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29 Hazen Drive; PO Box 95
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FALL 2020 MONITORING REPORT
New Hampshire Plating Company Superfund Site
Wright Avenue
Merrimack, New Hampshire
NHDES Site No. 198406030
NHDES Project No. 1951
Project Type: Superfund

Prepared For:
New Hampshire Department of Environmental Services
Waste Management Division
Hazardous Waste Remediation Bureau
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04.0190987.11

Date of Report: January 18, 2021

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FALL 2020 MONITORING REPORT

New Hampshire Plating Company Superfund Site
Wright Avenue
Merrimack, New Hampshire

NHDES Site No. 198406030
NHDES Project No. 1951
CERCLIS ID No. NHD001091453

January 2021
File No. 04.0190987.11

PREPARED FOR:

New Hampshire Department of Environmental Services
Hazardous Waste Remediation Bureau
Concord, New Hampshire

and

United States Environmental Protection Agency
Region I - New England
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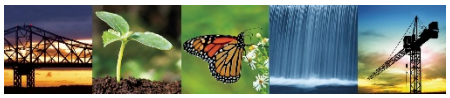

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Via Email

January 18, 2021
File No. 04.0190987.11

Mr. Michael Summerlin, P.E.
New Hampshire Department of Environmental Services
Waste Management Division
29 Hazen Drive, P.O. Box 95
Concord, New Hampshire 03302-0095

Re: Fall 2020 Monitoring Report
New Hampshire Plating Company Superfund Site (Site)
Wright Avenue
Merrimack, New Hampshire
NHDES Site No. 198406030
NHDES Project No. 1951

Dear Michael:

GZA GeoEnvironmental, Inc. (GZA) is pleased to submit the attached Fall 2020 Monitoring Report to New Hampshire Department of Environmental Services for the above-referenced Site. Routine monitoring activities at the Site included sampling and analyses of groundwater. This report summarizes the work performed and findings of GZA's groundwater monitoring and Site maintenance activities, as well as our conclusions and recommendations.

We appreciate the opportunity to have worked with you on this project. Should you have any questions, please call the undersigned at (603) 232-8765.

Very truly yours,

GZA GEOENVIRONMENTAL, INC.

Tanya P. Justham
Senior Project Manager

Claire G. Lund, P.E.
Consultant / Reviewer

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Attachment: Report

An Equal Opportunity Employer M/F/V/H

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1.0 INTRODUCTION

This report presents a summary of Fall 2020 monitoring activities conducted by GZA GeoEnvironmental, Inc. (GZA) at the New Hampshire Plating Company (NHPC) Superfund Site (Site) in Merrimack, New Hampshire (New Hampshire Department of Environmental Services [NHDES] Site No. 198406030; CERCLIS Site ID No. NHD001091453). The work described herein was performed on behalf of the NHDES and the United States Environmental Protection Agency (EPA).

Natural Attenuation (NA) is a primary component of the selected remedy in the Record of Decision[1] (ROD) to achieve the "Management of Migration" Remedial Action Objectives for the Site. Groundwater monitoring discussed herein is conducted to support continued evaluation of the effectiveness of the NA component and specifically includes the sampling and chemical analysis of groundwater from an existing network of monitoring wells or subset of the network. Supplemental investigation activities conducted during 2020 included the collection of groundwater samples for analysis of per- and polyfluoroalkyl substances (PFAS). The Fall 2020 sampling was performed in accordance with the Hazardous Waste Remediation Bureau (HWRB) Master Quality Assurance Project Plan (QAPP) EPA RFA# 18008 current at the time of sampling and the EPA- and NHDES-approved September 2020 Sampling Analysis Plan (SAP).

Authorization to proceed on this project was granted by NHDES in accordance with our proposed Work Scope and Budget Estimate dated September 18, 2020, and NHDES' Work Scope Approval (WSA) dated September 21, 2020 (WSA#2). The work was performed in general accordance with our NHDES Contract for Environmental Consulting Services effective as of July 1, 2019 through June 30, 2023 as approved by the Governor and Council on June 5, 2019.

This report presents GZA's field observations, results, technical opinions, and recommendations. The opinions included in this report are subject to modification based on additional information obtained by GZA or provided to GZA by other parties and the Limitations presented in **Appendix A**.

2.0 BACKGROUND SITE INFORMATION

2.1 SITE DESCRIPTION

The NHPC properties are comprised of two parcels of land located on Wright Avenue, off the Daniel Webster Highway in Merrimack, New Hampshire (see **Figure 1A** for a Site Locus and Site Exploration Plan). The 13-acre combined parcels are enclosed by an 8-foot-high chain-link security fence and are situated in an area with mixed land use, including light manufacturing, commercial businesses, and a few private residential dwellings. The study area of the NHPC Superfund Site includes the NHPC properties and the adjoining properties as follows:

- Wright Avenue and a privately-owned property, formerly owned by the Young Men's Christian Association (former YMCA) to the south;

[1] Declaration for the Record of Decision, New Hampshire Plating Superfund Site, Merrimack, New Hampshire, dated September 28, 1998.

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- Acme Pressure Washing (Acme) (formerly Aggregate Industries and the F&S Transit Mix Company) to the southwest. The Acme property was included in the NHPC properties between 1962 and 1965 prior to being sold to Aggregate Industries;

- JCI property and the Boston and Maine railroad right-of-way to the east; and beyond by Transupport, Inc., Combat Corp, and Equivise Ltd.; and

- New England Pole and Wood Treating Company (NE Pole) property to the southeast.

Cota Industrial Park and the National School Bus Service, Inc., property adjoin the NHPC property to the north and Synergy Self Storage adjoins the property to the west; however, these properties are situated hydraulically upgradient of the Site, and not included within the study area.

The NHPC Site is located on a broad stream terrace along the western bank of the Merrimack River, which is situated approximately 500 feet toward the east. Horseshoe Pond, an oxbow lake associated with the Merrimack River, is a recreational water body located on the southern boundary of the study area, approximately 600 feet south of the NHPC properties. The majority of the NHPC Site, 10.3 acres, is located within the 100-year floodplain, which considers a base flood elevation of 119 feet[2] (U.S. Department of Housing and Urban Development, 1979). The former lagoon/wetland system occupied approximately 2.7 acres.

2.2 BRIEF HISTORY

NHPC operated an electroplating facility on the property from 1962 to 1985. The metals used in the electroplating process included cadmium, zinc, chromium, copper, lead, nickel, tin, gold, silver, aluminum, iron, and manganese. Cyanide was also used in part of the electroplating process. NHPC also used chlorinated organic solvents for de-greasing including: trichloroethylene (TCE); 1,1,1-trichloroethane (TCA); and tetrachloroethylene (PCE). Chlorinated solvent use was reportedly discontinued during the latter part of the 1970s.

Treated and untreated wastes and wastewater from the process areas were discharged into drainage channels within the concrete floors of the building, and then gravity-drained through an underground discharge pipe into unlined waste lagoons located approximately 325 feet north of the former NHPC building. These former lagoons occupied wetlands that developed naturally in a series of meander scars formed by the Merrimack River. Wastes were discharged directly into a primary infiltration lagoon (Lagoon 1). The lagoon system was constructed to allow the discharged wastes to overflow from the primary lagoon into a secondary infiltration lagoon (Lagoon 2) and into subsequent overflow lagoons (Lagoons 3 and 4) and finally into the northern wetland during periods of high discharge from the facility; however, historical aerials suggest that Lagoon 1 and Lagoon 2 may have drained southwest to the Southern Wetland (adjacent to the Acme property) during periods of high facility discharge and high precipitation. Refer to **Figure 1B** for an illustration of the former locations of the lagoons. Approximately 35,000 to 60,000 gallons of wastewater were generated and discharged to the lagoons each day.

In 1980, NHPC notified the EPA that it was a hazardous waste generator in accordance with the Resource Conservation and Recovery Act (RCRA) Section 3001 regulations and continued to operate under an interim permit. As the result of inspections conducted by EPA and NHDES between 1982 and 1985, NHPC received several

[2] National Geodetic Vertical Datum.

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Notices of Violation/Orders of Abatement for failure to comply with RCRA transportation, storage, and disposal requirements, and for inadequate treatment of its cyanide wastewater prior to discharge.

2.3 EPA LIMITED REMOVAL ACTIONS AND ASSESSMENT

Operations at NHPC ceased during November 1985. During June 1987, the NHDES initiated interim remedial measures at the Site. Wastes including plating solutions, cyanide salts, and other materials were removed from the NHPC building. Sludge and sediment were also removed from the building floors and disposed of at an approved off-Site facility. The NHDES also treated sludge and process wastewater in Lagoon 1 with approximately 127 tons of lime and 800 gallons of a sodium hypochlorite solution.

EPA initiated an emergency removal action during October of 1989, and after a preliminary study in the fall of 1990 and spring of 1991, performed a limited removal action. Approximately 13,600 tons of sludge and soil were excavated, solidified on Site in an ash/mortar mixture, and encapsulated in a high-density polyethylene (HDPE) solidified material storage cell, referred to as the monolith, at a location immediately north of the former NHPC building (**Figure 1B**).

An additional 5,000 tons of soil were disposed off-Site at a secure landfill. As the last step of the removal action, approximately 5,600 cubic yards of untreated soils excavated from the overflow lagoon areas were placed in Lagoon 1. The soils were covered with an HDPE cap and approximately 2 feet of clean fill. The other excavated lagoons were covered with between 1 to 2 feet of clean fill.

EPA also conducted a Non-Time-Critical Removal Action within the NHPC building during November and December of 1994. Laboratory wastes left in the NHPC building were packed in drums and shipped off-Site for disposal; asbestos-containing materials were removed; process equipment and the building were decontaminated; the building, floor slab, and foundation were demolished; an underground storage tank was removed; the exposed soils were characterized; and the building footprint was graded and covered with a geomembrane. Both non-hazardous and hazardous materials generated during the building removal were disposed off-Site.

A Remedial Investigation (RI), completed during 1996, included the determination of contaminant nature and extent, evaluation of contaminant migration in groundwater, and assessment of risks to human health and the environment. Results of the RI indicated the presence of elevated metals concentrations in Site soils and the presence of volatile organic compounds (VOCs) and metals at concentrations higher than groundwater quality standards in the underlying hydrogeologic units. Detailed discussions of the Site description, Site history, nature and extent of contamination (as determined by the RI), and contaminant fate and transport can be found in the *Draft Final Remedial Investigation Report* (Halliburton NUS Corporation and Raytheon Engineers & Constructors, Inc., 1996). In addition to the eight VOC contaminants of concern (COCs) identified as exceeding drinking water standards at the Site, five metal COCs were identified as affecting groundwater quality via leaching from contaminated soils, including cadmium, chromium, arsenic, lead, and nickel.

A Baseline Human Health Risk Assessment (HHRA) was performed to estimate potential adverse human health and environmental effects from exposure to contaminated media at the Site. The HHRA concluded that an unacceptable non-carcinogenic risk (Hazard Index [HI] greater than 1.0) existed from exposure to cadmium in Site soils and for groundwater. Unacceptable carcinogenic (HI 1.7×10^{-3} to 1.4×10^{-2}) and non-carcinogenic (HI 99-140) risks were determined from exposure to contaminated groundwater through ingestion. In addition, a Baseline Ecological Risk Assessment (BERA) was conducted which determined that exposure to cadmium in Site soils would pose probable adverse ecological effects.

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Because both soil and groundwater required remediation to address unacceptable risks, a Feasibility Study (FS) report (Brown and Root, 1997) evaluated five soil remedial alternatives and three groundwater response alternatives. The basis for the soil remediation was to address the existing unacceptable ecological threats to local species and to eliminate the ongoing contribution to groundwater contamination through leaching. The basis for the groundwater remediation was unacceptable human health risks and exceedances of Federal and State drinking water standards.

One component of the FS included using a numerical model to estimate the potential soil leaching and groundwater transport for various metals of concern. The modeling effort produced estimates of Site soil concentrations that would leach metals of concern in excess of the federal Maximum Contaminant Levels (MCLs) or the New Hampshire Ambient Groundwater Quality Standards (AGQS) included in New Hampshire Code of Administrative Rules, Chapter Env-Or 600 *Contaminated Sites Management* (Env-Or 603.03) and were used to guide the selection of alternatives in the FS. The leaching of cadmium at the Site was addressed in the modeling as the principal and representative soil COC.

2.4 EPA'S RECORD OF DECISION AND REMEDIAL ACTIONS

A ROD was issued in 1998 that identified the selected remedy to address the Site's contaminated soils and provided for the long-term monitoring of the Site's groundwater quality. The remedy involved in-place treatment of metal-contaminated soil by chemical fixation, natural attenuation of contaminated groundwater in the overburden hydrogeologic units, and institutional controls to allow for acceptable re-development and prevent future ingestion of contaminated groundwater. The remedy selected was a comprehensive approach designed to address current and potential future risks caused by soil and groundwater contamination at the Site. The remedial measures were selected to prevent leaching of metal contaminants to groundwater, eliminate unacceptable exposure to sensitive ecosystems, prevent the ingestion and direct contact with contaminated groundwater, and allow for restoration of the Site to beneficial uses.

The contaminants detected within the NHPC Site correspond to the known plating effluent constituents including metals, chlorinated solvents, and cyanide. According to the ROD, eight VOCs were detected in groundwater at concentrations which exceeded the federal MCLs. These included: TCE, 1,1-dichloroethene (1,1-DCE); PCE; vinyl chloride (VC); TCA; cis- and trans-1,2-dichloroethene (cis- and trans-DCE, respectively); 1,2-dichloroethane (1,2-DCA); and chloroform. Five metals were also detected in the groundwater above the established MCLs, including cadmium, nickel, chromium, arsenic, and lead. TCE and cadmium were the contaminants that most frequently exceeded their respective MCLs of five micrograms per liter (µg/L).

Contaminants of Concern and Associated AGQS and ROD CUL Criteria

COMPOUND	AGQS µg/l	ROD CULs µg/l	Basis for ROD CULs
1,1,1-Trichloroethane	200	200	Federal MCL
1,1- Dichloroethene	7	7	Federal MCL
1,2- Dichloroethene (cis/trans DCE)	70/100	70/100	Federal MCL
1,2- Dichloroethane	5	5	Federal MCL
Chloroform (Trichloromethane)	70	100	Federal MCL
Trichloroethene (Trichloroethylene, TCE)	5	5	Federal MCL
Tetrachloroethene (Tetrachloroethylene, PCE)	5	5	Federal MCL
Vinyl Chloride	2	2	Federal MCL
Cyanide	200	200	Federal MCL

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COMPOUND	AGQS µg/l	ROD CULs µg/l	Basis for ROD CULs
Arsenic	10	50	Federal MCL
Cadmium	5	5	Federal MCL
Chromium	100	100	Federal MCL
Lead	15	15	Federal MCL
Manganese	300	--	No preliminary remediation goal developed for this contaminant
Nickel	100	100	Federal MCL

Notes:
1. ROD CULs = Cleanup Levels found in the ROD
2. AGQS = New Hampshire Ambient Groundwater Quality Standards, Env-Or 600
3. Federal MCL = Safe Drinking Water Act Maximum Contaminant Level for drinking water
4. µg/L = Micrograms per liter
5. Cis-DCE = 70 µg/L and Trans-DCE = 100 µg/L
6. The arsenic AGQS changed from 50 to 10 µg/L in October 2001
7. The manganese AGQS changed from 840 µg/L to 300 µg/L on January 1, 2021

The remedial action (RA) operations began in 2004 and consisted of contaminated soils excavation; soil treatment by chemical fixation; consolidation of treated soil and crushed monolith materials into the former lagoons; soil cover installation over the treated soil and crushed monolith material backfill; and Site grading to allow for possible future use of the remediated Site and to maintain flood storage capacity. During the RA, a total of approximately 95,000 tons of contaminated sludge and soil was excavated, treated through chemical fixation, and backfilled/re-graded to subgrade elevation. A 2-foot-thick permeable soil cover was placed over the treated soils backfill to prevent exposure to receptors. Final Site grading maintains flood storage capacity. Site restoration (reseeding and additional landscaping) was completed in 2007 (see the *Source Control Remedial Action Report* [Tetra Tech, 2007a] for detailed discussion and data on the soil RA activities).

A groundwater investigation to support the completion of the management of migration (MOM) remedy and the positioning of replacement monitoring wells for the Site groundwater monitoring network was performed during October 2006. The groundwater analytical data were to be used to support the evaluation of the NA remedy in the shallow and deep overburden aquifers as well as the bedrock aquifer.

As part of these investigations, groundwater profiling was conducted in October 2006 to better define the extent of the TCE groundwater contaminant plume in the southwestern portion of the Site, as well as to determine if the source and migration pathway of TCE in the area of MW-104S, located south and cross-gradient of the NHPC site, originated from the Site or an off-Site source area. Eight borings were advanced using a GeoProbe and direct push methodology at locations south of the Site to conduct groundwater profiling using a Waterloo® profiler. A total of 61 samples were collected. This data was used to define the horizontal and vertical extent of the western boundary of the TCE plume and determine the location for monitoring wells.

During January and February 2007, 26 monitoring wells were installed to supplement the existing Site groundwater monitoring network for a total of 46 monitoring wells used to monitor long-term groundwater quality as part of the Site groundwater remedy. An *Interim Management of Migration Remedial Action Report* (Tetra Tech, 2007b) was issued during 2007 that summarizes activities conducted in support of the completion of the RA management of migration remedy.

Except for 2015 and 2016, long-term monitoring of groundwater was conducted annually from 2007 through September 28, 2017, when the Site transitioned from EPA to State lead for future Operation and Maintenance

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(O&M). The first 10 years of monitoring activities following completion of a Fund-lead source control action are considered Long Term Response Actions (LTRA) and are followed by O&M activities to be implemented by the State. The O&M activities are on-going and focus on continued monitoring and maintenance of the Site and the groundwater monitoring well network.

2.5 SUPPLEMENTAL INVESTIGATIONS PRIOR TO 2015

Water level data collected during 2012 using transducers deployed in selected monitoring wells at the Site, indicated that withdrawal of groundwater from a groundwater supply well located on the JCI property (JCI production well [JCPROD-1]) influences groundwater hydraulic head within the bedrock and deep overburden hydraulic units. The influence of pumping the production well results in deep overburden groundwater flow migrating toward the east beneath the northern and eastern most central portions of the NHPC properties, and locally induced bedrock groundwater flow toward the production well. Downward vertical gradients observed beneath the central and northern portions of the NHPC properties and beneath areas along the northeastern edge of the Site in the vicinity of JCPROD-1, are likely due, at least in part, to the operation of the approximately 350-foot-deep bedrock production well.

GZA developed a three-dimensional numerical model of overburden stratigraphy to evaluate relationships between hydrostratigraphy and contaminant distribution. Based on this model, additional monitoring wells were needed to evaluate and monitor contaminant transport and concentrations of COCs in groundwater toward the southwest of the Site. Three monitoring wells (shallow overburden well MW-401S, deep overburden well MW-401D, and bedrock well MW-400R) were installed during fall 2012 on the adjoining Acme property at the southwestern corner of the Site and were sampled during subsequent monitoring rounds.

A deep overburden well (MW-402D) was also installed during 2012 along the northeastern border of the NHPC property proximate to the JCI property line as part of further evaluation of elevated TCE concentrations historically observed at JCMW-2D on the JCI property. The soil quality data collected during the advancement of the deep overburden well did not indicate an on-Site residual TCE source area that could be associated with TCE contamination in the downgradient monitoring well JCMW-2D. In addition, groundwater quality samples were collected during 2013, 2014, and 2018 from each of the existing monitoring wells located on the JCI property to provide supplemental data for the evaluation of the location of the residual source area. A residual TCE source area associated with JCMW-2D has not been identified; however, it is not clear whether the high concentrations at JCI are related to past migration from NHPC or a local source of dissolved contamination. The investigation is ongoing.

2.6 EPA'S FIVE-YEAR REVIEWS (2009, 2014, AND 2020)

The Site's first Five-Year Review (FYR) Report was signed by EPA's Director of the Office of Site Remediation and Restoration on December 29, 2009. The first FYR concluded that the remedy at the NHPC Superfund Site was currently protective, for exposures envisioned by the ROD; however, in order for the remedy to be protective in the long-term, the following actions needed to be taken:

- Implement institutional controls (ICs), including the establishment of an approved Groundwater Management Zone (GMZ).

- Evaluate groundwater monitoring data at the Site as it relates to abutting property uses and the potential for vapor intrusion into indoor air.

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- Monitor metals in the pore water and sediments in the transition zones between groundwater and surface water in the Merrimack River and Horseshoe Pond.

To begin addressing the actions identified in the First FYR, the following were completed or are on-going:

- An evaluation of the potential for vapor intrusion into indoor air at the NE Pole property was conducted by EPA during 2012. EPA concluded that vapor intrusion was not a pathway of concern for the NE Pole portion of the Site. TCE in off-Site shallow groundwater monitoring wells MW-203S and MW-204S on the Equivise and Transupport, Inc. properties, respectively, were noted above the EPA vapor intrusion screening level (VISL) during one or more sampling rounds prior to the First FYR. The evaluation of a potential vapor intrusion pathway for the buildings on these two properties was not included in the EPA 2012 study. EPA and NHDES specifically excluded these two properties due to the fact that there were multiple VOC sources on the properties at the time and, consequently, it would be difficult to determine/segregate contributions from the NHPC Site. Based on the data collected at these two properties during the SRI, additional vapor intrusion assessment may be warranted;

- Monitoring of metals in pore water within the transition zone between groundwater and surface water in the Merrimack River and Horseshoe Pond began during 2010 and was completed during 2013. Based on EPA's assessment of the data collected by GZA during 2010 and 2013, EPA concluded that "*Although some NRWQC [National Recommended Water Quality Criteria] of cadmium, lead, and nickel were exceeded, the SEM/AVS [Simultaneously Extracted Metals / Acid Volatile Sulfide] ratio of less than 1 in sediment suggests that these metals are not bioavailable…[t]he results with sediment and surface water suggest that adverse effects on aquatic organisms are unlikely because risk-based benchmarks were not exceeded*." No further activities were required; and

- Discussions between EPA, the Town of Merrimack and NHDES have been started; however, not all of the recommended ICs have been implemented and completed.

The Site's second FYR Report was signed on December 30, 2014. It was concluded by EPA in the 2014 FYR that the remedy implemented at NHPC was currently protective of human health and the environment because the source control portion of the remedy was successfully implemented and the ROD cleanup goals for soils remained protective. In order for the source control portion of the remedy to be protective in the long-term, ICs, as required in the ROD, would require implementation.

The 2014 FYR also concluded that natural attenuation of contaminants in groundwater had occurred and may be on-going; however, the rates of biological dechlorination of the cVOCs were likely to be low to very low as a result of several limiting factors, including uncertainty with respect to residual mass of cVOCs continuing to act as a long-term source of contamination to the groundwater. The overall contaminant concentration trends and natural attenuation indicator parameters within the monitoring well network suggested that: 1) concentrations of cVOCs in groundwater appeared to be relatively stable, suggesting the potential for a continuing source to be present; and 2) as a result, the clean-up goals established in the 1998 ROD may not be attained within the anticipated time frame established in the ROD (26 to 58 years after completion of the source control component), nor would contaminant migration off-Site be minimized.

The 2014 FYR concluded that for the management of migration portion of the remedy to be protective in the long-term, ICs, as required in the ROD, would need to be implemented. No additional actions were needed for

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protection in the short term as there are no users of Site groundwater and municipal water remains available for consumptive use near the Site.

Given these findings, EPA recommended that further evaluation of the effectiveness of the NA remedy for Site groundwater be conducted to better understand site dynamics and potential Site risks, and to accelerate Site cleanup.

The Site's third FYR Report was signed on February 13, 2020. It was concluded by EPA in the 2020 FYR that the remedy implemented at NHPC was currently protective of human health and the environment because "*the remedy has met soil cleanup goals and there are no current risks remaining at the Site following the completion of the vapor mitigation removal action in September 2019. ICs, in the form of deed notices, are in place for the NHPC properties and currently effective at managing activities and use as well as exposure to contaminated groundwater at the Site*." In order for the source control portion of the remedy to be protective in the long-term, the following actions were recommended:

- "*Further evaluation of the effectiveness of the current natural attenuation groundwater remedy to attain cleanup levels in the timeframe estimated in the ROD and to minimize migration beyond the NHPC properties, and, if needed, evaluation of alternative remedial options, including the use of IC's to assess or address future potential vapor intrusion risk at properties over Site groundwater, to minimize migration beyond the NHPC properties and attain cleanup standards;"*

- *"Further evaluation of Site contaminants, including 1,4-dioxane and PFAS in groundwater to determine if they should be considered Site COCs and have cleanup levels set;"*

- *"Installation of a comprehensive monitoring well network which allows for the vertical and horizontal monitoring of groundwater contamination, the assessment of migration, and the attainment of clean up levels within the shallow and deep overburden aquifers;"*

- *"Continued evaluation of future potential vapor intrusion pathways associated with future reuse;"*

- *"Implementation of ICs in the form of a GMZ, ordinance, deed notice and/or deed restriction;"* and

- *"Implementation of IC's on the current Acme Property to address future use of groundwater and require the continued operation of the installed vapor mitigation system*."

2.7 SUPPLEMENTAL REMEDIAL INVESTIGATION

A Supplemental Remedial Investigation (SRI) was initiated in 2015 to address issues identified during the 2014 FYR. The objectives of this SRI were to delineate the extent of the dissolved-phase TCE contaminant plume in overburden groundwater and further evaluate the mechanism responsible for ongoing contamination in the shallow and deep overburden water bearing zones, particularly relative to downgradient and off-Site contamination to the south, east, and west of the NHPC Site. A further objective of the SRI work performed in 2017 was to assess the potential existence of a complete pathway for TCE-contaminated soil vapor to migrate into the Acme building on the adjoining property.

The SRI concluded that the current horizontal extent and magnitude of VOC concentrations are greater than had been depicted by historical annual groundwater monitoring indicating that NA has not minimized migration of

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contaminants off the NHPC properties or vapor intrusion potential at nearby properties. The higher-permeability shallow and deep hydrogeologic units have persistent, strongly inhibiting conditions for biological degradation and indicators of abiotic degradation are also relatively low; therefore, attenuation within these units is strongly controlled by advection and dispersion. Furthermore, the SRI concluded that the findings (i.e., higher than previously observed concentrations of TCE and low rates of biological and abiotic degradation) support the conclusion from the second FYR that the clean-up levels may not be attained within the anticipated time frame established in the 1998 ROD (26 to 58 years after completion of the source control component).

As part of the SRI and based on elevated TCE concentrations observed in shallow overburden groundwater during the groundwater profiling, EPA conducted vapor intrusion assessment activities on the Acme property including indoor air, sub-slab soil vapor, and soil vapor sampling. Based on the results of the assessment activities, EPA implemented a Removal Action on the Acme property between June and September 2019, which included the installation of two Active Soil Depressurization Systems and new concrete slab in the Acme building and the construction of stormwater collection and mitigation structures to facilitate removal of stormwater surface flow from the Acme property and limit flooding in the Acme building. Stormwater mitigation structures were also constructed on the NHPC properties, including a berm along the western property line between the NHPC properties and the Acme property and a stormwater detention pond, to limit sheet flow from the NHPC properties to Acme and support the stormwater mitigation structures on the Acme property.

The SRI indicated that the monitoring well screened intervals for the Site monitoring well network generally do not span the soil layers with the highest concentrations of VOCs in groundwater. In general, existing screened intervals appear to have been positioned toward the middle of the shallower and deeper high permeability units; whereas vertical groundwater profiling during the SRI suggested that the soil layers where the gradational transitions occur into or out of the lower permeability lacustrine deposits have significantly higher concentrations of dissolved cVOCs.

During November 2018, GZA's subcontractor, Drilex Environmental (Drilex) of Auburn, Massachusetts, installed four new monitoring well couplets, consisting of shallow and deep overburden wells, at the MW-302, MW-303, MW-308, and MW-309 well series locations, and two additional single shallow monitoring wells. The two additional shallow monitoring wells were installed near the northeastern corner of the southern portion of the NHPC properties (MW-403SA) and near the center of the southern portion by the northwestern corner of the former Site building (MW-404SA). Each of the new monitoring wells were installed with a 1-foot screened interval at depths correlating to the highest concentration of TCE detected by the vertical groundwater profiling during the SRI at locations immediately above and immediately below the low permeability lacustrine soils. The intent of the installation of the short-screen monitoring wells was to provide long-term groundwater monitoring locations that more accurately depict VOC plume concentrations near the source (i.e., lacustrine soils).

2.8 2020 EXPLANATION OF SIGNIFICANT DIFFERENCES

In 2020, the Explanation of Significant Differences (ESD)[3] document dated September 2020 was prepared and included the following additions and changes to the remedy for the Site:

[3] Document titled "EPA Superfund, Explanation of Significant Differences, New Hampshire Plating Company Superfund Site, Merrimack, NH," prepared by EPA.

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- The Remedial Action Objectives (RAOs) for the remedy were modified to further define the remedy's requirements to protect human health due to vapor intrusion.

- Vapor intrusion mitigation and IC requirements were incorporated, including:

  - Installation and continued operation and maintenance of the vapor mitigation system in the Acme building and an IC for the Acme property to require continued operation of the vapor mitigation system,

  - Modification of existing IC requirements under the ROD for the NHPC properties and other properties within the groundwater plume area with contamination levels that exceed the EPA default VISLs to require assessment of risk from vapor intrusion potential, and incorporation of any necessary measures based on the risk assessment to minimize and/or mitigate risk to human health into any new construction, or existing building renovation, expansion or change in use, as determined necessary by EPA and NHDES, and

  - Modification of existing IC requirements under the ROD for the NHPC properties or other properties over the groundwater plume to include a prohibition on the installation of new wells and/or the withdrawal of groundwater without EPA and NHDES permission, and

- Applicable or Relevant and Appropriate Requirements (ARARs) and To Be Considered guidance (TBCs) were updated to incorporate additional promulgated state and federal standards and guidance.

2.9 CONCEPTUAL SITE MODEL

The Conceptual Site Model (CSM) is included in **Appendix B** for comparison to data collected during the fall 2020 Site activities. The following provides a brief summary of the Site hydrogeology. Refer to **Appendix B** for additional information.

2.9.1 Summary of Site Hydrogeology

During the RI and following investigations, three relatively higher permeability hydrogeologic units were identified beneath the study area:

- An unconfined shallow overburden unit consisting of alluvium deposits and saturated fill materials and bounded at depth by lower permeability glacio-lacustrine soils;

- A deep overburden hydrogeologic unit underlying the glacio-lacustrine deposit consisting of glacial outwash sand deposits; and

- A fractured bedrock hydrogeologic unit that underlies the study area.

Groundwater within the shallow and deep overburden hydrogeologic units predominantly flows in a southeasterly and easterly direction toward the Merrimack River. Refer to **Figure 2** and **Figure 3** for 2020 shallow and deep overburden inferred groundwater contours. Hydraulic head gradients within bedrock fractures beneath the Site/Site vicinity suggest groundwater flow in a southeasterly and easterly direction toward the Merrimack River, similar to the overburden (refer to **Figure 4**); however, bedrock topographic, structural, and water quality data

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suggest fracture orientation and connectivity may result in groundwater flow toward the south, as well as toward the southeast and east.

3.0 PFAS MULTI-MEDIA SCREENING

3.1 PFAS SCREENING AND REGULATORY VALUES

PFAS are emerging contaminants, known to be stable, persistent, and bioaccumulative in the environment. Screening levels (SLs) for the PFAS compounds perfluorooctanoic acid (PFOA), perfluorooctane sulfonic acid (PFOS), and perfluorobutane sulfonate (PFBS) in groundwater were developed by EPA using the Regional Screening Levels (RSL) calculator for a residential scenario and utilizing a Hazard Index (HI) = 0.1 to determine if the contaminant levels present at a site may warrant further investigation. This is consistent with standard practices for screening to identify contaminants of potential concern during a Remedial Investigation. The SLs for PFOA and PFOS are each 40 nanograms per liter (ng/L) and the SL for PFBS is 40,000 ng/L. Concentrations of PFOA or PFOS in groundwater that exceed 400 ng/L exceed an HI of 1 in a risk-based scenario.

During May 2016, EPA issued a Lifetime Drinking Water Health Advisory (EPA Health Advisory) level of 70 ng/L for PFOA, PFOS, and for both PFOA and PFOAS combined where these chemicals are present together. EPA recommends that the EPA Health Advisory level of 70 ng/L be used as the preliminary remediation goal (PRG) for contaminated groundwater that is a current or potential source of drinking water where no state MCL or other ARARs are available or sufficiently protective (EPA, 2020).

In 2016, NHDES established an AGQS of 70 ng/L for PFOA, PFOS, and for both PFOA and PFOS combined where these chemicals are present together. The AGQS was based on the Reference Dose established in EPA's Health Advisory for PFOA and PFOS, as discussed above.

Effective July 23, 2020, New Hampshire established MCLs in drinking water for PFOA (12 ng/L), PFOS (15 ng/L), perfluorononanoic acid (PFNA, 11 ng/L), and perfluorohexane sulfonic acid (PFHxS, 18 ng/L). New Hampshire also established AGQS for PFNA and PFHxS equivalent to the MCLs and lowered the AGQS for PFOA and PFOS to match the new MCLs.

3.2 PREVIOUS GROUNDWATER PFAS SCREENING RESULTS

During 2017, NHDES initiated screening of the Site groundwater for PFAS because PFAS have been widely used since the 1940s in industrial applications, such as plating operations. In addition, the Saint-Gobain facility, a known user and emitter of PFAS resulting in the airborne distribution and subsequent widespread contamination of vicinity groundwater, is located approximately 2.6 miles north of the NHPC Site. Groundwater contamination greater than the state standards, associated with the Saint-Gobain facility, has been identified several hundred yards upgradient of the NHPC Site. The Merrimack Village District Water Works (MVD) is a consortium of seven water supply wells. Two of the MVD water supply wells (Wells 4 and 5) are located midway between NHPC and Saint-Gobain and hydraulically upgradient of NHPC, and were found to be contaminated with PFAS during 2016. The NHPC Site and nearby facilities are supplied with water from the MVD water supply wells.

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PFOA has been detected at concentrations exceeding the EPA SL, EPA Health Advisory, and AGQS in groundwater collected from certain monitoring wells on the Site with a maximum concentration of 196 ng/L (MW-308D, July 2018) for samples collected prior to 2020.

Detected exceedances of the SL for PFOA were observed in wells located in the northwestern corner of the NHPC properties (background bedrock well MW-102R), the southern portion of the NHPC properties, and on the JCI, former YMCA, NE Pole, and Equivise properties. Exceedances of the EPA Health Advisories were observed in wells near the former NHPC building, Lagoon 1, and Southern Wetland Areas and on the Equivise and former YMCA properties.

Detected exceedances of the AGQS for PFOA (12 ng/L) extend across the Site and have been observed on each Site property, with the exception of the Transupport property. The downgradient extent of concentrations exceeding AGQS to the south is not fully delineated as groundwater samples for PFAS analysis have not yet been collected from the MW-109 triplet.

Detected concentrations for PFBS and PFOS have not exceed the established EPA SLs of 40,000 ng/L and 40 ng/L, respectively. In addition, the detected concentrations of PFOS, PFNA, and PFHxS did not exceed their respective AGQS of 15 ng/L, 11 ng/L, and 18 ng/L.

3.3 2019 SURFACE WATER SCREENING RESULTS

During 2019, NHDES initiated a surface water screening program to assess the presence and distribution of PFAS concentrations in surface water. Surface water samples were collected from Horseshoe Pond and the retention pond located on the NHPC properties. Of the 36 PFAS compounds analyzed for, eight compounds were detected in the surface water samples collected for PFAS analysis. The eight compounds detected are consistent with the suite of compounds detected in Site groundwater since screening began in 2017.

Each surface water sample had detectable concentrations of PFAS compounds. The detected concentrations ranged from 1.95 ng/L (perfluorobutanoic acid [PFBA] in SW-04A-2) to 30.7 ng/L (PFOA in SW-RP). Stratification of PFAS concentrations was not indicated by the results of the Horseshoe Pond samples collected at multiple depths.

Currently, no EPA or NHDES regulatory or Site-specific screening value exists for PFAS in surface water.

4.0 2020 SAMPLING AND ANALYSIS PLAN

The SAP describes the sampling locations, field measurement procedures and criteria, sampling methods, sample container requirements, preservation, and decontamination procedures. The data quality objectives identified for the NHPC Site include collecting data of known and sufficient quality to support the following:

- Evaluate the risk to human health and the environment;
- Monitor progress of NA of groundwater;
- Minimize off-Site migration of contaminants in groundwater;

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- Evaluate the effectiveness of the RA;
- Evaluate the adjacent surface water quality in the area (Merrimack River and Horseshoe Pond) relative to the presence of NHPC Site-related contaminants within nearby wells at concentrations exceeding laboratory reporting limits (RLs);
- Limit the potential for ingestion of groundwater containing contaminants at concentrations exceeding drinking water criteria; and, over time; and
- Restore Site groundwater to safe drinking water levels.

The NHDES- and EPA-approved September 2020 SAP is available electronically on NHDES' OneStop database (*https://www.des.nh.gov/onestop/index.htm*). Deviations from the SAP that occurred during the annual monitoring event resulting from unforeseen field conditions or changes following discussions with NHDES/EPA are discussed in **Section 5.0** below, as appropriate.

5.0 SUMMARY OF FALL 2020 SITE FIELD ACTIVITIES

Site activities during fall 2020 included performing:

- Site maintenance activities including cap maintenance (i.e., mowing), fence maintenance, and general monitoring well maintenance activities (i.e., well head, lock, and sample tubing inspections);
- Inspection by NHDES of the subslab depressurization system installed in the Acme building;
- A comprehensive water level measurement round of groundwater monitoring wells; and
- Groundwater quality monitoring of 32 of the 63 monitoring wells included in the Site monitoring well network.

Refer to **Table 1** for media sampled and analyses performed and **Appendix C** for copies of GZA's field notes. Each of the groundwater samples collected was submitted for laboratory analyses to NHDES' contract laboratory Alpha Analytical (Alpha) of Westborough and Mansfield, Massachusetts. Laboratory analyses of groundwater samples included VOCs, total metals (arsenic, cadmium, chromium, lead, manganese, and nickel), cyanide, 1,4-dioxane, and PFAS (NHDES 36 Compound List).

5.1 GENERAL SITE OBSERVATIONS

GZA observed the following conditions at the Site during October 2020:

- The posts for the chain link fence that surrounds the NHPC properties are sinking into the soil of the Northern Wetland Area, causing the posts to separate from their caps and the top of the fence;
- Well MW-312D appears to have been bumped during mowing activities at the Site. The well head does not appear to be significantly damaged; however, the protective metal casing is slightly tilted causing the concrete apron to uplift slightly. GZA will check the well in the spring of 2021 to verify that freeze/thaw action during the winter does not further damage the well head;

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- The top 20 feet of a tree on the JCI property near the MW-310 well couplet broke off and fell onto the chain link fence separating JCI from the NHPC properties. The top bar of the fence was dented, but the fence was otherwise undamaged;

- The top portion of a tree from Acme fell onto the NHPC properties proximate to the MW-304 well couplet but no damage to the wells occurred; and

- Several large tree branches were observed in the stormwater drainage swale constructed on the northern end of the Acme property, which may limit stormwater flow in the future.

GZA will coordinate with the Site landscaper to have the fallen trees chipped on Site in conjunction with mowing activities during 2021. Refer to **Appendix D** for a photographic log of Site conditions.

5.2 SITE MAINTENANCE ACTIVITIES

On October 12 and 14, 2020, GZA's subcontractor Sam Trombly, LLC, a landscaping company from Milford, New Hampshire, performed cap and landscaping maintenance activities at the Site. Activities included mowing within the fenced area of the Site; clearing of access trails to the former YMCA property wells and MW-308 series wells; and removal of scrub trees and cutting of vines encroaching on the fence on the NHPC properties. In general, vines interwoven into the fence were cut at their base and left in place to die.

In addition, GZA performed the following Site maintenance activities:

- Sealing an approximately ½-inch diameter hole within the concrete floor of the Acme building using Sika Pro-Select ¾-inch closed cell backer rod to fill the hole and Quikrete Concrete Repair to seal the hole;

- Painting the three monitoring wells located on the Acme property (MW-400R, MW-401S, and MW-401D) and the two protective bollards in front of MW-400R with reflective, yellow, rubberized paint for greater visibility; and

- During the comprehensive water level measurement round, the rope suspending the sample tubing within MW-106R was observed to have snapped due to friction from the protective locking cap and the tubing had collapsed into the well. GZA re-secured the tubing by installing a bolt in the side of the steel casing as an anchor point to hang the sample tubing from.

Refer to **Appendix D** for a photographic log of Site maintenance activities.

5.3 ACME SUBSLAB DEPRESSURIZATION SYSTEM INSPECTION

On October 20, 2020, Mr. Michael Summerlin of NHDES inspected the subslab depressurization system that was installed by EPA in the ACME building during 2019. The magnahelic gauge readings indicated vacuum between 1.2 inches (ASD-2-SP3) and 2.4 inches (ASD-1-SP1), which are within the recommended vacuum range of 1 inch to 2.5 inches. Each of the visible balance valves were observed to be 100% open and the two electric panel breakers were in the on position.

Refer to **Appendix E** for the Subslab Depressurization System Inspection Log.

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5.4 COMPREHENSIVE WATER LEVEL MEASUREMENT ROUND

GZA performed a water level measurement round of known existing and functional overburden and bedrock groundwater monitoring wells to monitor groundwater elevations to estimate the direction of groundwater flow relative to potential COC transport. The measurement round included a total of 63 monitoring wells and was performed on October 19, 2020. Refer to **Table 2** for specific well construction information and well bottom measurements, **Table 3** for groundwater elevation data, **Table 4** for calculated vertical hydraulic gradients, and to **Appendix F** for the completed *Water Level Worksheet*.

Groundwater levels were measured as depth-to-water using a Solinst Model 101 electronic water level indicator probe. Groundwater surface elevations were calculated by subtracting the depth-to-groundwater from the surveyed elevation of the well-specific reference measuring point (i.e., top of polyvinyl chloride riser). The depth to groundwater ranged between 12.16 feet at MW-303S to 29.47 feet at MW-109S. Overburden well MW-403SA did not contain measurable groundwater during the 2020 sampling event.

5.5 GROUNDWATER SAMPLING AND METHODOLOGY

During October 2020, groundwater sampling using low-flow sampling methodology was conducted at 31 of the planned 32 monitoring wells and at one additional unplanned well to further evaluate residual contaminant concentrations and temporal concentration trends. Groundwater sampling was conducted primarily using a combination of peristaltic pumps and dedicated bladder pumps.

Refer to **Figure 1A** for an illustration of well locations; **Table 1** for locations sampled, the sampling equipment used, and the analyses performed; **Table 2** for well construction information; and **Table 5A**, **Table 5B**, and **Table 6** for a summary of analytical and field parameter results for groundwater. Refer to **Appendix H** for the laboratory analytical reports. Refer to **Section 6.0** below for a summary of Quality Assurance and Quality Control (QA/QC) relating to groundwater sampling and the associated field calibration sheets and **Section 7.0** below for a discussion of the data results.

The following provides a brief summary of the groundwater sampling activities performed at the Site between October 19 and October 28, 2020.

5.5.1 Sampling Using Peristaltic Pumps

Collection of groundwater using a peristaltic pump included: a pump equipped with a pump head designed to accommodate thin wall silastic tubing; dedicated down-well polyethylene tubing; an In-Situ SmarTroll multi-parameter sonde (SmarTroll) or In-Situ AquaTroll 500 (AquaTroll) and flow-through cell (for specific conductance, oxidation reduction potential [ORP], dissolved oxygen [DO], pH, and temperature); and a Hach Model 2100Q turbidity meter (Hach). For a detailed description of the procedure followed for low-flow groundwater sampling using a peristaltic pump, refer to the SOP #B-5 Groundwater Well Sampling – Low-Flow Using a Peristaltic Pump included in the SAP. Refer to **Table 1** for a list of specific wells sampled using a peristaltic pump and the analyses performed. Refer to **Appendix F** for copies of the SmarTroll and AquaTroll *Low-Flow Test Reports.*

A flow rate of 50 milliliters per minute (mL/min) or greater and stabilized drawdown conditions were achieved using the peristaltic pump at 22 of 29 sampling locations with the following exceptions:

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- Stabilized drawdown could not be achieved during purging of well MW-400R. Purging activities were terminated after 2 hours and a grab sample was collected in accordance with SOP #B-5 Groundwater Well Sampling – Low-Flow Using a Peristaltic Pump;

- A number of shallow monitoring wells were identified as having partially saturated screens during the monitoring round. In accordance with SOP B-5, the modified sampling procedure was followed to collect the groundwater samples from the following wells: B-10S, MW-302S, MW-308S, MW-309S, and MW-310S; and

- Well MW-203SX was sampled using a three well volume purge rather than low flow methodology due to the low water level in the well.

5.5.2 Sampling Using Bladder Pumps

Collection of groundwater samples using a bladder pump included: a dedicated QED T1250 Bladder Pump (100-milliliter polyethylene bladder); compressed nitrogen and an MP-10 controller; dedicated polyethylene tubing; an In-Situ SmarTroll or AquaTroll multi parameter sonde and flow-through cell; and a Hach turbidity meter. For a detailed description of the procedure followed for low-flow groundwater sampling using a bladder pump, refer to the SOP #B-6 Groundwater Well Sampling – Low-Flow Using a Bladder Pump included in the SAP. Refer to **Table 1** for a list of specific wells sampled using dedicated bladder pumps and the analyses performed, and **Appendix F** for copies of the SmarTroll and AquaTroll *Low-Flow Test Reports.*

A flow rate of 50 mL/min or greater and stabilized drawdown conditions were not achieved in the three wells sampled using a bladder pump due to the following conditions:

- Stabilized turbidity and specific conductivity readings could not be achieved during purging of well MW-203D. Purging activities were terminated after 2 hours and a grab sample was collected in accordance with SOP #B-6 Groundwater Well Sampling – Low-Flow Using a Bladder Pump; and

- Shallow monitoring wells MW-108S and MW-204S were identified as having partially saturated screens during the monitoring round. In accordance with SOP #B-6, the modified sampling procedure was followed to collect the groundwater samples from these wells.

5.5.3 2020 PFAS Screening Program

The fall 2020 PFAS screening program was based on the results of sampling performed between 2017 and 2019 and included collecting water quality samples for PFAS analysis from 25 of the 32 sampled monitoring wells. PFAS sampling was performed according to the procedures and methods detailed in SOP #B-9 *Sampling for Per- & Poly-Fluorinated Alkyl Substances* included in the SAP.

Refer to **Figure 1A** for an illustration of well locations and **Table 6** for a summary of analytical results for PFAS in groundwater. Refer to **Appendix H** for the laboratory analytical reports. Refer to **Section 6.0** below for a summary of QA/QC measures relating to PFAS groundwater sampling and **Section 7.0** below for a discussion of the data results.

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6.0 PROJECT QUALITY ASSURANCE / QUALITY CONTROL SUMMARY OF FIELD WORK

QA/QC measures implemented during the fall 2020 monitoring activities are defined in the SAP.[4] Quality Control steps designed to evaluate the reliability of the monitoring data collected include: 1) field equipment maintenance and calibration; 2) field QC sample collection (i.e., duplicates, trip blanks, and equipment banks); and 3) data verification and validation. These QC steps have been established to confirm that the performance acceptance criteria are achieved relative to the project-specific data quality objectives outlined in the SAP.

Except as specifically noted herein, GZA followed the procedures outlined in the SAP. Overall, the data collected during the fall 2020 monitoring activities was found by GZA to be acceptable for its intended use. Of the analytical samples collected, no results were rejected. From a completeness perspective, the goal of 90% completeness was achieved for the fall 2020 monitoring activities. The DO measurement for well MW-302S was negative; therefore, the measurement was rejected. Well MW-302S was sampled using the modified low flow method and the field parameters were not allowed to stabilize prior to recording the values.

GZA notes the following sampling deviations from the SAP:

- Monitoring wells MW-403S and MW-404S were renamed MW-403SA and MW-404SA to identify their association with the other short-screen (1-foot screen length) wells installed during 2018;
- Measurable groundwater was not observed in monitoring well MW-403SA during the comprehensive water level round; therefore, a groundwater sample was not collected from the well. Per NHDES' request, groundwater samples were collected instead from monitoring well MW-203D for analysis of VOCs and PFAS; and
- During the comprehensive groundwater measurement round, a new historical low groundwater level was measured at monitoring well MW-203SX at a depth of 26.97 feet below top of measuring point (reported well bottom depth for the well is 27.5 feet). After consulting with NHDES, GZA lowered the sampling tubing intake for MW-203SX to a depth of 27.4 feet and performed a three well volume purge at a pump speed of 100 mL/min and then collected a groundwater sample for VOC analysis. Field parameters were not measured during purging and the PFAS sample planned in the SAP was not collected.

Laboratories achieved the reporting limits for each test method included in the SAP with the following exceptions:

Laboratory	Media	Parameter	Samples Affected	Comments
Alpha	Groundwater	1,2-Dichloroethane, trans-1,2-Dichloroethene, Chloroform, Tetrachloroethene, Vinyl Chloride	NHP_MW-303DA NHP_MW-308DA	The sample has elevated detection limits due to the dilution required by the elevated concentrations of target compounds in the sample.

[4] The NHDES- and EPA-approved SAP for the fall 2020 monitoring activities dated September 25, 2020 is available electronically on NHDES' OneStop database (*https://www4.des.state.nh.us/DESOnestop/BasicSearch.aspx*).

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GZA also notes the following QC issues were observed during the fall 2020 monitoring activities, which are not specifically addressed in the subsequent QC sections:

- Consistent with historical observations, gas bubbles were observed periodically in sample tubing during low-flow sampling at numerous wells (refer to **Appendix F** for the completed field sheets with notes on observations). The gas bubbles were expressed from the tubing and flow cell, as needed. The occasional gas bubbles may indicate off-gassing of the formation within the on-Site wells;

- During the groundwater sample collection of cyanide at well MW-404SA, the color of the sample water changed from clear to a greenish color upon contact with the sodium hydroxide (NaOH) preservative. A similar color change was observed by the EPA sampling team during the April 2019 sampling event. Neither the EPA laboratory in Chelmsford (2019) or Alpha (2020) noted concerns with the groundwater samples; and

- Per the Department of Defense (DOD) Quality Systems Manual (QSM) for environmental laboratories, Table B-15 (Per- and Polyfluoroalkyl Substances (PFAS) Using Liquid Chromatography Tandem Mass Spectrometry (LC/MS/MS) With Isotope Dilution or Internal Standard Quantification in Matrices Other Than Drinking Water), page 216, indicates "*PFAS identified with ion ratios that fail acceptance criteria must be flagged. Any quantitation ion peak that does not meet the maximization criteria shall be included in the summed integration and the resulting data flagged as 'estimated, biased high.'*" Accordingly, the laboratory qualified PFAS concentrations that did not meet this criteria with an "F" flag. In email communication with GZA, the laboratory noted that the ion ratio acceptance criteria were problematic for PFOA and PFOS due to the branched and linear isomers. In GZA's opinion the laboratory qualification is overly conservative; therefore, GZA has chosen not to qualify these data in **Table 6**.

6.1 FIELD EQUIPMENT MAINTENANCE AND CALIBRATION

Field equipment requiring maintenance and calibration that was used on Site included the SmarTroll, AquaTroll, and Hach.

Certifications were obtained from the vendor documenting that the appropriate routine maintenance had been performed on the equipment (refer to **Appendix G** for a copy of the certification). Equipment was successfully calibrated by GZA in the office before field activities commenced to determine if the condition of the equipment and standards met the project requirements (refer to **Appendix G** for a copy of the *Instrument Calibration/Maintenance Log* for each instrument). Instruments that failed a calibration check were replaced prior to the sampling event.

The SmarTroll, AquaTroll, and Hach calibrations were checked at the beginning of the first day of sampling at the Site and the first day of the second week of sampling to determine if the instrument was calibrated properly. The calibration was checked subsequently at the end of each day of use to document daily instrument calibration. In accordance with SOP #B-4 *Calibration of YSI, In-Situ and HACH Field Instruments*, the following describes the corrective actions taken if appropriate acceptance criteria were not met during the calibration check process:

- If the morning calibration check failed, the individual parameters were recalibrated. If the recalibration failed, the appropriate standards were replaced and a thorough inspection and/or any required cleaning or maintenance activities were performed (i.e., changing DO caps, cleaning probe heads, etc.) and then the

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parameter(s) were recalibrated. If the calibration failed again, the instrument was replaced with a backup instrument;

- If a calibration check at the end of the day was not within the acceptable range for that parameter, the data collected that day for that parameter was qualified in its use as noted on the *Low-Flow Test Reports* for the SmarTroll and AquaTroll included in **Appendix F**, and the individual parameters were recalibrated; and

- If erratic or uncharacteristic readings occurred between calibrations, the instrument was recalibrated.

Calibration and associated checks of the SmarTroll, AquaTroll, and Hach were successful and no data required qualification by GZA during the monitoring activities with the exception of the rejected DO measurement for well MW-302S. The calibration for the SmarTroll used at MW-302S was checked following sample collection at the well, and the DO calibration check was within the acceptable range.

6.2 FIELD QUALITY CONTROL SAMPLE COLLECTION

Field QC samples including field duplicates, trip blanks, field blanks, and equipment blanks were collected during the water quality sampling activities in accordance with the SAP. The following provides a summary of the field quality control results. Refer to **Appendix H** for the laboratory analytical data packages.

6.2.1 Duplicate Sample Results

Refer to **Table 7** and the individual laboratory data reports for specific details regarding the calculated relative percent difference (RPD) for duplicate samples. No samples exceeded the acceptance criteria for the calculated RPD (30 percent for aqueous samples).

6.2.2 Trip Blanks

Trip blanks for VOCs and PFAS were found free of contamination. No corrective action was required.

6.2.3 Equipment Blanks

During the fall 2020 monitoring activities, an equipment blank associated with the water level meter was obtained for PFAS analytes following standard decontamination procedures after the collection of the sample at monitoring well MW-108S.

The equipment blank was found free of contamination. No corrective action was required.

6.2.4 Field Blanks

A field blank is a sample that is collected in the field by each field sampler to evaluate the potential for cross contamination of a sample from ambient conditions. Field blanks were collected by the GZA field samplers, Mr. Matthew Bergen, Ms. Megan Murphy, and Mr. Erik Dyrness, prior to collection of the first PFAS sample by each of them. The field blanks were found free of contamination. No corrective action was required on the part of GZA.

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6.3 DATA VERIFICATION

As part of the data verification process, GZA performed an in-house review of the data to check that the data have been recorded, transmitted, and processed correctly, which includes the evaluation of completeness, correctness, and conformance / compliance of a specific data set. GZA found that the data generated during the spring 2020 monitoring round is complete. Outliers and/or inconsistencies that may indicate a problem with the sampling equipment or procedures were not identified, other than what has been discussed above.

Third-party validation was not required.

7.0 FINDINGS

The following sections provide a summary of the findings and conclusions from the 2020 Site activities. In accordance with the SAP, the regulatory standards used to evaluate the data included the following:

- Groundwater data results were compared to the groundwater CULs established in the ROD for the Site and the New Hampshire AGQS defined in Env-Or 603.03;
- Groundwater quality data for PFAS were compared to the EPA SLs for PFOA, PFOS, and PFBS and EPA Health Advisories for PFOA, PFOS, and PFOA/PFOS combined; and
- Groundwater quality data results were also compared to the AGQS established for the four PFAS compounds (PFOA, PFOS, PFNA, and PFHxS) on July 23, 2020.

7.1 HYDRAULIC HEAD DATA EVALUATION

The following summarizes GZA's understanding of groundwater flow conditions during October 2020, based on the comprehensive groundwater level measurement data collected as described in **Section 5.4**, and our understanding of Site hydrogeology.

7.1.1 Shallow Overburden Groundwater

The predominant groundwater flow direction in the shallow overburden hydrogeologic unit (alluvium deposit) is inferred to be to the southeast and east toward the Merrimack River (refer to **Figure 2**). There appears to be a groundwater divide on the west-central portion of the NHPC properties and the northern portion of the Acme property, which may be related to the influence of induced groundwater recharge associated with the stormwater detention pond constructed by EPA during 2019 on the NHPC properties along the northern boundary with Acme. Based on the groundwater divide, groundwater flow beneath the western portion of the Site is toward the southwest and the Acme Pressure Washing and Synergy Self Storage properties. GZA notes that a small wetland area is located toward the southwest of the northwestern portion of the Site (on the Synergy Self Storage property). The estimated southwesterly direction of groundwater flow beneath this area suggests flow toward the off-Site wetland area and possible discharge to the Horseshoe Pond. Although the groundwater divide has only recently been observed, a southwestern flow from the former Lagoon 1 area toward the Acme property has been indicated by historical hydraulic head measurements made in groundwater monitoring wells at the Site, and with the contamination signature observed on the Acme property.

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7.1.2 Deep Overburden Groundwater

The predominant groundwater flow direction in the deep overburden hydrogeologic unit (glacial till and outwash/deltaic deposits) is inferred to be toward the south and southeast toward the Merrimack River. As inferred by the estimated hydraulic head contours shown on **Figure 3**, groundwater flow beneath the northern and eastern central portions of the Site is anticipated to be predominantly toward the east, consistent with the anticipated effect of the withdrawal of groundwater from bedrock groundwater supply well JCPROD-1 on the JCI property. This finding is consistent with results of previous hydraulic head measurements made in groundwater monitoring wells at the Site.

7.1.3 Bedrock Groundwater

The predominant direction of groundwater flow within fractured bedrock is inferred to be to the southeast and east toward the Merrimack River (refer to **Figure 4**). Estimated bedrock groundwater hydraulic head contours, groundwater quality, surface topography, and structural information suggest the presence of a primary fracture orientation and groundwater flow in bedrock toward the south under the southwestern portion of the Site. As noted above relative to groundwater flow within the deep overburden, the withdrawal of groundwater from bedrock groundwater supply well JCPROD-1 is locally interpreted to create a hydraulic head gradient and groundwater flow toward the water supply well. GZA notes that the above description generally assumes that within the fractured bedrock, groundwater flow is consistent with a homogeneous isotropic porous media. Groundwater flow within the fractured bedrock occurs along fractures that are likely not fully orthogonal to the estimated hydraulic head contours. Consequently, the direction of groundwater flow may vary locally from the bulk direction flow inferred from the estimated hydraulic head contours. The available information is insufficient to infer a more detailed description of the direction of groundwater flow in fractured bedrock beneath the Site, except as noted below.

As noted in the CSM in **Appendix B**, the presence and apparent southwest-northeast orientation of a trough-like depression in the bedrock surface, and published information regarding the orientation of bedding and photolineaments within the vicinity of the Site suggest the presence of a southwest-northeast primary bedrock fracture set. However, estimated hydraulic head gradients based on measurements of hydraulic head within bedrock fractures beneath the majority of the Site/Site vicinity suggest groundwater flow in a southeasterly and easterly direction toward the Merrimack River, similar to the overburden (refer to **Figure 4**). The hydraulic head measured within wells screened in the fractured bedrock also suggest a potential west-northwest – east-southeast fracture set orientation as evidenced by the estimated hydraulic head contours under the influence of the bedrock groundwater withdrawal from bedrock groundwater supply well JCPROD-1.

7.1.4 Vertical Hydraulic Gradient

Water level measurements collected from the multilevel well clusters located in the southernmost portion of the NHPC properties and the south and southeast portions of the Site generally indicated the presence of upward vertical components of the hydraulic head gradient. Downward vertical components of the hydraulic head gradient were estimated based on measurements made in wells located throughout the central and northern portions of the NHPC properties, on the Acme property, and on the eastern portion of the Site in the vicinity of bedrock groundwater supply well JCPROD-1. The downward vertical gradients beneath the NHPC property, and areas within the eastern portion of the Site, are likely due to the operation of well JCPROD-1. Based on the potential presence of fractures in bedrock trending toward the southwest, the downward vertical gradients measured in wells on the Acme property may also be related to the operation of well JCPROD-1. The highest

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magnitude of vertical gradient (0.09 upward) was observed at well couplet MW-108S/D. No vertical hydraulic gradient was observed at well couplets MW-204D/R, MW-301S/D, and MW-308D/R.

7.2 GROUNDWATER QUALITY MONITORING

The laboratory analytical reports for groundwater samples are provided in **Appendix H**. Refer to **Table 5A**, **Table 5B**, and **Table 6** for a summary of the groundwater analytical results, which represents those contaminants detected in groundwater and identifies exceedances of applicable action limits. Refer to **Figures 5** through **Figure 8** for the distribution of TCE, 1,4-dioxane, metals, and PFOA in Site groundwater from data collected during October 2020. The following summarizes the groundwater analytical results.

7.2.1 NH AGQS/ROD CLEANUP LEVELS (CUL)

The VOC TCE, 1,4-dioxane, and metals were detected in groundwater quality samples collected from one or more wells during the October 2020 sampling round at concentrations exceeding AGQS and/or ROD CULs. TCE was detected in groundwater quality samples at concentrations exceeding AGQS/ROD CULs. Metals detected at concentrations exceeding AGQS/ROD CULs include cadmium, nickel, and arsenic. Manganese was detected at a concentration exceeding the new AGQS of 0.3 mg/L, but does not have a ROD CUL.

The detected concentration of 1,4-dioxane exceeded the AGQS of 0.32 µg/L in the groundwater sample collected from wells JCMW-2D, JCMW-4D, MW-106R, MW-108S, MW-204S, MW-302S, MW-302SA, MW-302DA, MW-303D, MW-303DA, MW-304D, MW-308S, MW-308SA, MW-308DA, MW-309DA, and MW-400R. 1,4-dioxane is not included as a COC in the ROD; however, it has historically been used as a stabilizer for 1,1,1-TCA, which is a COC included in the ROD.

Refer to **Figure 5, Figure 6, and Figure 7** for illustrations of the lateral distribution of concentrations of selected parameters exceeding regulatory groundwater quality standards in Site groundwater. Refer to **Section 7.2.4** below for a discussion of PFAS in groundwater relative to regulatory standards and screening levels.

7.2.2 VOCs and 1,4-dioxane in Groundwater

Refer to **Figure 5** for an illustration of the distribution of TCE and 1,4-dioxane detected in Site groundwater quality samples collected during the October 2020 sampling round. TCE was chosen as the representative VOC for the figure because it is the primary VOC for the Site and the only VOC that exceeded regulatory standards during October 2020.

The following summarizes the groundwater analytical results for VOCs:

GW-2 Exceedances

Based on comparison of the Site VOCs detected to GW-2 groundwater screening levels[5] and EPA default groundwater vapor intrusion screening levels (VISLs)[6], detected concentrations of TCE in groundwater samples collected from wells MW-108S, MW-302S, MW-302SA, MW-302DA, MW-303D, MW-303DA, MW-304D,

[5] "*Groundwater to Indoor Air Screening Levels, GW-2*" included in NHDES' Vapor Intrusion Guidance Document, dated July 2006, revised February 2013.

[6] The EPA TCE default VISLs in groundwater are: Resident: 1.2 µg/L (10E-6 risk), 0.52 µg/L (hazard quotient [HQ] = 0.1); and Worker: 7.4 µg/L (10E-6 risk), 2.2 µg/L (HQ = 0.1).

The EPA chloroform default VISLs in groundwater are: Resident: 0.81 µg/L (10E-6 risk).

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MW-308S, MW-308SA, MW-308DA, and MW-309DA are at or exceed the GW-2 screening level of 20 µg/L and the EPA VISL. Wells with concentrations of TCE exceeding the vapor intrusion screening levels during October 2020 were located on the NHPC properties and the NE Pole property (MW-108S).

As discussed in **Section 2.8**, the 2020 ESD incorporated an IC requirement for any properties within the groundwater plume area with groundwater contamination that exceeds the EPA default VISLs to perform an assessment of risk from vapor intrusion potential prior to new construction or renovation, expansion, or change in use of existing buildings. An evaluation of the potential for a completed exposure pathway and the need for potential vapor intrusion mitigation will need to be completed prior to future redevelopment of the NHPC properties.

Shallow and Deep Overburden Hydrogeologic Units

- TCE is the most commonly detected VOC in Site groundwater. Within the overburden, the area of the highest TCE concentrations detected in groundwater samples collected from monitoring wells during 2020 is located within the southernmost portion of the NHPC property near the former plating operation facility and the northernmost portion of the NE Pole property, and is associated with well series MW-302, MW-303, MW-304, MW-308, MW-309, and MW-108S;

- The highest detected concentration of TCE during October 2020 was 300 µg/L detected in groundwater collected from deep overburden, short-screen well MW-303DA;

- Other VOC COCs detected in groundwater samples collected during October 2020 include chloroform and the presumed TCE daughter products cis-DCE and 1,1-DCE;

- The current spatial distribution of TCE, TCE-related breakdown products, and other VOCs in the shallow overburden hydrogeologic unit are consistent with historical spatial distribution interpretations; and

- 1,4-dioxane was detected at concentrations exceeding the AGQS within the groundwater samples collected from 16 of the 24 wells analyzed for 1,4-dioxane and with a wide spatial distribution on the Site. Concentrations of 1,4-dioxane are generally detected in groundwater samples collected from wells that also have detections of TCE.

Bedrock Hydrogeologic Unit

- TCE and cis-DCE were detected at concentrations below their respective AGQS/ROD CUL in groundwater samples collected from downgradient bedrock well locations MW-106R and MW-400R, which were the only two bedrock wells sampled during October 2020. No other VOCs were detected above the laboratory reporting limit in bedrock groundwater;

- 1,4-dioxane was detected at concentrations exceeding the AGQS of 0.32 µg/L in groundwater samples collected from MW-106R (0.41 µg/L) and MW-400R (0.982 µg/L); and

- Based on our understanding of bedrock groundwater flow at the Site, groundwater quality at these locations may be controlled by fractures trending consistent with south-southwest linear (trough-like) depression in the bedrock surface (see the CSM in **Appendix B**).

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Temporal VOC Concentration Trends

Temporal plots for parameters and monitoring wells with long-term or recent exceedances of AGQS and the ROD CUL (i.e., within the last 5 years) in groundwater samples collected from Site wells are included in the attached **Graphs** section of this report. Temporal concentration plots were reviewed for graphical evidence of trends in concentration. In general, concentrations of detected contaminants have decreased since the last full O&M performance monitoring-associated sampling event performed during 2018. A review of the collective data indicates that Site-wide, the concentrations of COCs detected in groundwater collected from the monitoring well network appear to be relatively stable to decreasing relative to previous sampling events with a few exceptions; however, data from the SRI indicates that the monitoring well network (excluding the new short-screen wells) does not accurately assess the core of the plume and attenuation parameters around the lacustrine unit. The following summarizes observations from the concentration trend graphs.

Refer to **Graph 1A** and **Graph 1B** for temporal plots of TCE concentration data for wells with exceedances of NH AGQS/ROD CUL. TCE concentrations detected at well MW-304D, have been relatively stable around 40 µg/L since 2009 except for a dip in concentration to 14 µg/L in July 2017. TCE concentrations indicate a decreasing concentration trend since 2007/2008 at wells MW-203SX and MW-303D, since 2010 at well MW-308S (with variability), since 2011 at well JCMW-2D, and since 2013 at well JCMW-4D. TCE concentrations indicate a potential decreasing concentration trend since 2014 at MW-204S. An overall increasing concentration trend with some variability has been observed at well MW-302S since April 2008 with a potential decreasing concentration trend since 2013. TCE concentrations at well MW-108S have been increasing since July 2012.

Concentrations of 1,4-dioxane exceeding the AGQS of 0.32 µg/L have been detected in groundwater collected from wells JCMW-2D, JCMW-4D, MW-204D, MW-302S, MW-303D, MW-304D, MW-308S, and MW-400R since post remedy construction was completed in 2007 (**Graph 2**). Samples for 1,4-dioxane were first analyzed using EPA Method 8260 SIM and a low-level reporting limit of 0.25 µg/L during 2014. Since 2014, concentrations of 1,4-dioxane at wells MW-204D, MW-303D, and MW-400R have indicated a relatively stable trend and have indicated a decreasing temporal trend at wells JCMW-2D and JCMW-4D. Concentrations of 1,4-dioxane at wells MW-302S, MW-304D, and MW-308S have indicated an increasing temporal trend since 2014.

7.2.3 Metals and Other Inorganics in Groundwater

Refer to **Figure 6** and **Figure 7** for an illustrations of the distribution of COC metals/metalloids in shallow overburden and deep overburden groundwater. Groundwater samples were not collected for analysis of metals or cyanide from bedrock monitoring wells. The following summarizes the groundwater analytical results for metals and cyanide:

- Consistent with historical data, the highest concentrations of cadmium and nickel were found in the shallow overburden hydrogeologic unit. The historical spatial distribution of cadmium and nickel in the shallow overburden are consistent with a source for the metals near/within the footprint of former Lagoon 1 and the southern wetland area (**Figure 1B**) and plumes extending downgradient to the south, southeast, and southwest. Historically, cadmium has been observed primarily in the shallow overburden while nickel has been observed in groundwater in both the shallow and deep overburden hydrogeologic units;

- Cadmium was detected at concentrations at or above the AGQS/ROD CUL of 0.005 milligrams per liter (mg/L) in shallow overburden wells MW-108S (0.0.0882 mg/L), MW-301S (0.1328 mg/L), MW-303S (0.5025 mg/L) and MW-303SA (1.511 mg/L);

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- Nickel was detected above the AGQS/ROD CUL of 0.1 mg/L in shallow overburden wells MW-301S (0.1152 mg/L), MW-303S (0.3051 mg/L), and MW-303SA (0.4178 mg/L);

- Refer to **Figure 7** for illustrations of the distribution of arsenic and manganese in shallow overburden, deep overburden, and bedrock groundwater.

  - Consistent with historical data, manganese was detected at variable concentrations in each of the shallow and deep overburden wells from which samples were collected. Manganese concentrations generally exceeded the recently reduced AGQS of 0.3 mg/L[7], with the exception of shallow overburden well MW-303S (0.2614 mg/L). It is possible that manganese detected in groundwater samples collected from the NHPC properties and downgradient areas may be in part the result of past activities at the NHPC Site, including activities that could change the redox state of the groundwater system to be more chemically reducing, and

  - Arsenic was detected at concentrations exceeding the applicable AGQS of 0.1 mg/L at shallow overburden wells MW-309SA (0.01831 mg/L) and MW-404SA (0.02304 mg/L) and at a concentration exceeding both the AGQS and the ROD CUL of 0.5 mg/L at shallow overburden well MW-309S (0.07651 mg/L);

- Other parameters detected include cyanide and chromium and are summarized as follows:

  - Cyanide was detected at concentrations below the AGQS/ROD CUL (0.2 mg/L) at shallow overburden wells MW-308S, MW-308SA, and MW-404SA, and

  - Total chromium was detected at concentrations below the AGQS/ROD CUL (0.1 mg/L) in shallow overburden wells MW-108S, MW-303S, MW-303SA, MW-309S, and MW-309SA.

Trends in Cyanide and Selected Metals in Groundwater

Cyanide was detected at concentrations exceeding AGQS at well MW-308S twice between 2007 and 2014 and again in 2018 (**Graph 3**). A decreasing trend in cyanide concentrations was observed between 2007 and 2009, and an increasing trend was observed between 2009 and 2014. The variable concentrations of cyanide detected at MW-308S since 2014 appears to be representative of general variability in the distribution of the dissolved-phase cyanide at the Site.

An increasing temporal trend for cadmium concentrations (**Graph 4A** and **Graph 4B**) is observed at well MW-108S since May 2007, at well MW-301S since October 2011, and at well MW-303S since August 2013. A decreasing temporal trend is observed at well MW-309S since May 2007.

Concentrations of nickel detected in the groundwater collected from well MW-303S display a decreasing temporal trend since 2007 (refer to **Graph 5**). Concentrations of nickel detected in groundwater samples collected from well MW-301S indicates a potential increasing trend since August 2013.

Arsenic concentrations indicate an overall decreasing temporal trend since April 2008 at well MW-310S and an increasing temporal trend at MW-109D since October 2007 and at MW-309S since May 2007 (**Graph 6**).

[7] The AGQS for manganese was reduced from 0.84 mg/L to 0.3 mg/L on January 1, 2021.

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Manganese concentrations detected at wells JCMW-2D, MW-304D, and MW-309S indicate an overall decreasing trend since May 2007 and indicate a decreasing trend at well MW-310S since August 2013 (**Graph 7**). Increasing temporal trends for manganese concentrations are observed at MW-308D (since May 2007), B-10S (since October 2011), MW-108S (since August 2013), and MW-301S (since July 2017). Manganese concentrations detected at well MW-308S have fluctuated over time with a slight increasing trend.

7.3 PFAS IN GROUNDWATER

Refer to **Table 6** for PFAS compounds analyzed and detected and **Figure 8** for the interpreted distribution of PFOA concentrations detected in groundwater during October 2020. PFOA was chosen to be represented on the figures as the main PFAS contaminant of concern because it was the only PFAS contaminant to exceed its AGQS, EPA SL, and EPA Health Advisory.

Of the 36 PFAS compounds analyzed for during 2020, 10 were detected within the groundwater samples collected from the 25 groundwater wells sampled for PFAS (14 shallow overburden wells, 10 deep overburden wells, and 1 bedrock well). The following summarizes the 2020 groundwater analytical results for PFAS and incorporates historical PFAS results for wells not sampled during 2020.

7.3.1 Comparison to EPA Screening and Regulatory Values

The detected concentrations of PFOS and PFBS did not exceed the EPA SLs and concentrations of PFOS did not exceed the EPA Health Advisory.

The detected concentration of PFOA exceeded the EPA SL of 40 ng/L during the October 2020 sampling event in groundwater samples collected from shallow overburden wells B-10S, MW-204S, MW-301S, MW-302SA, MW-303S, MW-303SA, MW-308S, MW-308SA, MW-309SA, MW-310S, and MW-404SA and deep overburden wells JCMW-4D, MW-106, MW-302DA, MW-304D, MW-308D, and MW-311D.

The detected concentration of PFOA and the total combined concentrations of PFOA/PFOS exceeded the EPA Health Advisory of 70 ng/L during the October 2020 sampling event in groundwater samples collected from shallow overburden wells MW-204S, MW-308S, MW-308SA, MW-309SA, MW-310S, and MW-404SA and deep overburden wells MW-304D, MW-308D, and MW-311D. Although the concentrations of PFOA detected in the groundwater samples collected from MW-302DA and MW-303S did not exceed the EPA Health Advisory, the combined concentrations of PFOA and PFOS did exceed the EPA Health Advisory of 70 ng/L for the combined concentrations. Exceedances of the EPA Health Advisory for PFOA in shallow overburden groundwater are depicted with red and purple boxes on **Figure 8**.

Concentrations of PFOA exceeding 400 ng/L (i.e., HI>1) were detected in groundwater samples collected from shallow overburden well MW-308S.

PFOA was not detected above the laboratory reporting limit in the groundwater sample collected from MW-308DA, consistent with the 2019 data for the well.

7.3.2 Comparison to NH AGQS

The detected concentrations of PFOA exceeded the NH AGQS of 12 ng/L during the October 2020 sampling event in the groundwater samples collected from 23 of the 25 sampled wells (**Figure 8**). The exceptions were deep

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overburden well MW-308DA, in which PFOA was not detected above the laboratory reporting limit, and bedrock well MW-106R (8.93 ng/L).

Detected concentrations of PFOS, PFNA, and PFHxS in groundwater samples did not exceed their respective NH AGQS of 15 ng/L, 11, ng/L, and 18 ng/L, consistent with historical PFAS screening results.

7.3.3 Estimated Extent of Elevated PFOA Concentrations in the Shallow Overburden

Based on review of current and historical groundwater PFAS results for the Site, exceedances of the AGQS for PFOA in the shallow overburden appear to extend across the Site (**Figure 9** and **Figure 11**). Concentrations exceeding the AGQS have been observed in wells on each Site property with the exception of JCI, where elevated concentrations have been extrapolated from nearby wells. The downgradient extent of concentrations exceeding AGQS to the south is not fully delineated as groundwater samples for PFAS analysis have not yet been collected from the MW-109 triplet.

Exceedances of the EPA SL for PFOA also appear to extend across portions of each of the Site properties. The highest concentrations of PFOA (concentrations exceeding the EPA Health Advisory of 70 ng/L) are located on the southern and eastern portions of the NHPC properties in the vicinity of and downgradient of Site source areas and on the Equivise property, Transupport property, and the northern edges of the former YMCA property and NE Pole property (**Figure 9** and **Figure 11**).

As noted above, concentrations of PFOA exceeding the AGQS of 12 ng/L are widespread across the Site and former and current industrial activities on non-NHPC properties in the Site area may have contributed to concentrations of PFOA in those areas. Relative to St. Gobain, however, the groundwater sample collected from the upgradient, shallow overburden Site well, MW-102S, during 2017 did not have concentrations of PFOA detected above the laboratory reporting limit of 2 ng/L suggesting that the Site groundwater has not been impacted at concentrations exceeding the AGQS by air deposition of PFOA from St. Gobain.

7.3.4 Estimated Extent of Elevated PFOA Concentrations in the Deep Overburden

Exceedances of the AGQS for PFOA in the deep overburden appear to also extend across the Site (**Figure 9** and **Figure 11**). Concentrations exceeding the AGQS have been observed in wells on each Site property with the exception of Transupport, where elevated concentrations have been extrapolated from based on elevated concentrations detected on the JCI and Equivise properties.

Exceedances of the EPA SL for PFOA in the deep overburden also appear to extend across portions of each of the Site properties. The highest concentrations of PFOA (concentrations exceeding the EPA Health Advisory of 70 ng/L) have been detected on the southern and central portions of the NHPC properties (separated by an area of concentrations below the EPA SL) and the former YMCA property and are extrapolated to exist on the Acme, Combat Corp, and JCI properties.

Similar to the shallow overburden, the extent of PFOA concentrations exceeding AGQS in the deep overburden are widespread across the Site and former and current industrial activities on non-NHPC properties in the Site may have contributed to concentrations of PFOA in those areas. Concentrations of PFOA exceeding the EPA Health Advisory of 70 ng/L, however, correlate fairly well with historical source areas on the NHPC properties and areas immediately down gradient of the historical sources areas.

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7.4 COMPARISON OF SHORT-SCREEN WELL DATA TO DATA FROM TRADITIONAL WELLS AND WATERLOO

The intent of the installation of the short-screen monitoring wells (MW-XXXA series wells) was to provide long-term groundwater monitoring locations that more accurately depict VOC plume concentrations near the current source of the dissolved plume (i.e., lacustrine soils). The original monitoring wells have screened intervals that do not span the soil layers with the highest concentrations of VOCs in groundwater as identified during the SRI. Refer to the table below for a summary and comparison of TCE concentrations detected in the new monitoring wells during 2019 and 2020, the 2018 and 2020 results for the companion long-screen monitoring wells, and the SRI Waterloo data for that location.

Comparison of Short-Screen Well Data to Data from Traditional Wells and Waterloo

Sample Location	Location Type	TCE	
		2018/2019	2020
MW-302S	Long screen well	**93**	**91**
MW-302SA	Short screen well	**74**	**47**
GP-100	Waterloo exploration	**44**	
MW-302D	Long screen well	<2	<0.5
MW-302DA	Short screen well	**92**	**65**
GP-100	Waterloo exploration	**160**	
MW-303S	Long screen well	<2	**1.8**
MW-303SA	Short screen well	**3.6**	**4.4**
GP-112	Waterloo exploration	**5.9**	
MW-303D	Long screen well	**38**	**36**
MW-303DA	Short screen well	**350**	**300**
GP-112	Waterloo exploration	**370**	
MW-308S	Long screen well	**41**	**110**
MW-308SA	Short screen well	**51**	**30**
GP-215	Waterloo exploration	**140**	
MW-308D	Long screen well	<2	**0.8**
MW-308DA	Short screen well	**270**	**270**
GP-215	Waterloo exploration	**99**	
MW-309S	Long screen well	<2	<0.5
MW-309SA	Short screen well	**1.8**	**6.4**
GP-111	Waterloo exploration	**0.6**	
MW-309D	Long screen well	<2	**1.5**

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Sample Location	Location Type	TCE	
		2018/2019	2020
MW-309DA	Short screen well	**140**	**68**
GP-111	Waterloo exploration	**130**	
MW-404SA	Short screen well	<1.0	**0.62**
GP-102	Waterloo exploration	**180**	

With the exception of MW-308SA and MW-404SA, sampling results for the short-screen monitoring wells indicate that the effort was successful in achieving the objective of providing monitoring wells that more accurately represent VOC concentrations near the source, as identified during the SRI. MW-404SA was intended to be installed near the location of GP-102; however, as this location did not have other wells nearby to help constrain the location, it may not have been as closely placed to the former exploration as intended.

Unlike the other monitoring wells, the concentrations of TCE detected in MW-302S have consistently been higher than the concentrations detected near the lacustrine in the Waterloo exploration and MW-302SA. The anomaly of the MW-302S/MW-302SA couplet may be related to high concentrations of TCE back diffusing from the lacustrine beneath the Acme property, where the highest concentration was detected during the SRI (1,500 µg/L at 17.9 feet below ground surface), and flowing to the east across the southern portion of the NHPC properties with groundwater flow.

8.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the findings presented above, it appears that the concentrations of COCs detected within the groundwater samples from monitoring wells appear to be relatively stable to potentially decreasing with some exceptions indicating increasing concentration trends. Comparison of groundwater quality data from the monitoring well network to data collected during the SRI high resolution groundwater profiling has indicated that the screens of many of the Site monitoring wells are not placed at the appropriate focused depths to effectively delineate the extent and concentration range of the VOC plume.

Consistent with the general stable to decreasing groundwater quality condition and questions on the representativeness of groundwater quality from the original monitoring well network to effectively monitor the extent and concentration range of the VOC plume, GZA recommends assessing the current monitoring well network to identify wells that provide the most technically representative information to the monitoring program. A limited monitoring program that included 17 key indicator wells was suggested in the Summer 2017 Monitoring Report based on the information available at that time. The short-screen MW-XXXA series wells installed during 2018 could be used to replace or augment wells in the limited monitoring program. In addition, potential additional replacement short-screen monitoring wells and additional monitoring wells to fill in gaps in the current monitoring well network should be considered based on the data from the SRI and current concentrations of COCs.

In addition, GZA recommends the following:

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- Periodic water level measurement round utilizing each available monitoring well and, as practicable, performed on a Monday to limit the influence of the groundwater withdrawal from the water supply production well (JCPROD-1) on measured groundwater levels;

- Collection of groundwater samples for PFAS analysis from monitoring wells JCMW-2S, MW-5S, and MW-312S to assess the extent of PFOA concentrations in the shallow overburden in the northern portion of the Site and from well MW-109S to assess the southern extent of PFOA concentrations in the shallow overburden;

- Collection of groundwater samples for PFAS analysis from monitoring wells MW-305D and MW-312D to assess the extent of PFOA concentrations in the deep overburden in the northern portion of the Site;

- Development of an approach for evaluating whether specific wells exhibiting PFAS presence are reflective of impacts from on-Site or off-Site sources, whether these compounds should be identified as a COC for the Site and if so, evaluation of potential remedy impacts and/or modifications, if any;

- Consideration of replacement or closure of monitoring well MW-109D due to the apparent damage to the well screen.

- Coordination with the Site landscaper to have the fallen trees chipped on Site and the fence by the MW-310 well couplet repaired in conjunction with mowing activities during 2021; and

- Check well MW-312D in the spring of 2021 to verify that freeze/thaw action during the winter did not further damage the well head.

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Tables

TABLE 1 - GROUNDWATER SAMPLING - SUMMARY OF THE FALL 2020 MONITORING ACTIVITIES
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

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Sample Location	Date Collected	Sampling Method Used	Laboratory Analyses Planned and Performed					Field NA Parameters [1]
			VOCs (8260C)	1,4-Dioxane (8270D SIM)	Total Metals As, Cd, Cr, Pb, Mn, Ni (6020B)	Cyanide (9010C/9012B)	PFAS (537mod LC/MS/MS)	
NHP_JCMW-2D	10/22/2020	Low Flow using a Peristaltic Pump	x	x				x
NHP_JCMW-2D DUP			x	x				
NHP_JCMW-4D	10/22/2020		x	x			x	x
NHP_B-10S	10/21/2020				x		x	*Grab*
NHP_MW-106	10/21/2020		x	x			x	x
NHP_MW-106R	10/22/2020		x	x			x	x
NHP_MW-203SX	10/20/2020		x				*ns* [3]	*ns* [3]
NHP_MW-301S	10/27/2020		x		x		x	x
NHP_MW-302S	10/21/2020		x	x			x	*Grab*
NHP_MW-302SA	10/26/2020		x	x			x	x
NHP_MW-302D	10/21/2020		x	x				x
NHP_MW-302DA	10/26/2020		x	x			x	x
NHP_MW-303S	10/22/2020		x		x		x	x
NHP_MW-303SA	10/21/2020		x		x		x	x
NHP_MW-303D	10/22/2020		x	x				x
NHP_MW-303DA	10/21/2020		x	x			x	x
NHP_MW-304D	10/22/2020		x	x	x		x	x
NHP_MW-308S	10/23/2020		x	x		x	x	*Grab*
NHP_MW-308S DUP						x	x	
NHP_MW-308SA	10/26/2020		x	x		x	x	x
NHP_MW-308D	10/23/2020		x	x			x	x
NHP_MW-308DA	10/26/2020		x	x			x	x
NHP_MW-309S	10/20/2020		x		x			*Grab*
NHP_MW-309SA	10/26/2020		x		x		x	x
NHP_MW-309D	10/20/2020		x	x				x
NHP_MW-309DA	10/26/2020		x	x			x	x
NHP_MW-310S	10/20/2020			x	x		x	*Grab*
NHP_MW-311D	10/20/2020			x			x	x
NHP_MW-400R	10/27/2020		x	x				x
NHP_MW-401S	10/27/2020		x				x	x
NHP_MW-403SA	*ns* [4]		*ns* [4]	*ns* [4]	*ns* [4]	*ns* [4]	*ns* [4]	*ns* [4]
NHP_MW-404SA	10/23/2020		x	x	x	x	x	x
NHP_MW-108S	10/22/2020	Low Flow using a Bladder Pump	x	x	x		x	*Grab*
NHP_MW-108S DUP			x	x	x		x	
NHP_MW-203D	10/20/2020		x				x	*Grab*
NHP_MW-204S	10/23/2020		x	x			x	*Grab*

TABLE KEY:
ns = not sampled
na = not applicable
ft = feet
VOCs = Volatile Organic Compounds
As = Arsenic
Cd = Cadmium
Cr = Chromium
Pb = Lead
Mn = Manganese
Ni = Nickel
PFAS = Per- and Polyfluoroalkyl Substances
NA = Natural Attenuation

SPECIFIC NOTES:
1. Field NA parameters include specific conductance, oxidation-reduction potential (ORP), dissolved oxygen (DO), pH, temperature and turbidity using an In-Situ SmarTROLL multi-parameter meter and a Hach 2100Q turbidity meter. Grab indicates field parameter readings that were collected prior to stabilization due to partially-saturated well screen conditions.
2. A Geotech GeoPump Series II Variable Speed 300 + 600 RPM peristaltic pump was used to sample the peristaltic pump wells.
3. Due to the minimal water column (<0.5 ft) in well MW-203SX, a PFAS sample and field parameters were not collected from the well.
4. Groundwater samples were not collected from MW-403SA because the monitoring well did not contain measurable water during the 2020 sampling event.

TABLE 2 - WELL CONSTRUCTION INFORMATION
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

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Well Identification	Well Diameter (inches)	Aquifer Well is Screened	Well Location & Sample Rationale		Sampling		Measuring Reference Point		Reported Well Construction Information						Sampling Intake Partially Screen Saturated [2]		
			Property Well is Associated With	Sample Rationale	Method	Pump	Location (TOC / TOPVC)	Elevation (ft-NGVD)	Reported Well Depth (ft bmp)	Depth to Top of Screen (ft bmp)	Screen Bottom (ft bmp)	Screen /Open Borehole Length (ft)	Historical Low Water Levels [1] (ft bmp)	Saturated Screen Depth to Intake (ft bmp)	Depth to Intake (ft bmp)	Height of Intake from Well Bottom (ft)	Previous Depth to Intake/Change (ft)
NHP_JCPROD-1	6	Bedrock	Jones Chemical	Production well	Grab - Spigot	N/A	N/A [3]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
NHP_JCMW-2S	2	Shallow	Jones Chemical	Downgradient	LF/No Purge	Peristaltic	TOPVC	123.37	22.6	12.6	22.6	10	19.56	--	21.1	1.5	20.3 / 0.8
NHP_JCMW-2D	2	Deep	Jones Chemical	Downgradient	Low Flow	Peristaltic	TOPVC	122.77	49.5	39.5	49.5	10	20.30	44.5	--	--	
NHP_JCMW-4S	2	Shallow	Jones Chemical	Downgradient	LF/No Purge	Peristaltic	TOPVC	124.85	22.7	12.7	22.7	10	20.62	--	21.6	1.0	20.7 / 0.9
NHP_JCMW-4D	2	Deep	Jones Chemical	Downgradient	Low Flow	Peristaltic	TOPVC	124.03	47.3	37.3	47.3	10	20.92	42.25	--	--	
NHP_JCMW-6	2	Shallow	Jones Chemical	Downgradient	LF/No Purge	Peristaltic	TOPVC	121.68	25.7	10.7	25.7	**15**	21.98	--	23.9	1.9	22.6 / 1.3
NHP_MW-102S	2	Shallow	NHPC Properties	Upgradient	LF/No Purge	Bladder	TOPVC	130.54	33.6	13.6	33.6	**20**	25.79	--	29.5	4.1	
NHP_MW-102D	2	Deep	NHPC Properties	Upgradient	Low Flow	Bladder	TOPVC	130.16	65.5	45.5	65.5	**20**	25.88	47.4 [5]	--	--	
NHP_MW-102R	6	Bedrock	NHPC Properties	Upgradient	Low Flow	Bladder	TOC	130.13	262.4	80.4	262.4	**182**	32.99	171.4	--	--	
NHP_MW-106	2	Deep	Former YMCA Property	Sentry	Low Flow	Peristaltic	TOPVC	117.69	97.8	62.8	97.8	**35**	18.44	80.3	--	--	
NHP_MW-106R	6	Bedrock	Former YMCA Property	Sentry	Low Flow	Peristaltic	TOC	117.67	202.7	120.7	202.7	**82**	18.02	161.7	--	--	
NHP_B-10S	1.5	Shallow	Former YMCA Property	Sentry	LF/No Purge	Peristaltic	TOC	119.26	28.5	8.4	28.4	**20**	19.81	--	24.1	4.3	
NHP_MW-108S	2	Shallow	J&S Patterson	Downgradient	LF/No Purge	Bladder	TOPVC	123.79	32.7	17.7	32.7	**15**	27.58	--	30.1	2.6	
NHP_MW-108D	2	Deep	J&S Patterson	Downgradient	Low Flow	Bladder	TOPVC	123.57	85	50	85	**35**	24.34	67.5	--	--	
NHP_MW-109S	2	Shallow	New England Pole	Sentry	LF/No Purge	Bladder	TOPVC	124.71	37.8	17.8	37.8	**20**	30.02	--	33.9	3.9	
NHP_MW-109D [11]	2	Deep	New England Pole	Sentry	Low Flow	Bladder	TOPVC	124.55	78.6	58.6	78.6	**20**	29.55	68.6	--	--	
NHP_MW-109R	6	Bedrock	New England Pole	Sentry	Low Flow	Bladder	TOC	123.65	263.6	100.6	263.6	**163**	28.37	161 [6]	--	--	
NHP_MW-202S [4]	2	Shallow	New England Pole	Cross-gradient	LF/No Purge	Bladder [4]	TOPVC	123.34	37.2	22.2	37.2	**15**	29.70	--	33.5	3.8	
NHP_MW-202D	2	Deep	New England Pole	Cross-gradient	Low Flow	Bladder	TOPVC	123.80	66.6	56.6	66.6	10	29.10	61.6	--	--	
NHP_MW-203SX	2	Shallow	Equivise	Downgradient	LF/No Purge	Peristaltic	TOPVC	125.59	27.5	17.5	27.5	10	26.97	--	27.0	0.5	26.2 / 0.8
NHP_MW-203D	2	Deep	Equivise	Downgradient	Low Flow	Bladder	TOPVC	126.00	72.8	60.8	72.8	**12**	29.05	66.8	--	--	
NHP_MW-204S	2	Shallow	Transupport	Downgradient	LF/No Purge	Bladder	TOPVC	123.01	37.6	22.6	37.6	**15**	24.06	--	30.4	7.2	
NHP_MW-204D	2	Deep	Transupport	Downgradient	Low Flow	Bladder	TOPVC	123.44	59.3	49.3	59.3	10	26.40	54.3	--	--	
NHP_MW-204R	2	Bedrock	Transupport	Downgradient	Low Flow	Bladder	TOPVC	123.21	82.8	72.8	82.8	10	26.17	77.8	--	--	
NHP_MW-301S	2	Shallow	Former YMCA Property	Sentry	Low Flow	Peristaltic	TOPVC	116.60	26.6	16.6	26.6	10	16.27	21.6	--	--	
NHP_MW-301D	2	Deep	Former YMCA Property	Sentry	Low Flow	Peristaltic	TOPVC	116.47	49.5	39.5	49.5	10	16.25	44.5	--	--	
NHP_MW-302S	2	Shallow	NHPC Properties	Cross-gradient	LF/No Purge	Peristaltic	TOPVC	117.87	24.1	14.1	24.1	10	17.97	--	20.9	3.2	
NHP_MW-302SA	2	Shallow	NHPC Properties	Cross-gradient	Low Flow	Peristaltic	TOPVC	118.64	24.4	22.8	23.8	1	18.73	23.2	--	--	
NHP_MW-302D	2	Deep	NHPC Properties	Cross-gradient	Low Flow	Peristaltic	TOPVC	117.99	66.5	56.5	66.5	10	17.58	61.5	--	--	
NHP_MW-302DA	2	Deep	NHPC Properties	Cross-gradient	Low Flow	Peristaltic	TOPVC	118.77	48.4	46.9	47.9	1	17.77	47.5	--	--	
NHP_MW-303S	2	Shallow	NHPC Properties	Cross-gradient	Low Flow	Peristaltic	TOPVC	116.43	24.3	14.3	24.3	10	12.16	19.3	--	--	
NHP_MW-303SA	2	Shallow	NHPC Properties	Cross-gradient	Low Flow	Peristaltic	TOPVC	117.72	26.2	24.5	25.5	1	13.51	24.7	--	--	
NHP_MW-303D	2	Deep	NHPC Properties	Cross-gradient	Low Flow	Peristaltic	TOPVC	116.31	60.2	50.2	60.2	10	14.50	55.2	--	--	
NHP_MW-303DA	2	Deep	NHPC Properties	Cross-gradient	Low Flow	Peristaltic	TOPVC	117.33	43.9	42.2	43.2	1	15.12	42.8	--	--	
NHP_MW-304S	2	Shallow	NHPC Properties	Cross-gradient	Low Flow	Peristaltic	TOPVC	118.52	24.8	14.8	24.8	10	14.18	19.8	--	--	
NHP_MW-304D	2	Deep	NHPC Properties	Cross-gradient	Low Flow	Peristaltic	TOPVC	118.45	50.6	40.6	50.6	10	15.10	45.6	--	--	
NHP_MW-305S	2	Shallow	NHPC Properties	Upgradient	Low Flow	Peristaltic	TOPVC	117.94	26.8	16.8	26.8	10	13.84	21.8	--	--	
NHP_MW-305D	2	Deep	NHPC Properties	Upgradient	Low Flow	Peristaltic	TOPVC	118.07	55.7	45.7	55.7	10	14.03	50.7	--	--	
NHP_MW-306S	2	Shallow	Former YMCA Property	Sentry	LF/No Purge	Peristaltic	TOPVC	111.70	19.7	9.7	19.7	10	13.90	--	16.7	3.0	
NHP_MW-306D	2	Deep	Former YMCA Property	Sentry	Low Flow	Peristaltic	TOPVC	111.65	38.8	28.8	38.8	10	13.56	33.8	--	--	
NHP_MW-307S	2	Shallow	Former YMCA Property	Downgradient	LF/No Purge	Peristaltic	TOPVC	117.05	27.7	17.7	27.7	10	19.72	--	23.7	4.0	
NHP_MW-307D	2	Deep	Former YMCA Property	Downgradient	Low Flow	Peristaltic	TOPVC	117.15	68.8	58.8	68.8	10	17.56	63.8	--	--	
NHP_MW-308S	2	Shallow	NHPC Properties	Downgradient	LF/No Purge	Peristaltic	TOPVC	120.47	26.3	16.3	26.3	10	22.13	--	24.0	2.3	
NHP_MW-308SA	2	Shallow	NHPC Properties	Downgradient	Low Flow	Peristaltic	TOPVC	121.54	27.9	25.4	26.4	1	23.27	25.8	--	--	
NHP_MW-308D	2	Deep	NHPC Properties	Downgradient	Low Flow	Peristaltic	TOPVC	120.78	85.5	75.5	85.5	10	21.40	80.5	--	--	
NHP_MW-308DA	2	Deep	NHPC Properties	Downgradient	Low Flow	Peristaltic	TOPVC	121.70	47.4	45.9	46.9	1	21.57	46.5	--	--	
NHP_MW-308R	2	Bedrock	NHPC Properties	Downgradient	Low Flow	Peristaltic	TOPVC	121.05	159.6	144.6	159.6	**15**	20.69	152.1	--	--	
NHP_MW-309S	2	Shallow	NHPC Properties	Source	LF/No Purge	Peristaltic	TOPVC	119.10	20.5	10.5	20.5	10	17.62	--	19.1	1.4	18.4 / 0.7
NHP_MW-309SA	2	Shallow	NHPC Properties	Source	Low Flow	Peristaltic	TOPVC	119.47	22.9	20.4	21.4	1	18.00	21.3	--	--	

TABLE 2 - WELL CONSTRUCTION INFORMATION
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

DRAFT

Well Identification	Well Diameter (inches)	Aquifer Well is Screened	Well Location & Sample Rationale		Sampling		Measuring Reference Point		Reported Well Construction Information					Sampling Intake			
															Partially Screen Saturated [2]		
			Property Well is Associated With	Sample Rationale	Method	Pump	Location (TOC / TOPVC)	Elevation (ft-NGVD)	Reported Well Depth (ft bmp)	Depth to Top of Screen (ft bmp)	Screen Bottom (ft bmp)	Screen /Open Borehole Length (ft)	Historical Low Water Levels [1] (ft bmp)	Saturated Screen Depth to Intake (ft bmp)	Depth to Intake (ft bmp)	Height of Intake from Well Bottom (ft)	Previous Depth to Intake/Change (ft)
NHP_MW-309D	2	Deep	NHPC Properties	Source	Low Flow	Peristaltic	TOPVC	119.61	69.9	59.9	69.9	10	18.09	64.9	--	--	
NHP_MW-309DA	2	Deep	NHPC Properties	Source	Low Flow	Peristaltic	TOPVC	119.62	53.6	50.4	51.4	1	17.88	50.9	--	--	
NHP_MW-309R	2	Bedrock	NHPC Properties	Source	Low Flow	Peristaltic	TOPVC	119.64	150.7	135.7	150.7	**15**	18.42	143.2	--	--	
NHP_MW-310S	2	Shallow	NHPC Properties	Source	LF/No Purge	Peristaltic	TOPVC	123.09	23.8	13.8	23.8	10	20.64	--	21.7	2.1	
NHP_MW-310D	2	Deep	NHPC Properties	Source	Low Flow	Peristaltic	TOPVC	122.59	68.8	58.8	68.8	10	20.36	63.8	--	--	
NHP_MW-311S	2	Shallow	NHPC Properties	Source	LF/No Purge	Peristaltic	TOPVC	123.91	19.5	9.5	19.5	10	18.95	--	19.0	0.5	
NHP_MW-311D	2	Deep	NHPC Properties	Source	Low Flow	Peristaltic	TOPVC	124.33	65.9	55.9	65.9	10	21.80	60.9	--	--	
NHP_MW-312S	2	Shallow	NHPC Properties	Sentry	LF/No Purge	Peristaltic	TOPVC	119.89	21.6	11.6	21.6	10	15.47	--	18.1	3.5	
NHP_MW-312D	2	Deep	NHPC Properties	Sentry	Low Flow	Peristaltic	TOPVC	119.94	49.5	39.5	49.5	10	15.99	44.5	--	--	
NHP_MW-400R	4/6 [8]	Bedrock	Acme	Sentry	Low Flow	Peristaltic	TOC	116.26	201.7	55.0	201.7	146.7	14.74	163.1 [9]	--	--	
NHP_MW-401S	2	Shallow	Acme	Sentry	Low Flow	Peristaltic	TOPVC	120.22	27.8	22.8	27.8	5	17.12	25.3	--	--	
NHP_MW-401D	2	Deep	Acme	Sentry	Low Flow	Peristaltic	TOPVC	119.74	47.6	37.6	47.6	10	16.95	42.6	--	--	
NHP_MW-402D	2	Deep	NHPC Properties	Source	Low Flow	Peristaltic	TOPVC	119.57	47.7	37.7	47.7	10	16.37	42.7	--	--	
NHP_MW-403SA [10]	2	Shallow	NHPC Properties	Downgradient	Low Flow	Peristaltic	TOPVC	123.88	23.0	21.5	22.5	1	19.22 or Dry	21.9	--	--	
NHP_MW-404SA [10]	2	Shallow	NHPC Properties	Source	Low Flow	Peristaltic	TOPVC	119.21	30.7	28.7	29.7	1	19.07	29.1	--	--	

TABLE KEY:
TOC = Top of Casing
TOPVC = Top of Polyvinyl Chloride
ft-NGVD = feet, referenced to the National Geodetic Vertical Datum
ft bmp = feet below measuring point
ft = feet
N/A = Not Applicable
"--" = unknown information
LF/No Purge = Low Flow or No Purge depending upon water level.
No Purge/IR = no purge due to insufficient recharge
Wells that require tubing adjustments during the next sampling event

GENERAL NOTES:
* Information for this table, with the exception of three of the JCI property wells and the NHP_MW-400 well series, came from the Tetra Tech NPC QAPP 4, March 2008 table 8-2A4 and the GZA 2010 Annual Report. Information for NHP_JCMW-4S, NHP_JCMW-4D, and NHP_JCMW-6 came from the boring logs by Wehran Engineering included in the JCI site file maintained at NHDES. The NHP_MW-400 well series was installed by GZA during October 2012. Monitoring wells with the designation "SA" and "DA" as well as NHP_MW-403S and NHP_MW-404S were installed by GZA during November 2018.
* **Bold** screen lengths indicate wells with screens greater than 10 feet in length. With the following exceptions, all of these wells have had interval sampling performed during 2010 to determine suitable placement of the tubing/pump intake. Based on the interval sampling results, the 2010 NHPC Annual Report recommended continued sampling at the mid-screen point for each well. NHP_MW-102D has an obstruction around 49 feet, which prevented the installation of passive diffusion bags below the uppermost intervals. NHP_MW-400R was installed during 2012 (see note below). NHP_JCMW-6 was added to the sampling program during 2013.

SPECIFIC NOTES:
1. Historical low water levels are compiled from water level measurements taken from 2007 to the present. This data is checked yearly and updated as necessary. Refer to Table 3 - Groundwater Level Measurements and Elevation Data for historical groundwater levels and elevations.
2. Historical water levels indicate that some of the wells may have partially saturated screens. In those cases, the sampling intake will be located in the middle of the saturated screen based on historical low water levels.
3. Jones Chemical production well (NHP_JCPROD-1), has a sampling spigot inside the building.
4. NHP_MW-202S is also sampled under the New England Pole Groundwater Permit, NO. GWP-198711004-M-002, and is sampled using a QED non-dedicated SamplePRO bladder pump.
5. Due to the known obstruction around 49 feet in NHP_MW-102D, the bladder pump intake was positioned 1.6 feet above the obstruction, approximately 47.4 feet from the top of the PVC, and still within the screen.
6. NHP_MW-109R - Depth of well 166 ft - either blocked or error in well log/historical reporting. The dedicated pump was placed at 161 feet.
7. NHP_MW-308D - Error in depth of well - measured by GZA/Nobis to be 85.8 feet.
8. NHP_MW-400R is a 4-foot diameter borehole from 55 ft to 200 ft below ground surface (bgs) with a 6-inch steel casing from 55 feet bgs to the stickup measuring point. For sampling purposes, this well will be treated as a 6-inch diameter well.
9. NHP_MW-400R sampling intake is not the midpoint of borehole, the intake location is similar to NHP_MW-106R.
10. An "A" was added to the end of the identification of NHP_MW-403S and NHP_MW-404S during the fall 2020 sampling event to associate them with the other short-screen wells installed during 2018.
11. NHP_MW-109D was redeveloped during 2015 due to high observed turbidity during the previous two sampling events. Redeveloping the well did not reduce the turbidity indicating that the well may be damaged at depth.

TABLE 3 - HISTORICAL GROUNDWATER LEVEL MEASUREMENTS AND ELEVATION DATA
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

DRAFT

Monitoring Well Designation	Screened Geologic Unit	Measuring Point	Measuring Point Elevation (ft-NGVD)	Screen Bottom [1] (ft bmp)	May-07		Oct-07		Mar-08		Aug-09		Aug-10		Nov-11		Nov-12	
					Depth to Water (ft bmp)	Elevation (ft)	Depth to Water (ft bmp)	Elevation (ft)	Depth to Water (ft bmp)	Elevation (ft)	Depth to Water (ft bmp)	Elevation (ft)	Depth to Water (ft bmp)	Elevation (ft)	Depth to Water (ft bmp)	Elevation (ft)	Depth to Water (ft bmp)	Elevation (ft)
NHP_JCMW-2S	Shallow Overburden	TOPVC	123.37	22.6	14.76	108.6	18.04	105.3	---	---	15.42	108.0	17.45	105.9	16.30	107.1	---	---
NHP_JCMW-2D	Deep Overburden	TOPVC	122.77	49.5	14.91	107.9	20.30	102.5	---	---	16.53	106.2	16.16	106.6	18.10	104.7	19.96	102.8
NHP_JCMW-4S	Shallow Overburden	TOPVC	124.85	22.65	---	---	---	---	---	---	---	---	---	---	---	---	---	---
NHP_JCMW-4D	Deep Overburden	TOPVC	124.03	47.25	---	---	---	---	---	---	---	---	---	---	---	---	---	---
NHP_JCMW-6	Shallow Overburden	TOPVC	121.68	25.72	---	---	---	---	---	---	---	---	---	---	---	---	---	---
NHP_MW-102S	Shallow Overburden	TOPVC	130.54	33.6	19.80	110.7	25.39	105.2	20.66	109.9	20.98	109.6	23.98	106.6	22.92	107.6	16.52	114.0
NHP_MW-102D	Deep Overburden	TOPVC	130.16	65.5	20.47	109.7	24.81	105.4	21.46	108.7	21.61	108.6	25.14	105.0	23.48	106.7	---	---
NHP_MW-102R	Bedrock	TOC	130.13	262.4	25.47	104.7	32.99	97.1	26.02	104.1	26.67	103.5	31.21	98.9	31.20	98.9	27.86	102.3
NHP_B-10S	Shallow Overburden	TOC	119.26	28.4	17.01	102.3	19.81	99.5	16.70	102.6	17.22	102.0	19.32	99.9	17.33	101.9	---	---
NHP_MW-106	Deep Overburden	TOPVC	117.69	97.8	15.41	102.3	18.18	99.5	15.13	102.6	15.64	102.1	17.93	99.8	15.75	101.9	---	---
NHP_MW-106R	Bedrock	TOC	117.67	202.7	15.38	102.3	18.02	99.7	15.20	102.5	15.64	102.0	17.52	100.2	15.65	102.0	---	---
NHP_MW-108S	Shallow Overburden	TOPVC	123.79	32.7	21.80	102.0	27.48	96.3	22.31	101.5	23.39	100.4	26.81	97.0	23.95	99.8	---	---
NHP_MW-108D	Deep Overburden	TOPVC	123.57	85	19.61	104.0	24.34	99.2	19.64	103.9	21.10	102.5	24.02	99.6	21.44	102.1	---	---
NHP_MW-109S	Shallow Overburden	TOPVC	124.71	37.8	25.55	99.2	30.02	94.7	24.76	100.0	26.17	98.5	29.75	95.0	26.54	98.2	---	---
NHP_MW-109D	Deep Overburden	TOPVC	124.55	78.6	25.10	99.5	29.55	95.0	24.58	100.0	26.01	98.5	29.31	95.2	26.21	98.3	---	---
NHP_MW-109R	Bedrock	TOC	123.65	263.6	24.11	99.5	28.37	95.3	23.48	100.2	24.85	98.8	27.94	95.7	25.00	98.7	26.24	97.4
NHP_MW-202S	Shallow Overburden	TOPVC	123.34	37.2	24.08	99.3	29.24	94.1	24.74	98.6	27.03	96.3	29.60	93.7	26.30	97.0	---	---
NHP_MW-202D	Deep Overburden	TOPVC	123.80	66.58	23.27	100.5	28.78	95.0	24.03	99.8	26.36	97.4	29.10	94.7	25.73	98.1	---	---
NHP_MW-203S	Shallow Overburden	TOPVC	126.01	34.08	23.05	103.0	26.83	99.2	23.68	102.3	24.39	101.6	---[2]	---[2]	24.67	101.3	---	---
NHP_MW-203SX	Shallow Overburden	TOPVC	125.59	27.5	NHP_MW-203SX was installed during 2016. No data exists for this location prior to 2017.													
NHP_MW-203D	Deep Overburden	TOPVC	126.00	72.8	23.16	102.8	28.70	97.3	23.97	102.0	26.02	100.0	29.05	97.0	25.81	100.2	---	---
NHP_MW-204S	Shallow Overburden	TOPVC	123.01	37.6	19.41	103.6	23.16	99.9	19.78	103.2	20.51	102.5	23.00	100.0	21.05	102.0	---	---
NHP_MW-204D	Deep Overburden	TOPVC	123.44	59.3	20.55	102.9	26.40	97.0	21.39	102.1	23.24	100.2	26.30	97.1	23.65	99.8	---	---
NHP_MW-204R	Bedrock	TOPVC	123.21	82.8	20.36	102.9	26.17	97.0	21.16	102.1	23.04	100.2	26.13	97.1	23.45	99.8	25.06	98.2
NHP_MW-301S	Shallow Overburden	TOPVC	116.60	26.6	11.45	105.2	16.27	100.3	11.54	105.1	12.70	103.9	16.04	100.6	13.24	103.4	---	---
NHP_MW-301D	Deep Overburden	TOPVC	116.47	49.5	11.85	104.6	16.25	100.2	11.78	104.7	12.83	103.6	15.79	100.7	13.35	103.1	---	---
NHP_MW-302S	Shallow Overburden	TOPVC	117.87	24.1	12.06	105.8	17.63	100.2	12.36	105.5	13.85	104.0	16.86	101.0	14.37	103.5	---	---
NHP_MW-302SA	Shallow Overburden	TOPVC	118.64	23.8	NHP_MW-XXXA series wells were installed in 2018.													
NHP_MW-302D	Deep Overburden	TOPVC	117.99	66.5	13.07	104.9	17.58	100.4	13.15	104.8	14.13	103.9	17.41	100.6	14.76	103.2	---	---
NHP_MW-302DA	Deep Overburden	TOPVC	118.77	47.9	NHP_MW-XXXA series wells were installed in 2018.													
NHP_MW-303S	Shallow Overburden	TOPVC	116.43	24.3	7.34	109.1	12.07	104.4	8.17	108.3	8.61	107.8	11.79	104.6	9.50	106.9	---	---
NHP_MW-303SA	Shallow Overburden	TOPVC	117.72	25.5	NHP_MW-XXXA series wells were installed in 2018.													
NHP_MW-303D	Deep Overburden	TOPVC	116.31	60.2	9.76	106.6	14.50	101.8	10.11	106.2	10.88	105.4	14.31	102.0	11.91	104.4	---	---
NHP_MW-303DA	Deep Overburden	TOPVC	117.33	43.2	NHP_MW-XXXA series wells were installed in 2018.													
NHP_MW-304S	Shallow Overburden	TOPVC	118.52	24.8	9.56	109.0	14.07	104.5	9.80	108.7	10.58	107.9	13.74	104.8	11.48	107.0	---	---
NHP_MW-304D	Deep Overburden	TOPVC	118.45	50.6	10.11	108.3	15.10	103.4	10.85	107.6	11.36	107.1	14.89	103.6	12.82	105.6	---	---
NHP_MW-305S	Shallow Overburden	TOPVC	117.94	26.8	8.64	109.3	13.62	104.3	9.49	108.5	9.74	108.2	13.12	104.8	11.53	106.4	---	---
NHP_MW-305D	Deep Overburden	TOPVC	118.07	55.7	8.84	109.2	13.81	104.3	9.72	108.4	9.96	108.1	13.57	104.5	11.75	106.3	---	---
NHP_MW-306S	Shallow Overburden	TOPVC	111.70	19.7	9.25	102.5	13.60	98.1	9.01	102.7	10.19	101.5	13.40	98.3	10.48	101.2	---	---
NHP_MW-306D	Deep Overburden	TOPVC	111.65	38.8	9.64	102.0	13.56	98.1	9.19	102.5	10.18	101.5	13.37	98.3	10.53	101.1	---	---
NHP_MW-307S	Shallow Overburden	TOPVC	117.05	27.7	15.54	101.5	19.72	97.3	14.48	102.6	15.83	101.2	19.50	97.6	16.32	100.7	---	---
NHP_MW-307D	Deep Overburden	TOPVC	117.15	68.8	13.11	104.0	17.56	99.6	13.10	104.1	14.17	103.0	17.39	99.8	14.67	102.5	---	---
NHP_MW-308S	Shallow Overburden	TOPVC	120.47	26.3	15.81	104.7	21.62	98.9	16.67	103.8	17.88	102.6	20.81	99.7	18.44	102.0	---	---
NHP_MW-308SA	Shallow Overburden	TOPVC	121.54	26.4	NHP_MW-XXXA series wells were installed in 2018.													
NHP_MW-308D	Deep Overburden	TOPVC	120.78	85.5	15.82	105.0	21.40	99.4	15.95	104.8	16.95	103.8	20.27	100.5	17.62	103.2	---	---

TABLE 3 - HISTORICAL GROUNDWATER LEVEL MEASUREMENTS AND ELEVATION DATA
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

DRAFT

Monitoring Well Designation	Screened Geologic Unit	Measuring Point	Measuring Point Elevation (ft-NGVD)	Screen Bottom [1] (ft bmp)	Aug-13		Jul-14		Jul-17		Jul-18		Oct-20	
					Depth to Water (ft bmp)	Elevation (ft)	Depth to Water (ft bmp)	Elevation (ft)	Depth to Water (ft bmp)	Elevation (ft)	Depth to Water (ft bmp)	Elevation (ft)	Depth to Water (ft bmp)	Elevation (ft)
NHP_JCMW-2S	Shallow Overburden	TOPVC	123.37	22.6	17.55	105.8	17.25	106.1	15.23	108.1	17.38	106.0	19.56	103.8
NHP_JCMW-2D	Deep Overburden	TOPVC	122.77	49.5	18.57	104.2	17.77	105.0	16.80	106.0	17.77	105.0	20.04	102.7
NHP_JCMW-4S	Shallow Overburden	TOPVC	124.85	22.65	18.84	106.0	18.65	106.2	17.50	107.4	18.81	106.0	20.62	104.2
NHP_JCMW-4D	Deep Overburden	TOPVC	124.03	47.25	19.41	104.6	18.71	105.3	17.75	106.3	18.55	105.5	20.92	103.1
NHP_JCMW-6	Shallow Overburden	TOPVC	121.68	25.72	19.56	102.1	19.76	101.9	18.53	103.2	20.10	101.6	21.98	99.7
NHP_MW-102S	Shallow Overburden	TOPVC	130.54	33.6	24.24	106.3	23.46	107.1	22.37	108.2	23.62	106.9	25.79	104.8
NHP_MW-102D	Deep Overburden	TOPVC	130.16	65.5	24.4	105.8	24.24	105.9	22.75	107.4	24.03	106.1	25.88	104.3
NHP_MW-102R	Bedrock	TOC	130.13	262.4	26.52	103.6	28.73	101.4	24.36	105.8	25.16	105.0	27.67	102.5
NHP_B-10S	Shallow Overburden	TOC	119.26	28.4	16.81	102.5	18.14	101.1	17.06	102.2	17.85	101.4	18.75	100.5
NHP_MW-106	Deep Overburden	TOPVC	117.69	97.8	18.44	99.3	16.48	101.2	15.44	102.3	16.19	101.5	17.04	100.7
NHP_MW-106R	Bedrock	TOC	117.67	202.7	16.71	101.0	16.38	101.3	15.33	102.3	16.06	101.6	16.82	100.9
NHP_MW-108S	Shallow Overburden	TOPVC	123.79	32.7	25.52	98.3	25.66	98.1	24.45	99.3	26.43	97.4	27.58	96.2
NHP_MW-108D	Deep Overburden	TOPVC	123.57	85	22.92	100.7	22.83	100.7	21.68	101.9	22.97	100.6	23.68	99.9
NHP_MW-109S	Shallow Overburden	TOPVC	124.71	37.8	28.41	96.3	28.16	96.6	27.05	97.7	29.05	95.7	29.47	95.2
NHP_MW-109D	Deep Overburden	TOPVC	124.55	78.6	27.99	96.6	27.77	96.8	26.72	97.8	28.53	96.0	28.85	95.7
NHP_MW-109R	Bedrock	TOC	123.65	263.6	26.81	96.8	26.50	97.2	25.47	98.2	27.33	96.3	27.62	96.0
NHP_MW-202S	Shallow Overburden	TOPVC	123.34	37.2	28.23	95.1	28.59	94.8	28.24	95.1	29.70	93.6	28.60	94.7
NHP_MW-202D	Deep Overburden	TOPVC	123.80	66.58	27.64	96.2	27.91	95.9	27.27	96.5	28.77	95.0	27.84	96.0
NHP_MW-203S	Shallow Overburden	TOPVC	126.01	34.08	---[2]	---[2]	---[2]	---[2]	Well Decommissioned					
NHP_MW-203SX	Shallow Overburden	TOPVC	125.59	27.5	NHP_MW-203SX was installed during 2016.				24.84	100.8	26.09	99.5	26.97	98.6
NHP_MW-203D	Deep Overburden	TOPVC	126.00	72.8	27.54	98.5	27.77	98.2	26.92	99.1	28.36	97.6	27.92	98.1
NHP_MW-204S	Shallow Overburden	TOPVC	123.01	37.6	22.18	100.8	22.34	100.7	21.52	101.5	22.68	100.3	24.06	99.0
NHP_MW-204D	Deep Overburden	TOPVC	123.44	59.3	24.7	98.7	24.50	98.9	23.71	99.7	25.14	98.3	25.26	98.2
NHP_MW-204R	Bedrock	TOPVC	123.21	82.8	24.50	98.7	24.31	98.9	23.51	99.7	24.93	98.3	25.06	98.2
NHP_MW-301S	Shallow Overburden	TOPVC	116.60	26.6	14.67	101.9	14.58	102.0	13.27	103.3	14.47	102.1	15.66	100.9
NHP_MW-301D	Deep Overburden	TOPVC	116.47	49.5	14.72	101.8	14.57	101.9	13.31	103.2	14.43	102.0	15.53	100.9
NHP_MW-302S	Shallow Overburden	TOPVC	117.87	24.1	16.38	101.5	16.13	101.7	14.87	103.0	16.22	101.7	17.97	99.9
NHP_MW-302SA	Shallow Overburden	TOPVC	118.64	23.8	NHP_MW-XXXA series wells were installed in 2018.								18.73	99.9
NHP_MW-302D	Deep Overburden	TOPVC	117.99	66.5	16.09	101.9	15.98	102.0	14.68	103.3	15.87	102.1	16.96	101.0
NHP_MW-302DA	Deep Overburden	TOPVC	118.77	47.9	NHP_MW-XXXA series wells were installed in 2018.								17.77	101.0
NHP_MW-303S	Shallow Overburden	TOPVC	116.43	24.3	10.73	105.7	11.02	105.4	9.52	106.9	10.85	105.6	12.16	104.3
NHP_MW-303SA	Shallow Overburden	TOPVC	117.72	25.5	NHP_MW-XXXA series wells were installed in 2018.								13.51	104.2
NHP_MW-303D	Deep Overburden	TOPVC	116.31	60.2	13.08	103.2	13.06	103.3	11.62	104.7	12.87	103.4	14.13	102.2
NHP_MW-303DA	Deep Overburden	TOPVC	117.33	43.2	NHP_MW-XXXA series wells were installed in 2018.								15.12	102.2
NHP_MW-304S	Shallow Overburden	TOPVC	118.52	24.8	12.83	105.7	13.09	105.4	11.62	106.9	12.89	105.6	14.18	104.3
NHP_MW-304D	Deep Overburden	TOPVC	118.45	50.6	13.81	104.6	13.82	104.6	12.27	106.2	13.54	104.9	15.05	103.4
NHP_MW-305S	Shallow Overburden	TOPVC	117.94	26.8	12.51	105.4	12.44	105.5	10.92	107.0	12.16	105.8	13.84	104.1
NHP_MW-305D	Deep Overburden	TOPVC	118.07	55.7	12.67	105.4	12.64	105.4	11.07	107.0	12.36	105.7	14.03	104.0
NHP_MW-306S	Shallow Overburden	TOPVC	111.70	19.7	12.06	99.6	11.84	99.9	10.66	101.0	11.93	99.8	13.90	97.8
NHP_MW-306D	Deep Overburden	TOPVC	111.65	38.8	12.02	99.6	11.82	99.8	10.62	101.0	11.91	99.7	12.85	98.8
NHP_MW-307S	Shallow Overburden	TOPVC	117.05	27.7	18.07	99.0	17.82	99.2	16.82	100.2	18.46	98.6	19.52	97.5
NHP_MW-307D	Deep Overburden	TOPVC	117.15	68.8	16.10	101.1	15.98	101.2	14.71	102.4	15.97	101.2	16.95	100.2
NHP_MW-308S	Shallow Overburden	TOPVC	120.47	26.3	20.07	100.4	20.03	100.4	18.76	101.7	20.43	100.0	22.13	98.3
NHP_MW-308SA	Shallow Overburden	TOPVC	121.54	26.4	NHP_MW-XXXA series wells were installed in 2018.								23.27	98.3
NHP_MW-308D	Deep Overburden	TOPVC	120.78	85.5	18.96	101.8	18.85	101.9	17.53	103.3	18.81	102.0	19.84	100.9

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New Hampshire Plating Company Superfund Site
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DRAFT

Monitoring Well Designation	Screened Geologic Unit	Measuring Point	Measuring Point Elevation (ft-NGVD)	Screen Bottom [1] (ft bmp)	May-07		Oct-07		Mar-08		Aug-09		Aug-10		Nov-11		Nov-12	
					Depth to Water (ft bmp)	Elevation (ft)	Depth to Water (ft bmp)	Elevation (ft)	Depth to Water (ft bmp)	Elevation (ft)	Depth to Water (ft bmp)	Elevation (ft)	Depth to Water (ft bmp)	Elevation (ft)	Depth to Water (ft bmp)	Elevation (ft)	Depth to Water (ft bmp)	Elevation (ft)
NHP_MW-308DA	Deep Overburden	TOPVC	121.70	46.9	NHP_MW-XXXA series wells were installed in 2018.													
NHP_MW-308R	Bedrock	TOPVC	121.05	159.6	16.09	105.0	20.69	100.4	16.27	104.8	17.20	103.9	20.55	100.5	17.89	103.2	19.65	101.4
NHP_MW-309S	Shallow Overburden	TOPVC	119.10	20.5	11.81	107.3	16.37	102.7	11.79	107.3	13.20	105.9	15.92	103.2	13.85	105.3	---	---
NHP_MW-309SA	Shallow Overburden	TOPVC	119.47	21.4	NHP_MW-XXXA series wells were installed in 2018.													
NHP_MW-309D	Deep Overburden	TOPVC	119.61	69.9	13.32	106.3	18.09	101.5	13.71	105.9	14.50	105.1	17.96	101.7	15.47	104.1	---	---
NHP_MW-309DA	Deep Overburden	TOPVC	119.62	51.4	NHP_MW-XXXA series wells were installed in 2018.													
NHP_MW-309R	Bedrock	TOPVC	119.64	150.7	14.65	105.0	18.42	101.2	14.04	105.6	14.86	104.8	18.12	101.5	15.83	103.8	17.62	102.0
NHP_MW-310S	Shallow Overburden	TOPVC	123.09	23.8	14.75	108.3	19.52	103.6	14.94	108.2	16.02	107.1	19.00	104.1	16.48	106.6	---	---
NHP_MW-310D	Deep Overburden	TOPVC	122.59	68.8	15.37	107.2	20.36	102.2	15.94	106.7	16.47	106.1	20.13	102.5	18.04	104.6	---	---
NHP_MW-311S	Shallow Overburden	TOPVC	123.91	19.5	15.41	108.5	18.57	105.3	15.85	108.1	16.12	107.8	18.11	105.8	16.92	107.0	---	---
NHP_MW-311D	Deep Overburden	TOPVC	124.33	65.9	16.77	107.6	21.80	102.5	17.37	107.0	17.81	106.5	21.46	102.9	19.62	104.7	21.25	103.1
NHP_MW-312S	Shallow Overburden	TOPVC	119.89	21.6	10.44	109.5	14.67	105.2	10.70	109.2	11.26	108.6	14.06	105.8	12.25	107.6	---	---
NHP_MW-312D	Deep Overburden	TOPVC	119.94	49.5	10.98	109.0	15.76	104.2	11.60	108.3	11.95	108.0	15.44	104.5	13.56	106.4	15.51	104.4
NHP_MW-400R [3]	Bedrock	TOC	116.07	201.69	NHP_MW-400 series wells were installed in October 2012. No data exists for these locations prior to 2012.												14.70	101.6
NHP_MW-401S	Shallow Overburden	TOPVC	120.22	27.8													16.83	103.4
NHP_MW-401D	Deep Overburden	TOPVC	119.74	47.6													16.58	103.2
NHP_MW-402D	Deep Overburden	TOPVC	119.57	47.65													16.31	103.3
NHP_MW-403SA	Shallow Overburden	TOPVC	123.88	22.5	NHP_MW-XXXA series wells were installed in 2018.													
NHP_MW-404SA	Shallow Overburden	TOPVC	119.21	29.7	NHP_MW-XXXA series wells were installed in 2018.													

