GW	G		X		X			X		X													X			7	
FD-1	1310	GW	G		X		X			X		X													X			7	
NBR-2	1535	GW	G		X		X			X		X													X			7	
NB-4	11/28/17 0925	GW	G		X		X			X		X																5	
Field Blank	0955	TB	G																						X			2	
NBR-1	1020	GW	G		X		X			X		X																5	
MATRIX: A-AIR; S-SOIL; GW-GROUND WATER; SW-SURFACE WATER; DW-DRINKING WATER; WW-WASTE WATER PRESERVATIVE: H-HCL; N-HNO_3; S-H_2SO_4; Na-NaOH; M-MEOH				H								N																

PROJECT MANAGER: Tim Andrews
COMPANY: Nobis Engineering
ADDRESS: 18 Chenell Drive
CITY: Concord **STATE:** NH **ZIP:** 03301
PHONE: (603) 224-4182 **EXT.:**
FAX:
E-MAIL: TAndrews@nobiseng.com
SITE NAME: L.W. Packard Mill
PROJECT #: 93002.00
STATE: NH MA ME VT **OTHER:**
REGULATORY PROGRAM: NPDES: RGP POTW STORMWATER OR GWP, OIL FUND, BROWNFIELD OR OTHER:
QUOTE #: **PO #:**

DATE NEEDED: Standard TAT

QA/QC REPORTING LEVEL
A B C
OR
PRESUMPTIVE CERTAINTY

REPORTING OPTIONS
PRELIMS: YES OR NO

ELECTRONIC OPTIONS
(E-MAIL) (PDF) EQUIS EXCEL

TEMP. 2.5 °C
ICE? (YES) NO

SAMPLER(S): N. Zanchi

RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:
[signature]	11-29-17	11:30	[signature]
[signature]	11/29/17	11:38	[signature]

METALS: 8 RCRA (13 PP) FE, MN PB, CU
OTHER METALS:
SAMPLES FIELD FILTERED? ☒ YES ☐ NO
NOTES: (IE: SPECIAL DETECTION LIMITS, BILLING INFO, IF DIFFERENT)

SITE HISTORY:
SUSPECTED CONTAMINATION:
FIELD READINGS:

Eastern Analytical, Inc.
professional laboratory and drilling services
25 CHENELL DRIVE | CONCORD, NH 03301 | TEL: 603.228.0525 | 1.800.287.0525 | E-MAIL: CUSTOMERSERVICE@EASTERNANALYTICAL.COM | WWW.EASTERNANALYTICAL.COM

(WHITE: ORIGINAL GREEN: PROJECT MANAGER)

Eastern Analytical, Inc.

professional laboratory and drilling services

Tim Andrews
Nobis Engineering
18 Chenell Drive
Concord , NH 03301

Subject: Laboratory Report

Eastern Analytical, Inc. ID: 176901
Client Identification: L.W. Packard Mill | 70702.00
Date Received: 12/8/2017

Dear Mr. Andrews :

Enclosed please find the laboratory report for the above identified project. All analyses were performed in accordance with our QA/QC Program. Unless otherwise stated, holding times, preservation techniques, container types, and sample conditions adhered to EPA Protocol. Samples which were collected by Eastern Analytical, Inc. (EAI) were collected in accordance with approved EPA procedures. Eastern Analytical, Inc. certifies that the enclosed test results meet all requirements of NELAP and other applicable state certifications. Please refer to our website at www.eailabs.com for a copy of our NELAP certificate and accredited parameters.

The following standard abbreviations and conventions apply to all EAI reports:

Solid samples are reported on a dry weight basis, unless otherwise noted
< : "less than" followed by the reporting limit
> : "greater than" followed by the reporting limit
%R : % Recovery

Eastern Analytical Inc. maintains certification in the following states: Connecticut (PH-0492), Maine (NH005), Massachusetts (M-NH005), New Hampshire/NELAP (1012), Rhode Island (269) and Vermont (VT1012).

The following information is contained within this report: Sample Conditions summary, Analytical Results/Data, Quality Control data (if requested) and copies of the Chain of Custody. This report may not be reproduced except in full, without the the written approval of the laboratory.

If you have any questions regarding the results contained within, please feel free to directly contact me or the chemist(s) who performed the testing in question. Unless otherwise requested, we will dispose of the sample(s) 30 days from the sample receipt date.

We appreciate this opportunity to be of service and look forward to your continued patronage.

Sincerely,

Lorraine Olashaw, Lab Director | 12.15.17 Date | 3 # of pages (excluding cover letter)

SAMPLE CONDITIONS PAGE

EAI ID#: **176901**

Client: **Nobis Engineering**

Client Designation: **L.W. Packard Mill | 70702.00**

Temperature upon receipt (°C): 7.1 **Received on ice or cold packs (Yes/No): Y**

Acceptable temperature range (°C): 0-6

Lab ID	Sample ID	Date Received	Date Sampled	Sample Matrix	% Dry Weight	Exceptions/Comments (other than thermal preservation)
176901.01	NB-3	12/8/17	12/8/17	aqueous		Adheres to Sample Acceptance Policy
176901.02	NB-2	12/8/17	12/8/17	aqueous		Adheres to Sample Acceptance Policy