TABLE 3 - HISTORICAL GROUNDWATER LEVEL MEASUREMENTS AND ELEVATION DATA
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

DRAFT

Monitoring Well Designation	Screened Geologic Unit	Measuring Point	Measuring Point Elevation (ft-NGVD)	Screen Bottom [1] (ft bmp)	Aug-13		Jul-14		Jul-17		Jul-18		Oct-20	
					Depth to Water (ft bmp)	Elevation (ft)	Depth to Water (ft bmp)	Elevation (ft)	Depth to Water (ft bmp)	Elevation (ft)	Depth to Water (ft bmp)	Elevation (ft)	Depth to Water (ft bmp)	Elevation (ft)
NHP_MW-308DA	Deep Overburden	TOPVC	121.70	46.9	NHP_MW-XXXA series wells were installed in 2018.								21.57	100.1
NHP_MW-308R	Bedrock	TOPVC	121.05	159.6	19.22	101.8	19.12	101.9	17.81	103.2	19.05	102.0	20.11	100.9
NHP_MW-309S	Shallow Overburden	TOPVC	119.10	20.5	15.40	103.7	15.65	103.5	14.37	104.7	15.69	103.4	17.62	101.5
NHP_MW-309SA	Shallow Overburden	TOPVC	119.47	21.4	NHP_MW-XXXA series wells were installed in 2018.								18.00	101.5
NHP_MW-309D	Deep Overburden	TOPVC	119.61	69.9	16.63	103.0	16.67	102.9	15.18	104.4	16.45	103.2	17.66	102.0
NHP_MW-309DA	Deep Overburden	TOPVC	119.62	51.4	NHP_MW-XXXA series wells were installed in 2018.								17.88	101.7
NHP_MW-309R	Bedrock	TOPVC	119.64	150.7	17.07	102.6	17.07	102.6	15.72	103.9	16.87	102.8	17.97	101.7
NHP_MW-310S	Shallow Overburden	TOPVC	123.09	23.8	18.76	104.3	18.48	104.6	16.62	106.5	18.68	104.4	20.64	102.5
NHP_MW-310D	Deep Overburden	TOPVC	122.59	68.8	18.82	103.8	19.07	103.5	17.03	105.6	18.50	104.1	19.92	102.7
NHP_MW-311S	Shallow Overburden	TOPVC	123.91	19.5	18.18	105.7	17.84	106.1	16.91	107.0	18.03	105.9	18.95	105.0
NHP_MW-311D	Deep Overburden	TOPVC	124.33	65.9	20.15	104.2	20.49	103.8	18.11	106.2	19.82	104.5	21.44	102.9
NHP_MW-312S	Shallow Overburden	TOPVC	119.89	21.6	13.79	106.1	13.65	106.2	12.37	107.5	13.71	106.2	15.47	104.4
NHP_MW-312D	Deep Overburden	TOPVC	119.94	49.5	14.51	105.4	14.61	105.3	12.79	107.2	14.24	105.7	15.99	104.0
NHP_MW-400R [3]	Bedrock	TOC	116.07	201.69	14.32	101.9	14.19	102.1	12.29	103.8	13.56	102.5	14.74	101.3
NHP_MW-401S	Shallow Overburden	TOPVC	120.22	27.8	16.00	104.2	16.00	104.2	14.52	105.7	15.82	104.4	17.12	103.1
NHP_MW-401D	Deep Overburden	TOPVC	119.74	47.6	15.90	103.8	15.79	104.0	14.36	105.4	15.62	104.1	16.95	102.8
NHP_MW-402D	Deep Overburden	TOPVC	119.57	47.65	14.98	104.6	15.36	104.2	13.11	106.5	14.76	104.8	16.37	103.2
NHP_MW-403SA	Shallow Overburden	TOPVC	123.88	22.5	NHP_MW-XXXA series wells were installed in 2018.								Dry	---
NHP_MW-404SA	Shallow Overburden	TOPVC	119.21	29.7	NHP_MW-XXXA series wells were installed in 2018.								19.07	100.1

TABLE KEY:
ft = feet
ft bmp = feet below measuring point
"---" = groundwater level information for these monitoring locations was not collected during the time period indicated.

GENERAL NOTES:
* Depth to groundwater measurements are referenced to top of polyvinyl chloride (TOPVC) risers or top of casing (TOC) at groundwater monitoring wells as indicated.
* Depth to groundwater measurements from 2010 through the present were collected by GZA. Measurements from 2009 were collected by Nobis Engineering, Inc. Measurements from 2007 and 2008 were collected by Tetra Tech, Inc.

SPECIFIC NOTES:
1. Information on screen bottoms, with the exception of three of the JCI property wells and the MW-400 well series, came from the Tetra Tech NPC QAPP 4, March 2008 table 8-2A4. Information for JCMW-4S, JCMW-4D, and JCMW-6 came from the boring logs by Wehran Engineering included in the JCI site file maintained at NHDES.
2. No groundwater level measurement was taken for MW-203S during 2011, 2013, and 2014 due to an obstruction in the well above the static water level. MW-203S was decommissioned and replaced with NHP_MW-203SX during 2016.
3. The top of casing at MW-400R was damaged and approximately two inches were removed during 2015. The measuring point elevation for MW-400R prior to 2015 was 116.26 feet.

TABLE 4 - VERTICAL HYDRAULIC GRADIENTS
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

DRAFT

Monitoring Well ID	Lithologic Unit Screened Within	Measuring Point Elevation (ft, NGVD29)	Depth to Screen [1] (ft bmp)	Screen Midpoint Elevation (ft, NGVD29)	Difference in Screen Elevation (ft)	Groundwater Elevation (ft)	Change in Groundwater Elevation (ft)	Magnitude of Vertical Gradient [2]	Direction of Vertical Gradient (Upward/Downward)
NHP_JCMW-2S	Shallow Overburden	123.37	12.6-22.6	105.8	-27.5	103.8	-1.1	**0.040**	**Downward**
NHP_JCMW-2D	Deep Overburden	122.77	39.5-49.5	78.3		102.7			
NHP_JCMW-4S	Shallow Overburden	124.85	12.65-22.65	107.2	-25.4	104.2	-1.1	**0.043**	**Downward**
NHP_JCMW-4D	Deep Overburden	124.03	37.25-47.25	81.8		103.1			
NHP_MW-102S	Shallow Overburden	130.54	13.6-33.6	106.9	-32.3	104.8	-0.5	**0.015**	**Downward**
NHP_MW-102D	Deep Overburden	130.16	45.5-65.5	74.7		104.3			
NHP_MW-102D	Deep Overburden	130.16	45.5-65.5	74.7	-115.9	104.3	-1.8	**0.016**	**Downward**
NHP_MW-102R	Bedrock	130.13	80.4-262.4	-41.3		102.5			
NHP_B-10S	Shallow Overburden	119.26	8.4-28.4	100.86	-63.5	100.5	0.2	**-0.003**	**Upward**
NHP_MW-106	Deep Overburden	117.69	62.8-97.8	37.4		100.7			
NHP_MW-106	Deep Overburden	117.69	62.8-97.8	37.4	-81.4	100.7	0.2	**-0.002**	**Upward**
NHP_MW-106R	Bedrock	117.67	120.7-202.7	-44.0		100.9			
NHP_MW-108S	Shallow Overburden	123.79	17.7-32.7	98.6	-42.5	96.2	3.7	**-0.087**	**Upward**
NHP_MW-108D	Deep Overburden	123.57	50.0-85.0	56.1		99.9			
NHP_MW-109S	Shallow Overburden	124.71	17.8-37.8	96.9	-41.0	95.2	0.5	**-0.012**	**Upward**
NHP_MW-109D	Deep Overburden	124.55	58.6-78.6	56.0		95.7			
NHP_MW-109D	Deep Overburden	124.55	58.6-78.6	56.0	-114.4	95.7	0.3	**-0.003**	**Upward**
NHP_MW-109R	Bedrock	123.65	100.6-263.6	-58.5		96.0			
NHP_MW-202S	Shallow Overburden	123.34	22.2-37.2	93.6	-31.4	94.7	1.3	**-0.041**	**Upward**
NHP_MW-202D	Deep Overburden	123.80	56.58-66.58	62.2		96.0			
NHP_MW-203SX	Shallow Overburden	125.59	17.5-27.5	103.1	-43.9	98.6	-0.5	**0.011**	**Downward**
NHP_MW-203D	Deep Overburden	126.00	60.83-72.8	59.2		98.1			
NHP_MW-204S	Shallow Overburden	123.01	22.6-37.6	92.9	-23.8	99.0	-0.8	**0.034**	**Downward**
NHP_MW-204D	Deep Overburden	123.44	49.3-59.3	69.1		98.2			
NHP_MW-204D	Deep Overburden	123.44	49.3-59.3	69.1	-23.8	98.2	0.0	**0.000**	**Neutral**
NHP_MW-204R	Bedrock	123.21	72.83-82.8	45.38		98.2			
NHP_MW-301S	Shallow Overburden	116.60	16.6-26.6	95.0	-23.0	100.9	0.0	**0.000**	**Neutral**
NHP_MW-301D	Deep Overburden	116.47	39.5-49.5	72.0		100.9			
NHP_MW-302S	Shallow Overburden	117.87	14.1-24.1	98.8	-42.3	99.9	1.1	**-0.026**	**Upward**
NHP_MW-302D	Deep Overburden	117.99	56.5-66.5	56.5		101.0			
NHP_MW-303S	Shallow Overburden	116.43	14.3-24.3	97.1	-36.0	104.3	-2.1	**0.058**	**Downward**
NHP_MW-303D	Deep Overburden	116.31	50.2-60.2	61.1		102.2			
NHP_MW-304S	Shallow Overburden	118.52	14.8-24.8	98.7	-25.9	104.3	-0.9	**0.035**	**Downward**
NHP_MW-304D	Deep Overburden	118.45	40.6-50.6	72.9		103.4			

TABLE 4 - VERTICAL HYDRAULIC GRADIENTS
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

DRAFT

Monitoring Well ID	Lithologic Unit Screened Within	Measuring Point Elevation (ft, NGVD29)	Depth to Screen [1] (ft bmp)	Screen Midpoint Elevation (ft, NGVD29)	Difference in Screen Elevation (ft)	Groundwater Elevation (ft)	Change in Groundwater Elevation (ft)	Magnitude of Vertical Gradient [2]	Direction of Vertical Gradient (Upward/Downward)
NHP_MW-305S	Shallow Overburden	117.94	16.8-26.8	96.1	-28.8	104.1	-0.1	**0.003**	**Downward**
NHP_MW-305D	Deep Overburden	118.07	45.7-55.7	67.4		104.0			
NHP_MW-306S	Shallow Overburden	111.70	9.7-19.7	97.0	-19.2	97.8	1.0	**-0.052**	**Upward**
NHP_MW-306D	Deep Overburden	111.65	28.8-38.8	77.9		98.8			
NHP_MW-307S	Shallow Overburden	117.05	17.7-27.7	94.4	-41.0	97.5	2.7	**-0.066**	**Upward**
MHP_MW-307D	Deep Overburden	117.15	58.8-68.8	53.4		100.2			
NHP_MW-308S	Shallow Overburden	120.47	16.3-26.3	99.2	-58.9	98.3	2.6	**-0.044**	**Upward**
NHP_MW-308D	Deep Overburden	120.78	75.5-85.5	40.3		100.9			
NHP_MW-308D	Deep Overburden	120.78	75.5-85.5	40.3	-71.3	100.9	0.0	**0.000**	**Neutral**
NHP_MW-308R	Bedrock	121.05	144.6-159.6	-31.1		100.9			
NHP_MW-309S	Shallow Overburden	119.10	10.5-20.5	103.6	-48.9	101.5	0.5	**-0.010**	**Upward**
NHP_MW-309D	Deep Overburden	119.61	59.9-69.9	54.7		102.0			
NHP_MW-309D	Deep Overburden	119.61	59.9-69.9	54.7	-78.3	102.0	-0.3	**0.004**	**Downward**
NHP_MW-309R	Bedrock	119.64	135.7-150.7	-23.6		101.7			
NHP_MW-310S	Shallow Overburden	123.09	13.8-23.8	104.3	-45.5	102.5	0.2	**-0.004**	**Upward**
NHP_MW-310D	Deep Overburden	122.59	58.8-68.8	58.8		102.7			
NHP_MW-311S	Shallow Overburden	123.91	9.5-19.5	109.4	-46.0	105.0	-2.1	**0.046**	**Downward**
MHP_MW-311D	Deep Overburden	124.33	55.9-65.9	63.4		102.9			
NHP_MW-312S	Shallow Overburden	119.89	11.6-21.6	103.3	-27.9	104.4	-0.4	**0.014**	**Downward**
NHP_MW-312D	Deep Overburden	119.94	39.5-49.5	75.4		104.0			
NHP_MW-401S	Shallow Overburden	120.22	22.8-27.8	94.9	-17.8	103.1	-0.3	**0.017**	**Downward**
NHP_MW-401D	Deep Overburden	119.74	37.6-47.6	77.1		102.8			
NHP_MW-401D	Deep Overburden	119.74	37.6-47.6	77.1	-89.4	102.8	-1.5	**0.017**	**Downward**
NHP_MW-400R	Bedrock	116.07	55-201.69	-12.275		101.3			

TABLE KEY:
ft = feet
bmp = below measuring point
NGVD29 = National Geodetic Vertical Datum of 1929
Orange highlight indicates an upward vertical gradient
Green highlight indicates a downward vertical gradient

SPECIFIC NOTES:
1. Information on screen locations, with the exception of three of the JCI property wells and the NHP_MW-400 well series, came from the Tetra Tech NPC QAPP 4, March 2008 table 8-2A4. Information for NHP_JCMW-4S, NHP_JCMW-4D, and NHP_JCMW-6 came from the boring logs by Wehran Engineering included in the JCI site file maintained at NHDES.
2. Magnitude of vertical gradient calculated based on the difference in screen elevations and the difference in groundwater elevations. Groundwater elevations calculated based on depth-to water level measurements collected during the most recent water level round (refer to Table 3).

TABLE 5A - SUMMARY OF DETECTED COMPOUNDS - GROUNDWATER MONITORING
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

DRAFT

Monitoring Well ID	Geological Unit of Well Screen	Sample ID	Sampling Event Date	VOCs of Concern (µg/L)							Additional VOCs (µg/L)									Other COCs		Metals of Concern (mg/L)					
				Chloroform	1,1-Dichloroethene	Cis-1,2-Dichoroethene	1,1,1-Trichloroethane	Trichloroethene (TCE)	Tetrachloroethene (PCE)	Vinyl Chloride	Acetone	Benzene	Carbon Disulfide	Chloromethane	1,1-Dichloroethane	Methyl Tert-Butyl Ether (MTBE)	Toluene	Carbon Tetrachloride	Bromodichloromethane	1,4-Dioxane (µg/L)	Cyanide (mg/L)	Arsenic	Cadmium	Chromium	Lead	Manganese	Nickel
			CAS	**67-66-3**	**75-35-4**	**156-59-2**	**71-55-6**	**79-01-6**	**127-18-4**	**75-01-4**	**67-64-1**	**71-43-2**	**75-15-0**	**74-87-3**	**75-34-3**	**1634-04-4**	**108-88-3**	**56-23-5**	**75-27-4**	**123-91-1**	**57-12-5**	**7440-38-2**	**7440-43-9**	**7440-47-3**	**7439-92-1**	**7439-96-5**	**7440-02-0**
			AGQS	**70**	**7**	**70**	**200**	**5**	**5**	**2**	**6,000**	**5**	**70**	**30**	**81**	**13**	**1,000**	**5**	**0.6**	**0.32**	**0.2**	**0.01**	**0.005**	**0.1**	**0.015**	**0.3**	**0.1**
			ROD CUL	**100**	**7**	**70**	**200**	**5**	**5**	**2**	na	na	na	na	na	na	na	na	na	na	**0.2**	**0.05**	**0.005**	**0.1**	**0.015**	na	**0.1**
			NHDES GW-2	**70**	**630**	na	**27,000**	**20**	**240**	**4**	na	**2,900**	na	na	**130**	**2,600**	**50,000**	**10**	na	na	na	na	na	na	na	na	na
NHP_JCPROD-1	Bedrock	NHP_JCPROD-1	Oct-10	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	< 0.005	< 0.005
		NHP_JCPROD-1	Nov-11	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	< 0.005	< 0.005
		NHP_JCPROD-1	Aug-13	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	< 0.01	< 0.005
		NHP_JCPROD-1	Jul-14	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 0.2	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	< 0.01	< 0.005
		NHP_JCPROD-1	Jul-18	< 2	< 1	< 2	< 2	< 2	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	< 0.25	< 0.02	< 0.005	< 0.001	< 0.01	< 0.005	< 0.01	< 0.01
NHP_JCMW-2S	Shallow Overburden	NHP_JCMW-2S	Jun-07	**0.83 J**	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	< 2	< 0.01	< 0.0045	< 0.005	< 0.01	< 0.01	< 0.015	< 0.04
		NHP_JCMW-2S	Nov-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	< 2	**0.0168**	< 0.01	< 0.005	< 0.01	< 0.01	**0.0015 J**	< 0.04
		NHP_JCMW-2S	Apr-08	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	< 2	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	< 0.0016	< 0.04
		NHP_JCMW-2S_DUP	Apr-08	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	< 2	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	< 0.0013	< 0.04
		NHP_JCMW-2S	Aug-09	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	**0.0073**	< 0.002	< 0.005	< 0.01	< 0.005	< 0.005
		NHP_JCMW-2S	Oct-10	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	< 0.005	< 0.005
		NHP_JCMW-2S	Nov-11	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	**0.0081**	< 0.005
		NHP_JCMW-2S	Aug-13	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	**0.035**	< 0.005
		NHP_JCMW-2S	Jul-14	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 0.2	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	< 0.005	< 0.005
		NHP_JCMW-2S	Jul-18	< 2	< 1	< 2	< 2	< 2	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	< 0.25	< 0.02	< 0.005	< 0.001	< 0.01	< 0.005	**0.06**	< 0.01
NHP_JCMW-2D	Deep Overburden	NHP_JCMW-2D	Jun-07	**0.84 J**	< 5	**4.9 J**	< 5	**96**	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	**15.1**	< 0.01	< 0.0083	< 0.005	< 0.01	< 0.01	**1.82**	< 0.04
		NHP_JCMW-2D	Nov-07	< 5	< 5	**5.7**	< 5	**100**	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	< 2	< 0.01	**0.149**	< 0.005	< 0.01	< 0.0049	**2.18**	< 0.04
		NHP_JCMW-2D	Apr-08	< 5	< 5	**5.7**	< 5	**100 J**	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	**11.6**	< 0.01	**0.0146**	< 0.005	< 0.01	< 0.015	**1.96**	**0.018 J**
		NHP_JCMW-2D_DUP	Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 0.01	**0.0071 J**	< 0.005	< 0.01	< 0.015	**1.87**	**0.022 J**
		NHP_JCMW-2D	Aug-09	< 2	< 2	**5.1**	< 2	**82**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	**17.8**	< 0.01	**0.0101**	< 0.002	< 0.005	< 0.001	**2.46**	< 0.005
		NHP_JCMW-2D_DUP	Aug-09	< 2	< 2	**5.3**	< 2	**85**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	**18.4**	< 0.01	**0.0099**	< 0.002	< 0.005	< 0.001	**2.36**	< 0.005
		NHP_JCMW-2D	Oct-10	< 2	< 2	**6.8**	< 2	**115**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	**19**	< 0.01	**0.0189**	< 0.002	< 0.005	< 0.001	**2.23**	< 0.005
		NHP_JCMW-2D_DUP	Oct-10	< 2	< 2	**6.4**	< 2	**106**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	**21**	< 0.01	**0.0187**	< 0.002	< 0.005	< 0.001	**2.22**	< 0.005
		NHP_JCMW-2D	Nov-11	< 2	< 2	**6.4**	< 2	**104**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	**14**	< 0.01	**0.0294**	< 0.002	< 0.005	< 0.001	**2.61**	< 0.005
		NHP_JCMW-2D_DUP	Nov-11	< 2	< 2	**6.6**	< 2	**115**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	**18**	< 0.01	**0.0275**	< 0.002	< 0.005	< 0.001	**2.52**	< 0.005
		NHP_JCMW-2D	Nov-12	< 2	< 2	**6.8**	< 2	**113**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	---	< 0.01	**0.0209**	< 0.001	< 0.005	< 0.001	**2.16**	< 0.005
		NHP_JCMW-2D	Aug-13	< 2	< 2	**6.8**	< 2	**112 Q**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	**13**	< 0.01	**0.0236**	< 0.001	< 0.005	< 0.001	**2.32**	< 0.005
		NHP_JCMW-2D_DUP	Aug-13	< 2	< 2	**7**	< 2	**112 Q**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	**12**	< 0.01	**0.0237**	< 0.001	< 0.005	< 0.001	**2.3**	< 0.005
		NHP_JCMW-2D	Jul-14	< 2	< 2	**6.4**	< 2	**102**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	**17**	< 0.01	**0.015**	< 0.001	< 0.005	< 0.001	**2.47**	< 0.005
		NHP_JCMW-2D_DUP	Jul-14	< 2	< 2	**6.6**	< 2	**102**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	**17**	< 0.01	**0.0147**	< 0.001	< 0.005	< 0.001	**2.59**	< 0.005
		NHP_JCMW-2D	Jul-17	< 1	< 1	< 1	< 1	**12**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	---	---	**3.7**	< 0.005	< 0.02	< 0.01	< 0.02	< 0.02	**0.68**	< 0.02
		NHP_JCMW-2D_DUP	Jul-17	< 1	< 1	< 1	< 1	**11**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	---	---	**3.9**	< 0.005	< 0.02	< 0.01	< 0.02	< 0.02	**0.67**	< 0.02
		NHP_JCMW-2D	Jul-18	< 2	< 1	< 2	< 2	**9**	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	**2.2**	< 0.02	**0.005**	< 0.001	< 0.01	< 0.005	**0.14**	< 0.01
		NHP_JCMW-2D_DUP	Jul-18	< 2	< 1	< 2	< 2	**9**	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	**2.4**	< 0.02	**0.005**	< 0.001	< 0.01	< 0.005	**0.14**	< 0.01
		NHP_JCMW-2D	Oct-20	< 0.75	< 0.5	**0.76**	< 0.5	**11**	< 0.5	< 1	< 5	< 0.5	< 5	< 2.5	< 0.75	< 1	< 0.75	< 0.5	< 0.5	**3.97**	---	---	---	---	---	---	---
		NHP_JCMW-2D DUP	Oct-20	< 0.75	< 0.5	**0.73**	< 0.5	**12**	< 0.5	< 1	< 5	< 0.5	< 5	< 2.5	< 0.75	< 1	< 0.75	< 0.5	< 0.5	**3.89**	---	---	---	---	---	---	---
NHP_JCMW-4S	Shallow Overburden	NHP_JCMW-4S	Aug-13	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	< 0.01	< 0.005
		NHP_JCMW-4S	Jul-14	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 0.2	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	< 0.01	< 0.005
		NHP_JCMW-4S	Jul-18	< 2	< 1	< 2	< 2	< 2	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	< 0.25	< 0.02	< 0.005	< 0.001	< 0.01	< 0.005	< 0.01	< 0.01
NHP_JCMW-4D	Deep Overburden	NHP_JCMW-4D	Aug-13	< 2	< 2	< 2	< 2	**18 Q**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	**2.51**	< 0.01	**0.0044**	< 0.001	< 0.005	< 0.001	**0.172**	**0.0057**
		NHP_JCMW-4D	Jul-14	< 2	< 2	< 2	< 2	**14**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	**3.94**	< 0.01	**0.0016**	< 0.001	< 0.005	< 0.001	**0.041**	**0.0057**
		NHP_JCMW-4D	Jul-18	< 2	< 1	< 2	< 2	**8**	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	**2.1**	< 0.02	< 0.005	< 0.001	< 0.01	< 0.005	**0.02**	< 0.01
		NHP_JCMW-4D	Oct-20	< 0.75	< 0.5	< 0.5	< 0.5	**6.4**	< 0.5	< 1	< 5	< 0.5	< 5	< 2.5	< 0.75	< 1	< 0.75	< 0.5	< 0.5	**2.18**	---	---	---	---	---	---	---
NHP_JCMW-6	Shallow Overburden	NHP_JCMW-6	Aug-13	**2,050**	< 40	< 40	< 40	< 40	< 40	< 40	< 200	< 40	< 40	< 40	< 40	< 40	< 40	---	---	< 2	< 0.01	< 0.001	**0.001**	**0.015**	< 0.001	**0.22**	**0.0208**
		NHP_JCMW-6	Jul-14	**2,270**	< 40	< 40	< 40	< 40	< 40	< 40	< 200	< 40	< 40	< 40	< 40	< 40	< 40	---	---	< 0.2	< 0.01	< 0.001	< 0.001	**0.0152**	< 0.001	**0.163**	**0.0149**
		NHP_JCMW-6	Jul-18	**980**	< 1	< 2	< 2	< 2	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	**2**	**2.9**	< 0.25	< 0.02	< 0.005	< 0.001	< 0.01	< 0.005	**0.18**	**0.02**

TABLE 5A - SUMMARY OF DETECTED COMPOUNDS - GROUNDWATER MONITORING
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

DRAFT

Monitoring Well ID	Geological Unit of Well Screen	Sample ID	Sampling Event Date	VOCs of Concern (µg/L)							Additional VOCs (µg/L)									Other COCs		Metals of Concern (mg/L)					
				Chloroform	1,1-Dichloroethene	Cis-1,2-Dichoroethene	1,1,1-Trichloroethane	Trichloroethene (TCE)	Tetrachloroethene (PCE)	Vinyl Chloride	Acetone	Benzene	Carbon Disulfide	Chloromethane	1,1-Dichloroethane	Methyl Tert-Butyl Ether (MTBE)	Toluene	Carbon Tetrachloride	Bromodichloromethane	1,4-Dioxane (µg/L)	Cyanide (mg/L)	Arsenic	Cadmium	Chromium	Lead	Manganese	Nickel
			CAS	**67-66-3**	**75-35-4**	**156-59-2**	**71-55-6**	**79-01-6**	**127-18-4**	**75-01-4**	**67-64-1**	**71-43-2**	**75-15-0**	**74-87-3**	**75-34-3**	**1634-04-4**	**108-88-3**	**56-23-5**	**75-27-4**	**123-91-1**	**57-12-5**	**7440-38-2**	**7440-43-9**	**7440-47-3**	**7439-92-1**	**7439-96-5**	**7440-02-0**
			AGQS	**70**	**7**	**70**	**200**	**5**	**5**	**2**	**6,000**	**5**	**70**	**30**	**81**	**13**	**1,000**	**5**	**0.6**	**0.32**	**0.2**	**0.01**	**0.005**	**0.1**	**0.015**	**0.3**	**0.1**
			ROD CUL	**100**	**7**	**70**	**200**	**5**	**5**	**2**	na	na	na	na	na	na	na	na	na	na	**0.2**	**0.05**	**0.005**	**0.1**	**0.015**	na	**0.1**
			NHDES GW-2	**70**	**630**	na	**27,000**	**20**	**240**	**4**	na	**2,900**	na	na	**130**	**2,600**	**50,000**	**10**	na	na	na	na	na	na	na	na	na
NHP_MW-102S	Shallow Overburden	NHP_MW-102S	May-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	< 2	< 4.6	**0.0038 J**	< 0.005	< 0.01	< 0.01	< 0.015	< 0.04
		NHP_MW-102S_DUP	May-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	---	< 5.2	< 0.01	< 0.005	< 0.01	< 0.01	< 0.015	< 0.04
		NHP_MW-102S	Oct-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	---	< 0.01	< 0.01	< 0.0076	< 0.01	< 0.01	< 0.0061	< 0.04
		NHP_MW-102S	Apr-08	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	---	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	< 0.015	**0.0016 J**
		NHP_MW-102S	Aug-09	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	< 0.005	< 0.005
		NHP_MW-102S	Oct-11	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	**0.0054**	< 0.005
		NHP_MW-102S	Aug-13	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	< 0.01	< 0.005
		NHP_MW-102S	Jul-14	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 0.2	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	< 0.01	< 0.005
		NHP_MW-102S	Jul-18	< 2	< 1	< 2	< 2	< 2	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	< 0.25	< 0.02	< 0.005	< 0.001	< 0.01	< 0.005	< 0.01	< 0.01
NHP_MW-102D	Deep Overburden	NHP_MW-102D	May-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	**0.51 J**	< 5	---	---	< 2	< 6.9	< 0.01	< 0.005	< 0.01	< 0.01	< 0.015	< 0.04
		NHP_MW-102D	Oct-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	---	< 0.01	< 0.01	< 0.0076	< 0.01	< 0.01	< 0.015	< 0.04
		NHP_MW-102D	Apr-08	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	---	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	**0.0014 J**	< 0.04
		NHP_MW-102D	Aug-09	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	< 0.005	< 0.005
		NHP_MW-102D	Oct-11	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	**0.0137**	< 0.005
		NHP_MW-102D	Aug-13	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	< 0.01	< 0.005
		NHP_MW-102D	Jul-14	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 0.2	**0.012**	< 0.001	< 0.001	< 0.005	< 0.001	< 0.01	< 0.005
		NHP_MW-102D	Jul-18	< 2	< 1	< 2	< 2	< 2	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	< 0.25	< 0.02	< 0.005	< 0.001	< 0.01	< 0.005	< 0.01	< 0.01
NHP_MW-102R	Bedrock	NHP_MW-102R	May-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	< 5	---	---	---	---	---	---	---
		NHP_MW-102R	Nov-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	**2.3 J**	< 5	< 5	< 5	---	---	**2.22**	< 0.01	< 0.01	< 0.005	< 0.01	< 0.0122	**0.0344**	< 0.04
		NHP_MW-102R	Apr-08	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	< 5	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	**0.0804**	**0.0036 J**
		NHP_MW-102R	Oct-11	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	**0.0017**	**0.1223**	**0.005**
		NHP_MW-102R	Nov-12	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	**0.021**	**0.0062**
		NHP_MW-102R	Aug-13	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	**0.043**	< 0.005
		NHP_MW-102R	Jul-14	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 0.2	< 0.01	< 0.001	< 0.001	**0.0057**	< 0.001	**0.015**	**0.0055**
		NHP_MW-102R	Jul-18	< 2	< 1	< 2	< 2	< 2	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	< 0.25	< 0.02	< 0.005	< 0.001	< 0.01	< 0.005	**0.02**	< 0.01
NHP_B-10S	Shallow Overburden	NHP_B-10S	May-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	< 2	< 0.01	< 0.0057	< 0.005	< 0.01	< 0.01	**0.0077 J**	< 0.04
		NHP_B-10S	Oct-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	< 2	**0.0017 J**	< 0.01	< 0.005	< 0.0018	< 0.015	**0.0371 J**	< 0.04
		NHP_B-10S	Apr-08	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	< 2	< 0.01	< 0.01	< 0.005	< 0.01	< 0.015	**0.0673**	< 0.04
		NHP_B-10S	Jun-09	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	< 0.005	< 0.005
		NHP_B-10S	Oct-11	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	**0.0381**	< 0.005
		NHP_B-10S	Aug-13	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	**0.526**	< 0.005
		NHP_B-10S	Jul-14	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 0.2	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	< 0.005	< 0.005
		NHP_B-10S	Jul-17	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	---	---	< 0.25	< 0.005	< 0.02	< 0.01	< 0.02	< 0.02	**8.3**	< 0.02
		NHP_B-10S	Jul-18	< 2	< 1	< 2	< 2	< 2	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	< 0.25	< 0.02	< 0.005	< 0.001	< 0.01	< 0.005	**1.5**	< 0.01
		NHP_B-10S	Oct-20	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.0017**	< 0.0002	< 0.001	< 0.001	**2.674**	< 0.002
NHP_MW-106	Deep Overburden	NHP_MW-106	May-07	< 5	< 5	< 5	< 5	< 5	**2.5 J**	< 5	< 10	< 5	< 5	< 5	< 5	**1.9 J**	< 5	---	---	< 2	< 0.01	< 0.0044	< 0.005	< 0.01	< 0.01	< 0.015	< 0.04
		NHP_MW-106	Oct-07	< 5	< 5	< 5	< 5	< 5	**2.6 J**	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	---	**0.054 J**	< 0.01	< 0.005	< 0.01	< 0.01	**0.0041 J**	**0.0025 J**
		NHP_MW-106	Apr-08	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	**3.3 J**	< 5	**1 J**	< 5	---	---	---	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	**0.0004 J**	< 0.04
		NHP_MW-106	Jun-09	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	< 0.005	< 0.005
		NHP_MW-106	Oct-11	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	**0.0013**	< 0.002	< 0.005	**0.0013**	**0.2222**	< 0.005
		NHP_MW-106	Aug-13	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.001	**0.012**	< 0.001	< 0.01	< 0.005
		NHP_MW-106	Jul-14	< 2	< 2	< 2	< 2	< 2	**2.4**	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	**1.01**	< 0.01	< 0.001	< 0.001	**0.0052**	< 0.001	< 0.01	< 0.005
		NHP_MW-106	Jul-18	< 2	< 1	< 2	< 2	< 2	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	< 0.25	< 0.02	< 0.005	< 0.001	< 0.01	< 0.005	< 0.01	< 0.01
		NHP_MW-106	Oct-20	< 0.75	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1	< 5	< 0.5	< 5	< 2.5	< 0.75	< 1	< 0.75	< 0.5	< 0.5	< 0.134	---	---	---	---	---	---	---

TABLE 5A - SUMMARY OF DETECTED COMPOUNDS - GROUNDWATER MONITORING
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

DRAFT

Monitoring Well ID	Geological Unit of Well Screen	Sample ID	Sampling Event Date	VOCs of Concern (µg/L)							Additional VOCs (µg/L)									Other COCs		Metals of Concern (mg/L)					
				Chloroform	1,1-Dichloroethene	Cis-1,2-Dichoroethene	1,1,1-Trichloroethane	Trichloroethene (TCE)	Tetrachloroethene (PCE)	Vinyl Chloride	Acetone	Benzene	Carbon Disulfide	Chloromethane	1,1-Dichloroethane	Methyl Tert-Butyl Ether (MTBE)	Toluene	Carbon Tetrachloride	Bromodichloromethane	1,4-Dioxane (µg/L)	Cyanide (mg/L)	Arsenic	Cadmium	Chromium	Lead	Manganese	Nickel
			CAS	**67-66-3**	**75-35-4**	**156-59-2**	**71-55-6**	**79-01-6**	**127-18-4**	**75-01-4**	**67-64-1**	**71-43-2**	**75-15-0**	**74-87-3**	**75-34-3**	**1634-04-4**	**108-88-3**	**56-23-5**	**75-27-4**	**123-91-1**	**57-12-5**	**7440-38-2**	**7440-43-9**	**7440-47-3**	**7439-92-1**	**7439-96-5**	**7440-02-0**
			AGQS	**70**	**7**	**70**	**200**	**5**	**5**	**2**	**6,000**	**5**	**70**	**30**	**81**	**13**	**1,000**	**5**	**0.6**	**0.32**	**0.2**	**0.01**	**0.005**	**0.1**	**0.015**	**0.3**	**0.1**
			ROD CUL	**100**	**7**	**70**	**200**	**5**	**5**	**2**	na	na	na	na	na	na	na	na	na	na	**0.2**	**0.05**	**0.005**	**0.1**	**0.015**	na	**0.1**
			NHDES GW-2	**70**	**630**	na	**27,000**	**20**	**240**	**4**	na	**2,900**	na	na	**130**	**2,600**	**50,000**	**10**	na	na	na	na	na	na	na	na	na
NHP_MW-106R	Bedrock	NHP_MW-106R	May-07	< 5	< 5	**2.9 J**	< 5	**9.3**	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	< 2	< 0.01	< 0.0048	< 0.005	< 0.01	< 0.01	**0.168**	< 0.04
		NHP_MW-106R	Oct-07	< 5	< 5	< 5	< 5	**4.9 J**	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	---	< 0.01	< 0.01	< 0.005	< 0.0071	< 0.01	**0.0819**	< 0.04
		NHP_MW-106R	Apr-08	< 5	< 5	**5**	< 5	**11 J**	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	< 2	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	**0.223**	< 0.04
		NHP_MW-106R_DUP	Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	**0.129**	< 0.04
		NHP_MW-106R	Aug-09	< 2	< 2	< 2	< 2	**6.2**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	**0.126**	< 0.005
		NHP_MW-106R	Oct-11	< 2	< 2	< 2	< 2	**3.8**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	**0.137**	< 0.005
		NHP_MW-106R	Nov-12	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	**0.19**	< 0.005
		NHP_MW-106R	Aug-13	< 2	< 2	< 2	< 2	**2.8**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	**0.144**	< 0.005
		NHP_MW-106R	Jul-14	< 2	< 2	< 2	< 2	**2.2**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	**0.47**	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	**0.136**	< 0.005
		NHP_MW-106R	Jul-17	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	---	---	< 0.25	< 0.005	< 0.02	< 0.01	< 0.02	< 0.02	**0.16**	< 0.02
		NHP_MW-106R	Jul-18	< 2	< 1	< 2	< 2	< 2	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	**0.46**	< 0.02	< 0.005	< 0.001	< 0.01	< 0.005	**0.17**	< 0.01
		NHP_MW-106R	Oct-20	< 0.75	< 0.5	**0.82**	< 0.5	**0.68**	< 0.5	< 1	< 5	< 0.5	< 5	< 2.5	< 0.75	< 1	< 0.75	< 0.5	< 0.5	**0.41**	---	---	---	---	---	---	---
NHP_MW-108S	Shallow Overburden	NHP_MW-108S	May-07	< 5	< 5	**2.6 J**	< 5	**25**	< 5	< 2	< 10	< 5	< 5	< 5	< 5	< 5	< 2	---	---	< 2	< 0.01	< 0.01	**0.0721**	**0.0641**	< 0.01	**0.0102 J**	**0.0317 J**
		NHP_MW-108S	Nov-07	< 5	< 5	**2.2 J**	< 5	**26**	< 5	< 2	< 10	< 5	< 5	< 5	< 5	< 5	< 2	---	---	< 5	**0.0109**	< 0.01	**0.0972**	**0.093**	< 0.001	**0.0085 J**	**0.0308 J**
		NHP_MW-108S	Apr-08	< 5	< 5	**2.5 J**	< 5	**16 J**	< 5	< 2	< 10	< 5	< 5	< 5	< 5	< 5	< 2	---	---	< 2	< 0.01	< 0.01	**0.0744**	**0.0943**	< 0.01	**0.012 J**	**0.027 J**
		NHP_MW-108S	Aug-09	< 2	< 2	< 2	< 2	**7.3**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	**0.1161**	**0.0821**	< 0.001	< 0.005	**0.0396**
		NHP_MW-108S	Oct-11	< 2	< 2	< 2	< 2	**8.1**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	**0.1006**	**0.0517**	< 0.001	< 0.005	**0.0328**
		NHP_MW-108S	Jul-12	< 1	< 1	< 1	< 1	**4.8**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	---	---	---	---	---	---	---	---	---	---
		NHP_MW-108S	Aug-13	< 2	< 2	< 2	< 2	**6.4**	< 2	< 2	< 10	< 2	< 2	< 2	**3.5**	< 2	< 2	---	---	< 2	< 0.01	< 0.001	**0.1607**	**0.0177**	< 0.001	< 0.01	**0.041**
		NHP_MW-108S	Jul-14	< 2	< 2	**3.1 Q**	< 2	**17**	< 2	< 2	< 10	< 2	< 2	< 2	**6.3 Q**	< 2	< 2	---	---	**0.29**	< 0.01	< 0.001	**0.1395**	**0.0101**	< 0.001	**0.076**	**0.0366**
		NHP_MW-108S	Jul-18	< 2	**1**	**4**	< 2	**23**	< 2	< 2	< 50	< 2	< 2	< 2	**8**	< 2	< 2	< 2	< 0.6	**0.28**	< 0.02	< 0.005	**0.14**	< 0.01	< 0.005	**0.82**	**0.05**
		NHP_MW-108S_DUP	Jul-18	< 2	**1**	**4**	< 2	**22**	< 2	< 2	< 50	< 2	< 2	< 2	**8**	< 2	< 2	< 2	< 0.6	**0.36**	< 0.02	< 0.005	**0.15**	< 0.01	< 0.005	**0.9**	**0.05**
		NHP_MW-108S	Oct-20	< 0.75	**0.83**	**2.6**	< 0.5	**20**	< 0.5	< 1	< 5	< 0.5	< 5	< 2.5	**4.5**	< 1	< 0.75	< 0.5	< 0.5	**0.414**	---	< 0.0005	**0.08166**	**0.00236**	< 0.001	**0.8713**	**0.02866**
		NHP_MW-108S DUP	Oct-20	< 0.75	**0.65**	**2.9**	< 0.5	**20**	< 0.5	< 1	< 5	< 0.5	< 5	< 2.5	**4.6**	< 1	< 0.75	< 0.5	< 0.5	**0.364**	---	< 0.0005	**0.0882**	**0.00241**	< 0.001	**0.9426**	**0.03061**
NHP_MW-108D	Deep Overburden	NHP_MW-108D	May-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	**4.2 J**	< 5	---	---	< 2	< 0.01	< 0.0057	< 0.005	< 0.01	< 0.01	**0.0358**	< 0.04
		NHP_MW-108D	Nov-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	< 2	**0.0041 J**	< 0.01	< 0.005	< 0.01	< 0.01	< 0.0025	< 0.04
		NHP_MW-108D	Apr-08	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	**5.2**	< 5	---	---	< 2	< 0.01	< 0.01	< 0.002	< 0.01	< 0.01	**0.0308**	< 0.04
		NHP_MW-108D	Aug-09	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	< 0.005	< 0.005
		NHP_MW-108D	Oct-11	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	**0.0037**	< 0.002	< 0.005	< 0.001	**0.3496**	**0.0075**
		NHP_MW-108D	Aug-13	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	**0.0021**	< 0.001	**0.0079**	< 0.001	**0.148**	< 0.005
		NHP_MW-108D	Jul-14	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 0.2	< 0.01	**0.001**	< 0.001	**0.0069**	< 0.001	**0.108**	< 0.005
		NHP_MW-108D	Jul-18	< 2	< 1	< 2	< 2	< 2	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	< 0.25	< 0.02	< 0.005	< 0.001	< 0.01	< 0.005	**0.46**	< 0.01
NHP_MW-109S	Shallow Overburden	NHP_MW-109S	May-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	< 2	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	**0.0775**	< 0.04
		NHP_MW-109S	Apr-08	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	---	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	**0.0292**	< 0.04
		NHP_MW-109S_DUP	Apr-08	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	---	< 0.01	< 0.01	< 0.002	< 0.01	< 0.01	**0.0269**	< 0.04
		NHP_MW-109S	Aug-09	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	< 0.005	< 0.005
		NHP_MW-109S	Oct-11	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	**0.0011**	< 0.002	< 0.005	< 0.001	**0.0668**	< 0.005
		NHP_MW-109S	Aug-13	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	< 0.01	< 0.005
		NHP_MW-109S	Jul-14	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 0.2	< 0.01	< 0.001	< 0.001	**0.0051**	< 0.001	**0.024**	< 0.005
		NHP_MW-109S	Jul-18	< 2	< 1	< 2	< 2	< 2	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	< 0.25	< 0.02	< 0.005	< 0.001	< 0.01	< 0.005	**0.02**	< 0.01
NHP_MW-109D	Deep Overburden	NHP_MW-109D	May-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	< 2	< 0.01	**0.0298**	< 0.005	< 0.01	< 0.01	**0.463**	< 0.04
		NHP_MW-109D	Oct-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	< 2	**0.0034 J**	< 0.0073	< 0.005	< 0.01	< 0.01	**0.169**	**0.0029 J**
		NHP_MW-109D	Apr-08	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	R	< 0.01	**0.0214**	< 0.005	< 0.01	< 0.01	**0.396**	< 0.04
		NHP_MW-109D	Aug-09	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	**0.039**	**0.026**	< 0.002	< 0.005	< 0.001	**0.4165**	< 0.005
		NHP_MW-109D	Oct-11	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	**0.0214**	< 0.002	**0.014**	**0.0103**	**0.5845**	**0.0104**
		NHP_MW-109D	Aug-13	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	**0.0223**	< 0.001	**0.0184**	**0.0101**	**0.603**	**0.0156**
		NHP_MW-109D	Jul-14	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 0.2	< 0.01	**0.0254**	< 0.001	**0.0238**	**0.0147**	**0.802**	**0.0195**
		NHP_MW-109D	Jul-18	< 2	< 1	< 2	< 2	< 2	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	< 0.25	< 0.02	**0.059 T**	< 0.001	**0.03 T**	**0.019 T**	**1.4 T**	**0.03 T**

TABLE 5A - SUMMARY OF DETECTED COMPOUNDS - GROUNDWATER MONITORING
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

DRAFT

Monitoring Well ID	Geological Unit of Well Screen	Sample ID	Sampling Event Date	VOCs of Concern (µg/L)							Additional VOCs (µg/L)									Other COCs		Metals of Concern (mg/L)					
				Chloroform	1,1-Dichloroethene	Cis-1,2-Dichoroethene	1,1,1-Trichloroethane	Trichloroethene (TCE)	Tetrachloroethene (PCE)	Vinyl Chloride	Acetone	Benzene	Carbon Disulfide	Chloromethane	1,1-Dichloroethane	Methyl Tert-Butyl Ether (MTBE)	Toluene	Carbon Tetrachloride	Bromodichloromethane	1,4-Dioxane (µg/L)	Cyanide (mg/L)	Arsenic	Cadmium	Chromium	Lead	Manganese	Nickel
			CAS	**67-66-3**	**75-35-4**	**156-59-2**	**71-55-6**	**79-01-6**	**127-18-4**	**75-01-4**	**67-64-1**	**71-43-2**	**75-15-0**	**74-87-3**	**75-34-3**	**1634-04-4**	**108-88-3**	**56-23-5**	**75-27-4**	**123-91-1**	**57-12-5**	**7440-38-2**	**7440-43-9**	**7440-47-3**	**7439-92-1**	**7439-96-5**	**7440-02-0**
			AGQS	**70**	**7**	**70**	**200**	**5**	**5**	**2**	**6,000**	**5**	**70**	**30**	**81**	**13**	**1,000**	**5**	**0.6**	**0.32**	**0.2**	**0.01**	**0.005**	**0.1**	**0.015**	**0.3**	**0.1**
			ROD CUL	**100**	**7**	**70**	**200**	**5**	**5**	**2**	na	na	na	na	na	na	na	na	na	na	**0.2**	**0.05**	**0.005**	**0.1**	**0.015**	na	**0.1**
			NHDES GW-2	**70**	**630**	na	**27,000**	**20**	**240**	**4**	na	**2,900**	na	na	**130**	**2,600**	**50,000**	**10**	na	na	na	na	na	na	na	na	na
NHP_MW-109R	Bedrock	NHP_MW-109R	Jun-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	< 2	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	**0.0699**	< 0.04
		NHP_MW-109R	Oct-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	< 2	< 0.01	< 0.01	< 0.005	< 0.0014	< 0.01	**0.0083 J**	< 0.04
		NHP_MW-109R	Apr-08	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	---	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	**0.0655**	**0.0038 J**
		NHP_MW-109R	Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	**0.0118 J**	< 0.04
		NHP_MW-109R	Aug-09	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	**0.012**	< 0.005
		NHP_MW-109R	Oct-11	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	**0.0294**	< 0.005
		NHP_MW-109R	Nov-12	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	**0.015**	< 0.005
		NHP_MW-109R	Aug-13	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	**0.018**	< 0.005
		NHP_MW-109R	Jul-14	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	**0.38**	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	**0.013**	< 0.005
		NHP_MW-109R	Jul-18	< 2	< 1	< 2	< 2	< 2	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	< 0.25	< 0.02	< 0.005	< 0.001	< 0.01	< 0.005	**0.03**	< 0.01
NHP_MW-202S	Shallow Overburden	NHP_MW-202S	Jun-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	< 2	< 0.01	< 0.01	< 0.005	**0.128**	< 0.01	< 0.0015	< 0.04
		NHP_MW-202S	Nov-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	**2.2 J**	< 5	< 5	< 5	---	---	< 2	< 0.01	< 0.01	< 0.005	< 0.0032	< 0.0048	**0.0219**	< 0.04
		NHP_MW-202S_DUP	Nov-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	**2.5 J**	< 5	< 5	< 5	---	---	< 2	< 0.01	< 0.01	< 0.005	< 0.0034	< 0.01	**0.0213**	< 0.04
		NHP_MW-202S	Apr-08	< 5	< 5	< 5	< 5	**24**	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	---	< 0.01	< 0.01	< 0.005	**0.0031 J**	< 0.01	**0.00036 J**	**0.0025 J**
		NHP_MW-202S	Aug-09	< 2	< 2	< 2	< 2	**2.9**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	**0.0174**	**0.0172**	< 0.001	**0.031**	< 0.005
		NHP_MW-202S	Oct-11	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	**0.0128**	< 0.001	**0.0055**	< 0.005
		NHP_MW-202S	Jul-12	< 1	< 1	< 1	< 1	**2.9**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	---	---	---	---	---	---	---	---	---	---
		NHP_MW-202S	Aug-13	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.001	**0.021**	< 0.001	< 0.01	< 0.005
		NHP_MW-202S	Jul-14	< 2	< 2	< 2	< 2	**9.6**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	**0.29**	< 0.01	< 0.001	< 0.001	**0.0087**	< 0.001	**0.027**	**0.0063**
		NHP_MW-202S	Jul-17	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	---	---	**0.69 Z**	< 0.005	< 0.02	< 0.01	**0.076**	< 0.02	< 0.02	< 0.02
		NHP_MW-202S_DUP	Jul-17	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	---	---	**0.31 Z**	< 0.005	< 0.02	< 0.01	**0.074**	< 0.02	< 0.02	< 0.02
		NHP_MW-202S	Jul-18	< 2	< 1	< 2	< 2	< 2	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	< 0.25	< 0.02	< 0.005	< 0.001	< 0.01	< 0.005	< 0.01	< 0.01
		NHP_MW-202S_DUP	Jul-18	< 2	< 1	< 2	< 2	< 2	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	< 0.25	< 0.02	< 0.005	< 0.001	< 0.01	< 0.005	< 0.01	< 0.01
NHP_MW-202D	Deep Overburden	NHP_MW-202D	Jun-07	< 5	< 5	< 5	< 5	**0.67 J**	< 5	< 5	< 10	< 5	**8.4 J**	< 5	< 5	< 5	< 5	---	---	< 2	< 0.01	< 0.007	< 0.005	< 0.01	< 0.01	< 0.015	< 0.04
		NHP_MW-202D	Oct-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	< 2	**0.0068 J**	< 0.01	< 0.005	< 0.0025	< 0.01	< 0.015	< 0.04
		NHP_MW-202D	Apr-08	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	---	< 0.01	< 0.01	< 0.005	**0.033 J**	< 0.01	**0.00081 J**	**0.0024 J**
		NHP_MW-202D	Aug-09	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	< 0.005	**0.0114**
		NHP_MW-202D	Oct-10	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	**0.0021**	< 0.002	**0.0239**	< 0.001	< 0.005	< 0.005
		NHP_MW-202D	Nov-11	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	**0.0053**	< 0.001	< 0.005	< 0.005
		NHP_MW-202D	Aug-13	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	**0.0162**	< 0.001	< 0.005	**0.016**
		NHP_MW-202D	Jul-14	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 0.2	< 0.01	< 0.001	< 0.002	**0.0226**	< 0.001	< 0.005	**0.018**
		NHP_MW-202D	Jul-18	< 2	< 1	< 2	< 2	< 2	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	< 0.25	< 0.02	< 0.005	< 0.001	< 0.01	< 0.005	< 0.01	< 0.01
NHP_MW-203S	Shallow Overburden	NHP_MW-203S	May-07	< 5	< 5	**9.5**	**1.3 J**	**13**	< 5	< 5	< 10	< 5	< 5	< 5	< 5	**0.67 J**	< 5	---	---	< 2	< 0.01	< 0.0041	< 0.005	**0.0698**	< 0.01	< 0.015	**0.331**
		NHP_MW-203S	Nov-07	< 5	< 5	< 5	< 5	**26**	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	< 2	< 0.01	< 0.01	< 0.005	**0.0504**	< 0.0055	< 0.015	**0.344**
		NHP_MW-203S	Apr-08	< 5	< 5	**4.5 J**	< 5	**15**	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	R	< 0.01	< 0.01	< 0.005	**0.0699**	< 0.01	**0.0044 J**	**0.21**
		NHP_MW-203S_DUP	Apr-08	< 5	< 5	**4.7 J**	< 5	**14**	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	---	< 0.01	< 0.01	< 0.005	**0.0504**	< 0.01	**0.0021 J**	**0.206**
		NHP_MW-203S	Aug-09	< 2	< 2	**3.6**	< 2	**8.6**	< 2	< 2	< 10	< 2	< 2	**3.5**	**2.1**	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	**0.015**	< 0.001	< 0.005	**0.1361**
NHP_MW-203SX	Shallow Overburden	NHP_MW-203SX	Jul-17	< 1	< 1	**3.4**	< 1	**13**	< 1	< 1	< 1	< 1	< 1	< 1	**1.7**	< 1	< 1	---	---	< 0.25	< 0.005	< 0.02	< 0.01	**0.027**	< 0.02	< 0.02	**0.084**
		NHP_MW-203SX	Jul-18	< 2	< 1	< 2	< 2	< 2	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	< 0.25	< 0.02	< 0.005	**0.002**	**0.03**	< 0.005	< 0.01	**0.07**
		NHP_MW-203SX	Oct-20	< 0.75	< 0.5	**1.7**	< 0.5	**3.7**	< 0.5	< 1	< 5	< 0.5	< 5	< 2.5	< 0.75	< 1	< 0.75	< 0.5	< 0.5	---	---	---	---	---	---	---	---
NHP_MW-203D	Deep Overburden	NHP_MW-203D	May-07	< 5	< 5	---	< 5	**5.7**	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	< 2	< 0.01	< 0.0061	< 0.005	< 0.01	< 0.01	**0.167**	< 0.04
		NHP_MW-203D	Nov-07	< 5	< 5	**2.1 J**	< 5	**3 J**	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	< 2	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	**0.113**	**0.004 J**
		NHP_MW-203D	Apr-08	< 5	< 5	**1.6 J**	< 5	**2.3 J**	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	---	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	**0.109**	**0.0026 J**
		NHP_MW-203D	Aug-09	< 2	< 2	**2.2**	< 2	**2.1**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	**0.0021**	< 0.002	< 0.005	< 0.001	**0.1007**	< 0.005
		NHP_MW-203D	Nov-11	< 2	< 2	< 2	< 2	**2.4**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	**0.0022**	< 0.002	< 0.005	**0.0012**	**0.098**	< 0.005
		NHP_MW-203D	Aug-13	< 2	< 2	**4.3**	< 2	**5.2 Q**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	**0.0031**	< 0.002	< 0.005	< 0.001	**0.087**	< 0.005
		NHP_MW-203D	Jul-14	< 2	< 2	**5.2 Q**	< 2	**5.5**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	**0.45**	< 0.01	**0.0019**	< 0.001	< 0.005	< 0.001	**0.097**	< 0.005
		NHP_MW-203D	Jul-17	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	---	---	< 0.25	< 0.005	< 0.02	< 0.01	**0.024**	< 0.02	**0.075**	< 0.02
		NHP_MW-203D	Jul-18	< 2	< 1	< 2	< 2	**2**	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	**0.28**	< 0.02	< 0.005	< 0.001	< 0.01	< 0.005	**0.12**	< 0.01
		NHP_MW-203D	Oct-20	< 0.75	< 0.5	**0.67**	< 0.5	**1.1**	< 0.5	< 1	< 5	< 0.5	< 5	< 2.5	< 0.75	< 1	< 0.75	< 0.5	< 0.5	---	---	---	---	---	---	---	---

TABLE 5A - SUMMARY OF DETECTED COMPOUNDS - GROUNDWATER MONITORING
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

DRAFT

Monitoring Well ID	Geological Unit of Well Screen	Sample ID	Sampling Event Date	VOCs of Concern (µg/L)							Additional VOCs (µg/L)									Other COCs		Metals of Concern (mg/L)					
				Chloroform	1,1-Dichloroethene	Cis-1,2-Dichoroethene	1,1,1-Trichloroethane	Trichloroethene (TCE)	Tetrachloroethene (PCE)	Vinyl Chloride	Acetone	Benzene	Carbon Disulfide	Chloromethane	1,1-Dichloroethane	Methyl Tert-Butyl Ether (MTBE)	Toluene	Carbon Tetrachloride	Bromodichloromethane	1,4-Dioxane (µg/L)	Cyanide (mg/L)	Arsenic	Cadmium	Chromium	Lead	Manganese	Nickel
			CAS	67-66-3	75-35-4	156-59-2	71-55-6	79-01-6	127-18-4	75-01-4	67-64-1	71-43-2	75-15-0	74-87-3	75-34-3	1634-04-4	108-88-3	56-23-5	75-27-4	123-91-1	57-12-5	7440-38-2	7440-43-9	7440-47-3	7439-92-1	7439-96-5	7440-02-0
			AGQS	70	7	70	200	5	5	2	6,000	5	70	30	81	13	1,000	5	0.6	0.32	0.2	0.01	0.005	0.1	0.015	0.3	0.1
			ROD CUL	100	7	70	200	5	5	2	na	na	na	na	na	na	na	na	na	na	0.2	0.05	0.005	0.1	0.015	na	0.1
			NHDES GW-2	70	630	na	27,000	20	240	4	na	2,900	na	na	130	2,600	50,000	10	na	na	na	na	na	na	na	na	na
NHP_MW-204S	Shallow Overburden	NHP_MW-204S	Jun-07	5.8	< 5	< 5	< 5	7.9	2.9 J	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	< 2	< 0.01	< 0.0071	< 0.005	0.0044 J	< 0.01	< 0.015	0.0463
		NHP_MW-204S	Nov-07	230	< 5	< 5	< 5	4.4 J	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	< 5	0.0209	< 0.01	< 0.005	< 0.01	< 0.01	< 0.0026	0.0853
		NHP_MW-204S	Apr-08	710	< 5	< 5	< 5	3.3 J	2.9 J	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	< 2	< 0.01	< 0.01	< 0.0004	0.003	< 0.01	0.0196	0.31
		NHP_MW-204S	Aug-09	11	< 2	< 2	< 2	5	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	0.005	0.0805
		NHP_MW-204S	Nov-11	115	< 2	< 2	< 2	3.5	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	< 0.005	0.0465
		NHP_MW-204S	Aug-13	12	< 2	< 2	< 2	7.1	3.2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.001	0.0089	< 0.001	< 0.01	0.0212
		NHP_MW-204S	Jul-14	7.1	< 2	< 2	< 2	11	2.9	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	0.41	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	< 0.01	0.0155
		NHP_MW-204S	Jul-17	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	---	---	< 0.25	< 0.005	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02
		NHP_MW-204S	Jul-18	3	< 1	< 2	< 2	7	3	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	0.39	< 0.02	< 0.005	< 0.001	< 0.01	< 0.005	< 0.01	0.02
		NHP_MW-204S	Oct-20	1.2	< 0.5	< 0.5	< 0.5	3.9	2.9	< 1	< 5	< 0.5	< 5	< 2.5	< 0.75	< 1	< 0.75	< 0.5	< 0.5	0.374	---	---	---	---	---	---	---
NHP_MW-204D	Deep Overburden	NHP_MW-204D	Jun-07	< 5	< 5	0.86 J	< 5	4.5 J	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	< 2	< 0.01	< 0.0061	0.0025 J	< 0.01	< 0.01	0.456	< 0.04
		NHP_MW-204D	Nov-07	< 5	< 5	< 5	< 5	3.4 J	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	< 2	0.0385	0.0078 J	< 0.005	< 0.01	< 0.01	0.416	< 0.04
		NHP_MW-204D	Apr-08	< 5	< 5	< 5	< 5	3.3 J	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	R	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	0.402	< 0.04
		NHP_MW-204D	Aug-09	< 2	< 2	< 2	< 2	3.6	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	0.0048	< 0.002	< 0.005	< 0.001	0.3563	< 0.005
		NHP_MW-204D	Oct-10	< 2	< 2	2.3	< 2	4.3	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	0.0046	< 0.002	< 0.005	< 0.001	0.2118	< 0.005
		NHP_MW-204D	Oct-11	< 2	< 2	< 2	< 2	3.5	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	0.0061	< 0.002	< 0.005	< 0.001	0.3746	< 0.005
		NHP_MW-204D_DUP	Oct-11	< 2	< 2	< 2	< 2	3.3	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	0.0059	< 0.002	< 0.005	< 0.001	0.3641	< 0.005
		NHP_MW-204D	Aug-13	< 2	< 2	< 2	< 2	4.7	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	0.0051	< 0.001	< 0.005	< 0.001	0.366	< 0.005
		NHP_MW-204D_DUP	Aug-13	< 2	< 2	< 2	< 2	4.8	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	0.0051	< 0.001	< 0.005	< 0.001	0.37	< 0.005
		NHP_MW-204D	Jul-14	< 2	< 2	< 2	< 2	4.7	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	0.67	< 0.01	0.0049	< 0.001	< 0.005	< 0.001	0.32	< 0.005
		NHP_MW-204D_DUP	Jul-14	< 2	< 2	< 2	< 2	4.8	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	0.72	< 0.01	0.005	< 0.001	< 0.005	< 0.001	0.321	< 0.005
		NHP_MW-204D	Jul-17	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	---	---	0.46	< 0.005	< 0.02	< 0.01	< 0.02	< 0.02	0.3	< 0.02
		NHP_MW-204D	Jul-18	< 2	< 1	< 2	< 2	2	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	0.53	< 0.02	< 0.005	< 0.001	< 0.01	< 0.005	0.31	< 0.01
NHP_MW-204R	Bedrock	NHP_MW-204R	Jun-07	< 5	< 5	< 5	< 5	1.3 J	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	< 2	< 0.01	< 0.004	< 0.005	< 0.01	< 0.01	0.361	< 0.04
		NHP_MW-204R	Nov-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	< 2	0.0291	< 0.01	< 0.005	< 0.01	< 3.6	0.305	< 0.04
		NHP_MW-204R	Apr-08	< 5	< 5	< 5	< 5	1.4 J	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	R	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	0.363	0.0024 J
		NHP_MW-204R	Aug-09	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	0.2836	< 0.005
		NHP_MW-204R	Oct-10	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	0.2933	< 0.005
		NHP_MW-204R	Oct-11	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	0.2872	< 0.005
		NHP_MW-204R	Nov-12	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	0.266	< 0.005
		NHP_MW-204R_DUP	Nov-12	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	0.268	< 0.005
		NHP_MW-204R	Aug-13	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	0.28	< 0.005
		NHP_MW-204R	Jul-14	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 0.2	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	0.244	< 0.005
		NHP_MW-204R	Jul-18	< 2	< 1	< 2	< 2	< 2	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	< 0.25	< 0.02	< 0.005	< 0.001	< 0.01	< 0.005	0.19	< 0.01
NHP_MW-301S	Shallow Overburden	NHP_MW-301S	May-07	< 5	< 5	< 5	< 5	0.61 J	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	< 2	< 0.01	< 0.0047	0.0025 J	< 0.01	< 0.01	0.0492	0.0211 J
		NHP_MW-301S	Oct-07	< 5	< 5	< 5	< 5	3.6 J	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	---	< 0.01	< 0.01	0.0354	< 0.0022	< 0.01	0.191	0.0733
		NHP_MW-301S	Apr-08	< 5	< 5	< 5	< 5	0.98 J	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	< 2	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	0.0023 J	0.0241 J
		NHP_MW-301S	Aug-09	< 2	< 2	< 2	< 2	2.2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	0.0045	< 0.005	< 0.001	< 0.005	0.0524
		NHP_MW-301S	Oct-10	< 2	< 2	< 2	< 2	3.0	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	0.0303	< 0.005	< 0.001	0.0394	0.0823
		NHP_MW-301S	Nov-11	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	0.0023	< 0.005	< 0.001	< 0.005	0.0247
		NHP_MW-301S	Jul-12	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	---	---	---	---	---	---	---	---	---	---
		NHP_MW-301S_DUP	Jul-12	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	---	---	---	---	---	---	---	---	---	---
		NHP_MW-301S	Aug-13	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	0.012	< 0.001	0.0048	< 0.005	< 0.001	< 0.01	0.0222
		NHP_MW-301S	Jul-14	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 0.2	< 0.01	< 0.001	0.0206	< 0.005	< 0.001	< 0.01	0.0425
		NHP_MW-301S	Jul-17	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	---	---	< 0.25	< 0.005	< 0.02	0.027	< 0.02	< 0.02	< 0.02	0.032
		NHP_MW-301S	Jul-18	< 2	< 1	< 2	< 2	< 2	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	< 0.25	< 0.02	< 0.005	0.1	< 0.01	< 0.005	0.11	0.09
		NHP_MW-301S	Oct-20	< 0.75	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1	< 5	< 0.5	< 5	< 2.5	< 0.75	< 1	< 0.75	< 0.5	< 0.5	---	---	< 0.0005	0.1328	< 0.001	< 0.001	0.3644	0.1152

TABLE 5A - SUMMARY OF DETECTED COMPOUNDS - GROUNDWATER MONITORING
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

DRAFT

Monitoring Well ID	Geological Unit of Well Screen	Sample ID	Sampling Event Date	VOCs of Concern (µg/L)							Additional VOCs (µg/L)									Other COCs		Metals of Concern (mg/L)					
				Chloroform	1,1-Dichloroethene	Cis-1,2-Dichoroethene	1,1,1-Trichloroethane	Trichloroethene (TCE)	Tetrachloroethene (PCE)	Vinyl Chloride	Acetone	Benzene	Carbon Disulfide	Chloromethane	1,1-Dichloroethane	Methyl Tert-Butyl Ether (MTBE)	Toluene	Carbon Tetrachloride	Bromodichloromethane	1,4-Dioxane (µg/L)	Cyanide (mg/L)	Arsenic	Cadmium	Chromium	Lead	Manganese	Nickel
			CAS	**67-66-3**	**75-35-4**	**156-59-2**	**71-55-6**	**79-01-6**	**127-18-4**	**75-01-4**	**67-64-1**	**71-43-2**	**75-15-0**	**74-87-3**	**75-34-3**	**1634-04-4**	**108-88-3**	**56-23-5**	**75-27-4**	**123-91-1**	**57-12-5**	**7440-38-2**	**7440-43-9**	**7440-47-3**	**7439-92-1**	**7439-96-5**	**7440-02-0**
			AGQS	**70**	**7**	**70**	**200**	**5**	**5**	**2**	**6,000**	**5**	**70**	**30**	**81**	**13**	**1,000**	**5**	**0.6**	**0.32**	**0.2**	**0.01**	**0.005**	**0.1**	**0.015**	**0.3**	**0.1**
			ROD CUL	**100**	**7**	**70**	**200**	**5**	**5**	**2**	na	na	na	na	na	na	na	na	na	na	**0.2**	**0.05**	**0.005**	**0.1**	**0.015**	na	**0.1**
			NHDES GW-2	**70**	**630**	na	**27,000**	**20**	**240**	**4**	na	**2,900**	na	na	**130**	**2,600**	**50,000**	**10**	na	na	na	na	na	na	na	na	na
NHP_MW-301D	Deep Overburden	NHP_MW-301D	May-07	**0.82 J**	< 5	< 5	< 5	**28**	**0.63 J**	< 5	< 10	< 5	< 5	< 5	< 5	**1.6**	< 5	---	---	< 2	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	**0.361**	**0.0447**
		NHP_MW-301D	Oct-07	< 5	< 5	< 5	< 5	**16**	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	---	**0.0129 J**	< 0.01	< 0.00076	< 0.0031	< 0.01	**0.0673**	**0.0129 J**
		NHP_MW-301D	Apr-08	< 5	< 5	< 5	< 5	**29**	< 5	< 5	< 10	< 5	< 5	< 5	< 5	**1.1**	< 5	---	---	< 2	< 0.01	< 0.01	< 0.005	**0.00049 J**	< 0.01	**0.268**	**0.0328 J**
		NHP_MW-301D	Aug-09	< 2	< 2	< 2	< 2	**3.1**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	**0.0777**	**0.0284**
		NHP_MW-301D	Oct-10	< 2	< 2	< 2	< 2	**5.6**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	**0.4324**	**0.0555**
		NHP_MW-301D	Nov-11	< 2	< 2	< 2	< 2	**4.2**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	**0.0754**	**0.0308**
		NHP_MW-301D	Aug-13	< 2	< 2	< 2	< 2	**3.5**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.001	**0.0079**	< 0.001	< 0.01	**0.0308**
		NHP_MW-301D	Jul-14	< 2	< 2	< 2	< 2	**4.3**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	**0.26**	< 0.01	< 0.001	< 0.001	**0.0052**	< 0.001	< 0.01	**0.0258**
		NHP_MW-301D	Jul-18	< 2	< 1	< 2	< 2	**3**	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	< 0.25	< 0.02	< 0.005	< 0.001	< 0.01	< 0.005	< 0.01	**0.06**
MW-301	Shallow Overburden	MW-301	Nov-09	---	< 2	< 2	< 2	**26**	---	< 2	---	< 1	---	---	< 2	---	< 2	---	---	---	---	---	---	---	---	---	---
		MW-301	Nov-10	< 2	< 1	< 2	< 2	**28**	< 2	< 2	< 10	< 1	< 5	< 2	< 2	< 5	< 2	---	---	---	---	---	---	---	---	---	---
		MW-301	Nov-11	< 2	< 1	< 2	< 2	**12**	< 2	< 2	< 10	< 1	< 5	< 2	**2**	< 5	< 1	---	---	---	---	---	---	---	---	---	---
		MW-301	Nov-12	< 2	**3**	**8**	< 2	**30**	< 2	< 2	< 10	< 1	< 5	< 2	**15**	< 5	< 1	---	---	---	---	---	---	---	---	---	---
		MW-301	Nov-13	< 2	< 1	< 2	< 2	**32**	< 2	< 2	< 10	< 1	< 5	< 2	**2**	< 5	< 1	---	---	---	---	---	---	---	---	---	---
NHP_MW-302S	Shallow Overburden	NHP_MW-302S	May-07	< 5	< 5	< 5	< 5	**5.1**	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	< 2	< 0.0042	< 0.01	< 0.005	**0.0073 J**	< 0.01	**0.133**	< 0.04
		NHP_MW-302S	Oct-07	< 5	**2.6 J**	**3.1 J**	< 5	**82**	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	< 2	**0.147 J**	< 0.01	< 0.005	< 0.01	< 0.01	**0.26**	**0.102 J**
		NHP_MW-302S	Apr-08	< 5	< 5	< 5	< 5	**3.8**	< 5	< 5	< 10	< 5	< 5	< 5	< 5	< 5	< 5	---	---	**2**	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	**0.0361**	**0.0054 J**
		NHP_MW-302S	Aug-09	< 2	< 2	< 2	< 2	**18**	< 2	< 2	< 10	< 2	< 2	< 2	**2.7**	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	**0.0359**	< 0.005
		NHP_MW-302S	Oct-10	< 2	**2.4**	**3.2**	< 2	**48**	< 2	< 2	< 10	< 2	< 2	< 2	**11**	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	**0.8295**	**0.0313**
		NHP_MW-302S	Oct-11	< 2	< 2	< 2	< 2	**28**	< 2	< 2	< 10	< 2	< 2	< 2	**5**	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	**0.0833**	< 0.005
		NHP_MW-302S	Jul-12	< 1	**1.8**	**1.4**	< 1	**33**	< 1	< 1	< 1	< 1	< 1	< 1	**9.3**	< 1	< 1	---	---	---	---	---	---	---	---	---	---
		NHP_MW-302S	Aug-13	< 2	**4.2**	**4.2**	< 2	**123**	< 2	< 2	< 10	< 2	< 2	< 2	**20**	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	**0.609**	**0.0056**
		NHP_MW-302S	Jul-14	< 2	**5.8 Q**	**5.2 Q**	< 2	**119**	< 2	< 2	< 10	< 2	< 2	< 2	**28**	< 2	< 2	---	---	**1.84**	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	**0.114**	< 0.005
		NHP_MW-302S	Jul-17	< 1	**1.4**	**1.9**	< 1	**41**	< 1	< 1	< 1	< 1	< 1	< 1	**8.1**	< 1	< 1	---	---	**1.2**	< 0.005	< 0.02	< 0.01	< 0.02	< 0.02	**0.52**	< 0.02
		NHP_MW-302S	Jul-18	< 2	**4**	**3**	< 2	**93**	< 2	< 2	< 50	< 2	< 2	< 2	**19**	< 2	< 2	< 2	< 0.6	**2.2**	< 0.02	< 0.005	< 0.001	< 0.01	< 0.005	**0.64**	< 0.01
		NHP_MW-302S	Oct-20	< 0.75	**2.7**	**3.2**	< 0.5	**91**	< 0.5	< 1	< 5	< 0.5	< 5	< 2.5	**15**	< 1	< 0.75	< 0.5	< 0.5	**2.1**	---	---	---	---	---	---	---
NHP_MW-302SA	Shallow Overburden	NHP_MW-302SA	Apr-19	**5.1**	**10.5**	**6**	< 1	**73.9**	< 1	< 1	< 1	< 1	< 1	< 1	**46.5**	< 1	< 1	< 1	< 1	**0.95**	< 0.005	< 40	< 10	< 20	< 20	**0.72**	**0.061**
		NHP_MW-302SA	Oct-20	**0.81**	**4.2**	**3.4**	< 0.5	**47**	< 0.5	< 1	< 5	< 0.5	< 5	< 2.5	**23**	< 1	< 0.75	< 0.5	< 0.5	**0.636**	---	---	---	---	---	---	---
MW-302	Shallow Overburden	MW-302	Nov-09	---	**6**	**9**	< 2	**21**	---	< 2	---	**1**	---	---	< 2	---	< 2	---	---	---	---	---	---	---	---	---	---
		MW-302	Nov-10	< 2	**1**	**4**	< 2	**20**	< 2	< 2	< 10	< 1	< 5	< 2	**10**	< 5	< 2	---	---	---	---	---	---	---	---	---	---
		MW-302	Nov-11	< 2	**3**	**33**	< 2	**32**	< 2	< 2	< 10	**2**	< 5	< 2	**21**	< 5	< 1	---	---	---	---	---	---	---	---	---	---
		MW-302	Nov-12	< 2	**2**	**4**	< 2	**21**	< 2	< 2	< 10	< 1	< 5	< 2	**13**	< 5	< 1	---	---	---	---	---	---	---	---	---	---
		MW-302	Nov-13	< 2	< 1	**12**	< 2	**21**	< 2	< 2	< 10	< 1	< 5	< 2	**7**	< 5	< 1	---	---	---	---	---	---	---	---	---	---
NHP_MW-302D	Deep Overburden	NHP_MW-302D	May-07	< 5	< 5	< 5	< 5	**4.9 J**	< 5	< 5	< 10	< 5	< 5	< 5	< 5	**4.9 J**	< 5	---	---	< 2	< 0.0106	< 0.01	**0.0045 J**	< 0.01	< 0.01	**0.156**	< 0.04
		NHP_MW-302D	Oct-07	< 5	< 5	< 5	< 5	**3.6 J**	< 5	< 5	< 10	< 5	< 5	< 5	< 5	**3.3 J**	< 5	---	---	< 2	**0.0109 J**	< 0.01	< 0.005	**0.0028 J**	< 0.01	**0.174**	< 0.04
		NHP_MW-302D	Apr-08	< 5	< 5	< 5	< 5	**1.8 J**	< 5	< 5	< 10	< 5	< 5	< 5	< 5	**2.6 J**	< 5	---	---	---	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	**0.19**	**0.0034 J**
		NHP_MW-302D	Aug-09	< 2	< 2	< 2	< 2	**2**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	**2.1**	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	**0.1781**	< 0.005
		NHP_MW-302D	Oct-10	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	**0.1956**	< 0.005
		NHP_MW-302D	Oct-11	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	**2.8**	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	**0.2516**	< 0.005
		NHP_MW-302D	Aug-13	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	**2**	< 2	---	---	< 2	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	**0.069**	< 0.005
		NHP_MW-302D	Jul-14	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	**2.1**	< 2	---	---	< 0.2	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	**0.034**	< 0.005
		NHP_MW-302D	Jul-18	< 2	< 1	< 2	< 2	< 2	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	< 0.25	< 0.02	< 0.005	< 0.001	< 0.01	< 0.005	**0.31**	< 0.01
		NHP_MW-302D	Oct-20	< 0.75	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1	< 5	< 0.5	< 5	< 2.5	< 0.75	< 1	< 0.75	< 0.5	< 0.5	< 0.139	---	---	---	---	---	---	---
NHP_MW-302DA	Deep Overburden	NHP_MW-302DA	Apr-19	< 1	**1.3**	**1.8**	< 1	**92**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	**5.3**	< 1	< 1	< 1	**3.8**	< 0.005	< 40	< 10	< 20	< 20	**0.61**	< 20
		NHP_MW-302DA	Oct-20	< 0.75	**0.79**	**1.3**	< 0.5	**65**	< 0.5	< 1	< 5	< 0.5	< 5	< 2.5	< 0.75	**2**	< 0.75	< 0.5	< 0.5	**2.88**	---	---	---	---	---	---	---

TABLE 5A - SUMMARY OF DETECTED COMPOUNDS - GROUNDWATER MONITORING
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

DRAFT

Monitoring Well ID	Geological Unit of Well Screen	Sample ID	Sampling Event Date	VOCs of Concern (µg/L)							Additional VOCs (µg/L)									Other COCs		Metals of Concern (mg/L)					
				Chloroform	1,1-Dichloroethene	Cis-1,2-Dichoroethene	1,1,1-Trichloroethane	Trichloroethene (TCE)	Tetrachloroethene (PCE)	Vinyl Chloride	Acetone	Benzene	Carbon Disulfide	Chloromethane	1,1-Dichloroethane	Methyl Tert-Butyl Ether (MTBE)	Toluene	Carbon Tetrachloride	Bromodichloromethane	1,4-Dioxane (µg/L)	Cyanide (mg/L)	Arsenic	Cadmium	Chromium	Lead	Manganese	Nickel
			CAS	**67-66-3**	**75-35-4**	**156-59-2**	**71-55-6**	**79-01-6**	**127-18-4**	**75-01-4**	**67-64-1**	**71-43-2**	**75-15-0**	**74-87-3**	**75-34-3**	**1634-04-4**	**108-88-3**	**56-23-5**	**75-27-4**	**123-91-1**	**57-12-5**	**7440-38-2**	**7440-43-9**	**7440-47-3**	**7439-92-1**	**7439-96-5**	**7440-02-0**
			AGQS	**70**	**7**	**70**	**200**	**5**	**5**	**2**	**6,000**	**5**	**70**	**30**	**81**	**13**	**1,000**	**5**	**0.6**	**0.32**	**0.2**	**0.01**	**0.005**	**0.1**	**0.015**	**0.3**	**0.1**
			ROD CUL	**100**	**7**	**70**	**200**	**5**	**5**	**2**	na	na	na	na	na	na	na	na	na	na	**0.2**	**0.05**	**0.005**	**0.1**	**0.015**	na	**0.1**
			NHDES GW-2	**70**	**630**	na	**27,000**	**20**	**240**	**4**	na	**2,900**	na	na	**130**	**2,600**	**50,000**	**10**	na	na	na	na	na	na	na	na	na
NHP_MW-303S	Shallow Overburden	NHP_MW-303S	May-07	< 5	< 5	< 5	< 5	**2.2 J**	< 5	< 5	< 10	< 5	< 5	< 5	< 5	**7.1 J**	< 5	---	---	< 2	< 0.0052	< 0.01	**1.11**	< 0.01	< 0.01	**0.544**	**0.519**
		NHP_MW-303S	Oct-07	< 5	< 5	< 5	**0.9**	**4.5 J**	< 5	< 5	< 10	< 5	< 5	< 5	< 5	**4.3 J**	< 5	---	---	< 2	**0.0315 J**	< 0.01	**1.03**	**0.0058 J**	< 0.01	**0.432**	**0.452**
		NHP_MW-303S_DUP	Oct-07	< 5	< 5	< 5	< 5	**4.8 J**	< 5	< 5	< 10	< 5	< 5	< 5	< 5	**4.5 J**	< 5	---	---	**2.4**	**0.0338 J**	< 0.01	**1.03**	< 0.01	< 0.01	**0.433**	**0.45**
		NHP_MW-303S	Apr-08	< 10	< 5	**2.9 J**	< 5	**11 J**	< 5	< 5	< 10	< 5	< 5	< 5	< 5	**1.8 J**	< 5	---	---	< 2	< 0.01	< 0.01	**0.721**	< 0.01	< 0.01	**0.428**	**0.432**
		NHP_MW-303S	Aug-09	< 2	< 2	< 2	< 2	**3.1**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	**1.44**	< 0.005	< 0.001	**0.6594**	**0.596**
		NHP_MW-303S	Oct-10	< 2	< 2	**6.3**	< 2	**6.7**	< 2	< 2	< 10	< 2	< 2	< 2	**5**	< 2	< 2	---	---	< 2	< 0.01	**0.0013**	**0.5578**	< 0.005	< 0.001	**0.525**	**0.309**
		NHP_MW-303S	Oct-11	< 2	< 2	**17**	< 2	**13**	< 2	< 2	< 10	< 2	< 2	< 2	**19**	< 2	< 2	---	---	< 2	< 0.01	**0.004**	**0.5195**	< 0.005	< 0.001	**0.4114**	**0.2703**
		NHP_MW-303S	Aug-13	< 2	< 2	**55**	< 2	**12**	< 2	< 2	< 10	< 2	< 2	< 2	**21**	< 2	< 2	---	---	< 2	**0.013**	**0.0026**	**0.2046**	< 0.005	< 0.001	**0.136**	**0.1598**
		NHP_MW-303S	Jul-14	< 2	< 2	**44 Q**	< 2	**3.8**	< 2	< 2	< 10	< 2	< 2	< 2	**16 Q**	< 2	< 2	---	---	< 0.2	< 0.01	**0.0012**	**1.05**	< 0.005	< 0.001	**0.3494**	**0.3383**
		NHP_MW-303S	Jul-17	< 1	< 1	**3.2**	< 1	**1.6**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	---	---	< 0.25	**0.011**	< 0.02	**0.76**	< 0.02	< 0.02	**0.12**	**0.35**
		NHP_MW-303S	Jul-18	< 2	< 1	**4**	< 2	< 2	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	< 0.25	< 0.02	< 0.005	**1.1**	< 0.01	< 0.005	**0.19**	**0.34**
		NHP_MW-303S	Oct-20	< 0.75	< 0.5	< 0.5	< 0.5	**1.8**	< 0.5	< 1	< 5	< 0.5	< 5	< 2.5	< 0.75	< 1	< 0.75	< 0.5	< 0.5	---	---	**0.00106**	**0.5025**	**0.001**	< 0.001	**0.2614**	**0.3051**
NHP_MW-303SA	Shallow Overburden	NHP_MW-303SA	Apr-19	< 1	< 1	< 1	< 1	**3.6**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 0.25	< 0.005	< 40	**1**	< 20	< 20	**0.38**	**0.3**
		NHP_MW-303SA_DUP	Apr-19	< 1	< 1	< 1	< 1	**3.6**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 0.25	< 0.005	< 40	**1**	< 20	< 20	**0.36**	**0.29**
		NHP_MW-303SA	Oct-20	< 0.75	< 0.5	**0.56**	< 0.5	**4.4**	< 0.5	< 1	< 5	< 0.5	< 5	< 2.5	< 0.75	< 1	< 0.75	< 0.5	< 0.5	---	---	**0.00148**	**1.511**	**0.00109**	< 0.001	**0.4658**	**0.4178**
NHP_MW-303D	Deep Overburden	NHP_MW-303D	May-07	< 5	< 5	**4.4 J**	< 5	**120**	< 5	< 5	< 10	< 5	< 5	< 5	< 5	**0.9 J**	< 5	---	---	**7.1**	< 0.0056	< 0.01	< 0.005	< 0.01	< 0.01	**0.293**	< 0.04
		NHP_MW-303D_DUP	May-07	< 5	< 5	**3.9 J**	< 5	**110**	< 5	< 5	< 10	< 5	< 5	< 5.8	< 5	**0.96 J**	< 5	---	---	**7.2**	< 0.0042	< 0.01	< 0.005	< 0.01	< 0.01	**0.301**	< 0.04
		NHP_MW-303D	Oct-07	< 5	**1.1 J**	**4.5 J**	< 5	**130**	< 5	< 5	< 10	< 5	< 5	< 5	< 5	**1 J**	< 5	---	---	**8.3**	< 0.0042	< 0.01	< 0.005	**0.0021 J**	< 0.01	**0.366**	**0.0081 J**
		NHP_MW-303D	Apr-08	< 5	< 5	**2.4 J**	< 5	**79**	< 5	< 5	< 10	< 5	< 5	< 5	< 5	**1.1 J**	< 5	---	---	< 2	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	**0.26**	**0.007 J**
		NHP_MW-303D	Aug-09	< 2	< 2	**3**	< 2	**74**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	**6**	< 0.01	**0.0087**	< 0.002	< 0.005	< 0.001	**0.1076**	**0.0074**
		NHP_MW-303D	Oct-10	< 2	< 2	**3.3**	< 2	**78**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	**0.0081**	< 0.002	< 0.005	< 0.001	**0.1221**	**0.0067**
		NHP_MW-303D	Oct-11	< 2	< 2	**2.3**	< 2	**53**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	**2.9**	< 0.01	**0.0106**	< 0.002	< 0.005	< 0.001	**0.1086**	**0.0066**
		NHP_MW-303D	Aug-13	< 2	< 2	**2.9**	< 2	**74**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	**2.84**	< 0.01	**0.0091**	< 0.001	< 0.005	< 0.001	**0.124**	**0.0059**
		NHP_MW-303D	Jul-14	< 2	< 2	**3.1 Q**	< 2	**63**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	**2.52**	< 0.01	**0.0057**	< 0.001	< 0.005	< 0.001	**0.116**	< 0.005
		NHP_MW-303D	Jul-17	< 1	< 1	< 1	< 1	**20**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	---	---	**1.7**	< 0.005	< 0.02	< 0.01	< 0.02	< 0.02	**0.098**	< 0.02
		NHP_MW-303D	Jul-18	< 2	< 1	< 2	< 2	**38**	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	**2**	< 0.02	**0.008**	< 0.001	< 0.01	< 0.005	**0.14**	< 0.01
		NHP_MW-303D	Oct-20	< 0.75	< 0.5	**1.6**	< 0.5	**36**	< 0.5	< 1	< 5	< 0.5	< 5	< 2.5	< 0.75	< 1	< 0.75	< 0.5	< 0.5	**2.37**	---	---	---	---	---	---	---
NHP_MW-303DA	Deep Overburden	NHP_MW-303DA	Apr-19	< 1	**3.2**	**7.3**	< 1	**350**	**1.1**	< 1	< 1	< 1	< 1	< 1	**3.2**	**3.1**	< 1	< 1	< 1	**13**	< 0.005	< 40	< 10	< 20	< 20	**0.82**	< 20
		NHP_MW-303DA	Oct-20	< 1.9	**2.7**	**7.3**	< 1.2	**300**	< 1.2	< 2.5	< 12	< 1.2	< 12	< 6.2	**3.2**	< 2.5	< 1.9	< 1.2	< 1.2	**10.7**	---	---	---	---	---	---	---
NHP_MW-304S	Shallow Overburden	NHP_MW-304S	May-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	---	< 5	< 5	< 5	---	---	---	< 0.007	< 0.01	**0.052**	< 0.01	< 0.01	**0.847**	**0.198**
		NHP_MW-304S	Oct-07	< 5	---	< 5	< 5	< 5	< 5	< 5	---	---	---	---	< 5	---	< 5	---	---	---	**0.0477**	< 0.01	**0.0463**	< 0.01	< 0.01	**1.53**	**0.279**
		NHP_MW-304S	Apr-08	< 5	---	< 5	< 5	< 5	< 5	< 5	---	---	---	---	< 5	---	< 5	---	---	---	< 0.01	< 0.01	**0.0228**	< 0.01	< 0.01	**1.07**	**0.196**
		NHP_MW-304S	Aug-09	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	**0.04**	< 0.001	**0.0103**	< 0.005	< 0.001	**1.25**	**0.1884**
		NHP_MW-304S	Oct-10	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	**4.3**	**0.062**	< 0.001	**0.0109**	< 0.005	< 0.001	**0.79**	**0.113**
		NHP_MW-304S	Oct-11	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	**0.052**	< 0.001	< 0.002	< 0.005	< 0.001	**0.0985**	**0.0309**
		NHP_MW-304S	Aug-13	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	**0.064**	< 0.001	**0.0023**	< 0.005	< 0.001	**0.064**	**0.0409**
		NHP_MW-304S	Jul-14	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 0.2	**0.018**	< 0.001	**0.0023**	**0.0118**	< 0.001	**0.021**	**0.0311**
		NHP_MW-304S	Jul-18	< 2	< 1	< 2	< 2	< 2	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	< 0.25	**0.13**	< 0.005	**0.002**	< 0.01	< 0.005	**0.01**	**0.03**
NHP_MW-304D	Deep Overburden	NHP_MW-304D	May-07	< 5	< 5	**3.1 J**	< 5	**36**	< 5	< 5	< 10	< 5	< 5	---	< 5	**0.95 J**	< 5	---	---	---	< 0.006	< 0.01	< 0.005	< 0.01	< 0.01	**1.1**	**0.275**
		NHP_MW-304D	Oct-07	< 5	< 5	**3.2 J**	< 5	**35**	< 5	< 5	---	---	---	---	< 5	---	< 5	---	---	---	**0.0567**	**0.0062 J**	**0.0018 J**	**0.0012 J**	< 0.01	**1.38**	**0.503**
		NHP_MW-304D	Apr-08	< 5	< 5	< 5	< 5	**26**	< 5	< 5	---	---	---	---	< 5	---	< 5	---	---	**2.5**	< 0.01	< 0.01	**0.0017 J**	< 0.01	< 0.01	**1.38**	**0.514**
		NHP_MW-304D	Aug-09	< 2	< 2	**3.3**	< 2	**40**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	**0.0036**	< 0.005	< 0.001	**0.5722**	**0.1954**
		NHP_MW-304D	Oct-10	< 2	< 2	**3.6**	< 2	**36**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	**0.5208**	**0.0679**
		NHP_MW-304D	Oct-11	< 2	< 2	**4.5**	< 2	**38**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	**2.1**	< 0.01	< 0.001	**0.0128**	< 0.005	< 0.001	**0.7495**	**0.1379**
		NHP_MW-304D	Aug-13	< 2	< 2	**4**	< 2	**39**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	**0.0094**	< 0.005	< 0.001	**0.515**	**0.1235**
		NHP_MW-304D	Jul-14	< 2	< 2	**3.7**	< 2	**37**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	**1.6**	< 0.01	< 0.001	**0.0124**	< 0.005	< 0.001	**0.414**	**0.1087**
		NHP_MW-304D	Jul-17	< 1	< 1	**1.4**	< 1	**14**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	---	---	**1**	**0.005**	< 0.02	< 0.01	< 0.02	< 0.02	**0.32**	**0.054**
		NHP_MW-304D	Jul-18	< 2	< 1	**4**	< 2	**38**	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	**2.4**	< 0.02	< 0.005	**0.003**	< 0.01	< 0.005	**0.25**	**0.04**
		NHP_MW-304D	Oct-20	< 0.75	< 0.5	**4**	< 0.5	**37**	< 0.5	< 1	< 5	< 0.5	< 5	< 2.5	< 0.75	< 1	< 0.75	< 0.5	< 0.5	**2.41**	---	**0.00066**	**0.00312**	< 0.001	< 0.001	**0.3012**	**0.0425**

TABLE 5A - SUMMARY OF DETECTED COMPOUNDS - GROUNDWATER MONITORING
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

DRAFT

Monitoring Well ID	Geological Unit of Well Screen	Sample ID	Sampling Event Date	VOCs of Concern (µg/L)							Additional VOCs (µg/L)									Other COCs		Metals of Concern (mg/L)					
				Chloroform	1,1-Dichloroethene	Cis-1,2-Dichoroethene	1,1,1-Trichloroethane	Trichloroethene (TCE)	Tetrachloroethene (PCE)	Vinyl Chloride	Acetone	Benzene	Carbon Disulfide	Chloromethane	1,1-Dichloroethane	Methyl Tert-Butyl Ether (MTBE)	Toluene	Carbon Tetrachloride	Bromodichloromethane	1,4-Dioxane (µg/L)	Cyanide (mg/L)	Arsenic	Cadmium	Chromium	Lead	Manganese	Nickel
			CAS	**67-66-3**	**75-35-4**	**156-59-2**	**71-55-6**	**79-01-6**	**127-18-4**	**75-01-4**	**67-64-1**	**71-43-2**	**75-15-0**	**74-87-3**	**75-34-3**	**1634-04-4**	**108-88-3**	**56-23-5**	**75-27-4**	**123-91-1**	**57-12-5**	**7440-38-2**	**7440-43-9**	**7440-47-3**	**7439-92-1**	**7439-96-5**	**7440-02-0**
			AGQS	**70**	**7**	**70**	**200**	**5**	**5**	**2**	**6,000**	**5**	**70**	**30**	**81**	**13**	**1,000**	**5**	**0.6**	**0.32**	**0.2**	**0.01**	**0.005**	**0.1**	**0.015**	**0.3**	**0.1**
			ROD CUL	**100**	**7**	**70**	**200**	**5**	**5**	**2**	na	na	na	na	na	na	na	na	na	na	**0.2**	**0.05**	**0.005**	**0.1**	**0.015**	na	**0.1**
			NHDES GW-2	**70**	**630**	na	**27,000**	**20**	**240**	**4**	na	**2,900**	na	na	**130**	**2,600**	**50,000**	**10**	na	na	na	na	na	na	na	na	na
NHP_MW-305S	Shallow Overburden	NHP_MW-305S	May-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	---	< 5	< 5	< 5	---	---	---	< 0.004	< 0.01	< 0.005	< 0.01	< 0.01	< 0.01	**0.018**
		NHP_MW-305S	Oct-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	---	---	---	---	< 5	---	< 5	---	---	---	**0.0538**	< 0.01	< 0.005	**0.0014**	< 0.01	**0.0452**	**0.0401**
		NHP_MW-305S	Apr-08	< 5	< 5	< 5	< 5	< 5	< 5	< 5	---	---	---	---	< 5	---	< 5	---	---	---	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	**0.0325**	**0.111**
		NHP_MW-305S	Aug-09	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	**0.0059**	**0.0355**
		NHP_MW-305S	Oct-10	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	**0.0117**	**0.0759**
		NHP_MW-305S	Oct-11	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	**0.0055**	**0.0628**
		NHP_MW-305S	Aug-13	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	< 0.01	**0.0407**
		NHP_MW-305S	Jul-14	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 0.2	< 0.01	< 0.001	< 0.001	**0.0055**	< 0.001	< 0.01	**0.0563**
		NHP_MW-305S	Jul-18	**3**	< 1	< 2	< 2	< 2	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	< 0.25	< 0.02	< 0.005	< 0.001	< 0.01	< 0.005	< 0.01	**0.07**
NHP_MW-305D	Deep Overburden	NHP_MW-305D	May-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	---	< 5	< 5	< 5	---	---	---	< 0.005	**0.0048 J**	**0.0038 J**	< 0.01	< 0.01	**0.2**	< 0.04
		NHP_MW-305D	Oct-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	---	---	---	---	< 5	---	< 5	---	---	---	**0.0252**	**0.0067 J**	< 0.005	< 0.01	< 0.01	**0.381**	**0.0097 J**
		NHP_MW-305D	Apr-08	< 5	< 5	< 5	< 5	< 5	< 5	< 5	---	---	---	---	< 5	---	< 5	---	---	---	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	**0.0493**	**0.0015 J**
		NHP_MW-305D	Aug-09	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	**0.0096**	< 0.005
		NHP_MW-305D	Oct-10	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	**0.0218**	< 0.005
		NHP_MW-305D	Oct-11	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	**0.0062**	< 0.001	**0.0099**	< 0.005
		NHP_MW-305D	Aug-13	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.001	**0.0055**	< 0.001	< 0.01	< 0.005
		NHP_MW-305D	Jul-14	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 0.2	< 0.01	< 0.001	< 0.001	**0.0076**	< 0.001	< 0.01	< 0.005
		NHP_MW-305D	Jul-18	< 2	< 1	< 2	< 2	< 2	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	< 0.25	< 0.02	< 0.005	< 0.001	< 0.01	< 0.005	< 0.01	< 0.01
NHP_MW-306S	Shallow Overburden	NHP_MW-306S	May-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	---	< 5	< 5	< 5	---	---	---	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	**0.0123 J**	< 0.04
		NHP_MW-306S	Nov-07	< 5	**2.1 J**	< 5	< 5	**15**	< 5	< 5	---	---	---	---	< 5	---	< 5	---	---	---	**0.0033 J**	< 0.01	< 0.005	< 0.01	< 0.01	**0.0088 J**	< 0.04
		NHP_MW-306S	Apr-08	< 5	< 5	< 5	< 5	< 5	< 5	< 5	---	---	---	---	< 5	---	< 5	---	---	---	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	**0.0032 J**	< 0.04
		NHP_MW-306S	Aug-09	< 2	< 2	< 2	< 2	**7.3**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	< 0.005	< 0.005
		NHP_MW-306S	Oct-10	< 2	< 2	< 2	< 2	**5.9**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	**0.0187**	< 0.005
		NHP_MW-306S	Oct-11	< 2	< 2	< 2	< 2	< 2	< 2	< 2	**14**	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	**0.0189**	< 0.005
		NHP_MW-306S	Aug-13	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	**0.013**	< 0.005
		NHP_MW-306S	Jul-14	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 0.2	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	< 0.005	< 0.005
		NHP_MW-306S	Jul-18	< 2	< 1	< 2	< 2	< 2	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	< 0.25	< 0.02	< 0.005	< 0.001	< 0.01	< 0.005	< 0.01	< 0.01
NHP_MW-306D	Deep Overburden	NHP_MW-306D	May-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	---	< 5	< 5	< 5	---	---	---	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	**0.143**	< 0.04
		NHP_MW-306D_DUP	May-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	---	< 5	< 5	< 5	---	---	---	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	**0.164**	< 0.04
		NHP_MW-306D	Oct-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	---	---	---	---	< 5	---	< 5	---	---	---	**0.003 J**	< 0.01	< 0.005	< 0.01	< 0.01	**0.0607**	< 0.04
		NHP_MW-306D	Apr-08	< 5	< 5	< 5	< 5	< 5	< 5	< 5	---	---	---	---	< 5	---	< 5	---	---	---	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	**0.0266**	**0.0032 J**
		NHP_MW-306D	Aug-09	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	< 0.005	< 0.005
		NHP_MW-306D	Oct-10	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	< 0.005	< 0.005
		NHP_MW-306D	Oct-11	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	< 0.005	< 0.005
		NHP_MW-306D	Aug-13	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	< 0.01	< 0.005
		NHP_MW-306D	Jul-14	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 0.2	< 0.01	< 0.001	< 0.001	**0.0053**	< 0.001	< 0.01	< 0.005
		NHP_MW-306D	Jul-18	< 2	< 1	< 2	< 2	< 2	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	< 0.25	< 0.02	< 0.005	< 0.001	< 0.01	< 0.005	< 0.01	< 0.01
NHP_MW-307S	Shallow Overburden	NHP_MW-307S	May-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	---	< 5	< 5	< 5	---	---	---	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	**0.0069 J**	< 0.04
		NHP_MW-307S	Oct-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	---	---	---	---	< 5	---	< 5	---	---	---	< 0.01	< 0.01	< 0.005	**0.0023 J**	< 0.01	**0.0031 J**	< 0.04
		NHP_MW-307S	Apr-08	< 5	< 5	< 5	< 5	**5.8**	< 5	< 5	---	---	---	---	< 5	---	< 5	---	---	---	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	**0.0156**	**0.0059 J**
		NHP_MW-307S	Aug-09	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	< 0.005	< 0.005
		NHP_MW-307S	Oct-10	< 2	< 2	< 2	< 2	**2.4**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	**2.0**	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	< 0.005	**0.0058**
		NHP_MW-307S	Oct-11	< 2	< 2	< 2	< 2	**2.9**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	< 0.005	< 0.005
		NHP_MW-307S	Jul-12	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	---	---	---	---	---	---	---	---	---	---
		NHP_MW-307S	Aug-13	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	< 0.01	< 0.005
		NHP_MW-307S	Jul-14	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 0.2	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	< 0.01	< 0.005
		NHP_MW-307S	Jul-18	< 2	< 1	< 2	< 2	< 2	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	< 0.25	< 0.02	< 0.005	< 0.001	< 0.01	< 0.005	< 0.01	< 0.01

TABLE 5A - SUMMARY OF DETECTED COMPOUNDS - GROUNDWATER MONITORING
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

DRAFT

Monitoring Well ID	Geological Unit of Well Screen	Sample ID	Sampling Event Date	VOCs of Concern (µg/L)							Additional VOCs (µg/L)									Other COCs		Metals of Concern (mg/L)					
				Chloroform	1,1-Dichloroethene	Cis-1,2-Dichoroethene	1,1,1-Trichloroethane	Trichloroethene (TCE)	Tetrachloroethene (PCE)	Vinyl Chloride	Acetone	Benzene	Carbon Disulfide	Chloromethane	1,1-Dichloroethane	Methyl Tert-Butyl Ether (MTBE)	Toluene	Carbon Tetrachloride	Bromodichloromethane	1,4-Dioxane (µg/L)	Cyanide (mg/L)	Arsenic	Cadmium	Chromium	Lead	Manganese	Nickel
			CAS	**67-66-3**	**75-35-4**	**156-59-2**	**71-55-6**	**79-01-6**	**127-18-4**	**75-01-4**	**67-64-1**	**71-43-2**	**75-15-0**	**74-87-3**	**75-34-3**	**1634-04-4**	**108-88-3**	**56-23-5**	**75-27-4**	**123-91-1**	**57-12-5**	**7440-38-2**	**7440-43-9**	**7440-47-3**	**7439-92-1**	**7439-96-5**	**7440-02-0**
			AGQS	**70**	**7**	**70**	**200**	**5**	**5**	**2**	**6,000**	**5**	**70**	**30**	**81**	**13**	**1,000**	**5**	**0.6**	**0.32**	**0.2**	**0.01**	**0.005**	**0.1**	**0.015**	**0.3**	**0.1**
			ROD CUL	**100**	**7**	**70**	**200**	**5**	**5**	**2**	na	na	na	na	na	na	na	na	na	na	**0.2**	**0.05**	**0.005**	**0.1**	**0.015**	na	**0.1**
			NHDES GW-2	**70**	**630**	na	**27,000**	**20**	**240**	**4**	na	**2,900**	na	na	**130**	**2,600**	**50,000**	**10**	na	na	na	na	na	na	na	na	na
NHP_MW-307D	Deep Overburden	NHP_MW-307D	May-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	---	< 5	**3.6 J**	< 5	---	---	---	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	**0.329**	< 0.04
		NHP_MW-307D	Oct-07	< 5	< 5	< 5	< 5	**2.4 J**	< 5	< 5	---	---	---	---	< 5	---	< 5	---	---	---	**0.0336**	< 0.01	< 0.005	< 0.01	< 0.01	**0.192**	< 0.04
		NHP_MW-307D	Apr-08	< 5	< 5	< 5	< 5	**2.5 J**	< 5	< 5	---	---	---	---	< 5	---	< 5	---	---	---	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	**0.0964**	**0.0022 J**
		NHP_MW-307D	Aug-09	< 2	< 2	< 2	< 2	**3.3**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	**0.0477**	< 0.005
		NHP_MW-307D	Oct-10	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	**0.0686**	< 0.005
		NHP_MW-307D	Oct-11	< 2	< 2	< 2	< 2	< 2	< 2	< 2	**12**	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	**0.1025**	< 0.005
		NHP_MW-307D	Aug-13	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	**0.106**	< 0.005
		NHP_MW-307D	Jul-14	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 0.2	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	**0.081**	< 0.005
		NHP_MW-307D	Jul-18	< 2	< 1	< 2	< 2	< 2	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	< 0.25	< 0.02	< 0.005	< 0.001	< 0.01	< 0.005	**0.1**	< 0.01
NHP_MW-308S	Shallow Overburden	NHP_MW-308S	Jun-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	---	< 5	< 5	< 5	---	---	---	**0.352**	< 0.0045	< 0.005	**0.0273**	< 0.01	**0.0887**	< 0.04
		NHP_MW-308S_DUP	Jun-07	< 5	< 5	< 5	< 5	**1.2 J**	< 5	< 5	**3.1 J**	< 5	< 5	---	< 5	< 5	< 5	---	---	---	**0.34**	< 0.01	< 0.005	**0.0259**	< 0.01	**0.0892**	< 0.04
		NHP_MW-308S	Oct-07	< 5	**2.8 J**	**4.2 J**	< 5	**44**	< 5	< 5	---	---	---	---	< 5	---	< 5	---	---	---	**0.06**	< 0.01	**0.0066**	**0.0019 J**	< 0.01	**2.41**	**0.0163 J**
		NHP_MW-308S_DUP	Oct-07	< 5	**2.8 J**	**4.9 J**	< 5	**55**	< 5	< 5	---	---	---	---	< 5	---	< 5	---	---	---	< 0.01	< 0.01	**0.006**	**0.0012 J**	< 0.01	**2.45**	**0.0162 J**
		NHP_MW-308S	Apr-08	< 5	< 5	< 5	< 5	**1.3 J**	< 5	< 5	---	---	---	---	< 5	---	< 5	---	---	---	**0.128**	< 0.01	**0.0009 J**	< 0.01	< 0.01	**0.322**	**0.0052 J**
		NHP_MW-308S_DUP	Apr-08	< 5	< 5	< 5	< 5	< 5	< 5	< 5	---	---	---	---	< 5	---	< 5	---	---	---	**0.129**	< 0.01	**0.00077 J**	< 0.01	< 0.01	**0.303**	**0.0057 J**
		NHP_MW-308S	Aug-09	< 2	**2.8**	**2.4**	< 2	**63**	< 2	< 2	< 10	< 2	< 2	< 2	**10**	< 2	< 2	---	---	**2**	< 0.01	< 0.001	**0.0076**	< 0.005	< 0.001	**4.26**	**0.0411**
		NHP_MW-308S_DUP	Aug-09	< 2	**2.9**	**2.5**	< 2	**63**	< 2	< 2	< 10	< 2	< 2	< 2	**10**	< 2	< 2	---	---	< 2	< 0.01	< 0.001	**0.0071**	< 0.005	< 0.001	**4.54**	**0.039**
		NHP_MW-308S	Oct-10	< 2	**7.5**	**4.4**	< 2	**201**	< 2	< 2	< 10	< 2	< 2	< 2	**15**	< 2	< 2	---	---	**5.2**	**0.011**	**0.0029**	**0.0132**	< 0.005	< 0.001	**2.57**	**0.0233**
		NHP_MW-308S_DUP	Oct-10	< 2	**7.5**	**4.4**	< 2	**199**	< 2	< 2	< 10	< 2	< 2	< 2	**15**	< 2	< 2	---	---	**6**	**0.01**	**0.003**	**0.0131**	< 0.005	< 0.001	**2.59**	**0.0241**
		NHP_MW-308S	Oct-11	< 2	**5.5**	**5.7**	< 2	**128**	< 2	< 2	**23 J**	< 2	< 2	< 2	**18**	< 2	< 2	---	---	< 2	**0.015**	**0.0025**	**0.0065**	< 0.005	< 0.001	**2.63**	**0.0449**
		NHP_MW-308S_DUP	Oct-11	< 2	**5.2**	**5.9**	< 2	**114**	< 2	< 2	< 10 J	< 2	< 2	< 2	**18**	< 2	< 2	---	---	< 2	< 0.01	**0.0024**	**0.0066**	< 0.005	< 0.001	**2.68**	**0.045**
		NHP_MW-308S	Aug-13	< 2	**5**	**7.1**	< 2	**87**	< 2	< 2	< 10	< 2	< 2	< 2	**20**	< 2	< 2	---	---	< 2	**0.028**	**0.0023**	**0.0058**	< 0.005	< 0.001	**4.12**	**0.0377**
		NHP_MW-308S_DUP	Aug-13	< 2	**5.1**	**7.2**	< 2	**87**	< 2	< 2	< 10	< 2	< 2	< 2	**20**	< 2	< 2	---	---	< 2	**0.027**	**0.0022**	**0.0058**	< 0.005	< 0.001	**3.88**	**0.0376**
		NHP_MW-308S	Jul-14	< 2	< 2	< 2	< 2	**14**	< 2	< 2	---	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 0.2	**0.29**	**0.0023**	**0.0025**	< 0.005	< 0.001	**0.322**	**0.0075**
		NHP_MW-308S_DUP	Jul-14	< 2	< 2	< 2	< 2	**12**	< 2	< 2	---	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 0.2	**0.28**	**0.002**	**0.0026**	< 0.005	< 0.001	**0.368**	**0.0076**
		NHP_MW-308S	Jul-17	< 1	**9.8**	**7.8**	< 1	**140**	< 1	< 1	---	< 1	< 1	< 1	**60**	< 1	< 1	---	---	**1.3**	**0.065**	< 0.02	< 0.01	< 0.02	< 0.02	**2.6**	**0.025**
		NHP_MW-308S	Jul-18	< 2	**3**	**3**	< 2	**41**	< 2	< 2	---	< 50	< 2	< 2	**14**	< 2	< 2	< 2	< 0.6	**0.49**	**0.31**	**0.008 T**	**0.001 T**	< 0.01	< 0.005	**1.5 T**	**0.01 T**
		NHP_MW-308S	Oct-20	< 0.75	**3.6**	**2.6**	< 0.5	**110**	< 0.5	< 1	< 5	**0.81**	< 5	< 2.5	**13**	< 1	< 0.75	< 0.5	< 0.5	**3.12**	**0.023**	---	---	---	---	---	---
		NHP_MW-308S DUP	Oct-20	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.021**	---	---	---	---	---	---
NHP_MW-308SA	Shallow Overburden	NHP_MW-308SA	Apr-19	< 1	**5.3**	**11**	< 1	**51**	< 1	< 1	< 1	< 1	< 1	< 1	**32**	< 1	< 1	< 1	< 1	**0.63**	**0.0062**	< 40	< 10	< 20	< 20	**6**	**0.072**
		NHP_MW-308SA	Oct-20	< 0.75	**2.3**	**10**	< 0.5	**30**	< 0.5	< 1	< 5	< 0.5	< 5	< 2.5	**18**	< 1	< 0.75	< 0.5	< 0.5	**0.552**	**0.011**	---	---	---	---	---	---
NHP_MW-308D	Deep Overburden	NHP_MW-308D	Jun-07	< 5	< 5	< 5	< 5	**1.6 J**	< 5	< 5	< 10	< 5	< 5	---	< 5	< 5	< 5	---	---	---	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	**0.344**	< 0.04
		NHP_MW-308D	Nov-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	---	---	---	---	< 5	---	< 5	---	---	---	**0.0017 J**	< 0.01	< 0.005	< 0.01	< 0.01	**0.219**	< 0.04
		NHP_MW-308D	Apr-08	< 5	< 5	< 5	< 5	**1.1 J**	< 5	< 5	---	---	---	---	< 5	---	< 5	---	---	---	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	**0.519**	**0.0018 J**
		NHP_MW-308D	Aug-09	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	**0.671**	< 0.005
		NHP_MW-308D	Oct-10	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	**0.7096**	< 0.005
		NHP_MW-308D	Nov-11	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	**0.5776**	< 0.005
		NHP_MW-308D	Aug-13	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	**1.37**	< 0.005
		NHP_MW-308D	Jul-14	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 0.2	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	**2.49**	**0.0092**
		NHP_MW-308D	Jul-18	< 2	< 1	< 2	< 2	< 2	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	< 0.25	< 0.02	< 0.005	< 0.001	< 0.01	< 0.005	**3.4**	**0.02**
		NHP_MW-308D	Oct-20	< 0.75	< 0.5	**0.61**	< 0.5	**0.8**	< 0.5	< 1	< 5	< 0.5	< 5	< 2.5	< 0.75	< 1	< 0.75	< 0.5	< 0.5	**0.169**	---	---	---	---	---	---	---
NHP_MW-308DA	Deep Overburden	NHP_MW-308DA	Apr-19	< 1	**3.9**	**17**	< 1	**270**	< 1	< 1	< 1	< 1	< 1	< 1	**2.3**	< 1	< 1	< 1	< 1	**19**	< 0.005	**0.065**	< 10	< 20	< 20	**0.4**	< 20
		NHP_MW-308DA	Oct-20	< 1.9	**2.4**	**10**	< 1.2	**270**	< 1.2	< 2.5	< 12	< 1.2	< 12	< 6.2	< 1.9	< 2.5	< 1.9	< 1.2	< 1.2	**20**	---	---	---	---	---	---	---