Samples were properly preserved and the pH measured when applicable unless otherwise noted. Analysis of solids for pH, Flashpoint, Ignitability, Paint Filter, Corrosivity, Conductivity and Specific Gravity are reported on an "as received" basis.
Immediate analyses, pH, Total Residual Chlorine, Dissolved Oxygen and Sulfite, performed at the laboratory were run outside of the recommended 15 minute hold time.
All results contained in this report relate only to the above listed samples.
References include:
1) EPA 600/4-79-020, 1983
2) Standard Methods for Examination of Water and Wastewater,20th Edition, 1998 and 22nd Edition, 2012
3) Test Methods for Evaluating Solid Waste SW 846 3rd Edition including updates IVA and IVB
4) Hach Water Analysis Handbook, 2nd edition, 1992

LABORATORY REPORT

EAI ID#: **176901**

Client: **Nobis Engineering**

Client Designation: **L.W. Packard Mill | 70702.00**

Sample ID:	NB-3	NB-2
Lab Sample ID:	176901.01	176901.02
Matrix:	aqueous	aqueous
Date Sampled:	12/8/17	12/8/17
Date Received:	12/8/17	12/8/17
Units:	ug/L	ug/L
Date of Extraction/Prep:	12/11/17	12/11/17
Date of Analysis:	12/12/17	12/12/17
Analyst:	SG	SG
Method:	8082A	8082A
Dilution Factor:	1	1
PCB-1016	< 0.2	< 0.2
PCB-1221	< 0.2	< 0.2
PCB-1232	< 0.2	< 0.2
PCB-1242	< 0.2	< 0.2
PCB-1248	< 0.2	< 0.2
PCB-1254	< 0.2	< 0.2
PCB-1260	< 0.2	< 0.2
PCB-1262	< 0.2	< 0.2
PCB-1268	< 0.2	< 0.2
TMX (surr)	**87 %R**	**93 %R**
DCB (surr)	**103 %R**	**110 %R**

Acid clean-up was performed on the samples and associated batch QC.

Page 1 of 1

Chain-of-Custody Record

176901

Bold Fields Required. Please Circle Requested Analysis.

Sample I.D.	Sampling Date/Time *If Composite, Indicate Both Start & Finish Date/Time	Matrix (see below)	Grab/*Composite	VOC: 524.2 524.2 BTEX	VOC: 524.2 MTBE only	VOC: 8260B 624 1, 4 Dioxane	VOC: 8021B BTEX HALOS	VOC: 8015B GRO MAVPH	SVOC: 8270D 625 SVTICs EDB DBCP ABN A BN PAH	SVOC: TPH8100 L1 L2	SVOC: 8015B DRO MAEPH	SVOC: PEST 608 PCB 608 PEST 8081A PCB 8082	SVOC: Oil & Grease 1664 TPH 1664	TCLP: TCLP 1311 VOC Pest ABN Herb	Metals: Dissolved Metals (List Below)	Metals: Total Metals (List Below)	Inorganics: TS TSS TDS Spec. Con.	Inorganics: Br Cl F SO_4 NO_2 NO_3 NO_2NO_3	Inorganics: BOD CBOD T. Alk.	Inorganics: TKN NH_3 T. Phos. O. Phos.	Inorganics: pH T. Res. Chlorine	Inorganics: COD Phenols TOC DOC	Inorganics: Total Cyanide Total Sulfide	Inorganics: Reactive Cyanide Reactive Sulfide Flashpoint Ignitability	Micro: Total Coliform E. Coli Fecal Coliform	Micro: Enterococci Heterotrophic Plate Count	Other	# of Containers	Notes MeOH Vial #
NB-3	12/8/17 1200	GW	G									X																1	
NB-2	12/8/17 1325	GW	G									X																1	

Matrix: A-Air; S-Soil; GW-Ground Water; SW-Surface Water; DW-Drinking Water; WW-Waste water

Preservative: H-HCL; N-HNO_3; S-H_2SO_4; Na-NaOH; M-MEOH

Project Manager: Tim Andrews

Company: Nobis Engineering

Address: 18 Chenell Drive

City: Concord **State:** NH **Zip:** 03301

Phone: (603) 224-4182 **Ext.:**

Fax:

E-Mail: TAndrews@nobiseng.com

Site Name: L.W. Packard Mill

Project #: 70702.00

State: NH MA ME VT **Other:**

Regulatory Program: NPDES: RGP POTW Stormwater or GWP, Oil Fund, Brownfield or Other:

Quote #: **PO #:**

Date Needed: Standard TAT

QA/QC Reporting Level

A B C

OR

Presumptive Certainty

Reporting Options

Prelims: (Yes) or No

If Yes: Fax or (PDF)

Electronic Options

No Fax (E-Mail) (PDF) Equis

Temp. 7.1 °C

Ice? (Yes) No

Sampler(s): N. Zanchi

Relinquished By:	Date:	Time:	Received By:
	12-8-17	1450	
Relinquished By:	Date:	Time:	Received By:
Relinquished By:	Date:	Time:	Received By:

Metals: 8 RCRA 13 PP Fe, Mn Pb, Cu

Other Metals:

Samples Field Filtered? ☐ Yes ☐ No

Notes: (ie: Special Detection Limits, Billing Info, If Different)

Site History:

Suspected Contamination:

Field Readings:

Eastern Analytical, Inc.
professional laboratory & drilling services
25 Chenell Drive | Concord, NH 03301 | Tel: 603.228.0525 | 1.800.287.0525 | Fax: 603.228.4591 | E-Mail: customerservice@eailabs.com | www.eailabs.com

(WHITE: Original GREEN: Project Manager)