TABLE 5A - SUMMARY OF DETECTED COMPOUNDS - GROUNDWATER MONITORING
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

DRAFT

Monitoring Well ID	Geological Unit of Well Screen	Sample ID	Sampling Event Date	VOCs of Concern (µg/L)							Additional VOCs (µg/L)									Other COCs		Metals of Concern (mg/L)					
				Chloroform	1,1-Dichloroethene	Cis-1,2-Dichoroethene	1,1,1-Trichloroethane	Trichloroethene (TCE)	Tetrachloroethene (PCE)	Vinyl Chloride	Acetone	Benzene	Carbon Disulfide	Chloromethane	1,1-Dichloroethane	Methyl Tert-Butyl Ether (MTBE)	Toluene	Carbon Tetrachloride	Bromodichloromethane	1,4-Dioxane (µg/L)	Cyanide (mg/L)	Arsenic	Cadmium	Chromium	Lead	Manganese	Nickel
			CAS	**67-66-3**	**75-35-4**	**156-59-2**	**71-55-6**	**79-01-6**	**127-18-4**	**75-01-4**	**67-64-1**	**71-43-2**	**75-15-0**	**74-87-3**	**75-34-3**	**1634-04-4**	**108-88-3**	**56-23-5**	**75-27-4**	**123-91-1**	**57-12-5**	**7440-38-2**	**7440-43-9**	**7440-47-3**	**7439-92-1**	**7439-96-5**	**7440-02-0**
			AGQS	**70**	**7**	**70**	**200**	**5**	**5**	**2**	**6,000**	**5**	**70**	**30**	**81**	**13**	**1,000**	**5**	**0.6**	**0.32**	**0.2**	**0.01**	**0.005**	**0.1**	**0.015**	**0.3**	**0.1**
			ROD CUL	**100**	**7**	**70**	**200**	**5**	**5**	**2**	na	na	na	na	na	na	na	na	na	na	**0.2**	**0.05**	**0.005**	**0.1**	**0.015**	na	**0.1**
			NHDES GW-2	**70**	**630**	na	**27,000**	**20**	**240**	**4**	na	**2,900**	na	na	**130**	**2,600**	**50,000**	**10**	na	na	na	na	na	na	na	na	na
NHP_MW-308R	Bedrock	NHP_MW-308R	Jun-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**53 J**	< 5	< 5	---	< 5	< 5	< 5	---	---	---	< 0.01	< 0.0207	< 0.005	**0.0093 J**	< 0.01	< 0.005	< 0.04
		NHP_MW-308R	Oct-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	---	---	---	---	< 5	---	< 5	---	---	---	**0.0049 J**	**0.0195**	< 0.005	**0.0132**	< 0.01	**0.0044 J**	< 0.04
		NHP_MW-308R	Apr-08	< 5	< 5	< 5	< 5	< 5	< 5	< 5	---	---	---	---	< 5	---	< 5	---	---	---	< 0.01	**0.0128**	< 0.005	< 0.01	< 0.01	**0.0011 J**	**0.0019 J**
		NHP_MW-308R	Aug-09	< 2	< 2	< 2	< 2	< 2	< 2	< 2	**16**	< 2	**4.9**	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	**0.0184**	< 0.002	< 0.005	< 0.001	< 0.005	< 0.005
		NHP_MW-308R	Oct-11	< 2	< 2	< 2	< 2	< 2	< 2	< 2	**21**	< 2	**3.8**	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	**0.013**	< 0.002	< 0.005	< 0.001	< 0.005	< 0.005
		NHP_MW-308R	Nov-12	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 0.01	**0.177**	< 0.001	< 0.005	< 0.001	< 0.01	< 0.005
		NHP_MW-308R	Aug-13	< 2	< 2	< 2	< 2	< 2	< 2	< 2	**30**	< 2	**9.4**	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	**0.0181**	< 0.001	< 0.005	< 0.001	< 0.01	< 0.005
		NHP_MW-308R	Jul-14	< 2	< 2	< 2	< 2	< 2	< 2	< 2	**32**	< 2	**12**	< 2	< 2	< 2	< 2	---	---	**0.76**	< 0.01	**0.0167**	< 0.001	< 0.005	< 0.001	< 0.01	< 0.005
		NHP_MW-308R	Jul-18	< 2	< 1	< 2	< 2	< 2	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	**0.44**	< 0.02	< 0.005	< 0.001	< 0.01	< 0.005	< 0.01	< 0.01
NHP_MW-309S	Shallow Overburden	NHP_MW-309S	May-07	< 5	**5**	**9.3**	**0.77 J**	**3.6 J**	< 5	< 5	< 10	< 5	< 5	---	**2.8 J**	**1.3 J**	< 5	---	---	---	< 0.0056	**0.0046 J**	**0.0672**	< 0.01	< 0.01	**3.56**	**0.0551 J**
		NHP_MW-309S	Oct-07	< 5	< 5	**11**	**2.9 J**	**3.1 J**	< 5	< 5	---	---	---	---	< 5	---	< 5	---	---	< 2	**0.0507 J**	**0.0111**	**0.0744**	< 0.01	< 0.01	**3.94**	**0.0515**
		NHP_MW-309S	Apr-08	< 5	< 5	**3.5**	< 5	**0.98 J**	< 5	< 5	---	---	---	---	< 5	---	< 5	---	---	---	< 0.01	< 0.01	**0.0146**	< 0.01	< 0.01	**0.519**	**0.0216 J**
		NHP_MW-309S	Aug-09	< 2	< 2	**4.9**	< 2	**2.1**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	**0.0049**	**0.0114**	< 0.005	< 0.001	**0.663**	**0.0131**
		NHP_MW-309S	Oct-10	< 2	< 2	**4.9**	< 2	**4.7**	< 2	< 2	< 10	< 2	< 2	< 2	**5.7**	< 2	< 2	---	---	< 2	< 0.01	**0.0149**	**0.0049**	< 0.005	< 0.001	**0.4834**	**0.0546**
		NHP_MW-309S	Nov-11	< 2	< 2	**9.7**	< 2	**5.2**	< 2	**9.3**	< 10	< 2	< 2	< 2	**4.9**	< 2	< 2	---	---	< 2	< 0.01	**0.0278**	**0.0095**	< 0.005	< 0.001	**0.3364**	**0.0089**
		NHP_MW-309S	Aug-13	< 2	< 2	**7**	< 2	**3.1**	< 2	**5.3**	< 10	< 2	< 2	< 2	**5.6**	< 2	< 2	---	---	< 2	< 0.01	**0.0445**	**0.0033**	< 0.005	< 0.001	**0.31**	**0.0091**
		NHP_MW-309S	Jul-14	< 2	**2.1 Q**	**41 Q**	< 2	**5.4 Q**	< 2	**45**	< 10	< 2	< 2	< 2	**7.0 Q**	< 2	< 2	---	---	< 0.2	< 0.01	**0.0254**	**0.0035**	< 0.005	< 0.001	**0.268**	**0.0109**
		NHP_MW-309S	Jul-17	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	---	---	< 0.25	**0.0075**	**0.024 J**	**0.024**	< 0.02	< 0.02	**0.31**	< 0.02
		NHP_MW-309S	Jul-18	< 2	< 1	< 2	< 2	< 2	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	< 0.25	< 0.02	**0.019**	**0.005**	< 0.01	< 0.005	**0.21**	**0.02**
		NHP_MW-309S	Oct-20	< 0.75	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1	< 5	< 0.5	< 5	< 2.5	**1.6**	< 1	< 0.75	< 0.5	< 0.5	---	---	**0.07651**	**0.00144**	**0.00114**	< 0.001	**0.9379**	**0.00988**
NHP_MW-309SA	Shallow Overburden	NHP_MW-309SA	Apr-19	< 1	< 1	**170**	< 1	**1.8**	< 1	**250**	< 1	< 1	< 1	< 1	**2.3**	< 1	< 1	< 1	< 1	< 0.25	**0.012**	< 40	< 10	< 20	< 20	**0.69**	**0.021**
		NHP_MW-309SA	Oct-20	< 0.75	**1.4**	**3.1**	< 0.5	**6.4**	< 0.5	< 1	< 5	< 0.5	< 5	< 2.5	**5.2**	< 1	< 0.75	< 0.5	< 0.5	---	---	**0.01831**	**0.00041**	**0.001**	< 0.001	**0.537**	**0.01235**
NHP_MW-309D	Deep Overburden	NHP_MW-309D	May-07	**14**	< 5	< 5	< 5	**29**	< 5	< 5	< 10	< 5	< 5	---	< 5	< 5	< 5	---	---	**5.8**	< 0.01	**0.0114**	< 0.005	< 0.01	< 0.01	< 0.015	< 0.04
		NHP_MW-309D	Oct-07	**16**	**2.3 J**	**7.5**	< 5	**28**	< 5	< 5	---	---	---	---	< 5	---	< 5	---	---	---	**0.0719 J**	**0.0069 J**	< 0.005	**0.0023**	< 0.01	**0.362**	**0.00104 J**
		NHP_MW-309D	Apr-08	---	---	---	---	**13**	---	< 5	---	---	---	---	---	---	< 5	---	---	---	**0.0048 J**	**0.0955**	**0.011 J**	**0.165**	**0.0521**	**2.66**	**0.131**
		NHP_MW-309D_DUP	Apr-08	---	---	---	---	**14**	---	< 5	---	---	---	---	---	---	< 5	---	---	---	**0.0484 J**	**0.00918**	**0.0121 J**	**0.154**	**0.0539**	**2.7**	**0.129**
		NHP_MW-309D	Aug-09	< 2	< 2	**2.5**	**2.1**	**11**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	**2.1**	**0.014**	**0.0042**	< 0.002	**0.0058**	**0.0034**	**0.4009**	**0.0114**
		NHP_MW-309D_DUP	Aug-09	< 2	< 2	**2.3**	< 2	**10**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	**2.68**	**0.013**	**0.0043**	< 0.002	**0.0059**	**0.0034**	**0.3862**	**0.011**
		NHP_MW-309D	Oct-10	< 2	< 2	< 2	< 2	**5.6**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	**0.0017**	< 0.002	< 0.005	< 0.001	**0.4023**	**0.0065**
		NHP_MW-309D	Nov-11	< 2	< 2	**2.2**	< 2	**8.6**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	**0.002**	< 0.002	< 0.005	< 0.001	**0.1982**	**0.0079**
		NHP_MW-309D	Aug-13	< 2	< 2	< 2	< 2	**4.6**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	**0.0021**	< 0.001	< 0.005	**0.001**	**0.226**	**0.006**
		NHP_MW-309D	Jul-14	< 2	< 2	< 2	< 2	**4.6**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	**0.42**	< 0.01	**0.0016**	< 0.001	< 0.005	< 0.001	**0.152**	**0.0052**
		NHP_MW-309D	Jul-18	< 2	< 1	< 2	< 2	< 2	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	< 0.25	< 0.02	< 0.005	**0.002 T**	< 0.01	< 0.005	**0.47 T**	< 0.01
		NHP_MW-309D	Oct-20	< 0.75	< 0.5	< 0.5	< 0.5	**1.5**	< 0.5	< 1	< 5	< 0.5	< 5	< 2.5	< 0.75	< 1	< 0.75	< 0.5	< 0.5	**0.166**	---	---	---	---	---	---	---
NHP_MW-309DA	Deep Overburden	NHP_MW-309DA	Apr-19	< 1	**14**	**20**	< 1	**140**	< 1	**2**	< 1	< 1	< 1	< 1	**24**	< 1	< 1	< 1	< 1	**7.1**	< 5	< 40	< 10	< 20	< 20	**0.52**	< 20
		NHP_MW-309DA	Oct-20	< 0.75	**1.9**	**11**	< 0.5	**68**	< 0.5	< 1	< 5	< 0.5	< 5	< 2.5	**2.2**	< 1	< 0.75	< 0.5	< 0.5	**7.81**	---	---	---	---	---	---	---
NHP_MW-309R	Bedrock	NHP_MW-309R	May-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	---	< 5	**2.3 J**	< 5	---	---	---	**0.0942**	< 0.01	< 0.005	< 0.01	< 0.01	**0.0564**	< 0.04
		NHP_MW-309R	Oct-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	---	---	---	---	< 5	---	< 5	---	---	---	**0.02 J**	< 0.01	< 0.005	< 0.01	< 0.01	**0.138**	< 0.04
		NHP_MW-309R	Apr-08	< 5	< 5	< 5	< 5	< 5	< 5	< 5	---	---	---	---	< 5	---	< 5	---	---	---	< 0.0046	< 0.01	< 0.005	< 0.01	< 0.01	**0.233**	< 0.04
		NHP_MW-309R	Aug-09	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	**0.1783**	< 0.005
		NHP_MW-309R	Nov-11	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	**0.1836**	< 0.005
		NHP_MW-309R	Nov-12	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	**0.065**	< 0.005
		NHP_MW-309R	Aug-13	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.001	**0.005**	< 0.001	**0.059**	< 0.005
		NHP_MW-309R	Jul-14	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 0.2	< 0.01	< 0.001	< 0.001	**0.0056**	< 0.001	**0.024**	< 0.005
		NHP_MW-309R	Jul-18	< 2	< 1	< 2	< 2	< 2	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	< 0.25	< 0.02	< 0.005	< 0.001	< 0.01	< 0.005	**0.03**	< 0.01

TABLE 5A - SUMMARY OF DETECTED COMPOUNDS - GROUNDWATER MONITORING
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

DRAFT

Monitoring Well ID	Geological Unit of Well Screen	Sample ID	Sampling Event Date	VOCs of Concern (µg/L)							Additional VOCs (µg/L)									Other COCs		Metals of Concern (mg/L)					
				Chloroform	1,1-Dichloroethene	Cis-1,2-Dichoroethene	1,1,1-Trichloroethane	Trichloroethene (TCE)	Tetrachloroethene (PCE)	Vinyl Chloride	Acetone	Benzene	Carbon Disulfide	Chloromethane	1,1-Dichloroethane	Methyl Tert-Butyl Ether (MTBE)	Toluene	Carbon Tetrachloride	Bromodichloromethane	1,4-Dioxane (µg/L)	Cyanide (mg/L)	Arsenic	Cadmium	Chromium	Lead	Manganese	Nickel
			CAS	**67-66-3**	**75-35-4**	**156-59-2**	**71-55-6**	**79-01-6**	**127-18-4**	**75-01-4**	**67-64-1**	**71-43-2**	**75-15-0**	**74-87-3**	**75-34-3**	**1634-04-4**	**108-88-3**	**56-23-5**	**75-27-4**	**123-91-1**	**57-12-5**	**7440-38-2**	**7440-43-9**	**7440-47-3**	**7439-92-1**	**7439-96-5**	**7440-02-0**
			AGQS	**70**	**7**	**70**	**200**	**5**	**5**	**2**	**6,000**	**5**	**70**	**30**	**81**	**13**	**1,000**	**5**	**0.6**	**0.32**	**0.2**	**0.01**	**0.005**	**0.1**	**0.015**	**0.3**	**0.1**
			ROD CUL	**100**	**7**	**70**	**200**	**5**	**5**	**2**	na	na	na	na	na	na	na	na	na	na	**0.2**	**0.05**	**0.005**	**0.1**	**0.015**	na	**0.1**
			NHDES GW-2	**70**	**630**	na	**27,000**	**20**	**240**	**4**	na	**2,900**	na	na	**130**	**2,600**	**50,000**	**10**	na	na	na	na	na	na	na	na	na
NHP_MW-310S	Shallow Overburden	NHP_MW-310S	May-07	< 5	< 5	< 5	< 5	**0.61 J**	< 5	< 5	**120 J**	**2.4 J**	< 5	---	< 5	< 5	< 5	---	---	---	**0.047**	**0.0205**	**0.014**	< 0.01	< 0.01	**3.27**	**0.0508**
		NHP_MW-310S	Oct-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	---	---	---	---	< 5	---	< 5	---	---	---	**0.0572 J**	< 0.0099	< 0.0018	< 0.01	< 0.01	**1.33**	**0.0107 J**
		NHP_MW-310S	Apr-08	< 5	< 5	< 5	< 5	< 5	< 5	< 5	---	---	---	---	< 5	---	< 5	---	---	---	**0.0242**	**0.0243**	**0.0104**	< 0.01	< 0.01	**4.55**	**0.0719**
		NHP_MW-310S	Aug-09	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	**2.1**	< 2	< 2	< 2	< 2	< 2	---	---	< 2	**0.093**	**0.0176**	**0.0024**	< 0.005	< 0.001	**0.2567**	**0.0222**
		NHP_MW-310S	Oct-10	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	**0.077**	**0.0086**	**0.0043**	< 0.005	< 0.001	**0.2574**	**0.0189**
		NHP_MW-310S	Oct-11	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	**4**	< 2	< 2	< 2	< 2	**3.2**	---	---	< 2	< 0.01	**0.0154**	**0.0097**	< 0.005	< 0.001	**1.55**	**0.0346**
		NHP_MW-310S	Aug-13	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	**0.0099**	**0.0134**	< 0.005	< 0.001	**2.8**	**0.0174**
		NHP_MW-310S	Jul-14	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	**0.4**	< 0.01	**0.0211**	**0.0026**	< 0.005	< 0.001	**1.64**	**0.0141**
		NHP_MW-310S	Jul-18	< 2	< 1	< 2	< 2	< 2	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	**3**	< 2	< 0.6	**0.27**	< 0.02	**0.014**	**0.002**	< 0.01	< 0.005	**0.57**	**0.01**
		NHP_MW-310S	Oct-20	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 0.139	---	**0.00523**	**0.00376**	< 0.001	< 0.001	**0.6658**	**0.02311**
NHP_MW-310D	Deep Overburden	NHP_MW-310D	May-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	---	< 5	**1 J**	< 5	---	---	---	< 0.01	< 0.001	< 0.002	< 0.005	< 0.015	**0.0103**	< 0.015
		NHP_MW-310D	Oct-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	---	---	---	---	< 5	---	< 5	---	---	---	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	**0.0038 J**	< 0.04
		NHP_MW-310D	Apr-08	< 5	< 5	< 5	< 5	< 5	< 5	< 5	---	---	---	---	< 5	---	< 5	---	---	---	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	**0.0092 J**	< 0.04
		NHP_MW-310D	Aug-09	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	**0.0118**	< 0.005
		NHP_MW-310D	Oct-10	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	**2.1**	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	**0.0119**	< 0.005
		NHP_MW-310D	Oct-11	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	**3.5**	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	**0.0136**	< 0.005
		NHP_MW-310D	Aug-13	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	< 0.01	< 0.005
		NHP_MW-310D	Jul-14	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 0.2	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	< 0.01	< 0.005
		NHP_MW-310D	Jul-18	< 2	< 1	< 2	< 2	< 2	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	< 0.25	< 0.02	< 0.005	< 0.001	< 0.01	< 0.005	< 0.01	< 0.01
NHP_MW-311S	Shallow Overburden	NHP_MW-311S	May-07	< 5	< 5	< 5	< 5	**1 J**	< 5	< 5	< 10	< 5	< 5	---	< 5	< 5	< 5	---	---	---	< 0.0049	< 0.01	< 0.005	< 0.01	< 0.01	**0.0948**	< 0.04
		NHP_MW-311S	Oct-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	---	---	---	---	< 5	---	< 5	---	---	---	**0.0393 J**	< 0.01	< 0.005	< 0.01	< 0.01	**0.372**	< 0.04
		NHP_MW-311S	Apr-08	< 5	< 5	< 5	< 5	< 5	< 5	< 5	---	---	---	---	< 5	---	< 5	---	---	---	< 0.01	< 0.01	< 0.005	**0.00045 J**	< 0.01	**0.172**	< 0.04
		NHP_MW-311S	Aug-09	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	**0.4914**	< 0.005
		NHP_MW-311S	Oct-11	< 2	< 2	< 2	< 2	< 2	< 2	< 2	**10**	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	**0.0397**	< 0.005
		NHP_MW-311S	Aug-13	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	**0.0014**	< 0.001	< 0.005	**0.0012**	**0.044**	< 0.005
		NHP_MW-311S	Jul-14	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 0.2	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	**0.013**	< 0.005
		NHP_MW-311S	Jul-18	< 2	< 1	< 2	< 2	< 2	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	< 0.25	**0.1**	< 0.005	< 0.001	< 0.01	< 0.005	**0.22**	< 0.01
NHP_MW-311D	Deep Overburden	NHP_MW-311D	May-07	< 5	< 5	< 5	< 5	**0.87 J**	< 5	< 5	< 10	< 5	< 5	---	< 5	< 5	< 5	---	---	---	< 0.0056	**0.0064**	< 0.005	< 0.01	< 0.01	**2.96**	< 0.04
		NHP_MW-311D	Oct-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	---	---	---	---	< 5	---	< 5	---	---	---	**0.0029 J**	< 0.01	< 0.005	< 0.01	< 0.01	**1.21**	**0.004 J**
		NHP_MW-311D	Apr-08	< 5	< 5	< 5	< 5	< 5	< 5	< 5	---	---	---	---	< 5	---	< 5	---	---	---	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	**2.4**	**0.0046 J**
		NHP_MW-311D	Aug-09	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	**0.0014**	< 0.002	< 0.005	< 0.001	**0.8711**	< 0.005
		NHP_MW-311D	Oct-10	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	**0.002**	< 0.002	< 0.005	< 0.001	**0.4022**	< 0.005
		NHP_MW-311D	Oct-11	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	**0.298**	< 0.005
		NHP_MW-311D	Nov-12	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	---	< 0.01	**0.0013**	< 0.001	< 0.005	< 0.001	**0.24**	< 0.005
		NHP_MW-311D	Aug-13	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	**0.151**	**0.0051**
		NHP_MW-311D	Jul-14	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 0.2	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	**0.092**	< 0.005
		NHP_MW-311D	Jul-18	< 2	< 1	< 2	< 2	< 2	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	**0.92**	< 0.02	< 0.005	< 0.001	< 0.01	< 0.005	**0.09**	**0.01**
		NHP_MW-311D	Oct-20	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 0.139	---	---	---	---	---	---	---
NHP_MW-312S	Shallow Overburden	NHP_MW-312S	May-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	---	< 5	< 5	< 5	---	---	---	< 0.004	< 0.01	< 0.005	< 0.01	< 0.01	**0.033**	**0.0454**
		NHP_MW-312S	Oct-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	---	---	---	---	< 5	---	< 5	---	---	---	**0.0018 J**	< 0.01	< 0.005	**0.0016 J**	< 0.01	**0.0401**	**0.0411**
		NHP_MW-312S	Apr-08	< 5	< 5	< 5	< 5	< 5	---	< 5	---	---	---	---	< 5	---	< 5	---	---	---	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	**0.0328**	**0.0133 J**
		NHP_MW-312S	Aug-09	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	---	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	**0.0135**	< 0.005
		NHP_MW-312S	Oct-10	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	**0.0276**	< 0.005
		NHP_MW-312S	Oct-11	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	**0.0222**	< 0.005
		NHP_MW-312S	Aug-13	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	**0.025**	< 0.005
		NHP_MW-312S	Jul-14	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	**0.42**	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	< 0.01	< 0.005
		NHP_MW-312S	Jul-18	< 2	< 1	< 2	< 2	< 2	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	< 0.25	< 0.02	< 0.005	< 0.001	< 0.01	< 0.005	< 0.01	< 0.01

TABLE 5A - SUMMARY OF DETECTED COMPOUNDS - GROUNDWATER MONITORING
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

DRAFT

Monitoring Well ID	Geological Unit of Well Screen	Sample ID	Sampling Event Date	VOCs of Concern (µg/L)							Additional VOCs (µg/L)									Other COCs		Metals of Concern (mg/L)					
				Chloroform	1,1-Dichloroethene	Cis-1,2-Dichoroethene	1,1,1-Trichloroethane	Trichloroethene (TCE)	Tetrachloroethene (PCE)	Vinyl Chloride	Acetone	Benzene	Carbon Disulfide	Chloromethane	1,1-Dichloroethane	Methyl Tert-Butyl Ether (MTBE)	Toluene	Carbon Tetrachloride	Bromodichloromethane	1,4-Dioxane (µg/L)	Cyanide (mg/L)	Arsenic	Cadmium	Chromium	Lead	Manganese	Nickel
			CAS	**67-66-3**	**75-35-4**	**156-59-2**	**71-55-6**	**79-01-6**	**127-18-4**	**75-01-4**	**67-64-1**	**71-43-2**	**75-15-0**	**74-87-3**	**75-34-3**	**1634-04-4**	**108-88-3**	**56-23-5**	**75-27-4**	**123-91-1**	**57-12-5**	**7440-38-2**	**7440-43-9**	**7440-47-3**	**7439-92-1**	**7439-96-5**	**7440-02-0**
			AGQS	**70**	**7**	**70**	**200**	**5**	**5**	**2**	**6,000**	**5**	**70**	**30**	**81**	**13**	**1,000**	**5**	**0.6**	**0.32**	**0.2**	**0.01**	**0.005**	**0.1**	**0.015**	**0.3**	**0.1**
			ROD CUL	**100**	**7**	**70**	**200**	**5**	**5**	**2**	na	na	na	na	na	na	na	na	na	na	**0.2**	**0.05**	**0.005**	**0.1**	**0.015**	na	**0.1**
			NHDES GW-2	**70**	**630**	na	**27,000**	**20**	**240**	**4**	na	**2,900**	na	na	**130**	**2,600**	**50,000**	**10**	na	na	na	na	na	na	na	na	na
NHP_MW-312D	Deep Overburden	NHP_MW-312D	May-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 5	---	< 5	< 5	< 5	---	---	---	< 0.005	< 0.01	< 0.005	< 0.01	< 0.01	**0.224**	< 0.04
		NHP_MW-312D	Oct-07	< 5	< 5	< 5	< 5	< 5	< 5	< 5	---	---	---	---	< 5	---	< 5	---	---	---	**0.032**	**0.0049 J**	< 0.005	< 0.01	< 0.01	**0.405**	< 0.04
		NHP_MW-312D	Apr-08	< 5	< 5	< 5	< 5	< 5	< 5	< 5	---	---	---	---	< 5	---	< 5	---	---	---	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	**0.241**	< 0.04
		NHP_MW-312D_DUP	Apr-08	< 5	< 5	< 5	< 5	< 5	< 5	< 5	---	---	---	---	< 5	---	< 5	---	---	---	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	**0.25**	< 0.04
		NHP_MW-312D	Aug-09	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	**0.2531**	< 0.005
		NHP_MW-312D	Oct-10	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	**0.2084**	< 0.005
		NHP_MW-312D	Oct-11	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	**0.1579**	< 0.005
		NHP_MW-312D	Nov-12	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	---	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	**0.128**	< 0.005
		NHP_MW-312D	Aug-13	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	**0.098**	< 0.005
		NHP_MW-312D	Jul-14	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	**0.39**	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	**0.038**	< 0.005
		NHP_MW-312D	Jul-18	< 2	< 1	< 2	< 2	< 2	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	< 0.25	< 0.02	< 0.005	< 0.001	< 0.01	< 0.005	**0.01**	< 0.01
NHP_MW-400R	Bedrock	NHP_MW-400R	Nov-12	< 2	< 2	< 2	< 2	**2.5**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	**0.003**	< 0.002	< 0.005	< 0.001	**0.016**	< 0.005
		NHP_MW-400R	Aug-13	< 2	< 2	< 2	< 2	**5.5**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	**0.026**	< 0.005
		NHP_MW-400R	Jul-14	< 2	< 2	< 2	< 2	**5**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	**0.9**	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	**0.028**	< 0.005
		NHP_MW-400R	Jul-17	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	---	---	**1.2**	< 0.005	< 0.02	< 0.01	< 0.02	< 0.02	**0.021**	< 0.02
		NHP_MW-400R	Jul-18	< 2	< 1	< 2	< 2	**3**	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	**0.89**	< 0.02	< 0.005	< 0.001	< 0.01	< 0.005	**0.03**	< 0.01
		NHP_MW-400R	Oct-20	< 0.75	< 0.5	**0.82**	< 0.5	**2.3**	< 0.5	< 1	< 5	< 0.5	< 5	< 2.5	< 0.75	< 1	< 0.75	< 0.5	< 0.5	**0.982**	---	---	---	---	---	---	---
NHP_MW-401S	Shallow Overburden	NHP_MW-401S	Nov-12	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	**0.0013**	< 0.002	< 0.005	< 0.001	**0.548**	**0.0211**
		NHP_MW-401S	Aug-13	< 2	< 2	< 2	< 2	**3.5**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	**0.69**	**0.0204**
		NHP_MW-401S	Jul-14	< 2	< 2	< 2	< 2	**6.9**	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 0.2	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	**0.465**	**0.0125**
		NHP_MW-401S	Jul-17	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	---	---	< 0.25	< 0.005	< 0.02	< 0.01	< 0.02	< 0.02	**0.19**	< 0.02
		NHP_MW-401S	Jul-18	< 2	< 1	< 2	< 2	**4**	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	< 0.25	< 0.02	< 0.005	< 0.001	< 0.01	< 0.005	**0.16**	**0.01**
		NHP_MW-401S	Oct-20	< 0.75	< 0.5	**2.8**	< 0.5	**3.3**	< 0.5	< 1	< 5	**0.65**	< 5	< 2.5	< 0.75	< 1	< 0.75	< 0.5	< 0.5	---	---	---	---	---	---	---	---
NHP_MW-401D	Deep Overburden	NHP_MW-401D	Nov-12	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.002	< 0.005	< 0.001	**0.124**	< 0.005
		NHP_MW-401D	Aug-13	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	**0.019**	< 0.005
		NHP_MW-401D	Jul-14	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	**0.41**	< 0.01	< 0.001	< 0.001	< 0.005	< 0.001	**0.014**	< 0.005
		NHP_MW-401D	Jul-18	< 2	< 1	< 2	< 2	< 2	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	< 0.25	< 0.02	< 0.005	< 0.001	< 0.01	< 0.005	< 0.01	< 0.01
NHP_MW-402D	Deep Overburden	NHP_MW-402D	Nov-12	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	**0.0026**	< 0.002	**0.0135**	< 0.001	< 0.01	< 0.005
		NHP_MW-402D_DUP	Nov-12	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	**0.0023**	< 0.001	**0.0128**	< 0.001	< 0.01	< 0.005
		NHP_MW-402D	Aug-13	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	< 0.01	**0.0017**	< 0.001	**0.0328**	< 0.001	< 0.01	< 0.005
		NHP_MW-402D	Jul-14	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 10	< 2	< 2	< 2	< 2	< 2	< 2	---	---	**0.2**	< 0.01	< 0.001	< 0.001	**0.0142**	< 0.001	< 0.01	< 0.005
		NHP_MW-402D	Jul-18	< 2	< 1	< 2	< 2	< 2	< 2	< 2	< 50	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 0.6	< 0.25	< 0.02	< 0.005	< 0.001	< 0.01	< 0.005	< 0.01	< 0.01
NHP_MW-403SA	Shallow Overburden	NHP_MW-403S	Apr-19	< 1	< 1	**78**	< 1	< 1	< 1	**130**	< 1	< 1	< 1	< 1	**2**	< 1	< 1	< 1	< 1	< 0.25	< 0.005	< 40	**0.13**	< 20	< 20	**1.9**	**0.044**
NHP_MW-404SA	Shallow Overburden	NHP_MW-404S	Apr-19	< 1	< 1	**14**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	**6.9**	< 1	< 1	< 1	< 1	< 0.25	< 0.005	< 40	< 10	< 20	< 20	**7.5**	**0.05**
		NHP_MW-404SA	Oct-20	< 0.75	< 0.5	**12**	< 0.5	**0.62**	< 0.5	< 1	< 5	**0.61**	< 5	< 2.5	**4.5**	< 1	< 0.75	< 0.5	< 0.5	< 0.134	**0.005**	**0.02304**	**0.00029**	< 0.001	< 0.001	**10.69**	**0.0304**

TABLE 5A - SUMMARY OF DETECTED COMPOUNDS - GROUNDWATER MONITORING
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

DRAFT

TABLE KEY:
VOCs = Volatile Organic Compounds
AGQS = Ambient Groundwater Quality Standards included in Env-Or 600 - Contaminated Site Management
NHDES GW-2 = New Hampshire Department of Environmental Services Groundwater to indoor air screening levels (Vapor Intrustion Policy)
ROD CUL = Cleanup Levels established in the Record of Decision (ROD) for Site groundwater
na = no current standard available
"---" = not sampled or parameter was not detected above the analytical reporting limit (RL) and the RL is not readily available
< = analyte not detected above the laboratory reporting limit
J = estimated concentration qualified by the laboratory, see laboratory report for explanation
Z = concentration qualified by GZA, based on the relative percent difference (RPD) being outside the acceptance criteria
Q = indicates that the concentration has been qualified by the laboratory, see laboratory report for explanation
R = data rejected
T = metal analytical result qualified because the turbidity was greater than 25 NTUs at the time of sampling
mg/L = milligrams per Liter
µg/L = micrograms per Liter
Bold = parameter was detected above the laboratory reporting detection limit
Grey shading = concentration exceeds the Ambient Groundwater Quality Standards
Blue shading = concentration exceeds the GW-2 screening levels
Orange shading = most recent round of sample results

GENERAL NOTES:
* Groundwater samples were collected using a combination of peristaltic pumps, dedicated T1250 bladder pumps, and non-dedicated SamplePro bladder pumps and dedicated tubing.
* GZA collected the groundwater samples at the Site from 2010 through the present; 2009 groundwater samples were collected by Nobis Engineering; groundwater samples prior to 2009 were collected by Tetra Tech, Inc.
* During 2010, the following wells were sampled using passive diffusion bag (PDB) samplers set at multiple vertical intervals within each well: MW-102S MW-102D, MW-102R, B-10S, MW-106, MW-106R, MW-108S, MW-108D, MW-109S, MW-109D, MW-109R, MW-202S, MW-203D, MW-204S, MW-308R, and MW-309R. Refer to Table 6 of the 2010 summary report for data results.
* Refer to Table 1 for the analytical test methods for each compound analyzed during 2020.

SPECIFIC NOTES:
1. Wells MW-301 and MW-302 are not sampled by GZA for the NHPC annual monitoring. These wells are sampled by EnviroSense, Inc., and are associated with the New England Pole Property (NHDES Site No. 198711004). The analytical data provided for these wells were obtained by GZA from the annual summary reports for the NE Pole property by EnviroSense, and has been included for informational purposes only. GZA has relied upon the data provided, and has not conducted an independent evaluation of the reliability of these data.

TABLE 5B - SUMMARY OF NATURAL ATTENUATION PARAMETERS
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

DRAFT

Monitoring Well ID	Geological Unit of Well Screen	Sampling Event Date	NA - Laboratory										NA - Field Screening					
			Methane (µg/L)	*Alkalinity (mg/L)*	*Chloride (mg/L)*	*Nitrite-Nitrogen (mg/L)*	*Nitrate+Nitrite-Nitrogen (mg/L)*	*Nitrate-Nitrogen (mg/L)*	*Sulfate, as SO_4 (mg/L)*	*Total Organic Carbon (mg/L)*	*Carbon Dioxide (mg/L)*	*Total Suspended Solids (mg/L)*	*pH (SU)*	*ORP (mV)*	*Specific Conductance (µS/cm)*	*Dissolved Oxygen (mg/L)*	*Turbidity (ntu)*	*Temperature (°C)*
		NHAGQS	na	na	na	1	na	10	500	na	na	na	na	na	na	na	na	na
NHP_JCPROD-1	**Bedrock**	**Oct-10**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**7.2**	**113**	**593**	**6.7**	**0.13**	**11**
		Nov-11	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**7.6**	**30**	**634**	**5.8**	<5	**11**
		Aug-13	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**8.0**	**110**	**619**	**6.6**	<5	**12**
		Jul-14	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.3**	**180**	**618**	**6.5 J***	<5	**11**
		Jul-18	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**7.1 g**	**81 g**	**685 g**	**7.5 g**	**0 g**	**15 g**
NHP_JCMW-2S	**Shallow Overburden**	**Jun-07**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Nov-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08 DUP	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Aug-09	**0.18**	**46**	**16**	<0.05	**0.097**	**0.097**	**5.7**	*ns*	**40**	<1.3	**2.66**	**645.5**	**162**	**1.02**	**0.59**	**15.09**
		Oct-10	**0.180**	**69**	**9.5**	<0.05	**0.17**	**0.16**	**16**	<0.5	**44**	<10	**6.7**	**81**	**171**	**7.7**	**5**	**14**
		Nov-11	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*
		Aug-13	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*
		Jul-14	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*
		Jul-18	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.3 g**	**106 g**	**151 g**	**4.9 g**	**6 g**	**25 g**
NHP_JCMW-2D	**Deep Overburden**	**Jun-07**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Nov-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08 DUP	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Aug-09	**15.00**	**59**	**77**	<0.05	<0.05	<0.05	**42.0**	*ns*	**32**	**11**	**6.29**	**-43.8**	**533**	**0.99**	**1.02**	**19.23**
		Aug-09 DUP	**15.00**	**58**	**76**	<0.05	<0.05	<0.05	**42.0**	*ns*	**31**	**11**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
		Oct-10	**21**	**57**	**88**	<0.05	<0.05	<0.05	**52**	**0.74**	**23**	**15.3**	**6.7**	**-75**	**540 J***	**0.5**	<5	**14**
		Oct-10 DUP	**19**	**67**	**87**	<0.05	<0.05	<0.05	**50**	**0.77**	**27**	**15.0**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
		Nov-11	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.8**	**-61**	**524**	**0.7**	**6 J***	**11**
		Nov-11 DUP	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
		Nov-12	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.9**	**-64**	**516**	**0.6**	**6**	**12**
		Aug-13	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.4**	**-76**	**521**	**0.9**	**7**	**18**
		Aug-13 DUP	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
		Jul-14	**20**	**70**	**79**	<0.05	<0.05	<0.05	**48**	**1.0**	**31**	**10**	**6.1**	**-58**	**523**	**0.9**	**11**	**18**
		Jul-14 DUP	**15**	**67**	**79**	<0.05	<0.05	<0.05	**48**	**0.88**	**28**	**11**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
		Jul-17	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.8**	**-61**	**323**	**0.7**	**8**	**15**
		Jul-17 DUP	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
		Jul-18	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.9**	**4**	**267**	**1.6**	**8**	**22**
		Jul-18 DUP	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
		Oct-20	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.8**	**-15**	**281**	**0.9**	**16**	**17**

TABLE 5B - SUMMARY OF NATURAL ATTENUATION PARAMETERS
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

DRAFT

Monitoring Well ID	Geological Unit of Well Screen	Sampling Event Date	NA - Laboratory										NA - Field Screening					
			Methane (µg/L)	*Alkalinity (mg/L)*	*Chloride (mg/L)*	*Nitrite-Nitrogen (mg/L)*	*Nitrate+Nitrite-Nitrogen (mg/L)*	*Nitrate-Nitrogen (mg/L)*	*Sulfate, as SO_4 (mg/L)*	*Total Organic Carbon (mg/L)*	*Carbon Dioxide (mg/L)*	*Total Suspended Solids (mg/L)*	*pH (SU)*	*ORP (mV)*	*Specific Conductance (µS/cm)*	*Dissolved Oxygen (mg/L)*	*Turbidity (ntu)*	*Temperature (°C)*
		NHAGQS	na	na	na	1	na	10	500	na	na	na	na	na	na	na	na	na
NHP_JCMW-4S	**Shallow Overburden**	**Aug-13**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*
		Jul-14	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*
		Jul-17	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
		Jul-18	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.1 g**	**565 g**	**109 g**	**8.3 g**	**1 g**	**26 g**
NHP_JCMW-4D	**Deep Overburden**	**Aug-13**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.3**	**-10**	**334**	**1.3**	**11**	**19**
		Jul-14	**2.7**	**79**	**31**	<0.05	**0.069**	**0.066**	**24**	**0.99**	**23**	<2.5	**6.9**	**76**	**309**	**1.3**	<5	**17**
		Jul-18	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.7**	**206**	**242**	**0.9**	**2**	**19**
		Oct-20	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.9**	**46**	**244**	**0.8**	**2**	**13**
NHP_JCMW-6	**Shallow Overburden**	**Aug-13**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*
		Jul-14	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*
		Jul-18	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**5.4 g**	**628 g**	**1,568 g**	**4.1 g**	**17 g**	**24 g**
NHP_MW-102S	**Overburden**	**May-07**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		May-07 DUP	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Oct-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Aug-09	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**5.01**	**200.2**	**69**	**8.91**	**0.62**	**14.72**
		Oct-10	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
		Oct-11	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*
		Aug-13	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*
		Jul-14	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*
		Jul-17	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.6 g**	**83 g**	**83 g**	**7.4 g**	**<5 g**	**16 g**
		Jul-18	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.2 g**	**88 g**	**83 g**	**7.3 g**	**3 g**	**19 g**
NHP_MW-102D	**Deep Overburden**	**May-07**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Oct-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Aug-09	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**5.60**	**151.9**	**260**	**13.36**	**11.30**	**13.26**
		Oct-10	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
		Oct-11	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.0**	**227**	**119**	**12**	**18**	**10**
		Aug-13	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**5.6**	**288**	**265**	**10.2**	<5	**12**
		Jul-14	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.0**	**201**	**121**	**9.9**	<5	**13**
		Jul-17	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**5.9**	**96**	**443**	**8.7**	<5	**12**
		Jul-18	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.0**	**81**	**385**	**8.6**	**1**	**13**

TABLE 5B - SUMMARY OF NATURAL ATTENUATION PARAMETERS
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

DRAFT

Monitoring Well ID	Geological Unit of Well Screen	Sampling Event Date	NA - Laboratory										NA - Field Screening					
			Methane (µg/L)	*Alkalinity (mg/L)*	*Chloride (mg/L)*	*Nitrite-Nitrogen (mg/L)*	*Nitrate+Nitrite-Nitrogen (mg/L)*	*Nitrate-Nitrogen (mg/L)*	*Sulfate, as SO_4 (mg/L)*	*Total Organic Carbon (mg/L)*	*Carbon Dioxide (mg/L)*	*Total Suspended Solids (mg/L)*	*pH (SU)*	*ORP (mV)*	*Specific Conductance (µS/cm)*	*Dissolved Oxygen (mg/L)*	*Turbidity (ntu)*	*Temperature (°C)*
		NHAGQS	na	na	na	1	na	10	500	na	na	na	na	na	na	na	na	na
NHP_MW-102R	**Bedrock**	**May-07**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Nov-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Oct-10	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
		Oct-11	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	**7.2**	**58**	**631**	**6.6**	**87**	**11**
		Nov-12	ns	**74.2**	**150**	ns	ns	ns	**19**	<0.500	ns	ns	**7.4**	**39**	**677**	**5.5**	**12**	**10**
		Aug-13	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	**7.3**	**190**	**641**	**5.6**	**10**	**13**
		Jul-14	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns/ir	ns/ir	ns/ir	ns/ir	ns/ir	ns/ir
		Jul-17	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	**7.5**	**47**	**791**	**4.7**	**9**	**14**
		Jul-18	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	**7.6**	**44**	**764**	**4.0**	**6**	**16**
NHP_MW-106	**Deep Overburden**	**May-07**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Oct-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Jun-09	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	**5.69**	**218.3**	**658**	**8.42**	**0.29**	**11.72**
		Oct-10	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
		Oct-11	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	**6.4**	**107**	**774**	**6.9**	<5	**10**
		Aug-13	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	**6.1**	**203**	**753**	**6.4**	<5	**13**
		Jul-14	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	**6.4**	**208**	**701**	**5.1**	<5	**14**
		Jul-18	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	**6.7**	**65**	**762**	**5.6**	**2**	**14**
		Oct-20	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	**6.5**	**225**	**1,019**	**6.5**	**1**	**12**
NHP_MW-106R	**Bedrock**	**May-07**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Oct-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Aug-09	**55.00**	**61**	**34**	<0.05	<0.05	<0.05	**21**	ns	**1.30 J**	**1.3 J**	**7.90**	**-148.8**	**277**	**0.77**	**3.15**	**14.01**
		Oct-10	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
		Oct-11	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	**8.1**	**96**	**279**	**0.8**	**30**	**10**
		Nov-12	ns	**56.7**	**46**	ns	ns	ns	**19**	<0.500	ns	ns	**8.0**	**-85**	**310**	**0.6**	**34**	**11**
		Aug-13	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	**7.7**	**-128**	**297**	**0.6**	<5	**13**
		Jul-14	**18**	**58**	**42**	<0.050	<0.050	<0.050	**20**	<0.50	**0.89 J**	<2.5	**8.2**	**-137**	**307**	<0.5	<5	**14**
		Jul-17	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	**8.0**	**43**	**342**	**0.5**	**10**	**13**
		Jul-18	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	**8.0**	**-40**	**348**	**0.3**	**10**	**14**
		Oct-20	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	**7.9**	**-61**	**361**	**0.3**	**11**	**13**

TABLE 5B - SUMMARY OF NATURAL ATTENUATION PARAMETERS
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

DRAFT

Monitoring Well ID	Geological Unit of Well Screen	Sampling Event Date	NA - Laboratory										NA - Field Screening					
			Methane (µg/L)	*Alkalinity (mg/L)*	*Chloride (mg/L)*	*Nitrite-Nitrogen (mg/L)*	*Nitrate+Nitrite-Nitrogen (mg/L)*	*Nitrate-Nitrogen (mg/L)*	*Sulfate, as SO_4 (mg/L)*	*Total Organic Carbon (mg/L)*	*Carbon Dioxide (mg/L)*	*Total Suspended Solids (mg/L)*	*pH (SU)*	*ORP (mV)*	*Specific Conductance (µS/cm)*	*Dissolved Oxygen (mg/L)*	*Turbidity (ntu)*	*Temperature (°C)*
		NHAGQS	na	na	na	1	na	10	500	na	na	na	na	na	na	na	na	na
NHP_B-10S	**Shallow Overburden**	**May-07**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Oct-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Jun-09	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**4.10**	**605.4**	**200**	**8.38**	**4.42**	**12.56**
		Oct-10	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
		Oct-11	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*
		Aug-13	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*
		Jul-14	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*
		Jul-17	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.8 g**	**72 g**	**442 g**	**1.8 g**	**6 g**	**15 g**
		Jul-18	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.0 g**	**100 g**	**392 g**	**2.1 g**	**8 g**	**17 g**
		Oct-20	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**5.8 g**	**215 g**	**352 g**	**2.0 g**	**3 g**	**14 g**
NHP_MW-108S	**Shallow Overburden**	**May-07**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Nov-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Aug-09	**0.17**	**34**	**13**	<0.05	**4.6**	**4.6**	**14**	*ns*	**25**	<1.3	**5.67**	**599.6**	**181**	**4.21**	**0.54**	**23.71**
		Oct-10	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
		Oct-11	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*
		Jul-12	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.2**	**60**	**235**	**1.4**	**1**	**19**
		Aug-13	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*
		Jul-14	**3.6**	**60**	**21**	<0.050	**0.69**	**0.69**	**24**	**0.95**	**66**	<2.5	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*
		Jul-18	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.3 g**	**84 g**	**419 g**	**2.8 g**	**1 g**	**18 g**
		Jul-18 DUP	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
		Oct-20	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.5 g**	**109 g**	**378 g**	**1.1 g**	**1 g**	**13 g**
NHP_MW-108D	**Deep Overburden**	**May-07**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Nov-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Aug-09	**0.48**	**43**	**120**	<0.05	**2.2**	**2.2**	**17**	*ns*	**9**	<1.3	**6.52**	**123.0**	**521**	**3.25**	**0.72**	**16.82**
		Oct-10	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
		Oct-11	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.6**	**106**	**625**	**3.6**	**18**	**11**
		Nov-12	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
		Aug-13	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.3**	**421**	**700**	**3.7**	<5	**14**
		Jul-14	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.8**	**123**	**701**	**3.7**	<5	**13**
		Jul-18	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.8**	**51**	**679**	**4.5**	**2**	**14**

TABLE 5B - SUMMARY OF NATURAL ATTENUATION PARAMETERS
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

DRAFT

Monitoring Well ID	Geological Unit of Well Screen	Sampling Event Date	NA - Laboratory										NA - Field Screening					
			Methane (µg/L)	*Alkalinity (mg/L)*	*Chloride (mg/L)*	*Nitrite-Nitrogen (mg/L)*	*Nitrate+Nitrite-Nitrogen (mg/L)*	*Nitrate-Nitrogen (mg/L)*	*Sulfate, as SO_4 (mg/L)*	*Total Organic Carbon (mg/L)*	*Carbon Dioxide (mg/L)*	*Total Suspended Solids (mg/L)*	*pH (SU)*	*ORP (mV)*	*Specific Conductance (µS/cm)*	*Dissolved Oxygen (mg/L)*	*Turbidity (ntu)*	*Temperature (°C)*
		NHAGQS	na	na	na	1	na	10	500	na	na	na	na	na	na	na	na	na
NHP_MW-109S	**Shallow Overburden**	**May-07**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08 DUP	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Aug-09	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**2.41**	**679.8**	**91**	**7.10**	**0.60**	**17.61**
		Oct-10	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
		Oct-11	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*
		Nov-12	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
		Aug-13	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*
		Jul-14	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*
		Jul-17	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
		Jul-18	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**5.9 g**	**100 g**	**198 g**	**5.6 g**	**3 g**	**21 g**
NHP_MW-109D	**Deep Overburden**	**May-07**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Oct-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Aug-09	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**5.61**	**175.3**	**252**	**1.44**	**3.73**	**23.08**
		Oct-10	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
		Oct-11	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**7.2**	**-113**	**321**	<0.5	**662 J***	**12**
		Aug-13	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**7.0**	**-95**	**305**	**0.8**	**627**	**17**
		Jul-14	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns/t*	*ns/t*	*ns/t*	*ns/t*	*ns/t*	*ns/t*
		Jul-18	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**7.5**	**-88**	**236**	**0.3**	**OR**	**18**
NHP_MW-109R	**Bedrock**	**Jun-07**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Oct-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Aug-09	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**7.93**	**573.9**	**430**	**0.78**	**2.27**	**20.51**
		Oct-10	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
		Oct-11	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**8.2**	**-145**	**507**	<0.5	**57**	**11**
		Nov-12	*ns*	**199**	**45**	*ns*	*ns*	*ns*	<1.0	<0.500	*ns*	*ns*	**8.4**	**-202**	**482**	<0.5	<5	**11**
		Aug-13	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**7.9**	**-179**	**516**	<0.5	<5	**18**
		Jul-14	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns/ir*	*ns/ir*	*ns/ir*	*ns/ir*	*ns/ir*	*ns/ir*
		Jul-18	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**8.3**	**-186**	**482**	**0.1**	**2**	**19**

TABLE 5B - SUMMARY OF NATURAL ATTENUATION PARAMETERS
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

DRAFT

Monitoring Well ID	Geological Unit of Well Screen	Sampling Event Date	NA - Laboratory										NA - Field Screening					
			Methane (µg/L)	*Alkalinity (mg/L)*	*Chloride (mg/L)*	*Nitrite-Nitrogen (mg/L)*	*Nitrate+Nitrite-Nitrogen (mg/L)*	*Nitrate-Nitrogen (mg/L)*	*Sulfate, as SO_4 (mg/L)*	*Total Organic Carbon (mg/L)*	*Carbon Dioxide (mg/L)*	*Total Suspended Solids (mg/L)*	*pH (SU)*	*ORP (mV)*	*Specific Conductance (µS/cm)*	*Dissolved Oxygen (mg/L)*	*Turbidity (ntu)*	*Temperature (°C)*
		NHAGQS	na	na	na	1	na	10	500	na	na	na	na	na	na	na	na	na
NHP_MW-202S	**Shallow Overburden**	**Jun-07**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Nov-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Nov-07 DUP	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Aug-09	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
		Oct-10	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
		Oct-11	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*
		Jul-12	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**5.6**	**235**	**232**	**7.1**	**0**	**15**
		Aug-13	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*
		Jul-14	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*
		Jul-17	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.3 g**	**104 g**	**348 g**	**9.4 g**	<5 g	**18 g**
		Jul-17 DUP	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
		Jul-18	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.0 g**	**120 g**	**259 g**	**5.9 g**	**2 g**	**23 g**
		Jul-18 DUP	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
NHP_MW-202D	**Deep Overburden**	**Jun-07**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Oct-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Aug-09	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.35**	**18.7**	**566**	**5.79**	**1.26**	**20.59**
		Oct-10	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.8**	**211**	**535**	**2.9**	**5**	**13**
		Nov-11	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.3**	**115**	**625**	**5.2**	<5	**11**
		Aug-13	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.1**	**189**	**676**	**6.2**	<5	**15**
		Jul-14	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.6**	**169**	**696**	**5.0**	<5	**13**
		Jul-18	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.6**	**71**	**634**	**5.0**	**2**	**15**
NHP_MW-203S	**Shallow Overburden**	**May-07**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Nov-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08 DUP	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Aug-09	**0.48**	**49**	**8.1**	<0.05	**1.8**	**1.8**	**7.6**	*ns*	**38**	<1.3	**4.24**	**639.6**	**168**	**4.04**	**0.32**	**14.97**
NHP_MW-203SX	**Shallow Overburden**	**Jul-17**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.0 g**	**139 g**	**337 g**	**2.3 g**	<5 g	**17 g**
		Jul-18	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.4 g**	**99 g**	**261 g**	**5.3 g**	**2 g**	**16 g**
		Oct-20	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*

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New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

DRAFT

Monitoring Well ID	Geological Unit of Well Screen	Sampling Event Date	NA - Laboratory										NA - Field Screening					
			Methane (µg/L)	*Alkalinity (mg/L)*	*Chloride (mg/L)*	*Nitrite-Nitrogen (mg/L)*	*Nitrate+Nitrite-Nitrogen (mg/L)*	*Nitrate-Nitrogen (mg/L)*	*Sulfate, as SO_4 (mg/L)*	*Total Organic Carbon (mg/L)*	*Carbon Dioxide (mg/L)*	*Total Suspended Solids (mg/L)*	*pH (SU)*	*ORP (mV)*	*Specific Conductance (µS/cm)*	*Dissolved Oxygen (mg/L)*	*Turbidity (ntu)*	*Temperature (°C)*
		NHAGQS	na	na	na	1	na	10	500	na	na	na	na	na	na	na	na	na
NHP_MW-203D	**Deep Overburden**	**May-07**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Nov-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Aug-09	**3.10**	**88**	**84**	<0.05	<0.05	<0.05	**27**	*ns*	**13**	**8.2**	**6.67**	**-87.4**	**520**	**1.20**	**1.37**	**20.61**
		Oct-10	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
		Nov-11	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.7**	**-82**	**521**	<0.5	**18**	**12**
		Aug-13	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.7**	**-74**	**425**	**0.8**	**21**	**15**
		Jul-14	**4.0**	**83**	**160**	<0.050	<0.050	<0.050	**26**	**0.73**	**12**	**21**	**5.6**	**-33**	**410**	**0.5**	**7**	**14**
		Jul-17	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**7.1**	**-84**	**398**	**0.3**	**16**	**16**
		Jul-18	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**7**	**-52**	**436**	**0.4**	**7**	**15**
		Oct-20	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**7.1**	**-80**	**621 g**	**0.2**	**7 g**	**13**
NHP_MW-204S	**Shallow Overburden**	**Jun-07**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Nov-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Aug-09	**0.16**	**46**	**38**	<0.05	**1.5**	**1.5**	**8.5**	*ns*	**89**	**1.3J**	**2.92**	**630.1**	**226**	**4.00**	**0.95**	**13.60**
		Oct-10	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
		Nov-11	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**5.7**	**124**	**988**	**3.9**	<5	**12**
		Aug-13	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*
		Jul-14	**0.24**	**44**	**18**	<0.050	**0.91**	**0.91**	**12**	**0.80**	**62**	<2.5	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*
		Jul-17	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.3**	**92**	**216**	**4.5**	<5	**14**
		Jul-18	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.2 g**	**88 g**	**220 g**	**4.9 g**	**3 g**	**19 g**
		Oct-20	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.1 g**	**165 g**	**337 g**	**2.5 g**	**1 g**	**13**
NHP_MW-204D	**Deep Overburden**	**Jun-07**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Nov-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Aug-09	**2.20**	**43**	**81**	<0.05	<0.05	<0.05	**28**	*ns*	**24**	**7.5J**	**6.34**	**-70.8**	**438**	**0.77**	**0.72**	**14.85**
		Oct-10	**8.5**	**35**	**74**	<0.05	**0.07**	**0.057**	**29**	<0.5	**17.00**	**22.0**	**6.8**	**-51**	**370**	**0.9**	**18**	**15**
		Oct-11	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.3**	**-55**	**431**	<0.5	**10**	**12**
		Oct-11 DUP	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
		Aug-13	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.3**	**-48**	**417**	**0.7**	<5	**16**
		Aug-13 DUP	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
		Jul-14	**6.5**	**46**	**73**	<0.050	<0.050	<0.050	**26**	<0.50	**17**	**11**	**5.8**	**-27**	**406**	<0.5	**5**	**15**
		Jul-14 DUP	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
		Jul-17	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.8**	**-71**	**391**	<0.5	**12**	**14**
		Jul-18	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.6**	**-30**	**407**	**0.4**	**9**	**16**

TABLE 5B - SUMMARY OF NATURAL ATTENUATION PARAMETERS
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

DRAFT

Monitoring Well ID	Geological Unit of Well Screen	Sampling Event Date	NA - Laboratory										NA - Field Screening					
			Methane (µg/L)	*Alkalinity (mg/L)*	*Chloride (mg/L)*	*Nitrite-Nitrogen (mg/L)*	*Nitrate+Nitrite-Nitrogen (mg/L)*	*Nitrate-Nitrogen (mg/L)*	*Sulfate, as SO_4 (mg/L)*	*Total Organic Carbon (mg/L)*	*Carbon Dioxide (mg/L)*	*Total Suspended Solids (mg/L)*	*pH (SU)*	*ORP (mV)*	*Specific Conductance (µS/cm)*	*Dissolved Oxygen (mg/L)*	*Turbidity (ntu)*	*Temperature (°C)*
		NHAGQS	na	na	na	1	na	10	500	na	na	na	na	na	na	na	na	na
NHP_MW-204R	**Bedrock**	**Jun-07**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Nov-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Aug-09	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	**5.80**	**-26.9**	**488**	**0.66**	**0.62**	**15.79**
		Oct-10	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	**6.9**	**-72**	**410**	<0.5	**21**	**13**
		Oct-11	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	**6.4**	**-48**	**488**	**0.5**	**10**	**12**
		Nov-12	ns	**52.4**	**92**	ns	ns	ns	**23**	<0.500	ns	ns	**6.8**	**-52**	**468**	<0.5	<5	**10**
		Nov-12 DUP	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
		Aug-13	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	**7**	**-34**	**481**	<0.5	<5	**15**
		Jul-14	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	**3.6**	**28**	**475**	**0.5**	<5	**17**
		Jul-18	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	**6.8**	**-20**	**454**	**0.2**	**3**	**15**
NHP_MW-301S	**Shallow Overburden**	**May-07**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Oct-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Aug-09	**0.35**	**55**	**70**	<0.05	**4.4**	**4.4**	**18**	ns	**92**	<1.3	**4.70**	**624.0**	**391**	**4.25**	**1.98**	**15.91**
		Oct-10	**0.500**	**51**	**91**	<0.05	**4.0**	**4.0**	**18**	**0.53**	**100**	<10	**6.1**	**103 J***	**500**	**2.6**	<5	**13**
		Nov-11	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	**6.0**	**140**	**537**	**7.6**	<5	**12**
		Jul-12	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	**5.8**	**256**	**404**	**2.9**	**1**	**15**
		Jul-12 Dup	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
		Aug-13	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	**5.8**	**371**	**484**	**7.7**	<5	**14**
		Jul-14	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	**6.1**	**159**	**462**	**6.1**	<5	**13**
		Jul-17	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	**6.1**	**77**	**474**	**5.1**	<5	**12**
		Jul-18	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	**6.0**	**282**	**490**	**2.3**	**2**	**14**
		Oct-20	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	**6.1**	**103**	**665**	**1.1**	**2**	**12**
NHP_MW-301D	**Deep Overburden**	**May-07**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Oct-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Aug-09	**0.94**	**17**	**150**	<0.05	**1.5**	**1.5**	**20**	ns	**28**	<1.3	**5.71**	**166.1**	**596**	**10.35**	**1.29**	**15.35**
		Oct-10	**0.770**	**17**	**140**	<0.05	**1.5**	**1.4**	**18**	<0.50	**30**	<10	**6.1**	**91**	**583 J***	**7.3**	**8**	**13**
		Nov-11	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	**5.9**	**170**	**564**	**6.7**	<5	**12**
		Aug-13	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	**5.8**	**314**	**679**	**8.6**	<5	**13**
		Jul-14	**0.38**	**18**	**160**	<0.050	**1.6**	**1.6**	**29**	**0.57**	**26**	<2.5	**6.0**	**219**	**664**	**7.7**	<5	**14**
		Jul-18	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	**5.9**	**471**	**774**	**7.5**	**2**	**16**
MW-301 [1]	**Shallow Overburden**	**Nov-09**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Nov-10	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	**6.03**	**156**	ns	**1.79**	**2.7**	**12.07**
		Nov-11	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	**6.31**	**122**	**339**	**1.60**	**1.4**	**12.65**
		Nov-12	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	**5.88**	**226**	**544**	**0.93**	**3.3**	**12.78**
		Nov-13	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	**5.73**	**46.6**	**360**	**1.09**	ns	**11.06**

TABLE 5B - SUMMARY OF NATURAL ATTENUATION PARAMETERS
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

DRAFT

Monitoring Well ID	Geological Unit of Well Screen	Sampling Event Date	NA - Laboratory										NA - Field Screening					
			Methane (µg/L)	*Alkalinity (mg/L)*	*Chloride (mg/L)*	*Nitrite-Nitrogen (mg/L)*	*Nitrate+Nitrite-Nitrogen (mg/L)*	*Nitrate-Nitrogen (mg/L)*	*Sulfate, as SO_4 (mg/L)*	*Total Organic Carbon (mg/L)*	*Carbon Dioxide (mg/L)*	*Total Suspended Solids (mg/L)*	*pH (SU)*	*ORP (mV)*	*Specific Conductance (µS/cm)*	*Dissolved Oxygen (mg/L)*	*Turbidity (ntu)*	*Temperature (°C)*
		NHAGQS	na	na	na	1	na	10	500	na	na	na	na	na	na	na	na	na
NHP_MW-302S	**Shallow Overburden**	**May-07**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Oct-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Aug-09	**97.00**	**56**	**18**	<0.05	**3.5**	**3.5**	**35**	*ns*	**110**	**1.3 J**	**2.57**	**634.6**	**275**	**7.70**	**1.88**	**15.26**
		Oct-10	**1,800**	**100**	**34**	<0.05	**4.5**	**4.4**	**68**	**1.50**	**150**	<2.5	**6.2**	**129**	**447**	**1.5**	<5	**12**
		Oct-11	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*
		Jul-12	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**5.8**	**229**	**395**	**3.6**	**1**	**15**
		Aug-13	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*
		Jul-14	**290**	**69**	**33**	<0.050	**0.39**	**0.39**	**31**	**0.55**	**67**	<2.5	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*
		Jul-17	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**5.9 g**	**125 g**	**310 g**	**0.8 g**	**9 g**	**17 g**
		Jul-18	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.2 g**	**163 g**	**334 g**	**2.0 g**	**16 g**	**22 g**
		Oct-20	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.6 g**	**45 g**	**665 g**	**R**	**30 g**	**15 g**
NHP_MW-302SA	**Shallow Overburden**	**Oct-20**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.3**	**172**	**2,984**	**0.7**	**3**	**11**
NHP_MW-302D	**Deep Overburden**	**May-07**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Oct-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Aug-09	**5.80**	**64**	**46**	<0.05	**1.2**	**1.2**	**12**	*ns*	**46**	**4.5 J**	**5.12**	**485.6**	**315**	**-3.12R [1]**	**7.90**	**13.75**
		Oct-10	**1.4**	**59**	**43**	<0.05	**1.0**	**1.0**	**15**	**0.57**	**39.0**	**3.0**	**6.7**	**108**	**306**	**0.6**	**6**	**12**
		Oct-11	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.7**	**117**	**314**	**3**	**7**	**11**
		Aug-13	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.3**	**232**	**329**	**0.8**	<5	**13**
		Jul-14	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.7**	**84**	**364**	**5.8**	<5	**12**
		Jul-17	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.5**	**55**	**364**	<0.5	<5	**14**
		Jul-18	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.2**	**63**	**431**	**0.5**	**3**	**15**
		Oct-20	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**7.0**	**60**	**395**	**5.7**	**1**	**12**
NHP_MW-302DA	**Deep Overburden**	**Oct-20**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.5**	**7**	**482**	**1.3**	**3**	**10**
MW-302 [1]	**Shallow Overburden**	**Nov-09**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Nov-10	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.39**	**49**	*ns*	**0.09**	**3.2**	**12.50**
		Nov-11	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**7.08**	**21**	**277**	**0.24**	**2.9**	**12.12**
		Nov-12	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**5.22**	**193**	**336**	**0.98**	**4.9**	**12.75**
		Nov-13	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**4.92**	**67.7**	**174**	**0.26**	*ns*	**11.23**

TABLE 5B - SUMMARY OF NATURAL ATTENUATION PARAMETERS
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

DRAFT

Monitoring Well ID	Geological Unit of Well Screen	Sampling Event Date	NA - Laboratory										NA - Field Screening					
			Methane (µg/L)	*Alkalinity (mg/L)*	*Chloride (mg/L)*	*Nitrite-Nitrogen (mg/L)*	*Nitrate+Nitrite-Nitrogen (mg/L)*	*Nitrate-Nitrogen (mg/L)*	*Sulfate, as SO_4 (mg/L)*	*Total Organic Carbon (mg/L)*	*Carbon Dioxide (mg/L)*	*Total Suspended Solids (mg/L)*	*pH (SU)*	*ORP (mV)*	*Specific Conductance (µS/cm)*	*Dissolved Oxygen (mg/L)*	*Turbidity (ntu)*	*Temperature (°C)*
		NHAGQS	na	na	na	1	na	10	500	na	na	na	na	na	na	na	na	na
NHP_MW-303S	**Shallow Overburden**	**May-07**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Oct-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Oct-07 DUP	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Aug-09	**47.00**	**56**	**180**	<0.05	**1.2**	**1.2**	**24**	*ns*	**82**	<1.3	**5.50**	**157.3**	**575**	**0.77**	**1.39**	**16.14**
		Oct-10	**38**	**66**	**54**	<0.05	**0.44**	**0.44**	**26**	**1.3**	**84**	<2.5	**6.3**	**183**	**376**	<0.5	<5	**12**
		Oct-11	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.3**	**73**	**399**	**0.8**	<5	**13**
		Aug-13	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6**	**80**	**315**	**1.3**	<5	**14**
		Jul-14	**62**	**73**	**190**	<0.050	**0.34**	**0.34**	**12**	**1.5**	**56**	<2.5	**6.3**	**70**	**708**	**1.0**	<5	**13**
		Jul-17	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**5.8**	**141**	**963**	**1.8**	<5	**14**
		Jul-18	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.3**	**65**	**1,179**	**0.5**	**2**	**16**
		Oct-20	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.3**	**114**	**552**	**0.3**	**2**	**14**
NHP_MW-303SA	**Shallow Overburden**	**Oct-20**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.3**	**112**	**726**	**0.4**	**3**	**13**
NHP_MW-303D	**Deep Overburden**	**May-07**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		May-07 DUP	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Oct-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Aug-09	**25.00**	**89**	**47**	<0.05	**0.37**	**0.35**	**35**	*ns*	**39**	**5.2**	**2.35**	**473.5**	**433**	**0.10**	**24.70**	**16.02**
		Oct-10	**51**	**87**	**48**	<0.05	**0.1**	**0.099**	**43**	**1.1**	**36**	**4.50**	**6.8**	**-29**	**449**	**0.5**	**11**	**12**
		Oct-11	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.7**	**-1**	**396**	**0.6**	**25**	**12**
		Aug-13	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.4**	**-43**	**423**	**0.7**	**14**	**14**
		Jul-14	**72**	**110**	**39**	<0.050	<0.050	<0.050	**27**	**1.1**	**34**	<2.5	*ns/t*	*ns/t*	*ns/t*	*ns/t*	*ns/t*	*ns/t*
		Jul-17	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.2**	**30**	**408**	<0.5	**6**	**14**
		Jul-18	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.7**	**-2**	**400**	**0.3**	**14**	**16**
		Oct-20	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.8**	**-19**	**422**	**0.2**	**14**	**13**
NHP_MW-303DA	**Deep Overburden**	**Oct-20**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.8**	**-61**	**622**	**0.5**	**10**	**13**
NHP_MW-304S	**Shallow Overburden**	**May-07**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Oct-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Aug-09	**170.00**	**130**	**7.8**	<0.05	**0.12**	**0.11**	**44**	*ns*	**160**	<1.3	**3.66**	**575.8**	**331**	**0.46**	**0.78**	**12.29**
		Oct-10	**1.70**	**160**	**3.9**	<0.05	**0.49**	**0.49**	**72**	**2.40**	**180.00**	<2.5	**6.3**	**142**	**447**	**0.7**	<5	**11**
		Oct-11	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.2**	**168**	**327**	**5.1**	<5	**9**
		Aug-13	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**5.8**	**271**	**405**	**3.4**	<5	**11**
		Jul-14	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.3**	**139**	**250**	**7.7**	<5	**11**
		Jul-18	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.5**	**228**	**539**	**2.6**	**3**	**11**

TABLE 5B - SUMMARY OF NATURAL ATTENUATION PARAMETERS
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

DRAFT

Monitoring Well ID	Geological Unit of Well Screen	Sampling Event Date	NA - Laboratory										NA - Field Screening					
			Methane (µg/L)	*Alkalinity (mg/L)*	*Chloride (mg/L)*	*Nitrite-Nitrogen (mg/L)*	*Nitrate+Nitrite-Nitrogen (mg/L)*	*Nitrate-Nitrogen (mg/L)*	*Sulfate, as SO_4 (mg/L)*	*Total Organic Carbon (mg/L)*	*Carbon Dioxide (mg/L)*	*Total Suspended Solids (mg/L)*	*pH (SU)*	*ORP (mV)*	*Specific Conductance (µS/cm)*	*Dissolved Oxygen (mg/L)*	*Turbidity (ntu)*	*Temperature (°C)*
		NHAGQS	na	na	na	1	na	10	500	na	na	na	na	na	na	na	na	na
NHP_MW-304D	**Deep Overburden**	**May-07**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Oct-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Aug-09	**300.00**	**110**	**31**	<0.05	<0.05	<0.05	**22**	*ns*	**65**	<1.3	**6.38**	**20.6**	**380**	**0.51**	**0.44**	**13.95**
		Oct-10	**250**	**120**	**30**	<0.05	<0.05	<0.05	**24**	**1.20**	**52**	<2.5	**6.9**	**107**	**373**	**0.6**	<5	**11**
		Oct-11	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.6**	**106**	**386**	**0.6**	<5	**10**
		Aug-13	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.4**	**105**	**400**	**0.6**	<5	**11**
		Jul-14	**140**	**130**	**28**	<0.050	**0.13**	**0.13**	**21**	**1.3**	**52**	<2.5	**6.8**	**26**	**407**	**0.5**	<5	**13**
		Jul-17	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.4**	**101**	**392**	<0.5	<5	**11**
		Jul-18	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.6**	**176**	**395**	**0.2**	**1**	**13**
		Oct-20	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.6**	**40**	**420**	**0.6**	**1**	**12**
NHP_MW-305S	**Shallow Overburden**	**May-07**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Oct-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Aug-09	**0.28**	**14**	**160**	<0.05	**3.5**	**3.5**	**13**	*ns*	**59**	<1.3	**4.55**	**592.7**	**607**	**8.45**	**0.11**	**13.08**
		Oct-10	**0.53**	**51**	**16**	<0.05	**1.7**	**1.7**	**19**	**1.10**	**180.00**	<10	**5.9**	**115**	**201**	**3.7**	<5	**13**
		Oct-11	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**5.5**	**114**	**137**	**4.6**	<5	**12**
		Aug-13	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**5.3**	**272**	**222**	**8.4**	<5	**12**
		Jul-14	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**5.7**	**255**	**489**	**6.7**	<5	**12**
		Jul-18	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**5.7**	**386**	**1,186**	**7.5**	**2**	**14**
NHP_MW-305D	**Deep Overburden**	**May-07**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Oct-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Aug-09	**0.38**	**10**	**160**	<0.05	**1.9**	**1.9**	**17**	*ns*	**27**	<1.3	**5.63**	**186.3**	**597**	**10.55**	**1.02**	**13.76**
		Oct-10	**0.077**	**10**	**160**	<0.05	**1.80**	**1.80**	**23**	<0.5	**24.00**	<5.0	**6.2**	**143**	**558**	**9**	<5	**12**
		Oct-11	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**5.8**	**118**	**682**	**9.6**	<5	**12**
		Aug-13	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**5.5**	**232**	**620**	**10.7**	<5	**13**
		Jul-14	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**5.9**	**202**	**745**	**8.9**	<5	**13**
		Jul-18	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**5.9**	**387**	**905**	**9.3**	**1**	**14**
NHP_MW-306S	**Shallow Overburden**	**May-07**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Nov-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Aug-09	**0.84**	**16**	**69**	<0.05	**1**	**1**	**14**	*ns*	**40**	<1.3	**1.66**	**687.8**	**328**	**0.83**	**0.27**	**14.01**
		Oct-10	**0.290**	**21**	**70**	<0.05	**2.3**	**2.3**	**16**	<0.5	**50**	<10	**6**	**75**	**332**	**1.5**	<5	**12**
		Oct-11	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*
		Aug-13	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*
		Jul-14	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*
		Jul-18	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.0 g**	**492 g**	**383 g**	**6.7 g**	**2 g**	**15 g**

TABLE 5B - SUMMARY OF NATURAL ATTENUATION PARAMETERS
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

DRAFT

Monitoring Well ID	Geological Unit of Well Screen	Sampling Event Date	NA - Laboratory										NA - Field Screening					
			Methane (µg/L)	*Alkalinity (mg/L)*	*Chloride (mg/L)*	*Nitrite-Nitrogen (mg/L)*	*Nitrate+Nitrite-Nitrogen (mg/L)*	*Nitrate-Nitrogen (mg/L)*	*Sulfate, as SO_4 (mg/L)*	*Total Organic Carbon (mg/L)*	*Carbon Dioxide (mg/L)*	*Total Suspended Solids (mg/L)*	*pH (SU)*	*ORP (mV)*	*Specific Conductance (µS/cm)*	*Dissolved Oxygen (mg/L)*	*Turbidity (ntu)*	*Temperature (°C)*
		NHAGQS	na	na	na	1	na	10	500	na	na	na	na	na	na	na	na	na
NHP_MW-306D	**Deep Overburden**	**May-07**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		May-07 DUP	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Oct-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Aug-09	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**1.79**	**667.7**	**638**	**9.29**	**1.05**	**15.90**
		Oct-10	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.3**	**114**	**589**	**7.4**	<5	**12**
		Oct-11	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.0**	**77**	**583**	**9.0**	<5	**12**
		Aug-13	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**5.7**	**207**	**608**	**11.4**	<5	**13**
		Jul-14	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.1**	**194**	**619**	**10.2**	<5	**13**
		Jul-18	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.1**	**60**	**706**	**7.2**	**1**	**14**
NHP_MW-307S	**Shallow Overburden**	**May-07**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Oct-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Aug-09	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**5.80**	**142.4**	**205**	**8.32**	**1.61**	**13.72**
		Oct-10	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.2**	**194**	**273**	**5.5**	<5	**11**
		Oct-11	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**5.9**	**146**	**261**	**7.3**	<5	**13**
		Jul-12	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**5.7**	**247**	**181**	**8.1**	**0**	**16**
		Aug-13	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*
		Jul-14	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*
		Jul-18	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.2 g**	**81 g**	**182 g**	**8.2 g**	**0 g**	**21 g**
NHP_MW-307D	**Deep Overburden**	**May-07**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Oct-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Aug-09	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**3.54**	**654.7**	**216**	**0.85**	**0.3**	**13.07**
		Oct-10	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.7**	**182**	**283**	**0.8**	<5	**11**
		Oct-11	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**5.9**	**163**	**453**	**0.8**	<5	**12**
		Aug-13	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**5.6**	**181**	**535**	**0.9**	<5	**12**
		Jul-14	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.0**	**124**	**464**	**2.8**	<5	**12**
		Jul-18	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**5.9**	**90**	**470**	**0.8**	**1**	**14**

TABLE 5B - SUMMARY OF NATURAL ATTENUATION PARAMETERS
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

DRAFT

Monitoring Well ID	Geological Unit of Well Screen	Sampling Event Date	NA - Laboratory										NA - Field Screening					
			Methane (µg/L)	*Alkalinity (mg/L)*	*Chloride (mg/L)*	*Nitrite-Nitrogen (mg/L)*	*Nitrate+Nitrite-Nitrogen (mg/L)*	*Nitrate-Nitrogen (mg/L)*	*Sulfate, as SO_4 (mg/L)*	*Total Organic Carbon (mg/L)*	*Carbon Dioxide (mg/L)*	*Total Suspended Solids (mg/L)*	*pH (SU)*	*ORP (mV)*	*Specific Conductance (µS/cm)*	*Dissolved Oxygen (mg/L)*	*Turbidity (ntu)*	*Temperature (°C)*
		NHAGQS	na	na	na	1	na	10	500	na	na	na	na	na	na	na	na	na
NHP_MW-308S	**Shallow Overburden**	**Jun-07**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Jun-07 DUP	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Oct-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Oct-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Aug-09	**270.00**	**110**	**12**	<0.05	**0.75**	**0.75**	**31**	*ns*	**99**	<1.3	**5.40**	**152.5**	**230**	**0.87**	**0.48**	**14.69**
		Aug-09 DUP	**350.00**	**110**	**12**	<0.05	**0.79**	**0.78**	**31**	*ns*	**100**	<1.3	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
		Oct-10	**290**	**96**	**28**	<0.05	**0.18**	**0.17**	**35**	**2.7**	**79.00**	<2.5	**6.7**	**10**	**355**	**0.7**	<5	**11**
		Oct-10 DUP	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
		Oct-11	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*
		Oct-11 DUP	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
		Aug-13	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*
		Aug-13 DUP	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
		Jul-14	**13**	**350**	**4.7**	<0.05	**2.1**	**2.1**	**50**	**9.2**	**58**	**5.5**	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*
		Jul-14 DUP	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*
		Jul-17	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.3 g**	**132 g**	**534 g**	**1.3 g**	**40 g**	**17 g**
		Jul-18	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**7.4 g**	**225 g**	**2,012 g**	**2.6 g**	**69 g**	**22 g**
		Oct-20	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**7.1 g**	**160 g**	**808 g**	**1.9 g**	**77 g**	**15**
NHP_MW-308SA	**Shallow Overburden**	**Oct-20**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.3**	**78**	**1,000**	**0.3**	**1**	**10**
NHP_MW-308D	**Deep Overburden**	**Jun-07**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Nov-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Aug-09	**0.32**	**31**	**120**	<0.050	**3.8**	**3.8**	**14**	*ns*	**67**	**4.1J**	**5.67**	**158.7**	**536**	**0.58**	**7.81**	**13.27**
		Oct-10	**24**	**30**	**150**	<0.05	**4.0**	**4.0**	**14**	<0.5	**46.00**	<2.5	**6.3**	**93**	**563**	**0.7**	<5	**12**
		Nov-11	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.1**	**139**	**419**	**0.8**	<5	**11**
		Aug-13	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**5.8**	**197**	**359**	**0.6**	<5	**12**
		Jul-14	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**4.4 J***	**290**	**372**	**0.7**	<5	**14**
		Jul-18	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.2**	**59**	**430**	**0.3**	**3**	**15**
		Oct-20	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.4**	**106**	**416**	**0.2**	**2**	**12**
NHP_MW-308DA	**Deep Overburden**	**Oct-20**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**7.5**	**29**	**482**	**3.0**	**12**	**10**

TABLE 5B - SUMMARY OF NATURAL ATTENUATION PARAMETERS
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

DRAFT

Monitoring Well ID	Geological Unit of Well Screen	Sampling Event Date	NA - Laboratory										NA - Field Screening					
			Methane (µg/L)	*Alkalinity (mg/L)*	*Chloride (mg/L)*	*Nitrite-Nitrogen (mg/L)*	*Nitrate+Nitrite-Nitrogen (mg/L)*	*Nitrate-Nitrogen (mg/L)*	*Sulfate, as SO_4 (mg/L)*	*Total Organic Carbon (mg/L)*	*Carbon Dioxide (mg/L)*	*Total Suspended Solids (mg/L)*	*pH (SU)*	*ORP (mV)*	*Specific Conductance (µS/cm)*	*Dissolved Oxygen (mg/L)*	*Turbidity (ntu)*	*Temperature (°C)*
		NHAGQS	na	na	na	1	na	10	500	na	na	na	na	na	na	na	na	na
NHP_MW-308R	**Bedrock**	**Jun-07**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Oct-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Aug-09	**16.00**	**310**	**83**	<0.05	<0.05	<0.05	**32**	ns	<5	**2.2 J**	ns	ns	ns	ns	ns	ns
		Oct-10	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
		Oct-11	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns/ir	ns/ir	ns/ir	ns/ir	ns/ir	ns/ir
		Nov-12	ns	**259**	**93**	ns	ns	ns	**24**	**2.9**	ns	ns	**11.9**	**-130 J***	**1,798 J***	**1.3 J***	<5	**13**
		Aug-13	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns/ir	ns/ir	ns/ir	ns/ir	ns/ir	ns/ir
		Jul-14	**19**	**250 Q**	**96**	<0.050	<0.050	<0.050	**23**	**2.7**	<5.0	<2.5	ns/ir	ns/ir	ns/ir	ns/ir	ns/ir	ns/ir
		Jul-18	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	**11.8**	**8**	**1,106**	**0.9**	**1**	**19**
NHP_MW-309S	**Shallow Overburden**	**May-07**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Oct-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Aug-09	**280.00**	**140**	**20**	<0.050	**1**	**1**	**21**	ns	**57**	**1.8 J**	**6.57**	**-17.0**	**370**	**0.77**	**2.78**	**13.42**
		Oct-10	**4300**	**180**	**27**	<0.05	<0.05	<0.05	**16**	**4.4**	**19.0**	**6.0**	**7.6**	**-116**	**476 J***	**0.5**	<5	**13**
		Nov-11	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns/g	ns/g	ns/g	ns/g	ns/g	ns/g
		Nov-12	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
		Aug-13	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns/g	ns/g	ns/g	ns/g	ns/g	ns/g
		Jul-14	**2,300**	**190**	**43**	<0.050	**0.21**	**0.20**	**9.5**	**5.5**	**24**	<2.5	ns/g	ns/g	ns/g	ns/g	ns/g	ns/g
		Jul-17	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	**6.7 g**	**-31 J* g**	**629 g**	**1.2 g**	<5 g	**17 g**
		Jul-18	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	**7.2 g**	**-95 g**	**638 g**	**1.0 g**	**7 g**	**17 g**
		Oct-20	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	**7.0 g**	**-94 g**	**695 g**	**2.0 g**	**7 g**	**14 g**
NHP_MW-309SA	**Shallow Overburden**	**Oct-20**	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	**7.0**	**-48**	**967**	**0.7**	**8**	**11**
NHP_MW-309D	**Deep Overburden**	**May-07**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Oct-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Aug-09	**3.6 J**	**130**	**59**	<0.050	**0.98**	**0.97**	**21**	ns	**19**	**220 J**	**4.97**	**490.6**	**487**	**0.91**	**211**	**13.72**
		Aug-09 DUP	**2.5 J**	**130**	**58**	<0.050	**0.97**	**0.95**	**21**	ns	**20**	**200 J**	ns	ns	ns	ns	ns	ns
		Oct-10	**0.21**	**110**	**97**	<0.05	**1.0**	**0.98**	**23**	**0.93**	**15.00**	<2.5	**7.4**	**-15**	**559 J***	**0.6**	<5	**12**
		Nov-11	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	**7.3**	**89**	**440**	**1.6**	<5	**11**
		Aug-13	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	**6.7**	**302**	**535**	**1.1**	<5	**13**
		Jul-14	**0.62**	**92**	**83**	<0.050	**1.3**	**1.3**	**21**	**0.92**	**26**	**6.5**	**7.0**	**156**	**471**	**2.8**	<5	**14**
		Jul-17	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	**6.4**	**91 J***	**454**	**1.1**	<5	**15**
		Jul-18	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	**6.5**	**40**	**407**	**0.4**	**114**	**13**
		Oct-20	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	**6.9**	**102**	**480**	**0.6**	**2**	**12**
NHP_MW-309DA	**Deep Overburden**	**Oct-20**	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	**6.9**	**-60**	**554**	**0.5**	**6**	**10**

TABLE 5B - SUMMARY OF NATURAL ATTENUATION PARAMETERS
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

DRAFT

Monitoring Well ID	Geological Unit of Well Screen	Sampling Event Date	NA - Laboratory										NA - Field Screening					
			Methane (µg/L)	*Alkalinity (mg/L)*	*Chloride (mg/L)*	*Nitrite-Nitrogen (mg/L)*	*Nitrate+Nitrite-Nitrogen (mg/L)*	*Nitrate-Nitrogen (mg/L)*	*Sulfate, as SO_4 (mg/L)*	*Total Organic Carbon (mg/L)*	*Carbon Dioxide (mg/L)*	*Total Suspended Solids (mg/L)*	*pH (SU)*	*ORP (mV)*	*Specific Conductance (µS/cm)*	*Dissolved Oxygen (mg/L)*	*Turbidity (ntu)*	*Temperature (°C)*
		NHAGQS	na	na	na	1	na	10	500	na	na	na	na	na	na	na	na	na
NHP_MW-309R	**Bedrock**	**May-07**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Oct-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Aug-09	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**4.21**	**463.8**	**667**	**4.39**	**1.28**	**20.11**
		Oct-10	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
		Nov-11	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**8.2**	**89**	**694**	**2.4**	**9**	**12**
		Nov-12	*ns*	**67.1**	**160**	*ns*	*ns*	*ns*	**25**	<0.500	*ns*	*ns*	**8.0**	**144**	**719**	**1.4**	<5	**10**
		Aug-13	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**7.8**	**319**	**730**	**2.2**	<5	**16**
		Jul-14	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns/ir*	*ns/ir*	*ns/ir*	*ns/ir*	*ns/ir*	*ns/ir*
		Jul-17	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.6**	**100 J***	**812**	**5.2**	<5	**15**
		Jul-18	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.8**	**58**	**802**	**4.2**	**2**	**16**
NHP_MW-310S	**Shallow Overburden**	**May-07**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Oct-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Aug-09	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.51**	**316.1**	**433**	**0.45**	**1.21**	**15.88**
		Oct-10	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**8.4**	**137**	**649 J***	**0.8**	<5	**12**
		Oct-11	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*
		Aug-13	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*
		Jul-14	**8,100**	**380**	**7.9**	<0.050	**0.090**	**0.085**	**0.5**	**12**	**30**	**7.5**	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*
		Jul-18	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**7.5 g**	**-120 g**	**636 g**	**2.0 g**	**2 g**	**19 g**
		Oct-20	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**7.4 g**	**62 g**	**662 g**	**1.7 g**	**3 g**	**15 g**
NHP_MW-310D	**Deep Overburden**	**May-07**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Oct-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Aug-09	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**5.91**	**165.9**	**489**	**8.53**	**0.99**	**15.65**
		Oct-10	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.4**	**131**	**519 J***	**8.5**	<5	**12**
		Oct-11	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.2**	**238**	**522**	**8.5**	<5	**11**
		Aug-13	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6**	**235**	**626**	**8.9**	<5	**14**
		Jul-14	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.1**	**210**	**602**	**9.4**	<5	**14**
		Jul-18	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.3**	**73**	**459**	**7.6**	**0**	**13**
NHP_MW-311S	**Shallow Overburden**	**May-07**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Oct-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Aug-09	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**5.70**	**56.3**	**204**	**3.18**	**0.47**	**19.70**
		Oct-11	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*
		Aug-13	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*
		Jul-14	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*
		Jul-17	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**5.8 g**	**144 g**	**305 g**	**5.6 g**	**6 g**	**13 g**
		Jul-18	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.3 g**	**340 g**	**512 g**	**2.4 g**	**4 g**	**22 g**

TABLE 5B - SUMMARY OF NATURAL ATTENUATION PARAMETERS
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

DRAFT

Monitoring Well ID	Geological Unit of Well Screen	Sampling Event Date	NA - Laboratory										NA - Field Screening					
			Methane (µg/L)	*Alkalinity (mg/L)*	*Chloride (mg/L)*	*Nitrite-Nitrogen (mg/L)*	*Nitrate+Nitrite-Nitrogen (mg/L)*	*Nitrate-Nitrogen (mg/L)*	*Sulfate, as SO_4 (mg/L)*	*Total Organic Carbon (mg/L)*	*Carbon Dioxide (mg/L)*	*Total Suspended Solids (mg/L)*	*pH (SU)*	*ORP (mV)*	*Specific Conductance (µS/cm)*	*Dissolved Oxygen (mg/L)*	*Turbidity (ntu)*	*Temperature (°C)*
		NHAGQS	na	na	na	1	na	10	500	na	na	na	na	na	na	na	na	na
NHP_MW-311D	**Deep Overburden**	**May-07**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Oct-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Aug-09	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**4.97**	**565.9**	**357**	**2.41**	**5.65**	**18.18**
		Oct-10	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.4**	**120**	**372**	**2.2**	**14**	**13**
		Oct-11	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6**	**118**	**412**	**3.2**	<5	**12**
		Nov-12	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.1**	**172**	**388**	**3.4**	**11**	**10**
		Aug-13	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**5.7**	**219**	**388**	**4.8**	<5	**13**
		Jul-14	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.1**	**124**	**368**	**8.4**	<5	**13**
		Jul-17	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.0**	**129**	**319**	**4.1**	**32**	**12**
		Jul-18	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.0**	**198**	**311**	**2.5**	**1**	**17**
		Oct-20	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.1**	**123**	**268**	**2.1**	**1**	**11**
NHP_MW-312S	**Shallow Overburden**	**May-07**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Oct-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Aug-09	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**5.69**	**132.3**	**166**	**4.22**	**0.43**	**17.98**
		Oct-10	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.5**	**135 J***	**105**	**0.9**	<5	**17**
		Oct-11	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*
		Aug-13	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*
		Jul-14	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*	*ns/g*
		Jul-18	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.1 g**	**403 g**	**100 g**	**5.3 g**	**3 g**	**22 g**
NHP_MW-312D	**Deep Overburden**	**May-07**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Oct-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Apr-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Aug-09	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**3.58**	**679.7**	**127**	**0.62**	**0.10**	**15.45**
		Oct-10	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**5.8**	**150 J***	**107**	**0.8**	<5	**15**
		Oct-11	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**5.8**	**5**	**84**	**1.9**	<5	**15**
		Nov-12	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**5.7**	**177**	**113**	**0.8**	<5	**13**
		Aug-13	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**5.4**	**230**	**139**	**1.0**	<5	**14**
		Jul-14	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.1**	**190**	**77**	**5.2**	<5	**14**
		Jul-18	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**5.7**	**214**	**199**	**2.7**	**1**	**16**
NHP_MW-400R	**Bedrock**	**Nov-12**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**9.0**	**81**	**395**	**4.0**	<5	**15**
		Aug-13	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**8.0**	**283**	**441**	**1.1**	<5	**18**
		Jul-14	**26**	**51**	**76**	<0.050	<0.050	<0.050	**33**	<0.50	**0.91 J**	<2.5	*ns/ir*	*ns/ir*	*ns/ir*	*ns/ir*	*ns/ir*	*ns/ir*
		Jul-17	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**7.8**	**-100**	**394**	**0.6**	<5	**20**
		Jul-18	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**8.0**	**-73**	**394**	**0.7**	**6**	**22**
		Oct-20	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**8.0**	**185**	**437**	**0.9**	**6**	**12**

TABLE 5B - SUMMARY OF NATURAL ATTENUATION PARAMETERS
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

DRAFT

Monitoring Well ID	Geological Unit of Well Screen	Sampling Event Date	NA - Laboratory										NA - Field Screening					
			Methane (µg/L)	*Alkalinity (mg/L)*	*Chloride (mg/L)*	*Nitrite-Nitrogen (mg/L)*	*Nitrate+Nitrite-Nitrogen (mg/L)*	*Nitrate-Nitrogen (mg/L)*	*Sulfate, as SO_4 (mg/L)*	*Total Organic Carbon (mg/L)*	*Carbon Dioxide (mg/L)*	*Total Suspended Solids (mg/L)*	*pH (SU)*	*ORP (mV)*	*Specific Conductance (µS/cm)*	*Dissolved Oxygen (mg/L)*	*Turbidity (ntu)*	*Temperature (°C)*
		NHAGQS	na	na	na	1	na	10	500	na	na	na	na	na	na	na	na	na
NHP_MW-401S	**Shallow Overburden**	**Nov-12**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.3**	**-100**	**312**	**0.6**	<5	**13**
		Aug-13	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.1**	**32**	**323**	**0.8**	<5	**14**
		Jul-14	**20**	**74**	**81**	<0.050	**0.34**	**0.33**	**37**	**2.4**	**46**	<2.5	**6.4**	**-18**	**457**	**0.7**	<5	**15**
		Jul-17	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.4**	**36**	**387**	<0.5	<5	**15**
		Jul-18	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.2**	**87**	**315**	**0.4**	**1**	**17**
		Oct-20	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.4**	**18**	**359**	**0.3**	**3**	**12**
NHP_MW-401D	**Deep Overburden**	**Nov-12**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**5.9**	**194**	**372**	**0.9**	<5	**13**
		Aug-13	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.0**	**403**	**380**	**5.8**	<5	**14**
		Jul-14	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.1**	**190**	**458**	**5.0**	<5	**13**
		Jul-18	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**5.7**	**261**	**304**	**2.5**	**2**	**15**
NHP_MW-402D	**Deep Overburden**	**Nov-12**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**12.2**	**-196**	**2,204 J***	**0.6**	<5	**13**
		Nov-12 DUP	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
		Aug-13	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**11.8**	**-288**	**1,359**	**2.1**	<5	**15**
		Jul-14	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns/ir*	*ns/ir*	*ns/ir*	*ns/ir*	*ns/ir*	*ns/ir*
		Jul-18	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**9.7**	**209**	**207**	**1.1**	**1**	**16**
NHP_MW-404SA	**Shallow Overburden**	**Oct-20**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.9**	**-102**	**1,902**	**0.5**	**2**	**12**

TABLE KEY:

AGQS = Ambient Groundwater Quality Standards included in Env-Or 600 - Contaminated Site Management
na = no current standard available
ns = not sampled
ns/g = minimal purge sample collected from well due to a partially saturated screen, field parameters were not collected
ns/ir = insufficient recharge well, field parameters were not collected
ns/t = field parameters did not stabilize within the two hour time limit
nd = not detected above the laboratory reporting limit
< = analyte not detected above the laboratory reporting limit
J = estimated concentration qualified by the laboratory (NHDES/NHDPHS, EPA, or Microseeps), see laboratory report for explanation
J* = field measurement qualified by GZA due to end of day calibration check issues or failure of parameter to stabilize
Z = concentration qualified by GZA, based on the RPD being outside the acceptance criteria
Q = indicates that the concentration has been qualified by the laboratory, see laboratory report for explanation
g = field measurement collected as a grab sample, no stabilization
R = data rejected

"---" = information not readily available at current time
NA = Natural Attenuation
OR = Out of range of meter
ORP = Oxidation Reduction Potential
mg/L = milligrams per Liter
µg/L = micrograms per Liter
SU = Standard Units
mV = milliVolts
µS/cm = micro Siemens per centimeter
ntu = Nephelometric Turbidity Units
°C = degrees Celsius
Bold = parameter was detected above the laboratory reporting detection limit
Grey shading = concentration exceeds the Ambient Groundwater Quality Standards
Orange shading = most recent round of sample results

GENERAL NOTES:

* Groundwater samples collected during July 2018 were collected using a combination of peristaltic pumps, dedicated T1250 bladder pumps, and non-dedicated SamplePro bladder pumps and dedicated tubing.
* GZA collected the groundwater samples at the Site from 2010 through the present; 2009 groundwater samples were collected by Nobis Engineering; groundwater samples prior to 2009 were collected by Tetra Tech, Inc.
* The low-flow field screening parameter readings reported represent the last round of readings prior to sample collection.

SPECIFIC NOTES:

1. The 2009 DO reading for NHP_MW-302D of -3.12 should have been rejected by Nobis as a negative DO reading is not possible. This value was rejected by GZA per NHDES request.

TABLE 6 - SUMMARY OF DETECTED PFAS COMPOUNDS IN GROUNDWATER
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

DRAFT

Monitoring Well ID	Monitoring Well Location	Stratigraphic Unit	Sample ID	Sample Date	Perfluoroalkyl Carboxylic Acids													Perfluoroalkyl Sulfonic Acids								Fluorotelomers			
					Perfluorobutanoic Acid (PFBA) [4]	Perfluoropentanoic Acid (PFPeA) [5]	Perfluorohexanoic Acid (PFHxA) [6]	Perfluoroheptanoic Acid (PFHpA) [7]	Perfluorooctanoic Acid (PFOA) [8]	Perfluorononanoic Acid (PFNA) [9]	Perfluorodecanoic Acid (PFDA) [10]	Perfluoroundecanoic Acid (PFUnA) [11]	Perfluorododecanoic Acid (PFDoA) [12]	Perfluorotridecanoic Acid (PFTrDA) [13]	Perfluorotetradecanoic Acid (PFTA) [14]	Perfluorohexadecanoic Acid (PFHxDA) [16]	Perfluorooctadecanoic Acid (PFODA) [18]	Perfluorobutanesulfonic Acid (PFBS) [4S]	Perfluoropentanesulfonic Acid (PFPeS) [5S]	Perfluorohexanesulfonic Acid (PFHxS) [6S]	Perfluoroheptanesulfonic Acid (PFHpS) [7S]	Perfluorooctanesulfonic Acid (PFOS) [8S]	Perfluorononanesulfonic Acid (PFNS) [9S]	Perfluorodecanesulfonic Acid (PFDS) [10S]	Perfluorododecane sulfonate (PFDoDS) [12S]	1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)
				CAS No.	375-22-4	2706-90-3	307-24-4	375-85-9	335-67-1	375-95-1	335-76-2	2058-94-8	307-55-1	72629-94-8	376-06-7	67905-19-5	16517-11-6	375-73-5	2706-91-4	355-46-4	375-92-8	1763-23-1	68259-12-1	335-77-3	79780-39-5	120226-60-0	39108-34-4	27619-97-2	757124-72-4
				NH AGQS (ng/L) [2]	*na*	*na*	*na*	*na*	12	11	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	18	*na*	15	*na*	*na*	*na*	*na*	*na*	*na*	*na*
				EPA SLs (ng/L) [3]	*na*	*na*	*na*	*na*	40	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	40,000	*na*	*na*	*na*	40	*na*	40	*na*	*na*	*na*	*na*	*na*
				EPA Health Advisory (ng/L) [4]	*na*	*na*	*na*	*na*	70	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	70	*na*	*na*	*na*	*na*	*na*	*na*	*na*
Field Samples																														
NHP_JCMW-2D	Jones Chemical, Inc.	Deep Overburden	NHP_JCMW-2D	07-2017	< 20	**3.1**	**5**	**7.1**	**50**	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	---	< 2	< 2	**3.9**	---	< 2	---	---	---	---	---
			NHP_JCMW-2D DUP	07-2017	< 20	**3**	**4.5**	**6.8**	**41**	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	---	< 2	< 2	**3.9**	---	< 2	---	---	---	---	---
			NHP_JCMW-2D	07-2018	**2.96**	**4.72**	**7.31**	**7.41**	**52.3**	< 1.85	< 1.85	< 1.85	< 1.85	< 1.85	< 1.85	---	---	< 1.85	< 1.85	< 1.85	< 1.85	**3.93**	< 1.85	< 1.85	---	---	< 1.85	**9.66 B**	< 1.85
			NHP_JCMW-2D DUP	07-2018	**2.85**	**4.33**	**6.87**	**7.53**	**50.9**	< 1.85	< 1.85	< 1.85	< 1.85	< 1.85	< 1.85	---	---	< 1.85	< 1.85	< 1.85	< 1.85	**4.17**	< 1.85	< 1.85	---	---	< 1.85	**11.7 B**	< 1.85
NHP_JCMW-4D		Deep Overburden	NHP_JCMW-4D	10-2020	**3.78**	**7.29**	**9.98**	**9.38**	**58.6 F**	**2.19**	< 1.86	< 1.86	< 1.86	< 1.86	< 1.86	< 3.72	< 3.72	< 1.86	< 1.86	< 1.86	< 1.86	**4.57 F**	< 1.86	< 1.86	< 1.86	< 4.65	< 1.86	< 1.86	< 1.86
NHP_MW-102S	NHPC	Shallow Overburden	NHP_MW-102S	07-2017	< 2	< 2	**3.4**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	---	< 2	< 2	< 2	---	< 2	---	---	---	---	---
			NHP_MW-102S DUP	07-2017	< 2	**2.2**	**3.7**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	---	< 2	< 2	< 2	---	< 2	---	---	---	---	---
NHP_MW-102D		Deep Overburden	NHP_MW-102D	07-2017	**7.7**	**10**	**13**	**12**	**29**	< 2	< 2	< 2	< 2	< 2	< 2	---	---	**4.3**	---	**2.5**	< 2	< 2	---	< 2	---	---	---	---	---
NHP_MW-102R		Bedrock	NHP_MW-102R	07-2017	**8.6**	**20**	**16**	**15**	**57**	< 2	< 2	< 2	< 2	< 2	< 2	---	---	**4.9**	---	**4.2**	< 2	**2.9**	---	< 2	---	---	---	---	---
			NHP_MW-102R	07-2018	**6.01**	**14.4**	**15**	**9.86**	**43.8**	< 1.72	< 1.72	< 1.72	< 1.72	< 1.72	< 1.72	---	---	**4.01**	< 1.72	**4.01**	< 1.72	**2.51**	< 1.72	< 1.72	---	---	< 1.72	**13.3 B**	< 1.72
NHP_B-10S	YMCA	Shallow Overburden	NHP_B-10S	10-2020	**3.16**	**5.34**	**7.91**	**7.09**	**45.4 F**	< 1.83	< 1.83	< 1.83	< 1.83	< 1.83	< 1.83	< 3.65	< 3.65	**5.46**	< 1.83	**5.13**	< 1.83	**3.65 F**	< 1.83	< 1.83	< 1.83	< 4.57	< 1.83	< 1.83	< 1.83
NHP_MW-106		Deep Overburden	NHP_MW-106	07-2018	**4.02**	**8.51**	**8.9**	**7.61**	**44.1**	< 1.78	< 1.78	< 1.78	< 1.78	< 1.78	< 1.78	---	---	**2.27**	< 1.78	**4.12**	< 1.78	**5.15**	< 1.78	< 1.78	---	---	< 1.78	**4.97 B**	< 1.78
			NHP_MW-106	10-2020	**6.01**	**14.5**	**13.5**	**8.92**	**51.1 F**	< 1.83	< 1.83	< 1.83	< 1.83	< 1.83	< 1.83	< 3.65	< 3.65	**4.1**	< 1.83	**3.39**	< 1.83	**5.3 F**	< 1.83	< 1.83	< 1.83	< 4.57	< 1.83	< 1.83	< 1.83
NHP_MW-106R		Bedrock	NHP_MW-106R	07-2018	< 1.78	**2.5**	**2.82**	< 1.78	**9.08**	< 1.78	< 1.78	< 1.78	< 1.78	< 1.78	< 1.78	---	---	< 1.78	< 1.78	< 1.78	< 1.78	< 1.78	< 1.78	< 1.78	---	---	< 1.78	**5.45 B**	< 1.78
			NHP_MW-106R	10-2020	< 1.86	**2.73**	**2.98**	< 1.86	**8.93 F**	< 1.86	< 1.86	< 1.86	< 1.86	< 1.86	< 1.86	< 3.73	< 3.73	< 1.86	< 1.86	< 1.86	< 1.86	< 1.86	< 1.86	< 1.86	< 1.86	< 4.66	< 1.86	< 1.86	< 1.86
NHP_MW-108S	NE Pole	Shallow Overburden	NHP_MW-108S	04-2019	---	---	---	**6.5**	**62**	< 3.8	---	---	---	---	---	---	---	< 3.8	---	< 3.8	---	< 3.8	---	---	---	---	---	---	---
			NHP_MW-108S	10-2020	**2.57**	**4.56**	**5.12**	**4.2**	**30.4 F**	< 1.81	< 1.81	< 1.81	< 1.81	< 1.81	< 1.81	< 3.62	< 3.62	< 1.81	< 1.81	< 1.81	< 1.81	< 1.81	< 1.81	< 1.81	< 1.81	< 4.52	< 1.81	< 1.81	< 1.81
			NHP_MW-108S DUP	10-2020	**2.66**	**5.01**	**5.59**	**4.74**	**34.8 F**	< 1.78	< 1.78	< 1.78	< 1.78	< 1.78	< 1.78	< 3.55	< 3.55	< 1.78	< 1.78	< 1.78	< 1.78	< 1.78	< 1.78	< 1.78	< 1.78	< 4.44	< 1.78	< 1.78	< 1.78
NHP_MW-108D		Deep Overburden	NHP_MW-108D	04-2019	---	---	---	< 4	**19**	< 4	---	---	---	---	---	---	---	< 4	---	< 4	---	< 4	---	---	---	---	---	---	---
NHP_MW-202S		Shallow Overburden	NHP_MW-202S	07-2018	**2.48**	**4.74**	**5.53**	**4.25**	**37.2**	< 1.78	< 1.78	< 1.78	< 1.78	< 1.78	< 1.78	---	---	< 1.78	< 1.78	**1.99**	< 1.78	**1.96**	< 1.78	< 1.78	---	---	< 1.78	**10.2 B**	< 1.78
			NHP_MW-202S DUP	07-2018	**2.76**	**5.06**	**5.66**	**4.69**	**38.1**	< 1.78	< 1.78	< 1.78	< 1.78	< 1.78	< 1.78	---	---	< 1.78	< 1.78	< 1.78	< 1.78	< 1.78	< 1.78	< 1.78	---	---	< 1.78	**10.4 B**	< 1.78
NHP_MW-202D		Deep Overburden	NHP_MW-202D	07-2018	**3.28**	**6.68**	**7.8**	**5.82**	**29.9**	< 1.78	< 1.78	< 1.78	< 1.78	< 1.78	< 1.78	---	---	**2.23**	< 1.78	**2.93**	< 1.78	**3.14**	< 1.78	< 1.78	---	---	< 1.78	**3.86 B**	< 1.78
NHP_MW-203SX	Equivise	Shallow Overburden	NHP_MW-203SX	07-2018	**10.9**	**42.3**	**62.8**	**14**	**132**	< 1.85	< 1.85	< 1.85	< 1.85	< 1.85	< 1.85	---	---	< 1.85	< 1.85	**2.55**	< 1.85	**2.93**	< 1.85	< 1.85	---	---	< 1.85	**12.6 B**	< 1.85
NHP_MW-203D		Deep Overburden	NHP_MW-203D	07-2018	**2.16**	**4.02**	**3.8**	**3.29**	**18.8**	< 1.85	< 1.85	< 1.85	< 1.85	< 1.85	< 1.85	---	---	< 1.85	< 1.85	**3**	< 1.85	**3.23**	< 1.85	< 1.85	---	---	< 1.85	**17.5 B**	< 1.85
			NHP_MW-203D	10-2020	**2.54**	**5.96**	**5.56**	**4.68**	**23.6 F**	< 1.84	< 1.84	< 1.84	< 1.84	< 1.84	< 1.84	< 3.69	< 3.69	< 1.84	< 1.84	**3.17**	< 1.84	**2.52**	< 1.84	< 1.84	< 1.84	< 4.61	< 1.84	< 1.84	< 1.84
NHP_MW-204S	Transupport	Shallow Overburden	NHP_MW-204S	10-2020	**9.77**	**24**	**32.4**	**16.1**	**88.6 F**	**3.04**	< 1.84	< 1.84	< 1.84	< 1.84	< 1.84	< 3.68	< 3.68	< 1.84	< 1.84	< 1.84	< 1.84	**3.45 F**	< 1.84	< 1.84	< 1.84	< 4.6	< 1.84	< 1.84	< 1.84
NHP_MW-204D		Deep Overburden	NHP_MW-204D	07-2018	< 1.85	< 1.85	< 1.85	< 1.85	**2.97**	< 1.85	< 1.85	< 1.85	< 1.85	< 1.85	< 1.85	---	---	< 1.85	< 1.85	< 1.85	< 1.85	< 1.85	< 1.85	< 1.85	---	---	< 1.85	**10.9 B**	< 1.85
NHP_MW-204R		Bedrock	NHP_MW-204R	07-2018	< 1.78	< 1.78	< 1.78	< 1.78	**9.64**	< 1.78	< 1.78	< 1.78	< 1.78	< 1.78	< 1.78	---	---	< 1.78	< 1.78	< 1.78	< 1.78	< 1.78	< 1.78	< 1.78	---	---	< 1.78	**2.44 B**	< 1.78
NHP_MW-301S	YMCA	Shallow Overburden	NHP_MW-301S	10-2020	**4.42**	**6.14**	**7.85**	**6.79**	**47.2 F**	< 1.87	< 1.87	< 1.87	< 1.87	< 1.87	< 1.87	< 3.74	< 3.74	**3.79**	< 1.87	**2.21 F**	< 1.87	**2.34 F**	< 1.87	< 1.87	< 1.87	< 4.67	< 1.87	< 1.87	< 1.87
NHP_MW-301D		Deep Overburden	NHP_MW-301D	04-2019	---	---	---	**5.7**	**31**	< 3.9	---	---	---	---	---	---	---	**4.7**	---	< 3.9	---	< 3.9	---	---	---	---	---	---	---
NHP_MW-302S	NHPC	Shallow Overburden	NHP_MW-302S	07-2017	**2.2**	**3.3**	**3.6**	**4.1**	**29**	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	---	< 2	< 2	< 2	---	< 2	---	---	---	---	---
			NHP_MW-302S	10-2020	< 1.81	**2.88**	**3.08 F**	**2.24**	**20.4 F**	< 1.81	< 1.81	< 1.81	< 1.81	< 1.81	< 1.81	< 3.62	< 3.62	< 1.81	< 1.81	< 1.81	< 1.81	< 1.81	< 1.81	< 1.81	< 1.81	< 4.53	< 1.81	< 1.81	< 1.81
NHP_MW-302SA		Shallow Overburden	NHP_MW-302SA	04-2019	---	---	---	**9.4**	**20**	< 3.8	---	---	---	---	---	---	---	< 3.8	---	< 3.8	---	< 3.8	---	---	---	---	---	---	---
			NHP_MW-302SA	10-2020	**8.59**	**19.5**	**18.5**	**12.2**	**46.2 F**	**6.43**	< 1.82	< 1.82	< 1.82	< 1.82	< 1.82	< 3.64	< 3.64	**4.03**	< 1.82	< 1.82	< 1.82	**9.88 F**	< 1.82	< 1.82	< 1.82	< 4.55	< 1.82	< 1.82	< 1.82
NHP_MW-302D		Deep Overburden	NHP_MW-302D	07-2017	< 20	**6.6**	**8.5**	**11**	**87**	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	---	**2.5**	< 2	**4**	---	< 2	---	---	---	---	---
			NHP_MW-302D	07-2018	**4.92**	**7.84**	**11**	**9.08**	**75**	< 1.85	< 1.85	< 1.85	< 1.85	< 1.85	< 1.85	---	---	< 1.85	< 1.85	< 1.85	< 1.85	**4.11**	< 1.85	< 1.85	---	---	< 1.85	**11.7 B**	< 1.85
NHP_MW-302DA		Deep Overburden	NHP_MW-302DA	04-2019	---	---	---	< 4	**37**	< 4	---	---	---	---	---	---	---	< 4	---	**15**	---	< 4	---	---	---	---	---	---	---
			NHP_MW-302DA	10-2020	**2.71**	**4.67**	**6.69**	**7.48**	**68.4 F**	< 1.83	< 1.83	< 1.83	< 1.83	< 1.83	< 1.83	< 3.67	< 3.67	< 1.83	< 1.83	**2.16**	< 1.83	**4.06 F**	< 1.83	< 1.83	< 1.83	< 4.59	< 1.83	< 1.83	< 1.83
NHP_MW-303S		Shallow Overburden	NHP_MW-303S	07-2017	< 20	**8.7**	**7.8**	**5.4**	**25**	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	---	< 2	< 2	< 2	---	< 2	---	---	---	---	---
			NHP_MW-303S	10-2020	**8.34**	**12**	**15.4**	**11.2**	**68.6 F**	< 1.91	< 1.91	< 1.91	< 1.91	< 1.91	< 1.91	< 3.81	< 3.81	**2.9**	< 1.91	**1.97 F**	< 1.91	**3.06 F**	< 1.91	< 1.91	< 1.91	< 4.77	< 1.91	< 1.91	< 1.91
NHP_MW-303SA		Shallow Overburden	NHP_MW-303SA	04-2019	---	---	---	**5.5**	**31**	< 3.8	---	---	---	---	---	---	---	< 3.8	---	< 3.8	---	< 3.8	---	---	---	---	---	---	---
			NHP_MW-303SA	10-2020	**9.86**	**14.5**	**16.7**	**11**	**55.1 F**	< 1.89	< 1.89	< 1.89	< 1.89	< 1.89	< 1.89	< 3.78	< 3.78	**2.83**	< 1.89	< 1.89	< 1.89	**3.17**	< 1.89	< 1.89	< 1.89	< 4.73	< 1.89	< 1.89	< 1.89
			NHP_MW-303SA DUP	04-2019	---	---	---	**5**	**35**	< 4	---	---	---	---	---	---	---	< 4	---	< 4	---	< 4	---	---	---	---	---	---	---
NHP_MW-303D		Deep Overburden	NHP_MW-303D	07-2017	< 20	**11**	**17**	**21**	**140**	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	---	**3.3**	< 2	**4.3**	---	< 2	---	---	---	---	---
			NHP_MW-303D	07-2018	**7.36**	**10.9**	**19.4**	**21.5**	**166**	< 1.78	< 1.78	< 1.78	< 1.78	< 1.78	< 1.78	---	---	< 1.78	< 1.78	**2.22**	< 1.78	**3.19**	< 1.78	< 1.78	---	---	< 1.78	**9.9 B**	< 1.78
NHP_MW-303DA		Deep Overburden	NHP_MW-303DA	04-2019	---	---	---	< 4	**13**	< 4	---	---	---	---	---	---	---	< 4	---	< 4	---	< 4	---	---	---	---	---	---	---
			NHP_MW-303DA	10-2020	< 1.85	< 1.85	**2.8**	**2.81**	**27.2 F**	< 1.85	< 1.85	< 1.85	< 1.85	< 1.85	< 1.85	< 3.7	< 3.7	< 1.85	< 1.85	**2.02**	< 1.85	**3.49 F**	< 1.85	< 1.85	< 1.85	< 4.63	< 1.85	< 1.85	< 1.85
NHP_MW-304D		Deep Overburden	NHP_MW-304D	04-2019	---	---	---	**8.6**	**75**	< 4	---	---	---	---	---	---	---	< 4	---	< 4	---	< 4	---	---	---	---	---	---	---
			NHP_MW-304D	10-2020	**6.78**	**12**	**17.2**	**15.7**	**118 F**	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 3.61	< 3.61	< 1.8	< 1.8	< 1.8	< 1.8	**4.11 F**	< 1.8	< 1.8	< 1.8	< 4.51	< 1.8	< 1.8	< 1.8

TABLE 6 - SUMMARY OF DETECTED PFAS COMPOUNDS IN GROUNDWATER
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

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Monitoring Well ID	Monitoring Well Location	Stratigraphic Unit	Sample ID	Sample Date	Perfluoroalkane Sulfonamides (FASAs) and Sulfonamido Substances							Ether Carboxylic Acids		Additional Substances		Parameter Calculations			
					Perfluorooctanesulfonamide (PFOSA)	N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	Total PFOA + PFOS [1]	Total Measured PFAS	% PFOA vs. Total PFOA+PFOS	% PFOA + PFOS vs. Total PFAS
				CAS No.	754-91-6	4151-50-2	31506-32-8	1691-99-2	24448-09-7	2991-50-6	2355-31-9	13252-13-6	919005-14-4	756426-58-1	763051-92-9	N/A	N/A	N/A	N/A
				NH AGQS (ng/L) [2]	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*
				EPA SLs (ng/L) [3]	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*
				EPA Health Advisory (ng/L) [4]	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	70	*na*	*na*	*na*
Field Samples																			
NHP_JCMW-2D	Jones Chemical, Inc.	Deep Overburden	NHP_JCMW-2D	07-2017	---	---	---	---	---	---	---	---	---	---	---	53.9	69.1	93%	78%
			NHP_JCMW-2D DUP	07-2017	---	---	---	---	---	---	---	---	---	---	---	44.9	59.2	91%	76%
			NHP_JCMW-2D	07-2018	< 1.85	---	---	---	---	< 1.85	< 1.85	---	---	---	---	56.2	88.3	93%	64%
			NHP_JCMW-2D DUP	07-2018	< 1.85	---	---	---	---	< 1.85	< 1.85	---	---	---	---	55.1	88.4	92%	62%
NHP_JCMW-4D		Deep Overburden	NHP_JCMW-4D	10-2020	< 1.86	< 18.6	< 18.6	< 46.5	< 46.5	< 1.86	< 1.86	< 46.5	< 1.86	< 1.86	< 1.86	63.2	95.8	93%	66%
NHP_MW-102S	NHPC	Shallow Overburden	NHP_MW-102S	07-2017	---	---	---	---	---	---	---	---	---	---	---	ND	3.4	N/A	N/A
			NHP_MW-102S DUP	07-2017	---	---	---	---	---	---	---	---	---	---	---	ND	5.9	N/A	N/A
NHP_MW-102D		Deep Overburden	NHP_MW-102D	07-2017	---	---	---	---	---	---	---	---	---	---	---	29.0	78.5	100%	37%
NHP_MW-102R		Bedrock	NHP_MW-102R	07-2017	---	---	---	---	---	---	---	---	---	---	---	59.9	128.6	95%	47%
			NHP_MW-102R	07-2018	< 1.72	---	---	---	---	< 1.72	< 1.72	---	---	---	---	46.3	112.9	95%	41%
NHP_B-10S	YMCA	Shallow Overburden	NHP_B-10S	10-2020	< 1.83	< 18.3	< 18.3	< 45.7	< 45.7	< 1.83	< 1.83	< 45.7	< 1.83	< 1.83	< 1.83	49.1	83.1	93%	59%
NHP_MW-106		Deep Overburden	NHP_MW-106	07-2018	< 1.78	---	---	---	---	< 1.78	< 1.78	---	---	---	---	49.3	89.7	90%	55%
			NHP_MW-106	10-2020	< 1.83	< 18.3	< 18.3	< 45.7	< 45.7	< 1.83	< 1.83	< 45.7	< 1.83	< 1.83	< 1.83	56.4	106.8	91%	53%
NHP_MW-106R		Bedrock	NHP_MW-106R	07-2018	< 1.78	---	---	---	---	< 1.78	< 1.78	---	---	---	---	9.1	19.9	100%	46%
			NHP_MW-106R	10-2020	< 1.86	< 18.6	< 18.6	< 46.6	< 46.6	< 1.86	< 1.86	< 46.6	< 1.86	< 1.86	< 1.86	8.9	14.6	100%	61%
NHP_MW-108S	NE Pole	Shallow Overburden	NHP_MW-108S	04-2019	---	---	---	---	---	---	---	---	---	---	---	62.0	68.5	100%	91%
			NHP_MW-108S	10-2020	< 1.81	< 18.1	< 18.1	< 45.2	< 45.2	< 1.81	< 1.81	< 45.2	< 1.81	< 1.81	< 1.81	30.4	46.9	100%	65%
			NHP_MW-108S DUP	10-2020	< 1.78	< 17.8	< 17.8	< 44.4	< 44.4	< 1.78	< 1.78	< 44.4	< 1.78	< 1.78	< 1.78	34.8	52.8	100%	66%
NHP_MW-108D		Deep Overburden	NHP_MW-108D	04-2019	---	---	---	---	---	---	---	---	---	---	---	19.0	19.0	100%	100%
NHP_MW-202S		Shallow Overburden	NHP_MW-202S	07-2018	< 1.78	---	---	---	---	< 1.78	< 1.78	---	---	---	---	39.2	68.4	95%	57%
			NHP_MW-202S DUP	07-2018	< 1.78	---	---	---	---	< 1.78	< 1.78	---	---	---	---	38.1	66.7	100%	57%
NHP_MW-202D		Deep Overburden	NHP_MW-202D	07-2018	< 1.78	---	---	---	---	< 1.78	< 1.78	---	---	---	---	33.0	65.6	90%	50%
NHP_MW-203SX	Equivise	Shallow Overburden	NHP_MW-203SX	07-2018	< 1.85	---	---	---	---	< 1.85	< 1.85	---	---	---	---	134.9	280.1	98%	48%
NHP_MW-203D		Deep Overburden	NHP_MW-203D	07-2018	< 1.85	---	---	---	---	< 1.85	< 1.85	---	---	---	---	22.0	55.8	85%	39%
			NHP_MW-203D	10-2020	< 1.84	< 18.4	< 18.4	< 46.1	< 46.1	< 1.84	< 1.84	< 46.1	< 1.84	< 1.84	< 1.84	26.1	48.0	90%	54%
NHP_MW-204S	Transupport	Shallow Overburden	NHP_MW-204S	10-2020	< 1.84	< 18.4	< 18.4	< 46	< 46	< 1.84	< 1.84	< 46	< 1.84	< 1.84	< 1.84	92.1	177.4	96%	52%
NHP_MW-204D		Deep Overburden	NHP_MW-204D	07-2018	< 1.85	---	---	---	---	< 1.85	< 1.85	---	---	---	---	3.0	13.9	100%	21%
NHP_MW-204R		Bedrock	NHP_MW-204R	07-2018	< 1.78	---	---	---	---	< 1.78	< 1.78	---	---	---	---	9.6	12.1	100%	80%
NHP_MW-301S	YMCA	Shallow Overburden	NHP_MW-301S	10-2020	< 1.87	< 18.7	< 18.7	< 46.7	< 46.7	< 1.87	< 1.87	< 46.7	< 1.87	< 1.87	< 1.87	49.5	80.7	95%	61%
NHP_MW-301D		Deep Overburden	NHP_MW-301D	04-2019	---	---	---	---	---	---	---	---	---	---	---	31.0	41.4	100%	75%
NHP_MW-302S	NHPC	Shallow Overburden	NHP_MW-302S	07-2017	---	---	---	---	---	---	---	---	---	---	---	29.0	42.2	100%	69%
			NHP_MW-302S	10-2020	< 1.81	< 18.1	< 18.1	< 45.3	< 45.3	< 1.81	< 1.81	< 45.3	< 1.81	< 1.81	< 1.81	20.4	28.6	100%	71%
NHP_MW-302SA		Shallow Overburden	NHP_MW-302SA	04-2019	---	---	---	---	---	---	---	---	---	---	---	20.0	29.4	100%	68%
			NHP_MW-302SA	10-2020	< 1.82	< 18.2	< 18.2	< 45.5	< 45.5	< 1.82	< 1.82	< 45.5	< 1.82	< 1.82	< 1.82	56.1	125.3	82%	45%
NHP_MW-302D		Deep Overburden	NHP_MW-302D	07-2017	---	---	---	---	---	---	---	---	---	---	---	91.0	119.6	96%	76%
			NHP_MW-302D	07-2018	< 1.85	---	---	---	---	< 1.85	< 1.85	---	---	---	---	79.1	123.7	95%	64%
NHP_MW-302DA		Deep Overburden	NHP_MW-302DA	04-2019	---	---	---	---	---	---	---	---	---	---	---	37.0	52.0	100%	71%
			NHP_MW-302DA	10-2020	< 1.83	< 18.3	< 18.3	< 45.9	< 45.9	< 1.83	< 1.83	< 45.9	< 1.83	< 1.83	< 1.83	72.5	96.2	94%	75%
NHP_MW-303S		Shallow Overburden	NHP_MW-303S	07-2017	---	---	---	---	---	---	---	---	---	---	---	25.0	46.9	100%	53%
			NHP_MW-303S	10-2020	< 1.91	< 19.1	< 19.1	< 47.7	< 47.7	< 1.91	< 1.91	< 47.7	< 1.91	< 1.91	< 1.91	71.7	123.5	96%	58%
NHP_MW-303SA		Shallow Overburden	NHP_MW-303SA	04-2019	---	---	---	---	---	---	---	---	---	---	---	31.0	36.5	100%	85%
			NHP_MW-303SA	10-2020	< 1.89	< 18.9	< 18.9	< 47.3	< 47.3	< 1.89	< 1.89	< 47.3	< 1.89	< 1.89	< 1.89	58.3	113.2	95%	51%
			NHP_MW-303SA DUP	04-2019	---	---	---	---	---	---	---	---	---	---	---	35.0	40.0	100%	88%
NHP_MW-303D		Deep Overburden	NHP_MW-303D	07-2017	---	---	---	---	---	---	---	---	---	---	---	144.3	196.6	97%	73%
			NHP_MW-303D	07-2018	< 1.78	---	---	---	---	< 1.78	< 1.78	---	---	---	---	169.2	240.5	98%	70%
NHP_MW-303DA		Deep Overburden	NHP_MW-303DA	04-2019	---	---	---	---	---	---	---	---	---	---	---	13.0	13.0	100%	100%
			NHP_MW-303DA	10-2020	< 1.85	< 18.5	< 18.5	< 46.3	< 46.3	< 1.85	< 1.85	< 46.3	< 1.85	< 1.85	< 1.85	30.7	38.3	89%	80%
NHP_MW-304D		Deep Overburden	NHP_MW-304D	04-2019	---	---	---	---	---	---	---	---	---	---	---	75.0	83.6	100%	90%
			NHP_MW-304D	10-2020	< 1.8	< 18	< 18	< 45.1	< 45.1	< 1.8	< 1.8	< 45.1	< 1.8	< 1.8	< 1.8	122.1	173.8	97%	70%

TABLE 6 - SUMMARY OF DETECTED PFAS COMPOUNDS IN GROUNDWATER
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

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Monitoring Well ID	Monitoring Well Location	Stratigraphic Unit	Sample ID	Sample Date	Perfluoroalkyl Carboxylic Acids													Perfluoroalkyl Sulfonic Acids								Fluorotelomers			
					Perfluorobutanoic Acid (PFBA) [4]	Perfluoropentanoic Acid (PFPeA) [5]	Perfluorohexanoic Acid (PFHxA) [6]	Perfluoroheptanoic Acid (PFHpA) [7]	Perfluorooctanoic Acid (PFOA) [8]	Perfluorononanoic Acid (PFNA) [9]	Perfluorodecanoic Acid (PFDA) [10]	Perfluoroundecanoic Acid (PFUnA) [11]	Perfluorododecanoic Acid (PFDoA) [12]	Perfluorotridecanoic Acid (PFTrDA) [13]	Perfluorotetradecanoic Acid (PFTA) [14]	Perfluorohexadecanoic Acid (PFHxDA) [16]	Perfluorooctadecanoic Acid (PFODA) [18]	Perfluorobutanesulfonic Acid (PFBS) [4S]	Perfluoropentanesulfonic Acid (PFPeS) [5S]	Perfluorohexanesulfonic Acid (PFHxS) [6S]	Perfluoroheptanesulfonic Acid (PFHpS) [7S]	Perfluorooctanesulfonic Acid (PFOS) [8S]	Perfluorononanesulfonic Acid (PFNS) [9S]	Perfluorodecanesulfonic Acid (PFDS) [10S]	Perfluorododecane sulfonate (PFDoDS) [12S]	1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)
				CAS No.	375-22-4	2706-90-3	307-24-4	375-85-9	335-67-1	375-95-1	335-76-2	2058-94-8	307-55-1	72629-94-8	376-06-7	67905-19-5	16517-11-6	375-73-5	2706-91-4	355-46-4	375-92-8	1763-23-1	68259-12-1	335-77-3	79780-39-5	120226-60-0	39108-34-4	27619-97-2	757124-72-4
				NH AGQS (ng/L) [2]	*na*	*na*	*na*	*na*	12	11	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	18	*na*	15	*na*	*na*	*na*	*na*	*na*	*na*	*na*
				EPA SLs (ng/L) [3]	*na*	*na*	*na*	*na*	40	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	40,000	*na*	*na*	*na*	40	*na*	40	*na*	*na*	*na*	*na*	*na*
				EPA Health Advisory (ng/L) [4]	*na*	*na*	*na*	*na*	70	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	70	*na*	*na*	*na*	*na*	*na*	*na*	*na*
NHP_MW-306S	YMCA	Shallow Overburden	NHP_MW-306S	04-2019	---	---	---	< 4	**33**	< 4	---	---	---	---	---	---	---	**4.2**	---	**7.3**	---	< 4	---	---	---	---	---	---	---
NHP_MW-306D		Deep Overburden	NHP_MW-306D	07-2018	**5.6**	**11.3**	**15.6**	**9.59**	**50.1**	< 1.78	< 1.78	< 1.78	< 1.78	< 1.78	< 1.78	---	---	**4.89**	< 1.78	**4.03**	< 1.78	**6.02**	< 1.78	< 1.78	---	---	< 1.78	**10.8 B**	< 1.78
			NHP_MW-306D	04-2019	---	---	---	**6**	**33**	< 4	---	---	---	---	---	---	---	< 4	---	< 4	---	**4.2**	---	---	---	---	---	---	---
NHP_MW-307D		Deep Overburden	NHP_MW-307D	07-2018	**7.8**	**13.4**	**19.5**	**19.7**	**134**	< 1.85	< 1.85	< 1.85	< 1.85	< 1.85	< 1.85	---	---	**2.19**	< 1.85	**3.05**	< 1.85	**8.68**	< 1.85	< 1.85	---	---	< 1.85	**19.2 B**	< 1.85
NHP_MW-308S	NHPC	Shallow Overburden	NHP_MW-308S	07-2018	**19.5**	**29.1**	**59**	**49.4**	**171**	< 1.78	< 1.78	< 1.78	< 1.78	< 1.78	< 1.78	---	---	**7.81**	**1.98**	**8.55**	< 1.78	< 1.78	< 1.78	< 1.78	---	---	< 1.78	**16.9 B**	< 1.78
			NHP_MW-308S	10-2020	**6.31**	**8.85**	**15.7**	**28.8**	**506 F**	< 1.93	< 1.93	< 1.93	< 1.93	< 1.93	< 1.93	< 3.86	< 3.86	< 1.93	< 1.93	**7.83**	< 1.93	< 1.93	< 1.93	< 1.93	< 1.93	< 4.82	< 1.93	< 1.93	< 1.93
			NHP_MW-308S DUP	10-2020	**6.04**	**8.38**	**15.4**	**27.9**	**490 F**	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9	< 3.8	< 3.8	< 1.9	< 1.9	**8.08**	< 1.9	**2.13 F**	< 1.9	< 1.9	< 1.9	< 4.74	< 1.9	**3.26 F**	< 1.9
NHP_MW-308SA		Shallow Overburden	NHP_MW-308SA	04-2019	---	---	---	**5.8**	**68**	< 4	---	---	---	---	---	---	---	< 4	---	< 4	---	< 4	---	---	---	---	---	---	---
			NHP_MW-308SA	10-2020	**6.72**	**11.6**	**15.1**	**10.8**	**144 F**	< 1.86	< 1.86	< 1.86	< 1.86	< 1.86	< 1.86	< 3.72	< 3.72	**2.1**	< 1.86	< 1.86	< 1.86	**3.02 F**	< 1.86	< 1.86	< 1.86	< 4.64	< 1.86	< 1.86	< 1.86
NHP_MW-308D		Deep Overburden	NHP_MW-308D	07-2018	**12.6**	**19.2**	**33**	**34.9**	**196**	< 1.78	< 1.78	< 1.78	< 1.78	< 1.78	< 1.78	---	---	**2.28**	< 1.78	**3.51**	< 1.78	**3.38**	< 1.78	< 1.78	---	---	< 1.78	**8.44 B**	< 1.78
			NHP_MW-308D	10-2020	**8.25**	**14.9**	**22.9**	**23**	**162 F**	< 1.86	< 1.86	< 1.86	< 1.86	< 1.86	< 1.86	< 3.73	< 3.73	**2.06**	< 1.86	**2.14 F**	< 1.86	**3.86 F**	< 1.86	< 1.86	< 1.86	< 4.66	< 1.86	< 1.86	< 1.86
NHP_MW-308DA		Deep Overburden	NHP_MW-308DA	04-2019	---	---	---	< 4	< 4	< 4	---	---	---	---	---	---	---	< 4	---	**6.3**	---	< 4	---	---	---	---	---	---	---
			NHP_MW-308DA	10-2020	< 1.88	< 1.88	< 1.88	< 1.88	< 1.88	< 1.88	< 1.88	< 1.88	< 1.88	< 1.88	< 1.88	< 3.77	< 3.77	< 1.88	< 1.88	< 1.88	< 1.88	**2.77 F**	< 1.88	< 1.88	< 1.88	< 4.71	< 1.88	< 1.88	< 1.88
NHP_MW-308R		Bedrock	NHP_MW-308R	07-2018	**4.66**	**8.92**	**11.5**	**9.39**	**44.1**	**2.35**	< 1.78	< 1.78	< 1.78	< 1.78	< 1.78	---	---	**3.65**	< 1.78	**3.66**	< 1.78	**2.32**	< 1.78	< 1.78	---	---	< 1.78	**10.3 B**	< 1.78
NHP_MW-309S		Shallow Overburden	NHP_MW-309S	07-2017	< 20	**13**	**15**	**19**	**150**	**3.4**	< 2	< 2	< 2	< 2	< 2	---	---	**2.4**	---	**3.3**	< 2	**5.3**	---	< 2	---	---	---	---	---
			NHP_MW-309S	07-2018	**7.8**	**11.2**	**15.4**	**16**	**145**	**2.26**	< 1.85	< 1.85	< 1.85	< 1.85	< 1.85	---	---	< 1.85	< 1.85	**2.1**	< 1.85	**5.46**	< 1.85	< 1.85	---	---	< 1.85	**5.78 B**	< 1.85
NHP_MW-309SA		Shallow Overburden	NHP_MW-309SA	04-2019	---	---	---	**7.9**	**77**	< 4	---	---	---	---	---	---	---	< 4	---	< 4	---	< 4	---	---	---	---	---	---	---
			NHP_MW-309SA	10-2020	**8.11**	**13.1**	**15.9**	**12.5**	**97.1 F**	< 1.81	< 1.81	< 1.81	< 1.81	< 1.81	< 1.81	< 3.63	< 3.63	< 1.81	< 1.81	< 1.81	< 1.81	**3.27 F**	< 1.81	< 1.81	< 1.81	< 4.54	< 1.81	< 1.81	< 1.81
NHP_MW-309D		Deep Overburden	NHP_MW-309D	07-2017	**2.9**	**6.5**	**8.8**	**9.7**	**64**	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	---	**2.5**	< 2	**2.7**	---	< 2	---	---	---	---	---
			NHP_MW-309D	07-2018	**5.57**	**8.86**	**14.6**	**14.8**	**92**	< 1.78	< 1.78	< 1.78	< 1.78	< 1.78	< 1.78	---	---	< 1.78	< 1.78	**2.57**	< 1.78	**2.24**	< 1.78	< 1.78	---	---	< 1.78	**5.25 B**	< 1.78
NHP_MW-309DA		Deep Overburden	NHP_MW-309DA	04-2019	---	---	---	< 4	**31**	< 4	---	---	---	---	---	---	---	< 4	---	< 4	---	< 4	---	---	---	---	---	---	---
			NHP_MW-309DA	10-2020	**1.85**	**3.62**	**5.16**	**5.3**	**37.2 F**	< 1.82	< 1.82	< 1.82	< 1.82	< 1.82	< 1.82	< 3.64	< 3.64	< 1.82	< 1.82	< 1.82	< 1.82	**3.04 F**	< 1.82	< 1.82	< 1.82	< 4.55	< 1.82	< 1.82	< 1.82
NHP_MW-309R		Bedrock	NHP_MW-309R	07-2017	**8.9**	**10**	**15**	**11**	**45**	< 2	< 2	< 2	< 2	< 2	< 2	---	---	**6.6**	---	**3.3**	< 2	**4.8**	---	< 2	---	---	---	---	---
			NHP_MW-309R	07-2018	**4.62**	**9.12**	**11.2**	**8.83**	**42.9**	< 1.78	< 1.78	< 1.78	< 1.78	< 1.78	< 1.78	---	---	**6.56**	< 1.78	**3**	< 1.78	**4.71**	< 1.78	< 1.78	---	---	< 1.78	**7.39 B**	< 1.78
NHP_MW-310S		Shallow Overburden	NHP_MW-310S	10-2020	**9.89**	**14.8**	**17.7**	**14.6**	**138 F**	**2.46**	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 3.61	< 3.61	< 1.8	< 1.8	< 1.8	< 1.8	**7.14 F**	< 1.8	< 1.8	< 1.8	< 4.51	< 1.8	< 1.8	< 1.8
NHP_MW-311S		Shallow Overburden	NHP_MW-311S	07-2017	**23**	**28**	**32**	**14**	**9.8**	< 2	< 2	< 2	< 2	< 2	< 2	---	---	**4.1**	---	< 2	< 2	< 2	---	< 2	---	---	---	---	---
NHP_MW-311D		Deep Overburden	NHP_MW-311D	07-2017	**2.3**	**4.8**	**4.8**	**6.2**	**28**	< 2	< 2	< 2	< 2	< 2	< 2	---	---	< 2	---	**2.2**	< 2	**2.2**	---	< 2	---	---	---	---	---
			NHP_MW-311D	10-2020	**5.43**	**8.84**	**14.6**	**15.7**	**126 F**	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 3.6	< 3.6	< 1.8	< 1.8	**2.79**	< 1.8	**8.5 F**	< 1.8	< 1.8	< 1.8	< 4.5	< 1.8	< 1.8	< 1.8
NHP_MW-400R	Acme	Bedrock	NHP_MW-400R	04-2019	---	---	---	< 4	**11**	< 4	---	---	---	---	---	---	---	< 4	---	< 4	---	< 4	---	---	---	---	---	---	---
NHP_MW-401S		Shallow Overburden	NHP_MW-401S	10-2020	**4.25**	**5.25**	**5.73**	**4.19**	**24.3 F**	< 1.81	< 1.81	< 1.81	< 1.81	< 1.81	< 1.81	< 3.63	< 3.63	< 1.81	< 1.81	< 1.81	< 1.81	**3.04 F**	< 1.81	< 1.81	< 1.81	< 4.54	< 1.81	< 1.81	< 1.81
NHP_MW-401D		Deep Overburden	NHP_MW-401D	04-2019	---	---	---	**5.2**	**38**	< 3.8	---	---	---	---	---	---	---	< 3.8	---	**4.9**	---	< 3.8	---	---	---	---	---	---	---
NHP_MW-403SA	NHPC	Shallow Overburden	NHP_MW-403SA	04-2019	---	---	---	**6.7**	**84**	< 4	---	---	---	---	---	---	---	< 4	---	< 4	---	< 4	---	---	---	---	---	---	---
NHP_MW-404SA		Shallow Overburden	NHP_MW-404SA	04-2019	---	---	---	**4.1**	**41**	< 4	---	---	---	---	---	---	---	< 4	---	< 4	---	< 4	---	---	---	---	---	---	---
			NHP_MW-404SA	10-2020	**7.92**	**16.4**	**20.8**	**11.4**	**76.7 F**	**2.01**	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 3.6	< 3.6	**3**	< 1.8	< 1.8	< 1.8	**3.81 F**	< 1.8	< 1.8	< 1.8	< 4.49	< 1.8	< 1.8	< 1.8
2020 Field Quality Control Samples																													
N/A	N/A	N/A	TRIP BLANK	10-2020	<1.86	<1.86	<1.86	<1.86	<1.86	<1.86	<1.86	<1.86	<1.86	<1.86	<1.86	<3.72	<3.72	<1.86	<1.86	<1.86	<1.86	<1.86	<1.86	<1.86	<1.86	<4.64	<1.86	<1.86	<1.86
N/A	N/A	N/A	TRIP BLANK	10-2020	<1.81	<1.81	<1.81	<1.81	<1.81	<1.81	<1.81	<1.81	<1.81	<1.81	<1.81	<3.62	<3.62	<1.81	<1.81	<1.81	<1.81	<1.81	<1.81	<1.81	<1.81	<4.52	<1.81	<1.81	<1.81
N/A	N/A	N/A	TRIP BLANK	10-2020	<1.81	<1.81	<1.81	<1.81	<1.81	<1.81	<1.81	<1.81	<1.81	<1.81	<1.81	<3.62	<3.62	<1.81	<1.81	<1.81	<1.81	<1.81	<1.81	<1.81	<1.81	<4.53	<1.81	<1.81	<1.81
N/A	N/A	N/A	FIELD BLANK-MURPHY	10-2020	< 1.82	< 1.82	< 1.82	< 1.82	< 1.82	< 1.82	< 1.82	< 1.82	< 1.82	< 1.82	< 1.82	< 3.65	< 3.65	< 1.82	< 1.82	< 1.82	< 1.82	< 1.82	< 1.82	< 1.82	< 1.82	< 4.56	< 1.82	< 1.82	< 1.82
N/A	N/A	N/A	FIELD BLANK-BERGEN	10-2020	< 1.84	< 1.84	< 1.84	< 1.84	< 1.84	< 1.84	< 1.84	< 1.84	< 1.84	< 1.84	< 1.84	< 3.68	< 3.68	< 1.84	< 1.84	< 1.84	< 1.84	< 1.84	< 1.84	< 1.84	< 1.84	< 4.6	< 1.84	< 1.84	< 1.84
N/A	N/A	N/A	FIELD BLANK-DYRNESS	10-2020	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 3.6	< 3.6	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 4.5	< 1.8	< 1.8	< 1.8
MW-108S	N/A	N/A	EQUIP BLANK (WLM)	10-2020	< 1.76	< 1.76	< 1.76	< 1.76	< 1.76	< 1.76	< 1.76	< 1.76	< 1.76	< 1.76	< 1.76	< 3.52	< 3.52	< 1.76	< 1.76	< 1.76	< 1.76	< 1.76	< 1.76	< 1.76	< 1.76	< 4.4	< 1.76	< 1.76	< 1.76

TABLE 6 - SUMMARY OF DETECTED PFAS COMPOUNDS IN GROUNDWATER
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

DRAFT

Monitoring Well ID	Monitoring Well Location	Stratigraphic Unit	Sample ID	Sample Date	Perfluoroalkane Sulfonamides (FASAs) and Sulfonamido Substances							Ether Carboxylic Acids		Additional Substances		Parameter Calculations			
					Perfluorooctanesulfonamide (PFOSA)	N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	Total PFOA + PFOS [1]	Total Measured PFAS	% PFOA vs. Total PFOA+PFOS	% PFOA + PFOS vs. Total PFAS
				CAS No.	754-91-6	4151-50-2	31506-32-8	1691-99-2	24448-09-7	2991-50-6	2355-31-9	13252-13-6	919005-14-4	756426-58-1	763051-92-9	N/A	N/A	N/A	N/A
				NH AGQS (ng/L) [2]	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*
				EPA SLs (ng/L) [3]	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*
				EPA Health Advisory (ng/L) [4]	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	70	*na*	*na*	*na*
NHP_MW-306S	YMCA	Shallow Overburden	NHP_MW-306S	04-2019	---	---	---	---	---	---	---	---	---	---	---	33.0	44.5	100%	74%
NHP_MW-306D		Deep Overburden	NHP_MW-306D	07-2018	< 1.78	---	---	---	---	< 1.78	< 1.78	---	---	---	---	56.1	117.9	89%	48%
			NHP_MW-306D	04-2019	---	---	---	---	---	---	---	---	---	---	---	37.2	43.2	89%	86%
NHP_MW-307D		Deep Overburden	NHP_MW-307D	07-2018	< 1.85	---	---	---	---	< 1.85	< 1.85	---	---	---	---	142.7	227.5	94%	63%
NHP_MW-308S	NHPC	Shallow Overburden	NHP_MW-308S	07-2018	< 1.78	---	---	---	---	< 1.78	< 1.78	---	---	---	---	171.0	363.2	100%	47%
			NHP_MW-308S	10-2020	< 1.93	< 19.3	< 19.3	< 48.2	< 48.2	< 1.93	< 1.93	< 48.2	< 1.93	< 1.93	< 1.93	506.0	573.5	100%	88%
			NHP_MW-308S DUP	10-2020	< 1.9	< 19	< 19	< 47.4	< 47.4	< 1.9	< 1.9	< 47.4	< 1.9	< 1.9	< 1.9	492.1	561.2	100%	88%
NHP_MW-308SA		Shallow Overburden	NHP_MW-308SA	04-2019	---	---	---	---	---	---	---	---	---	---	---	68.0	73.8	100%	92%
			NHP_MW-308SA	10-2020	< 1.86	< 18.6	< 18.6	< 46.4	< 46.4	< 1.86	< 1.86	< 46.4	< 1.86	< 1.86	< 1.86	147.0	193.3	98%	76%
NHP_MW-308D		Deep Overburden	NHP_MW-308D	07-2018	< 1.78	---	---	---	---	< 1.78	< 1.78	---	---	---	---	199.4	313.3	98%	64%
			NHP_MW-308D	10-2020	< 1.86	< 18.6	< 18.6	< 46.6	< 46.6	< 1.86	< 1.86	< 46.6	< 1.86	< 1.86	< 1.86	165.9	239.1	98%	69%
NHP_MW-308DA		Deep Overburden	NHP_MW-308DA	04-2019	---	---	---	---	---	---	---	---	---	---	---	ND	6.3	N/A	N/A
			NHP_MW-308DA	10-2020	< 1.88	< 18.8	< 18.8	< 47.1	< 47.1	< 1.88	< 1.88	< 47.1	< 1.88	< 1.88	< 1.88	ND	2.8	N/A	N/A
NHP_MW-308R		Bedrock	NHP_MW-308R	07-2018	< 1.78	---	---	---	---	< 1.78	< 1.78	---	---	---	---	46.4	100.9	95%	46%
NHP_MW-309S		Shallow Overburden	NHP_MW-309S	07-2017	---	---	---	---	---	---	---	---	---	---	---	155.3	211.4	97%	73%
			NHP_MW-309S	07-2018	< 1.85	---	---	---	---	< 1.85	< 1.85	---	---	---	---	150.5	211.0	96%	71%
NHP_MW-309SA		Shallow Overburden	NHP_MW-309SA	04-2019	---	---	---	---	---	---	---	---	---	---	---	77.0	84.9	100%	91%
			NHP_MW-309SA	10-2020	< 1.81	< 18.1	< 18.1	< 45.4	< 45.4	< 1.81	< 1.81	< 45.4	< 1.81	< 1.81	< 1.81	100.4	150.0	97%	67%
NHP_MW-309D		Deep Overburden	NHP_MW-309D	07-2017	---	---	---	---	---	---	---	---	---	---	---	66.7	97.1	96%	69%
			NHP_MW-309D	07-2018	< 1.78	---	---	---	---	< 1.78	< 1.78	---	---	---	---	94.2	145.9	98%	65%
NHP_MW-309DA		Deep Overburden	NHP_MW-309DA	04-2019	---	---	---	---	---	---	---	---	---	---	---	31.0	31.0	100%	100%
			NHP_MW-309DA	10-2020	< 1.82	< 18.2	< 18.2	< 45.5	< 45.5	< 1.82	< 1.82	< 45.5	< 1.82	< 1.82	< 1.82	40.2	56.2	92%	72%
NHP_MW-309R		Bedrock	NHP_MW-309R	07-2017	---	---	---	---	---	---	---	---	---	---	---	49.8	104.6	90%	48%
			NHP_MW-309R	07-2018	< 1.78	---	---	---	---	< 1.78	< 1.78	---	---	---	---	47.6	98.3	90%	48%
NHP_MW-310S		Shallow Overburden	NHP_MW-310S	10-2020	< 1.8	< 18	< 18	< 45.1	< 45.1	< 1.8	< 1.8	< 45.1	< 1.8	< 1.8	< 1.8	145.1	204.6	95%	71%
NHP_MW-311S		Shallow Overburden	NHP_MW-311S	07-2017	---	---	---	---	---	---	---	---	---	---	---	9.8	110.9	100%	9%
NHP_MW-311D		Deep Overburden	NHP_MW-311D	07-2017	---	---	---	---	---	---	---	---	---	---	---	30.2	50.5	93%	60%
			NHP_MW-311D	10-2020	< 1.8	< 18	< 18	< 45	< 45	< 1.8	< 1.8	< 45	< 1.8	< 1.8	< 1.8	134.5	181.9	94%	74%
NHP_MW-400R	Acme	Bedrock	NHP_MW-400R	04-2019	---	---	---	---	---	---	---	---	---	---	---	11.0	11.0	100%	100%
NHP_MW-401S		Shallow Overburden	NHP_MW-401S	10-2020	< 1.81	< 18.1	< 18.1	< 45.4	< 45.4	< 1.81	< 1.81	< 45.4	< 1.81	< 1.81	< 1.81	27.3	46.8	89%	58%
NHP_MW-401D		Deep Overburden	NHP_MW-401D	04-2019	---	---	---	---	---	---	---	---	---	---	---	38.0	48.1	100%	79%
NHP_MW-403SA	NHPC	Shallow Overburden	NHP_MW-403SA	04-2019	---	---	---	---	---	---	---	---	---	---	---	84.0	90.7	100%	93%
NHP_MW-404SA		Shallow Overburden	NHP_MW-404SA	04-2019	---	---	---	---	---	---	---	---	---	---	---	41.0	45.1	100%	91%
			NHP_MW-404SA	10-2020	< 1.8	< 18	< 18	< 44.9	< 44.9	< 1.8	< 1.8	< 44.9	< 1.8	< 1.8	< 1.8	80.5	142.0	95%	57%
2020 Field Quality Control Samples																			
N/A	N/A	N/A	TRIP BLANK	10-2020	<1.86	<18.6	<18.6	<46.4	<46.4	<1.86	<1.86	<46.4	<1.86	<1.86	<1.86	ND	ND	N/A	N/A
N/A	N/A	N/A	TRIP BLANK	10-2020	<1.81	<18.1	<18.1	<45.2	<45.2	<1.81	<1.81	<45.2	<1.81	<1.81	<1.81	ND	ND	N/A	N/A
N/A	N/A	N/A	TRIP BLANK	10-2020	<1.81	<18.1	<18.1	<45.3	<45.3	<1.81	<1.81	<45.3	<1.81	<1.81	<1.81	ND	ND	N/A	N/A
N/A	N/A	N/A	FIELD BLANK-MURPHY	10-2020	< 1.82	< 18.2	< 18.2	< 45.6	< 45.6	< 1.82	< 1.82	< 45.6	< 1.82	< 1.82	< 1.82	ND	ND	N/A	N/A
N/A	N/A	N/A	FIELD BLANK-BERGEN	10-2020	< 1.84	< 18.4	< 18.4	< 46	< 46	< 1.84	< 1.84	< 46	< 1.84	< 1.84	< 1.84	ND	ND	N/A	N/A
N/A	N/A	N/A	FIELD BLANK-DYRNESS	10-2020	< 1.8	< 18	< 18	<45	<45	< 1.8	< 1.8	<45	< 1.8	< 1.8	< 1.8	ND	ND	N/A	N/A
MW-108S	N/A	N/A	EQUIP BLANK (WLM)	10-2020	< 1.76	< 17.6	< 17.6	<44	<44	< 1.76	< 1.76	<44	< 1.76	< 1.76	< 1.76	ND	ND	N/A	N/A

TABLE 6 - SUMMARY OF DETECTED PFAS COMPOUNDS IN GROUNDWATER
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

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TABLE KEY:
PFAS = per- and polyfluoroalkyl substances
[4] = Number of fluorinated carbon chains for perfluorinated carboxylic acids
[4S] = Number of fluorinated carbon chains for perfluorinated sulfonic acids
EPA SLs = Screening levels provided by the United States Environmental Protection Agency, refer to text for more information
NH AGQS = New Hampshire Ambient Groundwater Quality Standards included in Env-Or 600 - Contaminated Site Management (Env-Or 603.03)

na = no current standard available
N/A = not applicable
ND = not detected above the laboratory reporting limit
B = indicates the analyte was detected above the reporting limit in the associated method blank, see laboratory report for further explanation
B* = data qualified by GZA because the analyte was detected in the associated trip blank and/or field blank.
U = indicates that the concentration was not detected
< = analyte not detected above the laboratory reporting limit
ng/L = nanograms per liter
Bold indicates that the concentration was detected above the laboratory reporting detection limit
Grey shading indicates the concentration exceeds the NHDES AGQS
Green shading indicates the concentration exceeds the EPA screening level
Purple shading indicates the concentration exceeds the EPA Lifetime Drinking Water Health Advisory
Orange shading indicates 2020 sampling data

GENERAL NOTES:
* GZA collected the October 2020 samples for PFAS analysis and submitted the samples to Alpha Analytical Inc., of Mansfield, Massachusetts for analysis by US EPA Method 537 (modified) with isotope dilution.
* All concentrations reported in nanograms per liter (ng/L) which are roughly equivalent to parts per trillion (ppt).
* A total of 36 PFAS compounds were measured by the analyses during 2020. The presence or absence of other additional compounds has not been confirmed.

SPECIFIC NOTES:
1. Total PFOA & PFOS indicates the sum of the detected concentrations of Perfluorooctanoic Acid (PFOA) and Perfluorooctanesulfonic Acid (PFOS).
2. Screening levels of 40 ng/L for PFOA and PFOS and 40,000 ng/L for Perfluorobutanesulfonic Acid (PFBS) were established by EPA to determine if the compounds are present at a Site and may warrant further attention.
3. During May 2016, EPA issued a Lifetime Drinking Water Health Advisory (EPA Health Advisory) level of 70 ng/L for PFOA, PFOS, and for both PFOA and PFOS combined where these chemicals are present together
4. Effective July 23, 2020, New Hampshire established AGQS for PFOA (12 ng/L), PFOS (15 ng/L), perfluorononanoic acid (PFNA, 11 ng/L), and perfluorohexane sulfonic acid (PFHxS, 18 ng/L).

TABLE 7 - RELATIVE PERCENT DIFFERENCE (RPD) CALCULATIONS FOR DUPLICATE SAMPLES
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

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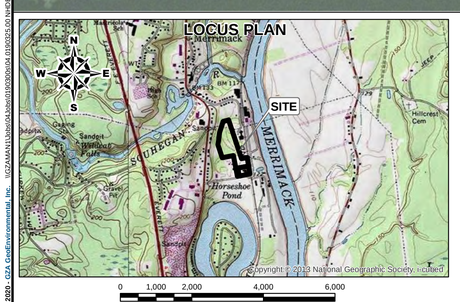
Stratigraphic Unit	Monitoring Well ID	Sample Date	Perfluoroalkyl Carboxylic Acids (ng/L)					Perfluoroalkyl Sulfonic Acids (ng/L)		Fluorotelomers (ng/L)	VOCs (µg/L)					Other COCs		Metals (mg/L)			
			Perfluorobutanoic Acid (PFBA) [4]	Perfluoropentanoic Acid (PFPeA) [5]	Perfluorohexanoic Acid (PFHxA) [6]	Perfluoroheptanoic Acid (PFHpA) [7]	Perfluorooctanoic Acid (PFOA) [8]	Perfluorohexanesulfonic Acid (PFHxS) [6S]	Perfluorooctanesulfonic Acid (PFOS) [8S]	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	1,1-Dichloroethene	Cis-1,2-Dichoroethene	Trichloroethene (TCE)	Benzene	1,1-Dichloroethane	1,4-Dioxane (µg/L)	Cyanide (mg/L)	Cadmium	Chromium	Manganese	Nickel
Deep Overburden	NHP_JCMW-2D	10/22/2020	**2.57**	**4.56**	**5.12**	**4.2**	**30.4**	< 1.81	< 1.81	< 1.81	**0.83**	**2.6**	**20**	< 0.5	**4.5**	**0.414**	---	**0.0817**	**0.0024**	**0.8713**	**0.02866**
	NHP_JCMW-2D DUP		**2.66**	**5.01**	**5.59**	**4.74**	**34.8**	< 1.78	< 1.78	< 1.78	**0.65**	**2.9**	**20**	< 0.5	**4.6**	**0.364**	---	**0.0882**	**0.0024**	**0.9426**	**0.03061**
	RPD		**3%**	**9%**	**9%**	**12%**	**13%**	N/A	N/A	N/A	**19%**	**19%**	**19%**	**19%**	**19%**	**19%**	**19%**	**19%**	**19%**	**19%**	**19%**
Shallow Overburden	NHP_MW-108S	10/22/2020	**6.31**	**8.85**	**15.7**	**28.8**	**506**	**7.83**	< 1.93	< 1.93	**3.6**	**2.6**	**110**	**0.81**	**13**	**3.12**	**0.023**	---	---	---	---
	NHP_MW-108S DUP		**6.04**	**8.38**	**15.4**	**27.9**	**490**	**8.08**	**2.13**	**3.26**	---	---	---	---	---	---	**0.021**	---	---	---	---
	RPD		**4%**	**5%**	**2%**	**3%**	**3%**	**3%**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	**9%**	N/A	N/A	N/A	N/A
Deep Overburden	NHP_MW-308S	10/23/2020	---	---	---	---	---	---	---	---	< 0.5	**0.76**	**11**	< 0.5	< 0.75	**3.97**	---	---	---	---	---
	NHP_MW-308S DUP		---	---	---	---	---	---	---	---	< 0.5	**0.73**	**12**	< 0.5	< 0.75	**3.89**	---	---	---	---	---
	RPD		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	**4%**	**9%**	N/A	N/A	**2%**	N/A	N/A	N/A	N/A	N/A

TABLE KEY:
DUP = Duplicate sample
VOCs = Volatile Organic Compounds
COCs = Contaminants of Concern
RPD = Relative Percent Difference
N/A = Not Applicable
mg/l = milligrams per liter
µg/l = micrograms per liter
ng/l = nanograms per liter
< = analyte not detected above the laboratory reporting limit
--- = no sample analyzed
Bold indicates that the concentration was detected above the laboratory reporting detection limit
Green shading indicates the RPD exceeded the acceptance criteria of 30% for aqueous samples

DRAFT

Figures



LEGEND:

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- Parcel Boundary
- Utility Pole
- Chainlink Fence
- Fence Gate
- Gravel Road
- Overhead Wire (OHW)
- Contour Line
- Easement Boundary

NOTES:

1. BASE PLAN WAS DEVELOPED FROM A FIELD SURVEY BY DOUCET SURVEY, INC. PERFORMED DURING OCTOBER 2015 AS DEPICTED ON THE PLAN OF LAND FOR US EPA, REGION 1 DATED OCTOBER 2016. ADDITIONAL PARCEL BOUNDARIES WERE OBTAINED FROM THE CITY OF MERRIMACK, NH GIS DATA PORTAL IN AUGUST 2017.

2. LOCATIONS AND SITE FEATURES ARE APPROXIMATE.

3. MONITORING WELLS MW-301 AND MW-302 ARE ASSOCIATED WITH THE NEW ENGLAND (NE) POLE PROPERTY (NHDES SITE NO. 198711004).

0 60 120 240 360
GRAPHIC SCALE IN FEET

N W E S

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NEW HAMPSHIRE PLATING COMPANY
SUPERFUND SITE
WRIGHT AVENUE
MERRIMACK, NEW HAMPSHIRE

LOCUS AND SITE EXPLORATION PLAN

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR: NHDES/EPA

PROJ MGR: TPJ	REVIEWED BY: SRL	CHECKED BY: JMW	FIGURE
DESIGNED BY: TPJ	DRAWN BY: ADM	SCALE: 1 in = 120 ft	1A
DATE: DEC 2020	PROJECT NO. 04.0190987.11	REVISION NO.	

© 2020 - GZA GeoEnvironmental, Inc. \\GZAMAN1\Jobs\04Jobs\01\05\0190\04 01\05\05.00 NHDES 2015-2018 Contract\04.01\05\05.01 MNPC-2015-2016 SOW\Figures-CATs\GIS\maps\Figure 1A - Site and Locus Plan_12\15\2020\ 7:00:03 PM, ximee.mountain

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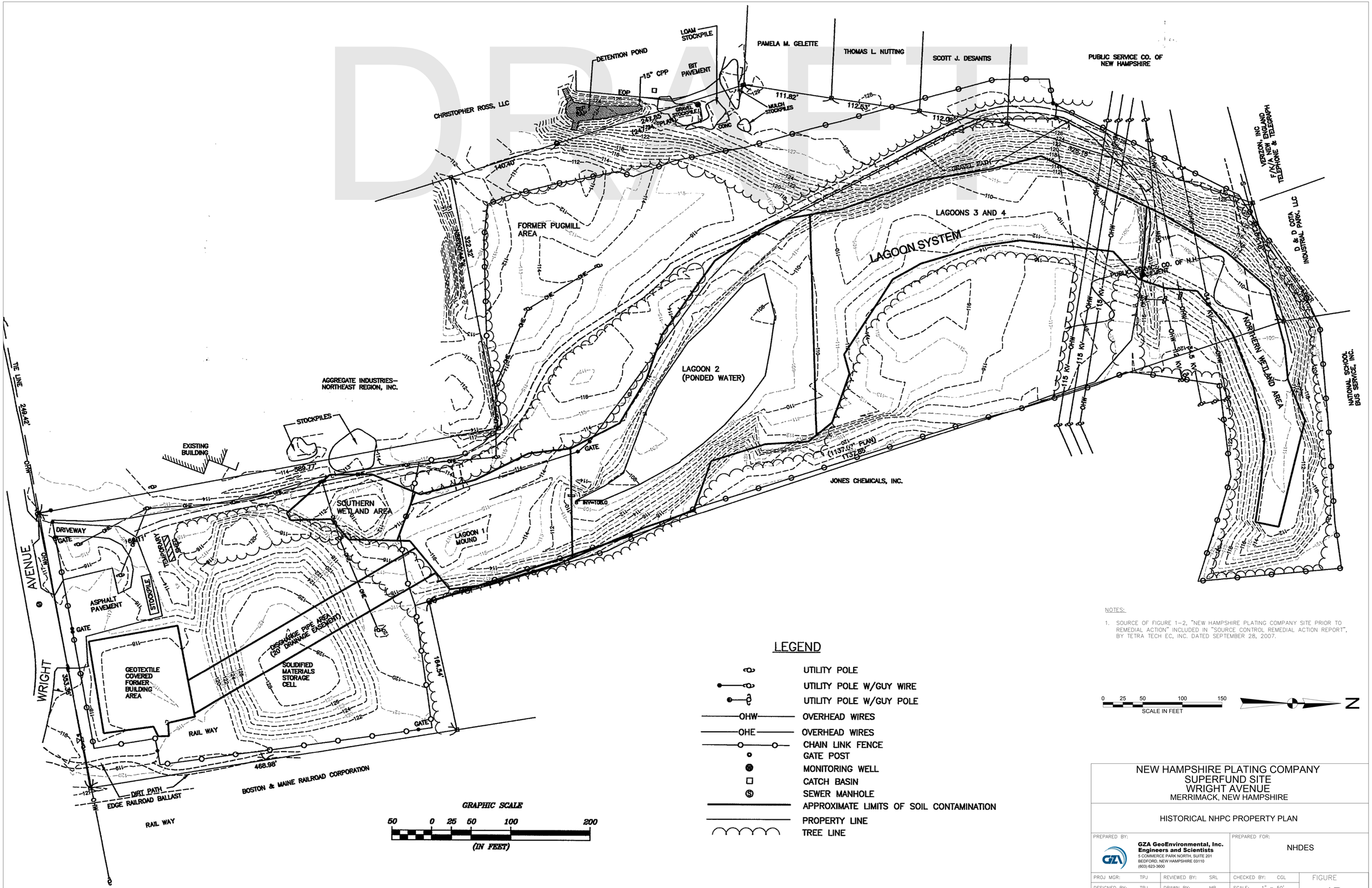


NOTES:

1. SOURCE OF FIGURE 1-2, "NEW HAMPSHIRE PLATING COMPANY SITE PRIOR TO REMEDIAL ACTION" INCLUDED IN "SOURCE CONTROL REMEDIAL ACTION REPORT", BY TETRA TECH EC, INC. DATED SEPTEMBER 28, 2007.

LEGEND

- UTILITY POLE
- UTILITY POLE W/GUY WIRE
- UTILITY POLE W/GUY POLE
- OHW — OVERHEAD WIRES
- OHE — OVERHEAD WIRES
- CHAIN LINK FENCE
- GATE POST
- MONITORING WELL
- CATCH BASIN
- SEWER MANHOLE
- APPROXIMATE LIMITS OF SOIL CONTAMINATION
- PROPERTY LINE
- TREE LINE

0 25 50 100 150
SCALE IN FEET

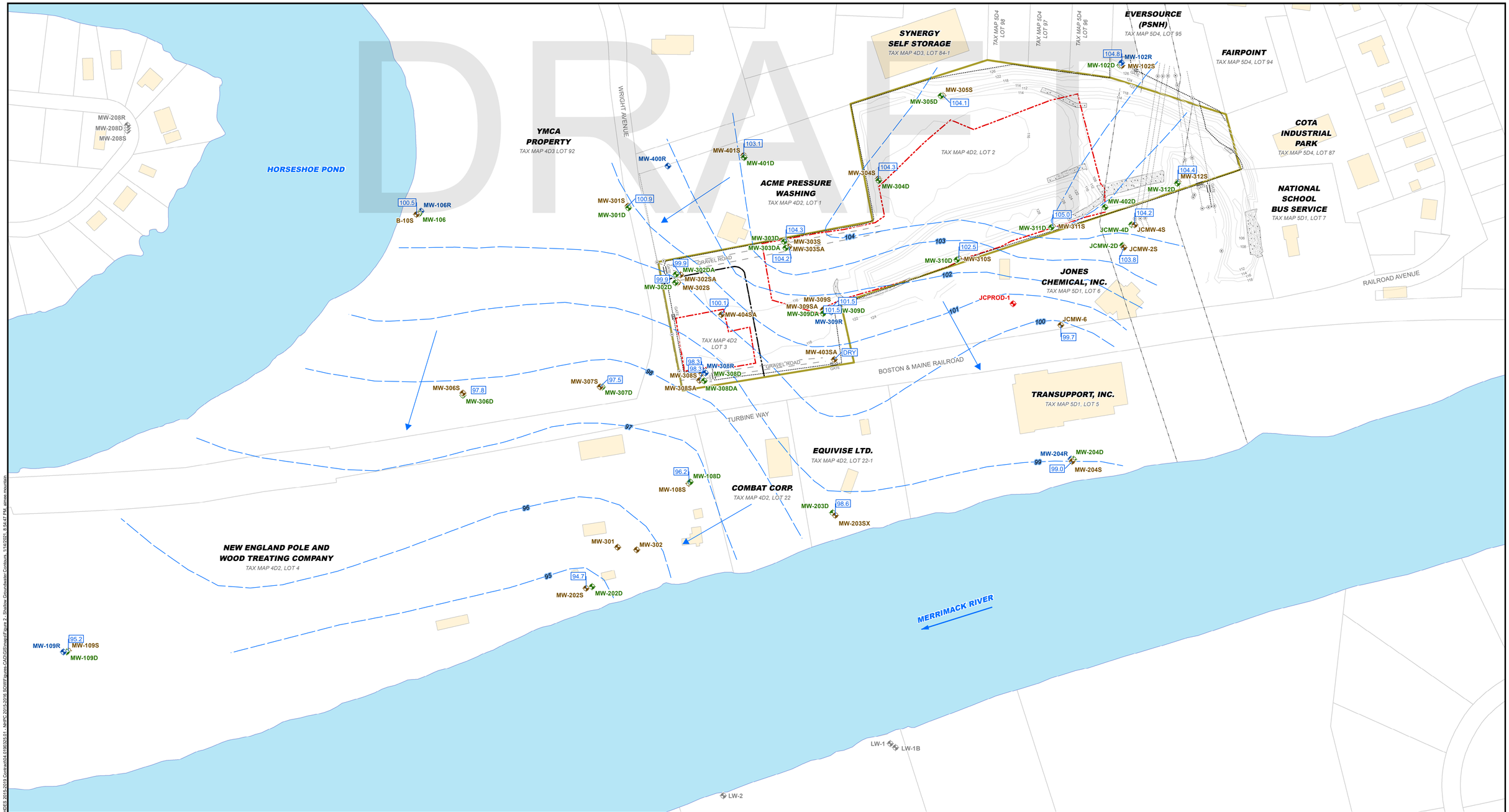
N

NEW HAMPSHIRE PLATING COMPANY
SUPERFUND SITE
WRIGHT AVENUE
MERRIMACK, NEW HAMPSHIRE

HISTORICAL NHPC PROPERTY PLAN

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists, 5 COMMERCE PARK NORTH, SUITE 201, BEDFORD, NEW HAMPSHIRE 03110, (603) 623-3600		PREPARED FOR: NHDES	
PROJ MGR: TPJ	REVIEWED BY: SRL	CHECKED BY: CGL	FIGURE
DESIGNED BY: TPJ	DRAWN BY: MR	SCALE: 1" = 50'	1B
DATE: OCTOBER 2020	PROJECT NO. 04.0190987.11	REVISION NO. 0	SHEET NO. 2 of 9

©2017– GZA GeoEnvironmental, Inc. GZA-P:\04Jobs\0190300s\04.0190325.00 NHDES 2015-2019 Contract\04.0190325.26 – NHPC 2018 Monitoring Round\Figures-CAD\Figure 1B – HISTORIC NHPC PROPERTY PLAN.dwg [Figure 1B] August 21, 2018 – 6:15pm kathryn.moran



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- Overhead Wire (OHW)
- Chainlink Fence
- Fence Gate
- Gravel Road
- Building
- Rip Rap
- Parcel Boundary
- Water
- Groundwater Contour
- Estimated Groundwater Flow Direction
- 104.4 Estimated Groundwater Elevation

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4. GROUNDWATER ELEVATIONS WERE CALCULATED FROM THE OCTOBER 19, 2020 COMPREHENSIVE WATER LEVEL ROUND.

0 60 120 240 360
GRAPHIC SCALE IN FEET

N E S W

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NEW HAMPSHIRE PLATING COMPANY
SUPERFUND SITE
WRIGHT AVENUE
MERRIMACK, NEW HAMPSHIRE

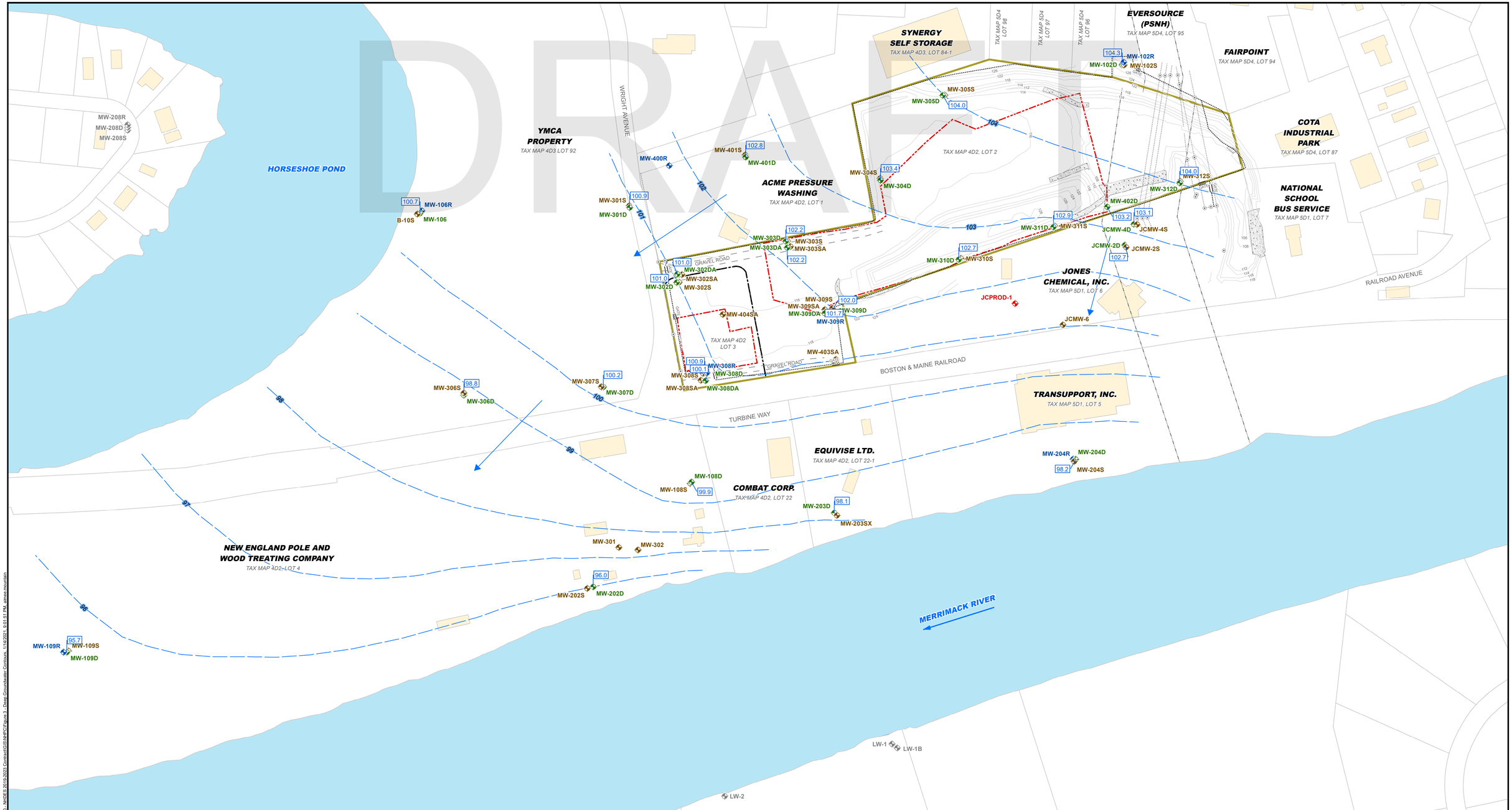
SHALLOW OVERBURDEN GROUNDWATER CONTOURS (OCTOBER 2020)

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR: NHDES/EPA

PROJ MGR: TPJ	REVIEWED BY: SRL	CHECKED BY: JMW	FIGURE
DESIGNED BY: TPJ	DRAWN BY: ADM	SCALE: 1 in = 120 ft	2
DATE: JAN 2021	PROJECT NO. 04.0190987.11	REVISION NO.	

© 2021 - GZA GeoEnvironmental, Inc. - GZAMAN1:\data\04\data\0190\00\04.0190925.00 NCRES 2015-2019 Compared\04.0190925.01 - NaPC-2015-2018 SGWF\Figures-CAD\GIS\maps\Figure 2 - Shallow Groundwater Contours, 1/14/2021 8:54:47 PM, almos mountain



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- Rip Rap
- Parcel Boundary
- Water
- Estimated Groundwater Flow Direction
- Estimated Groundwater Hydraulic Head Contour
- 99.7 — Estimated Hydraulic Head Elevation

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4. GROUNDWATER HYDRAULIC HEAD ELEVATIONS WERE CALCULATED FROM THE OCTOBER 19, 2020 COMPREHENSIVE WATER LEVEL ROUND.

0 60 120 240 360
GRAPHIC SCALE IN FEET

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NEW HAMPSHIRE PLATING COMPANY
SUPERFUND SITE
WRIGHT AVENUE
MERRIMACK, NEW HAMPSHIRE

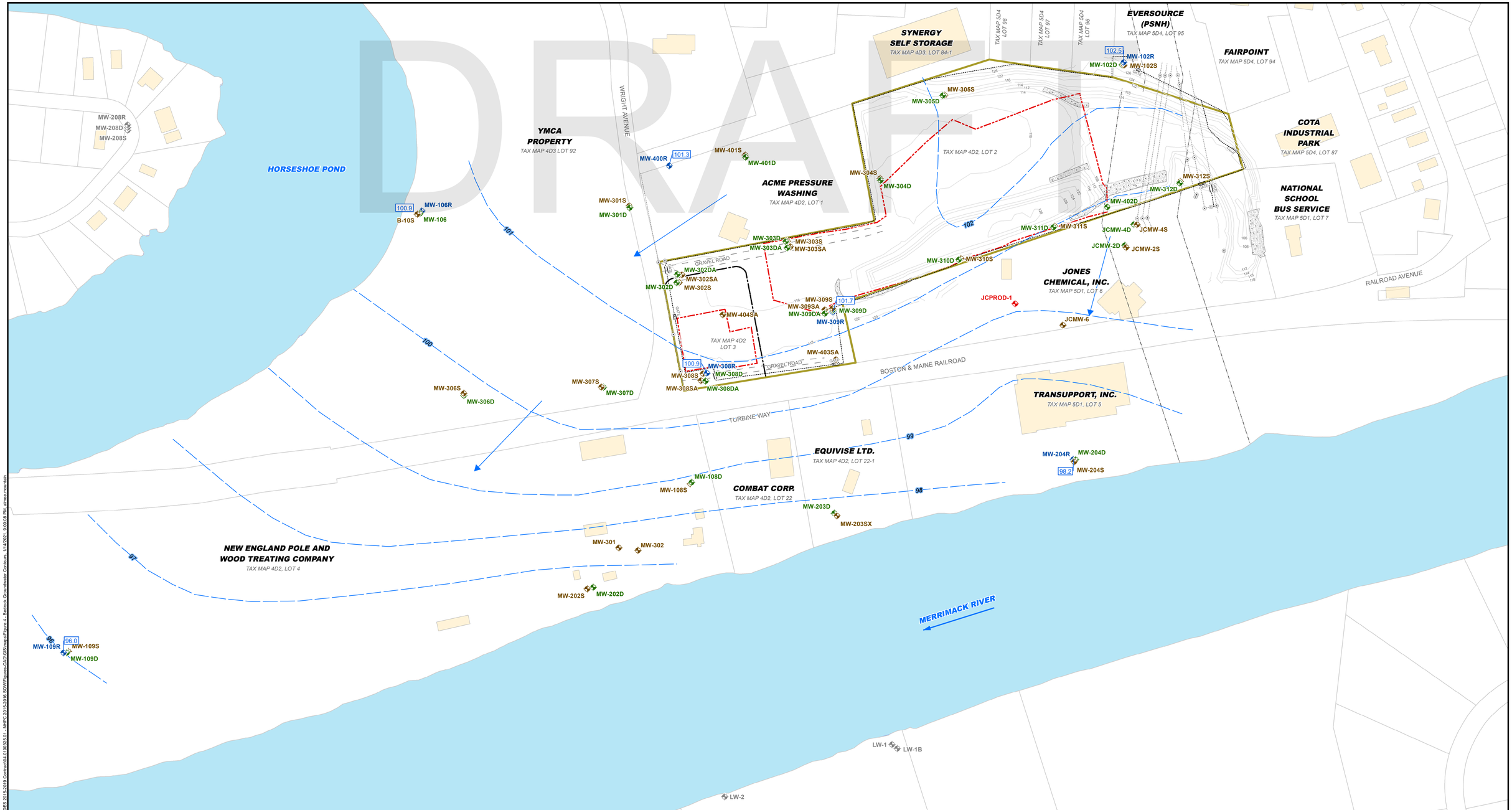
DEEP OVERBURDEN GROUNDWATER HYDRAULIC HEAD CONTOURS (OCTOBER 2020)

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com

PREPARED FOR: NHDES/EPA

PROJ MGR: TPJ	REVIEWED BY: SRL	CHECKED BY: JMW	FIGURE
DESIGNED BY: TPJ	DRAWN BY: ADM	SCALE: 1 in = 120 ft	3
DATE: JAN 2021	PROJECT NO. 04.0190987.11	REVISION NO.	

© 2021 - GZA GeoEnvironmental, Inc. \\GZA\BFGFORD\Jobs\04\Jobs\01\60\00\04.0190987.00 - NHDES 2019-2023 Contract\GIS\NHPC\Figure 3 - Deep Groundwater Contours, 1/14/2021 9:01:51 PM, amos.mountain



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- Surface Contour
- Utility Pole
- Overhead Wire (OHW)
- Chainlink Fence
- Fence Gate
- Gravel Road
- Building
- Rip Rap
- Parcel Boundary
- Water
- Estimated Groundwater Flow Direction
- Estimated Groundwater Hydraulic Head Contour
- 99.7 — Estimated Hydraulic Head Elevation

NOTES:

1. BASE PLAN WAS DEVELOPED FROM A FIELD SURVEY BY DOUCET SURVEY, INC. PERFORMED DURING OCTOBER 2015 AS DEPICTED ON THE PLAN OF LAND FOR US EPA, REGION 1 DATED OCTOBER 2016. ADDITIONAL PARCEL BOUNDARIES WERE OBTAINED FROM THE CITY OF MERRIMACK, NH GIS DATA PORTAL IN AUGUST 2017.

2. LOCATIONS AND SITE FEATURES ARE APPROXIMATE.

3. MONITORING WELLS MW-301 AND MW-302 ARE ASSOCIATED WITH THE NEW ENGLAND (NE) POLE PROPERTY (NHDES SITE NO. 198711004).

4. GROUNDWATER HYDRAULIC HEAD ELEVATIONS WERE CALCULATED FROM THE OCTOBER 19, 2020 COMPREHENSIVE WATER LEVEL ROUND.

0 60 120 240 360
GRAPHIC SCALE IN FEET

N W E S

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NEW HAMPSHIRE PLATING COMPANY
SUPERFUND SITE
WRIGHT AVENUE
MERRIMACK, NEW HAMPSHIRE

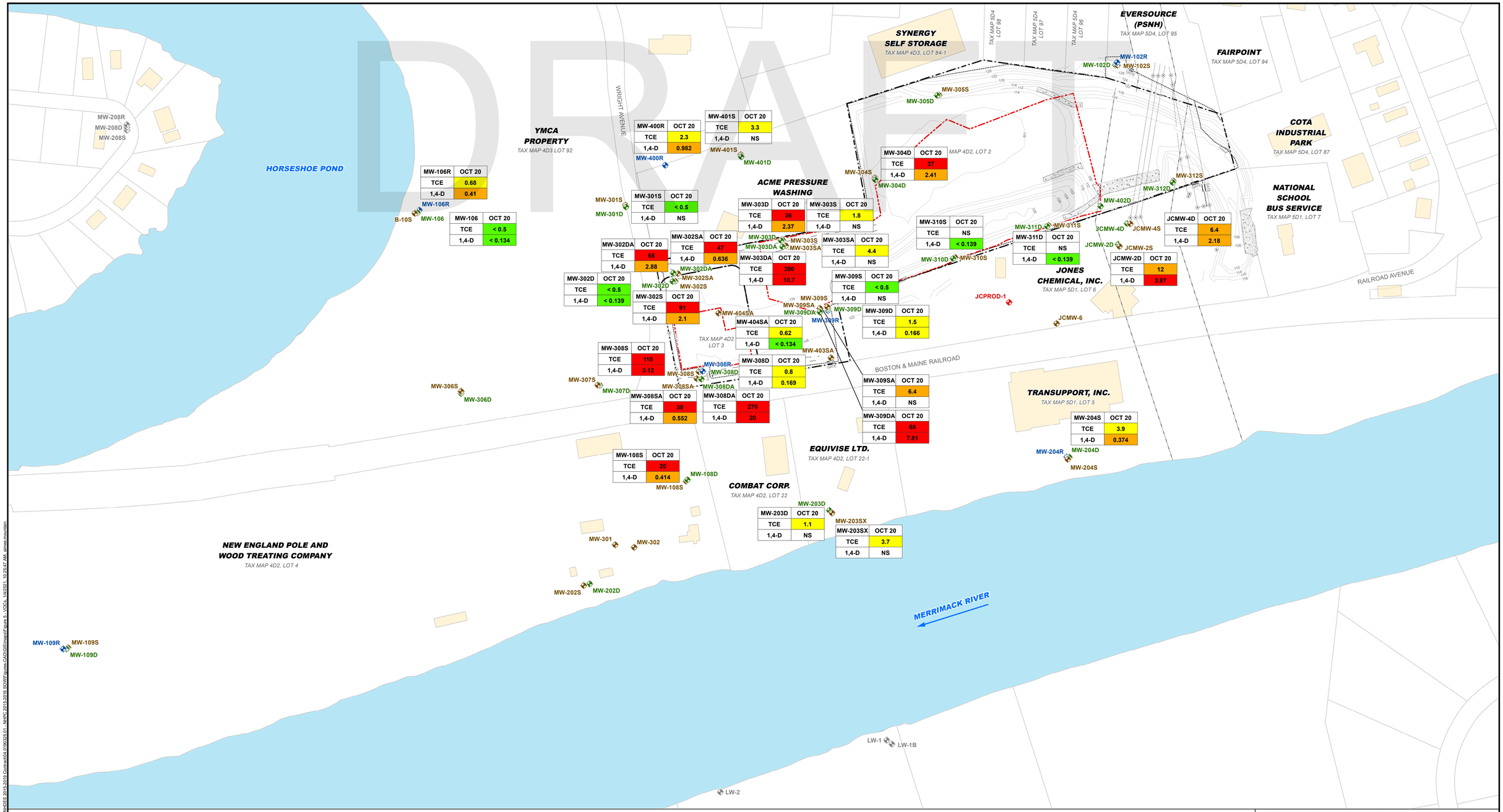
BEDROCK GROUNDWATER HYDRAULIC HEAD CONTOURS (OCTOBER 2020)

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com

PREPARED FOR: NHDES/EPA

PROJ MGR: TPJ	REVIEWED BY: SRL	CHECKED BY: JMW	FIGURE
DESIGNED BY: TPJ	DRAWN BY: ADM	SCALE: 1 in = 120 ft	4
DATE: JAN 2021	PROJECT NO. 04.0190987.11	REVISION NO.	

© 2021 - GZA GeoEnvironmental, Inc. \\GZAAUAN1\Jobs\04\Job\0190\00\04 NHDES 2015-2018 Contract\04 0190956.01 - NHPC 2014-2018 SOW\Figures\CAD\GIS\maps\Figure 4 - Bedrock Groundwater Contours, 1/14/2021 9:00:08 PM, aimee.mountain



LEGEND:

- MW-309S — Shallow Overburden Aquifer Monitoring Well
- MW-309D — Deep Overburden Aquifer Monitoring Well
- MW-309R — Bedrock Aquifer Monitoring Well
- MW-208S — Decommissioned Monitoring Well
- JCPROD-1 — Jones Chemical, Inc. Production Well
- New Hampshire Plating Company Superfund Site Boundary
- Area of Capped Soil
- Easement Boundary
- Contour Line
- Utility Pole
- Overhead Wire (OHW)
- Chainlink Fence
- Fence Gate
- Gravel Road
- Building
- Rip Rap
- Parcel Boundary
- Water

KEY CONTAMINANTS AND VALUE RANGES (µg/L)

Trichloroethene (TCE)	Non-Detect	< 5.0	≥ 5.0 & < 20	≥ 20
1,4-Dioxane (1,4-D)	Non-Detect	< 0.32	≥ 0.32 & < 3.0	≥ 3

	Compound	AGQS	ROD CUL	GW-2
VOC	*Trichloroethene (µg/L)*	5	5	20
	1,4-Dioxane (µg/L)	0.32	*na*	*na*

NOTES:

AGQS = Ambient Groundwater Quality Standards included in Env-Or 600 - Contaminated Site Management (Env-Or 603.3)

ROD CUL = Record of Decision, Cleanup Levels

GW-2 = Groundwater to indoor air screening levels in Vapor Intrusion Guidance dated 2006, revised 2013

µg/L = micrograms per Liter

VOC = Volatile Organic Compound

na = no standard currently applies

NOTES:

1. BASE PLAN WAS DEVELOPED FROM A FIELD SURVEY BY DOUCET SURVEY, INC. PERFORMED DURING OCTOBER 2015 AS DEPICTED ON THE PLAN OF LAND FOR US EPA, REGION 1 DATED OCTOBER 2016. ADDITIONAL PARCEL BOUNDARIES WERE OBTAINED FROM THE CITY OF MERRIMACK, NH GIS DATA PORTAL IN AUGUST 2017.

2. LOCATIONS AND SITE FEATURES ARE APPROXIMATE.

3. MONITORING WELLS MW-301 AND MW-302 ARE ASSOCIATED WITH THE NEW ENGLAND (NE) POLE PROPERTY (NHDES SITE NO. 198711004).

4. ANALYTICAL RESULTS REPRESENTED ON THE FIGURE ARE FROM THE MOST RECENT SAMPLING EVENT FOR EACH LOCATION.

0 60 120 240 360
GRAPHIC SCALE IN FEET

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NEW HAMPSHIRE PLATING COMPANY
SUPERFUND SITE
WRIGHT AVENUE
MERRIMACK, NEW HAMPSHIRE

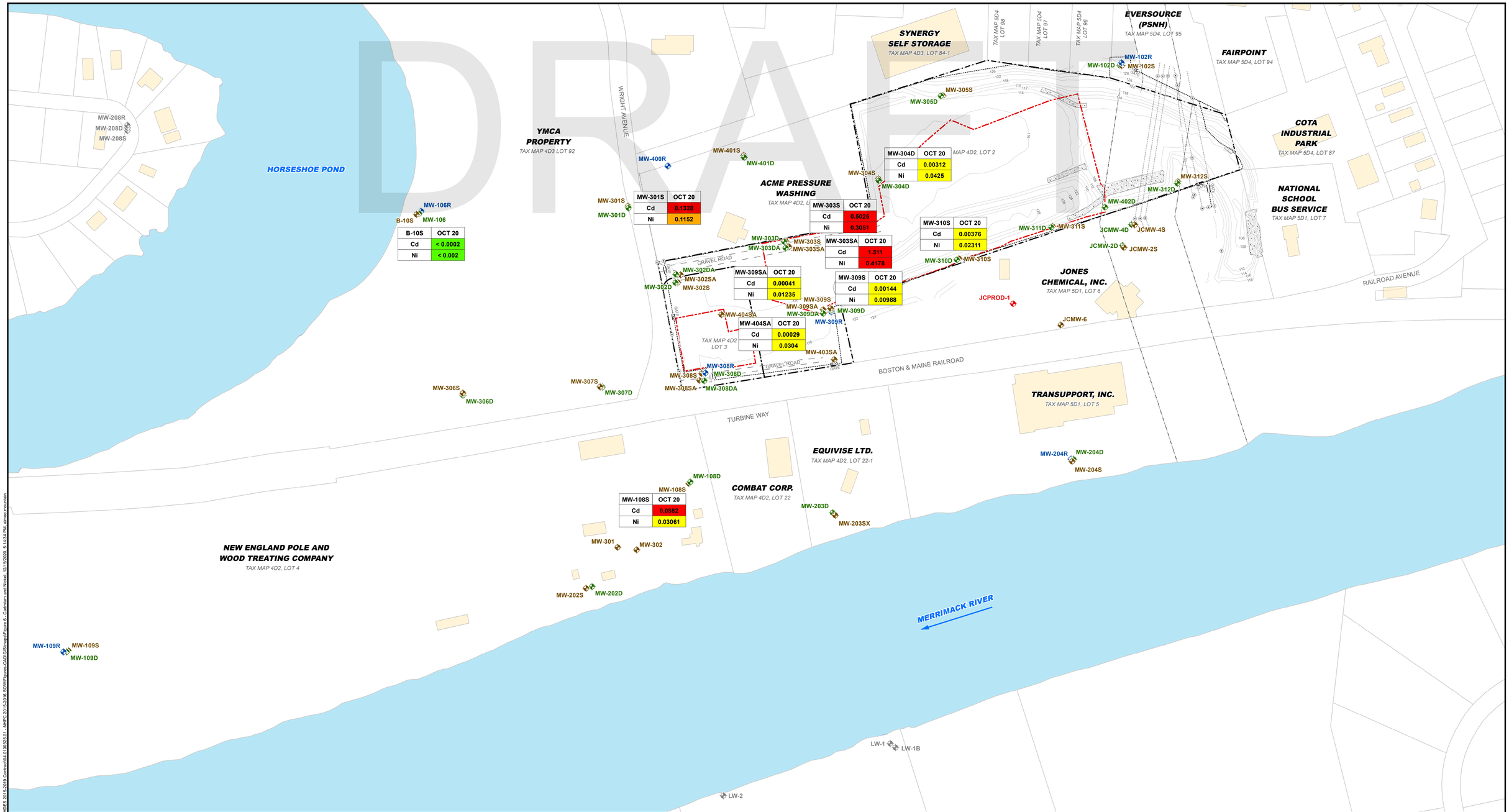
GROUNDWATER VOCS
KEY CONTAMINANT RESULT SUMMARY

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com

PREPARED FOR: NHDES/EPA

PROJ MGR: TPJ	REVIEWED BY: SRL	CHECKED BY: JMW	FIGURE
DESIGNED BY: TPJ	DRAWN BY: ADM	SCALE: 1 in = 120 ft	5
DATE: JAN 2021	PROJECT NO. 04.0190987.11	REVISION NO.	

© 2021 - GZA GeoEnvironmental, Inc. \\GZAMAIN\Jobs\04\Jobs\0190\30\04.0190325.00 NHDES 2015-2016 Contract\04.0190325.01 - NaPHCE 2015-2018 SOW\Figures-CAD\GIS\maps\Figure 5 - VOCs, 1&4\2021_10-25-17 AM_amaw.mxd\dwg



MW-304D	OCT 20
Cd	0.00312
Ni	0.0425

MW-301S	OCT 20
Cd	0.1328
Ni	0.1152

MW-303S	OCT 20
Cd	0.5025
Ni	0.3051

MW-310S	OCT 20
Cd	0.00376
Ni	0.02311

MW-303SA	OCT 20
Cd	1.511
Ni	0.4178

B-10S	OCT 20
Cd	< 0.0002
Ni	< 0.002

MW-309SA	OCT 20
Cd	0.00041
Ni	0.01235

MW-309S	OCT 20
Cd	0.00144
Ni	0.00988

MW-404SA	OCT 20
Cd	0.00029
Ni	0.0304

MW-108S	OCT 20
Cd	0.0882
Ni	0.03061

LEGEND:

- MW-309S — Shallow Overburden Aquifer Monitoring Well
- MW-309D — Deep Overburden Aquifer Monitoring Well
- MW-309R — Bedrock Aquifer Monitoring Well
- MW-208S — Decommissioned Monitoring Well
- JCPROD-1 — Jones Chemical, Inc. Production Well
- New Hampshire Plating Company Superfund Site Boundary
- Area of Capped Soil
- Easement Boundary
- Contour Line
- Utility Pole
- Overhead Wire (OHW)
- Chainlink Fence
- Fence Gate
- Gravel Road
- Building
- Rip Rap
- Parcel Boundary
- Water

KEY CONTAMINANTS AND VALUE RANGES (mg/L)

Cadmium (Cd)	Non-Detect	< 0.005	≥ 0.005 & < 0.01	≥ 0.01
Nickel (Ni)	Non-Detect	< 0.10	≥ 0.10 & < 0.20	≥ 0.20

NOTES:
AGQS = Ambient Groundwater Quality Standards included in Env-Or 600 - Contaminated Site Management (Env-Or 603.3)
ROD CUL = Record of Decision, Cleanup Levels
mg/L = milligrams per Liter
na = no standard currently applies

Compound		AGQS	ROD CUL
Metal	*Cadmium (mg/L)*	0.005	0.005
	Nickel (mg/L)	0.1	0.1

NOTES:
1. BASE PLAN WAS DEVELOPED FROM A FIELD SURVEY BY DOUCET SURVEY, INC. PERFORMED DURING OCTOBER 2015 AS DEPICTED ON THE PLAN OF LAND FOR US EPA, REGION 1 DATED OCTOBER 2016. ADDITIONAL PARCEL BOUNDARIES WERE OBTAINED FROM THE CITY OF MERRIMACK, NH GIS DATA PORTAL IN AUGUST 2017.

2. LOCATIONS AND SITE FEATURES ARE APPROXIMATE.

3. MONITORING WELLS MW-301 AND MW-302 ARE ASSOCIATED WITH THE NEW ENGLAND (NE) POLE PROPERTY (NHDES SITE NO. 198711004).

4. ANALYTICAL RESULTS REPRESENTED ON THE FIGURE ARE FROM THE MOST RECENT SAMPLING EVENT FOR EACH LOCATION.

0 60 120 240 360
GRAPHIC SCALE IN FEET

N W S E

UNLESS SPECIFICALLY STATED BY WRITTEN AGREEMENT, THIS DRAWING IS THE SOLE PROPERTY OF GZA GEOENVIRONMENTAL, INC. (GZA). THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR THE USE BY GZA'S CLIENT OR THE CLIENT'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT THE PRIOR WRITTEN CONSENT OF GZA. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY THE CLIENT OR OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA.

NEW HAMPSHIRE PLATING COMPANY
SUPERFUND SITE
WRIGHT AVENUE
MERRIMACK, NEW HAMPSHIRE

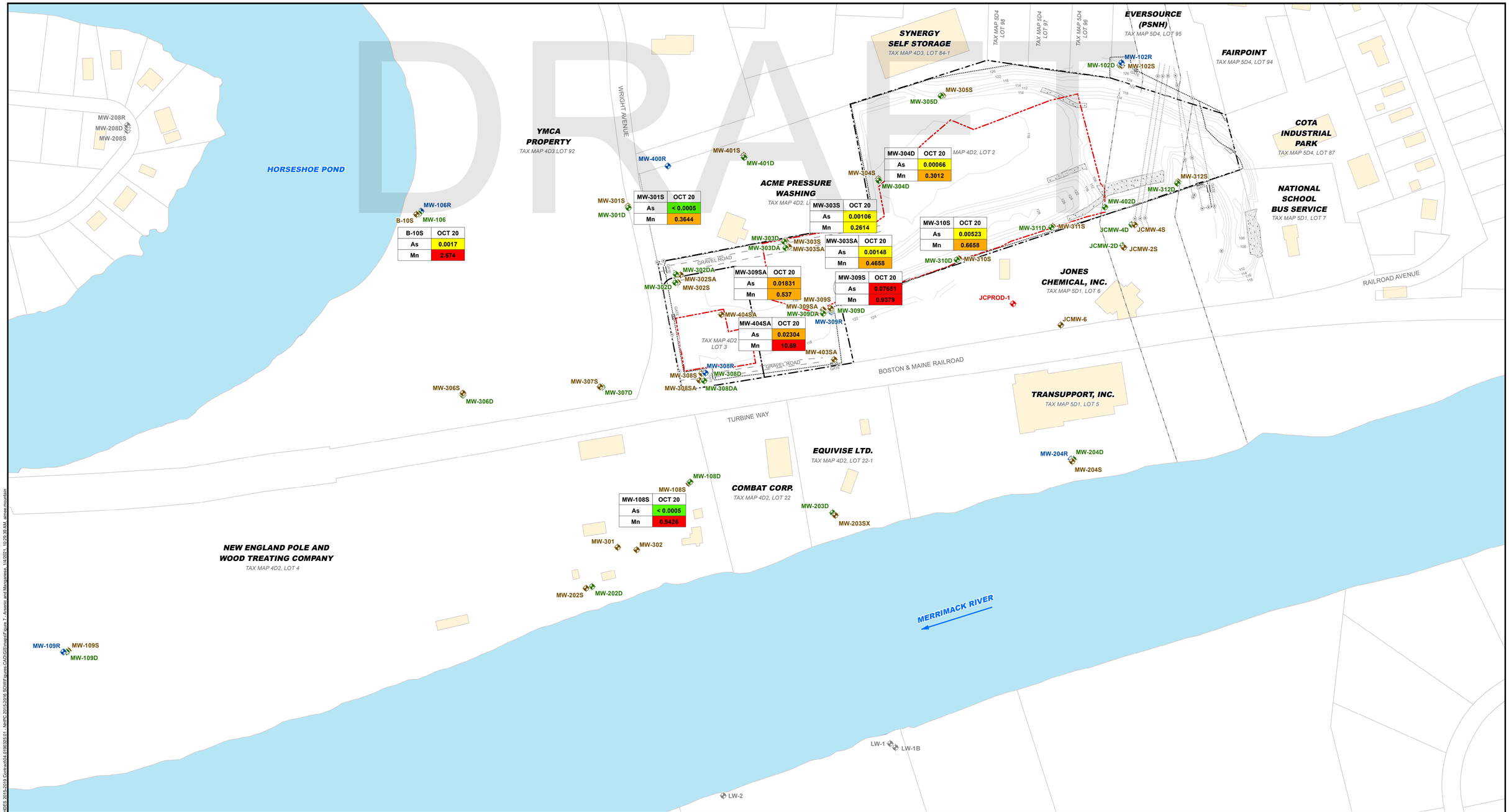
GROUNDWATER CADMIUM AND NICKEL KEY CONTAMINANT RESULT SUMMARY

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com

PREPARED FOR: NHDES/EPA

PROJ MGR: TPJ	REVIEWED BY: SRL	CHECKED BY: JMW	FIGURE
DESIGNED BY: TPJ	DRAWN BY: ADM	SCALE: 1 in = 120 ft	6
DATE: DEC 2020	PROJECT NO. 04.0190987.11	REVISION NO.	

© 2020 - GZA GeoEnvironmental, Inc. \\GZAMAIN\Jobs\04\Jobs\0190\30\04.0190325.00 NHPES 2015-2019 Compared\04.0190325.01 - NaPhCd 2015-2018 SOW\Figures-CAD\GIS\maps\Figure 6 - Cadmium and Nickel 12-15-2020 5:14:34 PM alman mountain



MW-301S	OCT 20
As	< 0.0005
Mn	0.3644

B-10S	OCT 20
As	0.0017
Mn	2.674

MW-304D	OCT 20
As	0.00066
Mn	0.3012

MW-303S	OCT 20
As	0.00106
Mn	0.2614

MW-303SA	OCT 20
As	0.00148
Mn	0.4658

MW-310S	OCT 20
As	0.00523
Mn	0.6658

MW-309SA	OCT 20
As	0.01831
Mn	0.537

MW-309S	OCT 20
As	0.07651
Mn	0.9379

MW-404SA	OCT 20
As	0.02304
Mn	10.69

MW-108S	OCT 20
As	< 0.0005
Mn	0.9426

LEGEND:

- MW-309S — Shallow Overburden Aquifer Monitoring Well
- MW-309D — Deep Overburden Aquifer Monitoring Well
- MW-309R — Bedrock Aquifer Monitoring Well
- MW-208S — Decommissioned Monitoring Well
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- New Hampshire Plating Company Superfund Site Boundary
- Area of Capped Soil
- Easement Boundary
- Contour Line
- Utility Pole
- Overhead Wire (OHW)
- Chainlink Fence
- Fence Gate
- Gravel Road
- Building
- Rip Rap
- Parcel Boundary
- Water

KEY CONTAMINANTS AND VALUE RANGES (mg/L)

Arsenic (As)	Non-Detect	< 0.010	≥ 0.010 & < 0.05	≥ 0.05
Manganese (Mn)	Non-Detect	< 0.3	≥ 0.3 & < 0.84	≥ 0.84

NOTES:

AGQS = Ambient Groundwater Quality Standards included in Env-Or 600 - Contaminated Site Management (Env-Or 603.3)

The AGQS for manganese was changed from 0.84 mg/L to 0.3 mg/L on January 1, 2021

EPA = U.S. Environmental Protection Agency

mg/L = milligrams per Liter

na = no standard currently applies

ROD CUL = Record of Decision, Cleanup Levels

	Compound	AGQS	ROD CUL	EPA Health Advisory
Metal	*Arsenic (mg/L)*	0.01	0.05	*na*
	Manganese (mg/L)	0.3	*na*	0.3

NOTES:

1. BASE PLAN WAS DEVELOPED FROM A FIELD SURVEY BY DOUCET SURVEY, INC. PERFORMED DURING OCTOBER 2015 AS DEPICTED ON THE PLAN OF LAND FOR US EPA, REGION 1 DATED OCTOBER 2016. ADDITIONAL PARCEL BOUNDARIES WERE OBTAINED FROM THE CITY OF MERRIMACK, NH GIS DATA PORTAL IN AUGUST 2017.

2. LOCATIONS AND SITE FEATURES ARE APPROXIMATE.

3. MONITORING WELLS MW-301 AND MW-302 ARE ASSOCIATED WITH THE NEW ENGLAND (NE) POLE PROPERTY (NHDES SITE NO. 198711004).

4. ANALYTICAL RESULTS REPRESENTED ON THE FIGURE ARE FROM THE MOST RECENT SAMPLING EVENT FOR EACH LOCATION.

0 60 120 240 360
GRAPHIC SCALE IN FEET

N W E S

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NEW HAMPSHIRE PLATING COMPANY
SUPERFUND SITE
WRIGHT AVENUE
MERRIMACK, NEW HAMPSHIRE

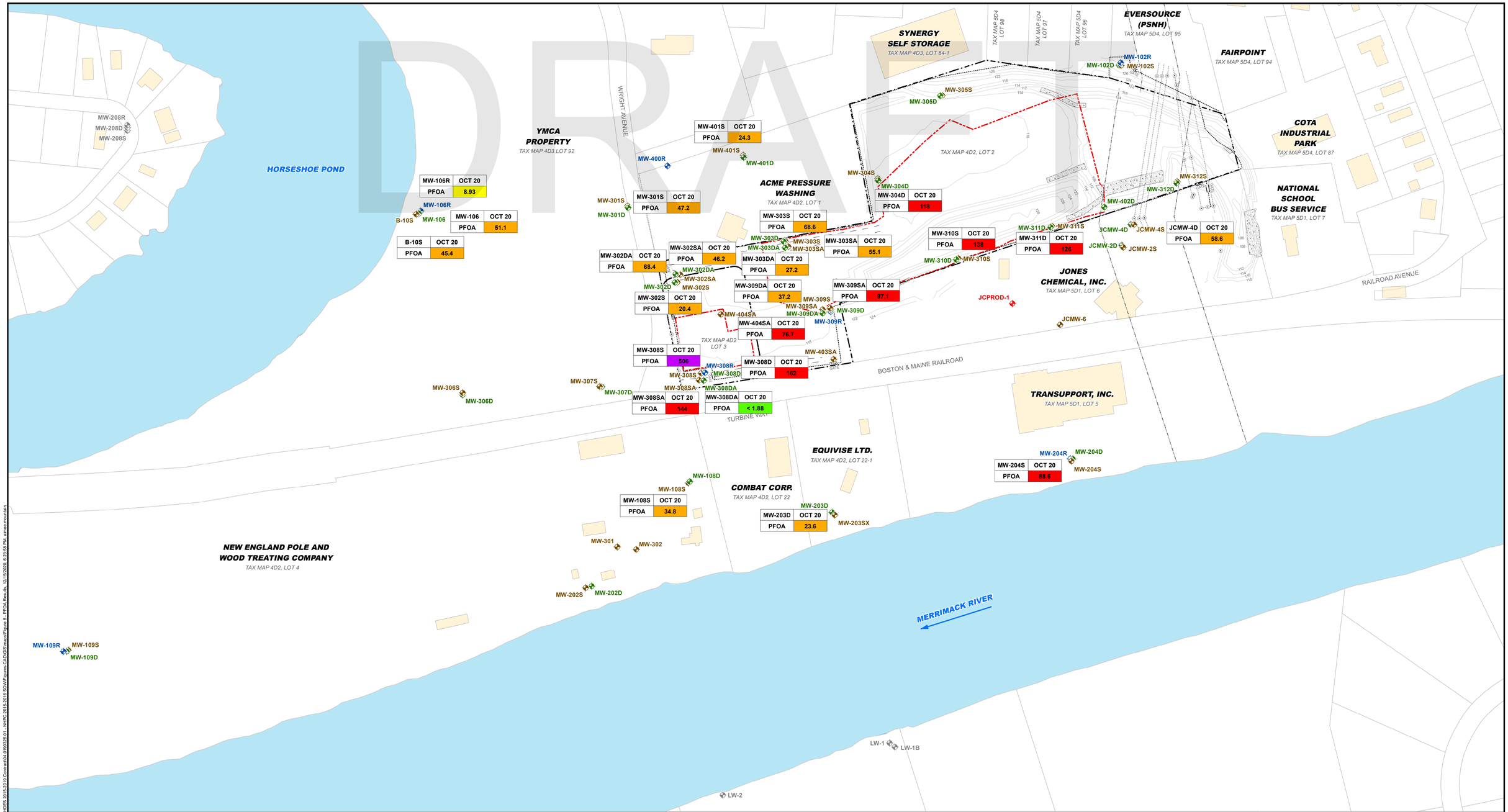
GROUNDWATER ARSENIC AND MANGANESE KEY CONTAMINANT RESULT SUMMARY

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com

PREPARED FOR: NHDES/EPA

PROJ MGR: TPJ	REVIEWED BY: SRL	CHECKED BY: JMW	FIGURE
DESIGNED BY: TPJ	DRAWN BY: ADM	SCALE: 1 in = 120 ft	7
DATE: JAN 2021	PROJECT NO. 04.0190987.11	REVISION NO.	

© 2021 - GZA GeoEnvironmental, Inc. - \\GZAMAIN1\Jobs\04\Jobs\0190\00\04 0190925.00 NCRES 2015-2019 Compact\04 0190925.01 - NHPC-2015-2018 SGWF\Figures-CAD\GIS\maps\Figure 7 - Arsenic and Manganese, 1/4/2021 - 10:29:39 AM - amaccomustafa



LEGEND:

- MW-309S — Shallow Overburden Aquifer Monitoring Well
- MW-309D — Deep Overburden Aquifer Monitoring Well
- MW-309R — Bedrock Aquifer Monitoring Well
- MW-208S — Decommissioned Monitoring Well
- JCPROD-1 — Jones Chemical, Inc. Production Well
- New Hampshire Plating Company Superfund Site Boundary
- Area of Capped Soil
- Easement Boundary
- Contour Line
- Utility Pole
- Overhead Wire (OHW)
- Chainlink Fence
- Fence Gate
- Gravel Road
- Building
- Rip Rap
- Parcel Boundary
- Water

KEY CONTAMINANTS AND VALUE RANGES

PFOA (ng/L)	Non-Detect	< 12	≥ = 12 & < 70	≥ = 70 & < 400	≥ 400

Compound	AGQS	EPA SL	EPA Health Advisory
PFOA (ng/L)	12	40	70

NOTES:

AGQS = Ambient Groundwater Quality Standards included in Env-Or 600 - Contaminated Site Management (Env-Or 603.3)
EPA = U.S. Environmental Protection Agency
ng/L = nanograms per liter
PFOA = Perfluoro-n-Octanoic Acid
SL = Screening level

NOTES:

1. BASE PLAN WAS DEVELOPED FROM A FIELD SURVEY BY DOUCET SURVEY, INC. PERFORMED DURING OCTOBER 2015 AS DEPICTED ON THE PLAN OF LAND FOR US EPA, REGION 1 DATED OCTOBER 2016. ADDITIONAL PARCEL BOUNDARIES WERE OBTAINED FROM THE CITY OF MERRIMACK, NH GIS DATA PORTAL IN AUGUST 2017.

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3. MONITORING WELLS MW-301 AND MW-302 ARE ASSOCIATED WITH THE NEW ENGLAND (NE) POLE PROPERTY (NHDES SITE NO. 198711004).

4. ANALYTICAL RESULTS REPRESENTED ON THE FIGURE ARE FROM THE MOST RECENT SAMPLING EVENT FOR EACH LOCATION.

0 60 120 240 360
GRAPHIC SCALE IN FEET

N S E W

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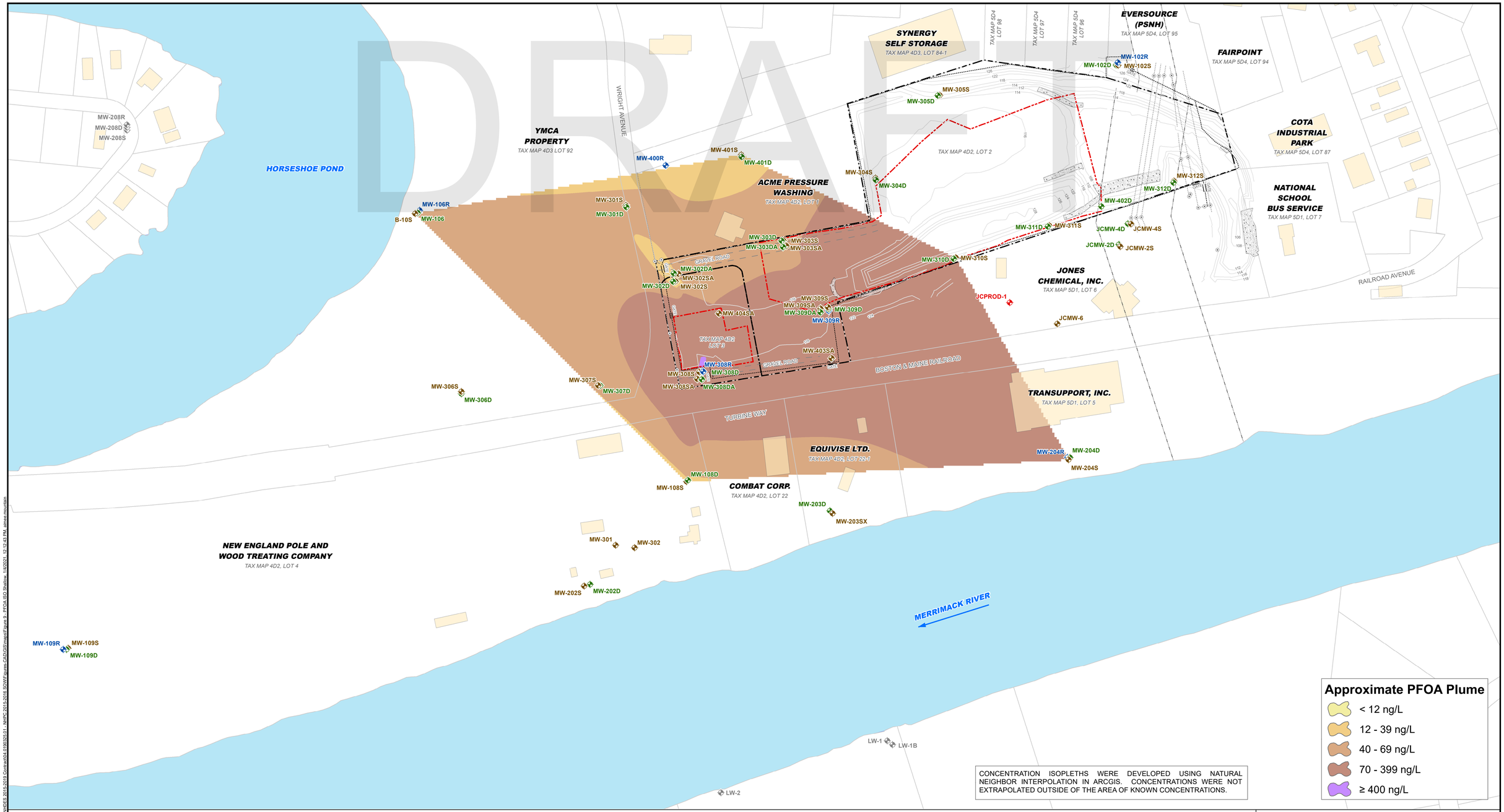
NEW HAMPSHIRE PLATING COMPANY
SUPERFUND SITE
WRIGHT AVENUE
MERRIMACK, NEW HAMPSHIRE

GROUNDWATER PFOA
KEY CONTAMINANT RESULT SUMMARY

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com
PREPARED FOR: NHDES/EPA

PROJ MGR: TPJ	REVIEWED BY: SRL	CHECKED BY: JMW	FIGURE
DESIGNED BY: TPJ	DRAWN BY: ADM	SCALE: 1 in = 120 ft	8
DATE: DEC 2020	PROJECT NO. 04.0190987.11	REVISION NO.	

© 2020 - GZA GeoEnvironmental, Inc. \\GZAMAN\Jobs\04Jobs\19\0000\04 19\0925-50 NHDES 2015-2019 Contract\04 0190925.51 - NHPC 2015-2016 SOW\Figures-CAD\GIS\Image\Figure 8 - PFOA Results_12/15/2020 6:23:58 PM jamie.mountain



CONCENTRATION ISOPLETHS WERE DEVELOPED USING NATURAL NEIGHBOR INTERPOLATION IN ARCGIS. CONCENTRATIONS WERE NOT EXTRAPOLATED OUTSIDE OF THE AREA OF KNOWN CONCENTRATIONS.

LEGEND:

- MW-309S — Shallow Overburden Aquifer Monitoring Well
- MW-309D — Deep Overburden Aquifer Monitoring Well
- MW-309R — Bedrock Aquifer Monitoring Well
- MW-208S — Decommissioned Monitoring Well
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- Overhead Wire (OHW)
- Chainlink Fence
- Fence Gate
- Gravel Road
- Building
- Rip Rap
- Parcel Boundary
- Water

Compound	AGQS	EPA SL	EPA Health Advisory
PFOA (ng/L)	12	40	70

NOTES:
AGQS = Ambient Groundwater Quality Standards included in Env-Or 600 - Contaminated Site Management (Env-Or 603.3)
EPA = U.S. Environmental Protection Agency
ng/L = nanograms per liter
PFOA = Perfluoro-n-Octanoic Acid
SL = Screening level

NOTES:
1. BASE PLAN WAS DEVELOPED FROM A FIELD SURVEY BY DOUCET SURVEY, INC. PERFORMED DURING OCTOBER 2015 AS DEPICTED ON THE PLAN OF LAND FOR US EPA, REGION 1 DATED OCTOBER 2016. ADDITIONAL PARCEL BOUNDARIES WERE OBTAINED FROM THE CITY OF MERRIMACK, NH GIS DATA PORTAL IN AUGUST 2017.

2. LOCATIONS AND SITE FEATURES ARE APPROXIMATE.

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4. ANALYTICAL RESULTS REPRESENTED ON THE FIGURE ARE FROM THE MOST RECENT SAMPLING EVENT FOR EACH LOCATION.

0 60 120 240 360
GRAPHIC SCALE IN FEET

N S E W

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NEW HAMPSHIRE PLATING COMPANY
SUPERFUND SITE
WRIGHT AVENUE
MERRIMACK, NEW HAMPSHIRE

SHALLOW GROUNDWATER PFOA ISOPLETHS
2020 SAMPLING RESULT SUMMARY

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com

PREPARED FOR: NHDES/EPA

PROJ MGR: TPJ	REVIEWED BY: SRL	CHECKED BY: JMW	FIGURE
DESIGNED BY: TPJ	DRAWN BY: ADM	SCALE: 1 in = 120 ft	
DATE: JAN 2021	PROJECT NO. 04.0190987.11	REVISION NO.	9

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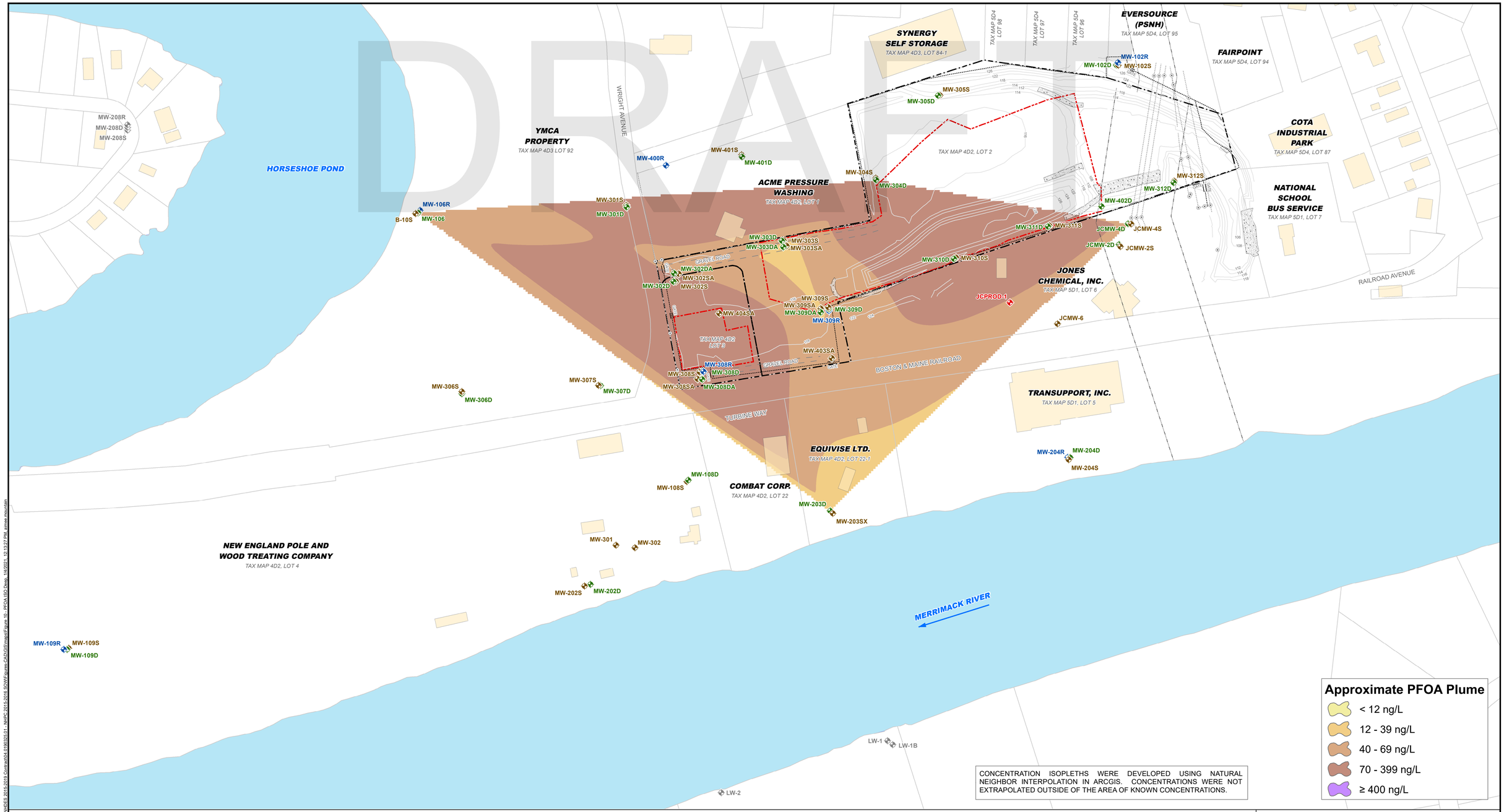

CONCENTRATION ISOPLETHS WERE DEVELOPED USING NATURAL NEIGHBOR INTERPOLATION IN ARCGIS. CONCENTRATIONS WERE NOT EXTRAPOLATED OUTSIDE OF THE AREA OF KNOWN CONCENTRATIONS.

Approximate PFOA Plume

- < 12 ng/L
- 12 - 39 ng/L
- 40 - 69 ng/L
- 70 - 399 ng/L
- ≥ 400 ng/L

LEGEND:

- MW-309S — Shallow Overburden Aquifer Monitoring Well
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- Parcel Boundary
- Water

Compound	AGQS	EPA SL	EPA Health Advisory
PFOA (ng/L)	12	40	70

NOTES:

AGQS = Ambient Groundwater Quality Standards included in Env-Or 600 - Contaminated Site Management (Env-Or 603.3)

EPA = U.S. Environmental Protection Agency

ng/L = nanograms per liter

PFOA = Perfluoro-n-Octanoic Acid

SL = Screening level

NOTES:

1. BASE PLAN WAS DEVELOPED FROM A FIELD SURVEY BY DOUCET SURVEY, INC. PERFORMED DURING OCTOBER 2015 AS DEPICTED ON THE PLAN OF LAND FOR US EPA, REGION 1 DATED OCTOBER 2016. ADDITIONAL PARCEL BOUNDARIES WERE OBTAINED FROM THE CITY OF MERRIMACK, NH GIS DATA PORTAL IN AUGUST 2017.

2. LOCATIONS AND SITE FEATURES ARE APPROXIMATE.

3. MONITORING WELLS MW-301 AND MW-302 ARE ASSOCIATED WITH THE NEW ENGLAND (NE) POLE PROPERTY (NHDES SITE NO. 198711004).

4. ANALYTICAL RESULTS REPRESENTED ON THE FIGURE ARE FROM THE MOST RECENT SAMPLING EVENT FOR EACH LOCATION.

0 60 120 240 360
GRAPHIC SCALE IN FEET

N E S W

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NEW HAMPSHIRE PLATING COMPANY
SUPERFUND SITE
WRIGHT AVENUE
MERRIMACK, NEW HAMPSHIRE

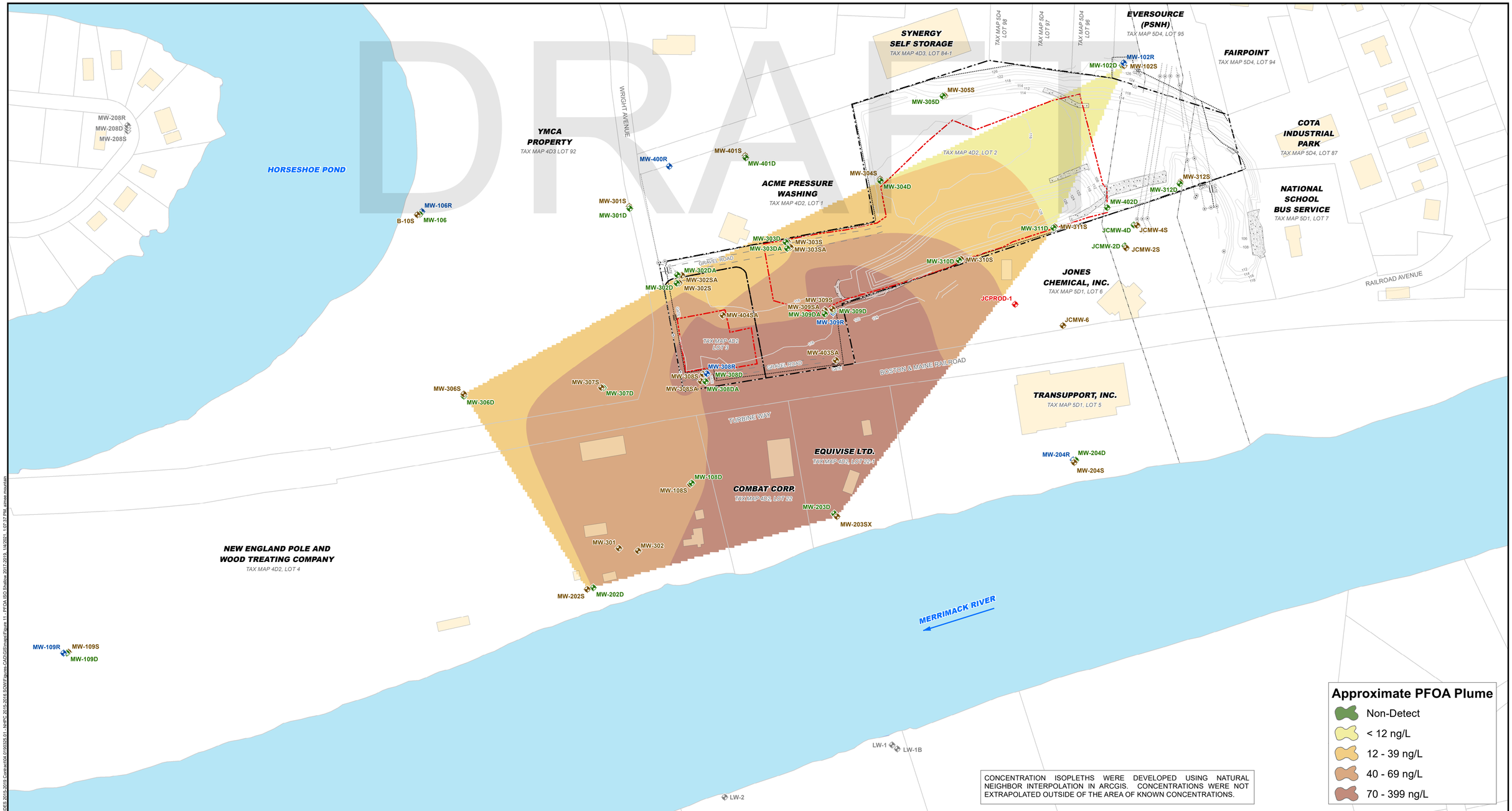
DEEP GROUNDWATER PFOA ISOPLETHS
2020 SAMPLING RESULT SUMMARY

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com

PREPARED FOR: NHDES/EPA

PROJ MGR: TPJ	REVIEWED BY: SRL	CHECKED BY: JMW	FIGURE
DESIGNED BY: TPJ	DRAWN BY: ADM	SCALE: 1 in = 120 ft	
DATE: JAN 2021	PROJECT NO. 04.0190987.11	REVISION NO.	10

© 2021 - GZA GeoEnvironmental, Inc. - \\GZAMAN1.local\Data\0190500s\04.0190925.00 NHDES 2015-2019 Contract\04.0190925.01 - NaPHC 2015-2018 SGWF\Figures-CAD\GIS\maps\Figure 10 - PFOA ISO Deep, 1/4/2021 12:13:27 PM, simon.mountain



CONCENTRATION ISOPLETHS WERE DEVELOPED USING NATURAL NEIGHBOR INTERPOLATION IN ARCGIS. CONCENTRATIONS WERE NOT EXTRAPOLATED OUTSIDE OF THE AREA OF KNOWN CONCENTRATIONS.

LEGEND:

- MW-309S — Shallow Overburden Aquifer Monitoring
- MW-309D — Deep Overburden Aquifer Monitoring
- MW-309R — Bedrock Aquifer Monitoring
- MW-208S — Decommissioned Monitoring Well
- JCPROD-1 — Jones Chemical, Inc. Production Well
- New Hampshire Plating Company Superfund Site Boundary
- Area of Capped Soil
- Easement Boundary
- Contour Line
- Utility Pole
- Overhead Wire (OHW)
- Chainlink Fence
- Fence Gate
- Gravel Road
- Building
- Rip Rap
- Parcel Boundary
- Water

Compound	AGQS	EPA SL	EPA Health Advisory
PFOA (ng/L)	12	40	70

NOTES:

AGQS = Ambient Groundwater Quality Standards included in Env-Or 600 - Contaminated Site Management (Env-Or 603.3)

EPA = U.S. Environmental Protection Agency

ng/L = nanograms per liter

PFOA = Perfluoro-n-Octanoic Acid

SL = Screening level

NOTES:

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NEW HAMPSHIRE PLATING COMPANY
SUPERFUND SITE
WRIGHT AVENUE
MERRIMACK, NEW HAMPSHIRE

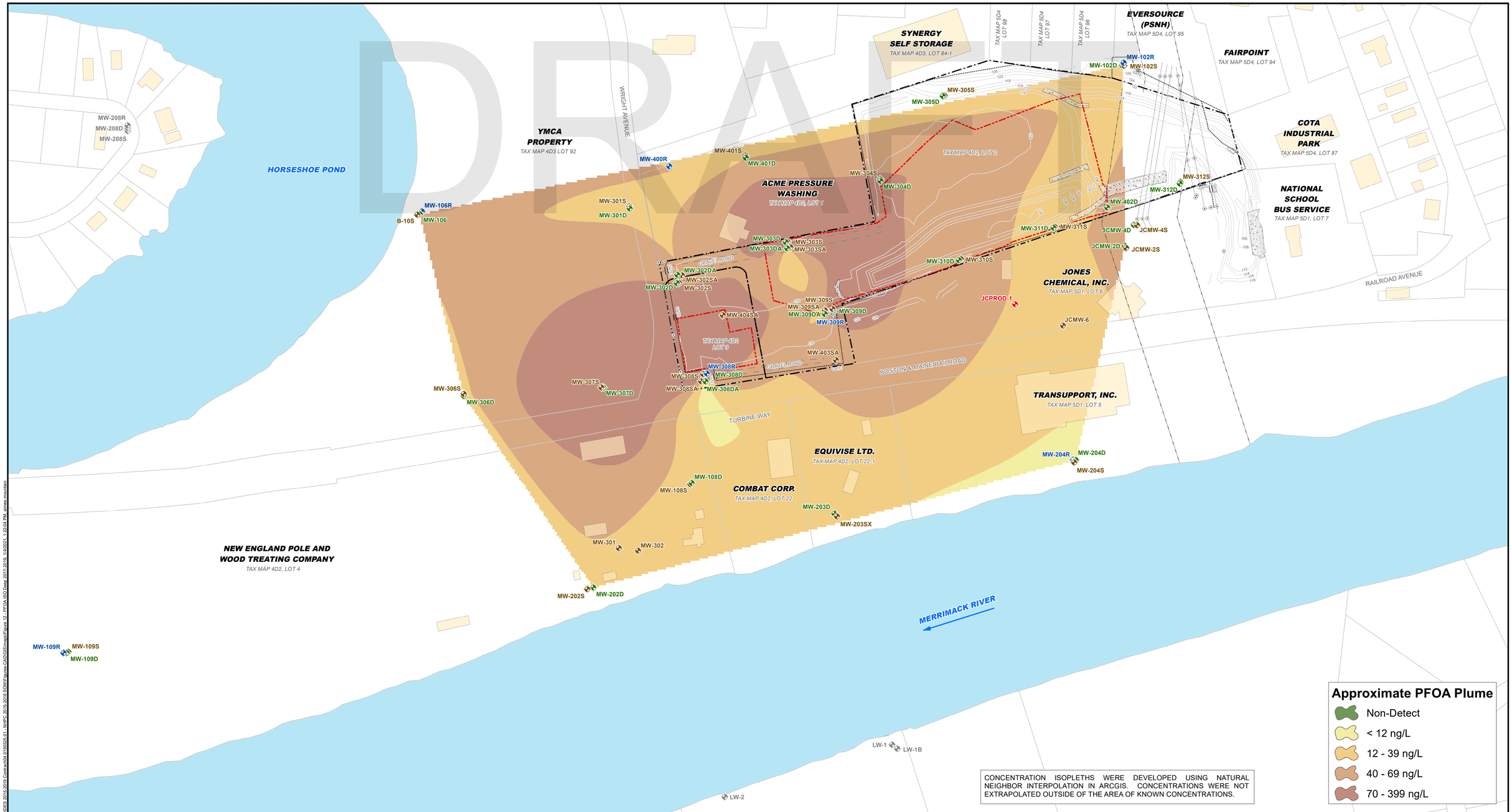
SHALLOW GROUNDWATER PFOA ISOPLETHS
2017-2019 SAMPLE RESULT SUMMARY

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com

PREPARED FOR: NHDES/EPA

PROJ MGR: TPJ	REVIEWED BY: SRL	CHECKED BY: JMW	FIGURE
DESIGNED BY: TPJ	DRAWN BY: ADM	SCALE: 1 in = 120 ft	11
DATE: JAN 2021	PROJECT NO. 04.0190987.04	REVISION NO.	

© 2021 - GZA GeoEnvironmental, Inc. \\GZAMAN1.local\GZA\Jobs\19\0903\04\04.0190903\04\04.0190903.09 NHDES 2015-2019 Contract\04.0190903.61 - NHPC 2015-2018 SGW\Figures-CAD\GIS\Image\Figure 11 - PFOA ISO Shallow 2017-2019, 1/4/2021 1:07:37 PM, simon.mountain



CONCENTRATION ISOPLETHS WERE DEVELOPED USING NATURAL NEIGHBOR INTERPOLATION IN ARCGIS. CONCENTRATIONS WERE NOT EXTRAPOLATED OUTSIDE OF THE AREA OF KNOWN CONCENTRATIONS.

Approximate PFOA Plume

- Non-Detect
- < 12 ng/L
- 12 - 39 ng/L
- 40 - 69 ng/L
- 70 - 399 ng/L

LEGEND:

- MW-309S — Shallow Overburden Aquifer Monitoring
- MW-309D — Deep Overburden Aquifer Monitoring
- MW-309R — Bedrock Aquifer Monitoring
- MW-208S — Decommissioned Monitoring Well
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- Fence Gate
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- Parcel Boundary
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NEW HAMPSHIRE PLATING COMPANY
SUPERFUND SITE
WRIGHT AVENUE
MERRIMACK, NEW HAMPSHIRE

DEEP GROUNDWATER PFOA ISOPLETHS
2017-2019 SAMPLE RESULT SUMMARY

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com
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PROJ MGR: TPJ	REVIEWED BY: SRL	CHECKED BY: JMW	FIGURE
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DATE: JAN 2021	PROJECT NO. 04.0190987.04	REVISION NO.	12

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Graphs

Graph 1A
Trichloroethene (TCE) Concentration Trends Exceeding AGQS/ROD CUL
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

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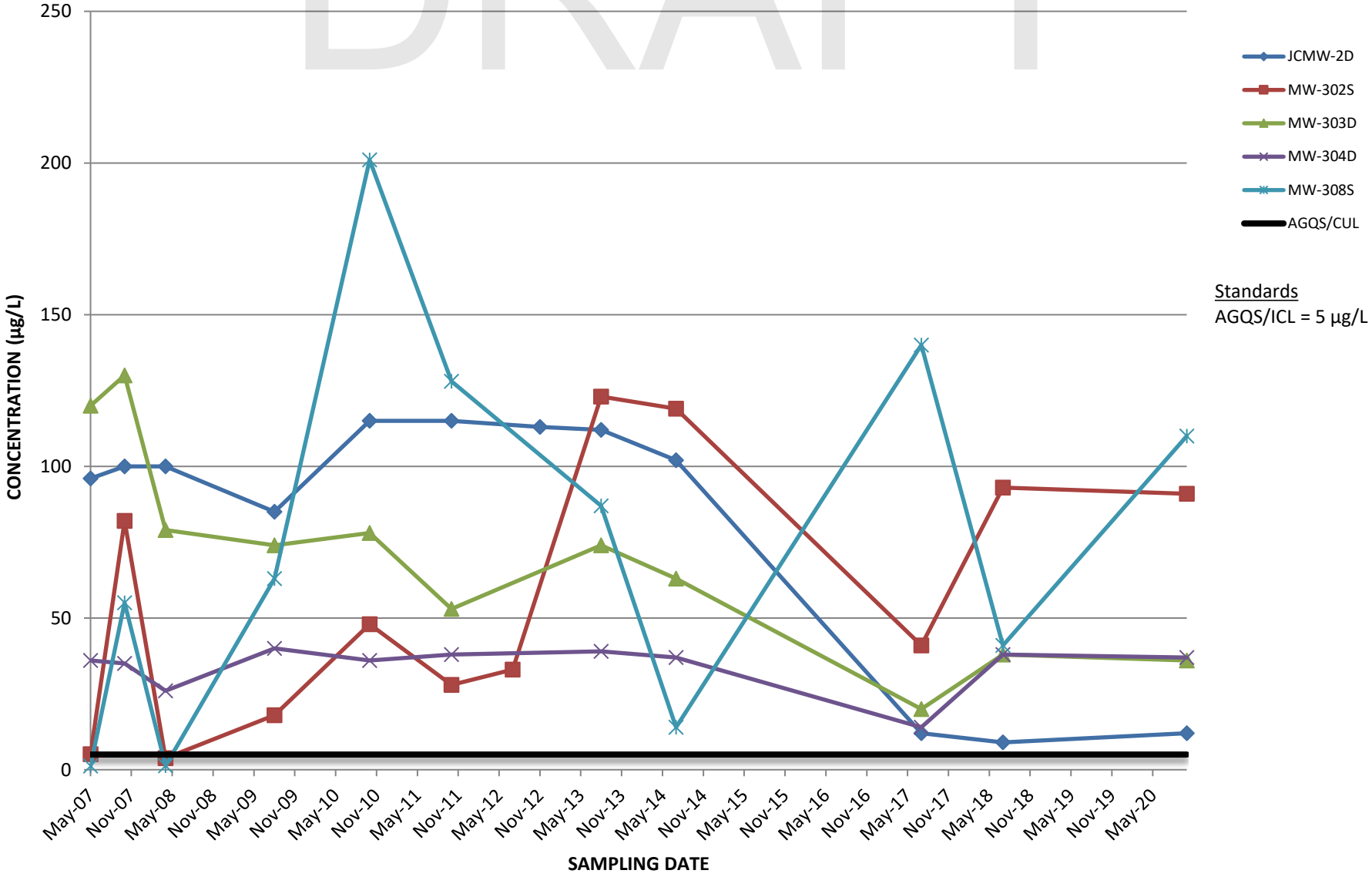

Standards
AGQS/ICL = 5 µg/L

Graph 1B
Trichloroethene (TCE) Concentration Trends Exceeding AGQS/ROD CUL
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

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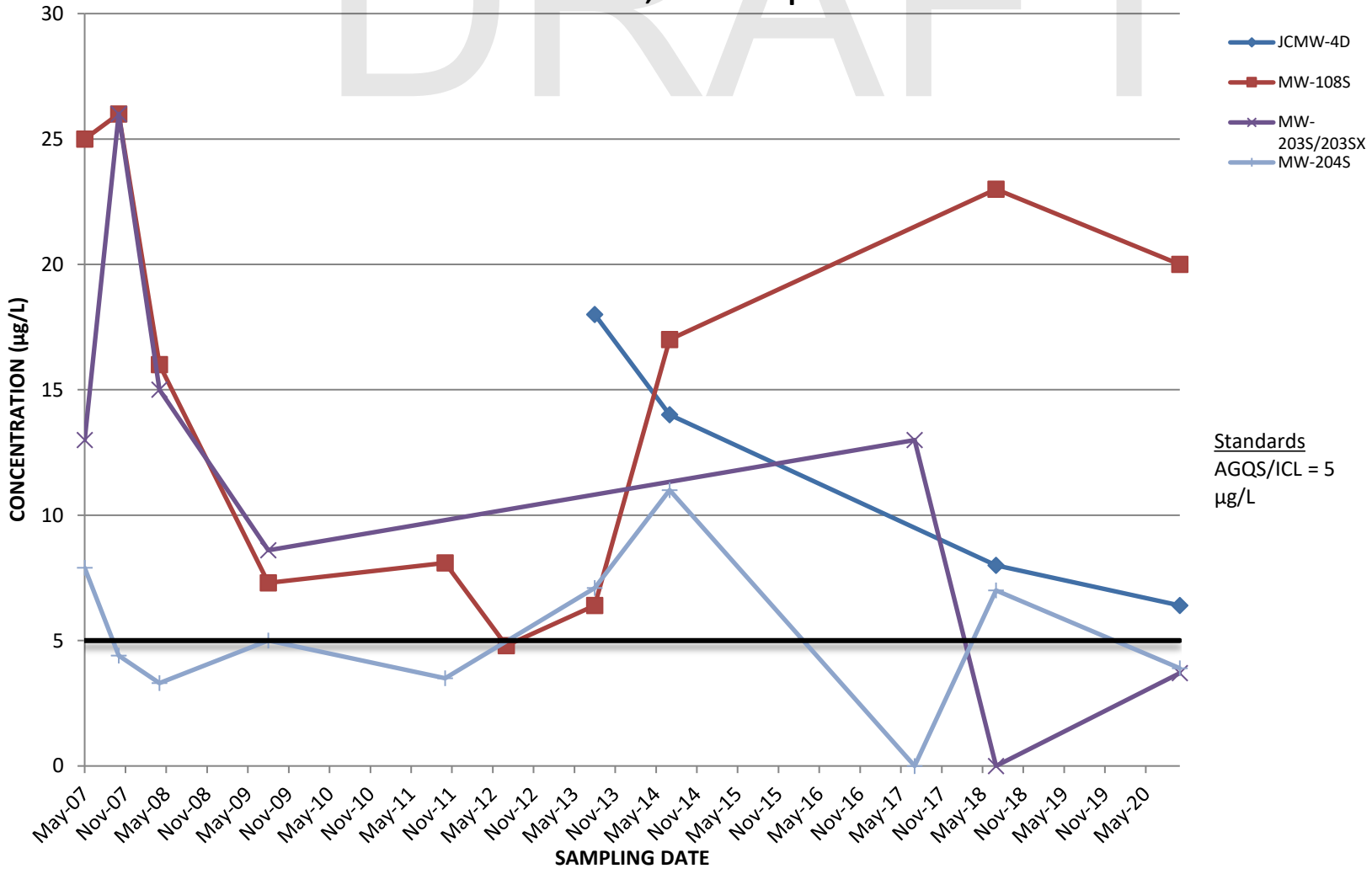
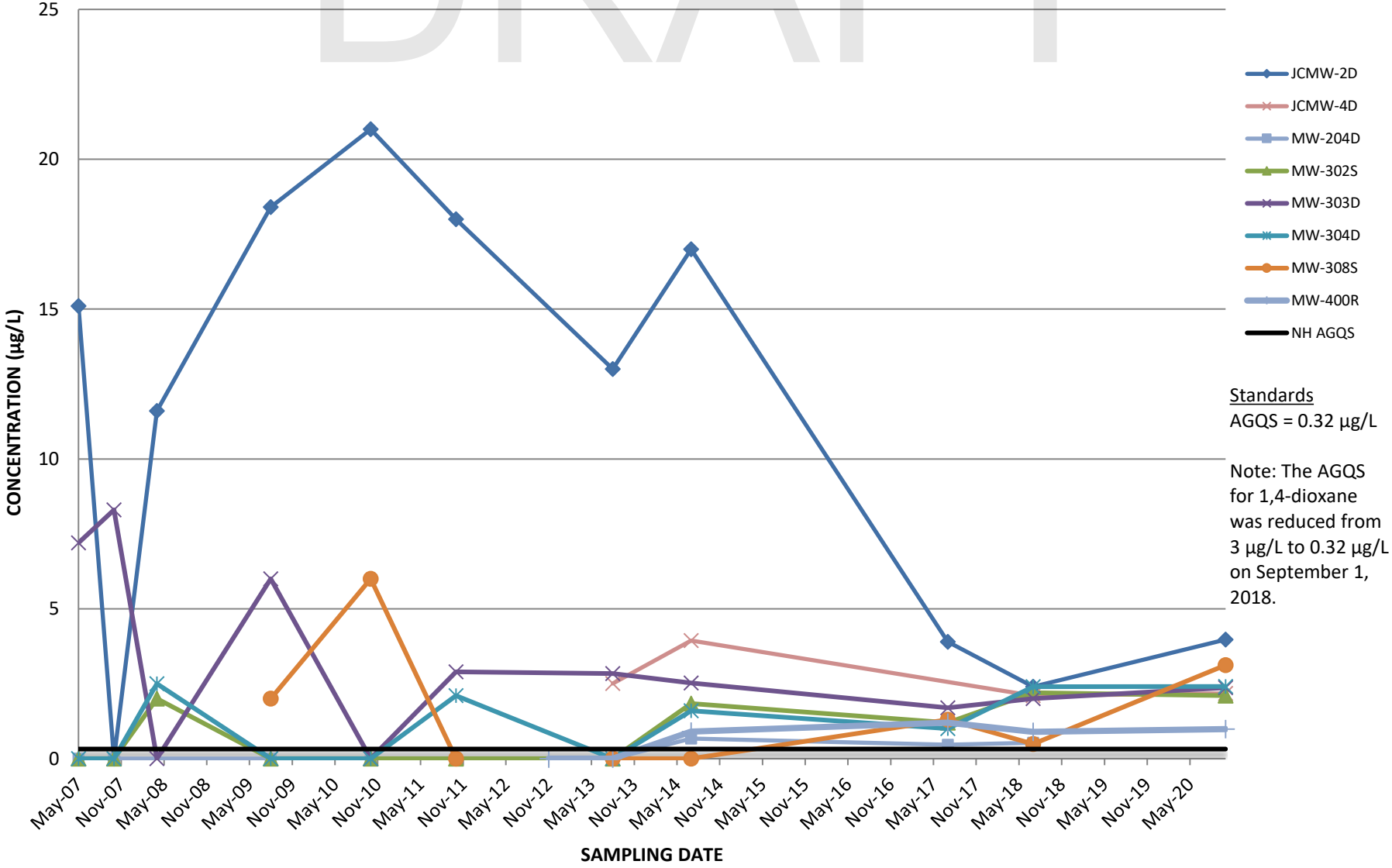


Graph 2
1,4-Dioxane Concentration Trends Exceeding AGQS/ROD CUL
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

DRAFT



Standards
AGQS = 0.32 µg/L

Note: The AGQS for 1,4-dioxane was reduced from 3 µg/L to 0.32 µg/L on September 1, 2018.

Graph 3
Cyanide Concentration Trends Exceeding AGQS/ROD CUL
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

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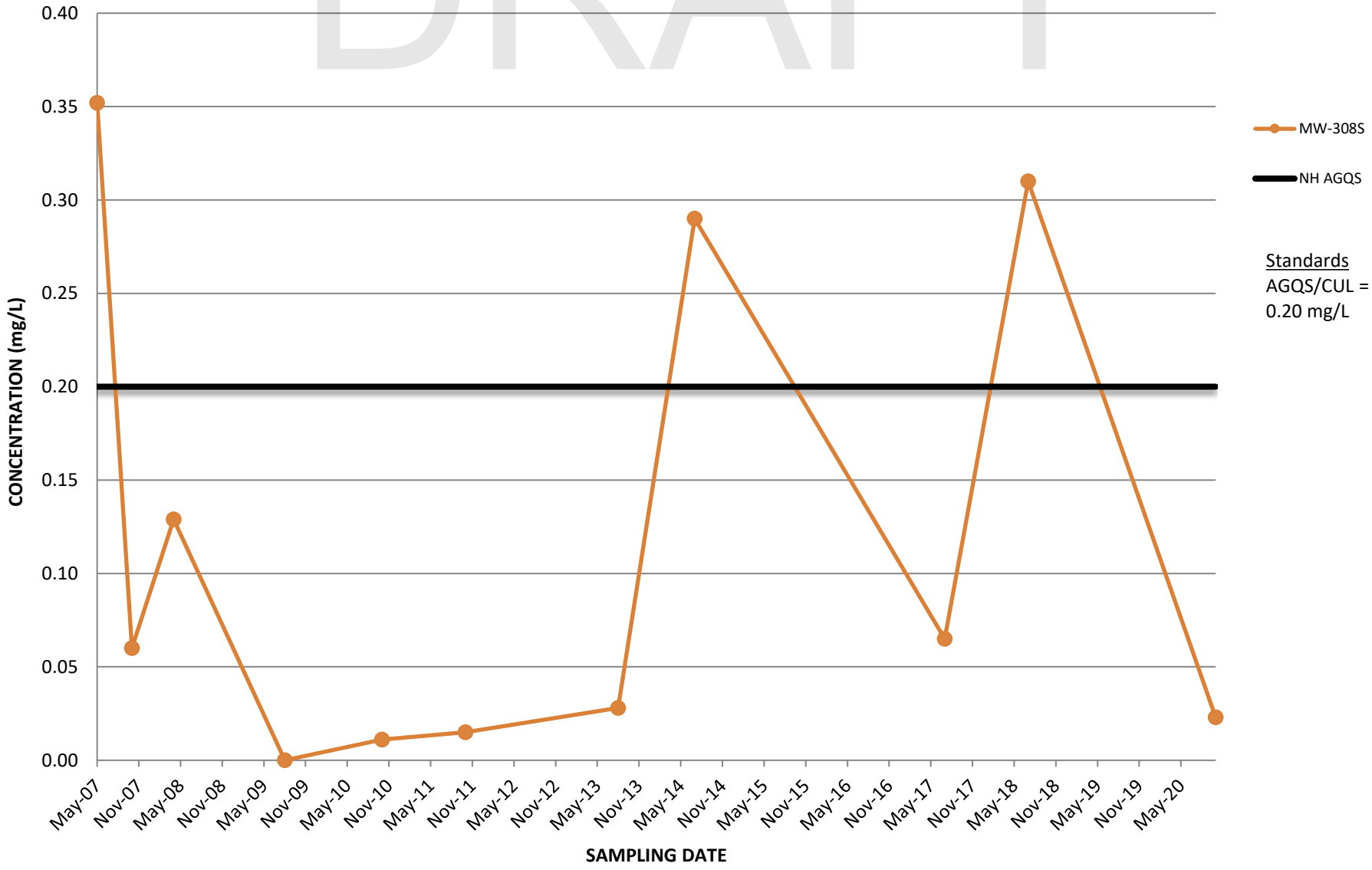

Graph 4A
Cadmium (Cd) Concentration Trends Exceeding AGQS/ROD CUL
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

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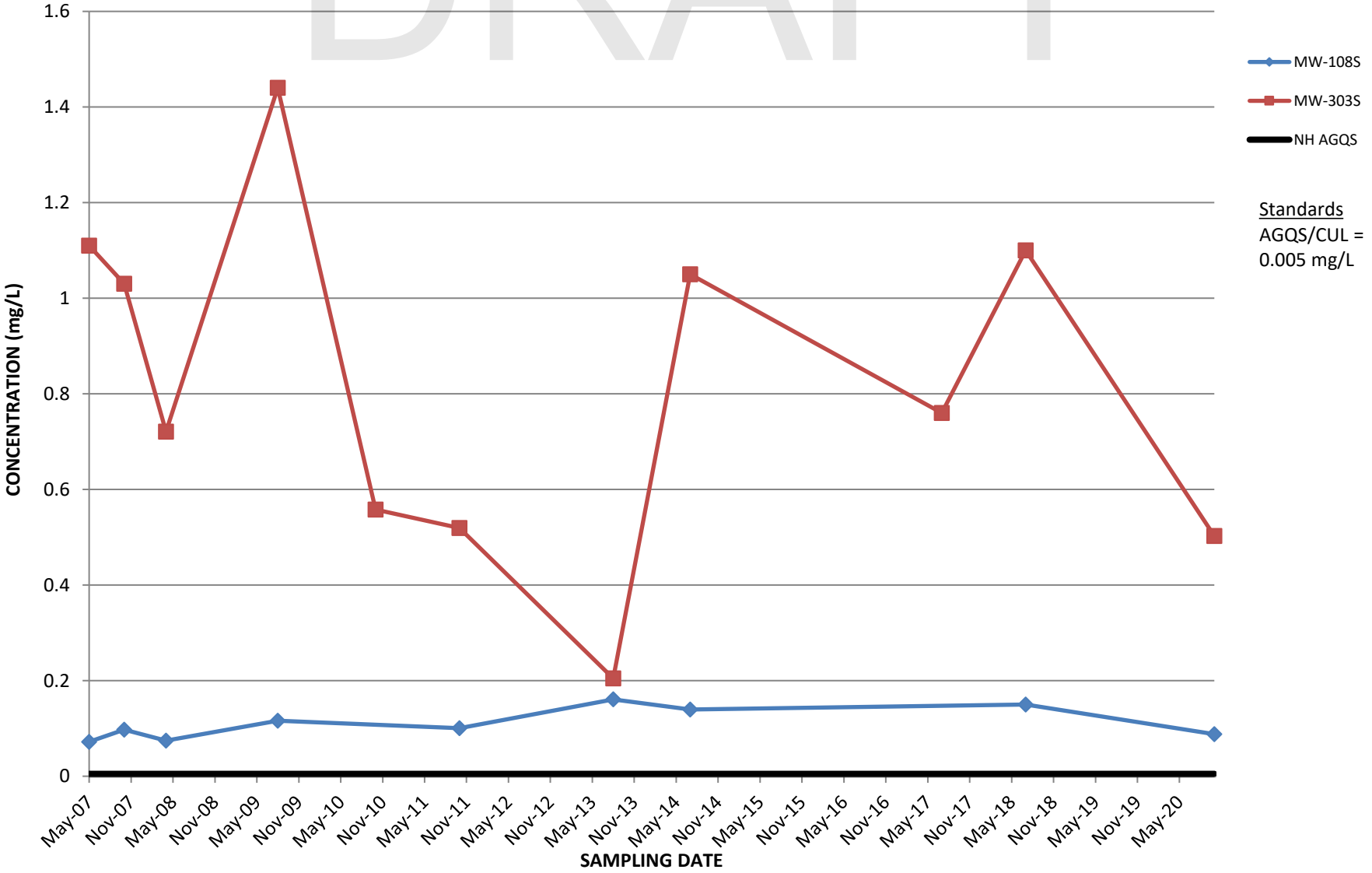

Graph 4B
Cadmium (Cd) Concentration Trends Exceeding AGQS/ROD CUL
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

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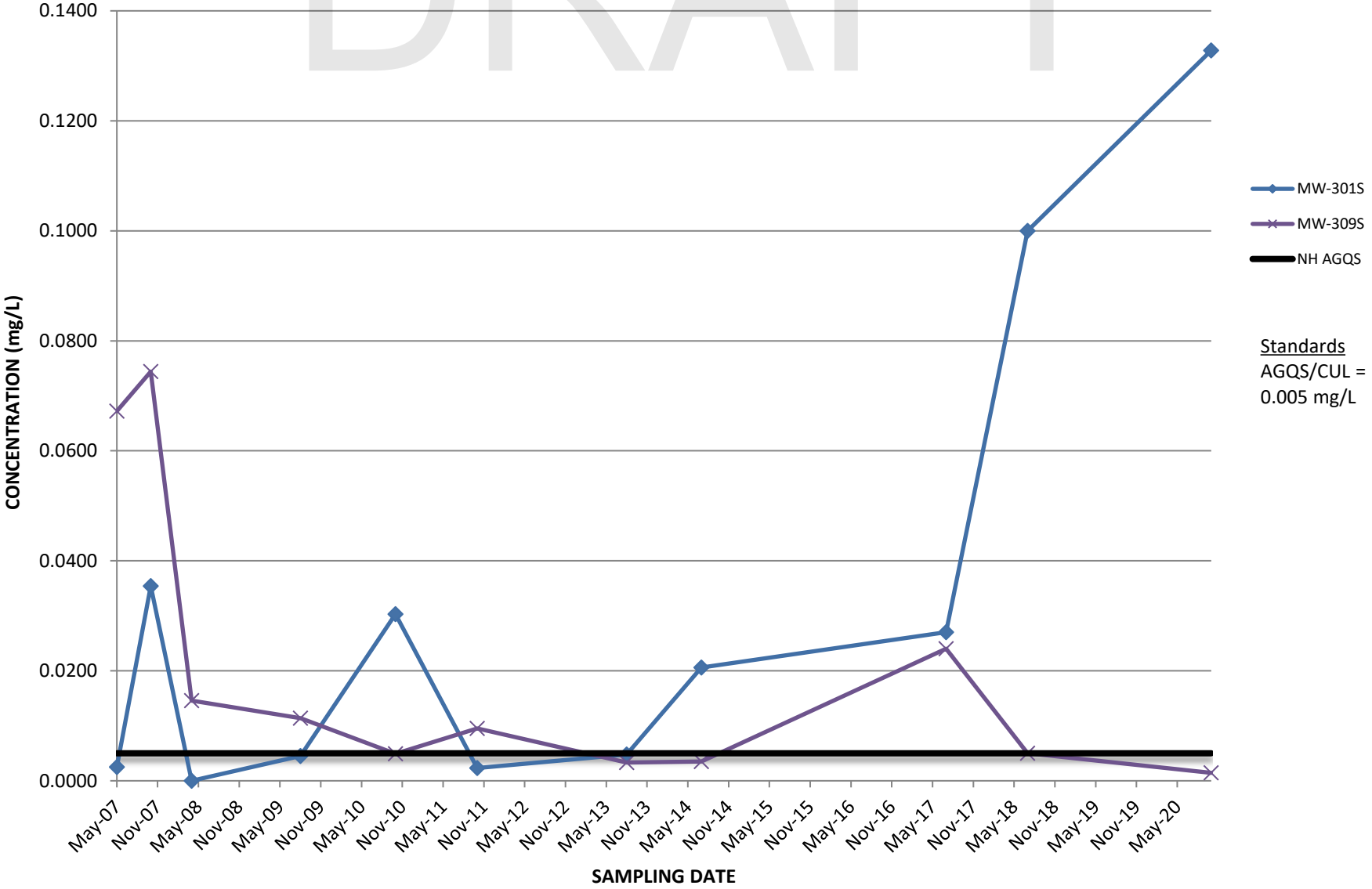

Graph 5
Nickel (Ni) Concentration Trends Exceeding AGQS/ROD CUL
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

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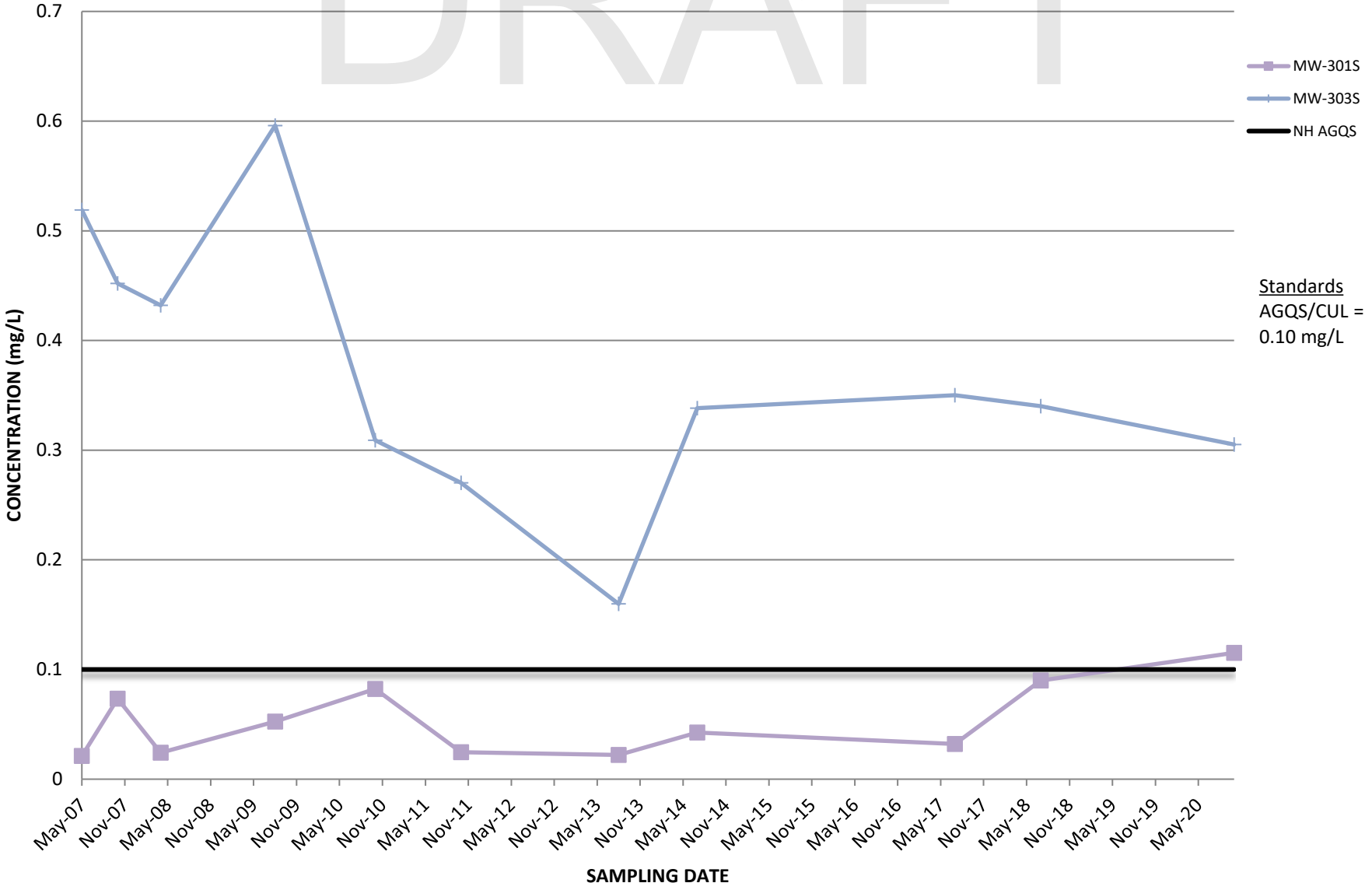

Graph 6
Arsenic (As) Concentration Trends Exceeding AGQS/ROD CUL
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

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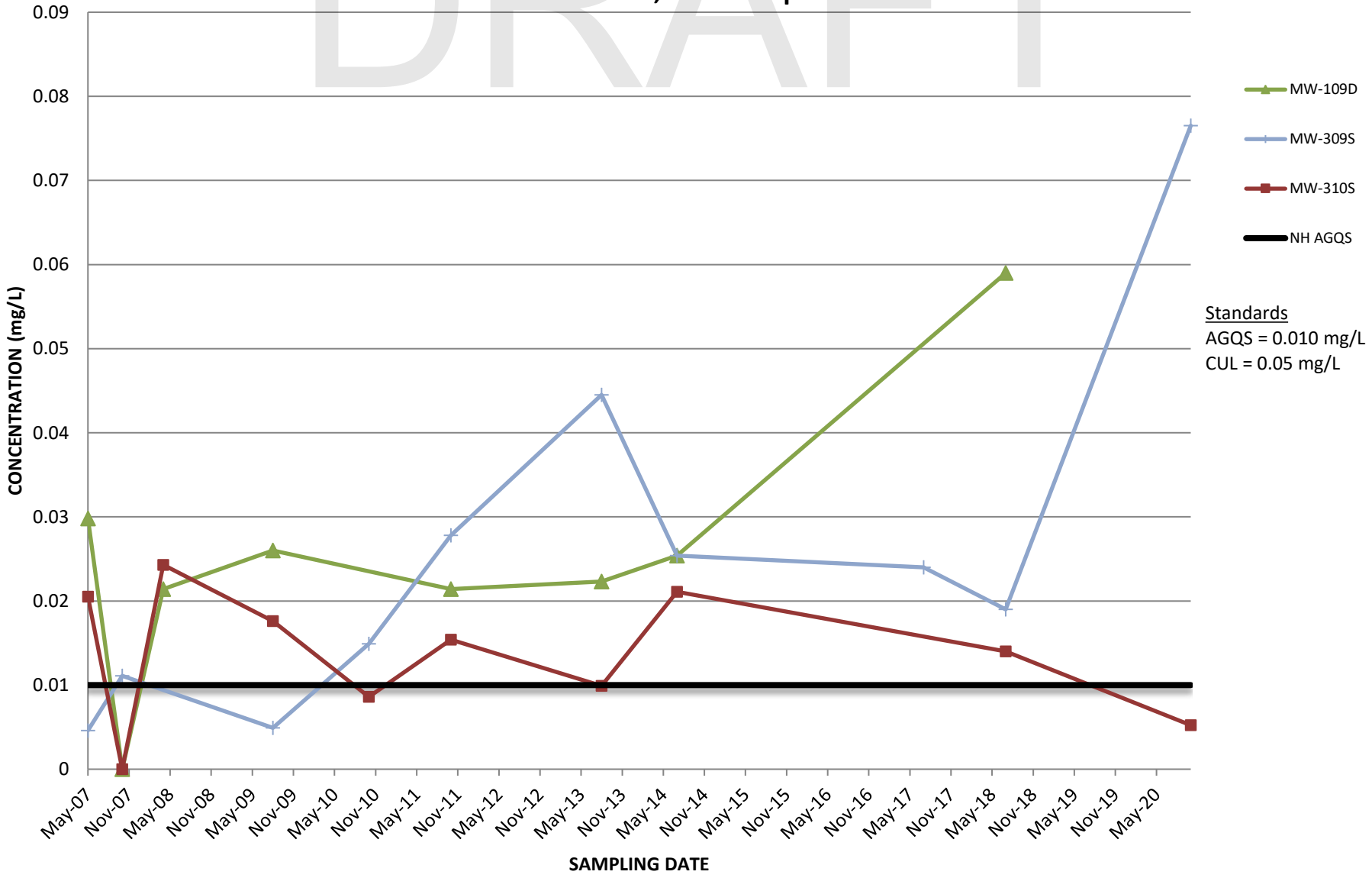

Graph 7
Manganese (Mn) Concentration Trends Exceeding AGQS
New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

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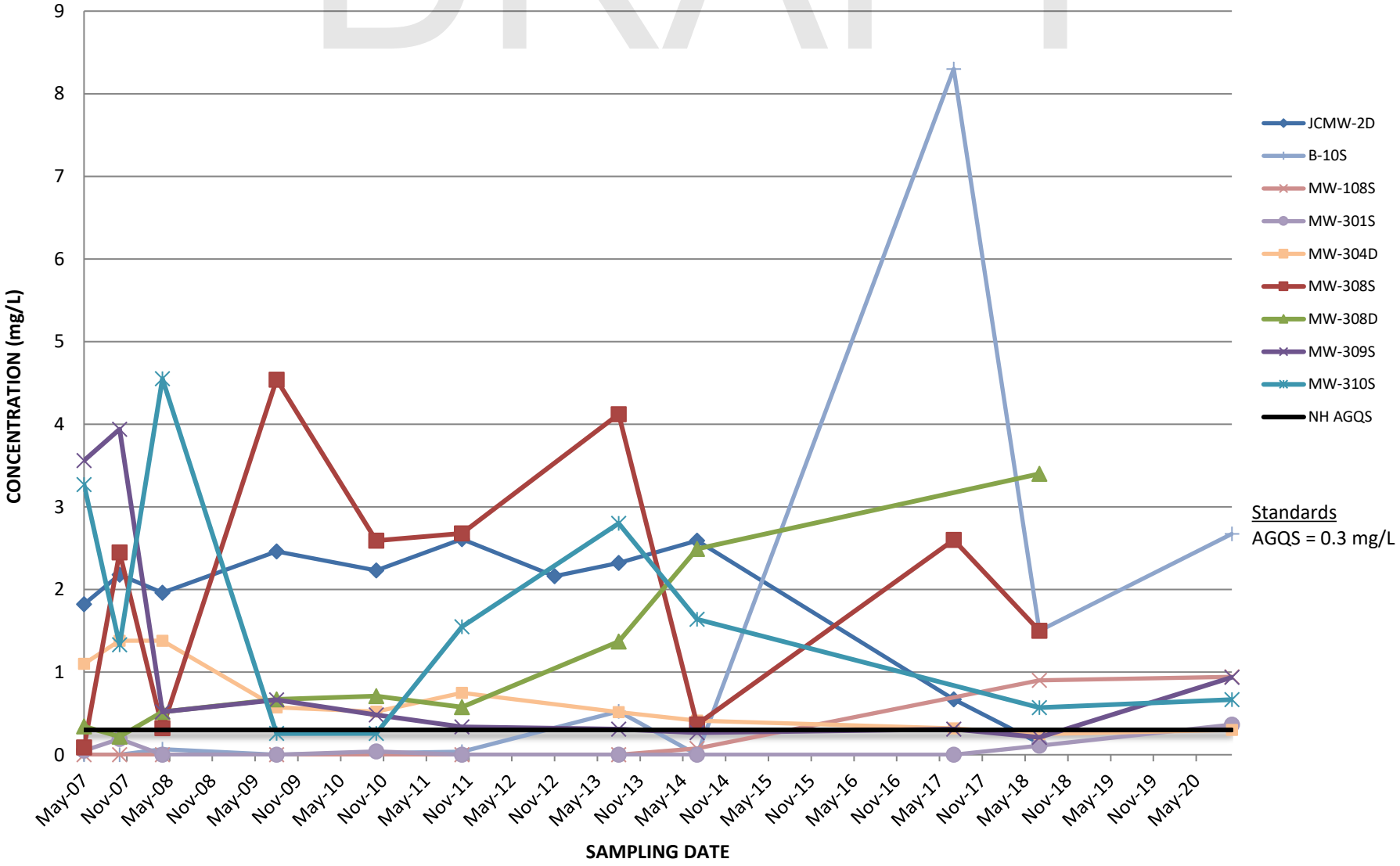

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Appendix A – Limitations

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USE OF REPORT

1. GZA GeoEnvironmental, Inc. (GZA) prepared this report on behalf of, and for the exclusive use of our Client for the stated purpose(s) and location(s) identified in the Proposal for Services and/or Report. Use of this report, in whole or in part, at other locations, or for other purposes, may lead to inappropriate conclusions; and we do not accept any responsibility for the consequences of such use(s). Further, reliance by any party not expressly identified in the agreement, for any use, without our prior written permission, shall be at that party's sole risk, and without any liability to GZA.

STANDARD OF CARE

2. GZA's findings and conclusions are based on the work conducted as part of the Scope of Services set forth in the Proposal for Services and/or Report and reflect our professional judgment. These findings and conclusions must be considered not as scientific or engineering certainties, but rather as our professional opinions concerning the limited data gathered during the course of our work. Conditions other than described in this report may be found at the subject location(s).

3. GZA's services were performed using the degree of skill and care ordinarily exercised by qualified professionals performing the same type of services, at the same time, under similar conditions, at the same or a similar property. No warranty, expressed or implied, is made. Specifically, GZA does not and cannot represent that the Site contains no hazardous material, oil, or other latent condition beyond that observed by GZA during its study. Additionally, GZA makes no warranty that any response action or recommended action will achieve all of its objectives or that the findings of this study will be upheld by a local, state or federal agency.

4. In conducting our work, GZA relied upon certain information made available by public agencies, Client and/or others. GZA did not attempt to independently verify the accuracy or completeness of that information. Inconsistencies in this information which we have noted, if any, are discussed in the Report.

SUBSURFACE CONDITIONS

5. The generalized soil profile(s) provided in our Report are based on widely-spaced subsurface explorations and are intended only to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized, and were based on our assessment of subsurface conditions. The composition of strata, and the transitions between strata, may be more variable and more complex than indicated. For more specific information on soil conditions at a specific location refer to the exploration logs. The nature and extent of variations between these explorations may not become evident until further exploration or construction. If variations or other latent conditions then become evident, it will be necessary to reevaluate the conclusions and recommendations of this report.

6. Water level readings have been made, as described in this Report, in and monitoring wells at the specified times and under the stated conditions. These data have been reviewed and interpretations have been made in this report. Fluctuations in the level of the groundwater however occur due to temporal or spatial variations in areal recharge rates, soil heterogeneities, the presence of subsurface utilities, and/or natural or artificially induced perturbations. The observed water table may be other than indicated in the Report.

COMPLIANCE WITH CODES AND REGULATIONS

7. We used reasonable care in identifying and interpreting applicable codes and regulations necessary to execute our scope of work. These codes and regulations are subject to various, and possibly contradictory, interpretations. Interpretations and compliance with codes and regulations by other parties is beyond our control.

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SCREENING AND ANALYTICAL TESTING

8. GZA collected environmental samples at the locations identified in the Report. These samples were analyzed for the specific parameters identified in the report. Additional constituents, for which analyses were not conducted, may be present in soil, groundwater, surface water, sediment and/or air. Future Site activities and uses may result in a requirement for additional testing.

9. Our interpretation of field screening and laboratory data is presented in the Report. Unless otherwise noted, we relied upon the laboratory's QA/QC program to validate these data.

10. Variations in the types and concentrations of contaminants observed at a given location or time may occur due to release mechanisms, disposal practices, changes in flow paths, and/or the influence of various physical, chemical, biological or radiological processes. Subsequently observed concentrations may be other than indicated in the Report.

INTERPRETATION OF DATA

11. Our opinions are based on available information as described in the Report, and on our professional judgment. Additional observations made over time, and/or space, may not support the opinions provided in the Report.

ADDITIONAL INFORMATION

12. In the event that the Client or others authorized to use this report obtain additional information on environmental or hazardous waste issues at the Site not contained in this report, such information shall be brought to GZA's attention forthwith. GZA will evaluate such information and, on the basis of this evaluation, may modify the conclusions stated in this report.

ADDITIONAL SERVICES

13. GZA recommends that we be retained to provide services during any future investigations, design, implementation activities, construction, and/or property development/ redevelopment at the Site. This will allow us the opportunity to: i) observe conditions and compliance with our design concepts and opinions; ii) allow for changes in the event that conditions are other than anticipated; iii) provide modifications to our design; and iv) assess the consequences of changes in technologies and/or regulations.

CONCEPTUAL SITE MODEL

14. Our opinions were developed, in part, based upon a comparison of site data to conditions anticipated within our Conceptual Site Model (CSM). The CSM is based on available information, and professional judgment. There are rarely sufficient data to develop a unique CSM. Therefore observations over time, and/or space, may vary from those depicted in the CSM provided in this report. In addition, the CSM should be evaluated and refined (as appropriate) whenever significant new information and/or data is obtained.

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Appendix B – Conceptual Site Model

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The Conceptual Site Model (CSM) encompassing Site hydrogeology, known sources of contamination, contaminant migration pathways, and receptors was established through the 1996 Remedial Investigation (RI) and 1998 Record of Decision (ROD) and has been revised based on the findings of the Supplemental RI (SRI) activities performed between 2015 and 2019.

GEOLOGY

OVERBURDEN STRATIGRAPHY

The subsurface soils encountered beneath the New Hampshire Plating Company (NHPC) properties and the greater Site, ordered from ground surface to bedrock, generally consist of alluvial sand deposits overlying glacio-lacustrine/paleofluvial (generally referred to as lacustrine in this report), glacial outwash, and glacial till deposits. Glacial till deposits, while anticipated to be present beneath the Site, may be thin and are anticipated to be laterally discontinuous within the study area. The glacial outwash deposits are present beneath the NHPC properties but are absent or thin on the eastern edge of the Site adjacent to the Merrimack River. The glacial outwash deposits are anticipated to have prograded from the west.

The lower permeability lacustrine deposits from glacial Lake Merrimack and the paleo-Merrimack River were observed in the subsurface soils across much, but not throughout, the study area. The Site appears to be located near the western and potentially southern edges of glacial lake Merrimack because the lacustrine deposits underlie the majority of the Site but are thin or absent beneath the extreme western portions of the Site and beneath areas toward the south and southwest of the Site. The lacustrine deposits do not constitute a vertically or horizontally continuous deposit and include lobes of fine materials extending horizontally and interbedded layers of coarser materials with greater permeability. Refer to Figures I-3 through I-6 in Appendix I and the Waterloo profiling cross sections included in Appendix O of the 2020 SRI report.

BEDROCK GEOLOGY

According to the Bedrock Geologic Map of New Hampshire[1], bedrock underlying the Site and Site vicinity consists of an unnamed member of the Berwick Formation within the Merrimack Group, which is described in New Hampshire as consisting of purple biotite-feldspar granofels or schist with interbeds of calcsilicate granofels.

A trough-shaped depression is present in the bedrock surface between the former NHPC building and Horseshoe Pond. This feature is oriented in an approximately southwest-northeast direction, and it may extend across the southern portion of the study area. The deepest portion of the depression is located beneath the southern portion of the Site.

SUMMARY OF HYDROGEOLOGY

During the 1995 RI and follow-on investigations, three relatively higher permeability hydrogeologic units were identified beneath the study area:

- An unconfined shallow overburden unit between approximately 5 and 40 feet below ground surface (bgs), consisting of the alluvium deposits and saturated fill materials, bounded at depth by lower permeability lacustrine deposits;

[1] Lyons, J.B., Bothner, W.A., Moench, R.H., and Thompson, J.B. 1997, Bedrock Geologic Map of New Hampshire, USGS.

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- A deep overburden hydrogeologic unit underlying the lacustrine deposits consisting of the glacial outwash sand deposits. This aquifer is semi-confined by the overlying lacustrine deposits throughout most of the study area. The deep unit ranges between 10 and 75 feet thick across the study area, showing a general trend of thinning toward down gradient locations adjacent to the Merrimack River; and

- A fractured bedrock hydrogeologic unit that underlies the study area. The presence and apparent southwest-northeast orientation of the trough-like depression in the bedrock surface and published information regarding the orientation of bedding and photolineaments within the vicinity of the Site suggest the presence of a southwest-northeast primary fracture orientation. Within fractured crystalline bedrock, the orientation of hydraulically interconnected fractures and hydraulic head gradient largely determine the direction of groundwater flow.

SHALLOW OVERBURDEN GROUNDWATER FLOW

The predominant groundwater flow direction in the shallow overburden hydrogeologic unit (alluvium deposit) is inferred to be to the southeast and east toward the Merrimack River, which flows in a southerly direction along the eastern boundary of the Site (refer to **Figure 2**).

A component of groundwater flow is present beneath the western portion of the Site which flows toward the southwest and the Acme Pressure Washing property. A small drainage pond/wetland area is located southwest of the northwestern portion of the Site (on the Synergy Self Storage property). The estimated southwesterly direction of groundwater flow suggests flow toward the off-Site wetland area and possible discharge to Horseshoe Pond.

DEEP OVERBURDEN GROUNDWATER FLOW

The predominant groundwater flow direction in the deep overburden hydrogeologic unit (glacial till and outwash/deltaic deposits) is inferred to be toward the southeast and south toward the Merrimack River. As inferred by the estimated hydraulic head contours shown on **Figure 3**, groundwater flow beneath the northern and eastern central portions of the Site is toward the east and is influenced by the effects of the withdrawal of groundwater from bedrock groundwater supply well (JCPROD-1) on the Jones Chemical, Inc. (JCI) property. JCPROD-1 is used by JCI for non-potable, non-contact cooling water.

FRACTURED BEDROCK GROUNDWATER FLOW

The predominant direction of groundwater flow within fractured bedrock is inferred to be to the southeast and east toward the Merrimack River (refer to **Figure 4**). Estimated bedrock groundwater hydraulic head contours, groundwater quality, surface topography, and structural information suggest the presence of a primary fracture orientation and groundwater flow in bedrock toward the south under the southwestern portion of the Site. As noted above relative to groundwater flow within the deep overburden, the withdrawal of groundwater from bedrock groundwater supply well JCPROD-1 is interpreted to create a localized hydraulic head gradient and groundwater flow toward the JCI water supply well located in the northern portion of the Site.

The above description generally assumes that within the fractured bedrock, groundwater flow is consistent with a homogeneous isotropic porous media. Groundwater flow within the fractured bedrock occurs along fractures that are likely not fully orthogonal to the estimated hydraulic head contours. Consequently, the direction of groundwater flow may vary locally from the bulk direction flow inferred from the estimated hydraulic head contours.

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As noted in the bedrock geology discussion above, the presence and apparent southwest-northeast orientation of a trough-like depression in the bedrock surface, published information regarding the orientation of bedding and photolineaments within the vicinity of the Site, and historical water quality data suggest the presence of a southwest-northeast primary bedrock fracture set which may result in bedrock groundwater flow toward the south/southwest, as well as toward the southeast and east. The hydraulic head measured within wells screened in the fractured bedrock also suggest a potential west-northwest – east-southeast fracture set orientation as evidenced by the estimated hydraulic head contours under the influence of the bedrock groundwater withdrawal from bedrock groundwater supply well JCPROD-1.

VERTICAL COMPONENT OF GROUNDWATER FLOW

Water level measurements collected from the multilevel well clusters located in the southernmost portion of the NHPC properties and areas to the south and southeast generally indicate the presence of an upward vertical component of the hydraulic head gradient. Downward vertical components of the hydraulic head gradient have been estimated based on measurements made in wells located throughout the central and northern portions of the NHPC properties and the southwest portion of the Site. Water level measurements within well couplets located on the eastern portion of the Site in the vicinity of bedrock groundwater supply well JCPROD-1 also generally indicate a downward vertical component of the hydraulic head gradient. The downward vertical gradients beneath the NHPC property, and areas within the eastern portion of the Site, are likely due to the operation of well JCPROD-1. Based on the potential presence of fractures in bedrock trending toward the southwest, the downward vertical gradients measured toward the southwest of the Site may also be related to the operation of well JCPROD-1.

POTENTIAL SOURCES AND SPATIAL EXTENT OF SITE CONTAMINATION

COCS

The ROD-specified contaminants of concern (COCs) for soil are arsenic, beryllium, cadmium, chromium, cyanide, lead, manganese, and nickel. The ROD identified eight volatile organic compounds (VOCs) (trichloroethene [TCE]; 1,1-dichloroethene [1,1-DCE]; tetrachloroethene [PCE]; vinyl chloride [VC]; 1,1,1-trichloroethane [TCA]; cis- and trans-dichloroethene [cis- and trans-DCE]; 1,2-dichloroethane; and chloroform), five metals and metalloids (cadmium, nickel, chromium, arsenic, and lead), and cyanide as the groundwater COCs at the Site. Refer to **Section 2.4** of the main report for a further description of the ROD cleanup levels (CULs) for groundwater. Site-related contaminants were not detected in surface water and sediments taken from Horseshoe Pond and the Merrimack River during the 1995 RI; therefore, COCs and ROD CULs were not established for sediment or surface water.

POTENTIAL SOURCES OF CONTAMINATION

The primary source areas of contaminants within the NHPC properties resulted from the discharge of NHPC facility operation waste waters into the former lagoons and from discharge, spills, and leaks into the subsurface under the former NHPC building area. Releases from the lagoons, in particular Lagoon 1, the primary discharge location, have historically contributed the majority of subsurface contamination, both in soils and in groundwater. Subsurface support facilities associated with the former building (i.e., the underground storage tank and leaching fields) may have also been historical sources of contamination. In addition, releases may have occurred on the Acme property during the period between 1962 and 1965 when it was owned and operated by NHPC.

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Contaminants in groundwater beneath and hydraulically downgradient of the lagoons are a result of former operations and leaching of contaminants through the lagoon bases and embankments. Both organic and inorganic contaminants have migrated from the lagoons into the three hydrogeologic units beneath the Site. Contaminant leaching from soils to groundwater and migration of contaminated groundwater have been the most significant migration pathways at the Site.

Shallow chlorinated volatile organic compound (cVOC) contamination in subsurface soils and groundwater was likely driven by leaching from the waste lagoons and/or by other localized subsurface sources (e.g., support facilities). Recent information compiled for the 2020 SRI report indicates that TCE spread with groundwater flow to the southwest, south, and southeast of the original source areas.

Over time, the natural gradients allowed cVOCs to diffuse and adsorb into the discontinuous, lower-permeability, less-transmissive lacustrine deposits. Following remedial actions addressing the lagoon sources, and dispersion of the majority of the plume within the shallow hydrostratigraphic unit, back diffusion of dissolved TCE from the lacustrine unit became the primary source of the TCE plume in the higher permeability shallow and deep hydrostratigraphic units. While concentrations remain elevated in groundwater, aqueous cVOC concentrations are currently relatively stable and a function of the rate of back diffusion. The cVOC mass remaining within the shallow and deep portions of the lacustrine unit will continue to govern attenuation rates. Refer to Figure I-7 and Figure I-8 in Appendix I of the 2020 SRI report.

DISTRIBUTION OF COCS IN SOIL

Soil excavation, treatment, and disposal reduced concentrations of COCs within vadose zone soil to cleanup levels in all areas except the northern wetland area where a shallow water table limited vertical excavation and additional excavation would have caused structural damage to adjacent properties. The Environmental Protection Agency (EPA) then determined that best efforts had been made to achieve the cadmium clean-up level for soil in the northern wetland area. After determining that cadmium concentrations above cleanup levels in the northern wetland area would have a minimal overall effect on water quality in the Merrimack River, the cleanup level was revised upward to 3.92 mg/kg in the northern wetland area.

With the exception of a sample collected at 19.0 feet bgs at GP-118 on the Acme property, VOCs were not detected above the New Hampshire Soil Remediation Standards (SRS) in phreatic zone soil samples collected during the 2015 and 2017 SRI high resolution groundwater investigation. VOCs were detected within soil vapor samples collected proximate to the Acme building and on the NHPC property proximate to the former southern wetland area (and currently the MW-303 series wells) and the Acme/NHPC property boundary, indicating that VOC soil contamination exceeding SRS may exist in the vadose zone on the Acme property.

DISTRIBUTION OF CHLORINATED VOLATILE ORGANIC COMPOUNDS IN GROUNDWATER

The concentrations and distribution of dissolved-phase TCE and the direction of groundwater flow have historically suggested that residual free-phase TCE is not likely to be present on the Site. Dissolved-phase VOCs exceeding New Hampshire Ambient Groundwater Quality Standards (AGQS)/ROD CULs in the overburden were observed during the Waterloo investigations to generally be located within the vicinity of the lacustrine deposits, with attenuation to below AGQS/ROD CUL occurring vertically within 10 to 15 feet of the lacustrine deposits (refer to Appendix O and Figure I-7 through Figure I-12 in Appendix I of the 2020 SRI report). The horizontal extent of the dissolved-phase VOC plume exceeding AGQS/ROD CULs (based on TCE concentrations) is described as follows:

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- Within the shallow overburden unit (refer to Figure 3 of the 2020 SRI report), the plume extends toward the north to slightly beyond MW-304S on NHPC and GP-213 on Transupport; toward the east to the Merrimack River; toward the south under Wright Avenue and less than 300 feet into the former YMCA property; and toward the west toward the western edge of the Acme property. The shallow groundwater unit plume is anticipated to discharge to the Merrimack River (refer to Figure 3-3 of the 1995 RI report and Figure I-9 in Appendix I and Figure O-7 in Appendix O of the 2020 SRI report);

- Within the deep overburden unit (refer to Figure 5 of the 2020 SRI report), the plume extends toward the north to a point between MW-402D and MW-312D; toward the east to the eastern edge of the Transupport, Equivise, Combat Corp., and New England Pole properties; toward the south proximate to Horseshoe Pond; and toward the west to just before the western edge of the Acme property. Currently, the deep overburden plume does not appear to extend beneath the Merrimack River; and

- TCE has been detected in groundwater within southern bedrock well MW-106R, located near Horseshoe Pond, and southwestern bedrock well MW-400R, located on the western edge of the adjacent Acme property, at concentrations at or near AGQS. Based on our understanding, VOC transport and concentration at these locations may be influenced by the orientation of fractures trending consistent with a south-southwest linear (trough-like) depression in the bedrock surface.

METALS CONTAMINATION IN GROUNDWATER

The highest concentrations of cadmium and nickel have been historically detected in the shallow overburden hydrogeologic unit. Cadmium is observed primarily in the shallow overburden while nickel has been observed in groundwater in both the shallow and deep overburden hydrogeologic units. The historical spatial distribution of cadmium and nickel in the shallow overburden are consistent with the former release of metals near/within the footprint of former Lagoon 1 and the southern wetland area (**Figure 1B**) with plumes extending downgradient to the south, east, and southwest. Metals concentrations exceeding AGQS/ROD CUL within the deep overburden have historically been limited to the southwestern area of the former Lagoon 2, near MW-304D. Low levels of metals of concern, generally below AGQS/ROD CULs, have been detected in upgradient bedrock well MW-102R and bedrock wells MW-308R and MW-309R located in the southern portion of the NHPC properties.

PFAS CONTAMINATION IN GROUNDWATER

Detected exceedances of the AGQS for PFOA (12 ng/L) extend across the Site and have been observed on each Site property, with the exception of the Transupport property (**Figure 2**). The downgradient extent of concentrations exceeding AGQS to the south is not fully delineated as groundwater samples for PFAS analysis have not yet been collected from the MW-109 triplet.

Detected exceedances of the EPA SL of 40 ng/L for PFOA in groundwater have been observed in wells located in the northwestern corner of the NHPC properties (background bedrock well MW-102R), the southern portion of the NHPC properties, and on the JCI, former YMCA, NE Pole, and Equivise properties. Exceedances of the EPA Health Advisories and NH AGQS of 70 ng/L for PFOA and 70 ng/L for the combined concentrations of PFOA and PFOS have been observed in wells near the former NHPC building, Lagoon 1, and Southern Wetland Areas on the NHPC properties and on the Equivise and former YMCA properties.

Detected concentrations of PFBS and PFOS in groundwater did not exceed the established SLs of 40,000 ng/L and 40 ng/L, respectively, and concentrations of PFOS did not exceed the EPA Health Advisory and NH AGQS of 70 ng/L.

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The detected concentrations of PFOS, PFNA, and PFHxS did not exceed their respective AGQS of 15 ng/L, 11 ng/L, and 18 ng/L.

CONTAMINANT FATE AND TRANSPORT

CVOCS

The presence, distribution, and persistence of contaminants in the environment are largely dependent upon the chemical-physical properties of the individual compounds. Detected cVOCs can be transported and transformed through a variety of transport and biotic/abiotic transformation mechanisms. The transport and transformation mechanisms that dominate can vary spatially and temporally and depend on the form of the contamination (e.g., dissolved-phase or vapor-phase) and the individual contaminant.

- Where cVOCs exist in the soil within the vadose zone, dissolution and transport as a solute in infiltrating and percolating precipitation, as well as vapor-phase transport by molecular diffusion, are major mechanisms for residual contaminant removal. These two mechanisms tend to remove VOCs from unsaturated soils. The effectiveness of removal decreases with depth and as the water table is approached;

- Within the saturated zone, the major mechanism for contaminant transport is dissolution into groundwater and transport by advection and hydrodynamic dispersion. The majority of VOC contaminants present at the Site are mobile or highly mobile in the subsurface;

- The higher-permeability shallow and deep hydrogeologic units have persistent, strongly inhibiting conditions for biological degradation such as elevated dissolved oxygen (DO) and generally low microbial activity for cVOC degrading communities. In addition, indicators of abiotic degradation were relatively low in the higher-permeability units; therefore, attenuation within these units is strongly controlled by advection and dispersion; and

- Based on results of the 1-D CSIA and other natural attenuation assessments, cVOC degradation is occurring within the lacustrine zone, albeit at a very slow rate, where biodegradation is enhanced by anaerobic groundwater conditions and longer contact time between contaminants, bacteria, and nutrients and abiotic degradation is enhanced by longer contact time with iron oxide and sulfide minerals possessing smaller particle sizes and larger surface areas.

METALS

Relative to metals in Site groundwater, DO, and oxidation-reduction potential (ORP) data suggest generally oxidizing conditions in the shallow and deep flow systems. Under such conditions, cadmium and, to a lesser extent, nickel release from the soil may be promoted via oxidative dissolution of metal sulfides and/or decomposition of potentially-binding organic matter; however, given the generally neutral pH conditions at the Site, adsorption likely represents a significant limiting factor in terms of mobility of metals-of-concern in groundwater, as cadmium and nickel are recognized as being precipitated or absorbed by soil at pH levels of 6 or greater.[2]

[2] U.S. EPA, 1992. "Ground Water Issue – Behavior of Metals in Soils," EPA/540/S-92/018.

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RECEPTORS TO SITE CONTAMINATION

At the time of the ROD, there were no known human receptors for Site contamination. The RAOs were established in the 1998 ROD for the source control component and addressed leaching from soil to groundwater and direct contact exposures of cadmium for ecological receptors in the top 2 feet of soil at the lagoon area and the north and south wetlands. The chemical fixation addressed the future leaching of metals into groundwater while a 2-foot-thick permeable soil cover was placed over the treated and backfilled soils to prevent exposure for ecological receptors.

GROUNDWATER RECEPTORS

There are no known drinking water supply wells within the vicinity of the Site. Water users within the Site vicinity are supplied with drinking water via a water line from the Merrimack Village District water supply. The JCI production well is used to supply non-contact production water and historical sampling of the well has not detected concentrations of COCs above laboratory reporting limits since at least 2010.

SURFACE WATER

Site VOCs potentially discharge to the Merrimack River through the shallow overburden based on the concentrations detected above the low permeability lacustrine unit during the Waterloo investigation; however, based on historical groundwater sampling and the high stream flow within the Merrimack River, detectable concentrations of Site contaminants within the River from potential Site-related discharges are not anticipated. Refer to Figure 3-3 of the 1995 RI report and Figure I-9 in Appendix I and Figure O-7 in Appendix O of the 2020 SRI report.

Site VOCs are not anticipated to discharge to Horseshoe Pond because the lacustrine unit generally pinches out on the northern portion of the former YMCA property. Concentrations of TCE detected in groundwater between the edge of the lacustrine and Horseshoe Pond during the SRI did not exceed the AGQS/ROD CUL. Refer to Figure I-9 and Figure I-13 in Appendix I and Figure O-2 in Appendix O of the 2020 SRI report.

POTENTIAL VAPOR ENCROACHMENT

During July 2012, EPA conducted indoor air and sub-slab soil gas sampling from within two structures on the New England Pole property, located southeast and downgradient of the NHPC property. This was performed to evaluate a potential VI pathway risk based on historical VOC concentration data for groundwater samples collected within the shallow overburden. Along with indoor air and sub-slab soil gas sampling, EPA performed concurrent groundwater sampling and analysis from selected wells proximate to the two structures. Based on their findings and conclusions, EPA determined that no further assessment of VI at these locations was warranted.

Although a direct connection has not been established between the soil vapor on the NHPC property, the PCE in soil vapor on the Acme property, and the PCE in indoor air quality samples collected within the Acme building (i.e., no PCE currently detected in groundwater at Acme or at elevated concentrations in soil vapor on the NHPC properties), PCE is a COC at the NHPC Site and has historically been detected at elevated concentrations within soil and groundwater beneath the former location of Lagoon 1. Lagoon 1 is understood to be one of the main contamination source areas on the NHPC Site and hydrogeologic modeling for the Site indicates components of groundwater flow from Lagoon 1 and the former southern wetland area to the southwest and the Acme property.

DRAFT

The potential for future vapor intrusion exists on properties where concentrations of VOCs exist above the EPA Vapor Intrusion Screening Levels (VISLs) in shallow overburden groundwater. Refer to Figure 3 and Figure 4 of the 2020 SRI report for properties with elevated TCE concentrations in shallow overburden groundwater.

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Appendix C – Field Notes

NHPC Superfund Site
Merrimack, NH
04.0190987.11

10-19-2020

DRAFT

Time On-site: 0730-1100
Weather: Partly cloudy, 60s
Personnel: Megan Murphy (MEM) - notetaker; Matt Bergen (MJB); Erik Dyrness (EBD)
TASK: Perform initial comprehensive groundwater level measuring round and setting up basecamp

0730 - GZA arrive on-site; perform Health and safety meeting; Portapotty arrived on-site
↳ MJB and EBD to begin gauging wells
↳ MEM to set up Base Camp and organize supplies/equipment for sampling event

1000 - Discovered that the 3 rented water levels from Pine could not fit through bladder pump openings on select wells with pump installations. MEM contacted US Environmental to obtain use of thier skinny dipper WL probe for bladder pump wells

1100 - Off-site to cal. 2 SmarTroll units at office

NHPC Superfund Site
Merrimack, NH
04.0190987.11

10-19-2020

Time On-site: 0730 - 1100
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1100 - Off-site to cal. 2 SmarTroll units at office

NHPC Superfund Site
Merrimack, NH
04.0190987.11

10-20-2020

Time On-site: 0730 - 1550
Weather: Partly cloudy; 60s
Personnel: Megan Murphy (MEM) - notetaker; Matt Bergen (MJB); Erik Dyrness (EBD); Tanya Justham (TPJ)
Add. Personnel: Michael Summerlin (NHDES)
TASK: Perform cal checks on equipment and begin superfund 2020 groundwater sampling
EQUIPMENT: Solinst water level #900731
Hach 2100Q #9579
AquaTroll #689645
Geopump #483AL
} UNIT #2

0730 - Arrived at Site after performing morning cal. checks on Units #1 - #3
↳ all passed!
↳ performed H+S meeting and prep for sampling day

0830 - TPJ on-site → H+S meeting check

0900 - NHDES on-site → H+S meeting check
↳ provided 2020 SAP and SI Reports

→

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cont... NHPC Superfund Site 10-20-2020
04.0190987.11 - Merrimack, NH

0930 - Set up at NHP_MW-311D
- Decon w/ PFAS-free DI water
• SEE LOW FLOW SAMPLING SHEETS FOR ADD. DETAILS •

Turbidity readings: (NTUs)
–, 0.91, 0.89, 0.77, 0.82, 0.59, 0.63, 0.49, 0.44, 0.37

1015 - Noted AquaTroll was 500 series and that turbidity was being measured automatically. After attempting to adjust/edit turbidity parameters while unit was running (accounting for the blank cells and adjusted elapsed time changes on the low flow sheet), determined there wasn't a way to enter turbidity values manually on the VuSitu platform.

1030 - Contacted In-Situ for support. Spoke to the technician, Andy. He indicated that unfortunately if the turbidity sensor is installed on the sonde (regardless if it is the 500 or 600 AquaTroll series), turbidity will automatically be recorded. →

cont... NHPC Superfund Site 10-20-2020
Merrimack, NH - 04.0190987.11

However, in the future if we want to record turbidity manually, all we need to do is request that the turbidity sensor be removed.

1115 - Sample start - sample end at 1115
↳ PFAS Field Blank

1120 - Sample start - sample end at 1135
↳ PFAS, 1,4-Dioxane

1215 - Set up at NHP_MW-310S
- Decon w/ PFAS-free DI water
• SEE LOW FLOW SHEETS FOR ADDITIONAL DETAILS •

Turbidity readings: (NTUs)
~~2~~ MOM, 2.92
→ modified sampling required

1305 - Sample start - sample end at 1345
↳ PFAS, 1,4-Dioxane, Total metals

1415 - Return to Base Camp to break down and assist with end-of-day cal. checks →

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Cont... NHPC Superfund Site 10-20-2020
Merrimack, NH - 04.0190987.11

1445 - Began cal. checks
↳ Due to instability of the 718 conductivity solution, plan is to recal. the units after they successfully cal. checked in order to switch to using the 1413 conductivity solution (more stable) for future cal. checks
↳ All units passed!
↳ Recalibration to 1413 solution successful!

1550 - MEM off-site to deliver samples to Alpha Lab

MEM
10-30-2020

NHPC Superfund Site 10-21-2020
Merrimack, NH
04.0190987.11

Time On-site: 0700 - 1445
Weather: Raining, 60s
Personnel: Megan Murphy (MEM) - notetaker; Matt Bergen (MJB); Erik Dyrness (EBD)
TASK: Continue Superfund GW low flow 2020 sampling
EQUIP: Unit #2

0700 - Arrived on-site; began prep'ing for day of sampling
↳ conducted health and safety meeting

0800 - Arrive at NHP_MW-106 series
↳ rope attatching NHP-MW-106R tubing was severed and no longer visible within 6-inch well. Switched schedule and planned to sample MW-106 and B-105 until MW-106R tubing is either fished out of well or replaced.

0905 - Set up at NHP_MW-106
- Decon w/ PFAS-free DI water
• SEE LOW FLOW SAMPLING

→

DRAFT

cont... NHPC Superfund Site 10-21-2020
Merrimack, NH - 04.0190987.11

SHEETS FOR ADDITIONAL DETAILS •
Turbidity readings: (NTU)
–, 0.52, 0.67, 0.48, 0.91, 0.71, 0.55

1015 - Sample start - sample end 1040
↳ PFAS, VOCs, 1,4-Dioxane

1100 - Set up at NHP_B-10S
- Decon w/ PFAS-free DI water
• SEE LOW FLOW SAMPLING SHEETS FOR ADDITIONAL DETAILS •
Turbidity readings: (NTU)
–, 2.91
→ modified sampling required

1145 - Sample start - sample end 1205
↳ PFAS, Total metals

1230 - Attempted to retrieve tubing from NHP_MW-106R with EBD using a decon'ed 100' Water Level meter
↳ Success!

1300 - Began break down at NHP_B-10S

→

cont... NHPC Superfund Site 10-21-2020
Merrimack, NH - 04.0190987.11

1340 - Back at Base Camp; unloaded vehicles, checked COCs and cal. check sheets

1435 - Checked to see if enough replacement tubing was available for one of the 302 series (NHP_MW-302S) due to pinched tubing observed
↳ Replacement tubing not readily available - LDPE tubing only; HDPE tubing ordered from US Environmental

1445 - GZA off-site; locked gate
↳ MEM to drop samples off at Alpha Lab

MEM
10-30-2020

DRAFT

Rite in the Rain

NHPC Superfund Site
Merrimack, NH
04.0190987.11

10-22-2020

Time Onsite: 0705 - 1530
Weather: Sunny, 50s-60s
Personnel: Megan Murphy (MEM) - notetaker; Matt Bergen (MJB); Erik Dyrness (EBD)
Task: Continue sampling for lowflow GW 2020 Superfund
Equip: Unit #2
↳ sub. in: Water level: #229585
↳ sub. in: MP-10 Controller #MP10-3585

0705 - Arrived on-site; prep'ed for work day, conducted health and safety meeting

0815 - Left site for Patterson, Inc. property

0830 - Set up at NHP_MW-108S
- Decon w/ PFAS-free DI water
• SEE LOW FLOW SAMPLING SHEETS FOR ADDITIONAL DETAILS •
→ Modified sampling required
Turbidity readings (NTU):
-, 0.68

0920 - Sample start - sample end 1030
↳ PFAS, VOCs, 1,4-Dioxane, Total metals
→

cont... NHPC Superfund Site
Merrimack, NH - 04.0190987.11

10-22-2020

→ FULL DUP COLLECTED
↳ Equip. Blank required

1100 - Returned to Base Camp to collect Equip. Blank w/ EBD assist
EQUIP. BLANK at NHP_MW-108S

1115 - Sample start - sample end
↳ PFAS

1200 - Set up at NHP_MW-304D
- Decon w/ PFAS-free DI water
• Replaced silastic head tubing and removed approx. 1' of 0.25" kinked tubing
• SEE LOW FLOW SAMPLING SHEETS FOR ADDITIONAL DETAILS •
→ Full, original Unit #2 Equip. used
Turbidity readings (NTU):
-, 0.94, 0.67, 0.48, 0.38, 0.89

1245 - Sample start - sample end 1305
↳ PFAS, VOCs, 1,4-Dioxane, Total metals

1335 - Return to Base Camp; breakdown; check COCs, cals.

1445 - Discuss sampling schedule, prep. for weeks ahead

1530 - GZA off-site; locked gate; transport samples to Alpha Labs

DRAFT

NHPC Superfund Site
Memmack, NH
04.0190987.11

10-23-2020

TIME ONSITE: 0715 -
WEATHER: Overcast, rain, 50s-60s
PERSONNEL: Megan Murphy (MeM) - note-taker; Erik Dyrness (EBD)
TASK: Continue Superfund GW low flow 2020 sampling
EQUIP: UNIT #2

0715 - Arrive on-site; begin prep'ing for day
↳ organize equip. and coolers

0845 - EBD on-site; assist with prep
↳ MeM conducted health and safety meeting

0830 - Set up at NHP_MW-204S
- Decon w/ PFAS-free DI water
• SEE LOW FLOW SAMPLING SHEETS FOR ADDITIONAL DETAILS •
→ modified sampling required
↳ Water level # 229585
↳ MP-10 Controller # MP10-3585
Turbidity readings (NTU):
-, 0.37

0925 - Sample start - sample end 0955
↳ PFAS, VOCs, 1,4-Dioxane

cont... NHPC Superfund Site
Memimack, NH - 04.0190987.11

10-23-2020

1025 - Set up at NHP_MW-404SA
- Decon w/ PFAS-free DI water
• SEE LOW FLOW SAMPLING SHEETS FOR ADDITIONAL DETAILS •
→ original UNIT #2 equip. used
Turbidity readings (NTU):
-, 7.1, 7.8, 6.7, 5.4, 3.6, 2.3, 1.2, 1.6

1125 - Sample start - 1150 Sample end
↳ PFAS, VOCs, 1,4-Dioxane, Total metals, cyanide
* Per Michael Summerlin's (NHDES') request, NHP_MW-404S was renamed and labled: NHP_MW-404SA
* While collecting the cyanide sample, a reaction occurred upon contact with the NaOH resulting in the groundwater turning green color.

1230 - Back at Base Camp for break down and organize samples and COCs
1415 - Off-site, locked gate, travel to MW-106R
1430 - Began installing bolt through steel casing to hold and secure tubing and rope (refer to photos)

1530 - Off YMCA property; heading to Alpha w/ samples

DRAFT

NHPC Superfund Site
Merrimack, NH
04.0190987.11

10-26-2020

TIME ONSITE: 0830 - 1445

WEATHER: Overcast, raining, 50s-60s

PERSONNEL: Megan Murphy (MEM) - notetaking; Matt Bergen (MJB); Erik Dyrness (EBD)

TASK: Continue low flow GW sampling for 2020 Superfund

EQUIP: UNIT #1 (refer to MJB's notes) multimeter #25477
UNIT #2 for remaining equip.

0830 - Arrived on-site
↳ conducted cal. checks off-site due to weather conditions; re-cal'ed Units #1 and #3 for ORP and Unit #2 for specific conductivity and ORP
↳ ALL PASSED!
↳ conducted health and safety meeting and tail gate form

0920 - Set up NHP_MW-309DA
- Decon w/ PFAS-free DI water
→ switched multimeter for UNIT #1 (#25477)
• SEE LOW FLOW SAMPLING SHEETS FOR ADDITIONAL DETAILS •
~~Turbidity readings (NTU):~~ MEM 10-30-2020
-,

→

Cont... NHPC Superfund Site
Merrimack, NH - 04.0190987.11

10-26-2020

1040 - Sample start - sample end 1105
↳ PFAS, VOCs, 1,4-Dioxane

1110 - Set up at NHP_MW-309SA
- Decon w/ PFAS-free DI water
• SEE LOW FLOW SHEETS FOR ADDITIONAL SAMPLING DETAILS •

1220 - Sample start - sample end 1233
↳ PFAS, VOCs, Total metals

1300 - Return to Base Camp; breakdown for day, check COCs and cal. check sheets

1445 - GZA off-site; lock gate
↳ MEM travel to Alpha Labs with samples

MEM
10-30-2020

DRAFT

Rite in the Rain

NHPC Superfund Site
Merrimack, NH - 04.0190987.11

10-27-2020

TIME ONSITE: 0715 - 1300
WEATHER: Overcast, 40s-50s
PERSONNEL: Megan Murphy (MeM) notetaker; Matt Bergen (MJB)
Erik Dymess (EBD); Tanya Justham (TPJ)
TASK: Complete 2020 Superfund low flow GW sampling
EQUIP: UNIT #2

0715 - Arrived on-site; prep'ed for day w/ additional necessary tasks (painting wells on Acme property and seal concrete hole in floor near SVE system inside Acme building)
↳ conduct health and safety meeting

0800 - Set up at NHP_MW-400R
- Decon w/ DI water
→ confirmed with PM that although 2 consecutive rounds of insufficient recharge was recorded at this location, low flow sampling (unmodified) was still to be performed
→ Discussed with PM about the well being recorded as a 4" steel casing on Table 2 but was measured in the field as a 6" casing.
↳ determined to use 6" well water draw down policy (0' per 5 mins.)

→

10-27-2020

cont... NHPC Superfund Site
Merrimack, NH - 04.0190987.11

• SEE LOW FLOW SAMPLING SHEETS FOR ADDITIONAL DETAILS •

Turbidity readings (NTU):
-, 21.0, 26, 28, 60, 34, 41, 21, 23, 27, 15, 13, 14, 12, 13, 12, 10, 14, 8, 9, 8, 6, 7, 6, 6,
→ 2 HOUR LIMIT REACHED
↳ WATER LEVEL ONLY PARAMETER NOT STABLE

1040 - Sample start - sample end 1100
↳ VOCs, 1,4-Dioxane

1045 - TPJ on-site; MJB painted MW-401 series bnght, reflective yellow per NHDES request

1115 - MJB and TPJ to fill / plug concrete hole in Acme floor (where SVE system exists)
↳ MJB to complete painting MW-400R as well

1135 - Returned to Base Camp to completely break down camp and pack up
↳ EBD to perform cal. checks
↳ MJB to complete sample and COCs

1300 - Off-site, gates locked

DRAFT

Rite in the Rain

NHPC Superfund Site
Merrimack, NH
04.0190987.11

10-28-2020

DRAFT

TIME ONSITE: 1545 - 1630

WEATHER: Raining, 50s

PERSONNEL: Megan Murphy (MEM) - notetaker; Erik Dymess (EBD)

TASK: Replace tubing in NHP_MW-302S

EQUIP: New HDPE 0.25" tubing

1545 - GZA on-site
↳ installed pre-measured and pre-cut HDPE 0.25" tubing
↳ installed /~~st~~ransfered silastic head tubing onto new HDPE tubing
↳ marked with blue ziptie the measuring point and secured tubing within well

1630 - GZA off-site, gates locked

MEM
10-30-2020

10/19/2020 NHPC Superfund Site 04.0190987.11
Merrimack, NH

Onsite: 0730 - 1620
Weather: Overcast 50s
Purpose: Set up base camp perform GW Elev. round.
Personnel: Matt Bergen (MB) Note taker
Megan Murphy (MM)
Erik Dyrness (ED)
Equipment: Solinst WL meter.

0730 Onsite w/ MM + ED to start set up for the day set up base camp

0740 United Site services dropped off Porta-Potty

- Heald Health + Safety meeting

0820 MB + ED Head out to start WL Round. MM Continues to set up base camp.

1050 MM off site.

10/19/2020 NHPC Superfund Site 04.0190987.11

1100 Tanya Justham onsite to drop off bottles

1200 Tanya Justham offsite.
- Called both numbers for John Pearson of Equivist
603-897-9360 - cell
603-424-8411 - office
to talk w/ him before going onto his property, did not answer, could not leave message. Will try again in ~ 1hr.

13:30 Was able to get in contact w/ John Pearson, will Gauge wells on his property @ 1400

1400 Gauged MW-203 SX + MW-203A
MW-203SX had only ~ 0.5 ft of water. John Pearson stayed w/ us the whole time asking a series of questions.

DRAFT

10/19/2020 NAPC Superfund Site 04.0190.98211

John also asked if we could sample the wells tomorrow (10/20). I told him I would have to talk w/ my project manager and get Back to him.

1415 Spoke w/ Tanya Justham (TJ) about sampling wells on Equinoxe on 10/20, and told her about how much water was in MW-2035X. She was fine w/ sampling on 10/20 and said to call Michael Summerlin (MS) about MW-2035X.

- Spoke w/ MS about MW-2035X He said that since the water is so low, he wants to sample the location by purging 3 well volumes @ 100 ml/min then collect sample for VOCs only Do not collect field parameters. If well goes dry, return later

04.0190.98211

10/19/2020 NAPC Superfund Site

to collect sample. MS also wanted to Add MW-203D, and sample for VOCs + PFAS.

- Called and updated TJ, she was OK w/ the sample changes.

1450 Called back John Pearson and told we would by onsite @ 0900 on 10/20 to start sampling. He was OK w/ that.

- Continue water level round.

1620 Completed WL Round, Secured site and left for the Night. Please see WL Sheet for more details.

~~Left & locked~~ NJB 4/19 MM 12-3-2020

DRAFT

10/20/2020 NAPC Superfund Site 04.0190987.11
Merrimack, NH

onsite 0715 - 1555
Weather Over cast 50-60s
Purpose: GW Sampling
Personnel Matt Bergen (MB) Note taker
Megan Murphy (MM)
Erik Dymes (ED)
Tanya Justham (TJ)
Equipment SmartTroll - 369550
HACH 2100Q - 3811
Geopump - 036785
Skinny Dipper WL - 229585
MP-103584 (GZA)
} unit 1

0715 MB onsite to start set up for the day. MM + ED performing calibrations @ the office.

0810 MM + ED onsite

0820 TJ onsite
Have health + Safety meeting
Continue set up for the day
0850 Michael Summerlin (MS) onsite C

10/20/2020 NAPC Superfund Site 04.0190198211

0900 - Check in @ office @ Equivase property
Set up on MW-2035X
Initial DTW = 27.03 ft.
3 well volumes for 2" well = 1/2 water column in gallons. There is approximately 0.5 ft of water so need to purge ~ 0.25 gallons or ≈ 1L of water.
- Added on ~ 2 ft of 0.17" ID tubing to drop intake of tubing to 27.4 ft.
Sampled per MS's instructions on 10/19. Was able to purge 1L w/o the well going dry. Final depth to water after sampling was 27.04, water was visually clear, sample collected @ 0948 hrs.
Pump Run from 0930-0952 hrs
Removed extra tubing when

10/20/2020 NHPC Superfund Site 04.0190987.01

finished sampling.

John Pearson stopped by at 1010 for about 5 minutes and asked a series of questions.

1015 Start set up on NHP-MW-203D
Initial DTW 28.42 ft.
- Needed to set up low flow sheet on tablet.
* ~~[illegible]~~ Sample did not stabilize, Turbidity and Specific Conductance did not stabalize w/ in the two hours.
Collected sample @ 1308 for PFAS and VOCs
"FIELD BLANK - BERGEN"
was collected @ 1304 for PFAS.
Please see low flow sheets for any more details.

1350 Returned to base camp

10/20/2020 NHPC Superfund Site 04.0190987.11

to start sample check / COC and break down for the day.

1545 Secured site

1550 Got WL Reading from MW-202R
DTW = 27.77 ft.

1555 Left site for the day

MM
12-3-2020

DRAFT

10/21/2020 NHPC Superfund Site 04.0190987.11
Merrimack, NH

Onsite: 0710 - 1445
Weather Chance of Rain 50-60%
Purpose: GW sampling.
Personnel Matt Bergen (MB) Note taker
Megan Murphy (MM)
Erik Dyrness (ED)
Equipment SmartFolk - 369550
Hach 2100Q - 3811
Geopump - 036785
Solinst WL - 337399
} Unit #1

0710 G2D onsite for the day
Set up + hold health + Safety meeting

0745 Set up on MW 302 D
initial DTW = 16.97 ft.

0800 Recieved phone call from MM, tubing had fallen down MW-106R. So I brought her down B-105 bottles and a trouble hook to help get tubing out of MW-106R. Secured sample bottles for MW-302

10/21/2020 NHPC Superfund Site 04.0190987.11

before going to help MM.

0835 Arrived Back @ MW 302
↳ Well stabilized w/in 30 minutes which is much quicker than usual. DO was reading @ 5.7 mg/L when it is usually < 1.0 mg/L. Affected 3 additional stabilized readings by confirming w/ MM that I should sample. Attempted to call Tanya Justham before sampling but could not get in contact. Tanya did call after began sampling and agreed w/ MM and myself. Collected NHP-MW-302 D @ 0930 for VOCs + 1,4 Dioxane. No other issues noted, see low flow sheet for details.
- Tanya also wanted to check DO, Cal checked DO @ 0% @ 0.0%. checked fine.

10/28/2020 NHPC Superfund Site 04.0190987.11

1035 Set up on NHP-MW-302S
initial DTW = 17.95 ft.
~~Sample collected~~ MB Grab sample
collected (Modified) because
of unsaturated screen, WL
is below the top of screen.
Sample collected @ 1138 hrs
for PFAS, VOCs, + 1,4 Dioxane,
Final turbidity after sampling
was 21 NTU.
Please see low flow sheets
for more details

1240 Returned to base camp to
start sample check + COCs
and break down for the day

1445 GZA left and locked site
for the day.

MM
12-3-2020

NHPC Superfund Site 04.0190987.11

10/22/2020
Merrimack, NH

Onsite: 0705-1500
Weather: Sunny 50-60s
Purpose: GW Sampling
Personnel: Matt Bergen (MB) Note taker
Megan Murphy (MM)
Erik Dyrness (ED)

Equipment SmartTroll : 369550
Hach 2100Q : 3811
Geopump : 036785
Solinst WL: 337399
} unit #1

0705 MB + ED onsite start
set up for the day
0715 MM onsite
Held health + safety meeting
finished setting up.

0800 Checked in @ Jones Chemical
Set up on JCMW-4D. Noted
that well was screened to
the top. Called to confirm
with Tanya Justham (TJ) that well
is actually screened properly

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10/22/2020 NHPC Superfund Site 04.0190987.11

TN confirmed.
- Initial DTW = 20.58'
Sample collected successfully @ 0935 hrs. of NHPE_JCMW-41D for PFAS, VOCs + 1,4 Dioxane.
- While purging and sampling air bubbles were observed coming up sample tubing.
- Please refer to low flow logs for more details.

1030 Set up on NHPE_JCMW-20
Initial DTW = 20.38 ft
Sample collected successfully
Sample time = 1210
Sample analysis = VOCs + 1,4 Dioxane.
Collected Duplicate sample for VOCs + 1,4 Dioxane.
- While purging + sampling, air bubbles were observed coming up sample tubing.
Please refer to low flow sheets for more details.

10/22/2020 NHPC Superfund Site 04.0190987.11

1330 Returned to site to start sample check/COCs and break down for the day.

1500 GZA left and locked site for the day.

MM
12-3-2020

DRAFT

DRAFT

Merrimack, NH

10/19/20 NHPC Superfund 04.0190987.11

purpose: GW Sampling
weather: Mostly Cloudy, 60s
personnel: E. Dyness (note taker) (EBD)
M. Bergen (MJB)
M. Murphy (MEM)

0730 EBD, MJB, MEM onsite
0740 United Rental dropped off porta potty
0800 Held H&S meeting to go over HASP, site guidelines, and info about adjacent properties
0820 EBD + MJB start full WL round w/ solinst WL meter
WL decon between each location
MEM to set up base camp
Notes from WL round:
- 3 empty drums near MW-403SA
- Tree on fence @ MW-310
- WL could not fit through bladder pump cap, had to lift up to obtain WL
- MW-102D no lock
- Tree down near MW-304

→

Merrimack, NH

10/19/20 NHPC Superfund 04.0190987.11

- Bees in cone over MW-401S, sprayed w/ well closed
- New trails observed on YMCA property

MJB spoke w/ John from equivise about timeline for sampling MW-203
Also, spoke to M. Sommerlin (DES) about low WL in 203SX and potentially sampling complete.

1050 MEM offsite to calibrate and pick up additional equipment
1100 T. Justham (TPS) onsite to drop off supplies
1200 TPS offsite

1600 WL round completed
See WL worksheet for additional details
1620 EBD + MJB offsite

EBD
10/19/2020

DRAFT

Merrimack, NH

10/20/20 NHPC Superfund 04.0190987.11

purpose: GW Sampling
weather: Overcast, 50s-60s,
personell: E. Dyness (EBD) (note-taker)
M. Bergen (MJB)
M. Murphy (MEM)

0700 EBD + MEM performed morning calibration checks on Units 1, 2, 3
All units passed
0810 EBD + MEM onsite
MJB onsite previously, prepped equipment
0820 TPS onsite, held daily H&S meeting
0845 M. Summelin onsite

0900 Set up on NHP_MW-309D
Using Kit #3
Smartroll: 40818
peri pump: 047277
Hach 2100Q: 15030C03 / 9364
Solinst WL: 14882

Merrimack, NH

10/20/20 NHPC Superfund 04.0190987.11

WL: 17.70'
Total Tubing: 64.9 + 3 = 67.9'
PVR: 67.9 x 9.7 = 659 mL
Pump start: 0950
purge: 5L
Sample: 1040-1050
End WL: 18.19
Bubbles that accumulated in tubing were periodically expelled

1100 Set up on NHP_MW-309S
Using Kit #3
WL: 17.62
Total Tubing: 18.4 + 3.5 = 21.9'
PVR: 21.9 x 9.7 = 213 mL
Pump start: 1130
purge: 300 mL
Sample: 1135-1205
End WL: 17.69

1245 Went to MW-310S to assist MEM

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Merrimack, NH

10/20/20 NHPC Superfund 04.0140987.11

1430 Returned to basecamp
1445 Started end of day calibration checks
All units passed

1515 All units recalibrated specific conductance to check w/ 1413 to be more stable

1550 All personell offsite

EBD
10/20/2020

Merrimack, NH

10/21/20 NHPC Superfund 04.0140987.11

purpose: GW Sampling
weather: 50s-60s, overcast, scattered showers
personell: E. Dymess (EBD) (Note taker)
M. Bergen (MJTS)
M. Murphy (MEM)

0700 MJTS & EBD onsite
0705 MEM onsite
prepped kits and bottles for day
Held tailgate H&S meeting
0750 Set up on NHR_MW-303DA
using Kit #3
WL: 15.10
Total Tubing: 42.8 + 2.5 = 45.3'
PVR: 45.3 x 9.7 = 440 mL
Pump Start: 0825
purge: 2L
Sample: 0905 - 0935
Final WL: 15.86

0900 Field Blank PFAS collected

→

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0945 Set up on NHP_MW-303SA
Using Kit #3
WL: 13.59
Total Tubing: 24.7 + 3 = 27.7'
PVR: 27.7 x 9.7 = 269 ml
Pump start: 1010
purge: 3L
Sample: 1050 - 1105
Final WL: 13.82

1130 Went to NHP_MW-106R
to attemp to recover tubing
that fell down 6" well.
Large treble hook and WL
decomned prior to using to
"snag" tubing.
Tubing able to be recovered.
New string was installed to
temporarily hold tubing before
a more permanent solution
can be outfitted.

→

1300 Returned to base camp
to start end of day
calibration checks
All units passed

1445 offsite, all personnell

ETSD
10/21/2020

DRAFT

Merrimack, NH

10/22/20 NHPL Superfund 04.0190987.11

purpose: GW Sampling
weather: Sunny, 50s-60s
Personnel: E. Dymess (EBD) (note taker)
M. Bergen (MJB)
M. Murphy (MEM)

0705 EBD, MJB, MEM onsite
prep equipment and bottles for day, held tailgate H&S meeting

0800 Set up on NHP_MW-303D
using Kit #3
WL: 14.20
Total Tubing: 55.2+3 = 58.2
PVR: 58.2 x 9.7 = 565 mL
pump start: 0825
purge: 4.5 L
Sample: 0910-0920
Final WL: 14.25

→

Merrimack, NH

10/22/20 NHPL Superfund 04.0190987.11

0930 Set up on NHP_MW-303S
using Kit #3
WL: 12.34
Total Tubing: 19.3+3 = 22.3'
PVR: 22.3 x 9.7 = 217 mL
pump start: 0950
purge: 2.5 L
Sample: 1020-1030
Final WL: 12.35

1045 Returned to base camp to drop off samples and get new bottles.

1100 Assisted MEM collect equip blank on WL

→

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1130 Set up on NHP_MW-106R
using Kit #3
WL: 16.85
Total Tubing: 161.7 + 2.5 = 164.2
PVR: 164.2 x 9.7 = 1593 mL
pump start: 1205
purge: 3L
Sample: 1240 - 1300
Final WL: 16.88

1315 Returned to site and helped MEM demob from well

1400 Started end of day calibration checks
All units passed

1530 All personnel offsite

ETBD
10/22/2020

purpose: GW Sampling
weather:
Personnel: E. Dyrness (ETBD) (note taker)
~~M. Bergen (MSB)~~ ETBD
M. Murphy (MEM)

0740 ETBD onsite
MEM conducted daily safety meeting, prepped for day

0815 Set up on NHP_MW-308D
Using: Kit #3
WL: 19.85
Total Tubing: 80.5 + 3 = 83.5'
PVR: 83.5 x 9.7 = 810 mL
pump start: 0900
purge gal: 4L
Sample: 0945 - 1000
Final WL: 19.88

1010 Set up on NHP_MW-308S
Using Kit #3 →

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Merrimack, NH

10/23/20 NHPC Superfund 04.0190987.11

WL: 22.16
Total Tubing: 24 + 3.5 = 27.5'
PVR: 27.5 x 9.7 = 267 mL
pump start: 1045
purge: 500 mL
Sample: 1100 – 1215
Final WL: 22.30

1230 Returned to base camp and unloaded equipment

1300 Started end of day cl checks
All units passed

1415 off-site, gate locked

1430 Arrived at NHP-MW-106R to secure tubing in well.
A bolt was inserted through to well casing below the cap to secure tubing to, so string would not be cut again.

1515 Completed task, off site

Merrimack, NH

10/26/20 NHPC Superfund 04.0190987.11

purpose: GW Sampling
weather:
personell: E. Dymess (EBD) (notetaker)
M. Bergen (MSB)
M. Murphy (MEM)

0700 EBD ~~onsite~~ arrived at office and started morning calibration checks
Units 1,2,3 needed
Orp recalibrated
Unit 2 needed Sc recalibrated
All units passed checks

0830 EBD + MEM onsite
MSB onsite prior to prep equip/ bottles
MEM lead H&S meeting

0900 Set up on NHP_MW-308DA
Using Kit #3

→

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Merrimack, NH

10/26/20 NHPC Superfund Site 04.0190986.11

WL: 21.61
Total Tubing: 46.5 + 3.5 = 50'
PVR: 50 x 9.7 = 485 mL
pump start: 0935
purge prior: 4L
Sample: 1030-1050
Final WL: 23.17

1100 Set up on NHP-MW-308SA
using kit #3
WL: 23.25
total tubing: 25.8 + 4 = 29.8'
PVR: 29.8 x 9.7 = 290 mL
pump start: 1120
purge prior: 2.5 L
Sample: 1210-1230
Final WL: 23.28

1245 Returned to base camp,
started end of day cal checks
all units passed

1445 All personell offsite

Merrimack, NH

11/27/20 NHPC Superfund 04.0190987.11

purpose: GW Sampling, Site maintenance
weather:
personnel: E. Dymess (EBD) (note taker)
M. Bergen (MJB)
M. Murphy (MEM)

0700 EBD + MJB onsite
0710 MEM onsite
prepped equip + bottles for day
MEM held HSS meeting

0745 Set up on NHP-MW-301S
using kit #3
WL: 15.70
total tubing: 21.6 + 2 = 23.6'
PVR: 23.6' x 9.7 = 229 mL
pump start: 0810
purge: 4L
Sample: 0900-0910
Final WL: 15.80

→

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Merrimack, NH

11/27/20 NHPC Superfund 04.0190987.11

0925 Went to JCI to replace J-plugs
no answer at gate or phone
Returned to ACME, checked in w/ MEM and helped MJB paint MW-401 S/D w/ high viz paint.

1030 Returned to JCI to replace j-plugs on JCMW-2/4

1100 Assisted MEM w/ sampling/ breakdown at MW-400R

1135 Returned to basecamp to complete end of day cal checks
All units passed
MEM broke down camp to prepare for demob

1300 GZA offsite & loaded out

EBD
10/22/2020

DRAFT

Appendix D – Photographic Log

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Photo No. 1	Fence posts sinking into the Northern Wetland Area and separating from the post caps.

Photo No. 2	View facing west of MW-312D after it was bumped by the mower.

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Photo No. 3	View facing southeast toward the JCI property of top of tree on fence by the MW-310 couplet.

Photo No. 4	View facing west along the Acme property of fallen tree by well couplet MW-304 .

DRAFT

Photo No. 5	View facing west of large branches in the stormwater swale constructed on the northern end of the Acme property.

Photo No. 6	View facing northeast of the southern portion of the NHPC properties following Site and fence maintenance activities.

DRAFT

Photo No. 7	View facing northwest of the northern portion of the NHPC properties following Site and fence maintenance activities.

Photo No. 8	Patched hole in the slab of the Acme building.

DRAFT

Photo No. 9	High visibility, reflective paint on well couple MW-401 on the Acme property.

Photo No. 10	High visibility, reflective paint on well MW-400R and its protective bollards on the Acme property.

DRAFT

Photo No. 11	Bedrock well MW-106R located on the former YMCA property and the bolt installed to hang the sampling tubing inside the well.

DRAFT

Appendix E – Acme Subslab Depressurization System Inspection Log

New Hampshire Plating Company Superfund Site, Wright Ave., Merrimack, NH
NHDES Site No. 198406030

DRAFT

Subslab Depressurization System Inspection Log

ACME Pressure Washing, 12 Wright Ave., Merrimack, NH
Installation Date: August 28, 2019

Note: recommended vacuum pressure range is 1 to 2.5 inches WC.

	Magnahelic Gauge Readings (inches) & Balance Valve Status (% open)					Electric Panel Breaker Status (On/Off)		
Date	ASD-1-SP1	ASD-1-SP2	ASD-2-SP1	ASD-2-SP2	ASD-2-SP3	Panel 1, Breaker 6	Panel 2, Breaker 37	Comments
8/29/2019	2.25 not stated	2.25 not stated	1.5 not stated	1.5 not stated	1.25 not stated	on	on	Reference "Project Closeout Documents & Sub-Slab Depressurization System & OMM Manual", Keystone Envir. Svcs., Aug. 30, 2019.
10/20/2020 9:45 AM	2.4 100%	~2.25 not visible	1.5 100%	1.4 100%	1.2 100%	on	on	Inspector: M. Summerlin, NHDES Outside temp 55°F; Zone A garage door open. Shop items observed hanging from ASD#2-SP1 gauge tubing & balancing valve stem; tenant removed items. Tenant pointed out old drill-hole in floor near ASD#2-SP1; plan made w/ GZA for plugging.
								Inspector: _____ Outside temp:

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Appendix F – Completed Field Measurement Forms

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Comprehensive Water Level Measurement Form

Water Level Worksheet

New Hampshire Plating Company Superfund Site
Merrimack, New Hampshire

DRAFT

Field Personnel: E. Dyrness, M. Bergen

Date: 10/19/20

Well	Well Diameter (inches)	Property	Measuring Point[1]	Reported Well Depth (ft, referenced to measuring point)	Measured Well Depth[2] (ft, referenced to measuring point)	Measured Depth-To-Water (ft, referenced to measuring point)	Comments
NHP_JCMW-2S	2	JCI	PVC	22.6		19.56	
NHP_JCMW-2D	2	JCI	PVC	49.5		20.04	no j-plug
NHP_JCMW-4S	2	JCI	PVC	22.65		20.62	no j-plug
* NHP_JCMW-4D	2	JCI	PVC	47.25		20.92	no j-plug
NHP_JCMW-6	2	JCI	PVC	25.72		21.98	
NHP_MW-102S	2	NHP Site	PVC	33.6	Dedicated Bladder	25.79	lock added
NHP_MW-102D	2	NHP Site	PVC	65.5	Dedicated Bladder	25.88	needs lock
NHP_MW-102R	6	NHP Site	Casing	262.4	Dedicated Bladder	27.67	
* NHP_MW-106	2	Former YMCA	PVC	97.8		17.04	no j-plug
* NHP_MW-106R	6	Former YMCA	Casing	202.7		16.82	
* NHP_B-10S	1.5	Former YMCA	Casing	28.54		18.75	
* NHP_MW-108S	2	Patterson	PVC	32.7	Dedicated Bladder	27.58	
NHP_MW-108D	2	Patterson	PVC	85	Dedicated Bladder	23.68	
NHP_MW-109S	2	NE Pole	PVC	37.8	Dedicated Bladder	29.47	
NHP_MW-109D	2	NE Pole	PVC	78.6	Dedicated Bladder	28.85	
NHP_MW-109R	6	NE Pole	Casing	263.6	Dedicated Bladder	27.62	
NHP_MW-202S	2	NE Pole	PVC	37.2		28.60	
NHP_MW-202D	2	NE Pole	PVC	66.58	Dedicated Bladder	27.84	
* NHP_MW-203SX	2	Equivise	PVC	27.5		~~27.92~~ ESD	26.97
NHP_MW-203D	2	Equivise	PVC	72.8	Dedicated Bladder	27.92	
* NHP_MW-204S	2	Transupport	PVC	37.6	Dedicated Bladder	24.06	Ants in well
NHP_MW-204D	2	Transupport	PVC	59.3	Dedicated Bladder	25.26	
NHP_MW-204R	2	Transupport	PVC	82.8	Dedicated Bladder	25.06	
* NHP_MW-301S	2	Former YMCA	PVC	26.6		15.66	
NHP_MW-301D	2	Former YMCA	PVC	49.5		15.53	
* NHP_MW-302S	2	NHP Site	PVC	24.1		17.97	
* NHP_MW-302SA	2	NHP Site	PVC	24.2		18.73	Tied off tubing
* NHP_MW-302D	2	NHP Site	PVC	66.5		16.96	
* NHP_MW-302DA	2	NHP Site	PVC	48.4		17.77	Tied off tubing
* NHP_MW-303S	2	NHP Site	PVC	24.3		12.16	
* NHP_MW-303SA	2	NHP Site	PVC	26.2		13.51	Tied off tubing
NHP_MW-303D	2	NHP Site	PVC	60.2		14.13	
* NHP_MW-303DA	2	NHP Site	PVC	43.9		15.12	Tied off tubing
NHP_MW-304S	2	NHP Site	PVC	24.8		14.18	
* NHP_MW-304D	2	NHP Site	PVC	50.6		15.05	

Water Level Worksheet

New Hampshire Plating Company Superfund Site

Merrimack, New Hampshire

Field Personnel: E. Dyness, M. Bergen Date: 10/19/2020

	Well	Well Diameter (inches)	Property	Measuring Point[1]	Reported Well Depth (ft, referenced to measuring point)	Measured Well Depth[2] (ft, referenced to measuring point)	Measured Depth-To-Water (ft, referenced to measuring point)	Comments
	NHP_MW-305S	2	NHP Site	PVC	26.8		13.84	
	NHP_MW-305D	2	NHP Site	PVC	55.7		14.03	
	NHP_MW-306S	2	Former YMCA	PVC	19.7		13.90	
	NHP_MW-306D	2	Former YMCA	PVC	38.8		12.85	
	NHP_MW-307S	2	Former YMCA	PVC	27.7		19.52	
	NHP_MW-307D	2	Former YMCA	PVC	68.8		16.95	
*	NHP_MW-308S	2	NHP Site	PVC	26.3		22.13	
*	NHP_MW-308SA	2	NHP Site	PVC	27.9		23.27	
*	NHP_MW-308D	2	NHP Site	PVC	85.5		19.84	
*	NHP_MW-308DA	2	NHP Site	PVC	47.4		21.57	
	NHP_MW-308R	2	NHP Site	PVC	159.6		20.11	
	NHP_MW-309S	2	NHP Site	PVC	20.5		17.62	
*	NHP_MW-309SA	2	NHP Site	PVC	22.9		18.00	Tied off tubing
	NHP_MW-309D	2	NHP Site	PVC	69.9		17.66	
*	NHP_MW-309DA	2	NHP Site	PVC	53.6		17.88	Tied off tubing
	NHP_MW-309R	2	NHP Site	PVC	150.7		17.97	
*	NHP_MW-310S	2	NHP Site	PVC	23.8		20.64	
	NHP_MW-310D	2	NHP Site	PVC	68.8		19.92	
	NHP_MW-311S	2	NHP Site	PVC	19.5		~~19.95~~ HEM	18.95
*	NHP_MW-311D	2	NHP Site	PVC	65.9		21.44	
	NHP_MW-312S	2	NHP Site	PVC	21.6		15.47	
	NHP_MW-312D	2	NHP Site	PVC	49.5		15.99	
	NHP_MW-400R	4	Acme	Casing	201.69		14.74	
*	NHP_MW-401S	2	Acme	PVC	27.8		17.12	
	NHP_MW-401D	2	Acme	PVC	47.6		16.95	Bees
	NHP_MW-402D	2	NHP Site	PVC	47.65		16.37	
*	NHP_MW-403S	2	NHP Site	PVC	23.0		Dry	22.45, Tied off Tubing, Hard bottom
*	NHP_MW-404S	2	NHP Site	PVC	30.7		19.07	Tied off tubing

1. The reference point is permanently marked on the PVC or inner casing of the monitoring well. In the event there is no inner casing, the water level is measured from the outer steel casing at the location of the hasp, or the metal label on the rim of the flush mounted wells.
2. The depth to the bottom of the monitoring well should be confirmed in each well once every five years, during the sampling event just prior to the 5-year review, unless otherwise requested. Highlight any significant deviations in the depth to the bottom from the reported depth to bottom. Well depths are not collected in wells containing dedicated bladder pumps. Reported well depths are from Table 4 in the SAP. Well depths do not need to be measured during 2020.

DRAFT

Low Flow Well Purging Field Water Quality Measurement Forms

Low-Flow Test Report:

DRAFT

Test Date / Time: 10/21/2020 11:32:56 AM
Project: NHP_B-10S NHPC Superfund Site (2)
Operator Name: M. Murphy

Location Name: NHP_B-10S **Well Diameter: 1.5 in** **Casing Type: PVC** **Screen Length: 20 ft** **Top of Screen: 8.4 ft** **Total Depth: 28.54 ft** **Initial Depth to Water: 18.72 ft**	**Pump Type: Peristaltic** **Tubing Type: Polyethylene** **Tubing Inner Diameter: 0.25 in** **Tubing Length: 29.1 ft** **Pump Intake From TOC: 24.1 ft** **Flow Cell Volume: 130 ml** **Final Flow Rate: 51 ml/min** **Final Draw Down: 0.09 ft**	**Instrument Used: Aqua TROLL 500** **Serial Number: 689645**

Test Notes:
PRIOR TO SAMPLING:

Pump serial number: Geopump A02295
Turbidity meter model and serial number (or similar unique designation, i.e., last four digits): Hach 2100Q 9597

Total tubing length (inside & outside of well): (24.1 ft + 5 ft) = 29.1 ft
PVR (including calculations): (29.1 ft × 9.7mL/ft) = ~~282.7 mL~~ 282.3 mL TPJ 1/3/21

Maximum allowable drawdown rate: 0.02ft per 5mins
Is #14 tubing used at this location? Yes

DURING/AFTER SAMPLING:

Pump start time: 1120

Parameters reached stabilization? No
If no, list parameters: All parameters did not reach stabilization.
Total volume purged prior to sampling: 600 mL
Minimum PVR reached (compare purge amount to PVR)? Yes, 600 mL > ~~282.7 mL~~ 282.3 mL TPJ 1/3/21
2 Hour time limit reached? No

Modified sampling required? (Clock time when modified sampling begins): Yes at start of purge.
Condition that triggered Modified Sampling: Partially saturated well screen triggered modified LF sampling method.

Any adjustments made (including flow rates, tubing, etc.): None

Final water level: 18.81 ft
Total actual volume purged (delete Estimated Purge Volume): 1.0 L
Measured Well Depth, if required (note variation in total depth compared to previously documented): NA
Pump Off: 1210

DRAFT

Weather Conditions:
Raining, 50s-60s

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 1	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 0.02	
10/21/2020 11:32 AM	00:00	5.95 pH	14.64 °C	419.55 µS/cm	4.44 mg/L	~~7.19 NTU~~ TPJ 1/3/21	319.4 mV	18.81 ft	54.00 ml/min
10/21/2020 11:37 AM	05:00	5.79 pH	13.80 °C	351.75 µS/cm	2.03 mg/L	~~2.02 NTU~~ 3 NTU	215.1 mV	18.81 ft	51.00 ml/min

Samples

Sample ID:	Description:
NHP_B-10S	Sample Start Time: 1145 Parameters: PFAS, Total metals Sample End Time: 1205

Low-Flow Test Report:

DRAFT

Test Date / Time: 10/22/2020 11:00:41 AM
Project: NHP_JCMW-2D NHPC Superfund Site (2)
Operator Name: Matt Bergen

Location Name: NHP_JCMW-2D **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 39.5 ft** **Total Depth: 49.5 ft** **Initial Depth to Water: 20.38 ft**	**Pump Type: Peristaltic** **Tubing Type: Polyethylene** **Tubing Inner Diameter: 0.25 in** **Tubing Length: 47.5 ft** **Pump Intake From TOC: 44.5 ft** **Flow Cell Volume: 90 ml** **Final Flow Rate: 50 ml/min** **Final Draw Down: 0.35 ft**	**Instrument Used: SmarTROLL MP** **Serial Number: 369550**

Test Notes:

PRIOR TO SAMPLING:

Pump serial number: Geopump 036785
Turbidity meter model and serial number (or similar unique designation, i.e., last four digits):HACH 2100Q 3811

Total tubing length (inside & outside of well): 47.5 ft
Tubing inner diameter: 0.25 in
PVR (including calculations): 47.5ft x 9.7 ml/ft =460.8 ml

Maximum allowable drawdown rate: 0.02 ft / 5 min
Is #14 tubing used at this location? Yes

DURING/AFTER SAMPLING:

Pump start time:1050 hrs

Parameters reached stabilization? Yes
If no, list parameters: n/a
Total volume purged prior to sampling: 3,200ml
Minimum PVR reached (compare purge amount to PVR)? Yes, 3,200 ml > 460.8 ml
2 Hour time limit reached? No

Modified sampling required? (Clock time when modified sampling begins): No
Condition that triggered Modified Sampling:n/a

Any adjustments made (including flow rates, tubing, etc.):none
Note: Air bubbles observed coming up sample tubing, while purging and sampling.

Final water level: 20.76 ft
Total actual volume purged (delete Estimated Purge Volume): 4,000ml
Measured Well Depth, if required (note variation in total depth compared to previously documented): n/a

Pump Off: 1243 hrs

DRAFT

Weather Conditions:
Sunny 60s

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 1	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 5	
10/22/2020 11:00 AM	00:00	6.91 pH	18.41 °C	274.34 µS/cm	5.24 mg/L	16.00 NTU	65.0 mV	20.61 ft	50.00 ml/min
10/22/2020 11:05 AM	05:00	6.84 pH	17.21 °C	274.71 µS/cm	2.98 mg/L	17.00 NTU	5.0 mV	20.66 ft	50.00 ml/min
10/22/2020 11:10 AM	10:00	6.83 pH	16.94 °C	275.60 µS/cm	1.87 mg/L	14.00 NTU	-6.6 mV	20.66 ft	52.00 ml/min
10/22/2020 11:15 AM	15:00	6.83 pH	16.86 °C	276.13 µS/cm	1.40 mg/L	19.00 NTU	-9.5 mV	20.63 ft	52.00 ml/min
10/22/2020 11:20 AM	20:00	6.82 pH	16.88 °C	275.40 µS/cm	1.29 mg/L	32.00 NTU	-10.6 mV	20.60 ft	50.00 ml/min
10/22/2020 11:25 AM	25:00	6.82 pH	16.81 °C	273.71 µS/cm	1.08 mg/L	21.00 NTU	-7.6 mV	20.58 ft	50.00 ml/min
10/22/2020 11:30 AM	30:00	6.82 pH	16.86 °C	275.51 µS/cm	0.98 mg/L	24.00 NTU	-9.2 mV	20.58 ft	50.00 ml/min
10/22/2020 11:35 AM	35:00	6.82 pH	16.72 °C	276.55 µS/cm	1.06 mg/L	24.00 NTU	-10.1 mV	20.58 ft	50.00 ml/min
10/22/2020 11:40 AM	40:00	6.83 pH	16.80 °C	275.99 µS/cm	0.92 mg/L	25.00 NTU	-9.5 mV	20.62 ft	50.00 ml/min
10/22/2020 11:45 AM	45:00	6.83 pH	16.76 °C	275.66 µS/cm	0.95 mg/L	22.00 NTU	-8.6 mV	20.65 ft	50.00 ml/min
10/22/2020 11:50 AM	50:00	6.83 pH	16.92 °C	275.93 µS/cm	1.04 mg/L	21.00 NTU	-9.8 mV	20.67 ft	50.00 ml/min
10/22/2020 11:55 AM	55:00	6.83 pH	17.08 °C	277.34 µS/cm	0.92 mg/L	16.00 NTU	-11.5 mV	20.69 ft	50.00 ml/min
10/22/2020 12:00 PM	01:00:00	6.80 pH	17.01 °C	279.36 µS/cm	0.96 mg/L	15.00 NTU	-11.7 mV	20.71 ft	50.00 ml/min
10/22/2020 12:05 PM	01:05:00	6.82 pH	17.05 °C	281.16 µS/cm	0.93 mg/L	16.00 NTU	-15.1 mV	20.73 ft	50.00 ml/min

Samples

Sample ID:	Description:
NHP_JCMW-2D	Sample analysis: VOCs, 1,4-DIOXANE Duplicate sample collected Sample time: 1210hrs Stop time: 1243 hrs
NHP_JCMW-2D DUP	Sample analysis:VOCs, 1,4-DIOXANE Sample time: 1210 hrs Stop time: 1243 hrs

Low-Flow Test Report:

DRAFT

Test Date / Time: 10/22/2020 8:50:36 AM
Project: NHP_JCMW-4D NHPC Superfund Site (2)
Operator Name: Matt Bergen

Location Name: NHP_JCMW-4D **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** MEM **Top of Screen: 37.~~25~~ 3 ft** **Total Depth: 47.25 ft** **Initial Depth to Water: 20.58 ft**	**Pump Type: Peristaltic** **Tubing Type: Polyethylene** **Tubing Inner Diameter: 0.25 in** **Tubing Length: 45.25 ft** **Pump Intake From TOC: 42.25 ft** **Flow Cell Volume: 90 ml** **Final Flow Rate: 62 ml/min** **Final Draw Down: 0.74 ft**	**Instrument Used: SmarTROLL MP** **Serial Number: 369550**

Test Notes:

PRIOR TO SAMPLING:

Pump serial number: Geopump 037685
Turbidity meter model and serial number (or similar unique designation, i.e., last four digits): HACH 2100Q 3811

Total tubing length (inside & outside of well): 45.25 ft
Tubing inner diameter: 0.25 in
PVR (including calculations): 45.25 ft x 9.7 ml/ft = 438.9 ml

Maximum allowable drawdown rate: 0.02 ft/5min
Is #14 tubing used at this location? No

DURING/AFTER SAMPLING:

Pump start time: 0847 hrs

Parameters reached stabilization? Yes
If no, list parameters: n/a
Total volume purged prior to sampling: 2,500 ml
Minimum PVR reached (compare purge amount to PVR)? Yes, 2,500 ml > 438.9 ml
2 Hour time limit reached? No

Modified sampling required? (Clock time when modified sampling begins): No
Condition that triggered Modified Sampling: n/a

Any adjustments made (including flow rates, tubing, etc.): Decreased flow rate to 62 ml/min to help minimize draw down.

Notes: Occasional air bubbles observed coming up sample tubing. Bubbles were originating before any connections.

Final water level: 21.44 ft
Total actual volume purged (delete Estimated Purge Volume): 3,300 ml

Measured Well Depth, if required (note variation in total depth compared to previously documented): n/a
Pump Off: 1003 hrs

DRAFT

Weather Conditions:
Sunny, 50-60s

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 1	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 5	
10/22/2020 8:50 AM	00:00	8.15 pH	14.21 °C	287.94 µS/cm	4.05 mg/L	10.00 NTU	33.5 mV	21.09 ft	68.00 ml/min
10/22/2020 8:55 AM	05:00	7.54 pH	13.33 °C	252.33 µS/cm	1.74 mg/L	11.00 NTU	26.7 mV	21.16 ft	64.00 ml/min
10/22/2020 9:00 AM	10:00	7.11 pH	13.20 °C	249.16 µS/cm	1.46 mg/L	7.00 NTU	32.2 mV	21.20 ft	60.00 ml/min
10/22/2020 9:05 AM	15:00	6.93 pH	13.21 °C	246.91 µS/cm	1.17 mg/L	6.00 NTU	36.1 mV	21.22 ft	60.00 ml/min
10/22/2020 9:10 AM	20:00	6.85 pH	13.27 °C	245.69 µS/cm	1.04 mg/L	4.00 NTU	40.6 mV	21.24 ft	62.00 ml/min
10/22/2020 9:15 AM	25:00	6.86 pH	13.28 °C	244.61 µS/cm	0.94 mg/L	5.00 NTU	43.0 mV	21.26 ft	62.00 ml/min
10/22/2020 9:20 AM	30:00	6.85 pH	13.29 °C	244.56 µS/cm	0.93 mg/L	3.00 NTU	44.3 mV	21.28 ft	62.00 ml/min
10/22/2020 9:25 AM	35:00	6.85 pH	13.31 °C	244.65 µS/cm	0.87 mg/L	3.00 NTU	45.6 mV	21.30 ft	62.00 ml/min
10/22/2020 9:30 AM	40:00	6.85 pH	13.37 °C	244.46 µS/cm	0.83 mg/L	2.00 NTU	45.8 mV	21.32 ft	62.00 ml/min

Samples

Sample ID:	Description:
NHP_JCMW-4D	Sample analysis: PFAS, VOCs, 1,4-DIOXANE No QA samples collected Sample time: 0935 hrs Stop time:1003 hrs

Low-Flow Test Report:

DRAFT

Test Date / Time: 10/21/2020 9:16:29 AM
Project: NHP_MW-106 NHPC Superfund Site (2)
Operator Name: M. Murphy

Location Name: NHP_MW-106 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 35 ft** **Top of Screen: 62.8 ft** **Total Depth: 97.8 ft** **Initial Depth to Water: 17.05 ft**	**Pump Type: Peristaltic** **Tubing Type: Polyethylene** **Tubing Inner Diameter: 0.25 in** **Tubing Length: 83.3 ft** **Pump Intake From TOC: 80.3 ft** **Flow Cell Volume: 130 ml** **Final Flow Rate: 112 ml/min** **Final Draw Down: 0.04 ft**	**Instrument Used: Aqua TROLL 500** **Serial Number: 689645**

Test Notes:
PRIOR TO SAMPLING:

Pump serial number: Geopump A02295
Turbidity meter model and serial number (or similar unique designation, i.e., last four digits): Hach 2100Q 9597

Total tubing length (inside & outside of well): (80.3 ft + 3 ft) = 83.3 ft
PVR (including calculations): (83.3 ft × 9.7mL/ft) = 808.01 mL

Maximum allowable drawdown rate: 0.02ft per 5mins
Is #14 tubing used at this location? No

DURING/AFTER SAMPLING:

Pump start time: 0910

Parameters reached stabilization? Yes
If no, list parameters: NA
Total volume purged prior to sampling: 5.0L
Minimum PVR reached (compare purge amount to PVR)? Yes, 5.0L > 808 mL
2 Hour time limit reached? No

Modified sampling required? (Clock time when modified sampling begins): No
Condition that triggered Modified Sampling: NA

Any adjustments made (including flow rates, tubing, etc.): Bubbles observed in the in well tubing and were periodically expunged during low flow sampling and sample collection.

Final water level: 17.09 ft
Total actual volume purged (delete Estimated Purge Volume): 7.0 L
Measured Well Depth, if required (note variation in total depth compared to previously documented): NA
Pump Off: 1045

DRAFT

Weather Conditions:
Raining, 50s-60s

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 1	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 0.02	
10/21/2020 9:16 AM	00:00	6.74 pH	13.04 °C	701.10 µS/cm	5.83 mg/L	~~0.00 NTU~~	141.4 mV	17.09 ft	116.00 ml/min
10/21/2020 9:21 AM	05:00	6.49 pH	12.68 °C	912.52 µS/cm	6.08 mg/L	~~0.00 NTU~~ 1 NTU	176.0 mV	17.09 ft	112.00 ml/min
10/21/2020 9:26 AM	10:00	6.47 pH	12.53 °C	968.78 µS/cm	6.12 mg/L	~~0.00 NTU~~ 1 NTU	189.8 mV	17.09 ft	114.00 ml/min
10/21/2020 9:31 AM	15:00	6.47 pH	12.50 °C	999.67 µS/cm	6.17 mg/L	~~0.00 NTU~~ 1 NTU	211.1 mV	17.09 ft	116.00 ml/min
10/21/2020 9:36 AM	20:00	6.48 pH	12.48 °C	1,010.4 µS/cm	6.52 mg/L	~~0.00 NTU~~ 1 NTU	219.2 mV	17.09 ft	114.00 ml/min
10/21/2020 9:41 AM	25:00	6.47 pH	12.44 °C	1,014.3 µS/cm	6.50 mg/L	~~0.00 NTU~~ 1 NTU	227.3 mV	17.09 ft	114.00 ml/min
10/21/2020 9:46 AM	30:00	6.45 pH	12.46 °C	1,018.7 µS/cm	6.50 mg/L	~~0.00 NTU~~ 1 NTU	225.6 mV	17.09 ft	112.00 ml/min

TPJ 1/3/21

Samples

Sample ID:	Description:
NHP_MW-106	Sample Start Time: 1015 Parameters: PFAS, VOCs, 1,4-dioxane Sample End Time: 1040

Low-Flow Test Report:

DRAFT

Test Date / Time: 10/22/2020 12:07:15 PM
Project: NHP_MW-106R NHPC Superfund Site (2)
Operator Name: E. Dyrness

Location Name: NHP_MW-106R **Well Diameter: 6 in** **Casing Type: Steel Riser** **Screen Length: 82 ft** **Top of Screen: 120.7 ft** **Total Depth: 202.7 ft** **Initial Depth to Water: 16.85 ft**	**Pump Type: Peristaltic** **Tubing Type: Polyethylene** **Tubing Inner Diameter: 0.25 in** **Tubing Length: 164.2 ft** **Pump Intake From TOC: 161.7 ft** **Flow Cell Volume: 90 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 0.03 ft**	**Instrument Used: SmarTROLL MP** **Serial Number: 598939**

Test Notes:

PRIOR TO SAMPLING:

Pump serial number: 047277
Turbidity meter model and serial number (or similar unique designation, i.e., last four digits): Hach 2100Q 030639

Total tubing length (inside & outside of well): 161.7 ft + 2.5 ft = 164.2 ~~ft~~ MEM
Tubing inner diameter: 0.25 in MEM
PVR (including calculations): (161.7 ft + 2.5 ft) x 9.7 ml/ft = 1,593 ml or 1.593 L

Maximum allowable drawdown rate: 0.00 ft/5 min
Is #14 tubing used at this location? No

DURING/AFTER SAMPLING:

Pump start time: 1205

Parameters reached stabilization? Yes
If no, list parameters: n/a
Total volume purged prior to sampling: 3 L
Minimum PVR reached (compare purge amount to PVR)? Yes, 3L > 1.593 L
2 Hour time limit reached? No

Modified sampling required? (Clock time when modified sampling begins): no
Condition that triggered Modified Sampling: n/a

Any adjustments made (including flow rates, tubing, etc.): no

Final water level: 16.88
Total actual volume purged (delete Estimated Purge Volume): 3.5L
Measured Well Depth, if required (note variation in total depth compared to previously documented): n/a
Pump Off: 1300

DRAFT

Weather Conditions:
Sunny, 60s-70s

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 1	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 5	
10/22/2020 12:07 PM	00:00	7.37 pH	19.50 °C	196.18 µS/cm	3.20 mg/L		190.3 mV	16.85 ft	100.00 ml/min
10/22/2020 12:12 PM	05:00	7.69 pH	14.00 °C	286.46 µS/cm	0.60 mg/L	11.00 NTU	-0.3 mV	16.88 ft	100.00 ml/min
10/22/2020 12:17 PM	10:00	7.80 pH	13.56 °C	315.49 µS/cm	0.46 mg/L	18.00 NTU	-43.0 mV	16.88 ft	100.00 ml/min
10/22/2020 12:22 PM	15:00	7.88 pH	13.34 °C	341.32 µS/cm	0.41 mg/L	14.00 NTU	-61.1 mV	16.88 ft	100.00 ml/min
10/22/2020 12:27 PM	20:00	7.88 pH	13.28 °C	352.24 µS/cm	0.37 mg/L	12.00 NTU	-58.6 mV	16.88 ft	100.00 ml/min
10/22/2020 12:32 PM	25:00	7.88 pH	13.34 °C	357.61 µS/cm	0.34 mg/L	11.00 NTU	-60.7 mV	16.88 ft	100.00 ml/min
10/22/2020 12:37 PM	30:00	7.89 pH	13.26 °C	360.82 µS/cm	0.33 mg/L	11.00 NTU	-60.5 mV	16.88 ft	100.00 ml/min

Samples

Sample ID:	Description:
NHP_MW-106R	10/22/2020 1240-1300 PFAS VOCS 1,4-DIOXANE

Low-Flow Test Report:

DRAFT

Test Date / Time: 10/22/2020 9:07:26 AM
Project: NHP_MW-108S NHPC Superfund Site (2)
Operator Name: M. Murphy

Location Name: NHP_MW-108S **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 15 ft** **Top of Screen: 17.7 ft** **Total Depth: 32.7 ft** **Initial Depth to Water: 27.63 ft**	**Pump Type: Bladder** **Tubing Type: Polyethylene** **Tubing Inner Diameter: 0.17 in** **Tubing Length: 33.1 ft** **Pump Intake From TOC: 30.1 ft** **Flow Cell Volume: 130 ml** **Final Flow Rate: 50 ml/min** **Final Draw Down: 0.03 ft**	**Instrument Used: Aqua TROLL 500** **Serial Number: 689645**

Test Notes:
PRIOR TO SAMPLING:

Pump serial number: MP-10 Controller MP10-3585
Turbidity meter model and serial number (or similar unique designation, i.e., last four digits): Hach 2100Q 9597

Total tubing length (inside & outside of well): (30.1 ft + 3 ft) = 33.1 ft
PVR (including calculations): (33.1 ft × 4.5 mL/ft) = 149 mL +100 = 249 mL TPJ 1/3/21

Maximum allowable drawdown rate: 0.02ft per 5mins
Is #14 tubing used at this location? No

DURING/AFTER SAMPLING:

Pump start time: 0900

Parameters reached stabilization? No
If no, list parameters: All parameters did not reach stabilization.
Total volume purged prior to sampling: 750 mL
Minimum PVR reached (compare purge amount to PVR)? Yes, 750 mL > 149 mL
2 Hour time limit reached? No

Modified sampling required? (Clock time when modified sampling begins): Yes
Condition that triggered Modified Sampling: Partially saturated well screen triggered modified LF sampling method.

Any adjustments made (including flow rates, tubing, etc.): No

Final Bladder Pressure: 20 psi
Final Bladder Fill Time: 53 seconds
Final Bladder Discharge Time: 7 seconds

Final water level: 27.66 ft
Total actual volume purged (delete Estimated Purge Volume): 1.25 L

Measured Well Depth, if required (note variation in total depth compared to previously documented): NA
Pump Off: 1040

DRAFT

Weather Conditions:
Sunny 50s-60s

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 1	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 0.02	
10/22/2020 9:07 AM	00:00	6.49 pH	13.04 °C	375.21 µS/cm	2.40 mg/L	~~0.00 NTU~~	105.3 mV	27.66 ft	51.00 ml/min
10/22/2020 9:12 AM	05:00	6.50 pH	12.97 °C	378.34 µS/cm	1.11 mg/L	~~0.00 NTU~~ 1 NTU	108.9 mV	27.66 ft	50.00 ml/min

TPJ 1/3/21

Samples

Sample ID:	Description:
NHP_MW-108S	Sample Start Time: 0920 Parameters: PFAS, VOCs, 1,4-dioxane, Total metals Sample End Time: 1030
NHP_MW-108S DUP	Sample Start Time: 0920 Parameters: PFAS, VOCs, 1,4-dioxane, Total metals Sample End Time: 1030
EQUIP BLANK	Sample Start Time: 1115 Parameters: PFAS Sample End Time: 1120

Low-Flow Test Report:

DRAFT

Test Date / Time: 10/20/2020 10:33:13 AM
Project: NHP_MW-203SX NHPC Superfund Site (2)
Operator Name: Matt Bergen

Location Name: NHP_MW-203SX **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 17.5 ft** **Total Depth: 27.5 ft** **Initial Depth to Water: 27.03 ft**	**Pump Type: Peristaltic** **Tubing Type: Polyethylene** **Tubing Inner Diameter: 0.17 in** **Tubing Length: 31.5 ft** **Pump Intake From TOC: 27.4 ft** **Flow Cell Volume: 90 ml** **Final Draw Down:** ~~0 ft~~ 0.01 ft MeM	**Instrument Used: SmarTROLL MP** **Serial Number: 369550**

Test Notes:

PRIOR TO SAMPLING:

Pump serial number: Geopump 03678
Turbidity meter model and serial number (or similar unique designation, i.e., last four digits): N/A

PVR (including calculations): 4.5 ml/ft x 31.5 ft = 141.8 ml

Maximum allowable drawdown rate:0.02 / 5 min MeM
Is #14 tubing used at this location? No

DURING/AFTER SAMPLING:

Pump start time: 0930 hrs

Parameters reached stabilization? No
If no, list parameters: none taken
Total volume purged prior to sampling: 1000ml
Minimum PVR reached (compare purge amount to PVR)? Yes, 1000ml > 141.8 ml
2 Hour time limit reached? No

Modified sampling required? (Clock time when modified sampling begins): initial time of pump start MeM
Condition that triggered Approx 0.5 ft of water in well. Per M. Summerlin on 10-19-2020, collected a grab sample by purging 3 well volumes at 100 ml/min. 3 well volumes with 0.5 ft of water in well is approximately 1000ml. M. Summerlin did not want any FIELD parameters collected. No PFAS samples to be collected per M. Summerlin. MeM

Any adjustments made (including flow rates, tubing, etc.): minor adjustments to initial flow rate to obtain 100ml/min.
Notes: Needed to add 2 additional feet of 0.17 IN. ID tubing to set intake at 27.4 ft.
Water was visually clear upon sampling. Occasional air bubbles observed in tubing while purging.

Final water level:27.04 ft MeM
Total actual volume purged (delete Estimated Purge Volume): 1.2 L MeM
Measured Well Depth, if required (note variation in total depth compared to previously documented): N/A MeM

Pump Off: 0952 hrs

DRAFT

Weather Conditions:
Overcast 60s

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water
		+/- 0.1	+/- 1	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 5
10/20/2020 10:33 AM	00:00	~~7.65 pH~~	~~18.64 °C~~	~~0.00 µS/cm~~	~~9.43 mg/L~~		~~74.5 mV~~	~~27.03 ft~~

MeM

Samples

Sample ID:	Description:
NHP_MW-203SX	Sample analysis: VOCS NO QA samples collected Sample time 0948 hrs Stop time 0952 hrs

Low-Flow Test Report:

DRAFT

Test Date / Time: 10/20/2020 11:02:23 AM
Project: NHP_MW-203D NHPC Superfund Site (3)
Operator Name: Matt Bergen

Location Name: NHP_MW-203D **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 12 ft** **Top of Screen: 60.8 ft** **Total Depth: 72.8 ft** Initial Depth to Water: 28.42 ft MeM	**Pump Type: Bladder** **Tubing Type: Polyethylene** **Tubing Inner Diameter: 0.17 in** **Tubing Length: 69.8 ft** **Pump Intake From TOC: 66.8 ft** **Flow Cell Volume: 90 ml** **Final Flow Rate: 70 ml/min** Final Draw Down: 0.14 ft MeM	**Instrument Used: SmarTROLL MP** **Serial Number: 369550**

Test Notes:

PRIOR TO SAMPLING:

Pump serial number: Dedicated Bladder
Turbidity meter model and serial number (or similar unique designation, i.e., last four digits): HACH 2100Q 3811

Total tubing length (inside & outside of well): 69.8 ft
Tubing inner diameter 0.17 in
PVR (including calculations): 69.8 ft x 4.5 ml/ft + 100 ml = ~~435~~ 414 ml
MeM

Maximum allowable drawdown rate: 0.02 ft / 5 min
Is #14 tubing used at this location? No

DURING/AFTER SAMPLING:

Pump start time: 1056 hrs

Parameters reached stabilization? NO
If no, list parameters: Turbidity and Specific Conductance
Total volume purged prior to sampling: 7,500 ml
Minimum PVR reached (compare purge amount to PVR)? Yes, 7,500 ml > ~~435~~ 414 ml
MeM
2 Hour time limit reached? Yes

Modified sampling required? (Clock time when modified sampling begins): No
Condition that triggered Modified Sampling: n/a

Final pressure of bladder pump:40 psi
Final refill rate: 52 sec
Final discharge rate: 8 sec

Any adjustments made (including flow rates, tubing, etc.): none

NHP_MW-203D

DRAFT

Final water level: 28.56 ft
Total actual volume purged (delete Estimated Purge Volume): 8,100 ml
Measured Well Depth, if required (note variation in total depth compared to previously documented): n/a
Pump Off: 1323 hrs

Weather Conditions:
Overcast 60s

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 1	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 5	
10/20/2020 11:02 AM	00:00	7.44 pH	14.70 °C	542.97 µS/cm	9.14 mg/L	113.00 NTU	83.4 mV	28.52 ft	78.00 ml/min
10/20/2020 11:07 AM	05:00	7.06 pH	12.78 °C	508.19 µS/cm	4.63 mg/L	88.00 NTU	-25.8 mV	28.54 ft	70.00 ml/min
10/20/2020 11:12 AM	10:00	6.99 pH	12.56 °C	502.32 µS/cm	1.65 mg/L	69.00 NTU	-47.3 mV	28.57 ft	88.00 ml/min
10/20/2020 11:17 AM	15:00	6.97 pH	12.34 °C	509.11 µS/cm	0.90 mg/L	56.00 NTU	-56.1 mV	28.58 ft	78.00 ml/min
10/20/2020 11:22 AM	20:00	6.96 pH	12.40 °C	512.31 µS/cm	0.76 mg/L	43.00 NTU	-57.6 mV	28.58 ft	74.00 ml/min
10/20/2020 11:27 AM	25:00	6.96 pH	12.47 °C	515.57 µS/cm	0.63 mg/L	33.00 NTU	-60.1 mV	28.58 ft	70.00 ml/min
10/20/2020 11:32 AM	30:00	6.97 pH	12.47 °C	518.49 µS/cm	0.52 mg/L	27.00 NTU	-61.9 mV	28.58 ft	70.00 ml/min
10/20/2020 11:37 AM	35:00	6.99 pH	12.33 °C	520.29 µS/cm	0.42 mg/L	27.00 NTU	-62.6 mV	28.58 ft	74.00 ml/min
10/20/2020 11:42 AM	40:00	6.99 pH	12.47 °C	520.36 µS/cm	0.36 mg/L	20.00 NTU	-63.7 mV	28.58 ft	74.00 ml/min
10/20/2020 11:47 AM	45:00	7.00 pH	12.28 °C	524.04 µS/cm	0.29 mg/L	23.00 NTU	-65.1 mV	28.57 ft	74.00 ml/min
10/20/2020 11:52 AM	50:00	7.02 pH	12.28 °C	526.02 µS/cm	0.26 mg/L	23.00 NTU	-66.0 mV	28.57 ft	70.00 ml/min
10/20/2020 11:57 AM	55:00	7.01 pH	12.33 °C	530.57 µS/cm	0.56 mg/L	24.00 NTU	-65.2 mV	28.57 ft	74.00 ml/min
10/20/2020 12:02 PM	01:00:00	7.02 pH	12.22 °C	531.81 µS/cm	0.49 mg/L	24.00 NTU	-65.8 mV	28.57 ft	70.00 ml/min
10/20/2020 12:07 PM	01:05:00	7.03 pH	12.33 °C	534.10 µS/cm	0.44 mg/L	21.00 NTU	-66.2 mV	28.56 ft	70.00 ml/min
10/20/2020 12:12 PM	01:10:00	7.03 pH	12.41 °C	539.71 µS/cm	0.42 mg/L	19.00 NTU	-66.9 mV	28.57 ft	70.00 ml/min
10/20/2020 12:17 PM	01:15:00	7.03 pH	12.31 °C	552.93 µS/cm	0.37 mg/L	17.00 NTU	-66.7 mV	28.57 ft	70.00 ml/min
10/20/2020 12:22 PM	01:20:00	7.01 pH	12.22 °C	572.94 µS/cm	0.34 mg/L	17.00 NTU	-68.2 mV	28.57 ft	76.00 ml/min
10/20/2020 12:27 PM	01:25:00	7.02 pH	12.33 °C	584.05 µS/cm	0.32 mg/L	14.00 NTU	-70.2 mV	28.56 ft	72.00 ml/min
10/20/2020 12:32 PM	01:30:00	7.01 pH	12.47 °C	590.20 µS/cm	0.38 mg/L	16.00 NTU	-71.2 mV	28.56 ft	70.00 ml/min
10/20/2020 12:37 PM	01:35:00	7.03 pH	12.43 °C	593.14 µS/cm	0.35 mg/L	14.00 NTU	-72.7 mV	28.56 ft	70.00 ml/min
10/20/2020 12:42 PM	01:40:00	7.04 pH	12.63 °C	590.98 µS/cm	0.31 mg/L	14.00 NTU	-73.8 mV	28.55 ft	70.00 ml/min

DRAFT

10/20/2020 12:47 PM	01:45:00	7.05 pH	12.91 °C	592.63 µS/cm	0.30 mg/L	11.00 NTU	-75.8 mV	28.54 ft	70.00 ml/min
10/20/2020 12:52 PM	01:50:00	7.05 pH	12.74 °C	601.77 µS/cm	0.28 mg/L	12.00 NTU	-76.5 mV	28.54 ft	70.00 ml/min
10/20/2020 12:57 PM	01:55:00	7.07 pH	12.57 °C	612.55 µS/cm	0.29 mg/L	9.00 NTU	-77.9 mV	28.54 ft	70.00 ml/min
10/20/2020 1:02 PM	02:00:00	7.07 pH	12.56 °C	621.49 µS/cm	0.24 mg/L	7.00 NTU	-80.1 mV	28.54 ft	70.00 ml/min

Samples

Sample ID:	Description:
NHP_MW-203D	Sample analysis: PFAS, VOCs Collected FIELD BLANK-BERGEN for PFAS AT 1304 hrs Sample time: 1308 Stop time 1323 hrs

Low-Flow Test Report:

DRAFT

Test Date / Time: 10/23/2020 9:12:36 AM
Project: NHP_MW-204S NHPC Superfund Site (2)
Operator Name: M. Murphy

Location Name: NHP_MW-204S **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 15 ft** **Top of Screen: 22.6 ft** **Total Depth: 37.6 ft** **Initial Depth to Water: 24.17 ft**	**Pump Type: Bladder** **Tubing Type: Polyethylene** **Tubing Inner Diameter: 0.17 in** **Tubing Length: 32.4 ft** **Pump Intake From TOC: 30.4 ft** **Flow Cell Volume: 130 ml** **Final Flow Rate: 50 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 500** **Serial Number: 689645**

Test Notes:
PRIOR TO SAMPLING:

Pump serial number: MP-10 Controller MP10-3585
Turbidity meter model and serial number (or similar unique designation, i.e., last four digits): Hach 2100Q 9597

Total tubing length (inside & outside of well): (30.4 ft + 2 ft) = 32.4 ft
PVR (including calculations): (34.2 ft × 4.5 mL/ft) = 154 mL

Maximum allowable drawdown rate: 0.02ft per 5mins
Is #14 tubing used at this location? No

DURING/AFTER SAMPLING:

Pump start time: 0900

Parameters reached stabilization? No
If no, list parameters: All parameters did not reach stabilization.
Total volume purged prior to sampling: 650 mL
Minimum PVR reached (compare purge amount to PVR)? Yes, 650 mL > 154 mL
2 Hour time limit reached? No

Modified sampling required? (Clock time when modified sampling begins): Yes at start of purge.
Condition that triggered Modified Sampling: Partially saturated well screen triggered modified LF sampling method.

Any adjustments made (including flow rates, tubing, etc.): No

Final Bladder Pressure: 20 psi
Final Bladder Fill Time: 54 seconds
Final Bladder Discharge Time: 6 seconds

Final water level: 24.17 ft
Total actual volume purged (delete Estimated Purge Volume): 1.25 L

Measured Well Depth, if required (note variation in total depth compared to previously documented): NA
Pump Off: 0955

DRAFT

Weather Conditions:
Overcast, intermittent rain, 50s-60s

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 1	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 0.02	
10/23/2020 9:12 AM	00:00	6.12 pH	13.34 °C	336.69 µS/cm	2.50 mg/L	~~0.00 NTU~~	171.1 mV	24.17 ft	50.00 ml/min
10/23/2020 9:17 AM	05:00	6.14 pH	13.47 °C	337.22 µS/cm	2.46 mg/L	~~0.00 NTU~~ 1 NTU	165.4 mV	24.17 ft	50.00 ml/min

TPJ 1/3/21

Samples

Sample ID:	Description:
NHP_MW-204S	Sample Start Time: 0925 Parameters: PFAS, VOCs, 1,4-dioxane Sample End Time: 0955

Low-Flow Test Report:

DRAFT

Test Date / Time: 10/27/2020 8:13:31 AM
Project: NHP_MW-301S NHPC Superfund Site (2)
Operator Name: E. Dyrness

Location Name: NHP_MW-301S **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 16.6 ft** **Total Depth: 26.6 ft** **Initial Depth to Water: 15.7 ft**	**Pump Type: Peristaltic** **Tubing Type: Polyethylene** **Tubing Inner Diameter: 0.25 in** **Tubing Length: 23.6 ft** **Pump Intake From TOC: ~~23.8 ft~~ 21.6 ft** MeM **Flow Cell Volume: 90 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 0.1 ft**	**Instrument Used: SmarTROLL MP** **Serial Number: 598939**

Test Notes:

PRIOR TO SAMPLING:

Pump serial number: 047277
Turbidity meter model and serial number (or similar unique designation, i.e., last four digits): Hach 2100Q 030639

Total tubing length (inside & outside of well): 21.6 ft + 2 ft = 23.6 ft
Tubing inner diameter: 0.25 in MeM
PVR (including calculations): (21.6 ft + 2 ft) x 9.7 ml/ft = 229 ml

Maximum allowable drawdown rate: 0.02 ft/5 min
Is #14 tubing used at this location? No

DURING/AFTER SAMPLING:

Pump start time: 0810

Parameters reached stabilization? Yes
If no, list parameters: n/a
Total volume purged prior to sampling: 4L
Minimum PVR reached (compare purge amount to PVR)? Yes, 4L > 229 ml
2 Hour time limit reached? No

Modified sampling required? (Clock time when modified sampling begins): no
Condition that triggered Modified Sampling: n/a

Any adjustments made (including flow rates, tubing, etc.): no

Final water level: 15.80 ft MeM
Total actual volume purged (delete Estimated Purge Volume): 4.5L
Measured Well Depth, if required (note variation in total depth compared to previously documented): n/a
Pump Off: 0910

DRAFT

Weather Conditions:
Mostly cloudy, 40s-50s

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 1	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 5	
10/27/2020 8:13 AM	00:00	8.01 pH	11.53 °C	772.59 µS/cm	4.19 mg/L		146.6 mV	15.70 ft	110.00 ml/min
10/27/2020 8:18 AM	05:00	7.23 pH	12.03 °C	771.71 µS/cm	0.74 mg/L	5.00 NTU	106.3 mV	15.79 ft	105.00 ml/min
10/27/2020 8:23 AM	10:00	6.77 pH	12.12 °C	730.90 µS/cm	0.59 mg/L	3.00 NTU	105.0 mV	15.80 ft	100.00 ml/min
10/27/2020 8:28 AM	15:00	6.46 pH	12.17 °C	709.21 µS/cm	0.70 mg/L	2.00 NTU	104.3 mV	15.80 ft	100.00 ml/min
10/27/2020 8:33 AM	20:00	6.31 pH	12.16 °C	692.87 µS/cm	0.87 mg/L	2.00 NTU	102.5 mV	15.80 ft	100.00 ml/min
10/27/2020 8:38 AM	25:00	6.22 pH	12.21 °C	684.92 µS/cm	0.96 mg/L	2.00 NTU	103.6 mV	15.80 ft	100.00 ml/min
10/27/2020 8:43 AM	30:00	6.17 pH	12.26 °C	674.58 µS/cm	1.06 mg/L	1.00 NTU	103.4 mV	15.80 ft	100.00 ml/min
10/27/2020 8:48 AM	35:00	6.16 pH	12.26 °C	669.72 µS/cm	1.12 mg/L	2.00 NTU	101.5 mV	15.80 ft	100.00 ml/min
10/27/2020 8:53 AM	40:00	6.13 pH	12.31 °C	665.43 µS/cm	1.14 mg/L	2.00 NTU	103.1 mV	15.80 ft	100.00 ml/min

Samples

Sample ID:	Description:
NHP_MW-301S	10/27/2020 0900-0910 PFAS VOCs Total metals

Low-Flow Test Report:

DRAFT

Test Date / Time: 10/21/2020 11:30:30 AM
Project: NHP_MW-302S NHPC Superfund Site (2)
Operator Name: Matt Bergen

Location Name: NHP_MW-302S **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 14.1 ft** **Total Depth: 24.1 ft** **Initial Depth to Water: 17.95 ft**	**Pump Type: Peristaltic** **Tubing Type: Polyethylene** **Tubing Inner Diameter: 0.25 in** **Tubing Length: 23.9 ft** **Pump Intake From TOC: 20.9 ft** **Flow Cell Volume: 90 ml** **Final Flow Rate: 50 ml/min** **Final Draw Down:** ~~0 ft~~ 0.39 ft MeM	**Instrument Used: SmarTROLL MP** **Serial Number: 369550**

Test Notes:

PRIOR TO SAMPLING:

Pump serial number: Geopump 036785
Turbidity meter model and serial number (or similar unique designation, i.e., last four digits): HACH 2100Q 3811

Total tubing length (inside & outside of well): 23.9 ft
Tubing inner diameter: 0.25 in
PVR (including calculations): 23.9 ft x 9.7 ml/ft = 231.8 ml
Maximum allowable drawdown rate: 0.02 ft / 5 min
Is #14 tubing used at this location? Yes

DURING/AFTER SAMPLING:

Pump start time: 1120 hrs

Parameters reached stabilization? No
If no, list parameters: all
Total volume purged prior to sampling: 250 ml
Minimum PVR reached (compare purge amount to PVR)? Yes 250 ml > 231.8 ml
2 Hour time limit reached? No

Modified sampling required? (Clock time when modified sampling begins):Yes, initial
Condition that triggered Modified Sampling: Partially saturated screen triggered modified LF sampling method.

Any adjustments made (including flow rates, tubing, etc.): none

Final water level:18.34 ft
Total actual volume (delete Estimated Purge Volume): 630 ml
Measured Well Depth, if required (note variation in total depth compared to previously documented): n/a
Pump Off: 1209 hrs

DRAFT

Weather Conditions:
Cloudy, 50-60s light rain

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 1	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 5	
10/21/2020 11:30 AM	00:00	7.23 pH	16.14 °C	819.78 µS/cm	R ~~-0.03 mg/L~~	30.00 NTU	105.9 mV	18.27 ft	50.00 ml/min
10/21/2020 11:35 AM	05:00	6.60 pH	15.10 °C	665.13 µS/cm	MeM ~~-0.04 mg/L~~ R		44.6 mV	17.95 ft	

The RDO value is rejected because it is negative. The RDO calibration was checked again after the well was completed and passed.

Samples

Sample ID:	Description:
NHP_MW-302S	Sample Analysis: PFAS, VOCs, 1,4-DIOXANE No QA samples collected Sample time: 1138 hrs Stop time: 1209 hrs

Low-Flow Test Report:

DRAFT

Test Date / Time: 10/26/2020 11:21:37 AM
Project: NHP_MW-302SA NHPC Superfund Site (2)
Operator Name: Matt Bergen

Location Name: NHP_MW-302SA **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 1 ft** **Top of Screen: 22.8 ft** **Total Depth: 24.4 ft** **Initial Depth to Water: 18.73 ft**	**Pump Type: Peristaltic** **Tubing Type: Polyethylene** **Tubing Inner Diameter: 0.25 in** **Pump Intake From TOC: 23.2 ft** **~~Estimated Total Volume Pumped:~~** **~~4300 ml~~** Tubing Length: 25.7 ft **Flow Cell Volume: 130 ml** **Final Flow Rate: 98 ml/min** **Final Draw Down: 0.24 ft**	**Instrument Used: Aqua TROLL 500** **Serial Number: 689645** TPJ 1/3/21

Test Notes:

PRIOR TO SAMPLING:

Pump serial number: Geopump 036785
Turbidity meter model and serial number (or similar unique designation, i.e., last four digits):HACH 2100Q 3811

Total tubing length (inside & outside of well) 25.7 ft
Tubing inner diameter: 0.25 in
PVR (including calculations): 25.7 ft x 9.7 ml/ft = 249.3 ml

Maximum allowable drawdown rate: 0.02 ft / 5 min
Is #14 tubing used at this location? No

DURING/AFTER SAMPLING:

Pump start time:1114 hrs

Parameters reached stabilization? Yes
If no, list parameters:n/a
Total volume purged prior to sampling: 4,500 ml
Minimum PVR reached (compare purge amount to PVR)? Yes 4,500 ml > 249.3 ml
2 Hour time limit reached? No

Modified sampling required? (Clock time when modified sampling begins): No
Condition that triggered Modified Sampling: n/a

Any adjustments made (including flow rates, tubing, etc.): No

Final water level:18.97
Total actual volume purged (delete Estimated Purge Volume): 5,600 ml
Measured Well Depth, if required (note variation in total depth compared to previously documented):n/a

Pump Off: 1234 hrs

DRAFT

Weather Conditions:
Light rain 30s-40s

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 1	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 5	
10/26/2020 11:21 AM	00:00	6.07 pH	10.01 °C	2,833.5 µS/cm	4.62 mg/L	~~303.40 NTU~~ 24 NTU	144.6 mV	18.91 ft	98.00 ml/min
10/26/2020 11:26 AM	05:00	6.16 pH	10.29 °C	2,883.0 µS/cm	1.49 mg/L	~~70.54 NTU~~ 26 NTU	152.2 mV	18.96 ft	98.00 ml/min
10/26/2020 11:31 AM	10:00	6.19 pH	10.74 °C	2,943.9 µS/cm	1.07 mg/L	~~26.59 NTU~~ 20 NTU	156.9 mV	18.96 ft	96.00 ml/min
10/26/2020 11:36 AM	15:00	6.22 pH	10.78 °C	2,941.0 µS/cm	0.94 mg/L	~~20.50 NTU~~ 17 NTU	159.3 mV	18.96 ft	96.00 ml/min
10/26/2020 11:41 AM	20:00	6.24 pH	10.72 °C	2,930.5 µS/cm	0.79 mg/L	~~19.78 NTU~~ 12 NTU	161.9 mV	18.96 ft	98.00 ml/min
10/26/2020 11:46 AM	25:00	6.26 pH	10.57 °C	2,981.4 µS/cm	0.79 mg/L	~~8.15 NTU~~ 11 NTU	164.7 mV	18.96 ft	98.00 ml/min
10/26/2020 11:51 AM	30:00	6.28 pH	10.68 °C	2,988.9 µS/cm	0.73 mg/L	~~2.72 NTU~~ 6 NTU	166.4 mV	18.96 ft	98.00 ml/min
10/26/2020 11:56 AM	35:00	6.28 pH	10.73 °C	2,984.4 µS/cm	0.84 mg/L	~~1.56 NTU~~ 4 NTU	168.2 mV	18.97 ft	98.00 ml/min
10/26/2020 12:01 PM	40:00	6.30 pH	10.64 °C	2,987.4 µS/cm	0.73 mg/L	~~0.44 NTU~~ 4 NTU	169.8 mV	18.97 ft	98.00 ml/min
10/26/2020 12:06 PM	45:00	6.31 pH	10.74 °C	2,984.4 µS/cm	0.65 mg/L	~~0.88 NTU~~ 3 NTU	171.7 mV	18.97 ft	98.00 ml/min

TPJ 1/3/21

Samples

Sample ID:	Description:
NHP_MW-302SA	Sample analysis: PFAS, VOCs, 1,4-DIOXANE No QA samples collected Sample time: 1215 hrs Stop time hrs:1243 hrs

Low-Flow Test Report:

DRAFT

Test Date / Time: 10/21/2020 8:56:06 AM
Project: NHP_MW-302D NHPC Superfund Site (3)
Operator Name: Matt Bergen

Location Name: NHP_MW-302D **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length:10 ft** MeM **Top of Screen: 56.5 ft** **Total Depth: 66.5 ft** **Initial Depth to Water: 16.97 ft**	**Pump Type: Peristaltic** **Tubing Type: Polyethylene** **Tubing Inner Diameter: 0.25 in** **Tubing Length: 64 ft** **Pump Intake From TOC: 61.5 ft** **Flow Cell Volume: 90 ml** **Final Flow Rate: 104 ml/min** **Final Draw Down: 0.01 ft**	**Instrument Used: SmarTROLL MP** **Serial Number: 369550**

Test Notes:

PRIOR TO SAMPLING:

Pump serial number: Geopump 038765
Turbidity meter model and serial number (or similar unique designation, i.e., last four digits): HACH 2100Q 3811

Total tubing length (inside & outside of well): 64 ft
Tubing inner diameter: 0.25 in
PVR (including calculations): 64 ft x 9.7 ml/ft = 620.8 ml

Maximum allowable drawdown rate: 0.02 ft/5min
Is #14 tubing used at this location? No

DURING/AFTER SAMPLING:

Pump start time: 0852 hrs

Parameters reached stabilization? Yes
If no, list parameters: n/a
Total volume purged prior to sampling: 3,500 ml
Minimum PVR reached (compare purge amount to PVR)? Yes, 3,500 ml > 620.8 ml
2 Hour time limit reached? No

Modified sampling required? (Clock time when modified sampling begins): no
Condition that triggered Modified Sampling: n/a

Any adjustments made (including flow rates, tubing, etc.): none

Notes: DO was much higher than usual, 5.7% instead of <1%. Attempted to contact T. Justham to notify, confirmed with M.Murphy, collected Sample after 3 stable readings to confirm DO was not falling.
Final water level:16.98 ft MeM
Total actual volume purged (delete Estimated Purge Volume): 4,800 ml

Measured Well Depth, if required (note variation in total depth compared to previously documented): n/a
Pump Off: 0942 hrs

DRAFT

Weather Conditions:
Cloudy 50-60s chance of rain

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 1	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 5	
10/21/2020 8:56 AM	00:00	7.75 pH	13.96 °C	447.78 µS/cm	7.97 mg/L	2.00 NTU	105.4 mV	16.97 ft	100.00 ml/min
10/21/2020 9:01 AM	05:00	7.10 pH	12.20 °C	405.23 µS/cm	5.90 mg/L	1.00 NTU	71.9 mV	16.97 ft	104.00 ml/min
10/21/2020 9:06 AM	10:00	7.05 pH	11.92 °C	396.89 µS/cm	5.77 mg/L	1.00 NTU	64.2 mV	16.97 ft	104.00 ml/min
10/21/2020 9:11 AM	15:00	7.03 pH	11.85 °C	395.85 µS/cm	5.76 mg/L	1.00 NTU	61.8 mV	16.98 ft	104.00 ml/min
10/21/2020 9:16 AM	20:00	7.01 pH	11.82 °C	395.30 µS/cm	5.70 mg/L	2.00 NTU	60.9 mV	16.98 ft	104.00 ml/min
10/21/2020 9:21 AM	25:00	7.00 pH	11.79 °C	395.88 µS/cm	5.69 mg/L	2.00 NTU	60.7 mV	16.98 ft	104.00 ml/min
10/21/2020 9:26 AM	30:00	7.00 pH	11.85 °C	395.18 µS/cm	5.66 mg/L	1.00 NTU	60.3 mV	16.98 ft	104.00 ml/min

Samples

Sample ID:	Description:
NHP_MW-302D	Sample analysis: VOCs, 1,4-DIOXANE NO QA samples collected Sample time: 0930 hrs Stop time: 0942 hrs

Low-Flow Test Report:

DRAFT

Test Date / Time: 10/26/2020 9:44:26 AM
Project: NHP_MW-302DA NHPC Superfund Site (2)
Operator Name: Matt Bergen

Location Name: NHP_MW-302DA **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 1 ft** **Top of Screen: 46.9 ft** **Total Depth: 48.4 ft** **Initial Depth to Water: 17.84 ft**	**Pump Type: Peristaltic** **Tubing Type: Polyethylene** **Tubing Inner Diameter: 0.25 in** **Tubing Length: 50 ft** **Pump Intake From TOC: 47.5 ft** **Flow Cell Volume: 130 ml** **Final Flow Rate: 90 ml/min** **Final Draw Down: 0.27 ft**	**Instrument Used: Aqua TROLL 500** **Serial Number: 689645**

Test Notes:

PRIOR TO SAMPLING:

Pump serial number: Geopump 036785
Turbidity meter model and serial number (or similar unique designation, i.e., last four digits):HACH 2100Q 3811

Total tubing length (inside & outside of well): 50.0 ft
Tubing inner diameter: 0.25 in
PVR (including calculations): 50 ft x 9.7 ml/ft = 485 ml

Maximum allowable drawdown rate: 0.02 ft/min
Is #14 tubing used at this location? No

DURING/AFTER SAMPLING:

Pump start time:0934 hrs

Parameters reached stabilization? Yes
If no, list parameters: n/a
Total volume purged prior to sampling: 3,200 ml
Minimum PVR reached (compare purge amount to PVR)? Yes 3,200 ml > 485 ml
2 Hour time limit reached? No

Modified sampling required? (Clock time when modified sampling begins): No
Condition that triggered Modified Sampling:n/a

Any adjustments made (including flow rates, tubing, etc.): none

Notes: Air bubbles observed coming up tubing while purging and sampling.

Final water level:18.11 ft
Total actual volume purged (delete Estimated Purge Volume): 4,400 ml

Measured Well Depth, if required (note variation in total depth compared to previously documented): n/a
Pump Off: 1044 hrs

DRAFT

Weather Conditions:
Light rain 30-40s

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 1	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 5	
10/26/2020 9:44 AM	00:00	6.67 pH	10.54 °C	476.72 µS/cm	5.23 mg/L	9.00 NTU	192.9 mV	18.03 ft	88.00 ml/min
10/26/2020 9:49 AM	05:00	6.51 pH	10.45 °C	473.81 µS/cm	2.83 mg/L	6.00 NTU	90.1 mV	18.09 ft	88.00 ml/min
10/26/2020 9:54 AM	10:00	6.47 pH	10.46 °C	475.81 µS/cm	1.92 mg/L	4.00 NTU	42.2 mV	18.10 ft	88.00 ml/min
10/26/2020 9:59 AM	15:00	6.47 pH	10.42 °C	478.10 µS/cm	1.61 mg/L	3.00 NTU	23.3 mV	18.10 ft	88.00 ml/min
10/26/2020 10:04 AM	20:00	6.48 pH	10.44 °C	479.38 µS/cm	1.34 mg/L	3.00 NTU	15.1 mV	18.10 ft	90.00 ml/min
10/26/2020 10:09 AM	25:00	6.49 pH	10.44 °C	480.25 µS/cm	1.22 mg/L	3.00 NTU	10.4 mV	18.11 ft	90.00 ml/min
10/26/2020 10:14 AM	30:00	6.51 pH	10.36 °C	480.94 µS/cm	1.18 mg/L	4.00 NTU	7.5 mV	18.11 ft	90.00 ml/min
10/26/2020 10:19 AM	35:00	6.52 pH	10.36 °C	481.79 µS/cm	1.29 mg/L	3.00 NTU	6.8 mV	18.11 ft	90.00 ml/min

Samples

Sample ID:	Description:
NHP_MW-302DA	Sample analysis: PFAS, VOCs, 1,4-DIOXANE No QA samples collected Sample time: 1025 hrs Stop time: 1044 hrs

Low-Flow Test Report:

DRAFT

Test Date / Time: 10/22/2020 9:53:06 AM
Project: NHP_MW-303S NHPC Superfund Site (2)
Operator Name: E. Dyrness

Location Name: NHP_MW-303S **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 14.3 ft** **Total Depth: 24.3 ft** **Initial Depth to Water: 12.34 ft**	**Pump Type: Peristaltic** **Tubing Type: Polyethylene** **Tubing Inner Diameter: 0.25 in** **Tubing Length: 22.3 ft** **Pump Intake From TOC: 19.3 ft** **Flow Cell Volume: 90 ml** **Final Flow Rate: 110 ml/min** **Final Draw Down: 0.01 ft**	**Instrument Used: SmarTROLL MP** **Serial Number: 598939**

Test Notes:

PRIOR TO SAMPLING:

Pump serial number: 047277
Turbidity meter model and serial number (or similar unique designation, i.e., last four digits): Hach 2100Q 030639

Total tubing length (inside & outside of well): 19.3 ft + 3 ft = 22.3 ft
Tubing inner diameter: 0.25 in MeM
PVR (including calculations): (19.3 ft + 3 ft) x 9.7 ml/ft = 217 ml

Maximum allowable drawdown rate: 0.02 ft/5 min
Is #14 tubing used at this location? No

DURING/AFTER SAMPLING:Geopump

Pump start time: 0950

Parameters reached stabilization? Yes
If no, list parameters: n/a
Total volume purged prior to sampling: 2.5 L
Minimum PVR reached (compare purge amount to PVR)? Yes, 2.5 L > 217 ml
2 Hour time limit reached? No

Modified sampling required? (Clock time when modified sampling begins): no
Condition that triggered Modified Sampling: n/a

Any adjustments made (including flow rates, tubing, etc.): added 6" of 16 pump tubing.

Final water level: 12.35 ft MeM
Total actual volume purged (delete Estimated Purge Volume): 3 L
Measured Well Depth, if required (note variation in total depth compared to previously documented): n/a
Pump Off: 1030

DRAFT

Weather Conditions:
Sunny, 60s

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 1	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 5	
10/22/2020 9:53 AM	00:00	6.97 pH	17.28 °C	600.55 µS/cm	4.45 mg/L	2.00 NTU	69.6 mV	12.34 ft	110.00 ml/min
10/22/2020 9:58 AM	05:00	6.54 pH	13.92 °C	567.87 µS/cm	0.52 mg/L	2.00 NTU	106.5 mV	12.35 ft	110.00 ml/min
10/22/2020 10:03 AM	10:00	6.38 pH	13.58 °C	559.18 µS/cm	0.35 mg/L	2.00 NTU	111.7 mV	12.35 ft	110.00 ml/min
10/22/2020 10:08 AM	15:00	6.32 pH	13.51 °C	556.25 µS/cm	0.28 mg/L	3.00 NTU	112.6 mV	12.35 ft	110.00 ml/min
10/22/2020 10:13 AM	20:00	6.28 pH	13.58 °C	552.17 µS/cm	0.25 mg/L	2.00 NTU	114.0 mV	12.35 ft	110.00 ml/min

Samples

Sample ID:	Description:
NHP_MW-303S	10/22/2020 1020-1030 PFAS VOCS Total Metals

Low-Flow Test Report:

DRAFT

Test Date / Time: 10/21/2020 10:19:22 AM
Project: NHP_MW-303SA NHPC Superfund Site (2)
Operator Name: E. Dyrness

Location Name: NHP_MW-303SA **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 1 ft** **Top of Screen: 24.5 ft** **Total Depth: 26.2 ft** **Initial Depth to Water: 13.59 ft**	**Pump Type: Peristaltic** **Tubing Type: Polyethylene** **Tubing Inner Diameter: 0.25 in** **Tubing Length: 27.7 ft** **Pump Intake From TOC: 24.7 ft** **Flow Cell Volume: 90 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 0.23 ft**	**Instrument Used: SmarTROLL MP** **Serial Number: 598939**

Test Notes:

PRIOR TO SAMPLING:

Pump serial number: 047277
Turbidity meter model and serial number (or similar unique designation, i.e., last four digits): Hach 2100Q 030639

Total tubing length (inside & outside of well): 24.7 ft + 3 ft = 27.7 ft
Tubing inner diameter: 0.25 in MeM
PVR (including calculations): (24.7 ft + 3 ft) x 9.~~8~~ 7 ml/ft = 269 ml MeM

Maximum allowable drawdown rate: 0.02 ft/5 min
Is #14 tubing used at this location? No

DURING/AFTER SAMPLING:

Pump start time: 1010

Parameters reached stabilization? Yes
If no, list parameters: n/a
Total volume purged prior to sampling: 3 L
Minimum PVR reached (compare purge amount to PVR)? Yes, 3L > 269 ml
2 Hour time limit reached? No

Modified sampling required? (Clock time when modified sampling begins): no
Condition that triggered Modified Sampling: n/a

Any adjustments made (including flow rates, tubing, etc.): no

Final water level: 13.82 ft MeM
Total actual volume purged (delete Estimated Purge Volume): 3.5 L
Measured Well Depth, if required (note variation in total depth compared to previously documented): n/a
Pump Off: 1105

DRAFT

Weather Conditions:
60s, overcast, light rain

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 1	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 5	
10/21/2020 10:19 AM	00:00	6.79 pH	15.26 °C	721.89 µS/cm	5.04 mg/L		69.5 mV	13.59 ft	90.00 ml/min
10/21/2020 10:24 AM	05:00	6.51 pH	13.68 °C	726.71 µS/cm	0.93 mg/L	12.00 NTU	99.4 mV	13.82 ft	100.00 ml/min
10/21/2020 10:29 AM	10:00	6.41 pH	13.31 °C	728.95 µS/cm	0.62 mg/L	7.00 NTU	104.5 mV	13.82 ft	100.00 ml/min
10/21/2020 10:34 AM	15:00	6.37 pH	13.22 °C	728.96 µS/cm	0.48 mg/L	6.00 NTU	108.5 mV	13.82 ft	100.00 ml/min
10/21/2020 10:39 AM	20:00	6.36 pH	13.25 °C	728.68 µS/cm	0.41 mg/L	4.00 NTU	109.5 mV	13.82 ft	100.00 ml/min
10/21/2020 10:44 AM	25:00	6.34 pH	13.36 °C	726.68 µS/cm	0.37 mg/L	3.00 NTU	109.2 mV	13.82 ft	100.00 ml/min
10/21/2020 10:49 AM	30:00	6.33 pH	13.36 °C	725.72 µS/cm	0.35 mg/L	3.00 NTU	111.8 mV	13.82 ft	100.00 ml/min

Samples

Sample ID:	Description:
NHP_MW-303SA	10/20/2020 1050-1105 PFAS VOCS Total Metals

Low-Flow Test Report:

DRAFT

Test Date / Time: 10/22/2020 8:34:07 AM
Project: NHP_MW-303D NHPC Superfund Site (2)
Operator Name: E. Dyrness

Location Name: NHP_MW-303D **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 50.2 ft** **Total Depth: 60.2 ft** **Initial Depth to Water: 14.2 ft**	**Pump Type: Peristaltic** **Tubing Type: Polyethylene** **Tubing Inner Diameter: 0.25 in** **Tubing Length: 58.2 ft** **Pump Intake From TOC: 55.2 ft** **Flow Cell Volume: 90 ml** **Final Flow Rate: 105 ml/min** **Final Draw Down: 0.05 ft**	**Instrument Used: SmarTROLL MP** **Serial Number: 598939**

Test Notes:

PRIOR TO SAMPLING:

Pump serial number: 047277
Turbidity meter model and serial number (or similar unique designation, i.e., last four digits): Hach 2100Q 030639

Total tubing length (inside & outside of well): 55.2 ft + 3 ft = 58.2 ft
Tubing inner diameter: 0.25 in MeM
PVR (including calculations): (55.2 ft + 3 ft) x 9.7 ft = 565 ml

Maximum allowable drawdown rate: 0.02 ft/5 min
Is #14 tubing used at this location? No

DURING/AFTER SAMPLING:

Pump start time:0825

Parameters reached stabilization? Yes
If no, list parameters: n/a
Total volume purged prior to sampling: 4.5 L
Minimum PVR reached (compare purge amount to PVR)? Yes, 4.5L > 565 ml
2 Hour time limit reached? No

Modified sampling required? (Clock time when modified sampling begins): no
Condition that triggered Modified Sampling: n/a

Any adjustments made (including flow rates, tubing, etc.): no

Final water level: 14.25 ~~ft~~ MeM
Total actual volume purged (delete Estimated Purge Volume): 5 L
Measured Well Depth, if required (note variation in total depth compared to previously documented): n/a
Pump Off: 0920

DRAFT

Weather Conditions:
Sunny, 50s-60s

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 1	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 5	
10/22/2020 8:34 AM	00:00	8.42 pH	15.84 °C	461.74 µS/cm	6.06 mg/L		146.8 mV	14.20 ft	100.00 ml/min
10/22/2020 8:39 AM	05:00	7.73 pH	13.04 °C	427.53 µS/cm	1.57 mg/L	19.00 NTU	-37.3 mV	14.25 ft	100.00 ml/min
10/22/2020 8:44 AM	10:00	7.37 pH	12.76 °C	420.95 µS/cm	0.66 mg/L	20.00 NTU	-28.6 mV	14.25 ft	105.00 ml/min
10/22/2020 8:49 AM	15:00	7.14 pH	12.67 °C	423.32 µS/cm	0.42 mg/L	13.00 NTU	-23.1 mV	14.25 ft	105.00 ml/min
10/22/2020 8:54 AM	20:00	7.02 pH	12.69 °C	422.94 µS/cm	0.33 mg/L	14.00 NTU	-22.4 mV	14.25 ft	105.00 ml/min
10/22/2020 8:59 AM	25:00	6.93 pH	12.65 °C	423.44 µS/cm	0.28 mg/L	15.00 NTU	-21.1 mV	14.25 ft	105.00 ml/min
10/22/2020 9:04 AM	30:00	6.88 pH	12.63 °C	423.91 µS/cm	0.25 mg/L	14.00 NTU	-19.5 mV	14.25 ft	105.00 ml/min
10/22/2020 9:09 AM	35:00	6.84 pH	12.76 °C	422.49 µS/cm	0.22 mg/L	14.00 NTU	-19.1 mV	14.25 ft	105.00 ml/min

Samples

Sample ID:	Description:
NHP_MW-303D	10/22/2020 0910-0920 VOCs 1,4-DIOXANE

Low-Flow Test Report:

DRAFT

Test Date / Time: 10/21/2020 8:28:15 AM
Project: NHP_MW-303DA NHPC Superfund Site (2)
Operator Name: E. Dyrness

Location Name: NHP_MW-303DA **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 1 ft** **Top of Screen: 42.2 ft** **Total Depth: 43.9 ft** **Initial Depth to Water: 15.1 ft**	**Pump Type: Peristaltic** **Tubing Type: Polyethylene** **Tubing Inner Diameter: 0.25 in** **Tubing Length: 45.3 ft** **Pump Intake From TOC: 42.8 ft** **Flow Cell Volume: 90 ml** **Final Flow Rate: 65 ml/min** **Final Draw Down: 0.75 ft**	**Instrument Used: SmarTROLL MP** **Serial Number: 598939**

Test Notes:

PRIOR TO SAMPLING:

Pump serial number: 047277
Turbidity meter model and serial number (or similar unique designation, i.e., last four digits): Hach 2100Q 030639

Total tubing length (inside & outside of well): 42.8 ft + 2.5 ft = 45.3 ft
Tubing inner diameter: 0.25 in MeM
PVR (including calculations): (42.8 ft + 2.5 ft) x 9.7 ml/ft = 440 ml

Maximum allowable drawdown rate: 0.02 ft/5 min
Is #14 tubing used at this location? No

DURING/AFTER SAMPLING:

Pump start time: 0825

Parameters reached stabilization? Yes
If no, list parameters: n/a
Total volume purged prior to sampling: 2L
Minimum PVR reached (compare purge amount to PVR)? Yes, 2L > 440 ml
2 Hour time limit reached? No

Modified sampling required? (Clock time when modified sampling begins): no
Condition that triggered Modified Sampling: n/a

Any adjustments made (including flow rates, tubing, etc.): no

Final water level: 15.86 ~~ft~~ MeM
Total actual volume purged (delete Estimated Purge Volume): 2.5 L
Measured Well Depth, if required (note variation in total depth compared to previously documented): n/a
Pump Off: 0935

DRAFT

Weather Conditions:
50s-60s, overcast, scattered showers, slight breeze

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 1	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 5	
10/21/2020 8:28 AM	00:00	7.70 pH	14.99 °C	671.81 µS/cm	4.89 mg/L		129.2 mV	15.10 ft	90.00 ml/min
10/21/2020 8:33 AM	05:00	7.13 pH	13.18 °C	646.08 µS/cm	0.91 mg/L	21.00 NTU	-47.1 mV	15.72 ft	75.00 ml/min
10/21/2020 8:38 AM	10:00	6.97 pH	12.95 °C	644.24 µS/cm	0.78 mg/L	9.00 NTU	-52.1 mV	15.80 ft	70.00 ml/min
10/21/2020 8:43 AM	15:00	6.90 pH	13.06 °C	643.72 µS/cm	0.89 mg/L	10.00 NTU	-52.6 mV	15.82 ft	65.00 ml/min
10/21/2020 8:48 AM	20:00	6.86 pH	13.12 °C	634.53 µS/cm	0.67 mg/L	13.00 NTU	-55.7 mV	15.84 ft	65.00 ml/min
10/21/2020 8:53 AM	25:00	6.84 pH	13.04 °C	629.77 µS/cm	0.63 mg/L	10.00 NTU	-58.8 mV	15.84 ft	65.00 ml/min
10/21/2020 8:58 AM	30:00	6.83 pH	13.04 °C	625.15 µS/cm	0.56 mg/L	9.00 NTU	-59.6 mV	15.84 ft	65.00 ml/min
10/21/2020 9:03 AM	35:00	6.83 pH	12.99 °C	621.64 µS/cm	0.54 mg/L	10.00 NTU	-60.6 mV	15.85 ft	65.00 ml/min

Samples

Sample ID:	Description:
NHP_MW-303DA	10/21/2020 0905-0935 PFAS VOCS 1,4-DIOXANE

Low-Flow Test Report:

DRAFT

Test Date / Time: 10/22/2020 12:14:04 PM
Project: NHP_MW-304D NHPC Superfund Site (2)
Operator Name: M. Murphy

Location Name: NHP_MW-304D **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 40.6 ft** **Total Depth: 50.6 ft** **Initial Depth to Water: 15.29 ft**	**Pump Type: Peristaltic** **Tubing Type: Polyethylene** **Tubing Inner Diameter: 0.25 in** **Tubing Length: 47.6 ft** **Pump Intake From TOC: 45.6 ft** **Flow Cell Volume: 130 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 0.05 ft**	**Instrument Used: Aqua TROLL 500** **Serial Number: 689645**

Test Notes:
PRIOR TO SAMPLING:

Pump serial number: Geopump A02295
Turbidity meter model and serial number (or similar unique designation, i.e., last four digits): Hach 2100Q 9597

Total tubing length (inside & outside of well): (45.6 ft + 2 ft) = 47.6 ft
PVR (including calculations): (47.6 ft × 9.7mL/ft) = 461.7 mL

Maximum allowable drawdown rate: 0.02ft per 5mins
Is #14 tubing used at this location? No

DURING/AFTER SAMPLING:

Pump start time: 1210

Parameters reached stabilization? Yes
If no, list parameters: NA
Total volume purged prior to sampling: 2.5 L
Minimum PVR reached (compare purge amount to PVR)? Yes, 2.5 L > 461.7 mL
2 Hour time limit reached? No

Modified sampling required? (Clock time when modified sampling begins): No
Condition that triggered Modified Sampling: NA

Any adjustments made (including flow rates, tubing, etc.): Large bubbles observed in well tubing and were periodically expunged during low flow sampling and sample collection.

Final water level: 15.34 ft
Total actual volume purged (delete Estimated Purge Volume): 3.0 L
Measured Well Depth, if required (note variation in total depth compared to previously documented): NA
Pump Off: 1305

DRAFT

Weather Conditions:
Sunny, 50s-60s

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 1	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 0.02	
10/22/2020 12:14 PM	00:00	6.72 pH	13.24 °C	408.22 µS/cm	3.19 mg/L	~~0.00 NTU~~	24.5 mV	15.34 ft	100.00 ml/min
10/22/2020 12:19 PM	05:00	6.66 pH	12.59 °C	420.74 µS/cm	0.96 mg/L	~~0.00 NTU~~ 1 NTU	12.0 mV	15.34 ft	99.00 ml/min
10/22/2020 12:24 PM	10:00	6.61 pH	12.35 °C	421.29 µS/cm	0.74 mg/L	~~0.00 NTU~~ 1 NTU	23.7 mV	15.34 ft	100.00 ml/min
10/22/2020 12:29 PM	15:00	6.59 pH	12.31 °C	421.91 µS/cm	0.68 mg/L	~~0.00 NTU~~ 1 NTU	31.4 mV	15.34 ft	100.00 ml/min
10/22/2020 12:34 PM	20:00	6.59 pH	12.41 °C	421.20 µS/cm	0.69 mg/L	~~0.47 NTU~~ 1 NTU	36.3 mV	15.34 ft	100.00 ml/min
10/22/2020 12:39 PM	25:00	6.59 pH	12.22 °C	420.42 µS/cm	0.64 mg/L	~~1.44 NTU~~ 1 NTU	40.0 mV	15.34 ft	100.00 ml/min

Samples

Sample ID:	Description:
NHP_MW-304D	Sample Start Time: 1245 Parameters: PFAS, VOCs, 1,4-dioxane, Total metals Sample End Time: 1305

Low-Flow Test Report:

DRAFT

Test Date / Time: 10/23/2020 10:58:53 AM
Project: NHP_MW-308S NHPC Superfund Site (2)
Operator Name: E. Dyrness

Location Name: NHP_MW-308S **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 16.3 ft** **Total Depth: 26.3 ft** **Initial Depth to Water: 22.16 ft**	**Pump Type: Peristaltic** **Tubing Type: Polyethylene** **Tubing Inner Diameter: 0.25 in** **Tubing Length: 27.5 ft** **Pump Intake From TOC: 24 ft** **Flow Cell Volume: 90 ml** **Final Flow Rate: 50 ml/min** **Final Draw Down: 0.14 ft**	**Instrument Used: SmarTROLL MP** **Serial Number: 598939**

Test Notes:

PRIOR TO SAMPLING:

Pump serial number: 047277
Turbidity meter model and serial number (or similar unique designation, i.e., last four digits): Hach 2100Q 030639

Total tubing length (inside & outside of well): 24 ft + 3.5 ft = 27.5 ft
Tubing inner diameter: 0.25 in MeM
PVR (including calculations): (24 ft + 3.5 ft) x 9.7 ft =267 ml

Maximum allowable drawdown rate: 0.02 ft/5 min
Is #14 tubing used at this location? Yes

DURING/AFTER SAMPLING:

Pump start time: 1045

Parameters reached stabilization? No
If no, list parameters: All
Total volume purged prior to sampling: 500 ml
Minimum PVR reached (compare purge amount to PVR)? Yes, 500 ml > 267 ml
2 Hour time limit reached? No

Modified sampling required? (Clock time when modified sampling begins): yes, 1100
Condition that triggered Modified Sampling: partially saturated screen triggered Modified low flow sampling

Any adjustments made (including flow rates, tubing, etc.): no

Final water level: 22.30 ft MeM
Total actual volume purged (delete Estimated Purge Volume): 1.5 L
Measured Well Depth, if required (note variation in total depth compared to previously documented): n/a
Pump Off: 1215

DRAFT

Weather Conditions:
Overcast, 50s-60s

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 1	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 5	
10/23/2020 10:58 AM	00:00	6.99 pH	17.90 °C	789.13 µS/cm	4.82 mg/L		394.6 mV	22.16 ft	50.00 ml/min
10/23/2020 11:03 AM	05:00	7.05 pH	15.35 °C	808.25 µS/cm	1.88 mg/L	77.00 NTU	160.2 mV	22.30 ft	50.00 ml/min

Samples

Sample ID:	Description:
NHP_MW-308S	10/23/2020 1100-1215 PFAS VOCs 1,4-DIOXANE Cyanide
NHP_MW-308S DUP	10/23/2020 1100-1215 PFAS Cyanide

Low-Flow Test Report:

DRAFT

Test Date / Time: 10/26/2020 11:29:31 AM
Project: NHP_MW-308SA NHPC Superfund Site (2)
Operator Name: E. Dyrness

Location Name: NHP_MW-308SA **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 1 ft** **Top of Screen: 25.4 ft** **Total Depth: 27.9 ft** **Initial Depth to Water: 23.25 ft**	**Pump Type: Peristaltic** **Tubing Type: Polyethylene** **Tubing Inner Diameter: 0.25 in** **Tubing Length: 29.8 ft** **Pump Intake From TOC: 25.8 ft** **Flow Cell Volume: 90 ml** **Final Flow Rate: 80 ml/min** **Final Draw Down: 0.03 ft**	**Instrument Used: SmarTROLL MP** **Serial Number: 598939**

Test Notes:

PRIOR TO SAMPLING:

Pump serial number: 047277
Turbidity meter model and serial number (or similar unique designation, i.e., last four digits): Hach 2100Q 030639

Total tubing length (inside & outside of well): 25.8 ft + 4 ft =29.8 ft
Tubing inner diameter: 0.25 in MeM
PVR (including calculations): (25.8 ft + 4 ft) x 9.7 ml/ft = 290 ml

Maximum allowable drawdown rate: 0.02 ml/5 min
Is #14 tubing used at this location? No

DURING/AFTER SAMPLING:

Pump start time: 1120

Parameters reached stabilization? Yes
If no, list parameters: n/a
Total volume purged prior to sampling: 2.5L
Minimum PVR reached (compare purge amount to PVR)? Yes, 2.5 L > 290 ml
2 Hour time limit reached? No

Modified sampling required? (Clock time when modified sampling begins): no
Condition that triggered Modified Sampling: n/a

Any adjustments made (including flow rates, tubing, etc.): no

Final water level: 23.28 ~~ft~~ MeM
Total actual volume purged (delete Estimated Purge Volume): 3L
Measured Well Depth, if required (note variation in total depth compared to previously documented): n/a
Pump Off: 1230

DRAFT

Weather Conditions:
Overcast, scattered showers, 40s

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 1	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 5	
10/26/2020 11:29 AM	00:00	7.21 pH	8.57 °C	879.34 µS/cm	5.72 mg/L		139.4 mV	23.25 ft	80.00 ml/min
10/26/2020 11:34 AM	05:00	6.99 pH	9.70 °C	884.77 µS/cm	1.59 mg/L	5.00 NTU	84.3 mV	23.28 ft	80.00 ml/min
10/26/2020 11:39 AM	10:00	6.77 pH	9.87 °C	920.11 µS/cm	0.87 mg/L	4.00 NTU	77.1 mV	23.28 ft	80.00 ml/min
10/26/2020 11:44 AM	15:00	6.62 pH	9.89 °C	953.67 µS/cm	0.57 mg/L	2.00 NTU	75.9 mV	23.28 ft	80.00 ml/min
10/26/2020 11:49 AM	20:00	6.48 pH	9.87 °C	967.36 µS/cm	0.47 mg/L	2.00 NTU	76.1 mV	23.28 ft	80.00 ml/min
10/26/2020 11:54 AM	25:00	6.41 pH	9.91 °C	991.10 µS/cm	0.31 mg/L	1.00 NTU	77.3 mV	23.28 ft	80.00 ml/min
10/26/2020 11:59 AM	30:00	6.37 pH	9.89 °C	993.72 µS/cm	0.28 mg/L	1.00 NTU	76.9 mV	23.28 ft	80.00 ml/min
10/26/2020 12:04 PM	35:00	6.34 pH	9.98 °C	999.68 µS/cm	0.26 mg/L	1.00 NTU	78.0 mV	23.28 ft	80.00 ml/min

Samples

Sample ID:	Description:
NHP_MW-308SA	10/26/2020 1210-1230 PFAS VOCs 1,4-DIOXANE Cyanide

Low-Flow Test Report:

DRAFT

Test Date / Time: 10/23/2020 9:05:03 AM
Project: NHP_MW-308D NHPC Superfund Site (2)
Operator Name: E. Dyrness

Location Name: NHP_MW-308D **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 75.5 ft** **Total Depth: 85.5 ft** **Initial Depth to Water: 19.85 ft**	**Pump Type: Peristaltic** **Tubing Type: Polyethylene** **Tubing Inner Diameter: 0.25 in** **Tubing Length: 83.5 ft** **Pump Intake From TOC: 80.5 ft** **Flow Cell Volume: 90 ml** **Final Flow Rate: 115 ml/min** **Final Draw Down: 0.03 ft**	**Instrument Used: SmarTROLL MP** **Serial Number: 598939**

Test Notes:

PRIOR TO SAMPLING:

Pump serial number: 047277
Turbidity meter model and serial number (or similar unique designation, i.e., last four digits): Hach 2100Q 030639

Total tubing length (inside & outside of well): 80.5 ft + 3 ft = 83.5 ft
Tubing inner diameter: 0.25 in MeM
PVR (including calculations): (80.5 ft + 3 ft) x 9.7 ml/ft = 810 ml

Maximum allowable drawdown rate: 0.02 ft/5 min
Is #14 tubing used at this location? No

DURING/AFTER SAMPLING:

Pump start time: 0900

Parameters reached stabilization? Yes
If no, list parameters: n/a
Total volume purged prior to sampling: 4L
Minimum PVR reached (compare purge amount to PVR)? Yes, 4L > 810 ml
2 Hour time limit reached? No

Modified sampling required? (Clock time when modified sampling begins): no
Condition that triggered Modified Sampling: n/a

Any adjustments made (including flow rates, tubing, etc.): no

Final water level: 19.88 ~~ft~~ MeM
Total actual volume purged (delete Estimated Purge Volume): 5L
Measured Well Depth, if required (note variation in total depth compared to previously documented): n/a
Pump Off: 1000

DRAFT

Weather Conditions:
Overcast, 50s-60s, scattered showers

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 1	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 5	
10/23/2020 9:05 AM	00:00	8.37 pH	16.11 °C	375.04 µS/cm	7.39 mg/L		239.6 mV	19.85 ft	115.00 ml/min
10/23/2020 9:10 AM	05:00	7.77 pH	12.03 °C	386.10 µS/cm	1.79 mg/L	3.00 NTU	89.0 mV	19.87 ft	115.00 ml/min
10/23/2020 9:15 AM	10:00	7.22 pH	11.61 °C	384.42 µS/cm	0.85 mg/L	2.00 NTU	98.2 mV	19.88 ft	115.00 ml/min
10/23/2020 9:20 AM	15:00	6.87 pH	11.52 °C	386.38 µS/cm	0.40 mg/L	2.00 NTU	104.8 mV	19.88 ft	115.00 ml/min
10/23/2020 9:22 AM	17:17	6.77 pH	11.52 °C	389.83 µS/cm	0.33 mg/L	3.00 NTU	151.1 mV	19.88 ft	115.00 ml/min
10/23/2020 9:27 AM	22:17	6.64 pH	11.50 °C	397.86 µS/cm	0.25 mg/L	2.00 NTU	108.1 mV	19.88 ft	115.00 ml/min
10/23/2020 9:32 AM	27:17	6.50 pH	11.52 °C	403.77 µS/cm	0.21 mg/L	2.00 NTU	108.0 mV	19.88 ft	115.00 ml/min
10/23/2020 9:37 AM	32:17	6.45 pH	11.48 °C	409.24 µS/cm	0.18 mg/L	1.00 NTU	108.9 mV	19.88 ft	115.00 ml/min
10/23/2020 9:42 AM	37:17	6.44 pH	11.53 °C	415.73 µS/cm	0.16 mg/L	2.00 NTU	106.0 mV	19.88 ft	115.00 ml/min

Samples

Sample ID:	Description:
NHP_MW-308D	10/23/2020 0945-1000 PFAS VOCs 1,4-DIOXANE

Low-Flow Test Report:

DRAFT

Test Date / Time: 10/26/2020 9:39:49 AM
Project: NHP_MW-308DA NHPC Superfund Site (2)
Operator Name: E. Dyrness

Location Name: NHP_MW-308DA **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 1 ft** **Top of Screen: 45.9 ft** **Total Depth: 47.4 ft** **Initial Depth to Water: 21.61 ft**	**Pump Type: Peristaltic** **Tubing Type: Polyethylene** **Tubing Inner Diameter: 0.25 in** **Tubing Length: 50 ft** **Pump Intake From TOC: 46.5 ft** **Flow Cell Volume: 90 ml** **Final Flow Rate: 70 ml/min** **Final Draw Down: 1.55 ft**	**Instrument Used: SmarTROLL MP** **Serial Number: 598939**

Test Notes:

PRIOR TO SAMPLING:

Pump serial number: 047277
Turbidity meter model and serial number (or similar unique designation, i.e., last four digits): Hach 2100Q 030639

Total tubing length (inside & outside of well): 46.5 ft + 3.5 ft = 50 ft
Tubing inner diameter: 0.25 in MeM
PVR (including calculations): (46.5 ft + 3.5 ft) x 9.7 ml/ft = 485 ml

Maximum allowable drawdown rate: 0.02 ft/5 min
Is #14 tubing used at this location? No

DURING/AFTER SAMPLING:

Pump start time: 0935

Parameters reached stabilization? Yes
If no, list parameters: n/a
Total volume purged prior to sampling: 4 L
Minimum PVR reached (compare purge amount to PVR)? Yes, 4L > 485 ml
2 Hour time limit reached? No

Modified sampling required? (Clock time when modified sampling begins): no
Condition that triggered Modified Sampling: n/a

Any adjustments made (including flow rates, tubing, etc.): no

Final water level: 23.17 ft MeM
Total actual volume purged (delete Estimated Purge Volume): 5L
Measured Well Depth, if required (note variation in total depth compared to previously documented): n/a
Pump Off: 1050

DRAFT

Weather Conditions:
Overcast, light rain, 40s

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 1	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 5	
10/26/2020 9:39 AM	00:00	8.32 pH	10.50 °C	451.90 µS/cm	8.56 mg/L		94.9 mV	21.61 ft	85.00 ml/min
10/26/2020 9:44 AM	05:00	7.89 pH	9.84 °C	502.46 µS/cm	1.98 mg/L	161.00 NTU	54.1 mV	22.54 ft	80.00 ml/min
10/26/2020 9:49 AM	10:00	7.78 pH	9.71 °C	502.28 µS/cm	1.57 mg/L	72.00 NTU	48.2 mV	22.83 ft	80.00 ml/min
10/26/2020 9:54 AM	15:00	7.70 pH	9.67 °C	496.91 µS/cm	1.84 mg/L	31.00 NTU	34.8 mV	22.95 ft	80.00 ml/min
10/26/2020 9:59 AM	20:00	7.67 pH	9.66 °C	491.56 µS/cm	2.37 mg/L	22.00 NTU	31.4 mV	23.03 ft	80.00 ml/min
10/26/2020 10:04 AM	25:00	7.62 pH	9.60 °C	489.28 µS/cm	2.57 mg/L	16.00 NTU	29.0 mV	23.08 ft	80.00 ml/min
10/26/2020 10:09 AM	30:00	7.59 pH	9.65 °C	487.65 µS/cm	2.64 mg/L	13.00 NTU	27.7 mV	23.12 ft	80.00 ml/min
10/26/2020 10:14 AM	35:00	7.55 pH	9.65 °C	484.98 µS/cm	2.73 mg/L	12.00 NTU	27.2 mV	23.17 ft	70.00 ml/min
10/26/2020 10:19 AM	40:00	7.52 pH	9.73 °C	482.18 µS/cm	2.97 mg/L	11.00 NTU	29.0 mV	23.17 ft	70.00 ml/min
10/26/2020 10:24 AM	45:00	7.50 pH	9.73 °C	482.16 µS/cm	2.99 mg/L	12.00 NTU	28.6 mV	23.16 ft	70.00 ml/min

Samples

Sample ID:	Description:
NHP_MW-308DA	10/26/20 1030-1050 PFAS VOCs 1,4-DIOXANE

Low-Flow Test Report:

DRAFT

Test Date / Time: 10/20/2020 11:48:07 AM
Project: NHP_MW-309S NHPC Superfund Site (2)
Operator Name: E. Dyrness

Location Name: NHP_MW-309S **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 10.5 ft** **Total Depth: 20.5 ft** **Initial Depth to Water: 17.62 ft**	**Pump Type: Peristaltic** **Tubing Type: Polyethylene** **Tubing Inner Diameter: 0.25 in** **Tubing Length: 21.9 ft** **Pump Intake From TOC: 18.4 ft** **Flow Cell Volume: 90 ml** **Final Flow Rate: 50 ml/min** **Final Draw Down: 0.07 ft**	**Instrument Used: SmarTROLL MP** **Serial Number: 598939**

Test Notes:

PRIOR TO SAMPLING:

Pump serial number: 047277
Turbidity meter model and serial number (or similar unique designation, i.e., last four digits): Hach 2100Q 030639

Total tubing length (inside & outside of well): 18.4 ft + 3.5 ft =21.9 ft
Tubing inner diameter: 0.25 in MeM
PVR (including calculations): (18.4 ft + 3.5 ft) x 9.7 ml/ft = 213 ml

Maximum allowable drawdown rate: 0.02 ft/5mjn
Is #14 tubing used at this location? Yes

DURING/AFTER SAMPLING:

Pump start time: 1130

Parameters reached stabilization? No
If no, list parameters: All
Total volume purged prior to sampling: 300 ml
Minimum PVR reached (compare purge amount to PVR)? Yes, 300 ml > 213 ml
2 Hour time limit reached? No

Modified sampling required? (Clock time when modified sampling begins): yes, 1130
Condition that triggered Modified Sampling: WL below top of screen, specified in SAP

Any adjustments made (including flow rates, tubing, etc.): No

Final water level: 17.69 ~~ft~~ MeM
Total actual volume purged (delete Estimated Purge Volume): 1.0L MeM
Measured Well Depth, if required (note variation in total depth compared to previously documented): N/A MeM
Pump Off: 1205

DRAFT

Weather Conditions:
50s-60s, Overcast, slight breeze

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 1	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 5	
10/20/2020 11:48 AM	00:00	6.97 pH	17.11 °C	617.38 µS/cm	5.23 mg/L		-64.4 mV	17.62 ft	50.00 ml/min
10/20/2020 11:53 AM	05:00	7.00 pH	14.40 °C	694.62 µS/cm	2.03 mg/L	7.00 NTU	-93.9 mV	17.69 ft	50.00 ml/min

Samples

Sample ID:	Description:
NHP_MW-309S	10/20/2020 1135-1205 VOCs Total Metals

Low-Flow Test Report:

DRAFT

Test Date / Time: 10/26/2020 11:19:05 AM
Project: NHP_MW-309SA NHPC Superfund Site (2)
Operator Name: M. Murphy

Location Name: NHP_MW-309SA **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 1 ft** **Top of Screen: 20.4 ft** **Total Depth: 22.9 ft** **Initial Depth to Water: 18.07 ft**	**Pump Type: Peristaltic** **Tubing Type: Polyethylene** **Tubing Inner Diameter: 0.25 in** **Tubing Length: 24.3 ft** **Pump Intake From TOC: 21.3 ft** **Flow Cell Volume: 90 ml** **Final Flow Rate: 110 ml/min** **Final Draw Down: 0.2 ft**	**Instrument Used: SmarTROLL MP** **Serial Number: 369550**

Test Notes:
PRIOR TO SAMPLING:

Pump serial number: Geopump A02295
Turbidity meter model and serial number (or similar unique designation, i.e., last four digits): Hach 2100Q 9597

Total tubing length (inside & outside of well): (21.3 ft + 3 ft) = 24.3 ft
PVR (including calculations): (24.3 ft × 9.7mL/ft) = 235.7 mL

Maximum allowable drawdown rate: 0.02ft per 5mins
Is #14 tubing used at this location? No

DURING/AFTER SAMPLING:

Pump start time: 1115

Parameters reached stabilization? Yes
If no, list parameters: NA
Total volume purged prior to sampling: 5.75 L
Minimum PVR reached (compare purge amount to PVR)? Yes, 5.75 L > 235.7 mL
2 Hour time limit reached? No

Modified sampling required? (Clock time when modified sampling begins): No
Condition that triggered Modified Sampling: NA

Any adjustments made (including flow rates, tubing, etc.): Large bubbles periodically observed in well tubing which were periodically expunged during low flow sampling and sample collection.

Pump speed up without adjustment, increasing the flow rate slightly.

Final water level: 18.26 ft
Total actual volume purged (delete Estimated Purge Volume): 6.5 L
Measured Well Depth, if required (note variation in total depth compared to previously documented): NA

Pump Off: 1235

DRAFT

Weather Conditions:
Overcast, raining, 30s-40s

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 1	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 0.02	
10/26/2020 11:19 AM	00:00	6.79 pH	9.49 °C	1,088.0 µS/cm	5.49 mg/L		-6.0 mV	18.26 ft	96.00 ml/min
10/26/2020 11:24 AM	05:00	6.92 pH	10.27 °C	1,195.2 µS/cm	1.21 mg/L	36.00 NTU	-8.1 mV	18.26 ft	101.00 ml/min
10/26/2020 11:29 AM	10:00	6.89 pH	10.53 °C	1,245.1 µS/cm	0.84 mg/L	15.00 NTU	-22.7 mV	18.26 ft	102.00 ml/min
10/26/2020 11:34 AM	15:00	6.89 pH	10.64 °C	1,228.9 µS/cm	0.69 mg/L	12.00 NTU	-31.8 mV	18.26 ft	104.00 ml/min
10/26/2020 11:39 AM	20:00	6.88 pH	10.68 °C	1,178.5 µS/cm	0.64 mg/L	10.00 NTU	-40.2 mV	18.25 ft	102.00 ml/min
10/26/2020 11:44 AM	25:00	6.89 pH	10.67 °C	1,113.7 µS/cm	0.64 mg/L	11.00 NTU	-43.8 mV	18.25 ft	102.00 ml/min
10/26/2020 11:49 AM	30:00	6.91 pH	10.62 °C	1,061.8 µS/cm	0.67 mg/L	11.00 NTU	-44.8 mV	18.25 ft	102.00 ml/min
10/26/2020 11:54 AM	35:00	6.91 pH	10.70 °C	1,024.3 µS/cm	0.66 mg/L	10.00 NTU	-45.2 mV	18.25 ft	102.00 ml/min
10/26/2020 11:59 AM	40:00	6.93 pH	10.73 °C	1,005.7 µS/cm	0.66 mg/L	8.00 NTU	-47.0 mV	18.27 ft	110.00 ml/min
10/26/2020 12:04 PM	45:00	6.93 pH	10.71 °C	984.16 µS/cm	0.67 mg/L	8.00 NTU	-48.7 mV	18.27 ft	110.00 ml/min
10/26/2020 12:09 PM	50:00	6.95 pH	10.76 °C	974.72 µS/cm	0.69 mg/L	7.00 NTU	-47.9 mV	18.27 ft	110.00 ml/min
10/26/2020 12:14 PM	55:00	6.96 pH	10.76 °C	966.92 µS/cm	0.71 mg/L	8.00 NTU	-48.3 mV	18.27 ft	110.00 ml/min

Samples

Sample ID:	Description:
NHP_MW-309SA	Sample Start Time: 1220 Parameters: PFAS, VOCs, Total metals Sample End Time: 1233

Low-Flow Test Report:

DRAFT

Test Date / Time: 10/20/2020 9:53:47 AM
Project: NHP_MW-309D NHPC Superfund Site (2)
Operator Name: E. Dyrness

Location Name: NHP_MW-309D **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 59.9 ft** **Total Depth: 69.9 ft** **Initial Depth to Water: 17.7 ft**	**Pump Type: Peristaltic** **Tubing Type: Polyethylene** **Tubing Inner Diameter: 0.25 in** **Tubing Length: 67.9 ft** **Pump Intake From TOC: 64.9 ft** **Flow Cell Volume: 90 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 0.48 ft**	**Instrument Used: SmarTROLL MP** **Serial Number: 598939**

Test Notes:

PRIOR TO SAMPLING:

Pump serial number: 047277
Turbidity meter model and serial number (or similar unique designation, i.e., last four digits): Hach 2100Q 030639

Total tubing length (inside & outside of well): 64.9 ft + 3 ft = 67.9 ft
Tubing inner diameter: 0.25 in MeM
PVR (including calculations): 67.9 ft x 9.7 ml/ft = 659 ml

Maximum allowable drawdown rate: 0.02 ft/5 min
Is #14 tubing used at this location? No

DURING/AFTER SAMPLING:

Pump start time: 0950

Parameters reached stabilization? Yes
If no, list parameters: n/a
Total volume purged prior to sampling: 5L
Minimum PVR reached (compare purge amount to PVR)? Yes, 5L > 659 ml
2 Hour time limit reached? No

Modified sampling required? (Clock time when modified sampling begins): no
Condition that triggered Modified Sampling: n/a

Any adjustments made (including flow rates, tubing, etc.): no

MeM
Final water level: 18.19 ft
Total actual volume purged (delete Estimated Purge Volume): 5.5 L
Measured Well Depth, if required (note variation in total depth compared to previously documented): n/a
Pump Off: 1050

DRAFT

Weather Conditions:
Overcast, partial sun, slight breeze, potential showers

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 1	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 5	
10/20/2020 9:53 AM	00:00	8.35 pH	16.34 °C	420.00 µS/cm	7.53 mg/L		105.0 mV	17.70 ft	100.00 ml/min
10/20/2020 9:58 AM	05:00	7.62 pH	12.06 °C	470.42 µS/cm	4.16 mg/L	2.00 NTU	87.2 mV	18.16 ft	100.00 ml/min
10/20/2020 10:03 AM	10:00	7.37 pH	11.94 °C	485.38 µS/cm	2.82 mg/L	1.00 NTU	86.5 mV	18.15 ft	100.00 ml/min
10/20/2020 10:08 AM	15:00	7.25 pH	11.78 °C	492.13 µS/cm	1.58 mg/L	2.00 NTU	86.2 mV	18.15 ft	100.00 ml/min
10/20/2020 10:13 AM	20:00	7.16 pH	11.95 °C	494.39 µS/cm	1.17 mg/L	1.00 NTU	87.7 mV	18.16 ft	100.00 ml/min
10/20/2020 10:18 AM	25:00	7.10 pH	12.05 °C	492.94 µS/cm	1.05 mg/L	1.00 NTU	88.4 mV	18.17 ft	100.00 ml/min
10/20/2020 10:23 AM	30:00	7.07 pH	12.23 °C	486.76 µS/cm	0.84 mg/L	2.00 NTU	92.1 mV	18.18 ft	100.00 ml/min
10/20/2020 10:28 AM	35:00	7.01 pH	12.21 °C	481.95 µS/cm	0.67 mg/L	3.00 NTU	95.7 mV	18.18 ft	100.00 ml/min
10/20/2020 10:33 AM	40:00	6.98 pH	12.07 °C	479.89 µS/cm	0.59 mg/L	3.00 NTU	100.7 mV	18.18 ft	100.00 ml/min
10/20/2020 10:38 AM	45:00	6.94 pH	11.87 °C	480.40 µS/cm	0.55 mg/L	2.00 NTU	101.5 mV	18.18 ft	100.00 ml/min

Samples

Sample ID:	Description:
NHP_MW-309D	10/20/2020 1040-1050 VOCS 1,4-DIOXANE

Low-Flow Test Report:

DRAFT

Test Date / Time: 10/26/2020 9:36:26 AM
Project: NHP_MW-309DA NHPC Superfund Site (2)
Operator Name: M. Murphy

Location Name: NHP_MW-309DA **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 1 ft** **Top of Screen: 50.4 ft** **Total Depth: 53.6 ft** **Initial Depth to Water: 18.05 ft**	**Pump Type: Peristaltic** **Tubing Type: Polyethylene** **Tubing Inner Diameter: 0.25 in** **Tubing Length: 53.9 ft** **Pump Intake From TOC: 50.9 ft** **Flow Cell Volume: 90 ml** **Final Flow Rate: 90 ml/min** **Final Draw Down: 0.53 ft**	**Instrument Used: SmarTROLL MP** **Serial Number: 369550**

Test Notes:
PRIOR TO SAMPLING:

Pump serial number: Geopump A02295
Turbidity meter model and serial number (or similar unique designation, i.e., last four digits): Hach 2100Q 9597

Total tubing length (inside & outside of well): (50.9 ft + 3 ft) = 53.9 ft
PVR (including calculations): (53.9 ft × 9.7mL/ft) = 522.8 mL

Maximum allowable drawdown rate: 0.02ft per 5mins
Is #14 tubing used at this location? No

DURING/AFTER SAMPLING:

Pump start time: 0935

Parameters reached stabilization? Yes
If no, list parameters: NA
Total volume purged prior to sampling: 5.5L
Minimum PVR reached (compare purge amount to PVR)? Yes, 5.5L > 522.8 mL
2 Hour time limit reached? No

Modified sampling required? (Clock time when modified sampling begins): No
Condition that triggered Modified Sampling: NA

Any adjustments made (including flow rates, tubing, etc.): Pump speed turned down to allow for water level stabilization.

Large bubbles periodically observed in well tubing which were periodically expunged during low flow sampling and sample collection.

Final water level: 18.59 ft
Total actual volume purged (delete Estimated Purge Volume): 6.5 L
Measured Well Depth, if required (note variation in total depth compared to previously documented): NA

Pump Off: 1105

DRAFT

Weather Conditions:
Overcast, raining, 30s-40s

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 1	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 0.02	
10/26/2020 9:36 AM	00:00	7.52 pH	10.15 °C	823.34 µS/cm	5.64 mg/L		-21.9 mV	18.38 ft	96.00 ml/min
10/26/2020 9:41 AM	05:00	6.90 pH	10.24 °C	670.63 µS/cm	1.20 mg/L	92.00 NTU	-56.3 mV	18.52 ft	94.00 ml/min
10/26/2020 9:46 AM	10:00	6.85 pH	10.10 °C	565.37 µS/cm	0.98 mg/L	57.00 NTU	-57.4 mV	18.53 ft	86.00 ml/min
10/26/2020 9:51 AM	15:00	6.84 pH	10.06 °C	547.42 µS/cm	0.85 mg/L	54.00 NTU	-58.8 mV	18.53 ft	86.00 ml/min
10/26/2020 9:56 AM	20:00	6.84 pH	10.06 °C	543.66 µS/cm	0.73 mg/L	35.00 NTU	-59.1 mV	18.53 ft	86.00 ml/min
10/26/2020 10:01 AM	25:00	6.85 pH	10.09 °C	543.20 µS/cm	0.68 mg/L	15.00 NTU	-59.2 mV	18.53 ft	86.00 ml/min
10/26/2020 10:06 AM	30:00	6.87 pH	10.15 °C	542.60 µS/cm	0.62 mg/L	15.00 NTU	-60.1 mV	18.55 ft	90.00 ml/min
10/26/2020 10:11 AM	35:00	6.88 pH	10.15 °C	543.75 µS/cm	0.60 mg/L	13.00 NTU	-60.1 mV	18.57 ft	90.00 ml/min
10/26/2020 10:16 AM	40:00	6.89 pH	10.15 °C	543.71 µS/cm	0.56 mg/L	8.00 NTU	-59.7 mV	18.57 ft	90.00 ml/min
10/26/2020 10:21 AM	45:00	6.90 pH	10.10 °C	543.80 µS/cm	0.55 mg/L	8.00 NTU	-60.4 mV	18.58 ft	90.00 ml/min
10/26/2020 10:26 AM	50:00	6.91 pH	10.20 °C	543.85 µS/cm	0.52 mg/L	6.00 NTU	-59.8 mV	18.58 ft	90.00 ml/min
10/26/2020 10:31 AM	55:00	6.91 pH	10.17 °C	543.40 µS/cm	0.53 mg/L	6.00 NTU	-59.9 mV	18.58 ft	90.00 ml/min
10/26/2020 10:36 AM	01:00:00	6.92 pH	10.23 °C	544.02 µS/cm	0.50 mg/L	6.00 NTU	-60.0 mV	18.58 ft	90.00 ml/min

Samples

Sample ID:	Description:
NHP_MW-309DA	Sample Start Time: 1040 Parameters: PFAS, VOCs, 1,4-dioxane Sample End Time: 1105

Low-Flow Test Report:

DRAFT

Test Date / Time: 10/20/2020 12:57:00 PM
Project: NHP_MW-310S NHPC Superfund Site (2)
Operator Name: M. Murphy

Location Name: NHP_MW-310S **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 13.8 ft** **Total Depth: 23.8 ft** **Initial Depth to Water: 20.62 ft**	**Pump Type: Peristaltic** **Tubing Type: Polyethylene** **Tubing Inner Diameter: 0.25 in** **Tubing Length: 26.2 ft** **Pump Intake From TOC: 21.7 ft** **Flow Cell Volume: 130 ml** **Final Flow Rate: 50 ml/min** **Final Draw Down: 0.22 ft**	**Instrument Used: Aqua TROLL 500** **Serial Number: 689645**

Test Notes:
PRIOR TO SAMPLING:

Pump serial number: Geopump A02295
Turbidity meter model and serial number (or similar unique designation, i.e., last four digits): Hach 2100Q 9597

Total tubing length (inside & outside of well): (21.7 ft + 5 ft) = 26.7 ft
PVR (including calculations): (26.7 ft × 9.7mL/ft) = 259 mL

Maximum allowable drawdown rate: 0.02ft per 5mins
Is #14 tubing used at this location? Yes

DURING/AFTER SAMPLING:

Pump start time: 1240

Parameters reached stabilization? No
If no, list parameters: No parameters reached stabilization
Total volume purged prior to sampling: 750 mL
Minimum PVR reached (compare purge amount to PVR)? Yes, 750 mL > 259 mL
2 Hour time limit reached? No

Modified sampling required? (Clock time when modified sampling begins): Yes at start of purge
Condition that triggered Modified Sampling: Water level measured below top of well screen.

Any adjustments made (including flow rates, tubing, etc.): Air bubbles observed in well tubing; bubbles were periodically expunged during low flow sampling and sample collection.

Final water level: 20.84 ft
Total actual volume purged (delete Estimated Purge Volume): 1.0 L
Measured Well Depth, if required (note variation in total depth compared to previously documented): NA
Pump Off: 1345

DRAFT

Weather Conditions:
Overcast skies, 50s-60s

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 1	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 0.02	
10/20/2020 12:57 PM	00:00	7.39 pH	15.18 °C	663.69 µS/cm	2.02 mg/L	~~0.51 NTU~~	105.5 mV	20.85 ft	50.00 ml/min
10/20/2020 1:02 PM	05:00	7.42 pH	14.99 °C	662.09 µS/cm	1.65 mg/L	~~0.30 NTU~~ 3 NTU	62.0 mV	20.84 ft	50.00 ml/min

TPJ 1/3/21

Samples

Sample ID:	Description:
NHP_MW-310S	Sample Start Time: 1305 Parameters: PFAS, 1,4-dioxane, Total metals Sample End Time: 1345

Low-Flow Test Report:

DRAFT

Test Date / Time: 10/20/2020 10:10:28 AM
Project: NHP_MW-311D NHPC Superfund Site (2)
Operator Name: M. Murphy

Location Name: NHP_MW-311D **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 55.9 ft** **Total Depth: 65.9 ft** **Initial Depth to Water: 21.59 ft**	**Pump Type: Peristaltic** **Tubing Type: Polyethylene** **Tubing Inner Diameter: 0.25 in** **Tubing Length: 64.9 ft** **Pump Intake From TOC: 60.9 ft** **Flow Cell Volume: 130 ml** **Final Flow Rate: 96 ml/min** **Final Draw Down: 0.27 ft**	**Instrument Used: Aqua TROLL 500** **Serial Number: 689645**

Test Notes:
PRIOR TO SAMPLING:

Pump serial number: Geopump A02295
Turbidity meter model and serial number (or similar unique designation, i.e., last four digits): Hach 2100Q 9597

Total tubing length (inside & outside of well): (60.9 ft + 4 ft) = 64.9 ft
PVR (including calculations): (64.9 ft × 9.7mL/ft) = 630 mL

Maximum allowable drawdown rate: 0.02ft per 5mins
Is #14 tubing used at this location? No

DURING/AFTER SAMPLING:

Pump start time: 1005

Parameters reached stabilization? Yes
If no, list parameters: NA
Total volume purged prior to sampling: 4.5L
Minimum PVR reached (compare purge amount to PVR)? Yes, 4.5 L > 630 mL
2 Hour time limit reached? No

Modified sampling required? (Clock time when modified sampling begins): No
Condition that triggered Modified Sampling: NA

Any adjustments made (including flow rates, tubing, etc.): Pump speed increased to prevent water level from rebounding more than 0.02ft per 5mins.

Final water level: 21.87 ft
Total actual volume purged (delete Estimated Purge Volume): 6L
Measured Well Depth, if required (note variation in total depth compared to previously documented): NA
Pump Off: 1145

DRAFT

Weather Conditions:
Overcast skies, 50s-60s

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 1	+/- 3 %	+/- 10 %	+/- 10	+/- 10	+/- 5	
10/20/2020 10:10 AM	00:00	6.36 pH	12.34 °C	271.66 µS/cm	4.02 mg/L	~~0.04 NTU~~	35.8 mV	22.06 ft	109.00 ml/min
10/20/2020 10:15 AM	05:00	6.07 pH	11.77 °C	268.51 µS/cm	2.32 mg/L	~~0.00 NTU~~ 1 NTU	56.8 mV	21.97 ft	74.00 ml/min
10/20/2020 10:20 AM	09:53	6.02 pH	12.12 °C	269.23 µS/cm	2.04 mg/L	~~0.00 NTU~~	65.4 mV	0.00 ft	0.00 ml/min
10/20/2020 10:25 AM	14:53	6.04 pH	12.15 °C	270.49 µS/cm	1.89 mg/L	~~0.00 NTU~~ 1 NTU	85.0 mV	21.94 ft	75.00 ml/min
10/20/2020 10:30 AM	19:53	6.03 pH	12.13 °C	273.00 µS/cm	1.75 mg/L	~~0.00 NTU~~ 1 NTU	91.7 mV	21.94 ft	74.00 ml/min
10/20/2020 10:35 AM	24:53	6.06 pH	12.09 °C	272.15 µS/cm	1.81 mg/L	~~0.00 NTU~~ 1 NTU	101.2 mV	21.93 ft	76.00 ml/min
10/20/2020 10:40 AM	29:53	6.09 pH	12.11 °C	271.44 µS/cm	1.87 mg/L	~~0.00 NTU~~ 1 NTU	106.3 mV	21.91 ft	76.00 ml/min
10/20/2020 10:45 AM	34:53	6.10 pH	12.05 °C	271.86 µS/cm	1.96 mg/L	~~0.00 NTU~~ 1 NTU	107.8 mV	21.89 ft	76.00 ml/min
10/20/2020 10:47 AM	36:42	6.11 pH	11.91 °C	271.00 µS/cm	1.93 mg/L	~~0.00 NTU~~	108.8 mV	0.00 ft	0.00 ml/min
10/20/2020 10:47 AM	37:26	6.10 pH	11.88 °C	271.08 µS/cm	1.93 mg/L	~~0.00 NTU~~	109.2 mV	0.00 ft	0.00 ml/min
10/20/2020 10:52 AM	42:26	6.11 pH	11.64 °C	270.10 µS/cm	1.93 mg/L	~~0.00 NTU~~ 1 NTU	116.5 mV	21.85 ft	92.00 ml/min
10/20/2020 10:57 AM	47:26	6.12 pH	11.52 °C	268.21 µS/cm	2.00 mg/L	~~0.00 NTU~~ 1 NTU	121.3 mV	21.85 ft	94.00 ml/min
10/20/2020 11:02 AM	52:26	6.12 pH	11.42 °C	267.88 µS/cm	2.10 mg/L	~~0.00 NTU~~ 1 NTU	123.2 mV	21.86 ft	96.00 ml/min

TPJ 1/3/21

Samples

Sample ID:	Description:
FIELD BLANK-MURPHY	Sample Start Time: 1115 Parameters: PFAS Sample End Time: 1115
NHP_MW-311D	Sample Start Time: 1120 Parameters: 1,4-dioxane, PFAS TPJ 1/3/21 Sample End Time: 1135

Low-Flow Test Report:

DRAFT

Test Date / Time: 10/27/2020 8:37:22 AM
Project: NHP_MW-400R NHPC Superfund Site (2)
Operator Name: M. Murphy

Location Name: NHP_MW-400R **Well Diameter:** ~~4 in~~ 6 in TPJ 1/3/21 **Casing Type: Casing** **Screen Length: 146.7 ft** **Top of Screen: 55 ft** **Total Depth: 201.7 ft** **Initial Depth to Water: 14.88 ft**	**Pump Type: Peristaltic** **Tubing Type: Polyethylene** **Tubing Inner Diameter: 0.25 in** **Tubing Length: 168.6 ft** **Pump Intake From TOC: 163.1 ft** **Flow Cell Volume: 130 ml** **Final Flow Rate: 50 ml/min** **Final Draw Down: 0.7 ft**	**Instrument Used: Aqua TROLL 500** **Serial Number: 689645**

Test Notes:
PRIOR TO SAMPLING:

Pump serial number: Geopump A02295
Turbidity meter model and serial number (or similar unique designation, i.e., last four digits): Hach 2100Q 9597

Total tubing length (inside & outside of well): (163.1 ft + 5.5 ft) = 168.6 ft
PVR (including calculations): (168.6 ft × 9.7mL/ft) = 1,635.4 mL

Maximum allowable drawdown rate: 0 ft per 5mins
Is #14 tubing used at this location? Yes

DURING/AFTER SAMPLING:

Pump start time: 0830

Parameters reached stabilization? No
If no, list parameters: Water level
Total volume purged prior to sampling: 6.0 L
Minimum PVR reached (compare purge amount to PVR)? Yes, 6.0L > 1,635.4 mL
2 Hour time limit reached? Yes

Modified sampling required? (Clock time when modified sampling begins): No
Condition that triggered Modified Sampling: NA

Any adjustments made (including flow rates, tubing, etc.): Large bubbles periodically observed in well tubing which were periodically expunged during low flow sampling and sample collection.

Final water level: 15.66 ft
Total actual volume purged (delete Estimated Purge Volume): 6.5L
Measured Well Depth, if required (note variation in total depth compared to previously documented): NA
Pump Off: 1100

DRAFT

Weather Conditions:
Overcast, 40s-50s

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 1	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 0.02	
10/27/2020 8:37 AM	00:00	9.31 pH	10.66 °C	298.03 µS/cm	4.84 mg/L	~~6.94 NTU~~	-24.7 mV	14.97 ft	48.00 ml/min
10/27/2020 8:42 AM	05:00	9.69 pH	10.88 °C	303.83 µS/cm	1.46 mg/L	~~14.91 NTU~~ 21 NTU	-103.9 mV	15.02 ft	50.00 ml/min
10/27/2020 8:47 AM	10:00	9.70 pH	11.14 °C	321.37 µS/cm	1.16 mg/L	~~23.04 NTU~~ 26 NTU	-125.0 mV	15.05 ft	50.00 ml/min
10/27/2020 8:52 AM	15:00	9.54 pH	11.21 °C	354.32 µS/cm	1.07 mg/L	~~25.06 NTU~~ 28 NTU	-129.3 mV	15.09 ft	50.00 ml/min
10/27/2020 8:57 AM	20:00	9.25 pH	11.39 °C	379.18 µS/cm	1.08 mg/L	~~35.00 NTU~~ 60 NTU	-122.4 mV	15.13 ft	50.00 ml/min
10/27/2020 9:02 AM	25:00	8.62 pH	11.33 °C	396.55 µS/cm	1.00 mg/L	~~26.35 NTU~~ 34 NTU	-115.8 mV	15.14 ft	54.00 ml/min
10/27/2020 9:07 AM	30:00	8.41 pH	11.49 °C	411.79 µS/cm	0.89 mg/L	~~27.52 NTU~~ 41 NTU	-101.4 mV	15.18 ft	50.00 ml/min
10/27/2020 9:12 AM	35:00	8.26 pH	11.40 °C	419.84 µS/cm	0.94 mg/L	~~14.06 NTU~~ 21 NTU	-87.5 mV	15.21 ft	49.00 ml/min
10/27/2020 9:17 AM	40:00	8.16 pH	11.49 °C	424.04 µS/cm	0.94 mg/L	~~16.94 NTU~~ 23 NTU	-37.8 mV	15.23 ft	50.00 ml/min
10/27/2020 9:22 AM	45:00	8.03 pH	11.56 °C	430.63 µS/cm	0.94 mg/L	~~14.36 NTU~~ 27 NTU	-14.6 mV	15.26 ft	49.00 ml/min
10/27/2020 9:27 AM	50:00	8.05 pH	11.58 °C	432.23 µS/cm	1.04 mg/L	~~12.89 NTU~~ 15 NTU	138.3 mV	15.28 ft	49.00 ml/min
10/27/2020 9:32 AM	55:00	8.02 pH	11.71 °C	435.21 µS/cm	0.93 mg/L	~~14.43 NTU~~ 13 NTU	158.2 mV	15.31 ft	50.00 ml/min
10/27/2020 9:37 AM	01:00:00	7.97 pH	11.77 °C	435.45 µS/cm	0.90 mg/L	~~12.01 NTU~~ 14 NTU	142.4 mV	15.33 ft	49.00 ml/min
10/27/2020 9:42 AM	01:05:00	8.00 pH	11.75 °C	436.15 µS/cm	0.93 mg/L	~~11.52 NTU~~ 12 NTU	183.5 mV	15.35 ft	50.00 ml/min
10/27/2020 9:47 AM	01:10:00	7.96 pH	11.73 °C	435.84 µS/cm	0.92 mg/L	~~9.68 NTU~~ 13 NTU	185.6 mV	15.38 ft	50.00 ml/min
10/27/2020 9:52 AM	01:15:00	8.07 pH	11.79 °C	438.03 µS/cm	0.87 mg/L	~~6.05 NTU~~ 12 NTU	180.1 mV	15.40 ft	49.00 ml/min
10/27/2020 9:57 AM	01:20:00	8.08 pH	11.86 °C	437.30 µS/cm	0.92 mg/L	~~7.09 NTU~~ 10 NTU	179.5 mV	15.42 ft	50.00 ml/min
10/27/2020 10:02 AM	01:25:00	8.09 pH	11.85 °C	437.09 µS/cm	0.92 mg/L	~~6.06 NTU~~ 14 NTU	183.5 mV	15.44 ft	50.00 ml/min
10/27/2020 10:07 AM	01:30:00	8.03 pH	11.72 °C	437.49 µS/cm	0.96 mg/L	~~5.78 NTU~~ 8 NTU	179.8 mV	15.46 ft	50.00 ml/min
10/27/2020 10:12 AM	01:35:00	8.03 pH	11.68 °C	437.54 µS/cm	0.92 mg/L	~~5.43 NTU~~ 9 NTU	185.4 mV	15.48 ft	50.00 ml/min
10/27/2020 10:17 AM	01:40:00	8.07 pH	11.80 °C	437.85 µS/cm	0.95 mg/L	~~3.88 NTU~~ 8 NTU	175.0 mV	15.50 ft	49.00 ml/min
10/27/2020 10:22 AM	01:45:00	8.06 pH	11.85 °C	438.18 µS/cm	0.96 mg/L	~~3.58 NTU~~ 6 NTU	185.1 mV	15.52 ft	50.00 ml/min
10/27/2020 10:27 AM	01:50:00	8.03 pH	12.03 °C	437.35 µS/cm	0.95 mg/L	~~4.10 NTU~~ 7 NTU	185.2 mV	15.54 ft	50.00 ml/min
10/27/2020 10:32 AM	01:55:00	8.04 pH	11.86 °C	436.64 µS/cm	0.93 mg/L	~~3.32 NTU~~ 6 NTU	185.7 mV	15.57 ft	50.00 ml/min

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10/27/2020 10:37 AM	02:00:00	8.02 pH	11.86 °C	437.46 µS/cm	0.90 mg/L	~~2.59 NTU~~ 6 NTU TPJ 1/3/21	184.7 mV	15.58 ft	50.00 ml/min

DRAFT

Samples

Sample ID:	Description:
NHP_MW-400R	Sample Start Time: 1040 Parameters: VOCs, 1,4-dioxane Sample End Time: 1100

Low-Flow Test Report:

DRAFT

Test Date / Time: 10/27/2020 8:49:01 AM
Project: NHP_MW-401S NHPC Superfund Site (2)
Operator Name: Matt Bergen

Location Name: NHP_MW-401S **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 5 ft** **Top of Screen: 22.8 ft** **Total Depth: 27.8 ft** **Initial Depth to Water: 17.38 ft**	**Pump Type: Peristaltic** **Tubing Type: Polyethylene** **Tubing Inner Diameter: 0.25 in** **Tubing Length: 28.3 ft** **Pump Intake From TOC: 25.3 ft** **Flow Cell Volume: 90 ml** **Final Flow Rate: 110 ml/min** **Final Draw Down: 0.03 ft**	**Instrument Used: SmarTROLL MP** **Serial Number: 369550**

Test Notes:

PRIOR TO SAMPLING:

Pump serial number: Geopump 036785
Turbidity meter model and serial number (or similar unique designation, i.e., last four digits): HACH 2100Q 3811

Total tubing length (inside & outside of well): 28.3 ft
Tubing inner diameter: 0.25 in
PVR (including calculations): 28.3 ft x 9.7 ml/ft = 274.5 ml

Maximum allowable drawdown rate: 0.02 ft / 5 min
Is #14 tubing used at this location? No

DURING/AFTER SAMPLING:

Pump start time:0846 hrs

Parameters reached stabilization? Yes
If no, list parameters: n/a
Total volume purged prior to sampling: 5,400 ml
Minimum PVR reached (compare purge amount to PVR)? Yes 5,400 ml > 274.5 ml
2 Hour time limit reached?No

Modified sampling required? (Clock time when modified sampling begins): No
Condition that triggered Modified Sampling: n/a

Any adjustments made (including flow rates, tubing, etc.): No

Notes: Purge water had a sulfur like ~~over~~ odor. Air bubbles observed coming up sample tubing while purging and sampling.

TPJ 1/3/21

Final water level:17.41 ft
Total actual volume purged (delete Estimated Purge Volume): 6,800 ml

Measured Well Depth, if required (note variation in total depth compared to previously documented):n/a
Pump Off: 0958 hr

DRAFT

Weather Conditions:
Overcast 40s - 50s

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 1	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 5	
10/27/2020 8:49 AM	00:00	7.70 pH	10.34 °C	341.08 µS/cm	5.69 mg/L	6.00 NTU	11.0 mV	17.40 ft	106.00 ml/min
10/27/2020 8:54 AM	05:00	6.64 pH	11.74 °C	330.09 µS/cm	1.28 mg/L	3.00 NTU	11.0 mV	17.41 ft	110.00 ml/min
10/27/2020 8:59 AM	10:00	6.45 pH	11.83 °C	331.68 µS/cm	0.77 mg/L	3.00 NTU	13.3 mV	17.41 ft	110.00 ml/min
10/27/2020 9:04 AM	15:00	6.38 pH	11.92 °C	339.55 µS/cm	0.54 mg/L	3.00 NTU	15.0 mV	17.41 ft	110.00 ml/min
10/27/2020 9:09 AM	20:00	6.36 pH	12.05 °C	342.03 µS/cm	0.99 mg/L	3.00 NTU	15.8 mV	17.41 ft	110.00 ml/min
10/27/2020 9:14 AM	25:00	6.35 pH	12.10 °C	344.24 µS/cm	0.75 mg/L	2.00 NTU	16.3 mV	17.41 ft	110.00 ml/min
10/27/2020 9:19 AM	30:00	6.35 pH	12.10 °C	349.18 µS/cm	0.58 mg/L	1.00 NTU	17.2 mV	17.41 ft	110.00 ml/min
10/27/2020 9:24 AM	35:00	6.36 pH	12.10 °C	350.61 µS/cm	0.47 mg/L	1.00 NTU	16.3 mV	17.41 ft	110.00 ml/min
10/27/2020 9:29 AM	40:00	6.36 pH	12.15 °C	352.45 µS/cm	0.43 mg/L	1.00 NTU	16.3 mV	17.41 ft	110.00 ml/min
10/27/2020 9:34 AM	45:00	6.36 pH	12.19 °C	357.01 µS/cm	0.38 mg/L	1.00 NTU	17.9 mV	17.41 ft	110.00 ml/min
10/27/2020 9:39 AM	50:00	6.36 pH	12.22 °C	358.76 µS/cm	0.33 mg/L	3.00 NTU	17.9 mV	17.41 ft	110.00 ml/min

Samples

Sample ID:	Description:
NHP_MW-401S	Sample analysis: PFAS, VOCs Sample time: 0945 hrs Stop time: 0958 hrs

Low-Flow Test Report:

DRAFT

Test Date / Time: 10/23/2020 10:38:40 AM
Project: NHP_MW-404SA NHPC Superfund Site (2)
Operator Name: M. Murphy

Location Name: NHP_MW-404SA **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 1 ft** **Top of Screen: 28.7 ft** **Total Depth: 30.7 ft** **Initial Depth to Water: 19.13 ft**	**Pump Type: Peristaltic** **Tubing Type: Polyethylene** **Tubing Inner Diameter: 0.25 in** **Tubing Length: 32.1 ft** **Pump Intake From TOC: 29.1 ft** **Flow Cell Volume: 130 ml** **Final Flow Rate: 102 ml/min** **Final Draw Down: 0.26 ft**	**Instrument Used: Aqua TROLL 500** **Serial Number: 689645**

TPJ 1/3/21

Test Notes:
PRIOR TO SAMPLING:

Pump serial number: Geopump A02295
Turbidity meter model and serial number (or similar unique designation, i.e., last four digits): Hach 2100Q 9597

Total tubing length (inside & outside of well): (29.1 ft + 3 ft) = 32.1 ft
PVR (including calculations): (32.1 ft × 9.7mL/ft) = 311.4 mL

Maximum allowable drawdown rate: 0.02ft per 5mins
Is #14 tubing used at this location? No

DURING/AFTER SAMPLING:

Pump start time: 1035

Parameters reached stabilization? Yes
If no, list parameters: NA
Total volume purged prior to sampling: 4.5L
Minimum PVR reached (compare purge amount to PVR)? Yes, 4.5L > 311.4 mL
2 Hour time limit reached? No

Modified sampling required? (Clock time when modified sampling begins): No
Condition that triggered Modified Sampling: NA

Any adjustments made (including flow rates, tubing, etc.): Pump speed slightly decreased after start due to high drawdown of groundwater.

Per Michael Summerlin's (NHDES) request, NHP_MW-404S was renamed and relabeled: NHP_MW-404SA.

While collecting the cyanide sample a reaction occurred upon contact with the NaOH preservative resulting in the groundwater turning a green-like color.

Final water level: 19.40 ft
Total actual volume purged (delete Estimated Purge Volume): 5.25 L
Measured Well Depth, if required (note variation in total depth compared to previously documented): NA
Pump Off: 1150

DRAFT

Weather Conditions:
Overcast, intermittent rain, 50s-60s

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 1	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 0.02	
10/23/2020 10:38 AM	00:00	6.80 pH	13.11 °C	1,601.4 µS/cm	2.48 mg/L	~~19.01 NTU~~	-56.2 mV	19.47 ft	130.00 ml/min
10/23/2020 10:43 AM	05:00	6.84 pH	11.74 °C	1,772.0 µS/cm	0.94 mg/L	~~8.42 NTU~~ 7 NTU	-85.8 mV	19.42 ft	100.00 ml/min
10/23/2020 10:48 AM	10:00	6.84 pH	11.94 °C	1,845.5 µS/cm	0.76 mg/L	~~10.90 NTU~~ 8 NTU	-89.6 mV	19.37 ft	100.00 ml/min
10/23/2020 10:53 AM	15:00	6.86 pH	11.74 °C	1,860.3 µS/cm	0.63 mg/L	~~6.84 NTU~~ 7 NTU	-95.7 mV	19.39 ft	106.00 ml/min
10/23/2020 10:58 AM	20:00	6.86 pH	11.94 °C	1,876.6 µS/cm	0.59 mg/L	~~0.42 NTU~~ 5 NTU	-98.2 mV	19.38 ft	102.00 ml/min
10/23/2020 11:03 AM	25:00	6.87 pH	11.78 °C	1,884.6 µS/cm	0.60 mg/L	~~1.80 NTU~~ 4 NTU	-99.0 mV	19.39 ft	102.00 ml/min
10/23/2020 11:08 AM	30:00	6.88 pH	11.93 °C	1,886.3 µS/cm	0.55 mg/L	~~0.00 NTU~~ 2 NTU	-101.2 mV	19.38 ft	100.00 ml/min
10/23/2020 11:13 AM	35:00	6.87 pH	11.81 °C	1,897.9 µS/cm	0.52 mg/L	~~0.00 NTU~~ 1 NTU	-101.9 mV	19.39 ft	102.00 ml/min
10/23/2020 11:18 AM	40:00	6.88 pH	11.67 °C	1,901.9 µS/cm	0.52 mg/L	~~0.00 NTU~~ 2 NTU	-102.3 mV	19.39 ft	102.00 ml/min

Samples

Sample ID:	Description:
NHP_MW-404SA	Sample Start Time: 1125 Parameters: PFAS, VOCs, 1,4-dioxane, Total metals, Cyanide Sample End Time: 1150

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Appendix G – Vendor Certifications and Instrument Calibration / Maintenance Logs

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Vendor Equipment Certifications

UNIT #1

INSTRUMENT CALIBRATION REPORT

DRAFT

Pine Environmental Services LLC
29 Washington Avenue, Unit A
Scarborough, ME 04074
Toll-free: (888) 779-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 25477
Description smarTROLL MPS
Calibrated 10/9/2020 4:33:19PM

Notes about this calibration

Manufacture - Aqua Phenix
PH-7 Lot # 9GK054 Exp: Nov.2021
PH-4 Lot # 9GK205 Exp: Nov. 2021
PH-10 Lot # 96F073 Exp: June 2021
1.413 Lot# 9GK393 Exp : Nov. 2020

Manufacturer : Hanna
240. mV Lot #:0GB510 Exp NoV/2020

NIST thermometer S/N : 170140224 Exp July 27, 2021 Reading : 19.35 degrees C

SmartTroll Temp Reading: 19.36 degrees C

Calibration Result Calibration Successful
Who Calibrated Nathan Pettingill

All instruments are calibrated by Pine Environmental Services LLC according to the manufacturer's specifications, but it is the customer's responsibility to calibrate and maintain this unit in accordance with the manufacturer's specifications and/or the customer's own specific needs.

Notify Pine Environmental Services LLC of any defect within 24 hours of receipt of equipment
Please call 800-301-9663 for Technical Assistance

UNIT #1

INSTRUMENT CALIBRATION REPORT

DRAFT

Pine Environmental Services LLC
29 Washington Avenue, Unit A
Scarborough, ME 04074
Toll-free: (888) 779-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 25477
Description smarTROLL MPS
Calibrated 10/9/2020 4:33:19PM

Manufacturer In-Situ
Model Number smarTROLL MP Sonde
Serial Number/ Lot Number 369550
Location Maine
Department

State Certified
Status Pass
Temp °C 22
Humidity % 36

Calibration Specifications

Group # 1
Group Name PH
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
7.00 / 7.00	PH	7.00	PH	7.00	7.02	0.29%	Pass
4.00 / 4.00	PH	4.00	PH	4.00	4.00	0.00%	Pass
10.00 / 10.00	PH	10.00	PH	10.00	10.00	0.00%	Pass

Group # 2
Group Name Conductivity
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.000

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
1.413 / 1.413	ms/cm	1.413	ms/cm	1.413	1.413	0.00%	Pass

Group # 3
Group Name Redox (ORP)
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
240.00 / 240.00	mv	240.00	mv	240.00	240.00	0.00%	Pass

Group # 4
Group Name Disolved Oxygen Span
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
100.00 / 100.00	%	100.00	%	100.00	100.00	0.00%	Pass

Test Instruments Used During the Calibration

(As Of Cal Entry Date)

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date

UNIT #1

Calibration Report

Sonde: 254177
AnaroSD: 410811

DRAFT

Instrument	SmarTROLL MP
Serial Number	369550
Created	10/9/2020

Sensor	**RDO**
Serial Number	727364
Last Calibrated	10/9/2020

Calibration Details

Slope	1.213941
Offset	-0.04 mg/L

Calibration point 100%

Concentration	7.20 mg/L
Temperature	22.42 °C
Barometric Pressure	1,017.2 mbar

Calibration point 0%

Concentration	0.03 mg/L
Temperature	21.90 °C

Sensor	**Conductivity**
Serial Number	369550
Last Calibrated	10/9/2020

Calibration Details

Cell Constant	1.002
Reference Temperature	25.00 °C
TDS Conversion Factor (ppm)	0.65

Sensor	**Level**
Serial Number	368834
Last Calibrated	10/9/2020

Calibration Details

Zero Offset	0.11 psi
Reference Depth	0.00 ft
Reference Offset	0.00 psi

NIST: 19.35

Sonde: 19.36

UNIT #1

Sensor	**pH**
Serial Number	19770
Last Calibrated	10/9/2020

DRAFT

Calibration Details

Total Calibration Points	3

Calibration Point 1

pH of Buffer	4.00 pH
pH mV	125.1 mV
Temperature	21.16 °C

Calibration Point 2

pH of Buffer	7.02 pH
pH mV	-42.3 mV
Temperature	21.35 °C

Calibration Point 3

pH of Buffer	10.00 pH
pH mV	-211.9 mV
Temperature	21.44 °C

Slope and Offset 1

Slope	-55.45 mV/pH
Offset	-41.2 mV

Slope and Offset 2

Slope	-56.9 mV/pH
Offset	-41.2 mV

Sensor	**ORP**
Serial Number	19770
Last Calibrated	10/9/2020

Calibration Details

ORP Solution	ORP Standard
Offset	45.2 mV
Temperature	21.61 °C

UNIT #1

INSTRUMENT CALIBRATION REPORT

DRAFT

Pine Environmental Services LLC
29 Washington Avenue, Unit A
Scarborough, ME 04074
Toll-free: (888) 779-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 41577
Description HACH 2100Q Turbidimeter
Calibrated 10/9/2020 12:23:12PM

Manufacturer HACH
Model Number 2100Q
Serial Number/ Lot Number 18010C063811
Location Maine
Department

State Certified NJ Cert#: 11034
Status Pass
Temp °C 20
Humidity % 37

Calibration Specifications

Group # 1
Group Name Turbidity
Stated Accy Pct of Reading

Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
10.00 / 10.00	NTU	10.00	NTU	9.93	9.93	-0.70%	Pass
20.00 / 20.00	NTU	20.00	NTU	19.50	19.50	-2.50%	Pass
100.00 / 100.00	NTU	100.00	NTU	98.40	98.40	-1.60%	Pass
800.00 / 800.00	NTU	800.00	NTU	782.00	782.00	-2.25%	Pass

Test Instruments Used During the Calibration

(As Of Cal Entry Date)

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Stephen Doughty

All instruments are calibrated by Pine Environmental Services LLC according to the manufacturer's specifications, but it is the customer's responsibility to calibrate and maintain this unit in accordance with the manufacturer's specifications and/or the customer's own specific needs.

Notify Pine Environmental Services LLC of any defect within 24 hours of receipt of equipment
Please call 800-301-9663 for Technical Assistance

RECAL'ED BY PINE UNIT #2

DRAFT

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services LLC
1790 Corporate Drive
Suite 300
Norcross, GA 30093
Toll-free: (800) 842-1088

Pine Environmental Services, Inc.

Instrument ID 689645
Description IN-SITU AQUATROLL 500
Calibrated 10/16/2020 3:22:53PM

Manufacturer In-Situ
Model Number AquaTROLL 500
Serial Number/ Lot Number 689645
Location Georgia
Department

State Certified
Status Pass
Temp °C 20
Humidity % 56

Calibration Specifications

Group # 1
Group Name PH
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
7.00 / 7.00	PH	7.00	PH	6.89	7.02	0.29%	Pass
4.00 / 4.00	PH	4.00	PH	3.99	4.00	0.00%	Pass
10.00 / 10.00	PH	10.00	PH	9.91	10.00	0.00%	Pass

Group # 2
Group Name Conductivity
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.000

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
1.413 / 1.413	ms/cm	1.413	ms/cm	1.378	1.413	0.00%	Pass

Group # 3
Group Name Redox (ORP)
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
240.00 / 240.00	mv	240.00	mv	257.20	235.00	-2.08%	Pass

Group # 4
Group Name Disolved Oxygen Span
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
100.00 / 100.00	%	100.00	%	96.38	100.00	0.00%	Pass

UNIT #2

DRAFT

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services LLC
1790 Corporate Drive
Suite 300
Norcross, GA 30093
Toll-free: (800) 842-1088

Pine Environmental Services, Inc.

Instrument ID 689645
Description IN-SITU AQUATROLL 500
Calibrated 10/16/2020 3:22:53PM

Test Instruments Used During the Calibration **(As Of Cal Entry Date)**

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Next Cal Date / Last Cal Date/ Expiration Date Opened Date

Notes about this calibration

NIST Thermometer SN#16110472
NIST Thermometer reading: 20.15 Degrees C
Instrument Temperature Reading: 20.18 Degree C

Calibration Result Calibration Successful
Who Calibrated Pastula Travis

All instruments are calibrated by Pine Environmental Services LLC according to the manufacturer's specifications, but it is the customer's responsibility to calibrate and maintain this unit in accordance with the manufacturer's specifications and/or the customer's own specific needs.

Notify Pine Environmental Services LLC of any defect within 24 hours of receipt of equipment
Please call 800-301-9663 for Technical Assistance

UNIT # 2
ANDROID: 37415
SONDE: 25061

Calibration Report

DRAFT

Instrument	SmarTROLL MP
Serial Number	369559
Created	10/9/2020

Sensor	**RDO**
Serial Number	642453
Last Calibrated	10/9/2020

Calibration Details

Slope	1.062678
Offset	-0.02 mg/L

Calibration point 100%

Concentration	8.38 mg/L
Temperature	21.46 °C
Barometric Pressure	1,019.7 mbar

Calibration point 0%

Concentration	0.02 mg/L
Temperature	21.54 °C

Sensor	**Conductivity**
Serial Number	369559
Last Calibrated	10/9/2020

Calibration Details

Cell Constant	0.991
Reference Temperature	25.00 °C
TDS Conversion Factor (ppm)	0.65

Sensor	**Level**
Serial Number	369627
Last Calibrated	10/9/2020

Calibration Details

Zero Offset	0.10 psi
Reference Depth	0.00 ft
Reference Offset	0.00 psi

Sonde: 18.64 °C
NIST: 18.64 °C

UNIT #2

Sensor	**pH**
Serial Number	17539
Last Calibrated	10/9/2020

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Calibration Details

Total Calibration Points	3

Calibration Point 1

pH of Buffer	4.00 pH
pH mV	100.6 mV
Temperature	20.52 °C

Calibration Point 2

pH of Buffer	7.02 pH
pH mV	-49.3 mV
Temperature	20.64 °C

Calibration Point 3

pH of Buffer	10.00 pH
pH mV	-203.6 mV
Temperature	20.89 °C

Slope and Offset 1

Slope	-49.64 mV/pH
Offset	-48.3 mV

Slope and Offset 2

Slope	-51.78 mV/pH
Offset	-48.3 mV

Sensor	**ORP**
Serial Number	17539
Last Calibrated	10/9/2020

Calibration Details

ORP Solution	ORP Standard
Offset	72.3 mV
Temperature	20.56 °C

UNIT 2

INSTRUMENT CALIBRATION REPORT

DRAFT

Pine Environmental Services LLC
29 Washington Avenue, Unit A
Scarborough, ME 04074
Toll-free: (888) 779-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 31427
Description HACH 2100Q Turbidimeter
Calibrated 10/9/2020 12:30:31PM

Manufacturer HACH
Model Number 2100Q
Serial Number/ Lot Number 15030C039579
Location Maine
Department

State Certified
Status Pass
Temp °C 20
Humidity % 37

Calibration Specifications

Group # 1
Group Name Turbidity
Stated Accy Pct of Reading

Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
10.00 / 10.00	NTU	10.00	NTU	9.91	9.91	-0.90%	Pass
20.00 / 20.00	NTU	20.00	NTU	20.00	20.00	0.00%	Pass
100.00 / 100.00	NTU	100.00	NTU	98.50	98.50	-1.50%	Pass
800.00 / 800.00	NTU	800.00	NTU	794.00	794.00	-0.75%	Pass

Test Instruments Used During the Calibration

(As Of Cal Entry Date)

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Stephen Doughty

All instruments are calibrated by Pine Environmental Services LLC according to the manufacturer's specifications, but it is the customer's responsibility to calibrate and maintain this unit in accordance with the manufacturer's specifications and/or the customer's own specific needs.

Notify Pine Environmental Services LLC of any defect within 24 hours of receipt of equipment
Please call 800-301-9663 for Technical Assistance

UNIT #3

INSTRUMENT CALIBRATION REPORT

DRAFT

Pine Environmental Services LLC
29 Washington Avenue, Unit A
Scarborough, ME 04074
Toll-free: (888) 779-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 40818
Description SMARTROLL
Calibrated 10/9/2020 3:06:55PM

Test Instruments Used During the Calibration **(As Of Cal Entry Date)**

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Next Cal Date / Last Cal Date/ Expiration Date Opened Date

Notes about this calibration

Manufacture - Aqua Phenix
PH-7 Lot # 9GK054 Exp: Nov.2021
PH-4 Lot # 9GK205 Exp: Nov. 2021
PH-10 Lot # 96F073 Exp: June 2021
1.413 Lot# 9GK393 Exp : Nov. 2020

Manufacturer : Hanna
240. mV Lot #:0GB510 Exp NoV/2020

NIST thermometer S/N : 170140224 Exp July 27, 2021 Reading : 17.78 degrees C

SmartTroll Temp Reading: 17.79 degrees C

Calibration Result Calibration Successful
Who Calibrated Nathan Pettingill

All instruments are calibrated by Pine Environmental Services LLC according to the manufacturer's specifications, but it is the customer's responsibility to calibrate and maintain this unit in accordance with the manufacturer's specifications and/or the customer's own specific needs.

Notify Pine Environmental Services LLC of any defect within 24 hours of receipt of equipment
Please call 800-301-9663 for Technical Assistance

UNIT #3

INSTRUMENT CALIBRATION REPORT

DRAFT

Pine Environmental Services LLC
29 Washington Avenue, Unit A
Scarborough, ME 04074
Toll-free: (888) 779-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 40818
Description SMARTROLL
Calibrated 10/9/2020 3:06:55PM

Manufacturer In-Situ
Model Number MP
Serial Number/ Lot Number 598939
Location Maine
Department

State Certified
Status Pass
Temp °C 22
Humidity % 37

Calibration Specifications

Group # 1
Group Name PH
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
7.00 / 7.00	PH	7.00	PH	7.00	7.00	0.00%	Pass
4.00 / 4.00	PH	4.00	PH	4.00	4.00	0.00%	Pass
10.00 / 10.00	PH	10.00	PH	10.00	10.00	0.00%	Pass

Group # 2
Group Name CONDUCTIVITY
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 0.0000
Plus/Minus 1.41

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
1.413 / 1.413	ms/cm	1.41	ms/cm	1.41	1.41	0.21%	Pass

Group # 3
Group Name ORP
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
240.00 / 240.00	mv	240.00	mv	240.00	240.00	0.00%	Pass

Group # 4
Group Name DO
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
100.00 / 100.00	%	100.00	%	100.00	100.00	0.00%	Pass
0.00 / 0.00	%	0.00	%	0.00	0.00	0.00%	Pass

UNIT #3

Sensor	**pH**
Serial Number	19777
Last Calibrated	10/9/2020

DRAFT

Calibration Details

Total Calibration Points	3

Calibration Point 1

pH of Buffer	4.00 pH
pH mV	148.1 mV
Temperature	19.46 °C

Calibration Point 2

pH of Buffer	7.00 pH
pH mV	-15.1 mV
Temperature	19.52 °C

Calibration Point 3

pH of Buffer	10.00 pH
pH mV	-182.3 mV
Temperature	19.45 °C

Slope and Offset 1

Slope	-54.4 mV/pH
Offset	-15.1 mV

Slope and Offset 2

Slope	-55.76 mV/pH
Offset	-15.1 mV

Sensor	**ORP**
Serial Number	19777
Last Calibrated	10/9/2020

Calibration Details

ORP Solution	ORP Standard
Offset	21.5 mV
Temperature	19.10 °C

UNIT #3
ANDROID: 40810
Sonde: 40818

Calibration Report

DRAFT

Instrument	SmarTROLL MP
Serial Number	598939
Created	10/9/2020

Sensor	**RDO**
Serial Number	688606
Last Calibrated	10/9/2020

Calibration Details

Slope	1.100439
Offset	-0.10 mg/L

Calibration point 100%

Concentration	8.44 mg/L
Temperature	19.81 °C
Barometric Pressure	1,019.8 mbar

Calibration point 0%

Concentration	0.09 mg/L
Temperature	19.68 °C

Sensor	**Conductivity**
Serial Number	598939
Last Calibrated	10/9/2020

Calibration Details

Cell Constant	0.99
Reference Temperature	25.00 °C
TDS Conversion Factor (ppm)	0.65

Sensor	**Level**
Serial Number	599771
Last Calibrated	10/9/2020

Calibration Details

Zero Offset	-0.06 psi
Reference Depth	0.00 ft
Reference Offset	0.00 psi

NIST: 17.78
Sonde: 17.79

UNIT 3

INSTRUMENT CALIBRATION REPORT

DRAFT

Pine Environmental Services LLC
29 Washington Avenue, Unit A
Scarborough, ME 04074
Toll-free: (888) 779-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 30639
Description HACH 2100Q Turbidity meter
Calibrated 10/9/2020 4:31:59PM

Manufacturer HACH
Model Number 2100Q
Serial Number/ Lot Number 15030C039364
Location Maine
Department

State Certified
Status Pass
Temp °C 21.5
Humidity % 35

Calibration Specifications

Group # 1
Group Name Turbidity
Stated Accy Pct of Reading

Range Acc % 0.0000
Reading Acc % 10.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
10.00 / 10.00	NTU	10.00	NTU	9.81	9.81	-1.90%	Pass
20.00 / 20.00	NTU	20.00	NTU	20.00	20.00	0.00%	Pass
100.00 / 100.00	NTU	100.00	NTU	97.70	97.70	-2.30%	Pass
800.00 / 800.00	NTU	800.00	NTU	793.00	793.00	-0.88%	Pass

Test Instruments Used During the Calibration

(As Of Cal Entry Date)

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Stephen Doughty

All instruments are calibrated by Pine Environmental Services LLC according to the manufacturer's specifications, but it is the customer's responsibility to calibrate and maintain this unit in accordance with the manufacturer's specifications and/or the customer's own specific needs.

Notify Pine Environmental Services LLC of any defect within 24 hours of receipt of equipment
Please call 800-301-9663 for Technical Assistance

RECAL'ED BY PINE

UNIT #4 / BACK-UP

DRAFT

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services LLC
4037 Darling Court
Lilburn, GA 30047
Toll-free: (800) 842-1088

Pine Environmental Services, Inc.

Instrument ID 25475
Description smarTROLL MPS
Calibrated 10/12/2020 2:28:25PM

Manufacturer In-Situ
Model Number smarTroll MP Handheld Instrument (probe)
Serial Number/ Lot Number 369557
Location Georiga
Department

State Certified
Status Pass
Temp °C 24
Humidity % 68

Calibration Specifications

Group # 1
Group Name PH
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
7.00 / 7.00	PH	7.00	PH	7.02	7.00	0.00%	Pass
4.00 / 4.00	PH	4.00	PH	4.12	4.00	0.00%	Pass
10.00 / 10.00	PH	10.00	PH	9.72	10.00	0.00%	Pass

Group # 2
Group Name Conductivity
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.000

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
1.413 / 1.413	ms/cm	1.413	ms/cm	1.500	1.413	0.00%	Pass

Group # 3
Group Name Redox (ORP)
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
240.00 / 240.00	mv	240.00	mv	244.00	240.00	0.00%	Pass

Group # 4
Group Name Disolved Oxygen Span
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
17.10 / 17.10	degrees C	100.00	%	97.90	100.00	0.00%	Pass

DRAFT

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services LLC
4037 Darling Court
Lilburn, GA 30047
Toll-free: (800) 842-1088

Pine Environmental Services, Inc.

Instrument ID 25475
Description smarTROLL MPS
Calibrated 10/12/2020 2:28:25PM

Test Instruments Used During the Calibration **(As Of Cal Entry Date)**

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date
GA ORP 2695	ORP SOLUTION 240 mV	Pine Environmental Services, Inc.		0GH1018		5/31/2021
GA PH 10	PH10	VWR		9gf073		6/30/2021
GA PH7	PH7	Pine Environmental Services, Inc.	2805406	0GD808		4/30/2022
GA-PH4 2109134	PH-4		9GA1010			1/31/2021
GA01.413	conductivity solution	Pine Environmental Services, Inc.	0GE438			5/31/2021

Notes about this calibration

NIST Thermometer SN#16110472
NIST Thermometer reading: 20.23 Degrees C
Instrument Temperature Reading: 20.25 Degree C

Calibration Result Calibration Successful
Who Calibrated Pastula Travis

All instruments are calibrated by Pine Environmental Services LLC according to the manufacturer's specifications, but it is the customer's responsibility to calibrate and maintain this unit in accordance with the manufacturer's specifications and/or the customer's own specific needs.

Notify Pine Environmental Services LLC of any defect within 24 hours of receipt of equipment
Please call 800-301-9663 for Technical Assistance

UNIT 4 / Backup

INSTRUMENT CALIBRATION REPORT

DRAFT

Pine Environmental Services LLC
29 Washington Avenue, Unit A
Scarborough, ME 04074
Toll-free: (888) 779-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 39560
Description HACH 2100Q Turbidity meter
Calibrated 10/9/2020 12:24:56PM

Manufacturer HACH
Model Number 2100Q
Serial Number/ Lot Number 17120C063426
Location Maine
Department

State Certified NJ Cert#: 11034
Status Pass
Temp °C 20
Humidity % 37

Calibration Specifications

Group # 1
Group Name Turbidity
Stated Accy Pct of Reading

Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
10.00 / 10.00	NTU	10.00	NTU	9.73	9.73	-2.70%	Pass
20.00 / 20.00	NTU	20.00	NTU	19.50	19.50	-2.50%	Pass
100.00 / 100.00	NTU	100.00	NTU	98.40	98.40	-1.60%	Pass
800.00 / 800.00	NTU	800.00	NTU	785.00	785.00	-1.88%	Pass

Test Instruments Used During the Calibration

(As Of Cal Entry Date)

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Stephen Doughty

All instruments are calibrated by Pine Environmental Services LLC according to the manufacturer's specifications, but it is the customer's responsibility to calibrate and maintain this unit in accordance with the manufacturer's specifications and/or the customer's own specific needs.

Notify Pine Environmental Services LLC of any defect within 24 hours of receipt of equipment
Please call 800-301-9663 for Technical Assistance

DRAFT

Instrument Calibration Logs

UNIT #1

NHPC INSTRUMENT CALIBRATION / MAINTENANCE LOG

DRAFT

Date: 10/27/20 Time: 1140 | Field Personnel: E. Dymness

Meter: (circle one) YSI: Model 600XL or 600XLM In-Situ: SmarTROLL Rental Company: PINE

Multimeter Serial Numbers (Sonde & Meter): 25497

Probe Pre-cleaned Certification Provided By (Personnel): NP Date: 10/9/20

Temperature Calibration: Personnel: NP Date: 10/9/20

Manufacturer's Accuracy Range of Sensor: +/- 0.2°C Vendor's check results Unit: 19.36 NIST: 19.35 Difference: 0.01

** When performing calibration checks, wait for temperature and parameter readings to stabilize before recording the results.**

BEGINNING CALIBRATION CHECK

Date: Time: Personnel:

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Zero DO check (mg/l)	0		0 to 0.5 mg/L				
pH 7 check ETSD	7		+/- 5%				Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check	10/27/20		+/- 5%				Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution ____ °C			+/- 5%				See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q	10		+/- 10%				Range 9.0 - 11.0 NTU (2100Q)

Notes:
1) If the post calibration check is not within the acceptable range the meter must be recalibrated.
2) All calibration checks must be made in the run mode (on a run/measurement screen) or on the live readings screen, not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark √ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: NA (Print) NA (Sign)

END OF DAY INSTRUMENT CALIBRATION CHECK

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Date: 10/27/20 Time: 1140		Personnel: E. Dymness					
Zero DO check (mg/l)	0	0.03	0 to 0.5 mg/L	Y	0GA431	1/21	
pH 7 check	7	7.08	+/- 5%	Y	4744	11/24	Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check	1413	1439	+/- 5%	Y	4457	8/24	Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution 12 °C	248	253	+/- 5%	Y	18510160	9/23	See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P[5]	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q[5]	10	9.9	+/- 10%	Y	A0029	4/21	Range 9.0 - 11.0 NTU (2100Q)

Notes:
1) If the end of the day calibration check is not within the acceptable range, the data collected that day for that parameter shall be qualified in it's use.
2) All calibration checks must be made in the run mode (on a run/measurement screen), not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark ✓ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: E. Dymness (Print) [signature] (Sign)

List wells sampled using this equipment on this day ONLY IF DATA NEEDS TO BE QUALIFIED

NA NA

UNIT #1

INSTRUMENT CALIBRATION

DRAFT

Date: Time:

Multimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
DO (% saturation)	100%				Allow time for stabilization per manufacturer
DO mg/l reading					Record these values immediately after calibration
DO Temp. (°C) reading					
DO (0% Saturation)-SmarTROLL	0%	ETSI			2 point DO Calibration for SmarTROLL only (100 & 0%)
pH 1st Standard	4				
2nd Standard	7	10/27/20			
3rd Standard	10				
Specific Conductance (µS/cm)					One standard is used to calibrate, second one to check (1413 and 718 standards) Using one standard for both is unacceptable.
Zobell Solution _____ °C					See Chart below for ORP Zobell Solution mV Value Based on Temperature
ORP using Zobell Solution					

Additional Information for Dissolved Oxygen Calibration

Barometric Pressure of Meter: N/A mm Hg [BP inches N/A x 25.4 + BP N/A mm Hg]

Dissolved Oxygen Charge (YSI Meters): N/A (Acceptable Range: 25 to 75) You MUST change the membrane if charge is out of range.

Inspected DO membrane/RDO CAP for nicks or bubbles (check as completed) ✓ Personnel: E. Dymess

Changed YSI Dissolved Oxygen Membrane and Electrolyte Solution (circle one) YES or NO (N/A)

Replaced SmarTROLL Rugged Dissolved Oxygen CAP (circle one) YES or (NO)

HACH 2100P or 2100Q * Turbidimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
Turbidity 1st Standard (blank)	<0.1 NTU	N/A	N/A	N/A	Calibrate w/ StablCal® Formazin Primary Turbidity Standards
2nd Standard	20 NTU	ETSI			
3rd Standard	100 NTU		10/27/20		
4th Standard	800 NTU				

HACH Model (circle one) P or Q Serial Number: Rental Company:

* NOTE: the 2100Q does not have a <0.1 standard, record N/A (not applicable) in the <0.1 standard boxes as appropriate.

Calibration Performed by E. Dymess (Print Name) [signature] (Signature)

Zobell Solution mV Value Based on Temperature for ORP Calibration
Calibration Check Range Values (+/- 5%)
Round off temperature to whole number (e.g., 23.5 °C rounds up to 24 °C)

Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%
-3	267	254-280	10	251	238-264	23	234	222-246
-2	266	253-279	11	249	237-261	24	232	220-244
-1	265	252-278	12	248	236-260	25	231	219-243
0	264	251-277	13	247	235-259	26	230	219-242
1	262	249-275	14	245	233-257	27	228	217-239
2	261	248-274	15	244	232-256	28	227	216-238
3	260	247-273	16	243	231-255	29	226	215-237
4	258	245-271	17	241	229-253	30	225	214-236
5	257	244-270	18	240	228-252	31	223	212-234
6	256	243-269	19	239	227-251	32	222	211-233
7	254	241-267	20	238	226-250	33	221	210-232
8	253	240-266	21	236	224-248	34	219	208-230
9	252	239-265	22	235	223-247	35	218	207-229

UNIT #2

NHPC INSTRUMENT CALIBRATION / MAINTENANCE LOG

DRAFT

Date: 10/27/20 Time: 1145 | Field Personnel: E. Dynness

Meter: (circle one) YSI: Model 600XL or 600XLM In-Situ: SmarTROLL Rental Company: PINE

Multimeter Serial Numbers (Sonde & Meter): 689645

Probe Pre-cleaned Certification Provided By (Personnel): PT Date: 10/16/20

Temperature Calibration: Personnel: PT Date: 10/16/20

Manufacturer's Accuracy Range of Sensor: +/- 0.2°C Vendor's check results Unit: 20.18 NIST: 20.15 Difference: 0.03

** When performing calibration checks, wait for temperature and parameter readings to stabilize before recording the results.**

BEGINNING CALIBRATION CHECK

Date: Time: | Personnel:

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Zero DO check (mg/l)	0		0 to 0.5 mg/L				
pH 7 check			+/- 5%				Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check		10/27/20	+/- 5%				Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution _____ °C			+/- 5%				See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q	10		+/- 10%				Range 9.0 - 11.0 NTU (2100Q)

Notes:
1) If the post calibration check is not within the acceptable range the meter must be recalibrated.
2) All calibration checks must be made in the run mode (on a run/measurement screen) or on the live readings screen, not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark √ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: E. Dynness (Print) [signature] (Sign)

END OF DAY INSTRUMENT CALIBRATION CHECK

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Date: 10/27/20 Time: 1145		Personnel: E. Dynness					
Zero DO check (mg/l)	0	0.02	0 to 0.5 mg/L	Y	06A431	1/21	
pH 7 check	7	7.16	+/- 5%	Y	4744	11/24	Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check	1413	1454	+/- 5%	Y	4457	8/24	Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution 12 °C	248	250	+/- 5%	Y	18J100160	9/23	See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P[5]	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q[5]	10	10.0	+/- 10%	Y	A0029	4/21	Range 9.0 - 11.0 NTU (2100Q)

Notes:
1) If the end of the day calibration check is not within the acceptable range, the data collected that day for that parameter shall be qualified in it's use.
2) All calibration checks must be made in the run mode (on a run/measurement screen), not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark ✓ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: E. Dynness (Print) [signature] (Sign)

List wells sampled using this equipment on this day ONLY IF DATA NEEDS TO BE QUALIFIED.

NA | NA

UNIT #2

INSTRUMENT CALIBRATION

DRAFT

Date: Time:

Multimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
DO (% saturation)	100%				Allow time for stabilization per manufacturer
DO mg/l reading					Record these values immediately after calibration
DO Temp. (°C) reading					
DO (0% Saturation)-SmarTROLL	0%				2 point DO Calibration for SmarTROLL only (100 & 0%)
pH 1st Standard	4	10/27/20			
2nd Standard	7				
3rd Standard	10				
Specific Conductance (µS/cm)					One standard is used to calibrate, second one to check (1413 and 718 standards) Using one standard for both is unacceptable.
Zobell Solution _____ °C					See Chart below for ORP Zobell Solution mV Value Based on Temperature
ORP using Zobell Solution					

ETD

Additional Information for Dissolved Oxygen Calibration

Barometric Pressure of Meter: NA **mm Hg** [BP inches NA x 25.4 + BP NA mm Hg]

Dissolved Oxygen Charge (YSI Meters): NA (Acceptable Range: 25 to 75) You MUST change the membrane if charge is out of range.

Inspected DO membrane/RDO CAP for nicks or bubbles (check as completed) ✓ **Personnel:** E. Dymess

Changed YSI Dissolved Oxygen Membrane and Electrolyte Solution (circle one) YES or NO (NA)

Replaced SmarTROLL Rugged Dissolved Oxygen CAP (circle one) YES or NO

HACH 2100P or 2100Q * Turbidimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
Turbidity 1st Standard (blank)	<0.1 NTU	N/A	N/A	N/A	Calibrate w/ StablCal® Formazin Primary Turbidity Standards
2nd Standard	20 NTU				
3rd Standard	100 NTU				
4th Standard	800 NTU				

ETD 10/27/20

HACH Model (circle one) P or Q Serial Number: **Rental Company:**

*** NOTE: the 2100Q does not have a <0.1 standard, record N/A (not applicable) in the <0.1 standard boxes as appropriate.**

Calibration Performed by Erik Dymess (Print Name) [signature] (Signature)

Zobell Solution mV Value Based on Temperature for ORP Calibration
Calibration Check Range Values (+/- 5%)
Round off temperature to whole number (e.g., 23.5 °C rounds up to 24 °C)

Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%
-3	**267**	254-280	10	**251**	238-264	23	**234**	222-246
-2	**266**	253-279	11	**249**	237-261	24	**232**	220-244
-1	**265**	252-278	12	**248**	236-260	25	**231**	219-243
0	**264**	251-277	13	**247**	235-259	26	**230**	219-242
1	**262**	249-275	14	**245**	233-257	27	**228**	217-239
2	**261**	248-274	15	**244**	232-256	28	**227**	216-238
3	**260**	247-273	16	**243**	231-255	29	**226**	215-237
4	**258**	245-271	17	**241**	229-253	30	**225**	214-236
5	**257**	244-270	18	**240**	228-252	31	**223**	212-234
6	**256**	243-269	19	**239**	227-251	32	**222**	211-233
7	**254**	241-267	20	**238**	226-250	33	**221**	210-232
8	**253**	240-266	21	**236**	224-248	34	**219**	208-230
9	**252**	239-265	22	**235**	223-247	35	**218**	207-229

UNIT #3

NHPC INSTRUMENT CALIBRATION / MAINTENANCE LOG

DRAFT

Date: 10/27/20 Time: ~~E. Dym~~ 1150 Field Personnel: E. Dymess

Meter: (circle one) YSI: Model 600XL or 600XLM In-Situ: SmarTROLL Rental Company: PINE

Multimeter Serial Numbers (Sonde & Meter): 40318

Probe Pre-cleaned Certification Provided By (Personnel): NP Date: 10/9/20

Temperature Calibration: Personnel: NP Date: 10/9/20

Manufacturer's Accuracy Range of Sensor: +/- 0.2°C Vendor's check results Unit: 17.79 NIST: 17.78 Difference: 0.01

** When performing calibration checks, wait for temperature and parameter readings to stabilize before recording the results.**

BEGINNING CALIBRATION CHECK

Date: Time: Personnel:

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Zero DO check (mg/l)	0		0 to 0.5 mg/L				
pH 7 check ETSD	7		+/- 5%				Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check		10/27/20	+/- 5%				Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution _____ °C			+/- 5%				See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q	10		+/- 10%				Range 9.0 - 11.0 NTU (2100Q)

Notes:
1) If the post calibration check is not within the acceptable range the meter must be recalibrated.
2) All calibration checks must be made in the run mode (on a run/measurement screen) or on the live readings screen, not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark √ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: NA (Print) NA (Sign)

END OF DAY INSTRUMENT CALIBRATION CHECK

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Date: 10/27/20 Time: 1150		Personnel: E. Dymess					
Zero DO check (mg/l)	0	0.00	0 to 0.5 mg/L	Y	06A431	1/21	
pH 7 check	7	7.30	+/- 5%	Y	4744	11/24	Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check	1413	1451	+/- 5%	Y	4457	8/24	Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution 12 °C	248	254	+/- 5%	Y	18510160	9/23	See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P[5]	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q[5]	10	9.9	+/- 10%	Y	A0029	4/21	Range 9.0 - 11.0 NTU (2100Q)

Notes:
1) If the end of the day calibration check is not within the acceptable range, the data collected that day for that parameter shall be qualified in it's use.
2) All calibration checks must be made in the run mode (on a run/measurement screen), not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark ✓ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: E. Dymess (Print) Erik Dymess (Sign)

List wells sampled using this equipment on this day ONLY IF DATA NEEDS TO BE QUALIFIED.

NA NA

UNIT # 3

INSTRUMENT CALIBRATION

DRAFT

Date: Time:

Multimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
DO (% saturation)	100%				Allow time for stabilization per manufacturer
DO mg/l reading					Record these values immediately after calibration
DO Temp. (°C) reading					
DO (0% Saturation)-SmarTROLL	0%				2 point DO Calibration for SmarTROLL only (100 & 0%)
pH 1st Standard	4	10/27/22			
2nd Standard	7				
3rd Standard	10				
Specific Conductance (µS/cm)					One standard is used to calibrate, second one to check (1413 and 718 standards) Using one standard for both is unacceptable.
Zobell Solution _____ °C					See Chart below for ORP Zobell Solution mV Value Based on Temperature
ORP using Zobell Solution					

ETD

Additional Information for Dissolved Oxygen Calibration

Barometric Pressure of Meter: NA **mm Hg** [BP inches NA x 25.4 + BP NA mm Hg]

Dissolved Oxygen Charge (YSI Meters): NA (Acceptable Range: 25 to 75) You MUST change the membrane if charge is out of range.

Inspected DO membrane/RDO CAP for nicks or bubbles (check as completed) ✓ **Personnel:** E. Dymess

Changed YSI Dissolved Oxygen Membrane and Electrolyte Solution (circle one) YES or NO (NA)

Replaced SmarTROLL Rugged Dissolved Oxygen CAP (circle one) YES or (NO)

HACH 2100P or 2100Q * Turbidimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
Turbidity 1st Standard (blank)	<0.1 NTU	N/A	N/A	N/A	Calibrate w/ StablCal® Formazin Primary Turbidity Standards
2nd Standard	20 NTU				
3rd Standard	100 NTU			10/27/22	
4th Standard	800 NTU				

ETD

HACH Model (circle one) P or Q Serial Number: **Rental Company:**

*** NOTE: the 2100Q does not have a <0.1 standard, record N/A (not applicable) in the <0.1 standard boxes as appropriate.**

Calibration Performed by E. Dymess (Print Name) Erik Dymess (Signature)

Zobell Solution mV Value Based on Temperature for ORP Calibration
Calibration Check Range Values (+/- 5%)
Round off temperature to whole number (e.g., 23.5 °C rounds up to 24 °C)

Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%
-3	**267**	254-280	10	**251**	238-264	23	**234**	222-246
-2	**266**	253-279	11	**249**	237-261	24	**232**	220-244
-1	**265**	252-278	12	**248**	236-260	25	**231**	219-243
0	**264**	251-277	13	**247**	235-259	26	**230**	219-242
1	**262**	249-275	14	**245**	233-257	27	**228**	217-239
2	**261**	248-274	15	**244**	232-256	28	**227**	216-238
3	**260**	247-273	16	**243**	231-255	29	**226**	215-237
4	**258**	245-271	17	**241**	229-253	30	**225**	214-236
5	**257**	244-270	18	**240**	228-252	31	**223**	212-234
6	**256**	243-269	19	**239**	227-251	32	**222**	211-233
7	**254**	241-267	20	**238**	226-250	33	**221**	210-232
8	**253**	240-266	21	**236**	224-248	34	**219**	208-230
9	**252**	239-265	22	**235**	223-247	35	**218**	207-229

UNIT #1

NHPC INSTRUMENT CALIBRATION / MAINTENANCE LOG

DRAFT

Date: 10-26-20 Time: 0705 | Field Personnel: E. Dyrness

Meter: (circle one) YSI: Model 600XL or 600XLM In-Situ SmarTROLL Rental Company: PINE

Multimeter Serial Numbers (Sonde & Meter): 25477

Probe Pre-cleaned Certification Provided By (Personnel): NS Date: 10/9/20

Temperature Calibration: Personnel: NS Date: 10/9/20

Manufacturer's Accuracy Range of Sensor: +/- 0.2°C Vendor's check results Unit: 19.56 NIST: 19.55 Difference: 0.01

** When performing calibration checks, wait for temperature and parameter readings to stabilize before recording the results.**

BEGINNING CALIBRATION CHECK

Date: 10-26-20 Time: 0705 | Personnel: E. Dyrness

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Zero DO check (mg/l)	0	0.00	0 to 0.5 mg/L	Y	683003	7/21	
pH 7 check	7	7.19	+/- 5%	Y	4744	11/24	Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check	1413	1437	+/- 5%	Y	4457	8/24	Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution 21 °C	236	238	+/- 5%	Y	18510060	9/23	See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q	10	9.8	+/- 10%	Y	A0029	4/21	Range 9.0 - 11.0 NTU (2100Q)

Notes:
1) If the post calibration check is not within the acceptable range the meter must be recalibrated.
2) All calibration checks must be made in the run mode (on a run/measurement screen) or on the live readings screen, not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark √ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: E. Dyness (Print) [signature] (Sign)

END OF DAY INSTRUMENT CALIBRATION CHECK

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Date: 10/26/20 Time: 1320		Personnel: E. Dyness					
Zero DO check (mg/l)	0	0.06	0 to 0.5 mg/L	Y	683003	7/21	
pH 7 check	7	7.24	+/- 5%	Y	4744	11/24	Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check	1413	1443	+/- 5%	Y	4457	8/24	Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution 12 °C	248	253	+/- 5%	Y	18510060	9/23	See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P[5]	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q[5]	10	10.0	+/- 10%	Y	A0029	4/21	Range 9.0 - 11.0 NTU (2100Q)

Notes:
1) If the end of the day calibration check is not within the acceptable range, the data collected that day for that parameter shall be qualified in it's use.
2) All calibration checks must be made in the run mode (on a run/measurement screen), not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark ✓ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: E. Dyness (Print) [signature] (Sign)

List wells sampled using this equipment on this day ONLY IF DATA NEEDS TO BE QUALIFIED:

NA | NA

UNIT #1

INSTRUMENT CALIBRATION

DRAFT

Date: 10/26/20 Time: 0750

Multimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
DO (% saturation)	100%	NA			Allow time for stabilization per manufacturer
DO mg/l reading	NA	↓			Record these values immediately after calibration
DO Temp. (°C) reading	↓	↓			
DO (0% Saturation)-SmarTROLL	0%	↓	NA	NA	2 point DO Calibration for SmarTROLL only (100 & 0%)
pH 1st Standard	4	↓	↓	↓	
2nd Standard	7	↓	↓	↓	
3rd Standard	10	↓	↓	E130 10/26	
Specific Conductance (µS/cm)	~~238~~	✓	~~18510016~~0	9/23	One standard is used to calibrate, second one to check (1413 and 718 standards) Using one standard for both is unacceptable.
Zobell Solution 20 °C		✓			See Chart below for ORP Zobell Solution mV Value Based on Temperature
ORP using Zobell Solution	238	✓	18510016 0	9/23	

Additional Information for Dissolved Oxygen Calibration

Barometric Pressure of Meter: NA mm Hg [BP inches NA x 25.4 + BP NA mm Hg]

Dissolved Oxygen Charge (YSI Meters): NA (Acceptable Range: 25 to 75) You MUST change the membrane if charge is out of range.

Inspected DO membrane/RDO CAP for nicks or bubbles (check as completed) ✓ Personnel: E. Dymess

Changed YSI Dissolved Oxygen Membrane and Electrolyte Solution (circle one) YES or NO (NA)

Replaced SmarTROLL Rugged Dissolved Oxygen CAP (circle one) YES or (NO)

HACH 2100P or 2100Q * Turbidimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
Turbidity 1st Standard (blank)	<0.1 NTU	N/A	N/A	N/A	Calibrate w/ StablCal® Formazin Primary Turbidity Standards
2nd Standard	20 NTU				
3rd Standard	100 NTU				
4th Standard	800 NTU				

HACH Model (circle one) P or Q Serial Number: Rental Company:

* NOTE: the 2100Q does not have a <0.1 standard, record N/A (not applicable) in the <0.1 standard boxes as appropriate.

Calibration Performed by E. Dymess
Print Name

Signature

Zobell Solution mV Value Based on Temperature for ORP Calibration
Calibration Check Range Values (+/- 5%)
Round off temperature to whole number (e.g., 23.5 °C rounds up to 24 °C)

Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%
-3	**267**	254-280	10	**251**	238-264	23	**234**	222-246
-2	**266**	253-279	11	**249**	237-261	24	**232**	220-244
-1	**265**	252-278	12	**248**	236-260	25	**231**	219-243
0	**264**	251-277	13	**247**	235-259	26	**230**	219-242
1	**262**	249-275	14	**245**	233-257	27	**228**	217-239
2	**261**	248-274	15	**244**	232-256	28	**227**	216-238
3	**260**	247-273	16	**243**	231-255	29	**226**	215-237
4	**258**	245-271	17	**241**	229-253	30	**225**	214-236
5	**257**	244-270	18	**240**	228-252	31	**223**	212-234
6	**256**	243-269	19	**239**	227-251	32	**222**	211-233
7	**254**	241-267	20	**238**	226-250	33	**221**	210-232
8	**253**	240-266	21	**236**	224-248	34	**219**	208-230
9	**252**	239-265	22	**235**	223-247	35	**218**	207-229

UNIT #2

NHPC INSTRUMENT CALIBRATION / MAINTENANCE LOG

DRAFT

Date: 10-26-20 Time: 0710 | Field Personnel: E. Dyrness

Meter: (circle one) YSI: Model 600XL or 600XLM In-Situ: SmarTROLL AQUA Rental Company: PINE

Multimeter Serial Numbers (Sonde & Meter): 689645

Probe Pre-cleaned Certification Provided By (Personnel): PT Date: 10/16/20

Temperature Calibration: Personnel: PT Date: 10/16/20

Manufacturer's Accuracy Range of Sensor: +/- 0.2°C Vendor's check results Unit: 20.18 NIST: 20.15 Difference: 0.03

** When performing calibration checks, wait for temperature and parameter readings to stabilize before recording the results.**

BEGINNING CALIBRATION CHECK

Date: 10-26-20 Time: 0710 | Personnel: E. Dyrness

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Zero DO check (mg/l)	0	0.01	0 to 0.5 mg/L	Y	683003	7/21	
pH 7 check	7	7.10	+/- 5%	Y	4744	11/24	Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check	1413	1441	+/- 5%	Y	4457	8/24	Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution 22 °C	235	235	+/- 5%	Y	185100160	9/23	See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q	10	9.9	+/- 10%	Y	A0029	4/21	Range 9.0 - 11.0 NTU (2100Q)

Notes:
1) If the post calibration check is not within the acceptable range the meter must be recalibrated.
2) All calibration checks must be made in the run mode (on a run/measurement screen) or on the live readings screen, not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark √ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: E. Dyness (Print) [signature] (Sign)

END OF DAY INSTRUMENT CALIBRATION CHECK

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Date: 10/26/20 Time: 1730		Personnel: E. Dyrness					
Zero DO check (mg/l)	0	0.01	0 to 0.5 mg/L	Y	683003	7/21	
pH 7 check	7	7.21	+/- 5%	Y	4744	11/24	Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check	1413	1393	+/- 5%	Y	4457	8/24	Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution 11 °C	249	249	+/- 5%	Y	185100160	9/23	See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P[5]	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q[5]	10	10.1	+/- 10%	Y	A0029	4/21	Range 9.0 - 11.0 NTU (2100Q)

Notes:
1) If the end of the day calibration check is not within the acceptable range, the data collected that day for that parameter shall be qualified in it's use.
2) All calibration checks must be made in the run mode (on a run/measurement screen), not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark ✓ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: E. Dyness (Print) [signature] (Sign)

List wells sampled using this equipment on this day ONLY IF DATA NEEDS TO BE QUALIFIED.

NA | NA

UNIT #2

INSTRUMENT CALIBRATION

DRAFT

Date: 10-26-20 Time: 0755

Multimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
DO (% saturation)	100%	NA			Allow time for stabilization per manufacturer
DO mg/l reading	NA	↓			Record these values immediately after calibration
DO Temp. (°C) reading	↓	↓			
DO (0% Saturation)-SmarTROLL	0%	↓	NA	NA	2 point DO Calibration for SmarTROLL only (100 & 0%)
pH 1st Standard	4	↓	↓	↓	
2nd Standard	7	↓	↓	↓	
3rd Standard	10	↓	↓	↓	
Specific Conductance (µS/cm)	718	✓	9GK809	11/20	One standard is used to calibrate, second one to check (1413 and 718 standards) Using one standard for both is unacceptable,
Zobell Solution 22 °C		✓			See Chart below for ORP Zobell Solution mV Value Based on Temperature
ORP using Zobell Solution	235	~~22~~ ✓ PMA	18J100160	9/23	

Additional Information for Dissolved Oxygen Calibration

Barometric Pressure of Meter: NA **mm Hg** [BP inches NA x 25.4 + BP NA mm Hg]

Dissolved Oxygen Charge (YSI Meters): NA (Acceptable Range: 25 to 75) You MUST change the membrane if charge is out of range.

Inspected DO membrane/RDO CAP for nicks or bubbles (check as completed) ✓ **Personnel:** M. Murphy

Changed YSI Dissolved Oxygen Membrane and Electrolyte Solution (circle one) YES or NO

Replaced SmarTROLL Rugged Dissolved Oxygen CAP (circle one) YES or NO

HACH 2100P or 2100Q * Turbidimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
Turbidity 1st Standard (blank)	<0.1 NTU	N/A	N/A	N/A	Calibrate w/ StablCal® Formazin Primary Turbidity Standards
2nd Standard	20 NTU				
3rd Standard	100 NTU				
4th Standard	800 NTU				

HACH Model (circle one) P or Q Serial Number: **Rental Company:**

*** NOTE: the 2100Q does not have a <0.1 standard, record N/A (not applicable) in the <0.1 standard boxes as appropriate.**

Calibration Performed by E. Dymesp
Print Name

Signature

Zobell Solution mV Value Based on Temperature for ORP Calibration
Calibration Check Range Values (+/- 5%)
Round off temperature to whole number (e.g., 23.5 °C rounds up to 24 °C)

Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%
-3	**267**	254-280	10	**251**	238-264	23	**234**	222-246
-2	**266**	253-279	11	**249**	237-261	24	**232**	220-244
-1	**265**	252-278	12	**248**	236-260	25	**231**	219-243
0	**264**	251-277	13	**247**	235-259	26	**230**	219-242
1	**262**	249-275	14	**245**	233-257	27	**228**	217-239
2	**261**	248-274	15	**244**	232-256	28	**227**	216-238
3	**260**	247-273	16	**243**	231-255	29	**226**	215-237
4	**258**	245-271	17	**241**	229-253	30	**225**	214-236
5	**257**	244-270	18	**240**	228-252	31	**223**	212-234
6	**256**	243-269	19	**239**	227-251	32	**222**	211-233
7	**254**	241-267	20	**238**	226-250	33	**221**	210-232
8	**253**	240-266	21	**236**	224-248	34	**219**	208-230
9	**252**	239-265	22	**235**	223-247	35	**218**	207-229

UNIT #3

NHPC INSTRUMENT CALIBRATION / MAINTENANCE LOG

DRAFT

Date: 10-26-20 Time: 0715 | Field Personnel: E. Dyrness

Meter: (circle one) YSI: Model 600XL or 600XLM In-Situ: SmarTROLL Rental Company: PINE

Multimeter Serial Numbers (Sonde & Meter): 40818

Probe Pre-cleaned Certification Provided By (Personnel): NS Date: 10/9/20

Temperature Calibration: Personnel: NS Date: 10/9/20

Manufacturer's Accuracy Range of Sensor: +/- 0.2°C Vendor's check results Unit: 17.79 NIST: 17.78 Difference: 0.01

** When performing calibration checks, wait for temperature and parameter readings to stabilize before recording the results.**

BEGINNING CALIBRATION CHECK

Date: 10-26-20 Time: 0715 | Personnel: E. Dyrness

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Zero DO check (mg/l)	0	0.00	0 to 0.5 mg/L	Y	683003	7/21	
pH 7 check	7	7.25	+/- 5%	Y	4744	11/24	Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check	1413	1443	+/- 5%	Y	4457	8/24	Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution 21 °C	236	238	+/- 5%	Y	185100160	9/23	See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q	10	9.9	+/- 10%	Y	A0029	4/21	Range 9.0 - 11.0 NTU (2100Q)

Notes:
1) If the post calibration check is not within the acceptable range the meter must be recalibrated.
2) All calibration checks must be made in the run mode (on a run/measurement screen) or on the live readings screen, not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark √ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: E. Dyness (Print) Erik Dyness (Sign)

END OF DAY INSTRUMENT CALIBRATION CHECK

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Date: 10/26/20 Time: 1325		Personnel: E. Dyness					
Zero DO check (mg/l)	0	0.00	0 to 0.5 mg/L	Y	683003	7/21	
pH 7 check	7	7.29	+/- 5%	Y	4744	11/24	Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check	1413	1450	+/- 5%	Y	4457	8/24	Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution 12 °C	248	254	+/- 5%	Y	185100160	9/23	See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P[5]	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q[5]	10	10.3	+/- 10%	Y	A0029	4/21	Range 9.0 - 11.0 NTU (2100Q)

Notes:
1) If the end of the day calibration check is not within the acceptable range, the data collected that day for that parameter shall be qualified in it's use.
2) All calibration checks must be made in the run mode (on a run/measurement screen), not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark ✓ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: E. Dyness (Print) Erik Dyness (Sign)

List wells sampled using this equipment on this day ONLY IF DATA NEEDS TO BE QUALIFIED.

NA

NA

UNIT #3

INSTRUMENT CALIBRATION

DRAFT

Date: 10/26/20 Time: 0750

Multimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
DO (% saturation)	100%	NA			Allow time for stabilization per manufacturer
DO mg/l reading	NA				Record these values immediately after calibration
DO Temp. (°C) reading					
DO (0% Saturation)-SmarTROLL	0%		NA	NA	2 point DO Calibration for SmarTROLL only (100 & 0%)
pH 1st Standard	4				
2nd Standard	7				
3rd Standard	10			EBD 10/26	
Specific Conductance (µS/cm)	~~238~~	~~✓~~	~~18510060~~	~~9/23~~	One standard is used to calibrate, second one to check (1413 and 718 standards) Using one standard for both is unacceptable.
Zobell Solution 20 °C		✓			See Chart below for ORP Zobell Solution mV Value Based on Temperature
ORP using Zobell Solution	238	✓	18510060	9/23	

Additional Information for Dissolved Oxygen Calibration

Barometric Pressure of Meter: NA mm Hg [BP inches NA x 25.4 + BP NA mm Hg]

Dissolved Oxygen Charge (YSI Meters): NA (Acceptable Range: 25 to 75) You MUST change the membrane if charge is out of range.

Inspected DO membrane/RDO CAP for nicks or bubbles (check as completed) ✓ Personnel: E. Dyness

Changed YSI Dissolved Oxygen Membrane and Electrolyte Solution (circle one) YES or NO (NA)

Replaced SmarTROLL Rugged Dissolved Oxygen CAP (circle one) YES or (NO)

HACH 2100P or 2100Q * Turbidimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
Turbidity 1st Standard (blank)	<0.1 NTU	N/A	N/A	N/A	Calibrate w/ StablCal® Formazin Primary Turbidity Standards
2nd Standard	20 NTU				
3rd Standard	100 NTU				
4th Standard	800 NTU				

HACH Model (circle one) P or Q Serial Number: Rental Company:

* NOTE: the 2100Q does not have a <0.1 standard, record N/A (not applicable) in the <0.1 standard boxes as appropriate.

Calibration Performed by E. Dyness
Print Name

Signature

Zobell Solution mV Value Based on Temperature for ORP Calibration
Calibration Check Range Values (+/- 5%)
Round off temperature to whole number (e.g., 23.5 °C rounds up to 24 °C)

Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%
-3	267	254-280	10	251	238-264	23	234	222-246
-2	266	253-279	11	249	237-261	24	232	220-244
-1	265	252-278	12	248	236-260	25	231	219-243
0	264	251-277	13	247	235-259	26	230	219-242
1	262	249-275	14	245	233-257	27	228	217-239
2	261	248-274	15	244	232-256	28	227	216-238
3	260	247-273	16	243	231-255	29	226	215-237
4	258	245-271	17	241	229-253	30	225	214-236
5	257	244-270	18	240	228-252	31	223	212-234
6	256	243-269	19	239	227-251	32	222	211-233
7	254	241-267	20	238	226-250	33	221	210-232
8	253	240-266	21	236	224-248	34	219	208-230
9	252	239-265	22	235	223-247	35	218	207-229

UNIT #2

NHPC INSTRUMENT CALIBRATION / MAINTENANCE LOG

DRAFT

Date: 10/23/20 Time: 1300 | Field Personnel: E. Dymess

Meter: (circle one) YSI: Model 600XL or 600XLM In-Situ: SmarTROLL Aqua Rental Company: PINE

Multimeter Serial Numbers (Sonde & Meter): 689645

Probe Pre-cleaned Certification Provided By (Personnel): PT Date: 10/16/20

Temperature Calibration: Personnel: PT Date: 10/16/20

Manufacturer's Accuracy Range of Sensor: +/- 0.2°C Vendor's check results Unit: 20.18 NIST: 20.15 Difference: 0.03

** When performing calibration checks, wait for temperature and parameter readings to stabilize before recording the results.**

BEGINNING CALIBRATION CHECK

Date: Time: | Personnel:

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Zero DO check (mg/l)	0		0 to 0.5 mg/L				
pH 7 check	7		+/- 5%				Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check		ETSD	+/- 5%	10/23/20			Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution _____ °C			+/- 5%				See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q	10		+/- 10%				Range 9.0 - 11.0 NTU (2100Q)

Notes:
1) If the post calibration check is not within the acceptable range the meter must be recalibrated.
2) All calibration checks must be made in the run mode (on a run/measurement screen) or on the live readings screen, not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark √ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: _____ (Print) _____ (Sign)

END OF DAY INSTRUMENT CALIBRATION CHECK

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Date: 10/23/20 Time: 1300		Personnel: E. Dymess					
Zero DO check (mg/l)	0	0.00	0 to 0.5 mg/L	Y	683005	7/21	
pH 7 check	7	7.11	+/- 5%	Y	4744	11/24	Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check	1413	1420	+/- 5%	Y	4457	8/24	Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution 20 °C	238	235	+/- 5%	Y	06E906	2/21	See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P[5]	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q[5]	10	10.2	+/- 10%	Y	A0029	4/21	Range 9.0 - 11.0 NTU (2100Q)

Notes:
1) If the end of the day calibration check is not within the acceptable range, the data collected that day for that parameter shall be qualified in it's use.
2) All calibration checks must be made in the run mode (on a run/measurement screen), not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark ✓ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: E. Dymess (Print) Eric D. Dymess (Sign)

List wells sampled using this equipment on this day ONLY IF DATA NEEDS TO BE QUALIFIED.

NA

NA

UNIT #2

INSTRUMENT CALIBRATION

DRAFT

Date: Time:

Multimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
DO (% saturation)	100%				Allow time for stabilization per manufacturer
DO mg/l reading					Record these values immediately after calibration
DO Temp. (°C) reading					
DO (0% Saturation)-SmarTROLL	0%	10/23/00			2 point DO Calibration for SmarTROLL only (100 & 0%)
pH 1st Standard	4				
2nd Standard	7				
3rd Standard	10				
Specific Conductance (µS/cm)					One standard is used to calibrate, second one to check (1413 and 718 standards) Using one standard for both is unacceptable.
Zobell Solution _____ °C					See Chart below for ORP Zobell Solution mV Value Based on Temperature
ORP using Zobell Solution					

ETSD

Additional Information for Dissolved Oxygen Calibration

Barometric Pressure of Meter: NA mm Hg [BP inches NA x 25.4 + BP NA mm Hg]

Dissolved Oxygen Charge (YSI Meters): NA (Acceptable Range: 25 to 75) You MUST change the membrane if charge is out of range.

Inspected DO membrane/RDO CAP for nicks or bubbles (check as completed) ✓ Personnel: E. Dymess

Changed YSI Dissolved Oxygen Membrane and Electrolyte Solution (circle one) YES or NO (NA)

Replaced SmarTROLL Rugged Dissolved Oxygen CAP (circle one) YES or NO

HACH 2100P or 2100Q * Turbidimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
Turbidity 1st Standard (blank)	<0.1 NTU	N/A	N/A	N/A	Calibrate w/ StablCal® Formazin Primary Turbidity Standards
2nd Standard	20 NTU				
3rd Standard	100 NTU				
4th Standard	800 NTU				

ETSD 10/23/00

HACH Model (circle one) P or Q Serial Number: Rental Company:

* NOTE: the 2100Q does not have a <0.1 standard, record N/A (not applicable) in the <0.1 standard boxes as appropriate.

Calibration Performed by E. Dymess (Print Name) Erik Dymess (Signature)

Zobell Solution mV Value Based on Temperature for ORP Calibration
Calibration Check Range Values (+/- 5%)
Round off temperature to whole number (e.g., 23.5 °C rounds up to 24 °C)

Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%
-3	267	254-280	10	251	238-264	23	234	222-246
-2	266	253-279	11	249	237-261	24	232	220-244
-1	265	252-278	12	248	236-260	25	231	219-243
0	264	251-277	13	247	235-259	26	230	219-242
1	262	249-275	14	245	233-257	27	228	217-239
2	261	248-274	15	244	232-256	28	227	216-238
3	260	247-273	16	243	231-255	29	226	215-237
4	258	245-271	17	241	229-253	30	225	214-236
5	257	244-270	18	240	228-252	31	223	212-234
6	256	243-269	19	239	227-251	32	222	211-233
7	254	241-267	20	238	226-250	33	221	210-232
8	253	240-266	21	236	224-248	34	219	208-230
9	252	239-265	22	235	223-247	35	218	207-229

UNIT #3

NHPC INSTRUMENT CALIBRATION / MAINTENANCE LOG

DRAFT

Date: 10/23/20 Time: 1305 Field Personnel: E. Dymess

Meter: (circle one) YSI: Model 600XL or 600XLM In-Situ: SmarTROLL Rental Company: PINE

Multimeter Serial Numbers (Sonde & Meter): 40818

Probe Pre-cleaned Certification Provided By (Personnel): NP Date: 10/9/20

Temperature Calibration: Personnel: NP Date: 10/9/20

Manufacturer's Accuracy Range of Sensor: +/- 0.2°C Vendor's check results Unit: 17.79 NIST: 17.78 Difference: 0.01

** When performing calibration checks, wait for temperature and parameter readings to stabilize before recording the results.**

BEGINNING CALIBRATION CHECK

Date: Time: Personnel:

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Zero DO check (mg/l)	0		0 to 0.5 mg/L				
pH 7 check	7		+/- 5%				Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check	E TSD		+/- 5%		10/23/20		Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution _____ °C			+/- 5%				See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q	10		+/- 10%				Range 9.0 - 11.0 NTU (2100Q)

Notes:
1) If the post calibration check is not within the acceptable range the meter must be recalibrated.
2) All calibration checks must be made in the run mode (on a run/measurement screen) or on the live readings screen, not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark √ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: _____ (Print) _____ (Sign)

END OF DAY INSTRUMENT CALIBRATION CHECK

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Date: 10/23/20 Time: 1305		Personnel: E. Dymess					
Zero DO check (mg/l)	0	0.01	0 to 0.5 mg/L	Y	683003	7/21	
pH 7 check	7	7.24	+/- 5%	Y	4744	11/24	Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check	1413	1398	+/- 5%	Y	4457	8/24	Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution 19 °C	239	236	+/- 5%	Y	0GE906	2/21	See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P[5]	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q[5]	10	10.3	+/- 10%	Y	A0029	4/21	Range 9.0 - 11.0 NTU (2100Q)

Notes:
1) If the end of the day calibration check is not within the acceptable range, the data collected that day for that parameter shall be qualified in it's use.
2) All calibration checks must be made in the run mode (on a run/measurement screen), not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark ✓ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: E. Dymess (Print) Erik Dymess (Sign)

List wells sampled using this equipment on this day ONLY IF DATA NEEDS TO BE QUALIFIED.

NA

NA

UNIT #3

INSTRUMENT CALIBRATION

DRAFT

Date: Time:

Multimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
DO (% saturation)	100%				Allow time for stabilization per manufacturer
DO mg/l reading					Record these values immediately after calibration
DO Temp. (°C) reading	ETSD				
DO (0% Saturation)-SmarTROLL	0%	10/23/20			2 point DO Calibration for SmarTROLL only (100 & 0%)
pH 1st Standard	4				
2nd Standard	7				
3rd Standard	10				
Specific Conductance (µS/cm)					One standard is used to calibrate, second one to check (1413 and 718 standards) Using one standard for both is unacceptable.
Zobell Solution _____ °C					See Chart below for ORP Zobell Solution mV Value Based on Temperature
ORP using Zobell Solution					

Additional Information for Dissolved Oxygen Calibration

Barometric Pressure of Meter: NA **mm Hg** [BP inches NA x 25.4 + BP NA mm Hg]

Dissolved Oxygen Charge (YSI Meters): NA (Acceptable Range: 25 to 75) You MUST change the membrane if charge is out of range.

Inspected DO membrane/RDO CAP for nicks or bubbles (check as completed) ✓ **Personnel:** E. Dyrness

Changed YSI Dissolved Oxygen Membrane and Electrolyte Solution (circle one) YES or NO (NA)

Replaced SmarTROLL Rugged Dissolved Oxygen CAP (circle one) YES or (NO)

HACH 2100P or 2100Q * Turbidimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
Turbidity 1st Standard (blank)	<0.1 NTU	N/A	N/A	N/A	Calibrate w/ StablCal® Formazin Primary Turbidity Standards
2nd Standard	20 NTU	ETSD			
3rd Standard	100 NTU		10/23/20		
4th Standard	800 NTU				

HACH Model (circle one) P or Q Serial Number: **Rental Company:**

*** NOTE: the 2100Q does not have a <0.1 standard, record N/A (not applicable) in the <0.1 standard boxes as appropriate.**

Calibration Performed by E. Dyrness
Print Name

Eric Dyrness
Signature

Zobell Solution mV Value Based on Temperature for ORP Calibration
Calibration Check Range Values (+/- 5%)
Round off temperature to whole number (e.g., 23.5 °C rounds up to 24 °C)

Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%
-3	**267**	254-280	10	**251**	238-264	23	**234**	222-246
-2	**266**	253-279	11	**249**	237-261	24	**232**	220-244
-1	**265**	252-278	12	**248**	236-260	25	**231**	219-243
0	**264**	251-277	13	**247**	235-259	26	**230**	219-242
1	**262**	249-275	14	**245**	233-257	27	**228**	217-239
2	**261**	248-274	15	**244**	232-256	28	**227**	216-238
3	**260**	247-273	16	**243**	231-255	29	**226**	215-237
4	**258**	245-271	17	**241**	229-253	30	**225**	214-236
5	**257**	244-270	18	**240**	228-252	31	**223**	212-234
6	**256**	243-269	19	**239**	227-251	32	**222**	211-233
7	**254**	241-267	20	**238**	226-250	33	**221**	210-232
8	**253**	240-266	21	**236**	224-248	34	**219**	208-230
9	**252**	239-265	22	**235**	223-247	35	**218**	207-229

UNIT #1

NHPC INSTRUMENT CALIBRATION / MAINTENANCE LOG

DRAFT

Date: 10/22/20 Time: 1400 Field Personnel: E. Dymess

Meter: (circle one) YSI: Model 600XL or 600XLM In-Situ: SmarTROLL Rental Company: PINE

Multimeter Serial Numbers (Sonde & Meter): 25977

Probe Pre-cleaned Certification Provided By (Personnel): NP Date: 10/9/20

Temperature Calibration: Personnel: NP Date: 10/9/20

Manufacturer's Accuracy Range of Sensor: +/- 0.2°C Vendor's check results Unit: 19.36 NIST: 19.35 Difference: 0.01

** When performing calibration checks, wait for temperature and parameter readings to stabilize before recording the results.**

BEGINNING CALIBRATION CHECK

Date: Time: Personnel:

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Zero DO check (mg/l)	0		0 to 0.5 mg/L				
pH 7 check	7		+/- 5%				Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check		ETSD	+/- 5%	10/22/20			Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution _____ °C			+/- 5%				See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q	10		+/- 10%				Range 9.0 - 11.0 NTU (2100Q)

Notes:
1) If the post calibration check is not within the acceptable range the meter must be recalibrated.
2) All calibration checks must be made in the run mode (on a run/measurement screen) or on the live readings screen, not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark √ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: E. Dymess (Print) [signature] (Sign)

END OF DAY INSTRUMENT CALIBRATION CHECK

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Date: 10/22/20 Time: 1400		Personnel: E. Dymess					
Zero DO check (mg/l)	0	0.00	0 to 0.5 mg/L	Y	683003	7/21	
pH 7 check	7	7.21	+/- 5%	Y	4744	11/24	Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check	1413	1436	+/- 5%	Y	4457	8/24	Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution 23 °C	234	229	+/- 5%	Y	06E706	2/21	See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P[5]	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q[5]	10	10.1	+/- 10%	Y	A0029	4/21	Range 9.0 - 11.0 NTU (2100Q)

Notes:
1) If the end of the day calibration check is not within the acceptable range, the data collected that day for that parameter shall be qualified in it's use.
2) All calibration checks must be made in the run mode (on a run/measurement screen), not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark ✓ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: E. Dymess (Print) [signature] (Sign)

List wells sampled using this equipment on this day ONLY IF DATA NEEDS TO BE QUALIFIED.

NA

NA

UNIT #1

INSTRUMENT CALIBRATION

DRAFT

Date: Time:

Multimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
DO (% saturation)	100%				Allow time for stabilization per manufacturer
DO mg/l reading					Record these values immediately after calibration
DO Temp. (°C) reading					
DO (0% Saturation)-SmarTROLL	0%	EBD			2 point DO Calibration for SmarTROLL only (100 & 0%)
pH 1st Standard	4				
2nd Standard	7		10/22/20		
3rd Standard	10				
Specific Conductance (µS/cm)					One standard is used to calibrate, second one to check (1413 and 718 standards) Using one standard for both is unacceptable.
Zobell Solution _____ °C					See Chart below for ORP Zobell Solution mV Value Based on Temperature
ORP using Zobell Solution					

Additional Information for Dissolved Oxygen Calibration

Barometric Pressure of Meter: NA **mm Hg** [BP inches NA x 25.4 + BP NA mm Hg]

Dissolved Oxygen Charge (YSI Meters): NA (Acceptable Range: 25 to 75) You **MUST** change the membrane if charge is out of range.

Inspected DO membrane/RDO CAP for nicks or bubbles (check as completed) ✓ **Personnel:** E. Dynes

Changed YSI Dissolved Oxygen Membrane and Electrolyte Solution (circle one) YES or NO (NA)

Replaced SmarTROLL Rugged Dissolved Oxygen CAP (circle one) YES or (NO)

HACH 2100P or 2100Q * Turbidimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
Turbidity 1st Standard (blank)	<0.1 NTU	N/A	N/A	N/A	Calibrate w/ StablCal® Formazin Primary Turbidity Standards
2nd Standard	20 NTU	EBD			
3rd Standard	100 NTU		10/22/20		
4th Standard	800 NTU				

HACH Model (circle one) P or Q Serial Number: **Rental Company:**

*** NOTE: the 2100Q does not have a <0.1 standard, record N/A (not applicable) in the <0.1 standard boxes as appropriate.**

Calibration Performed by E. Dynes
Print Name

Signature

Zobell Solution mV Value Based on Temperature for ORP Calibration
Calibration Check Range Values (+/- 5%)
Round off temperature to whole number (e.g., 23.5 °C rounds up to 24 °C)

Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%
-3	**267**	254-280	10	**251**	238-264	23	**234**	222-246
-2	**266**	253-279	11	**249**	237-261	24	**232**	220-244
-1	**265**	252-278	12	**248**	236-260	25	**231**	219-243
0	**264**	251-277	13	**247**	235-259	26	**230**	219-242
1	**262**	249-275	14	**245**	233-257	27	**228**	217-239
2	**261**	248-274	15	**244**	232-256	28	**227**	216-238
3	**260**	247-273	16	**243**	231-255	29	**226**	215-237
4	**258**	245-271	17	**241**	229-253	30	**225**	214-236
5	**257**	244-270	18	**240**	228-252	31	**223**	212-234
6	**256**	243-269	19	**239**	227-251	32	**222**	211-233
7	**254**	241-267	20	**238**	226-250	33	**221**	210-232
8	**253**	240-266	21	**236**	224-248	34	**219**	208-230
9	**252**	239-265	22	**235**	223-247	35	**218**	207-229

UNIT #2

NHPC INSTRUMENT CALIBRATION / MAINTENANCE LOG

DRAFT

Date: 10/22/20 Time: 1405 | Field Personnel: E. Dymess

Meter: (circle one) YSI: Model 600XL or 600XLM In-Situ SmarTROLL Aqua Rental Company: PINE

Multimeter Serial Numbers (Sonde & Meter): 68945

Probe Pre-cleaned Certification Provided By (Personnel): PT Date: 10/16/20

Temperature Calibration: Personnel: PT Date: 10/16/20

Manufacturer's Accuracy Range of Sensor: +/- 0.2°C Vendor's check results Unit: 20.18 NIST: 20.15 Difference: 0.03

** When performing calibration checks, wait for temperature and parameter readings to stabilize before recording the results.**

BEGINNING CALIBRATION CHECK

Date: Time: | Personnel:

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Zero DO check (mg/l)	0		0 to 0.5 mg/L				
pH 7 check	7		+/- 5%				Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check			+/- 5%				Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution ____ °C			+/- 5%				See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q	10		+/- 10%				Range 9.0 - 11.0 NTU (2100Q)

EOD 10/22/20

Notes:
1) If the post calibration check is not within the acceptable range the meter must be recalibrated.
2) All calibration checks must be made in the run mode (on a run/measurement screen) or on the live readings screen, not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark √ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: E. Dymess (Print) [signature] (Sign)

END OF DAY INSTRUMENT CALIBRATION CHECK

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Date: 10/22/20 Time: 1405		Personnel: E. Dymess					
Zero DO check (mg/l)	0	0.02	0 to 0.5 mg/L	Y	683003	7/21	
pH 7 check	7	7.09	+/- 5%	Y	4744	11/24	Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check	1413	1464	+/- 5%	Y	4457	8/24	Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution 24 °C	232	230	+/- 5%	Y	06E906	2/21	See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P[5]	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q[5]	10	10.1	+/- 10%	Y	A0029	4/21	Range 9.0 - 11.0 NTU (2100Q)

Notes:
1) If the end of the day calibration check is not within the acceptable range, the data collected that day for that parameter shall be qualified in it's use.
2) All calibration checks must be made in the run mode (on a run/measurement screen), not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark ✓ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: E. Dymess (Print) [signature] (Sign)

List wells sampled using this equipment on this day ONLY IF DATA NEEDS TO BE QUALIFIED.

NA | NA

UNIT #2

INSTRUMENT CALIBRATION

DRAFT

Date: Time:

Multimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
DO (% saturation)	100%				Allow time for stabilization per manufacturer
DO mg/l reading					Record these values immediately after calibration
DO Temp. (°C) reading					
DO (0% Saturation)-SmarTROLL	0%				2 point DO Calibration for SmarTROLL only (100 & 0%)
pH 1st Standard	4	EBD			
2nd Standard	7				
3rd Standard	10		10/22/20		
Specific Conductance (µS/cm)					One standard is used to calibrate, second one to check (1413 and 718 standards) Using one standard for both is unacceptable.
Zobell Solution _____ °C					See Chart below for ORP Zobell Solution mV Value Based on Temperature
ORP using Zobell Solution					

Additional Information for Dissolved Oxygen Calibration

Barometric Pressure of Meter: NA **mm Hg** [BP inches NA x 25.4 + BP NA mm Hg]

Dissolved Oxygen Charge (YSI Meters): NA (Acceptable Range: 25 to 75) You MUST change the membrane if charge is out of range.

Inspected DO membrane/RDO CAP for nicks or bubbles (check as completed) ✓ **Personnel:** E. Dyness

Changed YSI Dissolved Oxygen Membrane and Electrolyte Solution (circle one) YES or NO (NA)

Replaced SmarTROLL Rugged Dissolved Oxygen CAP (circle one) YES or (NO)

HACH 2100P or 2100Q * Turbidimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
Turbidity 1st Standard (blank)	<0.1 NTU	N/A	N/A	N/A	Calibrate w/ StablCal® Formazin Primary Turbidity Standards
2nd Standard	20 NTU	EBD			
3rd Standard	100 NTU		10/22/20		
4th Standard	800 NTU				

HACH Model (circle one) P or Q Serial Number: **Rental Company:**

*** NOTE: the 2100Q does not have a <0.1 standard, record N/A (not applicable) in the <0.1 standard boxes as appropriate.**

Calibration Performed by E. Dyness (Print Name) [signature] (Signature)

Zobell Solution mV Value Based on Temperature for ORP Calibration
Calibration Check Range Values (+/- 5%)
Round off temperature to whole number (e.g., 23.5 °C rounds up to 24 °C)

Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%
-3	**267**	254-280	10	**251**	238-264	23	**234**	222-246
-2	**266**	253-279	11	**249**	237-261	24	**232**	220-244
-1	**265**	252-278	12	**248**	236-260	25	**231**	219-243
0	**264**	251-277	13	**247**	235-259	26	**230**	219-242
1	**262**	249-275	14	**245**	233-257	27	**228**	217-239
2	**261**	248-274	15	**244**	232-256	28	**227**	216-238
3	**260**	247-273	16	**243**	231-255	29	**226**	215-237
4	**258**	245-271	17	**241**	229-253	30	**225**	214-236
5	**257**	244-270	18	**240**	228-252	31	**223**	212-234
6	**256**	243-269	19	**239**	227-251	32	**222**	211-233
7	**254**	241-267	20	**238**	226-250	33	**221**	210-232
8	**253**	240-266	21	**236**	224-248	34	**219**	208-230
9	**252**	239-265	22	**235**	223-247	35	**218**	207-229

UNIT #3

NHPC INSTRUMENT CALIBRATION / MAINTENANCE LOG

DRAFT

Date: 10/22/20 Time: 1410 | Field Personnel: E. Dymess

Meter: (circle one) YSI: Model 600XL or 600XLM In-Situ SmarTROLL Rental Company: PINE

Multimeter Serial Numbers (Sonde & Meter): 40818

Probe Pre-cleaned Certification Provided By (Personnel): NP Date: 10/9/20

Temperature Calibration: Personnel: NP Date: 10/9/20

Manufacturer's Accuracy Range of Sensor: +/- 0.2°C Vendor's check results Unit: 17.79 NIST: 17.78 Difference: 0.01

** When performing calibration checks, wait for temperature and parameter readings to stabilize before recording the results.**

BEGINNING CALIBRATION CHECK

Date: Time: Personnel:

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Zero DO check (mg/l)	0		0 to 0.5 mg/L				
pH 7 check	7		+/- 5%				Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check		10/22/20	+/- 5%				Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution _____ °C			+/- 5%				See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q	10		+/- 10%				Range 9.0 - 11.0 NTU (2100Q)

Notes:
1) If the post calibration check is not within the acceptable range the meter must be recalibrated.
2) All calibration checks must be made in the run mode (on a run/measurement screen) or on the live readings screen, not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark √ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: E. Dymess (Print) [signature] (Sign)

END OF DAY INSTRUMENT CALIBRATION CHECK

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Date: 10/22/20 Time: 1410		Personnel: E. Dymess					
Zero DO check (mg/l)	0	0.00	0 to 0.5 mg/L	Y	683003	7/21	
pH 7 check	7	7.29	+/- 5%	Y	4744	11/24	Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check	1413	1441	+/- 5%	Y	4457	8/24	Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution 23 °C	234	229	+/- 5%	Y	06E906	2/21	See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P[5]	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q[5]	10	10.1	+/- 10%	Y	A0029	4/21	Range 9.0 - 11.0 NTU (2100Q)

Notes:
1) If the end of the day calibration check is not within the acceptable range, the data collected that day for that parameter shall be qualified in it's use.
2) All calibration checks must be made in the run mode (on a run/measurement screen), not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark ✓ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: E. Dymess (Print) [signature] (Sign)

List wells sampled using this equipment on this day ONLY IF DATA NEEDS TO BE QUALIFIED.

NA

NA

UNIT #3

INSTRUMENT CALIBRATION

DRAFT

Date: Time:

Multimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
DO (% saturation)	100%				Allow time for stabilization per manufacturer
DO mg/l reading					Record these values immediately after calibration
DO Temp. (°C) reading					
DO (0% Saturation)-SmarTROLL	0%				2 point DO Calibration for SmarTROLL only (100 & 0%)
pH 1st Standard	4	EBD			
2nd Standard	7		10/22/20		
3rd Standard	10				
Specific Conductance (µS/cm)					One standard is used to calibrate, second one to check (1413 and 718 standards) Using one standard for both is unacceptable.
Zobell Solution _____ °C					See Chart below for ORP Zobell Solution mV Value Based on Temperature
ORP using Zobell Solution					

Additional Information for Dissolved Oxygen Calibration

Barometric Pressure of Meter: NA mm Hg [BP inches NA x 25.4 + BP NA mm Hg]

Dissolved Oxygen Charge (YSI Meters): NA (Acceptable Range: 25 to 75) You MUST change the membrane if charge is out of range.

Inspected DO membrane/RDO CAP for nicks or bubbles (check as completed) ✓ Personnel: E. Dymess

Changed YSI Dissolved Oxygen Membrane and Electrolyte Solution (circle one) YES or NO (NA)

Replaced SmarTROLL Rugged Dissolved Oxygen CAP (circle one) YES or NO

HACH 2100P or 2100Q * Turbidimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
Turbidity 1st Standard (blank)	<0.1 NTU	N/A	N/A	N/A	Calibrate w/ StablCal® Formazin Primary Turbidity Standards
2nd Standard	20 NTU	EBD			
3rd Standard	100 NTU		10/22/20		
4th Standard	800 NTU				

HACH Model (circle one) P or Q Serial Number: Rental Company:

* NOTE: the 2100Q does not have a <0.1 standard, record N/A (not applicable) in the <0.1 standard boxes as appropriate.

Calibration Performed by E. Dymess (Print Name) [signature] (Signature)

Zobell Solution mV Value Based on Temperature for ORP Calibration
Calibration Check Range Values (+/- 5%)
Round off temperature to whole number (e.g., 23.5 °C rounds up to 24 °C)

Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%
-3	267	254-280	10	251	238-264	23	234	222-246
-2	266	253-279	11	249	237-261	24	232	220-244
-1	265	252-278	12	248	236-260	25	231	219-243
0	264	251-277	13	247	235-259	26	230	219-242
1	262	249-275	14	245	233-257	27	228	217-239
2	261	248-274	15	244	232-256	28	227	216-238
3	260	247-273	16	243	231-255	29	226	215-237
4	258	245-271	17	241	229-253	30	225	214-236
5	257	244-270	18	240	228-252	31	223	212-234
6	256	243-269	19	239	227-251	32	222	211-233
7	254	241-267	20	238	226-250	33	221	210-232
8	253	240-266	21	236	224-248	34	219	208-230
9	252	239-265	22	235	223-247	35	218	207-229

UNIT #1

NHPC INSTRUMENT CALIBRATION / MAINTENANCE LOG

DRAFT

Date: 10/21/20 Time: 1320 Field Personnel: E. Dymess

Meter: (circle one) YSI: Model 600XL or 600XLM In-Situ: SmarTROLL Rental Company: PINE

Multimeter Serial Numbers (Sonde & Meter): 25477

Probe Pre-cleaned Certification Provided By (Personnel): NP Date: 10/9/20

Temperature Calibration: Personnel: NP Date: 10/9/20

Manufacturer's Accuracy Range of Sensor: +/- 0.2°C Vendor's check results Unit: 19.36 NIST: 19.35 Difference: 0.01

** When performing calibration checks, wait for temperature and parameter readings to stabilize before recording the results.**

BEGINNING CALIBRATION CHECK

Date: Time: Personnel:

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Zero DO check (mg/l)	0		0 to 0.5 mg/L				
pH 7 check	7		+/- 5%				Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check			~~+/-5%~~	10/21/20			Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution _____ °C			+/- 5%				See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q	10		+/- 10%				Range 9.0 - 11.0 NTU (2100Q)

Notes:
1) If the post calibration check is not within the acceptable range the meter must be recalibrated.
2) All calibration checks must be made in the run mode (on a run/measurement screen) or on the live readings screen, not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark √ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: E. Dymess (Print) [signature] (Sign)

END OF DAY INSTRUMENT CALIBRATION CHECK

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Date: 10/21/20 Time: 1320		Personnel: E. Dymess					
Zero DO check (mg/l)	0	0.00	0 to 0.5 mg/L	Y	683003	7/21	
pH 7 check	7	7.19	+/- 5%	Y	4744	11/24	Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check	1413	1441	+/- 5%	Y	4457	8/24	Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution 18 °C	240	241	+/- 5%	Y	0CE906	2/21	See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P[5]	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q[5]	10	10.1	+/- 10%	Y	A0029	4/21	Range 9.0 - 11.0 NTU (2100Q)

Notes:
1) If the end of the day calibration check is not within the acceptable range, the data collected that day for that parameter shall be qualified in it's use.
2) All calibration checks must be made in the run mode (on a run/measurement screen), not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark ✓ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: E. Dymess (Print) [signature] (Sign)

List wells sampled using this equipment on this day <u>ONLY IF DATA NEEDS TO BE QUALIFIED.</u>

NA

NA

UNIT #1

INSTRUMENT CALIBRATION

DRAFT

Date: Time:

Multimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
DO (% saturation)	100%				Allow time for stabilization per manufacturer
DO mg/l reading					Record these values immediately after calibration
DO Temp. (°C) reading					
DO (0% Saturation)-SmarTROLL	0%				2 point DO Calibration for SmarTROLL only (100 & 0%)
pH 1st Standard	4		ETSD		
2nd Standard	7				
3rd Standard	10			10/21/20	
Specific Conductance (µS/cm)					One standard is used to calibrate, second one to check (1413 and 718 standards) Using one standard for both is unacceptable.
Zobell Solution _____ °C					See Chart below for ORP Zobell Solution mV Value Based on Temperature
ORP using Zobell Solution					

Additional Information for Dissolved Oxygen Calibration

Barometric Pressure of Meter: NA mm Hg [BP inches NA x 25.4 + BP NA mm Hg]

Dissolved Oxygen Charge (YSI Meters): NA (Acceptable Range: 25 to 75) You MUST change the membrane if charge is out of range.

Inspected DO membrane/RDO CAP for nicks or bubbles (check as completed) ✓ Personnel: E. Dymess

Changed YSI Dissolved Oxygen Membrane and Electrolyte Solution (circle one) YES or NO (NA)

Replaced SmarTROLL Rugged Dissolved Oxygen CAP (circle one) YES or (NO)

HACH 2100P or 2100Q * Turbidimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
Turbidity 1st Standard (blank)	<0.1 NTU	N/A	N/A	N/A	Calibrate w/ StablCal® Formazin Primary Turbidity Standards
2nd Standard	20 NTU		ETSD		
3rd Standard	100 NTU			10/21/20	
4th Standard	800 NTU				

HACH Model (circle one) P or Q Serial Number: Rental Company:

* NOTE: the 2100Q does not have a <0.1 standard, record N/A (not applicable) in the <0.1 standard boxes as appropriate.

Calibration Performed by E. Dymess (Print Name) [signature] (Signature)

Zobell Solution mV Value Based on Temperature for ORP Calibration
Calibration Check Range Values (+/- 5%)
Round off temperature to whole number (e.g., 23.5 °C rounds up to 24 °C)

Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%
-3	**267**	254-280	10	**251**	238-264	23	**234**	222-246
-2	**266**	253-279	11	**249**	237-261	24	**232**	220-244
-1	**265**	252-278	12	**248**	236-260	25	**231**	219-243
0	**264**	251-277	13	**247**	235-259	26	**230**	219-242
1	**262**	249-275	14	**245**	233-257	27	**228**	217-239
2	**261**	248-274	15	**244**	232-256	28	**227**	216-238
3	**260**	247-273	16	**243**	231-255	29	**226**	215-237
4	**258**	245-271	17	**241**	229-253	30	**225**	214-236
5	**257**	244-270	18	**240**	228-252	31	**223**	212-234
6	**256**	243-269	19	**239**	227-251	32	**222**	211-233
7	**254**	241-267	20	**238**	226-250	33	**221**	210-232
8	**253**	240-266	21	**236**	224-248	34	**219**	208-230
9	**252**	239-265	22	**235**	223-247	35	**218**	207-229

UNIT #2

NHPC INSTRUMENT CALIBRATION / MAINTENANCE LOG

DRAFT

Date: 10/21/20 Time: 1325 | Field Personnel: E. Dyrness

Meter: (circle one) YSI: Model 600XL or 600XLM In-Situ: SmarTROLL Aqua Rental Company: PNE

Multimeter Serial Numbers (Sonde & Meter): 689645

Probe Pre-cleaned Certification Provided By (Personnel): PT Date: 10/16/20

Temperature Calibration: Personnel: PT Date: 10/16/20

Manufacturer's Accuracy Range of Sensor: +/- 0.2°C Vendor's check results Unit: 20.18 NIST: 20.15 Difference: 0.03

** When performing calibration checks, wait for temperature and parameter readings to stabilize before recording the results.**

BEGINNING CALIBRATION CHECK

Date: Time: | Personnel:

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Zero DO check (mg/l)	0		0 to 0.5 mg/L				
pH 7 check	7		+/- 5%				Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check		EBR	+/- 5%	10/21/20			Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution _____ °C			+/- 5%				See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q	10		+/- 10%				Range 9.0 - 11.0 NTU (2100Q)

Notes:
1) If the post calibration check is not within the acceptable range the meter must be recalibrated.
2) All calibration checks must be made in the run mode (on a run/measurement screen) or on the live readings screen, not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark √ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: E. Dyrness (Print) Erik Dyrness (Sign)

END OF DAY INSTRUMENT CALIBRATION CHECK

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Date: 10/21/20 Time: 1325		Personnel: E. Dyrness					
Zero DO check (mg/l)	0	0.00	0 to 0.5 mg/L	Y	683003	7/21	
pH 7 check	7	7.11	+/- 5%	Y	4744	11/24	Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check	1413	1424	+/- 5%	Y	4457	8/24	Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution 18 °C	240	238	+/- 5%	Y	06E906	2/21	See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P[5]	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q[5]	10	10.2	+/- 10%	Y	A0029	4/21	Range 9.0 - 11.0 NTU (2100Q)

Notes:
1) If the end of the day calibration check is not within the acceptable range, the data collected that day for that parameter shall be qualified in it's use.
2) All calibration checks must be made in the run mode (on a run/measurement screen), not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark ✓ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: E. Dyrness (Print) Erik Dyrness (Sign)

List wells sampled using this equipment on this day <u>ONLY IF DATA NEEDS TO BE QUALIFIED.</u>

NA

NA

UNIT #2

INSTRUMENT CALIBRATION

DRAFT

Date: Time:

Multimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
DO (% saturation)	100%				Allow time for stabilization per manufacturer
DO mg/l reading					Record these values immediately after calibration
DO Temp. (°C) reading					
DO (0% Saturation)-SmarTROLL	0%				2 point DO Calibration for SmarTROLL only (100 & 0%)
pH 1st Standard	4				
2nd Standard	7				
3rd Standard	10				
Specific Conductance (µS/cm)					One standard is used to calibrate, second one to check (1413 and 718 standards) Using one standard for both is unacceptable.
Zobell Solution _____ °C					See Chart below for ORP Zobell Solution mV Value Based on Temperature
ORP using Zobell Solution					

ERD 10/21/20

Additional Information for Dissolved Oxygen Calibration

Barometric Pressure of Meter: NA **mm Hg** [BP inches NA x 25.4 + BP NA mm Hg]

Dissolved Oxygen Charge (YSI Meters): NA (Acceptable Range: 25 to 75) You MUST change the membrane if charge is out of range.

Inspected DO membrane/RDO CAP for nicks or bubbles (check as completed) ✓ **Personnel:** E. Dymess

Changed YSI Dissolved Oxygen Membrane and Electrolyte Solution (circle one) YES or NO (NA)

Replaced SmarTROLL Rugged Dissolved Oxygen CAP (circle one) YES or (NO)

HACH 2100P or 2100Q * Turbidimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
Turbidity 1st Standard (blank)	<0.1 NTU	N/A	N/A	N/A	Calibrate w/ StablCal® Formazin Primary Turbidity Standards
2nd Standard	20 NTU				
3rd Standard	100 NTU				
4th Standard	800 NTU				

HACH Model (circle one) P or Q Serial Number: **Rental Company:**

*** NOTE: the 2100Q does not have a <0.1 standard, record N/A (not applicable) in the <0.1 standard boxes as appropriate.**

Calibration Performed by E. Dymess
Print Name

Signature

Zobell Solution mV Value Based on Temperature for ORP Calibration
Calibration Check Range Values (+/- 5%)
Round off temperature to whole number (e.g., 23.5 °C rounds up to 24 °C)

Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%
-3	**267**	254-280	10	**251**	238-264	23	**234**	222-246
-2	**266**	253-279	11	**249**	237-261	24	**232**	220-244
-1	**265**	252-278	12	**248**	236-260	25	**231**	219-243
0	**264**	251-277	13	**247**	235-259	26	**230**	219-242
1	**262**	249-275	14	**245**	233-257	27	**228**	217-239
2	**261**	248-274	15	**244**	232-256	28	**227**	216-238
3	**260**	247-273	16	**243**	231-255	29	**226**	215-237
4	**258**	245-271	17	**241**	229-253	30	**225**	214-236
5	**257**	244-270	18	**240**	228-252	31	**223**	212-234
6	**256**	243-269	19	**239**	227-251	32	**222**	211-233
7	**254**	241-267	20	**238**	226-250	33	**221**	210-232
8	**253**	240-266	21	**236**	224-248	34	**219**	208-230
9	**252**	239-265	22	**235**	223-247	35	**218**	207-229

UNIT #3

NHPC INSTRUMENT CALIBRATION / MAINTENANCE LOG

DRAFT

Date: 10/21/20 Time: 1330 | Field Personnel: E. Dymness

Meter: (circle one) YSI: Model 600XL or 600XLM In-Situ: SmarTROLL Rental Company: PINE

Multimeter Serial Numbers (Sonde & Meter): 40818

Probe Pre-cleaned Certification Provided By (Personnel): NP Date: 10/9/20

Temperature Calibration: Personnel: NP Date: 10/9/20

Manufacturer's Accuracy Range of Sensor: +/- 0.2°C Vendor's check results Unit: 17.79 NIST: 17.78 Difference: 0.01

** When performing calibration checks, wait for temperature and parameter readings to stabilize before recording the results.**

BEGINNING CALIBRATION CHECK

Date: Time: | Personnel:

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Zero DO check (mg/l)	0	~~0.00~~ EDD	0 to 0.5 mg/L	~~Y~~ EDD			
pH 7 check	7		+/- 5%				Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check		EDD	+/- 5%	10/21/20			Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution _____ °C			+/- 5%				See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q	10		+/- 10%				Range 9.0 - 11.0 NTU (2100Q)

Notes:
1) If the post calibration check is not within the acceptable range the meter must be recalibrated.
2) All calibration checks must be made in the run mode (on a run/measurement screen) or on the live readings screen, not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark √ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: E. Dymness (Print) [signature] (Sign)

END OF DAY INSTRUMENT CALIBRATION CHECK

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Date: 10/21/20 Time: 1330		Personnel: E. Dymness					
Zero DO check (mg/l)	0	0.00	0 to 0.5 mg/L	Y	683005	7/21	
pH 7 check	7	7.26	+/- 5%	Y	9744	11/24	Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check	1413	1444	+/- 5%	Y	4457	8/24	Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution 18 °C	240	239	+/- 5%	Y	06E906	2/21	See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P[5]	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q[5]	10	10.5	+/- 10%	Y	A0029	4/21	Range 9.0 - 11.0 NTU (2100Q)

Notes:
1) If the end of the day calibration check is not within the acceptable range, the data collected that day for that parameter shall be qualified in it's use.
2) All calibration checks must be made in the run mode (on a run/measurement screen), not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark ✓ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: E. Dymness (Print) [signature] (Sign)

List wells sampled using this equipment on this day ONLY IF DATA NEEDS TO BE QUALIFIED.

NA

NA

UNIT #3

INSTRUMENT CALIBRATION

DRAFT

Date: Time:

Multimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
DO (% saturation)	100%				Allow time for stabilization per manufacturer
DO mg/l reading					Record these values immediately after calibration
DO Temp. (°C) reading					
DO (0% Saturation)-SmarTROLL	0%				2 point DO Calibration for SmarTROLL only (100 & 0%)
pH 1st Standard	4	CBD	10/21/20		
2nd Standard	7				
3rd Standard	10				
Specific Conductance (µS/cm)					One standard is used to calibrate, second one to check (1413 and 718 standards) Using one standard for both is unacceptable.
Zobell Solution _____ °C					See Chart below for ORP Zobell Solution mV Value Based on Temperature
ORP using Zobell Solution					

Additional Information for Dissolved Oxygen Calibration

Barometric Pressure of Meter: NA mm Hg [BP inches NA x 25.4 + BP NA mm Hg]

Dissolved Oxygen Charge (YSI Meters): NA (Acceptable Range: 25 to 75) You MUST change the membrane if charge is out of range.

Inspected DO membrane/RDO CAP for nicks or bubbles (check as completed) ✓ **Personnel:** E. Dymess

Changed YSI Dissolved Oxygen Membrane and Electrolyte Solution (circle one) YES or NO (NA)

Replaced SmarTROLL Rugged Dissolved Oxygen CAP (circle one) YES or (NO)

HACH 2100P or 2100Q * Turbidimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
Turbidity 1st Standard (blank)	<0.1 NTU	N/A	N/A	N/A	Calibrate w/ StablCal® Formazin Primary Turbidity Standards
2nd Standard	20 NTU	CBD	10/21/20		
3rd Standard	100 NTU				
4th Standard	800 NTU				

HACH Model (circle one) P or Q Serial Number: **Rental Company:**

*** NOTE: the 2100Q does not have a <0.1 standard, record N/A (not applicable) in the <0.1 standard boxes as appropriate.**

Calibration Performed by E. Dymess (Print Name) [signature] (Signature)

Zobell Solution mV Value Based on Temperature for ORP Calibration
Calibration Check Range Values (+/- 5%)
Round off temperature to whole number (e.g., 23.5 °C rounds up to 24 °C)

Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%
-3	**267**	254-280	10	**251**	238-264	23	**234**	222-246
-2	**266**	253-279	11	**249**	237-261	24	**232**	220-244
-1	**265**	252-278	12	**248**	236-260	25	**231**	219-243
0	**264**	251-277	13	**247**	235-259	26	**230**	219-242
1	**262**	249-275	14	**245**	233-257	27	**228**	217-239
2	**261**	248-274	15	**244**	232-256	28	**227**	216-238
3	**260**	247-273	16	**243**	231-255	29	**226**	215-237
4	**258**	245-271	17	**241**	229-253	30	**225**	214-236
5	**257**	244-270	18	**240**	228-252	31	**223**	212-234
6	**256**	243-269	19	**239**	227-251	32	**222**	211-233
7	**254**	241-267	20	**238**	226-250	33	**221**	210-232
8	**253**	240-266	21	**236**	224-248	34	**219**	208-230
9	**252**	239-265	22	**235**	223-247	35	**218**	207-229

UNIT #1

NHPC INSTRUMENT CALIBRATION / MAINTENANCE LOG

DRAFT

Date: 10/20/20 Time: 1445 Field Personnel: E. Dymess

Meter: (circle one) YSI: Model 600XL or 600XLM In-Situ: SmarTROLL Rental Company: PINE

Multimeter Serial Numbers (Sonde & Meter): 25477

Probe Pre-cleaned Certification Provided By (Personnel): NP Date: 10/9/20

Temperature Calibration: Personnel: NP Date: 10/9/20

Manufacturer's Accuracy Range of Sensor: +/- 0.2°C Vendor's check results Unit: 19.36 NIST: 19.35 Difference: 0.01

** When performing calibration checks, wait for temperature and parameter readings to stabilize before recording the results.**

BEGINNING CALIBRATION CHECK

Date: 10/20/20 Time: 1520 Personnel: E. Dymess

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Zero DO check (mg/l)	0	NA	0 to 0.5 mg/L	NA	NA	NA	
pH 7 check	7	✓	+/- 5%	✓	✓	✓	Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check	1413	1409	+/- 5%	Y	4457	8/24	Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution NA °C	NA	NA	+/- 5%	NA	NA	NA	See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q	10	NA	+/- 10%	NA	NA	NA	Range 9.0 - 11.0 NTU (2100Q)

Notes:
1) If the post calibration check is not within the acceptable range the meter must be recalibrated.
2) All calibration checks must be made in the run mode (on a run/measurement screen) or on the live readings screen, not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark √ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: E. Dymess (Print) [signature] (Sign)

END OF DAY INSTRUMENT CALIBRATION CHECK

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Date: Time:		Personnel:					
Zero DO check (mg/l)	0		0 to 0.5 mg/L				
pH 7 check	7		+/- 5%	ETSD			Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check			+/- 5%		10/20/20		Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution ____ °C			+/- 5%				See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P[5]	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q[5]	10		+/- 10%				Range 9.0 - 11.0 NTU (2100Q)

Notes:
1) If the end of the day calibration check is not within the acceptable range, the data collected that day for that parameter shall be qualified in it's use.
2) All calibration checks must be made in the run mode (on a run/measurement screen), not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark ✓ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: NA (Print) NA (Sign)

List wells sampled using this equipment on this day <u>ONLY IF DATA NEEDS TO BE QUALIFIED.</u>

NA

NA

UNIT #1

INSTRUMENT CALIBRATION

DRAFT

Date: 10/20/20 Time: 1515

Multimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
DO (% saturation)	100%	NA			Allow time for stabilization per manufacturer
DO mg/l reading	NA	↓			Record these values immediately after calibration
DO Temp. (°C) reading	↓	↓			
DO (0% Saturation)-SmarTROLL	0%	↓	NA	NA	2 point DO Calibration for SmarTROLL only (100 & 0%)
pH 1st Standard	4	↓	↓	↓	
2nd Standard	7	↓	↓	↓	
3rd Standard	10	↓	↓	↓	
Specific Conductance (µS/cm)	718	✓	96K 809	11/20	One standard is used to calibrate, second one to check (1413 and 718 standards) Using one standard for both is unacceptable.
Zobell Solution NA °C		NA			See Chart below for ORP Zobell Solution mV Value Based on Temperature
ORP using Zobell Solution	NA	↓	NA	NA	

Additional Information for Dissolved Oxygen Calibration

Barometric Pressure of Meter: _____ mm Hg [BP inches _____ x 25.4 + BP _____ mm Hg]

Dissolved Oxygen Charge (YSI Meters): _____ (Acceptable Range: 25 to 75) You MUST change the membrane if charge is out of range.

Inspected DO membrane/RDO CAP for nicks or bubbles (check as completed) ____ Personnel: _____

Changed YSI Dissolved Oxygen Membrane and Electrolyte Solution (circle one) YES or NO

Replaced SmarTROLL Rugged Dissolved Oxygen CAP (circle one) YES or NO EDD 10/20/20

HACH 2100P or 2100Q * Turbidimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
Turbidity 1st Standard (blank)	<0.1 NTU	N/A	N/A	N/A	Calibrate w/ StablCal® Formazin Primary Turbidity Standards
2nd Standard	20 NTU				
3rd Standard	100 NTU				
4th Standard	800 NTU				

HACH Model (circle one) P or Q Serial Number: Rental Company:

* NOTE: the 2100Q does not have a <0.1 standard, record N/A (not applicable) in the <0.1 standard boxes as appropriate.

Calibration Performed by E. Dymess (Print Name) Eric Dymess (Signature)

Zobell Solution mV Value Based on Temperature for ORP Calibration
Calibration Check Range Values (+/- 5%)
Round off temperature to whole number (e.g., 23.5 °C rounds up to 24 °C)

Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%
-3	**267**	254-280	10	**251**	238-264	23	**234**	222-246
-2	**266**	253-279	11	**249**	237-261	24	**232**	220-244
-1	**265**	252-278	12	**248**	236-260	25	**231**	219-243
0	**264**	251-277	13	**247**	235-259	26	**230**	219-242
1	**262**	249-275	14	**245**	233-257	27	**228**	217-239
2	**261**	248-274	15	**244**	232-256	28	**227**	216-238
3	**260**	247-273	16	**243**	231-255	29	**226**	215-237
4	**258**	245-271	17	**241**	229-253	30	**225**	214-236
5	**257**	244-270	18	**240**	228-252	31	**223**	212-234
6	**256**	243-269	19	**239**	227-251	32	**222**	211-233
7	**254**	241-267	20	**238**	226-250	33	**221**	210-232
8	**253**	240-266	21	**236**	224-248	34	**219**	208-230
9	**252**	239-265	22	**235**	223-247	35	**218**	207-229

UNIT #2

NHPC INSTRUMENT CALIBRATION / MAINTENANCE LOG

DRAFT

Date: 10-20-20 Time: 1445 | Field Personnel: M. Murphy

Meter: (circle one) YSI: Model 600XL or 600XLM In-Situ: SmarTROLL / Aqua Rental Company: PINE

Multimeter Serial Numbers (Sonde & Meter): 687643

Probe Pre-cleaned Certification Provided By (Personnel): PT Date: 10/16/20

Temperature Calibration: Personnel: PT Date: 10/16/20

Manufacturer's Accuracy Range of Sensor: +/- 0.2°C Vendor's check results Unit: 20.18 NIST: 20.15 Difference: 0.03

** When performing calibration checks, wait for temperature and parameter readings to stabilize before recording the results.**

BEGINNING CALIBRATION CHECK

Date: 10-20-20 Time: 1520 | Personnel: M. Murphy

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Zero DO check (mg/l)	0	NA	0 to 0.5 mg/L	NA	NA	NA	
pH 7 check	7	NA	+/- 5%	↓	↓	↓	Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check	1413	1424	+/- 5%	↓	↓	8/24	Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution NA °C	NA	NA	+/- 5%	Y	4457	~~8/24~~ NA	See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q	10	NA	+/- 10%	NA	→	→	Range 9.0 - 11.0 NTU (2100Q)

Notes:
1) If the post calibration check is not within the acceptable range the meter must be recalibrated.
2) All calibration checks must be made in the run mode (on a run/measurement screen) or on the live readings screen, not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark √ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: M. Murphy (Print) Megan Tuhl (Sign)

END OF DAY INSTRUMENT CALIBRATION CHECK

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Date: Time:		Personnel:					
Zero DO check (mg/l)	0		0 to 0.5 mg/L				
pH 7 check	7		+/- 5%				Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check			+/- 5%				Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution ____ °C			+/- 5%				See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P[5]	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q[5]	10		+/- 10%				Range 9.0 - 11.0 NTU (2100Q)

MM 10-20-20

Notes:
1) If the end of the day calibration check is not within the acceptable range, the data collected that day for that parameter shall be qualified in it's use.
2) All calibration checks must be made in the run mode (on a run/measurement screen), not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark ✓ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: ____ (Print) ____ (Sign)

List wells sampled using this equipment on this day ONLY IF DATA NEEDS TO BE QUALIFIED.

NA ↓ | NA ↓

UNIT #2

INSTRUMENT CALIBRATION

DRAFT

Date: 10-20-20 Time: 1520

Multimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
DO (% saturation)	100%	NA			Allow time for stabilization per manufacturer
DO mg/l reading	NA				Record these values immediately after calibration
DO Temp. (°C) reading	↓				
DO (0% Saturation)-SmarTROLL	0%		NA	NA	2 point DO Calibration for SmarTROLL only (100 & 0%)
pH 1st Standard	4				
2nd Standard	7				
3rd Standard	10		9GK8[illegible]	11/20	
Specific Conductance (µS/cm)	718	✓	4HS7 NM 10-20-20	8/24 NM 10-20-20	One standard is used to calibrate, second one to check (1413 and 718 standards) Using one standard for both is unacceptable.
Zobell Solution NA °C		NA			See Chart below for ORP Zobell Solution mV Value Based on Temperature
ORP using Zobell Solution	NA				

Additional Information for Dissolved Oxygen Calibration

Barometric Pressure of Meter: _____ **mm Hg** [BP inches _____ x 25.4 + BP _____ mm Hg]

Dissolved Oxygen Charge (YSI Meters): _____ (Acceptable Range: 25 to 75) You MUST change the membrane if charge is out of range.

Inspected DO membrane/RDO CAP for nicks or bubbles (check as completed) ____ **Personnel:** _____

Changed YSI Dissolved Oxygen Membrane and Electrolyte Solution (circle one) YES or NO

Replaced SmarTROLL Rugged Dissolved Oxygen CAP (circle one) YES or NO

NM

HACH 2100P or 2100Q * Turbidimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
Turbidity 1st Standard (blank)	<0.1 NTU	N/A	N/A	N/A	Calibrate w/ StablCal® Formazin Primary Turbidity Standards
2nd Standard	20 NTU				
3rd Standard	100 NTU				
4th Standard	800 NTU				

HACH Model (circle one) P or Q Serial Number: **Rental Company:**

*** NOTE: the 2100Q does not have a <0.1 standard, record N/A (not applicable) in the <0.1 standard boxes as appropriate.**

Calibration Performed by M. Murphy (Print Name) Margaret Murphy (Signature)

Zobell Solution mV Value Based on Temperature for ORP Calibration
Calibration Check Range Values (+/- 5%)
Round off temperature to whole number (e.g., 23.5 °C rounds up to 24 °C)

Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%
-3	**267**	254-280	10	**251**	238-264	23	**234**	222-246
-2	**266**	253-279	11	**249**	237-261	24	**232**	220-244
-1	**265**	252-278	12	**248**	236-260	25	**231**	219-243
0	**264**	251-277	13	**247**	235-259	26	**230**	219-242
1	**262**	249-275	14	**245**	233-257	27	**228**	217-239
2	**261**	248-274	15	**244**	232-256	28	**227**	216-238
3	**260**	247-273	16	**243**	231-255	29	**226**	215-237
4	**258**	245-271	17	**241**	229-253	30	**225**	214-236
5	**257**	244-270	18	**240**	228-252	31	**223**	212-234
6	**256**	243-269	19	**239**	227-251	32	**222**	211-233
7	**254**	241-267	20	**238**	226-250	33	**221**	210-232
8	**253**	240-266	21	**236**	224-248	34	**219**	208-230
9	**252**	239-265	22	**235**	223-247	35	**218**	207-229

UNIT #3

NHPC INSTRUMENT CALIBRATION / MAINTENANCE LOG

DRAFT

Date: 10/20/20 Time: 1450 | Field Personnel: E. Dyness

Meter: (circle one) YSI: Model 600XL or 600XLM In-Situ: SmarTROLL Rental Company: PINE

Multimeter Serial Numbers (Sonde & Meter): 40818

Probe Pre-cleaned Certification Provided By (Personnel): N/ Date: 10/9/20

Temperature Calibration: Personnel: N/ Date: 10/9/20

Manufacturer's Accuracy Range of Sensor: +/- 0.2°C Vendor's check results Unit: 17.79 NIST: 17.78 Difference: 0.01

** When performing calibration checks, wait for temperature and parameter readings to stabilize before recording the results.**

BEGINNING CALIBRATION CHECK

Date: 10/20/20 Time: 1520 | Personnel: E. Dyness

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Zero DO check (mg/l)	0	NA	0 to 0.5 mg/L	NA	NA	NA	
pH 7 check	7	✓	+/- 5%	✓	✓	✓	Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check	1413	1403	+/- 5%	Y	4457	8/24	Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution NA °C	NA	NA	+/- 5%	NA	NA	NA	See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q	10	NA	+/- 10%	NA	NA	N/A	Range 9.0 - 11.0 NTU (2100Q)

Notes:
1) If the post calibration check is not within the acceptable range the meter must be recalibrated.
2) All calibration checks must be made in the run mode (on a run/measurement screen) or on the live readings screen, not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark √ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: E. Dyness (Print) [signature] (Sign)

END OF DAY INSTRUMENT CALIBRATION CHECK

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Date: ~~10/20/20~~ ~~Time: 1450~~ ETSD		Personnel: ~~E. Dyness~~ ETSD					
Zero DO check (mg/l)	0		0 to 0.5 mg/L				
pH 7 check	7		+/- 5%				Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check		ETSD	+/- 5%		10/20/20		Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution _____ °C			+/- 5%				See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P[5]	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q[5]	10		+/- 10%				Range 9.0 - 11.0 NTU (2100Q)

Notes:
1) If the end of the day calibration check is not within the acceptable range, the data collected that day for that parameter shall be qualified in it's use.
2) All calibration checks must be made in the run mode (on a run/measurement screen), not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark ✓ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: NA (Print) NA (Sign)

List wells sampled using this equipment on this day <u>ONLY IF DATA NEEDS TO BE QUALIFIED.</u>

NA

NA

UNIT #3

INSTRUMENT CALIBRATION

DRAFT

Date: 10/20/20 Time: 1515

Multimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
DO (% saturation)	100%	NA			Allow time for stabilization per manufacturer
DO mg/l reading	NA	↓			Record these values immediately after calibration
DO Temp. (°C) reading	↓	↓			
DO (0% Saturation)-SmarTROLL	0%	↓	NA	NA	2 point DO Calibration for SmarTROLL only (100 & 0%)
pH 1st Standard	4	↓	↓	↓	
2nd Standard	7	↓	↓	↓	
3rd Standard	10	↓	↓	↓	
Specific Conductance (µS/cm)	718	✓	9GK809	11/20	One standard is used to calibrate, second one to check (1413 and 718 standards) Using one standard for both is unacceptable.
Zobell Solution NA °C		NA			See Chart below for ORP Zobell Solution mV Value Based on Temperature
ORP using Zobell Solution	NA	↓	NA	NA	

Additional Information for Dissolved Oxygen Calibration

Barometric Pressure of Meter: _____ **mm Hg** [BP inches _____ x 25.4 + BP _____ mm Hg]

Dissolved Oxygen Charge (YSI Meters): _____ (Acceptable Range: 25 to 75) You MUST change the membrane if charge is out of range.

Inspected DO membrane/RDO CAP for nicks or bubbles (check as completed) ____ **Personnel:** _____

Changed YSI Dissolved Oxygen Membrane and Electrolyte Solution (circle one) YES or NO E

Replaced SmarTROLL Rugged Dissolved Oxygen CAP (circle one) YES or NO 10/20/20

HACH 2100P or 2100Q * Turbidimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
Turbidity 1st Standard (blank)	<0.1 NTU	N/A	N/A	N/A	Calibrate w/ StablCal® Formazin Primary Turbidity Standards
2nd Standard	20 NTU				
3rd Standard	100 NTU				
4th Standard	800 NTU				

HACH Model (circle one) P or Q Serial Number: **Rental Company:**

*** NOTE: the 2100Q does not have a <0.1 standard, record N/A (not applicable) in the <0.1 standard boxes as appropriate.**

Calibration Performed by E. Dymess (Print Name) Eric Dymess (Signature)

Zobell Solution mV Value Based on Temperature for ORP Calibration
Calibration Check Range Values (+/- 5%)
Round off temperature to whole number (e.g., 23.5 °C rounds up to 24 °C)

Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%
-3	**267**	254-280	10	**251**	238-264	23	**234**	222-246
-2	**266**	253-279	11	**249**	237-261	24	**232**	220-244
-1	**265**	252-278	12	**248**	236-260	25	**231**	219-243
0	**264**	251-277	13	**247**	235-259	26	**230**	219-242
1	**262**	249-275	14	**245**	233-257	27	**228**	217-239
2	**261**	248-274	15	**244**	232-256	28	**227**	216-238
3	**260**	247-273	16	**243**	231-255	29	**226**	215-237
4	**258**	245-271	17	**241**	229-253	30	**225**	214-236
5	**257**	244-270	18	**240**	228-252	31	**223**	212-234
6	**256**	243-269	19	**239**	227-251	32	**222**	211-233
7	**254**	241-267	20	**238**	226-250	33	**221**	210-232
8	**253**	240-266	21	**236**	224-248	34	**219**	208-230
9	**252**	239-265	22	**235**	223-247	35	**218**	207-229

UNIT #1

NHPC INSTRUMENT CALIBRATION / MAINTENANCE LOG

DRAFT

Date: 10/20/20 Time: 0700 | Field Personnel: E. Dymess

Meter: (circle one) YSI: Model 600XL or 600XLM In-Situ: SmarTROLL Rental Company: PINE

Multimeter Serial Numbers (Sonde & Meter): 25477

Probe Pre-cleaned Certification Provided By (Personnel): NP Date: 10/9/20

Temperature Calibration: Personnel: NP Date: 10/9/20

Manufacturer's Accuracy Range of Sensor: +/- 0.2°C Vendor's check results Unit: 19.36 NIST: 19.35 Difference: 0.01

** When performing calibration checks, wait for temperature and parameter readings to stabilize before recording the results.**

BEGINNING CALIBRATION CHECK

Date: 10/20/20 Time: 0700 | Personnel: E. Dymess

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Zero DO check (mg/l)	0	0.00	0 to 0.5 mg/L	Y	683003	7/21	
pH 7 check	7	7.18	+/- 5%	Y	4744	11/24	Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check	718	725	+/- 5%	Y	96K809	11/20	Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution 22 °C	235	233	+/- 5%	Y	0GE906	2/21	See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q	10	10.1	+/- 10%	Y	A0029	4/21	Range 9.0 - 11.0 NTU (2100Q)

Notes:
1) If the post calibration check is not within the acceptable range the meter must be recalibrated.
2) All calibration checks must be made in the run mode (on a run/measurement screen) or on the live readings screen, not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark √ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: E. Dymess (Print) [signature] (Sign)

END OF DAY INSTRUMENT CALIBRATION CHECK

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Date: 10/20/20 Time: 1445		Personnel: E. Dymess					
Zero DO check (mg/l)	0	0.00	0 to 0.5 mg/L	Y	683003	7/21	
pH 7 check	7	7.23	+/- 5%	Y	4744	11/24	Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check	718	722	+/- 5%	Y	96K809	11/20	Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution 21 °C	236	234	+/- 5%	Y	0GE906	2/21	See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P[5]	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q[5]	10	9.9	+/- 10%	Y	A0029	4/21	Range 9.0 - 11.0 NTU (2100Q)

Notes:
1) If the end of the day calibration check is not within the acceptable range, the data collected that day for that parameter shall be qualified in it's use.
2) All calibration checks must be made in the run mode (on a run/measurement screen), not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark ✓ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: E. Dymess (Print) [signature] (Sign)

List wells sampled using this equipment on this day ONLY IF DATA NEEDS TO BE QUALIFIED.

NA

NA

UNIT #1

INSTRUMENT CALIBRATION

DRAFT

Date: Time:

Multimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
DO (% saturation)	100%				Allow time for stabilization per manufacturer
DO mg/l reading					Record these values immediately after calibration
DO Temp. (°C) reading					
DO (0% Saturation)-SmarTROLL	0%				2 point DO Calibration for SmarTROLL only (100 & 0%)
pH 1st Standard	4		EBD		
2nd Standard	7				
3rd Standard	10		10/20/20		
Specific Conductance (µS/cm)					One standard is used to calibrate, second one to check (1413 and 718 standards) Using one standard for both is unacceptable.
Zobell Solution _____ °C					See Chart below for ORP Zobell Solution mV Value Based on Temperature
ORP using Zobell Solution					

Additional Information for Dissolved Oxygen Calibration

Barometric Pressure of Meter: NA **mm Hg** [BP inches NA x 25.4 + BP NA mm Hg]

Dissolved Oxygen Charge (YSI Meters): NA (Acceptable Range: 25 to 75) You MUST change the membrane if charge is out of range.

Inspected DO membrane/RDO CAP for nicks or bubbles (check as completed) ✓ **Personnel:** E. Dymess

Changed YSI Dissolved Oxygen Membrane and Electrolyte Solution (circle one) YES or NO (NA)

Replaced SmarTROLL Rugged Dissolved Oxygen CAP (circle one) YES or NO

HACH 2100P or 2100Q * Turbidimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
Turbidity 1st Standard (blank)	<0.1 NTU	N/A	N/A	N/A	Calibrate w/ StablCal® Formazin Primary Turbidity Standards
2nd Standard	20 NTU				
3rd Standard	100 NTU		EBD 10/20/20		
4th Standard	800 NTU				

HACH Model (circle one) P or Q Serial Number: **Rental Company:**

*** NOTE: the 2100Q does not have a <0.1 standard, record N/A (not applicable) in the <0.1 standard boxes as appropriate.**

Calibration Performed by E. Dymess
Print Name

Signature

Zobell Solution mV Value Based on Temperature for ORP Calibration
Calibration Check Range Values (+/- 5%)
Round off temperature to whole number (e.g., 23.5 °C rounds up to 24 °C)

Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%
-3	**267**	254-280	10	**251**	238-264	23	**234**	222-246
-2	**266**	253-279	11	**249**	237-261	24	**232**	220-244
-1	**265**	252-278	12	**248**	236-260	25	**231**	219-243
0	**264**	251-277	13	**247**	235-259	26	**230**	219-242
1	**262**	249-275	14	**245**	233-257	27	**228**	217-239
2	**261**	248-274	15	**244**	232-256	28	**227**	216-238
3	**260**	247-273	16	**243**	231-255	29	**226**	215-237
4	**258**	245-271	17	**241**	229-253	30	**225**	214-236
5	**257**	244-270	18	**240**	228-252	31	**223**	212-234
6	**256**	243-269	19	**239**	227-251	32	**222**	211-233
7	**254**	241-267	20	**238**	226-250	33	**221**	210-232
8	**253**	240-266	21	**236**	224-248	34	**219**	208-230
9	**252**	239-265	22	**235**	223-247	35	**218**	207-229

UNIT #2

NHPC INSTRUMENT CALIBRATION / MAINTENANCE LOG

DRAFT

Date: 10-20-20 Time: 0710 | Field Personnel: M. Murphy

Meter: (circle one) YSI: Model 600XL or 600XLM In-Situ: (SmarTROLL) AQUA Rental Company: PINE

Multimeter Serial Numbers (Sonde & Meter): 689645

Probe Pre-cleaned Certification Provided By (Personnel): P.T. Date: 10-16-2020

Temperature Calibration: Personnel: P.T. Date: 10-16-2020

Manufacturer's Accuracy Range of Sensor: +/- 0.2°C Vendor's check results Unit: 20.18 NIST: 20.15 Difference: 0.03

** When performing calibration checks, wait for temperature and parameter readings to stabilize before recording the results.**

BEGINNING CALIBRATION CHECK

Date: 10-20-20 Time: 0710 | Personnel: M. Murphy

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Zero DO check (mg/l)	0	0.00	0 to 0.5 mg/L	Y	683003	7/21	
pH 7 check	7	7.10	+/- 5%	Y	4744	11/24	Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check	718	724	+/- 5%	Y	9GK809	11/20	Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution 22 °C	235	233	+/- 5%	Y	ØGE906	2/21	See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q	10	9.7	+/- 10%	Y	A0029	4/21	Range 9.0 - 11.0 NTU (2100Q)

Notes:
1) If the post calibration check is not within the acceptable range the meter must be recalibrated.
2) All calibration checks must be made in the run mode (on a run/measurement screen) or on the live readings screen, not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark √ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: M. Murphy (Print) Megan Tuke (Sign)

END OF DAY INSTRUMENT CALIBRATION CHECK

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Date: 10-20-20 Time: 1445		Personnel: M. Murphy					
Zero DO check (mg/l)	0	0.00	0 to 0.5 mg/L	Y	683003	7/21	
pH 7 check	7	7.09	+/- 5%	Y	4744	11/24	Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check	718	720	+/- 5%	Y	9GK809	11/20	Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution 21 °C	236	234	+/- 5%	Y	ØGE906	2/21	See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P[5]	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q[5]	10	10.0	+/- 10%	Y	A0029	4/21	Range 9.0 - 11.0 NTU (2100Q)

Notes:
1) If the end of the day calibration check is not within the acceptable range, the data collected that day for that parameter shall be qualified in it's use.
2) All calibration checks must be made in the run mode (on a run/measurement screen), not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark ✓ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: M. Murphy (Print) Megan Tuke (Sign)

List wells sampled using this equipment on this day ONLY IF DATA NEEDS TO BE QUALIFIED.

NA

NA

UNIT #2

INSTRUMENT CALIBRATION

DRAFT

Date: Time:

Multimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
DO (% saturation)	100%				Allow time for stabilization per manufacturer
DO mg/l reading					Record these values immediately after calibration
DO Temp. (°C) reading					
DO (0% Saturation)-SmarTROLL	0%	MM 10-20-20			2 point DO Calibration for SmarTROLL only (100 & 0%)
pH 1st Standard	4				
2nd Standard	7				
3rd Standard	10				
Specific Conductance (µS/cm)					One standard is used to calibrate, second one to check (1413 and 718 standards) Using one standard for both is unacceptable.
Zobell Solution _____ °C					See Chart below for ORP Zobell Solution mV Value Based on Temperature
ORP using Zobell Solution					

Additional Information for Dissolved Oxygen Calibration

Barometric Pressure of Meter: NA mm Hg [BP inches NA x 25.4 + BP NA mm Hg]

Dissolved Oxygen Charge (YSI Meters): NA (Acceptable Range: 25 to 75) You MUST change the membrane if charge is out of range.

Inspected DO membrane/RDO CAP for nicks or bubbles (check as completed) ✓ Personnel: M. Murphy

Changed YSI Dissolved Oxygen Membrane and Electrolyte Solution (circle one) YES or (NO)

Replaced SmarTROLL Rugged Dissolved Oxygen CAP (circle one) YES or (NO)

HACH 2100P or 2100Q * Turbidimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
Turbidity 1st Standard (blank)	<0.1 NTU	N/A	N/A	N/A	Calibrate w/ StablCal® Formazin Primary Turbidity Standards
2nd Standard	20 NTU	MM 10-20-20			
3rd Standard	100 NTU				
4th Standard	800 NTU				

HACH Model (circle one) P or Q Serial Number: Rental Company:

* NOTE: the 2100Q does not have a <0.1 standard, record N/A (not applicable) in the <0.1 standard boxes as appropriate.

Calibration Performed by _____ _____

Print Name Signature

Zobell Solution mV Value Based on Temperature for ORP Calibration
Calibration Check Range Values (+/- 5%)
Round off temperature to whole number (e.g., 23.5 °C rounds up to 24 °C)

Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%
-3	**267**	254-280	10	**251**	238-264	23	**234**	222-246
-2	**266**	253-279	11	**249**	237-261	24	**232**	220-244
-1	**265**	252-278	12	**248**	236-260	25	**231**	219-243
0	**264**	251-277	13	**247**	235-259	26	**230**	219-242
1	**262**	249-275	14	**245**	233-257	27	**228**	217-239
2	**261**	248-274	15	**244**	232-256	28	**227**	216-238
3	**260**	247-273	16	**243**	231-255	29	**226**	215-237
4	**258**	245-271	17	**241**	229-253	30	**225**	214-236
5	**257**	244-270	18	**240**	228-252	31	**223**	212-234
6	**256**	243-269	19	**239**	227-251	32	**222**	211-233
7	**254**	241-267	20	**238**	226-250	33	**221**	210-232
8	**253**	240-266	21	**236**	224-248	34	**219**	208-230
9	**252**	239-265	22	**235**	223-247	35	**218**	207-229

UNIT #3

NHPC INSTRUMENT CALIBRATION / MAINTENANCE LOG

DRAFT

Date: 10/20/20 Time: 0705 | Field Personnel: E. Dymess

Meter: (circle one) YSI: Model 600XL or 600XLM In-Situ: SmarTROLL Rental Company: PINE

Multimeter Serial Numbers (Sonde & Meter): 40818

Probe Pre-cleaned Certification Provided By (Personnel): NP Date: ~~10/20/20~~ 10/9/20

Temperature Calibration: Personnel: NP Date: 10/9/20

Manufacturer's Accuracy Range of Sensor: +/- 0.2°C Vendor's check results Unit: 17.79 NIST: 17.78 Difference: 0.01

** When performing calibration checks, wait for temperature and parameter readings to stabilize before recording the results.**

BEGINNING CALIBRATION CHECK

Date: 10/20/20 Time: 0705 | Personnel: E. Dymess

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Zero DO check (mg/l)	0	0.00	0 to 0.5 mg/L	Y	683003	7/21	
pH 7 check	7	7.20	+/- 5%	Y	4744	11/24	Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check	718	730	+/- 5%	Y	96K809	11/20	Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution 21 °C	236	233	+/- 5%	Y	06E906	2/21	See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q	10	10.0	+/- 10%	Y	A0029	4/21	Range 9.0 - 11.0 NTU (2100Q)

Notes:
1) If the post calibration check is not within the acceptable range the meter must be recalibrated.
2) All calibration checks must be made in the run mode (on a run/measurement screen) or on the live readings screen, not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark √ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: E. Dymess (Print) [signature] (Sign)

END OF DAY INSTRUMENT CALIBRATION CHECK

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Date: 10/20/20 Time: 1450		Personnel: E. Dymess					
Zero DO check (mg/l)	0	0.00	0 to 0.5 mg/L	Y	683003	7/21	
pH 7 check	7	7.25	+/- 5%	Y	4744	11/24	Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check	718	724	+/- 5%	Y	96K809	11/20	Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution 20 °C	238	235	+/- 5%	Y	06E906	2/21	See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P[5]	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q[5]	10	9.9	+/- 10%		A0029	4/21	Range 9.0 - 11.0 NTU (2100Q)

Notes:
1) If the end of the day calibration check is not within the acceptable range, the data collected that day for that parameter shall be qualified in it's use.
2) All calibration checks must be made in the run mode (on a run/measurement screen), not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark ✓ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: E. Dymess (Print) [signature] (Sign)

List wells sampled using this equipment on this day ONLY IF DATA NEEDS TO BE QUALIFIED:

NA | NA

UNIT #3

INSTRUMENT CALIBRATION

DRAFT

Date: Time:

Multimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
DO (% saturation)	100%				Allow time for stabilization per manufacturer
DO mg/l reading					Record these values immediately after calibration
DO Temp. (˚C) reading					
DO (0% Saturation)-SmarTROLL	0%				2 point DO Calibration for SmarTROLL only (100 & 0%)
pH 1st Standard	4	EBD			
2nd Standard	7				
3rd Standard	10		10/20/20		
Specific Conductance (µS/cm)					One standard is used to calibrate, second one to check (1413 and 718 standards) Using one standard for both is unacceptable.
Zobell Solution _____ ˚C					See Chart below for ORP Zobell Solution mV Value Based on Temperature
ORP using Zobell Solution					

Additional Information for Dissolved Oxygen Calibration

Barometric Pressure of Meter: NA mm Hg [BP inches NA x 25.4 + BP NA mm Hg]

Dissolved Oxygen Charge (YSI Meters): NA (Acceptable Range: 25 to 75) You MUST change the membrane if charge is out of range.

Inspected DO membrane/RDO CAP for nicks or bubbles (check as completed) ✓ **Personnel:** E. Dymers

Changed YSI Dissolved Oxygen Membrane and Electrolyte Solution (circle one) YES or NO (NA)

Replaced SmarTROLL Rugged Dissolved Oxygen CAP (circle one) YES or NO (NO)

HACH 2100P or 2100Q * Turbidimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
Turbidity 1st Standard (blank)	<0.1 NTU	N/A	N/A	N/A	Calibrate w/ StablCal® Formazin Primary Turbidity Standards
2nd Standard	20 NTU				
3rd Standard	100 NTU	EBD			
4th Standard	800 NTU		10/20/20		

HACH Model (circle one) P or Q Serial Number: **Rental Company:**

*** NOTE: the 2100Q does not have a <0.1 standard, record N/A (not applicable) in the <0.1 standard boxes as appropriate.**

Calibration Performed by E. Dymers
Print Name

Signature

Zobell Solution mV Value Based on Temperature for ORP Calibration
Calibration Check Range Values (+/- 5%)
Round off temperature to whole number (e.g., 23.5 °C rounds up to 24 °C)

Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%
-3	**267**	254-280	10	**251**	238-264	23	**234**	222-246
-2	**266**	253-279	11	**249**	237-261	24	**232**	220-244
-1	**265**	252-278	12	**248**	236-260	25	**231**	219-243
0	**264**	251-277	13	**247**	235-259	26	**230**	219-242
1	**262**	249-275	14	**245**	233-257	27	**228**	217-239
2	**261**	248-274	15	**244**	232-256	28	**227**	216-238
3	**260**	247-273	16	**243**	231-255	29	**226**	215-237
4	**258**	245-271	17	**241**	229-253	30	**225**	214-236
5	**257**	244-270	18	**240**	228-252	31	**223**	212-234
6	**256**	243-269	19	**239**	227-251	32	**222**	211-233
7	**254**	241-267	20	**238**	226-250	33	**221**	210-232
8	**253**	240-266	21	**236**	224-248	34	**219**	208-230
9	**252**	239-265	22	**235**	223-247	35	**218**	207-229

UNIT #1

NHPC INSTRUMENT CALIBRATION / MAINTENANCE LOG

DRAFT

Date: 10/15/20 Time: 1010 Field Personnel: E. Dyness

Meter: (circle one) YSI: Model 600XL or 600XLM In-Situ: SmarTROLL Rental Company: Pine

Multimeter Serial Numbers (Sonde & Meter): 25477

Probe Pre-cleaned Certification Provided By (Personnel): NP Date: 10/9/20

Temperature Calibration: Personnel: NP Date: 10/9/20

Manufacturer's Accuracy Range of Sensor: +/- 0.2°C Vendor's check results Unit: 19.36 NIST: 19.35 Difference: 0.01

** When performing calibration checks, wait for temperature and parameter readings to stabilize before recording the results.**

BEGINNING CALIBRATION CHECK

Date: 10/15/20 Time: 1145 Personnel: E. Dyness

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Zero DO check (mg/l)	0	0.03	0 to 0.5 mg/L	Y	683003	7/21	
pH 7 check	7	7.08	+/- 5%	Y	0C8276	2/22	Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check	718	723	+/- 5%	Y	9GK809	11/20	Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution 21 °C	236	234	+/- 5%	Y	0GE906	2/21	See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q	10	10.0	+/- 10%	Y	A0029	4/21	Range 9.0 - 11.0 NTU (2100Q)

Notes:
1) If the post calibration check is not within the acceptable range the meter must be recalibrated.
2) All calibration checks must be made in the run mode (on a run/measurement screen) or on the live readings screen, not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark √ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: E. Dyness (Print) [signature] (Sign)

END OF DAY INSTRUMENT CALIBRATION CHECK

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Date: Time:		Personnel:					
Zero DO check (mg/l)	0		0 to 0.5 mg/L				
pH 7 check	7		+/- 5%				Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check		ETS	+/- 5%		10/15/20		Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution _____ °C			+/- 5%				See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P[5]	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q[5]	10		+/- 10%				Range 9.0 - 11.0 NTU (2100Q)

Notes:
1) If the end of the day calibration check is not within the acceptable range, the data collected that day for that parameter shall be qualified in it's use.
2) All calibration checks must be made in the run mode (on a run/measurement screen), not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark ✓ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: NA (Print) NA (Sign)

List wells sampled using this equipment on this day ONLY IF DATA NEEDS TO BE QUALIFIED.

NA

NA

UNIT #1

INSTRUMENT CALIBRATION

DRAFT

Date: 10/15/20 Time: 1010

Multimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
DO (% saturation)	100%	✓			Allow time for stabilization per manufacturer
DO mg/l reading	9.95	✓			Record these values immediately after calibration
DO Temp. (°C) reading	20.75	✓			
DO (0% Saturation)-SmarTROLL	0%	✓	06A431	1/21	2 point DO Calibration for SmarTROLL only (100 & 0%)
pH 1st Standard	4	✓	1526	5/22	
2nd Standard	7	✓	06B276	2/22	
3rd Standard	10	✓	965 379	12/21	
Specific Conductance (µS/cm)	1413	✓	4457	8/24	One standard is used to calibrate, second one to check (1413 and 718 standards) Using one standard for both is unacceptable.
Zobell Solution 21.4 °C		✓			See Chart below for ORP Zobell Solution mV Value Based on Temperature
ORP using Zobell Solution	236	✓	06E906	2/21	

Additional Information for Dissolved Oxygen Calibration

Barometric Pressure of Meter: NA mm Hg [BP inches NA x 25.4 + BP NA mm Hg]

Dissolved Oxygen Charge (YSI Meters): NA (Acceptable Range: 25 to 75) You MUST change the membrane if charge is out of range.

Inspected DO membrane/RDO CAP for nicks or bubbles (check as completed) ✓ Personnel: E. Dymess

Changed YSI Dissolved Oxygen Membrane and Electrolyte Solution (circle one) YES or NO (NA)

Replaced SmarTROLL Rugged Dissolved Oxygen CAP (circle one) YES or (NO)

HACH 2100P or 2100Q * Turbidimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
Turbidity 1st Standard (blank)	<0.1 NTU	N/A	N/A	N/A	Calibrate w/ StablCal® Formazin Primary Turbidity Standards
2nd Standard	20 NTU	✓	A9254	12/20	
3rd Standard	100 NTU	✓	A0031	5/21	
4th Standard	800 NTU	✓	A9213	11/20	

HACH Model (circle one) P or (Q) Serial Number: 1801000638 11 Rental Company: PINE

* NOTE: the 2100Q does not have a <0.1 standard, record N/A (not applicable) in the <0.1 standard boxes as appropriate.

Calibration Performed by E. Dymess (Print Name) Eric D Dymess (Signature)

Zobell Solution mV Value Based on Temperature for ORP Calibration
Calibration Check Range Values (+/- 5%)
Round off temperature to whole number (e.g., 23.5 °C rounds up to 24 °C)

Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%
-3	**267**	254-280	10	**251**	238-264	23	**234**	222-246
-2	**266**	253-279	11	**249**	237-261	24	**232**	220-244
-1	**265**	252-278	12	**248**	236-260	25	**231**	219-243
0	**264**	251-277	13	**247**	235-259	26	**230**	219-242
1	**262**	249-275	14	**245**	233-257	27	**228**	217-239
2	**261**	248-274	15	**244**	232-256	28	**227**	216-238
3	**260**	247-273	16	**243**	231-255	29	**226**	215-237
4	**258**	245-271	17	**241**	229-253	30	**225**	214-236
5	**257**	244-270	18	**240**	228-252	31	**223**	212-234
6	**256**	243-269	19	**239**	227-251	32	**222**	211-233
7	**254**	241-267	20	**238**	226-250	33	**221**	210-232
8	**253**	240-266	21	**236**	224-248	34	**219**	208-230
9	**252**	239-265	22	**235**	223-247	35	**218**	207-229

UNIT #2

NHPC INSTRUMENT CALIBRATION / MAINTENANCE LOG

DRAFT

Date: 10-19-2020 Time: 1415 | Field Personnel: M. Murphy

Meter: (circle one) YSI: Model 600XL or 600XLM In-Situ: SmarTROLL Aqua Rental Company: PINE

Multimeter Serial Numbers (Sonde & Meter): 0896645

Probe Pre-cleaned Certification Provided By (Personnel): P.T. Date: 10-16-2020

Temperature Calibration: Personnel: P.T. Date: 10-16-2020

Manufacturer's Accuracy Range of Sensor: +/- 0.2°C Vendor's check results Unit: 20.18 NIST: 20.15 Difference: 0.03

** When performing calibration checks, wait for temperature and parameter readings to stabilize before recording the results.**

BEGINNING CALIBRATION CHECK

Date: 10-19-20 Time: 1500 | Personnel: M. Murphy

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Zero DO check (mg/l)	0	0.00	0 to 0.5 mg/L	Y	683003	7/21	
pH 7 check	7	7.08	+/- 5%	Y	4744	11/24	Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check	718	712	+/- 5%	Y	9QK809	11/20	Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution 21 °C	236	235	+/- 5%	Y	ØGE9Ø6	2/21	See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q	10	10.0	+/- 10%	Y	A0029	4/21	Range 9.0 - 11.0 NTU (2100Q)

Notes:
1) If the post calibration check is not within the acceptable range the meter must be recalibrated.
2) All calibration checks must be made in the run mode (on a run/measurement screen) or on the live readings screen, not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark √ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: M. Murphy (Print) Megan Murphy (Sign)

END OF DAY INSTRUMENT CALIBRATION CHECK

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Date: Time:		Personnel:					
Zero DO check (mg/l)	0		0 to 0.5 mg/L				
pH 7 check	7		+/- 5%				Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check			+/- 5%				Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution _____ °C			+/- 5%				See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P[5]	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q[5]	10		+/- 10%				Range 9.0 - 11.0 NTU (2100Q)

MEM 10-19-2020

Notes:
1) If the end of the day calibration check is not within the acceptable range, the data collected that day for that parameter shall be qualified in it's use.
2) All calibration checks must be made in the run mode (on a run/measurement screen), not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark ✓ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: NA (Print) NA (Sign)

List wells sampled using this equipment on this day ONLY IF DATA NEEDS TO BE QUALIFIED.

NA

NA

UNIT #2

INSTRUMENT CALIBRATION

DRAFT

Date 10-19-2020 Time: 1415

Multimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
DO (% saturation)	100%	✓			Allow time for stabilization per manufacturer
DO mg/l reading	9.26	✓			Record these values immediately after calibration
DO Temp. (°C) reading	19.24	✓			
DO (0% Saturation)-SmarTROLL	0%	✓	ØGA431	1/21	2 point DO Calibration for SmarTROLL only (100 & 0%)
pH 1st Standard	4	✓	1526	5/22	
2nd Standard	7	✓	ØGB276	2/22	
3rd Standard	10	✓	9GJ379	10/21	
Specific Conductance (µS/cm)	1413	✓	4457	8/24	One standard is used to calibrate, second one to check (1413 and 718 standards) Using one standard for both is unacceptable.
Zobell Solution 21 °C		✓			See Chart below for ORP Zobell Solution mV Value Based on Temperature
ORP using Zobell Solution	236	✓	ØGE986	2/21	

Additional Information for Dissolved Oxygen Calibration

Barometric Pressure of Meter: NA mm Hg [BP inches NA x 25.4 + BP NA mm Hg]

Dissolved Oxygen Charge (YSI Meters): NA (Acceptable Range: 25 to 75) You MUST change the membrane if charge is out of range.

Inspected DO membrane/RDO CAP for nicks or bubbles (check as completed) ✓ Personnel: M. Murphy

Changed YSI Dissolved Oxygen Membrane and Electrolyte Solution (circle one) YES or NO

Replaced SmarTROLL Rugged Dissolved Oxygen CAP (circle one) YES or NO

HACH 2100P or 2100Q * Turbidimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
Turbidity 1st Standard (blank)	<0.1 NTU	N/A	N/A	N/A	Calibrate w/ StablCal® Formazin Primary Turbidity Standards
2nd Standard	20 NTU	✓	A9254	12/20	
3rd Standard	100 NTU	✓	A0031	5/21	
4th Standard	800 NTU	✓	A9213	11/20	

HACH Model (circle one) P or Q Serial Number: 15030C039579 Rental Company: PINE

* NOTE: the 2100Q does not have a <0.1 standard, record N/A (not applicable) in the <0.1 standard boxes as appropriate.

Calibration Performed by M. Murphy (Print Name) Megan Murphy (Signature)

Zobell Solution mV Value Based on Temperature for ORP Calibration
Calibration Check Range Values (+/- 5%)
Round off temperature to whole number (e.g., 23.5 °C rounds up to 24 °C)

Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%
-3	267	254-280	10	251	238-264	23	234	222-246
-2	266	253-279	11	249	237-261	24	232	220-244
-1	265	252-278	12	248	236-260	25	231	219-243
0	264	251-277	13	247	235-259	26	230	219-242
1	262	249-275	14	245	233-257	27	228	217-239
2	261	248-274	15	244	232-256	28	227	216-238
3	260	247-273	16	243	231-255	29	226	215-237
4	258	245-271	17	241	229-253	30	225	214-236
5	257	244-270	18	240	228-252	31	223	212-234
6	256	243-269	19	239	227-251	32	222	211-233
7	254	241-267	20	238	226-250	33	221	210-232
8	253	240-266	21	236	224-248	34	219	208-230
9	252	239-265	22	235	223-247	35	218	207-229

UNIT #3

NHPC INSTRUMENT CALIBRATION / MAINTENANCE LOG

DRAFT

Date: 10/15/20 Time: 1020 Field Personnel: E. Dyness

Meter: (circle one) YSI: Model 600XL or 600XLM In-Situ SmarTROLL Rental Company: PINE

Multimeter Serial Numbers (Sonde & Meter): 40818

Probe Pre-cleaned Certification Provided By (Personnel): NP Date: 10/9/20

Temperature Calibration: Personnel: NP Date: 10/9/20

Manufacturer's Accuracy Range of Sensor: +/- 0.2°C Vendor's check results Unit: 17.79 NIST: 17.78 Difference: 0.01

** When performing calibration checks, wait for temperature and parameter readings to stabilize before recording the results.**

BEGINNING CALIBRATION CHECK

Date: 10/15/20 Time: 1155 Personnel: E. Dyness

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Zero DO check (mg/l)	0	0.00	0 to 0.5 mg/L	Y	683003	7/21	
pH 7 check	7	7.14	+/- 5%	Y	008276	2/22	Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check	718	744	+/- 5%	Y	96K809	11/20	Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution 21 °C	236	239	+/- 5%	Y	06E906	2/21	See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q	10	10.1	+/- 10%	Y	A0029	4/21	Range 9.0 - 11.0 NTU (2100Q)

Notes:
1) If the post calibration check is not within the acceptable range the meter must be recalibrated.
2) All calibration checks must be made in the run mode (on a run/measurement screen) or on the live readings screen, not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark √ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: E. Dyness (Print) Erik Dyness (Sign)

END OF DAY INSTRUMENT CALIBRATION CHECK

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Date: Time:		Personnel:					
Zero DO check (mg/l)	0		0 to 0.5 mg/L				
pH 7 check	7		+/- 5%	ETD			Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check			+/- 5%		10/15/20		Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution _____ °C			+/- 5%				See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P[5]	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q[5]	10		+/- 10%				Range 9.0 - 11.0 NTU (2100Q)

Notes:
1) If the end of the day calibration check is not within the acceptable range, the data collected that day for that parameter shall be qualified in it's use.
2) All calibration checks must be made in the run mode (on a run/measurement screen), not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark ✓ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: NA (Print) NA (Sign)

List wells sampled using this equipment on this day ONLY IF DATA NEEDS TO BE QUALIFIED.

NA

NA

UNIT #3

INSTRUMENT CALIBRATION

DRAFT

Date: 10/15/20 Time: 1020

Multimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
DO (% saturation)	100%	✓			Allow time for stabilization per manufacturer
DO mg/l reading	8.85	✓			Record these values immediately after calibration
DO Temp. (°C) reading	20.61	✓			
DO (0% Saturation)-SmarTROLL	0%	✓	OGA431	1/21	2 point DO Calibration for SmarTROLL only (100 & 0%)
pH 1st Standard	4	✓	1526	5/22	
2nd Standard	7	✓	OGB276	2/22	
3rd Standard	10	✓	965379	10/21	
Specific Conductance (µS/cm)	1413	✓	4457	8/24	One standard is used to calibrate, second one to check (1413 and 718 standards) Using one standard for both is unacceptable.
Zobell Solution 21 °C		✓			See Chart below for ORP Zobell Solution mV Value Based on Temperature
ORP using Zobell Solution	236	✓	OGE906	2/21	

Additional Information for Dissolved Oxygen Calibration

Barometric Pressure of Meter: NA mm Hg [BP inches NA x 25.4 + BP NA mm Hg]

Dissolved Oxygen Charge (YSI Meters): NA (Acceptable Range: 25 to 75) You MUST change the membrane if charge is out of range.

Inspected DO membrane/RDO CAP for nicks or bubbles (check as completed) ✓ Personnel: E. Dymass

Changed YSI Dissolved Oxygen Membrane and Electrolyte Solution (circle one) YES or NO (NA)

Replaced SmarTROLL Rugged Dissolved Oxygen CAP (circle one) YES or (NO)

HACH 2100P or 2100Q * Turbidimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
Turbidity 1st Standard (blank)	<0.1 NTU	N/A	N/A	N/A	Calibrate w/ StablCal® Formazin Primary Turbidity Standards
2nd Standard	20 NTU	✓	A9254	12/20	
3rd Standard	100 NTU	✓	A0031	5/21	
4th Standard	800 NTU	✓	A9213	11/20	

HACH Model (circle one) P or (Q) Serial Number: 150030CO39364 Rental Company: PINE

* NOTE: the 2100Q does not have a <0.1 standard, record N/A (not applicable) in the <0.1 standard boxes as appropriate.

Calibration Performed by E. Dymass (Print Name) [signature] (Signature)

Zobell Solution mV Value Based on Temperature for ORP Calibration
Calibration Check Range Values (+/- 5%)
Round off temperature to whole number (e.g., 23.5 °C rounds up to 24 °C)

Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%
-3	267	254-280	10	251	238-264	23	234	222-246
-2	266	253-279	11	249	237-261	24	232	220-244
-1	265	252-278	12	248	236-260	25	231	219-243
0	264	251-277	13	247	235-259	26	230	219-242
1	262	249-275	14	245	233-257	27	228	217-239
2	261	248-274	15	244	232-256	28	227	216-238
3	260	247-273	16	243	231-255	29	226	215-237
4	258	245-271	17	241	229-253	30	225	214-236
5	257	244-270	18	240	228-252	31	223	212-234
6	256	243-269	19	239	227-251	32	222	211-233
7	254	241-267	20	238	226-250	33	221	210-232
8	253	240-266	21	236	224-248	34	219	208-230
9	252	239-265	22	235	223-247	35	218	207-229

BACK-UP

NHPC INSTRUMENT CALIBRATION / MAINTENANCE LOG

Date: 10-19-2020 Time: 1430 | Field Personnel: M. Murphy

Meter: (circle one) YSI: Model 600XL or 600XLM In-Situ: SmarTROLL Rental Company: PINE

Multimeter Serial Numbers (Sonde & Meter): 02547

Probe Pre-cleaned Certification Provided By (Personnel): P.T. Date: 10-12-2020

Temperature Calibration: Personnel: P.T. Date: 10-12-2020

Manufacturer's Accuracy Range of Sensor: +/- 0.2°C Vendor's check results Unit: 20.25 NIST: 20.23 Difference: 0.02

** When performing calibration checks, wait for temperature and parameter readings to stabilize before recording the results.**

BEGINNING CALIBRATION CHECK

Date: 10-19-2020 Time: 1515 | Personnel: M. Murphy

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Zero DO check (mg/l)	0	0.00	0 to 0.5 mg/L	Y	683003	7/21	
pH 7 check	7	7.09	+/- 5%	Y	4744	11/24	Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check	718	743	+/- 5%	Y	9GK809	11/20	Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution 21 °C	236	235	+/- 5%	Y	0GE906	2/21	See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q	10	10.0	+/- 10%	Y	A0029	4/21	Range 9.0 - 11.0 NTU (2100Q)

Notes:
1) If the post calibration check is not within the acceptable range the meter must be recalibrated.
2) All calibration checks must be made in the run mode (on a run/measurement screen) or on the live readings screen, not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark √ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: M. Murphy (Print) Meagan Murphy (Sign)

END OF DAY INSTRUMENT CALIBRATION CHECK

Calibration Check	Value of Standard	Check Results	Acceptable Range	Within Range (yes/no)	Lot #	Expiration Date	Comments
Date: Time:		Personnel:					
Zero DO check (mg/l)	0		0 to 0.5 mg/L				
pH 7 check	7		+/- 5%				Range 6.65 - 7.35 pH
Specific Conductance (µS/cm) Second standard used for check			+/- 5%				Range 682 - 754 µS/cm (718) or Range 1342 - 1484 µS/cm (1413)
ORP check - Zobell (mV) Zobell Solution ____ °C			+/- 5%				See Chart on Page 2 for ORP Zobell Solution mV Value Based on Temperature
Turbidity Standard (NTU) 2100P[5]	20	N/A	+/- 5%	N/A	N/A	N/A	Range 19.0 - 21.0 NTU (2100P)
Turbidity Standard (NTU) 2100Q[5]	10		+/- 10%				Range 9.0 - 11.0 NTU (2100Q)

MEM 10-19-2020

Notes:
1) If the end of the day calibration check is not within the acceptable range, the data collected that day for that parameter shall be qualified in it's use.
2) All calibration checks must be made in the run mode (on a run/measurement screen), not the calibration mode.
3) If the lot numbers and expiration dates are the same as the initial calibration, place a check mark ✓ in the appropriate box.
4) Either standard (718 or 1413 µS/cm) may be used to calibrate specific conductance; the second standard is used to check it.
5) Record N/A (Not Applicable) in the boxes for the turbidity meter that was not used.

Calibration Check Performed by: ____ (Print) ____ (Sign)

List wells sampled using this equipment on this day ONLY IF DATA NEEDS TO BE QUALIFIED.

NA

NA

BACK-UP

DRAFT

INSTRUMENT CALIBRATION

Date 10-19-2020 Time 1430

Multimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
DO (% saturation)	100%	✓			Allow time for stabilization per manufacturer
DO mg/l reading	9.35	✓			Record these values immediately after calibration
DO Temp. (°C) reading	19.58	✓			
DO (0% Saturation)-SmarTROLL	0%	✓	ØGA431	1/21	2 point DO Calibration for SmarTROLL only (100 & 0%)
pH 1st Standard	4	✓	1526	5/22	
2nd Standard	7	✓	4744	11/24	
3rd Standard	10	✓	9GJ379	10/21	
Specific Conductance (µS/cm)	1413	✓	4457	8/24	One standard is used to calibrate, second one to check (1413 and 718 standards) Using one standard for both is unacceptable.
Zobell Solution 21 °C		✓			See Chart below for ORP Zobell Solution mV Value Based on Temperature
ORP using Zobell Solution	236	✓	ØGE906	2/21	

Additional Information for Dissolved Oxygen Calibration

Barometric Pressure of Meter: NA mm Hg [BP inches NA x 25.4 + BP NA mm Hg]

Dissolved Oxygen Charge (YSI Meters): NA (Acceptable Range: 25 to 75) You MUST change the membrane if charge is out of range.

Inspected DO membrane/RDO CAP for nicks or bubbles (check as completed) ✓ Personnel: M. Murphy

Changed YSI Dissolved Oxygen Membrane and Electrolyte Solution (circle one) YES or NO

Replaced SmarTROLL Rugged Dissolved Oxygen CAP (circle one) YES or NO

HACH 2100P or 2100Q * Turbidimeter Calibration	Value of Standard	Check as Completed	Lot #	Expiration Date	Comments
Turbidity 1st Standard (blank)	<0.1 NTU	N/A	N/A	N/A	Calibrate w/ StablCal® Formazin Primary Turbidity Standards
2nd Standard	20 NTU	✓	A9254	12/20	
3rd Standard	100 NTU	✓	A0031	5/21	
4th Standard	800 NTU	✓	A9213	11/20	

HACH Model (circle one) P or Q Serial Number: 17120000634426 Rental Company: PINE

* NOTE: the 2100Q does not have a <0.1 standard, record N/A (not applicable) in the <0.1 standard boxes as appropriate.

Calibration Performed by M. Murphy (Print Name) Megan Murphy (Signature)

Zobell Solution mV Value Based on Temperature for ORP Calibration
Calibration Check Range Values (+/- 5%)
Round off temperature to whole number (e.g., 23.5 °C rounds up to 24 °C)

Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%	Temp. °C	ORP Zobell Solution mV Value	Calibration Check Range Values +/- 5%
-3	267	254-280	10	251	238-264	23	234	222-246
-2	266	253-279	11	249	237-261	24	232	220-244
-1	265	252-278	12	248	236-260	25	231	219-243
0	264	251-277	13	247	235-259	26	230	219-242
1	262	249-275	14	245	233-257	27	228	217-239
2	261	248-274	15	244	232-256	28	227	216-238
3	260	247-273	16	243	231-255	29	226	215-237
4	258	245-271	17	241	229-253	30	225	214-236
5	257	244-270	18	240	228-252	31	223	212-234
6	256	243-269	19	239	227-251	32	222	211-233
7	254	241-267	20	238	226-250	33	221	210-232
8	253	240-266	21	236	224-248	34	219	208-230
9	252	239-265	22	235	223-247	35	218	207-229

DRAFT

Appendix H – Alpha Analytical Laboratory Data Packages

DRAFT

ANALYTICAL REPORT

Lab Number:	L2045393
Client:	GZA GeoEnvironmental, Inc. / NHDES PO Box 95 29 Hazen Drive Concord, NH 03302-0095
ATTN:	Michael Summerlin
Phone:	(603) 271-3649
Project Name:	NH PLATING COMPANY SUPERFUND
Project Number:	04.0190987.11
Report Date:	10/27/20

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

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

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

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11

Lab Number: L2045393
Report Date: 10/27/20

DRAFT

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2045393-01	TRIP BLANK	WATER	MERRIMACK, NH	10/20/20 08:00	10/20/20
L2045393-02	NHP_MW-203SX	WATER	MERRIMACK, NH	10/20/20 09:48	10/20/20
L2045393-03	NHP_MW-203D	WATER	MERRIMACK, NH	10/20/20 13:08	10/20/20
L2045393-04	NHP_MW-309S	WATER	MERRIMACK, NH	10/20/20 11:35	10/20/20
L2045393-05	NHP_MW-309D	WATER	MERRIMACK, NH	10/20/20 10:40	10/20/20
L2045393-06	NHP_MW-310S	WATER	MERRIMACK, NH	10/20/20 13:05	10/20/20
L2045393-07	NHP_MW-311D	WATER	MERRIMACK, NH	10/20/20 11:20	10/20/20

Project Name:	NH PLATING COMPANY SUPERFUND	**Lab Number:**	L2045393
Project Number:	04.0190987.11	**Report Date:**	10/27/20

DRAFT

Case Narrative

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

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

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

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

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

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

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

Authorized Signature: Jennifer L Clements

Title: Technical Director/Representative

Date: 10/27/20

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ORGANICS

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VOLATILES

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045393

Project Number: 04.0190987.11 **Report Date:** 10/27/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045393-01
Client ID: TRIP BLANK
Sample Location: MERRIMACK, NH

Date Collected: 10/20/20 08:00
Date Received: 10/20/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 10/23/20 11:29
Analyst: TMS

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045393

Project Number: 04.0190987.11 **Report Date:** 10/27/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045393-01 Date Collected: 10/20/20 08:00

Client ID: TRIP BLANK Date Received: 10/20/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	ND		ug/l	0.50	--	1
Trichloroethene	ND		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045393

Project Number: 04.0190987.11 **Report Date:** 10/27/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045393-01 Date Collected: 10/20/20 08:00

Client ID: TRIP BLANK Date Received: 10/20/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	92		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	96		70-130

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045393

Project Number: 04.0190987.11 **Report Date:** 10/27/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045393-02
Client ID: NHP_MW-203SX
Sample Location: MERRIMACK, NH

Date Collected: 10/20/20 09:48
Date Received: 10/20/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 10/23/20 11:55
Analyst: TMS

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045393

Project Number: 04.0190987.11 **Report Date:** 10/27/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045393-02 Date Collected: 10/20/20 09:48

Client ID: NHP_MW-203SX Date Received: 10/20/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	1.7		ug/l	0.50	--	1
Trichloroethene	3.7		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	1.7		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045393

Project Number: 04.0190987.11 **Report Date:** 10/27/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045393-02 Date Collected: 10/20/20 09:48

Client ID: NHP_MW-203SX Date Received: 10/20/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	100		70-130

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045393

Project Number: 04.0190987.11 **Report Date:** 10/27/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045393-03
Client ID: NHP_MW-203D
Sample Location: MERRIMACK, NH

Date Collected: 10/20/20 13:08
Date Received: 10/20/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 10/23/20 12:21
Analyst: TMS

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045393

Project Number: 04.0190987.11 **Report Date:** 10/27/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045393-03 Date Collected: 10/20/20 13:08

Client ID: NHP_MW-203D Date Received: 10/20/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	0.67		ug/l	0.50	--	1
Trichloroethene	1.1		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	0.67		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045393

Project Number: 04.0190987.11 **Report Date:** 10/27/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045393-03 Date Collected: 10/20/20 13:08

Client ID: NHP_MW-203D Date Received: 10/20/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

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

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045393

Project Number: 04.0190987.11 **Report Date:** 10/27/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045393-04
Client ID: NHP_MW-309S
Sample Location: MERRIMACK, NH

Date Collected: 10/20/20 11:35
Date Received: 10/20/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 10/23/20 12:46
Analyst: TMS

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	1.6		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045393

Project Number: 04.0190987.11 **Report Date:** 10/27/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045393-04 Date Collected: 10/20/20 11:35

Client ID: NHP_MW-309S Date Received: 10/20/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	ND		ug/l	0.50	--	1
Trichloroethene	ND		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045393

Project Number: 04.0190987.11 **Report Date:** 10/27/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045393-04 Date Collected: 10/20/20 11:35

Client ID: NHP_MW-309S Date Received: 10/20/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

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

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045393

Project Number: 04.0190987.11 **Report Date:** 10/27/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045393-05
Client ID: NHP_MW-309D
Sample Location: MERRIMACK, NH

Date Collected: 10/20/20 10:40
Date Received: 10/20/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 10/23/20 13:12
Analyst: TMS

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045393

Project Number: 04.0190987.11 **Report Date:** 10/27/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045393-05 Date Collected: 10/20/20 10:40

Client ID: NHP_MW-309D Date Received: 10/20/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	ND		ug/l	0.50	--	1
Trichloroethene	1.5		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045393

Project Number: 04.0190987.11 **Report Date:** 10/27/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045393-05 Date Collected: 10/20/20 10:40

Client ID: NHP_MW-309D Date Received: 10/20/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	99		70-130

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045393

Project Number: 04.0190987.11 **Report Date:** 10/27/20

DRAFT

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 10/23/20 08:54
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-05 Batch: WG1425752-5					
Methylene chloride	ND		ug/l	3.0	--
1,1-Dichloroethane	ND		ug/l	0.75	--
Chloroform	ND		ug/l	0.75	--
Carbon tetrachloride	ND		ug/l	0.50	--
1,2-Dichloropropane	ND		ug/l	1.8	--
Dibromochloromethane	ND		ug/l	0.50	--
1,1,2-Trichloroethane	ND		ug/l	0.75	--
Tetrachloroethene	ND		ug/l	0.50	--
Chlorobenzene	ND		ug/l	0.50	--
Trichlorofluoromethane	ND		ug/l	2.5	--
1,2-Dichloroethane	ND		ug/l	0.50	--
1,1,1-Trichloroethane	ND		ug/l	0.50	--
Bromodichloromethane	ND		ug/l	0.50	--
trans-1,3-Dichloropropene	ND		ug/l	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
1,3-Dichloropropene, Total	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	2.5	--
Bromoform	ND		ug/l	2.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	0.75	--
Ethylbenzene	ND		ug/l	0.50	--
Chloromethane	ND		ug/l	2.5	--
Bromomethane	ND		ug/l	1.0	--
Vinyl chloride	ND		ug/l	1.0	--
Chloroethane	ND		ug/l	1.0	--
1,1-Dichloroethene	ND		ug/l	0.50	--
trans-1,2-Dichloroethene	ND		ug/l	0.75	--
1,2-Dichloroethene, Total	ND		ug/l	0.50	--

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045393

Project Number: 04.0190987.11 **Report Date:** 10/27/20

DRAFT

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 10/23/20 08:54
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-05 Batch: WG1425752-5					
Trichloroethene	ND		ug/l	0.50	--
1,2-Dichlorobenzene	ND		ug/l	2.5	--
1,3-Dichlorobenzene	ND		ug/l	2.5	--
1,4-Dichlorobenzene	ND		ug/l	2.5	--
Methyl tert butyl ether	ND		ug/l	1.0	--
p/m-Xylene	ND		ug/l	1.0	--
o-Xylene	ND		ug/l	1.0	--
Xylenes, Total	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	0.50	--
Dibromomethane	ND		ug/l	5.0	--
1,2,3-Trichloropropane	ND		ug/l	5.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	5.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	5.0	--
2-Butanone	ND		ug/l	5.0	--
4-Methyl-2-pentanone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	2.5	--
Tetrahydrofuran	ND		ug/l	5.0	--
2,2-Dichloropropane	ND		ug/l	2.5	--
1,2-Dibromoethane	ND		ug/l	2.0	--
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--
Bromobenzene	ND		ug/l	2.5	--
n-Butylbenzene	ND		ug/l	0.50	--
sec-Butylbenzene	ND		ug/l	0.50	--
tert-Butylbenzene	ND		ug/l	2.5	--
o-Chlorotoluene	ND		ug/l	2.5	--
p-Chlorotoluene	ND		ug/l	2.5	--

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045393

Project Number: 04.0190987.11 **Report Date:** 10/27/20

DRAFT

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 10/23/20 08:54
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-05 Batch: WG1425752-5					
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--
Hexachlorobutadiene	ND		ug/l	0.50	--
Isopropylbenzene	ND		ug/l	0.50	--
p-Isopropyltoluene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	2.5	--
n-Propylbenzene	ND		ug/l	0.50	--
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--
Ethyl ether	ND		ug/l	2.5	--
Isopropyl Ether	ND		ug/l	2.0	--
Tert-Butyl Alcohol	ND		ug/l	10	--
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--
1,4-Dioxane	ND		ug/l	250	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	93		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	102		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11
Lab Number: L2045393
Report Date: 10/27/20

DRAFT

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-05 Batch: WG1425752-3 WG1425752-4								
Methylene chloride	110		110		70-130	0		20
1,1-Dichloroethane	120		110		70-130	9		20
Chloroform	110		110		70-130	0		20
Carbon tetrachloride	120		110		63-132	9		20
1,2-Dichloropropane	110		110		70-130	0		20
Dibromochloromethane	100		99		63-130	1		20
1,1,2-Trichloroethane	100		98		70-130	2		20
Tetrachloroethene	110		100		70-130	10		20
Chlorobenzene	110		100		75-130	10		25
Trichlorofluoromethane	120		110		62-150	9		20
1,2-Dichloroethane	120		120		70-130	0		20
1,1,1-Trichloroethane	120		110		67-130	9		20
Bromodichloromethane	110		110		67-130	0		20
trans-1,3-Dichloropropene	100		100		70-130	0		20
cis-1,3-Dichloropropene	110		110		70-130	0		20
1,1-Dichloropropene	110		110		70-130	0		20
Bromoform	96		100		54-136	4		20
1,1,2,2-Tetrachloroethane	92		94		67-130	2		20
Benzene	110		110		70-130	0		25
Toluene	110		100		70-130	10		25
Ethylbenzene	110		100		70-130	10		20
Chloromethane	110		110		64-130	0		20
Bromomethane	56		57		39-139	2		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11
Lab Number: L2045393
Report Date: 10/27/20

DRAFT

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-05 Batch: WG1425752-3 WG1425752-4								
Vinyl chloride	110		110		55-140	0		20
Chloroethane	120		120		55-138	0		20
1,1-Dichloroethene	100		100		61-145	0		25
trans-1,2-Dichloroethene	110		110		70-130	0		20
Trichloroethene	110		110		70-130	0		25
1,2-Dichlorobenzene	100		100		70-130	0		20
1,3-Dichlorobenzene	100		100		70-130	0		20
1,4-Dichlorobenzene	100		100		70-130	0		20
Methyl tert butyl ether	110		110		63-130	0		20
p/m-Xylene	110		105		70-130	5		20
o-Xylene	110		105		70-130	5		20
cis-1,2-Dichloroethene	120		110		70-130	9		20
Dibromomethane	110		110		70-130	0		20
1,2,3-Trichloropropane	100		100		64-130	0		20
Styrene	110		105		70-130	5		20
Dichlorodifluoromethane	100		100		36-147	0		20
Acetone	130		130		58-148	0		20
Carbon disulfide	110		100		51-130	10		20
2-Butanone	120		**150**	Q	63-138	**22**	Q	20
4-Methyl-2-pentanone	98		97		59-130	1		20
2-Hexanone	100		100		57-130	0		20
Bromochloromethane	120		120		70-130	0		20
Tetrahydrofuran	120		120		58-130	0		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11
Lab Number: L2045393
Report Date: 10/27/20

DRAFT

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-05 Batch: WG1425752-3 WG1425752-4								
2,2-Dichloropropane	130		120		63-133	8		20
1,2-Dibromoethane	100		98		70-130	2		20
1,1,1,2-Tetrachloroethane	110		100		64-130	10		20
Bromobenzene	100		100		70-130	0		20
n-Butylbenzene	98		98		53-136	0		20
sec-Butylbenzene	96		97		70-130	1		20
tert-Butylbenzene	99		97		70-130	2		20
o-Chlorotoluene	110		100		70-130	10		20
p-Chlorotoluene	100		100		70-130	0		20
1,2-Dibromo-3-chloropropane	69		70		41-144	1		20
Hexachlorobutadiene	80		83		63-130	4		20
Isopropylbenzene	98		98		70-130	0		20
p-Isopropyltoluene	99		98		70-130	1		20
Naphthalene	**59**	Q	**64**	Q	70-130	8		20
n-Propylbenzene	100		100		69-130	0		20
1,2,3-Trichlorobenzene	**59**	Q	**66**	Q	70-130	11		20
1,2,4-Trichlorobenzene	**69**	Q	73		70-130	6		20
1,3,5-Trimethylbenzene	100		100		64-130	0		20
1,3,5-Trichlorobenzene	91		95		70-130	4		20
1,2,4-Trimethylbenzene	100		100		70-130	0		20
Ethyl ether	110		110		59-134	0		20
Isopropyl Ether	120		120		70-130	0		20
Tert-Butyl Alcohol	108		112		70-130	4		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND

Project Number: 04.0190987.11

Lab Number: L2045393

Report Date: 10/27/20

DRAFT

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-05 Batch: WG1425752-3 WG1425752-4								
Ethyl-Tert-Butyl-Ether	120		120		70-130	0		20
Tertiary-Amyl Methyl Ether	110		110		66-130	0		20
1,4-Dioxane	110		112		56-162	2		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	110		110		70-130
Toluene-d8	96		94		70-130
4-Bromofluorobenzene	95		97		70-130
Dibromofluoromethane	101		102		70-130

DRAFT

SEMIVOLATILES

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045393

Project Number: 04.0190987.11 **Report Date:** 10/27/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045393-05
Client ID: NHP_MW-309D
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/26/20 11:55
Analyst: PS

Date Collected: 10/20/20 10:40
Date Received: 10/20/20
Field Prep: Not Specified

Extraction Method: EPA 3510C
Extraction Date: 10/23/20 12:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	0.166		ug/l	0.150	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	47		15-110

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045393

Project Number: 04.0190987.11 **Report Date:** 10/27/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045393-06
Client ID: NHP_MW-310S
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/26/20 12:23
Analyst: PS

Date Collected: 10/20/20 13:05
Date Received: 10/20/20
Field Prep: Not Specified

Extraction Method: EPA 3510C
Extraction Date: 10/23/20 12:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ug/l	0.139	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	46		15-110

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045393

Project Number: 04.0190987.11 **Report Date:** 10/27/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045393-07
Client ID: NHP_MW-311D
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/26/20 12:51
Analyst: PS

Date Collected: 10/20/20 11:20
Date Received: 10/20/20
Field Prep: Not Specified

Extraction Method: EPA 3510C
Extraction Date: 10/23/20 12:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ug/l	0.139	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	46		15-110

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045393

Project Number: 04.0190987.11 **Report Date:** 10/27/20

DRAFT

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 10/26/20 09:19
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 10/23/20 12:00

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by 8270D-SIM - Mansfield Lab for sample(s): 05-07 Batch: WG1425544-1					
1,4-Dioxane	ND		ug/l	0.150	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	32		15-110

Lab Control Sample Analysis

Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND

Project Number: 04.0190987.11

Lab Number: L2045393

Report Date: 10/27/20

DRAFT

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by 8270D-SIM - Mansfield Lab Associated sample(s): 05-07 Batch: WG1425544-2 WG1425544-3								
1,4-Dioxane	92		97		40-140	5		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	36		30		15-110

DRAFT

METALS

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045393

Project Number: 04.0190987.11 **Report Date:** 10/27/20

DRAFT

SAMPLE RESULTS

Lab ID: L2045393-04 Date Collected: 10/20/20 11:35

Client ID: NHP_MW-309S Date Received: 10/20/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	0.07651		mg/l	0.00050	--	1	10/23/20 23:35	10/26/20 09:34	EPA 3005A	1,6020B	AM
Cadmium, Total	0.00144		mg/l	0.00020	--	1	10/23/20 23:35	10/26/20 09:34	EPA 3005A	1,6020B	AM
Chromium, Total	0.00114		mg/l	0.00100	--	1	10/23/20 23:35	10/26/20 09:34	EPA 3005A	1,6020B	AM
Lead, Total	ND		mg/l	0.00100	--	1	10/23/20 23:35	10/26/20 09:34	EPA 3005A	1,6020B	AM
Manganese, Total	0.9379		mg/l	0.00100	--	1	10/23/20 23:35	10/26/20 09:34	EPA 3005A	1,6020B	AM
Nickel, Total	0.00988		mg/l	0.00200	--	1	10/23/20 23:35	10/26/20 09:34	EPA 3005A	1,6020B	AM

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045393

Project Number: 04.0190987.11 **Report Date:** 10/27/20

DRAFT

SAMPLE RESULTS

Lab ID: L2045393-06 Date Collected: 10/20/20 13:05

Client ID: NHP_MW-310S Date Received: 10/20/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	0.00523		mg/l	0.00050	--	1	10/23/20 23:35	10/26/20 09:39	EPA 3005A	1,6020B	AM
Cadmium, Total	0.00376		mg/l	0.00020	--	1	10/23/20 23:35	10/26/20 09:39	EPA 3005A	1,6020B	AM
Chromium, Total	ND		mg/l	0.00100	--	1	10/23/20 23:35	10/26/20 09:39	EPA 3005A	1,6020B	AM
Lead, Total	ND		mg/l	0.00100	--	1	10/23/20 23:35	10/26/20 09:39	EPA 3005A	1,6020B	AM
Manganese, Total	0.6658		mg/l	0.00100	--	1	10/23/20 23:35	10/26/20 09:39	EPA 3005A	1,6020B	AM
Nickel, Total	0.02311		mg/l	0.00200	--	1	10/23/20 23:35	10/26/20 09:39	EPA 3005A	1,6020B	AM

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045393

Project Number: 04.0190987.11 **Report Date:** 10/27/20

DRAFT

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 04,06 Batch: WG1425604-1										
Arsenic, Total	ND		mg/l	0.00050	--	1	10/23/20 23:35	10/26/20 08:35	1,6020B	AM
Cadmium, Total	ND		mg/l	0.00020	--	1	10/23/20 23:35	10/26/20 08:35	1,6020B	AM
Chromium, Total	ND		mg/l	0.00100	--	1	10/23/20 23:35	10/26/20 08:35	1,6020B	AM
Lead, Total	ND		mg/l	0.00100	--	1	10/23/20 23:35	10/26/20 08:35	1,6020B	AM
Manganese, Total	ND		mg/l	0.00100	--	1	10/23/20 23:35	10/26/20 08:35	1,6020B	AM
Nickel, Total	ND		mg/l	0.00200	--	1	10/23/20 23:35	10/26/20 08:35	1,6020B	AM

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND

Project Number: 04.0190987.11

Lab Number: L2045393

Report Date: 10/27/20

DRAFT

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 04,06 Batch: WG1425604-2								
Arsenic, Total	106		-		80-120	-		
Cadmium, Total	110		-		80-120	-		
Chromium, Total	101		-		80-120	-		
Lead, Total	108		-		80-120	-		
Manganese, Total	98		-		80-120	-		
Nickel, Total	98		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11
Lab Number: L2045393
Report Date: 10/27/20

DRAFT

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 04,06 QC Batch ID: WG1425604-3 QC Sample: L2046019-01 Client ID: MS Sample												
Arsenic, Total	0.00073	0.12	0.1315	109		-	-		75-125	-		20
Cadmium, Total	ND	0.051	0.05560	109		-	-		75-125	-		20
Chromium, Total	0.0021	0.2	0.2016	100		-	-		75-125	-		20
Lead, Total	ND	0.51	0.5480	107		-	-		75-125	-		20
Manganese, Total	0.2680	0.5	0.7630	99		-	-		75-125	-		20
Nickel, Total	0.0033	0.5	0.5018	100		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND

Project Number: 04.0190987.11

Lab Number: L2045393

Report Date: 10/27/20

DRAFT

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 04,06 QC Batch ID: WG1425604-4 QC Sample: L2046019-01 Client ID: DUP Sample						
Arsenic, Total	0.00073	0.00079	mg/l	7		20

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11

Lab Number: L2045393
Report Date: 10/27/20

DRAFT

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2045393-01A	Vial HCl preserved	A	NA		4.4	Y	Absent		8260-NH(14)
L2045393-01B	Vial HCl preserved	A	NA		4.4	Y	Absent		8260-NH(14)
L2045393-02A	Vial HCl preserved	A	NA		4.4	Y	Absent		8260-NH(14)
L2045393-02B	Vial HCl preserved	A	NA		4.4	Y	Absent		8260-NH(14)
L2045393-02C	Vial HCl preserved	A	NA		4.4	Y	Absent		8260-NH(14)
L2045393-03A	Vial HCl preserved	A	NA		4.4	Y	Absent		8260-NH(14)
L2045393-03B	Vial HCl preserved	A	NA		4.4	Y	Absent		8260-NH(14)
L2045393-03C	Vial HCl preserved	A	NA		4.4	Y	Absent		8260-NH(14)
L2045393-04A	Vial HCl preserved	A	NA		4.4	Y	Absent		8260-NH(14)
L2045393-04B	Vial HCl preserved	A	NA		4.4	Y	Absent		8260-NH(14)
L2045393-04C	Vial HCl preserved	A	NA		4.4	Y	Absent		8260-NH(14)
L2045393-04D	Plastic 250ml HNO3 preserved	A	<2	<2	4.4	Y	Absent		NI-6020T(180),CR-6020T(180),PB-6020T(180),MN-6020T(180),AS-6020T(180),CD-6020T(180)
L2045393-05A	Vial HCl preserved	A	NA		4.4	Y	Absent		8260-NH(14)
L2045393-05B	Vial HCl preserved	A	NA		4.4	Y	Absent		8260-NH(14)
L2045393-05C	Vial HCl preserved	A	NA		4.4	Y	Absent		8260-NH(14)
L2045393-05D	Amber 250ml unpreserved	A	7	7	4.4	Y	Absent		A2-14-DIOXANESIM-PPB(7)
L2045393-05E	Amber 250ml unpreserved	A	7	7	4.4	Y	Absent		A2-14-DIOXANESIM-PPB(7)
L2045393-06A	Amber 250ml unpreserved	A	7	7	4.4	Y	Absent		A2-14-DIOXANESIM-PPB(7)
L2045393-06B	Amber 250ml unpreserved	A	7	7	4.4	Y	Absent		A2-14-DIOXANESIM-PPB(7)
L2045393-06C	Plastic 250ml HNO3 preserved	A	<2	<2	4.4	Y	Absent		CR-6020T(180),NI-6020T(180),PB-6020T(180),MN-6020T(180),AS-6020T(180),CD-6020T(180)
L2045393-07A	Amber 250ml unpreserved	A	7	7	4.4	Y	Absent		A2-14-DIOXANESIM-PPB(7)

*Values in parentheses indicate holding time in days

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11

Lab Number: L2045393
Report Date: 10/27/20

DRAFT

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2045393-07B	Amber 250ml unpreserved	A	7	7	4.4	Y	Absent		A2-14-DIOXANESIM-PPB(7)

*Values in parentheses indicate holding time in days

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045393

Project Number: 04.0190987.11 **Report Date:** 10/27/20

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GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: Data Usability Report

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Footnotes

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

Terms

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

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

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

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

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

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

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

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

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

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

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

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

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

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

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

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

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

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

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

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

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

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

Report Format: Data Usability Report

Project Name:	NH PLATING COMPANY SUPERFUND	**Lab Number:**	L2045393
Project Number:	04.0190987.11	**Report Date:**	10/27/20

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Data Qualifiers

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

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045393
Project Number: 04.0190987.11 **Report Date:** 10/27/20

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REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

LIMITATION OF LIABILITIES

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

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

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Certification Information

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

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
EPA TO-12 Non-methane organics
EPA 3C Fixed gases
Biological Tissue Matrix: EPA 3050B

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

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

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

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

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL

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

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Date Rec'd in Lab: 10/20/20

ALPHA Job #: L 2045393

Project Information

Project Name: NH Plating Company Superfund

Project Location: Merrimack, NH

Project #: 04.0190987.11

Project Manager: Michael Summerlin

ALPHA Quote #: NH DES Contract No. 1069635

Report Information - Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #: 2589-00"4"

Regulatory Requirements/Report Limits

State/Fed Program	Criteria
NHDES	Sampling and Analysis Plan limits

Client Information

Client: NHDES
Address: 29 Hazen Drive
Concord, NH 03302
Phone: 603-271-3649
Fax:
Email: michael.summerlinjr@des.nh.gov

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

Please also email login receipts and lab reports to tanya justham@gza.com. Please provide excel files formatted for upload to the NHDES EMD and for GZA EQUIS upload.

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	VOCs 8260 NHDES List	1,4-dioxane	Total metals (As, Cd, Cr, Pb, Mn & Ni)	Cyanide									Sample Specific Comments	
245393 01	TRIP BLANK	10-20-20	0800	AQ	MB	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		2
02	NHP_MW-203SX	10-20-20	0948	AQ	MB	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		3
03	NHP_MW-203D	10-20-20	1308	AQ	MB	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		3
04	NHP_MW-309S	10-20-20	1135	AQ	ED	☒	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐		4
05	NHP_MW-309D	10-20-20	1040	AQ	ED	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		5
06	NHP_MW-310S	10-20-20	1305	AQ	MM	☐	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐		3
07	NHP_MW-311D	10-20-20	1120	AQ	MM	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		3
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		

Container Type	V	A	P	P			-	-	-	-	-	-
Preservative	B	A	C	E			-	-	-	-	-	-

Relinquished By:	Date/Time	Received By:	Date/Time
Megan Tuk	10-20-20 1645	[signature]	10/20/20 1645
[signature]	10/20/20 1800	Rob Maestro	10/20/20 1800
Rob Maestro AK	10/20/20 2030	[signature]	10/20/20 2030

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

DRAFT

ANALYTICAL REPORT

Lab Number:	L2045730
Client:	GZA GeoEnvironmental, Inc. / NHDES PO Box 95 29 Hazen Drive Concord, NH 03302-0095
ATTN:	Michael Summerlin
Phone:	(603) 271-3649
Project Name:	NH PLATING COMPANY SUPERFUND
Project Number:	04.0190987.11
Report Date:	11/04/20

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

Certifications & Approvals: MA (M-MA030), NH NELAP (2062), CT (PH-0141), DoD (L2474), FL (E87814), IL (200081), LA (85084), ME (MA00030), MD (350), NJ (MA015), NY (11627), NC (685), OH (CL106), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #P330-17-00150), USFWS (Permit #206964).

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11

Lab Number: L2045730
Report Date: 11/04/20

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Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2045730-01	TRIP BLANK	WATER	MERRIMACK, NH	10/20/20 08:00	10/21/20
L2045730-02	NHP_MW-203D	WATER	MERRIMACK, NH	10/20/20 13:08	10/21/20
L2045730-03	FIELD BLANK-BERGEN	WATER	MERRIMACK, NH	10/20/20 13:04	10/21/20
L2045730-04	NHP_MW-310S	WATER	MERRIMACK, NH	10/20/20 13:05	10/21/20
L2045730-05	NHP_MW-311D	WATER	MERRIMACK, NH	10/20/20 11:20	10/21/20
L2045730-06	FIELD BLANK-MURPHY	WATER	MERRIMACK, NH	10/20/20 11:15	10/21/20
L2045730-07	NHP_MW-303SA	WATER	MERRIMACK, NH	10/21/20 10:50	10/21/20
L2045730-08	NHP_MW-303DA	WATER	MERRIMACK, NH	10/21/20 09:05	10/21/20
L2045730-09	FIELD BLANK-DYRNESS	WATER	MERRIMACK, NH	10/21/20 09:00	10/21/20
L2045730-10	NHP_MW-302S	WATER	MERRIMACK, NH	10/21/20 09:38	10/21/20
L2045730-11	NHP_B-10S	WATER	MERRIMACK, NH	10/21/20 11:45	10/21/20
L2045730-12	NHP_MW-106	WATER	MERRIMACK, NH	10/21/20 10:15	10/21/20

Project Name:	NH PLATING COMPANY SUPERFUND	**Lab Number:**	L2045730
Project Number:	04.0190987.11	**Report Date:**	11/04/20

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Case Narrative

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

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

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

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

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

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

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045730
Project Number: 04.0190987.11 **Report Date:** 11/04/20

DRAFT

Case Narrative (continued)

Perfluorinated Alkyl Acids by Isotope Dilution

L2045730-01 through -12: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

WG1429586-1, WG1429586-2, WG1429586-3, WG1429586-4, and WG1429586-5: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

The WG1429586-2/-3 LCS/LCSD recoveries, associated with L2045730-01 through -12, are below the acceptance criteria for perfluorooctadecanoic acid (pfoda) (45%/44%); however, it has been identified as a "difficult" analyte. The results of the associated samples are reported.

The WG1429586-2 LCS recoveries, associated with L2045730-01 through -12, are above the acceptance criteria for 4,8-dioxa-3h-perfluorononanoic acid (adona) (154%), perfluorohexadecanoic acid (pfhxda) (201%), 9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9cl-pf3ons) (153%) and 11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11cl-pf3ouds) (154%); however, the associated samples are non-detect to the RL for these target analytes. The results of the original analysis are reported.

The WG1429586-3 LCSD recoveries, associated with L2045730-01 through -12, are above the acceptance criteria for perfluorohexadecanoic acid (pfhxda) (205%) and 1h,1h,2h,2h-perfluorododecanesulfonic acid (10:2fts) (152%); however, the associated samples are non-detect to the RL for these target analytes. The results of the original analysis are reported.

The WG1429586-2/-3 LCS/LCSD RPD, associated with L2045730-01 through -12, is above the acceptance criteria for 1h,1h,2h,2h-perfluorodecanesulfonic acid (8:2fts) (33%).

The WG1429586-4 MS recoveries, performed on L2045730-04, are outside the acceptance criteria for perfluorobutanoic acid (pfba) (160%), perfluoropentanoic acid (pfpea) (187%), perfluorohexanoic acid (pfhxa) (187%), perfluoroheptanoic acid (pfhpa) (172%),perfluorooctanoic acid (pfoa) (495%), perfluorooctanesulfonic acid (pfos) (166%),n-methyl perfluorooctanesulfonamidoacetic acid (nmefosaa) (185%), perfluorohexadecanoic acid (pfhxda) (195%), perfluorododecane sulfonic acid (pfdods) (157%) and 9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9cl-pf3ons) (158%).

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

Authorized Signature: Susan E O'Neil Susan O' Neil

Title: Technical Director/Representative Date: 11/04/20

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ORGANICS

DRAFT

SEMIVOLATILES

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045730

Project Number: 04.0190987.11 **Report Date:** 11/04/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045730-01
Client ID: TRIP BLANK
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/03/20 13:41
Analyst: PB

Date Collected: 10/20/20 08:00
Date Received: 10/21/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/03/20 04:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.81	--	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	18.1	--	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	18.1	--	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	45.2	--	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	45.2	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	62		1-87
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	53		50-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	59		50-150
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	79		50-150
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	74		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045730

Project Number: 04.0190987.11 **Report Date:** 11/04/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045730-01
Client ID: TRIP BLANK
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/04/20 00:34
Analyst: JW

Date Collected: 10/20/20 08:00
Date Received: 10/21/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/03/20 04:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.81	--	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.81	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.81	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.81	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.81	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.81	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.81	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.81	--	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.81	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.81	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.81	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.81	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.81	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.81	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.81	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.81	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.81	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.81	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.81	--	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.81	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.81	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.81	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.81	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.81	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	45.2	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.81	--	1
Perfluorohexadecanoic Acid (PFHxDA)	ND		ng/l	3.62	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045730

Project Number: 04.0190987.11 **Report Date:** 11/04/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045730-01 Date Collected: 10/20/20 08:00

Client ID: TRIP BLANK Date Received: 10/21/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctadecanoic Acid (PFODA)	ND		ng/l	3.62	--	1
Perfluorododecane Sulfonic Acid (PFDoDS)	ND		ng/l	1.81	--	1
1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	ND		ng/l	4.52	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.81	--	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.81	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	84		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	110		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	93		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	77		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	84		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	86		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	99		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	80		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	81		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	77		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	77		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	70		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	81		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	50		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	72		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	1		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	49		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	66		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	54		33-143
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	123		50-150
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	**44**	Q	50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045730

Project Number: 04.0190987.11 **Report Date:** 11/04/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045730-02
Client ID: NHP_MW-203D
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/03/20 13:47
Analyst: PB

Date Collected: 10/20/20 13:08
Date Received: 10/21/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/03/20 04:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.84	--	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	18.4	--	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	18.4	--	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	46.1	--	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	46.1	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	62		1-87
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	58		50-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	57		50-150
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	79		50-150
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	73		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045730

Project Number: 04.0190987.11 **Report Date:** 11/04/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045730-02
Client ID: NHP_MW-203D
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/04/20 00:51
Analyst: JW

Date Collected: 10/20/20 13:08
Date Received: 10/21/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/03/20 04:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	2.54		ng/l	1.84	--	1
Perfluoropentanoic Acid (PFPeA)	5.96		ng/l	1.84	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.84	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.84	--	1
Perfluorohexanoic Acid (PFHxA)	5.56		ng/l	1.84	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.84	--	1
Perfluoroheptanoic Acid (PFHpA)	4.68		ng/l	1.84	--	1
Perfluorohexanesulfonic Acid (PFHxS)	3.17		ng/l	1.84	--	1
Perfluorooctanoic Acid (PFOA)	23.6	F	ng/l	1.84	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.84	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.84	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.84	--	1
Perfluorooctanesulfonic Acid (PFOS)	2.52		ng/l	1.84	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.84	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.84	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.84	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.84	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.84	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.84	--	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.84	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.84	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.84	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.84	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.84	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	46.1	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.84	--	1
Perfluorohexadecanoic Acid (PFHxDA)	ND		ng/l	3.69	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045730

Project Number: 04.0190987.11 **Report Date:** 11/04/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045730-02 Date Collected: 10/20/20 13:08

Client ID: NHP_MW-203D Date Received: 10/21/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctadecanoic Acid (PFODA)	ND		ng/l	3.69	--	1
Perfluorododecane Sulfonic Acid (PFDoDS)	ND		ng/l	1.84	--	1
1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	ND		ng/l	4.61	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.84	--	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.84	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	97		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	125		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	123		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	101		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	97		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	97		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	134		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	86		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	89		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	83		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	108		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	82		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	95		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	45		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	87		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	20		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	53		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	83		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	70		33-143
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	**169**	Q	50-150
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	53		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045730

Project Number: 04.0190987.11 **Report Date:** 11/04/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045730-03
Client ID: FIELD BLANK-BERGEN
Sample Location: MERRIMACK, NH

Date Collected: 10/20/20 13:04
Date Received: 10/21/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/03/20 13:53
Analyst: PB

Extraction Method: ALPHA 23528
Extraction Date: 11/03/20 04:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.84	--	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	18.4	--	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	18.4	--	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	46.0	--	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	46.0	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	64		1-87
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	56		50-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	57		50-150
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	77		50-150
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	73		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045730

Project Number: 04.0190987.11 **Report Date:** 11/04/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045730-03
Client ID: FIELD BLANK-BERGEN
Sample Location: MERRIMACK, NH

Date Collected: 10/20/20 13:04
Date Received: 10/21/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/04/20 01:07
Analyst: JW

Extraction Method: ALPHA 23528
Extraction Date: 11/03/20 04:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.84	--	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.84	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.84	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.84	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.84	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.84	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.84	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.84	--	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.84	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.84	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.84	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.84	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.84	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.84	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.84	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.84	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.84	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.84	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.84	--	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.84	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.84	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.84	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.84	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.84	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	46.0	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.84	--	1
Perfluorohexadecanoic Acid (PFHxDA)	ND		ng/l	3.68	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045730

Project Number: 04.0190987.11 **Report Date:** 11/04/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045730-03 Date Collected: 10/20/20 13:04

Client ID: FIELD BLANK-BERGEN Date Received: 10/21/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctadecanoic Acid (PFODA)	ND		ng/l	3.68	--	1
Perfluorododecane Sulfonic Acid (PFDoDS)	ND		ng/l	1.84	--	1
1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	ND		ng/l	4.60	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.84	--	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.84	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	102		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	141		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	107		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	79		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	103		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	108		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	114		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	101		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	87		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	98		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	97		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	94		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	88		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	75		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	96		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	36		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	68		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	88		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	71		33-143
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	**202**	Q	50-150
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	55		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045730

Project Number: 04.0190987.11 **Report Date:** 11/04/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045730-04
Client ID: NHP_MW-310S
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/03/20 13:59
Analyst: PB

Date Collected: 10/20/20 13:05
Date Received: 10/21/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/03/20 04:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.80	--	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	18.0	--	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	18.0	--	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	45.1	--	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	45.1	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	52		1-87
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	51		50-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	50		50-150
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	55		50-150
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	53		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045730

Project Number: 04.0190987.11 **Report Date:** 11/04/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045730-04
Client ID: NHP_MW-310S
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/04/20 01:24
Analyst: JW

Date Collected: 10/20/20 13:05
Date Received: 10/21/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/03/20 04:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	9.89		ng/l	1.80	--	1
Perfluoropentanoic Acid (PFPeA)	14.8		ng/l	1.80	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.80	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.80	--	1
Perfluorohexanoic Acid (PFHxA)	17.7		ng/l	1.80	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.80	--	1
Perfluoroheptanoic Acid (PFHpA)	14.6		ng/l	1.80	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.80	--	1
Perfluorooctanoic Acid (PFOA)	138	F	ng/l	1.80	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.80	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.80	--	1
Perfluorononanoic Acid (PFNA)	2.46		ng/l	1.80	--	1
Perfluorooctanesulfonic Acid (PFOS)	7.14	F	ng/l	1.80	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.80	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.80	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.80	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.80	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.80	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.80	--	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.80	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.80	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.80	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.80	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.80	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	45.1	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.80	--	1
Perfluorohexadecanoic Acid (PFHxDA)	ND		ng/l	3.61	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045730

Project Number: 04.0190987.11 **Report Date:** 11/04/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045730-04 Date Collected: 10/20/20 13:05

Client ID: NHP_MW-310S Date Received: 10/21/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctadecanoic Acid (PFODA)	ND		ng/l	3.61	--	1
Perfluorododecane Sulfonic Acid (PFDoDS)	ND		ng/l	1.80	--	1
1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	ND		ng/l	4.51	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.80	--	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.80	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	99		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	104		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	102		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	229		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	89		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	102		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	122		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	92		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	154		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	85		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	94		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	76		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	105		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	44		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	71		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	19		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	52		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	65		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	56		33-143
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	**210**	Q	50-150
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	**43**	Q	50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045730

Project Number: 04.0190987.11 **Report Date:** 11/04/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045730-05
Client ID: NHP_MW-311D
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/03/20 14:12
Analyst: PB

Date Collected: 10/20/20 11:20
Date Received: 10/21/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/03/20 04:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.80	--	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	18.0	--	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	18.0	--	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	45.0	--	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	45.0	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	56		1-87
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	62		50-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	61		50-150
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	75		50-150
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	70		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045730

Project Number: 04.0190987.11 **Report Date:** 11/04/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045730-05
Client ID: NHP_MW-311D
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/04/20 01:57
Analyst: JW

Date Collected: 10/20/20 11:20
Date Received: 10/21/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/03/20 04:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	5.43		ng/l	1.80	--	1
Perfluoropentanoic Acid (PFPeA)	8.84		ng/l	1.80	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.80	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.80	--	1
Perfluorohexanoic Acid (PFHxA)	14.6		ng/l	1.80	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.80	--	1
Perfluoroheptanoic Acid (PFHpA)	15.7		ng/l	1.80	--	1
Perfluorohexanesulfonic Acid (PFHxS)	2.79		ng/l	1.80	--	1
Perfluorooctanoic Acid (PFOA)	126	F	ng/l	1.80	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.80	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.80	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.80	--	1
Perfluorooctanesulfonic Acid (PFOS)	8.50	F	ng/l	1.80	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.80	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.80	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.80	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.80	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.80	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.80	--	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.80	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.80	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.80	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.80	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.80	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	45.0	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.80	--	1
Perfluorohexadecanoic Acid (PFHxDA)	ND		ng/l	3.60	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045730

Project Number: 04.0190987.11 **Report Date:** 11/04/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045730-05 Date Collected: 10/20/20 11:20

Client ID: NHP_MW-311D Date Received: 10/21/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctadecanoic Acid (PFODA)	ND		ng/l	3.60	--	1
Perfluorododecane Sulfonic Acid (PFDoDS)	ND		ng/l	1.80	--	1
1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	ND		ng/l	4.50	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.80	--	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.80	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	85		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	111		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	117		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	104		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	88		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	93		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	127		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	83		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	89		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	79		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	102		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	76		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	83		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	44		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	80		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	15		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	47		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	76		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	60		33-143
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	**165**	Q	50-150
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	**47**	Q	50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045730

Project Number: 04.0190987.11 **Report Date:** 11/04/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045730-06
Client ID: FIELD BLANK-MURPHY
Sample Location: MERRIMACK, NH

Date Collected: 10/20/20 11:15
Date Received: 10/21/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/03/20 14:36
Analyst: PB

Extraction Method: ALPHA 23528
Extraction Date: 11/03/20 04:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.82	--	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	18.2	--	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	18.2	--	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	45.6	--	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	45.6	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	58		1-87
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	60		50-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	60		50-150
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	79		50-150
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	74		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045730

Project Number: 04.0190987.11 **Report Date:** 11/04/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045730-06
Client ID: FIELD BLANK-MURPHY
Sample Location: MERRIMACK, NH

Date Collected: 10/20/20 11:15
Date Received: 10/21/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/04/20 02:30
Analyst: JW

Extraction Method: ALPHA 23528
Extraction Date: 11/03/20 04:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.82	--	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.82	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.82	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.82	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.82	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.82	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.82	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.82	--	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.82	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.82	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.82	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.82	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.82	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.82	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.82	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.82	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.82	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.82	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.82	--	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.82	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.82	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.82	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.82	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.82	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	45.6	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.82	--	1
Perfluorohexadecanoic Acid (PFHxDA)	ND		ng/l	3.65	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045730

Project Number: 04.0190987.11 **Report Date:** 11/04/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045730-06 Date Collected: 10/20/20 11:15

Client ID: FIELD BLANK-MURPHY Date Received: 10/21/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctadecanoic Acid (PFODA)	ND		ng/l	3.65	--	1
Perfluorododecane Sulfonic Acid (PFDoDS)	ND		ng/l	1.82	--	1
1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	ND		ng/l	4.56	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.82	--	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.82	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	87		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	122		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	90		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	66		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	88		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	92		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	96		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	85		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	64		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	82		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	82		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	80		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	80		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	67		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	85		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	31		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	59		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	78		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	60		33-143
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	**163**	Q	50-150
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	**46**	Q	50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045730

Project Number: 04.0190987.11 **Report Date:** 11/04/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045730-07
Client ID: NHP_MW-303SA
Sample Location: MERRIMACK, NH

Date Collected: 10/21/20 10:50
Date Received: 10/21/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/03/20 14:42
Analyst: PB

Extraction Method: ALPHA 23528
Extraction Date: 11/03/20 04:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.89	--	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	18.9	--	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	18.9	--	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	47.3	--	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	47.3	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	53		1-87
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	57		50-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	57		50-150
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	73		50-150
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	63		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045730

Project Number: 04.0190987.11 **Report Date:** 11/04/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045730-07
Client ID: NHP_MW-303SA
Sample Location: MERRIMACK, NH

Sample Depth:

Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/04/20 02:47
Analyst: JW

Date Collected: 10/21/20 10:50
Date Received: 10/21/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/03/20 04:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	9.86		ng/l	1.89	--	1
Perfluoropentanoic Acid (PFPeA)	14.5		ng/l	1.89	--	1
Perfluorobutanesulfonic Acid (PFBS)	2.83		ng/l	1.89	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.89	--	1
Perfluorohexanoic Acid (PFHxA)	16.7		ng/l	1.89	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.89	--	1
Perfluoroheptanoic Acid (PFHpA)	11.0		ng/l	1.89	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.89	--	1
Perfluorooctanoic Acid (PFOA)	55.1	F	ng/l	1.89	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.89	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.89	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.89	--	1
Perfluorooctanesulfonic Acid (PFOS)	3.17		ng/l	1.89	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.89	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.89	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.89	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.89	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.89	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.89	--	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.89	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.89	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.89	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.89	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.89	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	47.3	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.89	--	1
Perfluorohexadecanoic Acid (PFHxDA)	ND		ng/l	3.78	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045730

Project Number: 04.0190987.11 **Report Date:** 11/04/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045730-07 Date Collected: 10/21/20 10:50

Client ID: NHP_MW-303SA Date Received: 10/21/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctadecanoic Acid (PFODA)	ND		ng/l	3.78	--	1
Perfluorododecane Sulfonic Acid (PFDoDS)	ND		ng/l	1.89	--	1
1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	ND		ng/l	4.73	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.89	--	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.89	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	71		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	90		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	87		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	96		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	76		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	79		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	98		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	70		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	73		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	70		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	74		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	64		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	69		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	42		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	70		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	20		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	46		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	66		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	46		33-143
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	128		50-150
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	**33**	Q	50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045730

Project Number: 04.0190987.11 **Report Date:** 11/04/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045730-08
Client ID: NHP_MW-303DA
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/03/20 14:48
Analyst: PB

Date Collected: 10/21/20 09:05
Date Received: 10/21/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/03/20 04:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.85	--	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	18.5	--	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	18.5	--	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	46.3	--	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	46.3	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	63		1-87
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	57		50-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	55		50-150
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	73		50-150
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	68		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045730

Project Number: 04.0190987.11 **Report Date:** 11/04/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045730-08
Client ID: NHP_MW-303DA
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/04/20 03:03
Analyst: JW

Date Collected: 10/21/20 09:05
Date Received: 10/21/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/03/20 04:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.85	--	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.85	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.85	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.85	--	1
Perfluorohexanoic Acid (PFHxA)	2.80		ng/l	1.85	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.85	--	1
Perfluoroheptanoic Acid (PFHpA)	2.81		ng/l	1.85	--	1
Perfluorohexanesulfonic Acid (PFHxS)	2.02		ng/l	1.85	--	1
Perfluorooctanoic Acid (PFOA)	27.2	F	ng/l	1.85	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.85	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.85	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.85	--	1
Perfluorooctanesulfonic Acid (PFOS)	3.49	F	ng/l	1.85	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.85	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.85	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.85	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.85	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.85	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.85	--	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.85	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.85	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.85	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.85	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.85	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	46.3	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.85	--	1
Perfluorohexadecanoic Acid (PFHxDA)	ND		ng/l	3.70	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045730

Project Number: 04.0190987.11 **Report Date:** 11/04/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045730-08 Date Collected: 10/21/20 09:05

Client ID: NHP_MW-303DA Date Received: 10/21/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctadecanoic Acid (PFODA)	ND		ng/l	3.70	--	1
Perfluorododecane Sulfonic Acid (PFDoDS)	ND		ng/l	1.85	--	1
1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	ND		ng/l	4.63	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.85	--	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.85	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	81		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	105		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	89		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	94		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	83		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	89		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	98		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	81		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	73		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	81		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	80		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	76		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	74		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	52		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	78		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	17		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	69		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	64		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	51		33-143
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	135		50-150
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	**36**	Q	50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045730

Project Number: 04.0190987.11 **Report Date:** 11/04/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045730-09
Client ID: FIELD BLANK-DYRNESS
Sample Location: MERRIMACK, NH

Date Collected: 10/21/20 09:00
Date Received: 10/21/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/03/20 14:55
Analyst: PB

Extraction Method: ALPHA 23528
Extraction Date: 11/03/20 04:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.80	--	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	18.0	--	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	18.0	--	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	45.0	--	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	45.0	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	55		1-87
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	60		50-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	60		50-150
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	80		50-150
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	73		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045730

Project Number: 04.0190987.11 **Report Date:** 11/04/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045730-09
Client ID: FIELD BLANK-DYRNESS
Sample Location: MERRIMACK, NH

Date Collected: 10/21/20 09:00
Date Received: 10/21/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/04/20 03:20
Analyst: JW

Extraction Method: ALPHA 23528
Extraction Date: 11/03/20 04:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.80	--	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.80	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.80	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.80	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.80	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.80	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.80	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.80	--	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.80	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.80	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.80	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.80	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.80	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.80	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.80	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.80	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.80	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.80	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.80	--	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.80	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.80	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.80	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.80	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.80	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	45.0	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.80	--	1
Perfluorohexadecanoic Acid (PFHxDA)	ND		ng/l	3.60	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045730

Project Number: 04.0190987.11 **Report Date:** 11/04/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045730-09 Date Collected: 10/21/20 09:00

Client ID: FIELD BLANK-DYRNESS Date Received: 10/21/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctadecanoic Acid (PFODA)	ND		ng/l	3.60	--	1
Perfluorododecane Sulfonic Acid (PFDoDS)	ND		ng/l	1.80	--	1
1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	ND		ng/l	4.50	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.80	--	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.80	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	100		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	137		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	108		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	75		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	100		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	105		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	112		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	98		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	78		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	92		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	94		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	90		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	97		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	67		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	93		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	36		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	64		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	88		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	66		33-143
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	**185**	Q	50-150
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	52		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045730

Project Number: 04.0190987.11 **Report Date:** 11/04/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045730-10
Client ID: NHP_MW-302S
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/03/20 15:01
Analyst: PB

Date Collected: 10/21/20 09:38
Date Received: 10/21/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/03/20 04:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.81	--	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	18.1	--	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	18.1	--	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	45.3	--	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	45.3	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	59		1-87
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	52		50-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	52		50-150
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	74		50-150
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	68		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045730

Project Number: 04.0190987.11 **Report Date:** 11/04/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045730-10
Client ID: NHP_MW-302S
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/04/20 03:36
Analyst: JW

Date Collected: 10/21/20 09:38
Date Received: 10/21/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/03/20 04:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.81	--	1
Perfluoropentanoic Acid (PFPeA)	2.88		ng/l	1.81	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.81	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.81	--	1
Perfluorohexanoic Acid (PFHxA)	3.08	F	ng/l	1.81	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.81	--	1
Perfluoroheptanoic Acid (PFHpA)	2.24		ng/l	1.81	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.81	--	1
Perfluorooctanoic Acid (PFOA)	20.4	F	ng/l	1.81	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.81	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.81	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.81	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.81	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.81	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.81	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.81	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.81	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.81	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.81	--	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.81	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.81	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.81	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.81	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.81	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	45.3	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.81	--	1
Perfluorohexadecanoic Acid (PFHxDA)	ND		ng/l	3.62	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045730

Project Number: 04.0190987.11 **Report Date:** 11/04/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045730-10 Date Collected: 10/21/20 09:38

Client ID: NHP_MW-302S Date Received: 10/21/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctadecanoic Acid (PFODA)	ND		ng/l	3.62	--	1
Perfluorododecane Sulfonic Acid (PFDoDS)	ND		ng/l	1.81	--	1
1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	ND		ng/l	4.53	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.81	--	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.81	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	89		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	123		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	114		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	97		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	90		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	98		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	126		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	92		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	88		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	87		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	93		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	82		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	75		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	43		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	84		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	13		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	52		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	79		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	67		33-143
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	**198**	Q	50-150
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	**46**	Q	50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045730

Project Number: 04.0190987.11 **Report Date:** 11/04/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045730-11
Client ID: NHP_B-10S
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/03/20 15:07
Analyst: PB

Date Collected: 10/21/20 11:45
Date Received: 10/21/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/03/20 04:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.83	--	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	18.3	--	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	18.3	--	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	45.7	--	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	45.7	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	59		1-87
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	56		50-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	56		50-150
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	72		50-150
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	72		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045730

Project Number: 04.0190987.11 **Report Date:** 11/04/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045730-11
Client ID: NHP_B-10S
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/04/20 04:26
Analyst: JW

Date Collected: 10/21/20 11:45
Date Received: 10/21/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/03/20 04:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	3.16		ng/l	1.83	--	1
Perfluoropentanoic Acid (PFPeA)	5.34		ng/l	1.83	--	1
Perfluorobutanesulfonic Acid (PFBS)	5.46		ng/l	1.83	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.83	--	1
Perfluorohexanoic Acid (PFHxA)	7.91		ng/l	1.83	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.83	--	1
Perfluoroheptanoic Acid (PFHpA)	7.09		ng/l	1.83	--	1
Perfluorohexanesulfonic Acid (PFHxS)	5.13		ng/l	1.83	--	1
Perfluorooctanoic Acid (PFOA)	45.4	F	ng/l	1.83	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.83	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.83	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.83	--	1
Perfluorooctanesulfonic Acid (PFOS)	3.65	F	ng/l	1.83	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.83	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.83	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.83	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.83	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.83	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.83	--	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.83	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.83	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.83	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.83	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.83	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	45.7	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.83	--	1
Perfluorohexadecanoic Acid (PFHxDA)	ND		ng/l	3.65	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045730

Project Number: 04.0190987.11 **Report Date:** 11/04/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045730-11 Date Collected: 10/21/20 11:45

Client ID: NHP_B-10S Date Received: 10/21/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctadecanoic Acid (PFODA)	ND		ng/l	3.65	--	1
Perfluorododecane Sulfonic Acid (PFDoDS)	ND		ng/l	1.83	--	1
1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	ND		ng/l	4.57	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.83	--	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.83	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	78		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	108		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	105		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	82		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	81		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	89		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	113		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	82		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	75		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	77		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	82		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	72		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	69		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	54		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	80		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	8		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	50		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	77		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	52		33-143
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	**154**	Q	50-150
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	**45**	Q	50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045730

Project Number: 04.0190987.11 **Report Date:** 11/04/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045730-12
Client ID: NHP_MW-106
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/03/20 15:13
Analyst: PB

Date Collected: 10/21/20 10:15
Date Received: 10/21/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/03/20 04:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.83	--	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	18.3	--	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	18.3	--	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	45.7	--	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	45.7	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	58		1-87
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	52		50-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	**49**	Q	50-150
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	81		50-150
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	75		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045730

Project Number: 04.0190987.11 **Report Date:** 11/04/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045730-12
Client ID: NHP_MW-106
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/04/20 04:43
Analyst: JW

Date Collected: 10/21/20 10:15
Date Received: 10/21/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/03/20 04:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	6.01		ng/l	1.83	--	1
Perfluoropentanoic Acid (PFPeA)	14.5		ng/l	1.83	--	1
Perfluorobutanesulfonic Acid (PFBS)	4.10		ng/l	1.83	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.83	--	1
Perfluorohexanoic Acid (PFHxA)	13.5		ng/l	1.83	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.83	--	1
Perfluoroheptanoic Acid (PFHpA)	8.92		ng/l	1.83	--	1
Perfluorohexanesulfonic Acid (PFHxS)	3.39		ng/l	1.83	--	1
Perfluorooctanoic Acid (PFOA)	51.1	F	ng/l	1.83	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.83	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.83	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.83	--	1
Perfluorooctanesulfonic Acid (PFOS)	5.30	F	ng/l	1.83	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.83	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.83	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.83	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.83	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.83	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.83	--	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.83	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.83	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.83	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.83	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.83	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	45.7	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.83	--	1
Perfluorohexadecanoic Acid (PFHxDA)	ND		ng/l	3.65	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045730

Project Number: 04.0190987.11 **Report Date:** 11/04/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045730-12 Date Collected: 10/21/20 10:15

Client ID: NHP_MW-106 Date Received: 10/21/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctadecanoic Acid (PFODA)	ND		ng/l	3.65	--	1
Perfluorododecane Sulfonic Acid (PFDoDS)	ND		ng/l	1.83	--	1
1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	ND		ng/l	4.57	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.83	--	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.83	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	63		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	86		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	91		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	69		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	66		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	68		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	99		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	61		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	54		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	59		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	77		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	55		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	59		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	31		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	61		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	17		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	37		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	62		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	51		33-143
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	121		50-150
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	**40**	Q	50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045730

Project Number: 04.0190987.11 **Report Date:** 11/04/20

DRAFT

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/03/20 13:22
Analyst: PB

Extraction Method: ALPHA 23528
Extraction Date: 11/03/20 04:55

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-12 Batch: WG1429586-1					
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	--
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	20.0	--
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	20.0	--
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	50.0	--
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	50.0	--

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	64		1-87
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	54		50-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	57		50-150
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	74		50-150
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	69		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045730

Project Number: 04.0190987.11 **Report Date:** 11/04/20

DRAFT

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/03/20 23:45
Analyst: JW

Extraction Method: ALPHA 23528
Extraction Date: 11/03/20 04:55

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-12 Batch: WG1429586-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	--
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	--
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	--
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	2.00	--
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	--
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	2.00	--
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	--
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	--
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	--
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	--
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	--
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	--
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	--
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	2.00	--
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	--
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	--
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	--
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	--
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	--
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	--
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	--
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	--
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	50.0	--
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	2.00	--

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045730

Project Number: 04.0190987.11 **Report Date:** 11/04/20

DRAFT

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/03/20 23:45
Analyst: JW

Extraction Method: ALPHA 23528
Extraction Date: 11/03/20 04:55

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-12 Batch: WG1429586-1					
Perfluorohexadecanoic Acid (PFHxDA)	ND		ng/l	4.00	--
Perfluorooctadecanoic Acid (PFODA)	ND		ng/l	4.00	--
Perfluorododecane Sulfonic Acid (PFDoDS)	ND		ng/l	2.00	--
1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	ND		ng/l	5.00	--
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	2.00	--
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	2.00	--

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045730

Project Number: 04.0190987.11 **Report Date:** 11/04/20

DRAFT

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/03/20 23:45
Analyst: JW

Extraction Method: ALPHA 23528
Extraction Date: 11/03/20 04:55

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-12 Batch: WG1429586-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	96		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	121		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	104		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	80		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	95		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	100		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	114		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	94		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	86		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	88		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	94		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	88		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	97		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	67		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	95		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	2		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	64		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	87		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	68		33-143
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	**169**	Q	50-150
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	53		50-150

Lab Control Sample Analysis

Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND

Project Number: 04.0190987.11

Lab Number: L2045730

Report Date: 11/04/20

DRAFT

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-12 Batch: WG1429586-2 WG1429586-3								
Perfluorooctanesulfonamide (FOSA)	118		116		46-170	2		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	115		128		50-150	11		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	114		126		50-150	10		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	121		131		50-150	8		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	128		129		50-150	1		30

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	63		68		1-87
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	58		**49**	Q	50-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	55		**49**	Q	50-150
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	75		73		50-150
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	74		76		50-150

Lab Control Sample Analysis
Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11
Lab Number: L2045730
Report Date: 11/04/20

DRAFT

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-12 Batch: WG1429586-2 WG1429586-3								
Perfluorobutanoic Acid (PFBA)	136		131		67-148	4		30
Perfluoropentanoic Acid (PFPeA)	142		137		63-161	4		30
Perfluorobutanesulfonic Acid (PFBS)	141		138		65-157	2		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	174		167		37-219	4		30
Perfluorohexanoic Acid (PFHxA)	139		131		69-168	6		30
Perfluoropentanesulfonic Acid (PFPeS)	130		127		52-156	2		30
Perfluoroheptanoic Acid (PFHpA)	132		126		58-159	5		30
Perfluorohexanesulfonic Acid (PFHxS)	137		131		69-177	4		30
Perfluorooctanoic Acid (PFOA)	137		131		63-159	4		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	144		147		49-187	2		30
Perfluoroheptanesulfonic Acid (PFHpS)	136		128		61-179	6		30
Perfluorononanoic Acid (PFNA)	136		133		68-171	2		30
Perfluorooctanesulfonic Acid (PFOS)	145		133		52-151	9		30
Perfluorodecanoic Acid (PFDA)	135		135		63-171	0		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	162		116		56-173	**33**	Q	30
Perfluorononanesulfonic Acid (PFNS)	136		136		48-150	0		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	138		115		60-166	18		30
Perfluoroundecanoic Acid (PFUnA)	140		131		60-153	7		30
Perfluorodecanesulfonic Acid (PFDS)	145		137		38-156	6		30
Perfluorooctanesulfonamide (FOSA)	128		133		46-170	4		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	121		128		45-170	6		30
Perfluorododecanoic Acid (PFDoA)	136		133		67-153	2		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND

Project Number: 04.0190987.11

Lab Number: L2045730

Report Date: 11/04/20

DRAFT

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-12 Batch: WG1429586-2 WG1429586-3								
Perfluorotridecanoic Acid (PFTrDA)	142		135		48-158	5		30
Perfluorotetradecanoic Acid (PFTA)	159		152		59-182	5		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	91		116		50-150	24		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	**154**	Q	146		50-150	5		30
Perfluorohexadecanoic Acid (PFHxDA)	**201**	Q	**205**	Q	50-150	2		30
Perfluorooctadecanoic Acid (PFODA)	**45**	Q	**44**	Q	50-150	2		30
Perfluorododecane Sulfonic Acid (PFDoDS)	139		136		50-150	2		30
1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	150		**152**	Q	50-150	1		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	**153**	Q	144		50-150	6		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	**154**	Q	149		50-150	3		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND

Project Number: 04.0190987.11

Lab Number: L2045730

Report Date: 11/04/20

DRAFT

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

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-12 Batch: WG1429586-2 WG1429586-3

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	87		95		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	108		118		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	91		96		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	73		81		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	86		95		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	91		99		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	99		105		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	85		93		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	77		79		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	86		91		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	86		94		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	83		89		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	84		96		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	61		79		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	83		94		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	9		7		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	66		69		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	80		88		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	61		69		33-143
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	**154**	Q	127		50-150
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	**45**	Q	54		50-150

Matrix Spike Analysis

Batch Quality Control

DRAFT

Project Name: NH PLATING COMPANY SUPERFUND

Project Number: 04.0190987.11

Lab Number: L2045730

Report Date: 11/04/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-12 QC Batch ID: WG1429586-4 QC Sample: L2045730-04 Client ID: NHP_MW-310S												
Perfluorobutanoic Acid (PFBA)	9.89	37.6	60.0	**160**	Q	-	-		67-148	-		30
Perfluoropentanoic Acid (PFPeA)	14.8	37.6	70.2	**187**	Q	-	-		63-161	-		30
Perfluorobutanesulfonic Acid (PFBS)	ND	33.4	50.4	151		-	-		65-157	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	35.2	65.6	186		-	-		37-219	-		30
Perfluorohexanoic Acid (PFHxA)	17.7	37.6	70.2	**187**	Q	-	-		69-168	-		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	35.3	47.1	133		-	-		52-156	-		30
Perfluoroheptanoic Acid (PFHpA)	14.6	37.6	64.8	**172**	Q	-	-		58-159	-		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	34.3	47.3	138		-	-		69-177	-		30
Perfluorooctanoic Acid (PFOA)	138F	37.6	186F	**495**	Q	-	-		63-159	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	35.8	52.9F	148		-	-		49-187	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	35.8	58.2	163		-	-		61-179	-		30
Perfluorononanoic Acid (PFNA)	2.46	37.6	54.3	144		-	-		68-171	-		30
Perfluorooctanesulfonic Acid (PFOS)	7.14F	34.9	58.0F	**166**	Q	-	-		52-151	-		30
Perfluorodecanoic Acid (PFDA)	ND	37.6	49.2	131		-	-		63-171	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	36.1	49.0F	136		-	-		56-173	-		30
Perfluorononanesulfonic Acid (PFNS)	ND	36.2	48.5	134		-	-		48-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	37.6	69.6F	**185**	Q	-	-		60-166	-		30
Perfluoroundecanoic Acid (PFUnA)	ND	37.6	49.3	131		-	-		60-153	-		30
Perfluorodecanesulfonic Acid (PFDS)	ND	36.2	49.4	136		-	-		38-156	-		30
Perfluorooctanesulfonamide (FOSA)	ND	37.6	44.6	119		-	-		46-170	-		30
Perfluorooctanesulfonamide (FOSA)	ND	37.6	49.7	132		-	-		46-170	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	37.6	46.1	123		-	-		45-170	-		30

Matrix Spike Analysis

Batch Quality Control

DRAFT

Project Name: NH PLATING COMPANY SUPERFUND

Project Number: 04.0190987.11

Lab Number: L2045730

Report Date: 11/04/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-12 QC Batch ID: WG1429586-4 QC Sample: L2045730-04 Client ID: NHP_MW-310S												
Perfluorododecanoic Acid (PFDoA)	ND	37.6	49.5	132		-	-		67-153	-		30
Perfluorotridecanoic Acid (PFTrDA)	ND	37.6	54.0	144		-	-		48-158	-		30
Perfluorotetradecanoic Acid (PFTA)	ND	37.6	60.3	160		-	-		59-182	-		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND	752	866F	115		-	-		50-150	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	35.5	53.2	150		-	-		50-150	-		30
Perfluorohexadecanoic Acid (PFHxDA)	ND	37.6	73.1	**195**	Q	-	-		50-150	-		30
Perfluorooctadecanoic Acid (PFODA)	ND	37.6	34.0	90		-	-		50-150	-		30
Perfluorododecane Sulfonic Acid (PFDoDS)	ND	36.4	57.0	**157**	Q	-	-		50-150	-		30
1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	ND	36.2	46.1	127		-	-		50-150	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	35	55.3	**158**	Q	-	-		50-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	35.5	50.5	142		-	-		50-150	-		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND	376	442	118		-	-		50-150	-		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND	376	442	118		-	-		50-150	-		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND	376	443	118		-	-		50-150	-		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND	376	476	127		-	-		50-150	-		30

Surrogate (Extracted Internal Standard)	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	104				7-170
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	211				1-313

Matrix Spike Analysis

Batch Quality Control

DRAFT

Project Name: NH PLATING COMPANY SUPERFUND ***Lab Number:*** L2045730

Project Number: 04.0190987.11 ***Report Date:*** 11/04/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-12 QC Batch ID: WG1429586-4 QC Sample: L2045730-04 Client ID: NHP_MW-310S												

Surrogate (Extracted Internal Standard)	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	144				1-244
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	134				50-150
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	54				50-150
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	59				50-150
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	52				23-146
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	31				1-181
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	56				50-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	56				50-150
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	65				40-144
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	67				38-144
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	75				21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	85				30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	103				47-153
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	61				24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	50				33-143
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	**41**	Q			50-150
Perfluoro[13C4]Butanoic Acid (MPFBA)	83				2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	88				16-173
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	15				1-87
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	57				1-87
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	76				42-146
Perfluoro[13C8]Octanoic Acid (M8PFOA)	77				36-149
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	69				34-146

Matrix Spike Analysis

Batch Quality Control

DRAFT

Project Name: NH PLATING COMPANY SUPERFUND

Project Number: 04.0190987.11

Lab Number: L2045730

Report Date: 11/04/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-12 QC Batch ID: WG1429586-4 QC Sample: L2045730-04 Client ID: NHP_MW-310S												

Surrogate (Extracted Internal Standard)	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	87				31-159

Lab Duplicate Analysis

Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND

Project Number: 04.0190987.11

Lab Number: L2045730

Report Date: 11/04/20

DRAFT

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-12 QC Batch ID: WG1429586-5 QC Sample: L2045730-05 Client ID: NHP_MW-311D						
Perfluorooctanesulfonamide (FOSA)	ND	ND	ng/l	NC		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND	ND	ng/l	NC		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND	ND	ng/l	NC		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND	ND	ng/l	NC		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND	ND	ng/l	NC		30

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	56		59		1-87
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	62		60		50-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	61		62		50-150
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	75		74		50-150
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	70		72		50-150

Lab Duplicate Analysis
Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11
Lab Number: L2045730
Report Date: 11/04/20

DRAFT

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-12 QC Batch ID: WG1429586-5 QC Sample: L2045730-05 Client ID: NHP_MW-311D						
Perfluorobutanoic Acid (PFBA)	5.43	5.34	ng/l	2		30
Perfluoropentanoic Acid (PFPeA)	8.84	9.00	ng/l	2		30
Perfluorobutanesulfonic Acid (PFBS)	ND	ND	ng/l	NC		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	ND	ng/l	NC		30
Perfluorohexanoic Acid (PFHxA)	14.6	14.6	ng/l	0		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	ND	ng/l	NC		30
Perfluoroheptanoic Acid (PFHpA)	15.7	15.6	ng/l	1		30
Perfluorohexanesulfonic Acid (PFHxS)	2.79	2.78	ng/l	0		30
Perfluorooctanoic Acid (PFOA)	126F	124F	ng/l	2		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	ND	ng/l	NC		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	ND	ng/l	NC		30
Perfluorononanoic Acid (PFNA)	ND	ND	ng/l	NC		30
Perfluorooctanesulfonic Acid (PFOS)	8.50F	8.52F	ng/l	0		30
Perfluorodecanoic Acid (PFDA)	ND	ND	ng/l	NC		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	ND	ng/l	NC		30
Perfluorononanesulfonic Acid (PFNS)	ND	ND	ng/l	NC		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	ND	ng/l	NC		30
Perfluoroundecanoic Acid (PFUnA)	ND	ND	ng/l	NC		30
Perfluorodecanesulfonic Acid (PFDS)	ND	ND	ng/l	NC		30
Perfluorooctanesulfonamide (FOSA)	ND	ND	ng/l	NC		30

Lab Duplicate Analysis
Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11
Lab Number: L2045730
Report Date: 11/04/20

DRAFT

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-12 QC Batch ID: WG1429586-5 QC Sample: L2045730-05 Client ID: NHP_MW-311D						
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	ND	ng/l	NC		30
Perfluorododecanoic Acid (PFDoA)	ND	ND	ng/l	NC		30
Perfluorotridecanoic Acid (PFTrDA)	ND	ND	ng/l	NC		30
Perfluorotetradecanoic Acid (PFTA)	ND	ND	ng/l	NC		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND	ND	ng/l	NC		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	ND	ng/l	NC		30
Perfluorohexadecanoic Acid (PFHxDA)	ND	ND	ng/l	NC		30
Perfluorooctadecanoic Acid (PFODA)	ND	ND	ng/l	NC		30
Perfluorododecane Sulfonic Acid (PFDoDS)	ND	ND	ng/l	NC		30
1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	ND	ND	ng/l	NC		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	ND	ng/l	NC		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	ND	ng/l	NC		30

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	85		69		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	111		90		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	117		99		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	104		93		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	88		74		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	93		76		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	127		109		47-153

Lab Duplicate Analysis
Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11

Lab Number: L2045730
Report Date: 11/04/20

DRAFT

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-12 QC Batch ID: WG1429586-5 QC Sample: L2045730-05 Client ID: NHP_MW-311D

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanoic Acid (M8PFOA)	83		69		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	89		70		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	79		65		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	102		90		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	76		61		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	83		73		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	44		41		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	80		62		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	15		14		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	47		34		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	76		63		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	60		46		33-143
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	165	Q	137		50-150
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	**47**	Q	**34**	Q	50-150

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11

Lab Number: L2045730
Report Date: 11/04/20

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Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2045730-01A	Plastic 250ml unpreserved	A	NA		4.2	Y	Absent		A2-537-ISOTOPE-36(14)
L2045730-02A	Plastic 250ml unpreserved	A	NA		4.2	Y	Absent		A2-537-ISOTOPE-36(14)
L2045730-02B	Plastic 250ml unpreserved	A	NA		4.2	Y	Absent		A2-537-ISOTOPE-36(14)
L2045730-03A	Plastic 250ml unpreserved	A	NA		4.2	Y	Absent		A2-537-ISOTOPE-36(14)
L2045730-04A	Plastic 250ml unpreserved	A	NA		4.2	Y	Absent		A2-537-ISOTOPE-36(14)
L2045730-04B	Plastic 250ml unpreserved	A	NA		4.2	Y	Absent		A2-537-ISOTOPE-36(14)
L2045730-05A	Plastic 250ml unpreserved	A	NA		4.2	Y	Absent		A2-537-ISOTOPE-36(14)
L2045730-05B	Plastic 250ml unpreserved	A	NA		4.2	Y	Absent		A2-537-ISOTOPE-36(14)
L2045730-06A	Plastic 250ml unpreserved	A	NA		4.2	Y	Absent		A2-537-ISOTOPE-36(14)
L2045730-07A	Plastic 250ml unpreserved	A	NA		4.2	Y	Absent		A2-537-ISOTOPE-36(14)
L2045730-07B	Plastic 250ml unpreserved	A	NA		4.2	Y	Absent		A2-537-ISOTOPE-36(14)
L2045730-08A	Plastic 250ml unpreserved	A	NA		4.2	Y	Absent		A2-537-ISOTOPE-36(14)
L2045730-08B	Plastic 250ml unpreserved	A	NA		4.2	Y	Absent		A2-537-ISOTOPE-36(14)
L2045730-09A	Plastic 250ml unpreserved	A	NA		4.2	Y	Absent		A2-537-ISOTOPE-36(14)
L2045730-10A	Plastic 250ml unpreserved	A	NA		4.2	Y	Absent		A2-537-ISOTOPE-36(14)
L2045730-10B	Plastic 250ml unpreserved	A	NA		4.2	Y	Absent		A2-537-ISOTOPE-36(14)
L2045730-11A	Plastic 250ml unpreserved	A	NA		4.2	Y	Absent		A2-537-ISOTOPE-36(14)
L2045730-11B	Plastic 250ml unpreserved	A	NA		4.2	Y	Absent		A2-537-ISOTOPE-36(14)
L2045730-12A	Plastic 250ml unpreserved	A	NA		4.2	Y	Absent		A2-537-ISOTOPE-36(14)
L2045730-12B	Plastic 250ml unpreserved	A	NA		4.2	Y	Absent		A2-537-ISOTOPE-36(14)

*Values in parentheses indicate holding time in days

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11
Lab Number: L2045730
Report Date: 11/04/20

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PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
PERFLUOROALKYL CARBOXYLIC ACIDS (PFCAs)		
Perfluorooctadecanoic Acid	PFODA	16517-11-6
Perfluorohexadecanoic Acid	PFHxDA	67905-19-5
Perfluorotetradecanoic Acid	PFTA	376-06-7
Perfluorotridecanoic Acid	PFTrDA	72629-94-8
Perfluorododecanoic Acid	PFDoA	307-55-1
Perfluoroundecanoic Acid	PFUnA	2058-94-8
Perfluorodecanoic Acid	PFDA	335-76-2
Perfluorononanoic Acid	PFNA	375-95-1
Perfluorooctanoic Acid	PFOA	335-67-1
Perfluoroheptanoic Acid	PFHpA	375-85-9
Perfluorohexanoic Acid	PFHxA	307-24-4
Perfluoropentanoic Acid	PFPeA	2706-90-3
Perfluorobutanoic Acid	PFBA	375-22-4
PERFLUOROALKYL SULFONIC ACIDS (PFSAs)		
Perfluorododecanesulfonic Acid	PFDoDS	79780-39-5
Perfluorodecanesulfonic Acid	PFDS	335-77-3
Perfluorononanesulfonic Acid	PFNS	68259-12-1
Perfluorooctanesulfonic Acid	PFOS	1763-23-1
Perfluoroheptanesulfonic Acid	PFHpS	375-92-8
Perfluorohexanesulfonic Acid	PFHxS	355-46-4
Perfluoropentanesulfonic Acid	PFPeS	2706-91-4
Perfluorobutanesulfonic Acid	PFBS	375-73-5
FLUOROTELOMERS		
1H,1H,2H,2H-Perfluorododecanesulfonic Acid	10:2FTS	120226-60-0
1H,1H,2H,2H-Perfluorodecanesulfonic Acid	8:2FTS	39108-34-4
1H,1H,2H,2H-Perfluorooctanesulfonic Acid	6:2FTS	27619-97-2
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	4:2FTS	757124-72-4
PERFLUOROALKANE SULFONAMIDES (FASAs)		
Perfluorooctanesulfonamide	FOSA	754-91-6
N-Ethyl Perfluorooctane Sulfonamide	NEtFOSA	4151-50-2
N-Methyl Perfluorooctane Sulfonamide	NMeFOSA	31506-32-8
PERFLUOROALKANE SULFONYL SUBSTANCES		
N-Ethyl Perfluorooctanesulfonamido Ethanol	NEtFOSE	1691-99-2
N-Methyl Perfluorooctanesulfonamido Ethanol	NMeFOSE	24448-09-7
N-Ethyl Perfluorooctanesulfonamidoacetic Acid	NEtFOSAA	2991-50-6
N-Methyl Perfluorooctanesulfonamidoacetic Acid	NMeFOSAA	2355-31-9
PER- and POLYFLUOROALKYL ETHER CARBOXYLIC ACIDS		
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid	HFPO-DA	13252-13-6
4,8-Dioxa-3h-Perfluorononanoic Acid	ADONA	919005-14-4
CHLORO-PERFLUOROALKYL SULFONIC ACIDS		
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid	11Cl-PF3OUdS	763051-92-9
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid	9Cl-PF3ONS	756426-58-1
PERFLUOROETHER SULFONIC ACIDS (PFESAs)		
Perfluoro(2-Ethoxyethane)Sulfonic Acid	PFEESA	113507-82-7
PERFLUOROETHER/POLYETHER CARBOXYLIC ACIDS (PFPCAs)		
Perfluoro-3-Methoxypropanoic Acid	PFMPA	377-73-1
Perfluoro-4-Methoxybutanoic Acid	PFMBA	863090-89-5
Nonafluoro-3,6-Dioxaheptanoic Acid	NFDHA	151772-58-6

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045730

Project Number: 04.0190987.11 **Report Date:** 11/04/20

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GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Project Name:	NH PLATING COMPANY SUPERFUND	**Lab Number:**	L2045730
Project Number:	04.0190987.11	**Report Date:**	11/04/20

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Footnotes

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

Terms

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

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

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

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

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

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

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

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

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

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

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

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

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

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

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

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

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

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

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

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

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

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

Report Format: Data Usability Report

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045730

Project Number: 04.0190987.11 **Report Date:** 11/04/20

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Data Qualifiers

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

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045730
Project Number: 04.0190987.11 **Report Date:** 11/04/20

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REFERENCES

134 Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS) using Isotope Dilution. Alpha SOP 23528.

LIMITATION OF LIABILITIES

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

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

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Certification Information

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

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
EPA TO-12 Non-methane organics
EPA 3C Fixed gases
Biological Tissue Matrix: EPA 3050B

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

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

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

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

CHAIN OF CUSTODY

PAGE 1 OF 2

ALPHA ANALYTICAL

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

Date Rec'd in Lab: 10/21/20

ALPHA Job #: L2045730

Project Information

Project Name: NH Plating Company Superfund
Project Location: Merrimack, NH
Project #: 04.0190984.11
Project Manager: Michael Summerlin
ALPHA Quote #: NH DES Contract No. 1069635

Client Information

Client: NHDES
Address: 29 Hazen Drive
Concord, NH 03302
Phone: 603 271 3649
Fax:
Email: michael.summerlin@des.nh.gov

Turn Around Time

☒ Standard ☐ Rush (ONLY IF PRE APPROVED)

☐ These samples have been Previously analyzed by Alpha

Due Date: Time:

Report Information - Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client Info PO #: 2589-00M

Regulatory Requirements/Report Limits

State/Fed Program: NHDES
Criteria: Sampling and Analysis Plan limits

Other Project Specific Requirements/Comments/Detection Limits:
Please also email login receipts and lab reports to tanya.latham@gza.com. Please provide excel files formatted for upload to the NHDES CMD and for CZA EQUIS upload.

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PFAS (NHDES List)	Sample Specific Comments	Total Bottles
45730-01	TRIP BLANK	10-20-20	0800	AQ	MB	✓		1
-02	NHP_MW 203D	10-20-20	1308	AQ	MB	✓		2
-03	FIELD BLANK - BERGEN	10-20-20	1304	AQ	MB	✓		1
-04	NHP_MW-310S	10-20-20	1305	AQ	MM	✓		2
-05	NHP_MW 311D	10-20-20	1120	AQ	MM	✓		2
-06	FIELD BLANK - MURPHY	10-20-20	1115	AQ	MM	✓		1
-07	NHP_MW-303SA	10-21-20	1050	AQ	ED	✓		2
-08	NHP_MW-303DA	10-21-20	0905	AQ	ED	✓		2
-09	FIELD BLANK - DYRNESS	10-21-20	0900	AQ	ED	✓		1
-10	NHP_MW 302S	10-21-20	0938	AQ	MB	✓		2

Container Type: P
Preservative: A

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	10-21-20/1547	[signature]	10/21/20 1547
[signature]	10/21/20 1815	Rob Maesto	10/21/20 1815
Rob Maesto	10/21/20 1950	[signature]	10/21/20 2000
[signature]	10/21/20 2102	[signature]	10/21/20 21:02

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

FORM NO. 01-01 (MA) (Rev. 3-Jan-19)

CHAIN OF CUSTODY

PAGE 2 of 2

ALPHA ANALYTICAL

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

Date Rec'd in Lab: 10/21/20

ALPHA Job #: L2045730

Project Information

Project Name: NH Plating Company Superfund

Project Location: Merrimack, NH

Project #: 04.019098/.11

Project Manager: Michael Summerlin

ALPHA Quote #: NH DES Contract No. 1069635

Client Information

Client: NHDES

Address: 29 Hazen Drive

Concord, NH 03302

Phone: 603-271-3649

Fax:

Email: michael.summerlin@des.nh.gov

☐ These samples have been Previously analyzed by Alpha

Turn Around Time

☒ Standard ☐ RUSH (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information

☐ FAX ☒ EMAIL ☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client Info PO #: 2589-00M

Regulatory Requirements/Report Limits

State/Fed Program: NHDES

Criteria: Sampling and Analysis Plan limits

Other Project Specific Requirements/Comments/Detection Limits:

Please also email login receipts and lab reports to tanya.justham@gza.com. Please provide excel files formatted for upload to the NHDES DMD and for GZA EQUIS upload.

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PFAS (NH DES List)	Sample Specific Comments	Total # of Containers
45730-11	NHP_8-10S	10-21-20	1145	AQ	MM	☒		2
-12	NHP_MW-106	10-21-20	1015	AQ	MM	☒		2

MM 10-21-20

Container Type: P
Preservative: A

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	10-21-20/1547	[signature]	10/21/20 1547
[signature]	10/21/20 1815	Rob Maesto	10/21/20
Rob Maesto	10/21/20 1950	[signature]	10/21/20 2000
[signature]	10/21/20 2102	[signature]	10/21/20 21:02

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

FORM NO: 01-01(MA) (rev 5-Jan-12)

DRAFT

ANALYTICAL REPORT

Lab Number:	L2045734
Client:	GZA GeoEnvironmental, Inc. / NHDES PO Box 95 29 Hazen Drive Concord, NH 03302-0095
ATTN:	Michael Summerlin
Phone:	(603) 271-3649
Project Name:	NH PLATING COMPANY SUPERFUND
Project Number:	04.0190987.11
Report Date:	10/28/20

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

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

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

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11

Lab Number: L2045734
Report Date: 10/28/20

DRAFT

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2045734-01	TRIP BLANK	WATER	MERRIMACK, NH	10/21/20 07:30	10/21/20
L2045734-02	NHP_B-10S	WATER	MERRIMACK, NH	10/21/20 11:45	10/21/20
L2045734-03	NHP_MW-106	WATER	MERRIMACK, NH	10/21/20 10:15	10/21/20
L2045734-04	NHP_MW-302S	WATER	MERRIMACK, NH	10/21/20 11:38	10/21/20
L2045734-05	NHP_MW-302D	WATER	MERRIMACK, NH	10/21/20 09:30	10/21/20
L2045734-06	NHP_MW-303SA	WATER	MERRIMACK, NH	10/21/20 10:50	10/21/20
L2045734-07	NHP_MW-303DA	WATER	MERRIMACK, NH	10/21/20 09:05	10/21/20

Project Name:	NH PLATING COMPANY SUPERFUND	**Lab Number:**	L2045734
Project Number:	04.0190987.11	**Report Date:**	10/28/20

DRAFT

Case Narrative

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

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

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

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

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

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

Project Name:	NH PLATING COMPANY SUPERFUND	**Lab Number:**	L2045734
Project Number:	04.0190987.11	**Report Date:**	10/28/20

DRAFT

Case Narrative (continued)

Volatile Organics

L2045734-07: The sample has elevated detection limits due to the dilution required by the elevated concentrations of target compounds in the sample.

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

Authorized Signature: Jennifer L Clements

Title: Technical Director/Representative

Date: 10/28/20

DRAFT

ORGANICS

DRAFT

VOLATILES

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045734

Project Number: 04.0190987.11 **Report Date:** 10/28/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045734-01
Client ID: TRIP BLANK
Sample Location: MERRIMACK, NH

Date Collected: 10/21/20 07:30
Date Received: 10/21/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 10/26/20 18:41
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045734

Project Number: 04.0190987.11 **Report Date:** 10/28/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045734-01 Date Collected: 10/21/20 07:30

Client ID: TRIP BLANK Date Received: 10/21/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	ND		ug/l	0.50	--	1
Trichloroethene	ND		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045734

Project Number: 04.0190987.11 **Report Date:** 10/28/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045734-01 Date Collected: 10/21/20 07:30

Client ID: TRIP BLANK Date Received: 10/21/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	106		70-130

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045734

Project Number: 04.0190987.11 **Report Date:** 10/28/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045734-03
Client ID: NHP_MW-106
Sample Location: MERRIMACK, NH

Date Collected: 10/21/20 10:15
Date Received: 10/21/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 10/26/20 16:07
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045734

Project Number: 04.0190987.11 **Report Date:** 10/28/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045734-03 Date Collected: 10/21/20 10:15

Client ID: NHP_MW-106 Date Received: 10/21/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	ND		ug/l	0.50	--	1
Trichloroethene	ND		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045734

Project Number: 04.0190987.11 **Report Date:** 10/28/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045734-03 Date Collected: 10/21/20 10:15

Client ID: NHP_MW-106 Date Received: 10/21/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	94		70-130

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045734

Project Number: 04.0190987.11 **Report Date:** 10/28/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045734-04
Client ID: NHP_MW-302S
Sample Location: MERRIMACK, NH

Date Collected: 10/21/20 11:38
Date Received: 10/21/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 10/26/20 16:28
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	15		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	2.7		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045734

Project Number: 04.0190987.11 **Report Date:** 10/28/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045734-04 Date Collected: 10/21/20 11:38

Client ID: NHP_MW-302S Date Received: 10/21/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	3.2		ug/l	0.50	--	1
Trichloroethene	91		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	3.2		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045734

Project Number: 04.0190987.11 **Report Date:** 10/28/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045734-04 Date Collected: 10/21/20 11:38

Client ID: NHP_MW-302S Date Received: 10/21/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	96		70-130

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045734

Project Number: 04.0190987.11 **Report Date:** 10/28/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045734-05
Client ID: NHP_MW-302D
Sample Location: MERRIMACK, NH

Date Collected: 10/21/20 09:30
Date Received: 10/21/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 10/26/20 16:50
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045734

Project Number: 04.0190987.11 **Report Date:** 10/28/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045734-05 Date Collected: 10/21/20 09:30

Client ID: NHP_MW-302D Date Received: 10/21/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	ND		ug/l	0.50	--	1
Trichloroethene	ND		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045734

Project Number: 04.0190987.11 **Report Date:** 10/28/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045734-05 Date Collected: 10/21/20 09:30

Client ID: NHP_MW-302D Date Received: 10/21/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	97		70-130

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045734

Project Number: 04.0190987.11 **Report Date:** 10/28/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045734-06
Client ID: NHP_MW-303SA
Sample Location: MERRIMACK, NH

Date Collected: 10/21/20 10:50
Date Received: 10/21/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 10/26/20 20:08
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045734

Project Number: 04.0190987.11 **Report Date:** 10/28/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045734-06 Date Collected: 10/21/20 10:50

Client ID: NHP_MW-303SA Date Received: 10/21/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	0.56		ug/l	0.50	--	1
Trichloroethene	4.4		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	0.56		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045734

Project Number: 04.0190987.11 **Report Date:** 10/28/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045734-06 Date Collected: 10/21/20 10:50

Client ID: NHP_MW-303SA Date Received: 10/21/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	107		70-130

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045734

Project Number: 04.0190987.11 **Report Date:** 10/28/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045734-07 D
Client ID: NHP_MW-303DA
Sample Location: MERRIMACK, NH

Date Collected: 10/21/20 09:05
Date Received: 10/21/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 10/27/20 01:12
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	7.5	--	2.5
1,1-Dichloroethane	3.2		ug/l	1.9	--	2.5
Chloroform	ND		ug/l	1.9	--	2.5
Carbon tetrachloride	ND		ug/l	1.2	--	2.5
1,2-Dichloropropane	ND		ug/l	4.4	--	2.5
Dibromochloromethane	ND		ug/l	1.2	--	2.5
1,1,2-Trichloroethane	ND		ug/l	1.9	--	2.5
Tetrachloroethene	ND		ug/l	1.2	--	2.5
Chlorobenzene	ND		ug/l	1.2	--	2.5
Trichlorofluoromethane	ND		ug/l	6.2	--	2.5
1,2-Dichloroethane	ND		ug/l	1.2	--	2.5
1,1,1-Trichloroethane	ND		ug/l	1.2	--	2.5
Bromodichloromethane	ND		ug/l	1.2	--	2.5
trans-1,3-Dichloropropene	ND		ug/l	1.2	--	2.5
cis-1,3-Dichloropropene	ND		ug/l	1.2	--	2.5
1,3-Dichloropropene, Total	ND		ug/l	1.2	--	2.5
1,1-Dichloropropene	ND		ug/l	6.2	--	2.5
Bromoform	ND		ug/l	5.0	--	2.5
1,1,2,2-Tetrachloroethane	ND		ug/l	1.2	--	2.5
Benzene	ND		ug/l	1.2	--	2.5
Toluene	ND		ug/l	1.9	--	2.5
Ethylbenzene	ND		ug/l	1.2	--	2.5
Chloromethane	ND		ug/l	6.2	--	2.5
Bromomethane	ND		ug/l	2.5	--	2.5
Vinyl chloride	ND		ug/l	2.5	--	2.5
Chloroethane	ND		ug/l	2.5	--	2.5
1,1-Dichloroethene	2.7		ug/l	1.2	--	2.5
trans-1,2-Dichloroethene	ND		ug/l	1.9	--	2.5

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045734

Project Number: 04.0190987.11 **Report Date:** 10/28/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045734-07 D
Client ID: NHP_MW-303DA
Sample Location: MERRIMACK, NH

Date Collected: 10/21/20 09:05
Date Received: 10/21/20
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	7.3		ug/l	1.2	--	2.5
Trichloroethene	300		ug/l	1.2	--	2.5
1,2-Dichlorobenzene	ND		ug/l	6.2	--	2.5
1,3-Dichlorobenzene	ND		ug/l	6.2	--	2.5
1,4-Dichlorobenzene	ND		ug/l	6.2	--	2.5
Methyl tert butyl ether	ND		ug/l	2.5	--	2.5
p/m-Xylene	ND		ug/l	2.5	--	2.5
o-Xylene	ND		ug/l	2.5	--	2.5
Xylenes, Total	ND		ug/l	2.5	--	2.5
cis-1,2-Dichloroethene	7.3		ug/l	1.2	--	2.5
Dibromomethane	ND		ug/l	12	--	2.5
1,2,3-Trichloropropane	ND		ug/l	12	--	2.5
Styrene	ND		ug/l	2.5	--	2.5
Dichlorodifluoromethane	ND		ug/l	12	--	2.5
Acetone	ND		ug/l	12	--	2.5
Carbon disulfide	ND		ug/l	12	--	2.5
2-Butanone	ND		ug/l	12	--	2.5
4-Methyl-2-pentanone	ND		ug/l	12	--	2.5
2-Hexanone	ND		ug/l	12	--	2.5
Bromochloromethane	ND		ug/l	6.2	--	2.5
Tetrahydrofuran	ND		ug/l	12	--	2.5
2,2-Dichloropropane	ND		ug/l	6.2	--	2.5
1,2-Dibromoethane	ND		ug/l	5.0	--	2.5
1,1,1,2-Tetrachloroethane	ND		ug/l	1.2	--	2.5
Bromobenzene	ND		ug/l	6.2	--	2.5
n-Butylbenzene	ND		ug/l	1.2	--	2.5
sec-Butylbenzene	ND		ug/l	1.2	--	2.5
tert-Butylbenzene	ND		ug/l	6.2	--	2.5
o-Chlorotoluene	ND		ug/l	6.2	--	2.5
p-Chlorotoluene	ND		ug/l	6.2	--	2.5
1,2-Dibromo-3-chloropropane	ND		ug/l	6.2	--	2.5
Hexachlorobutadiene	ND		ug/l	1.2	--	2.5
Isopropylbenzene	ND		ug/l	1.2	--	2.5
p-Isopropyltoluene	ND		ug/l	1.2	--	2.5
Naphthalene	ND		ug/l	6.2	--	2.5
n-Propylbenzene	ND		ug/l	1.2	--	2.5
1,2,3-Trichlorobenzene	ND		ug/l	6.2	--	2.5

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045734

Project Number: 04.0190987.11 **Report Date:** 10/28/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045734-07 D
Client ID: NHP_MW-303DA
Sample Location: MERRIMACK, NH

Date Collected: 10/21/20 09:05
Date Received: 10/21/20
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	6.2	--	2.5
1,3,5-Trimethylbenzene	ND		ug/l	6.2	--	2.5
1,3,5-Trichlorobenzene	ND		ug/l	5.0	--	2.5
1,2,4-Trimethylbenzene	ND		ug/l	6.2	--	2.5
Ethyl ether	ND		ug/l	6.2	--	2.5
Isopropyl Ether	ND		ug/l	5.0	--	2.5
Tert-Butyl Alcohol	ND		ug/l	25	--	2.5
Ethyl-Tert-Butyl-Ether	ND		ug/l	5.0	--	2.5
Tertiary-Amyl Methyl Ether	ND		ug/l	5.0	--	2.5
1,4-Dioxane	ND		ug/l	620	--	2.5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	107		70-130

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045734

Project Number: 04.0190987.11 **Report Date:** 10/28/20

DRAFT

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 10/26/20 09:32
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 03-05 Batch: WG1427027-5					
Methylene chloride	ND		ug/l	3.0	--
1,1-Dichloroethane	ND		ug/l	0.75	--
Chloroform	ND		ug/l	0.75	--
Carbon tetrachloride	ND		ug/l	0.50	--
1,2-Dichloropropane	ND		ug/l	1.8	--
Dibromochloromethane	ND		ug/l	0.50	--
1,1,2-Trichloroethane	ND		ug/l	0.75	--
Tetrachloroethene	ND		ug/l	0.50	--
Chlorobenzene	ND		ug/l	0.50	--
Trichlorofluoromethane	ND		ug/l	2.5	--
1,2-Dichloroethane	ND		ug/l	0.50	--
1,1,1-Trichloroethane	ND		ug/l	0.50	--
Bromodichloromethane	ND		ug/l	0.50	--
trans-1,3-Dichloropropene	ND		ug/l	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
1,3-Dichloropropene, Total	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	2.5	--
Bromoform	ND		ug/l	2.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	0.75	--
Ethylbenzene	ND		ug/l	0.50	--
Chloromethane	ND		ug/l	2.5	--
Bromomethane	ND		ug/l	1.0	--
Vinyl chloride	ND		ug/l	1.0	--
Chloroethane	ND		ug/l	1.0	--
1,1-Dichloroethene	ND		ug/l	0.50	--
trans-1,2-Dichloroethene	ND		ug/l	0.75	--
1,2-Dichloroethene, Total	ND		ug/l	0.50	--

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045734

Project Number: 04.0190987.11 **Report Date:** 10/28/20

DRAFT

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 10/26/20 09:32
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 03-05 Batch: WG1427027-5					
Trichloroethene	ND		ug/l	0.50	--
1,2-Dichlorobenzene	ND		ug/l	2.5	--
1,3-Dichlorobenzene	ND		ug/l	2.5	--
1,4-Dichlorobenzene	ND		ug/l	2.5	--
Methyl tert butyl ether	ND		ug/l	1.0	--
p/m-Xylene	ND		ug/l	1.0	--
o-Xylene	ND		ug/l	1.0	--
Xylenes, Total	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	0.50	--
Dibromomethane	ND		ug/l	5.0	--
1,2,3-Trichloropropane	ND		ug/l	5.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	5.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	5.0	--
2-Butanone	ND		ug/l	5.0	--
4-Methyl-2-pentanone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	2.5	--
Tetrahydrofuran	ND		ug/l	5.0	--
2,2-Dichloropropane	ND		ug/l	2.5	--
1,2-Dibromoethane	ND		ug/l	2.0	--
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--
Bromobenzene	ND		ug/l	2.5	--
n-Butylbenzene	ND		ug/l	0.50	--
sec-Butylbenzene	ND		ug/l	0.50	--
tert-Butylbenzene	ND		ug/l	2.5	--
o-Chlorotoluene	ND		ug/l	2.5	--
p-Chlorotoluene	ND		ug/l	2.5	--

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045734

Project Number: 04.0190987.11 **Report Date:** 10/28/20

DRAFT

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 10/26/20 09:32
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 03-05 Batch: WG1427027-5					
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--
Hexachlorobutadiene	ND		ug/l	0.50	--
Isopropylbenzene	ND		ug/l	0.50	--
p-Isopropyltoluene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	2.5	--
n-Propylbenzene	ND		ug/l	0.50	--
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--
Ethyl ether	ND		ug/l	2.5	--
Isopropyl Ether	ND		ug/l	2.0	--
Tert-Butyl Alcohol	ND		ug/l	10	--
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--
1,4-Dioxane	ND		ug/l	250	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	97		70-130

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045734

Project Number: 04.0190987.11 **Report Date:** 10/28/20

DRAFT

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 10/26/20 18:19
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01,06-07 Batch: WG1427087-5					
Methylene chloride	ND		ug/l	3.0	--
1,1-Dichloroethane	ND		ug/l	0.75	--
Chloroform	ND		ug/l	0.75	--
Carbon tetrachloride	ND		ug/l	0.50	--
1,2-Dichloropropane	ND		ug/l	1.8	--
Dibromochloromethane	ND		ug/l	0.50	--
1,1,2-Trichloroethane	ND		ug/l	0.75	--
Tetrachloroethene	ND		ug/l	0.50	--
Chlorobenzene	ND		ug/l	0.50	--
Trichlorofluoromethane	ND		ug/l	2.5	--
1,2-Dichloroethane	ND		ug/l	0.50	--
1,1,1-Trichloroethane	ND		ug/l	0.50	--
Bromodichloromethane	ND		ug/l	0.50	--
trans-1,3-Dichloropropene	ND		ug/l	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
1,3-Dichloropropene, Total	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	2.5	--
Bromoform	ND		ug/l	2.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	0.75	--
Ethylbenzene	ND		ug/l	0.50	--
Chloromethane	ND		ug/l	2.5	--
Bromomethane	ND		ug/l	1.0	--
Vinyl chloride	ND		ug/l	1.0	--
Chloroethane	ND		ug/l	1.0	--
1,1-Dichloroethene	ND		ug/l	0.50	--
trans-1,2-Dichloroethene	ND		ug/l	0.75	--
1,2-Dichloroethene, Total	ND		ug/l	0.50	--

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045734

Project Number: 04.0190987.11 **Report Date:** 10/28/20

DRAFT

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 10/26/20 18:19
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01,06-07 Batch: WG1427087-5					
Trichloroethene	ND		ug/l	0.50	--
1,2-Dichlorobenzene	ND		ug/l	2.5	--
1,3-Dichlorobenzene	ND		ug/l	2.5	--
1,4-Dichlorobenzene	ND		ug/l	2.5	--
Methyl tert butyl ether	ND		ug/l	1.0	--
p/m-Xylene	ND		ug/l	1.0	--
o-Xylene	ND		ug/l	1.0	--
Xylenes, Total	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	0.50	--
Dibromomethane	ND		ug/l	5.0	--
1,2,3-Trichloropropane	ND		ug/l	5.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	5.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	5.0	--
2-Butanone	ND		ug/l	5.0	--
4-Methyl-2-pentanone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	2.5	--
Tetrahydrofuran	ND		ug/l	5.0	--
2,2-Dichloropropane	ND		ug/l	2.5	--
1,2-Dibromoethane	ND		ug/l	2.0	--
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--
Bromobenzene	ND		ug/l	2.5	--
n-Butylbenzene	ND		ug/l	0.50	--
sec-Butylbenzene	ND		ug/l	0.50	--
tert-Butylbenzene	ND		ug/l	2.5	--
o-Chlorotoluene	ND		ug/l	2.5	--
p-Chlorotoluene	ND		ug/l	2.5	--

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045734

Project Number: 04.0190987.11 **Report Date:** 10/28/20

DRAFT

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 10/26/20 18:19
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01,06-07 Batch: WG1427087-5					
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--
Hexachlorobutadiene	ND		ug/l	0.50	--
Isopropylbenzene	ND		ug/l	0.50	--
p-Isopropyltoluene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	2.5	--
n-Propylbenzene	ND		ug/l	0.50	--
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--
Ethyl ether	ND		ug/l	2.5	--
Isopropyl Ether	ND		ug/l	2.0	--
Tert-Butyl Alcohol	ND		ug/l	10	--
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--
1,4-Dioxane	ND		ug/l	250	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	104		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11
Lab Number: L2045734
Report Date: 10/28/20

DRAFT

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 03-05 Batch: WG1427027-3 WG1427027-4								
Methylene chloride	94		95		70-130	1		20
1,1-Dichloroethane	100		98		70-130	2		20
Chloroform	100		100		70-130	0		20
Carbon tetrachloride	110		100		63-132	10		20
1,2-Dichloropropane	100		98		70-130	2		20
Dibromochloromethane	83		90		63-130	8		20
1,1,2-Trichloroethane	93		96		70-130	3		20
Tetrachloroethene	**69**	Q	**68**	Q	70-130	1		20
Chlorobenzene	100		100		75-130	0		25
Trichlorofluoromethane	120		120		62-150	0		20
1,2-Dichloroethane	99		99		70-130	0		20
1,1,1-Trichloroethane	100		110		67-130	10		20
Bromodichloromethane	94		95		67-130	1		20
trans-1,3-Dichloropropene	87		89		70-130	2		20
cis-1,3-Dichloropropene	91		92		70-130	1		20
1,1-Dichloropropene	110		110		70-130	0		20
Bromoform	72		77		54-136	7		20
1,1,2,2-Tetrachloroethane	84		89		67-130	6		20
Benzene	100		100		70-130	0		25
Toluene	100		100		70-130	0		25
Ethylbenzene	110		100		70-130	10		20
Chloromethane	87		81		64-130	7		20
Bromomethane	120		120		39-139	0		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11
Lab Number: L2045734
Report Date: 10/28/20

DRAFT

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 03-05 Batch: WG1427027-3 WG1427027-4								
Vinyl chloride	100		100		55-140	0		20
Chloroethane	120		130		55-138	8		20
1,1-Dichloroethene	99		98		61-145	1		25
trans-1,2-Dichloroethene	96		100		70-130	4		20
Trichloroethene	100		100		70-130	0		25
1,2-Dichlorobenzene	100		100		70-130	0		20
1,3-Dichlorobenzene	100		100		70-130	0		20
1,4-Dichlorobenzene	100		100		70-130	0		20
Methyl tert butyl ether	90		88		63-130	2		20
p/m-Xylene	105		105		70-130	0		20
o-Xylene	105		105		70-130	0		20
cis-1,2-Dichloroethene	100		97		70-130	3		20
Dibromomethane	92		95		70-130	3		20
1,2,3-Trichloropropane	83		86		64-130	4		20
Styrene	105		105		70-130	0		20
Dichlorodifluoromethane	100		97		36-147	3		20
Acetone	88		93		58-148	6		20
Carbon disulfide	96		92		51-130	4		20
2-Butanone	75		82		63-138	9		20
4-Methyl-2-pentanone	72		79		59-130	9		20
2-Hexanone	66		71		57-130	7		20
Bromochloromethane	96		88		70-130	9		20
Tetrahydrofuran	83		93		58-130	11		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11
Lab Number: L2045734
Report Date: 10/28/20

DRAFT

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 03-05 Batch: WG1427027-3 WG1427027-4								
2,2-Dichloropropane	100		98		63-133	2		20
1,2-Dibromoethane	89		93		70-130	4		20
1,1,1,2-Tetrachloroethane	98		98		64-130	0		20
Bromobenzene	99		98		70-130	1		20
n-Butylbenzene	110		110		53-136	0		20
sec-Butylbenzene	110		110		70-130	0		20
tert-Butylbenzene	98		98		70-130	0		20
o-Chlorotoluene	100		100		70-130	0		20
p-Chlorotoluene	100		100		70-130	0		20
1,2-Dibromo-3-chloropropane	66		74		41-144	11		20
Hexachlorobutadiene	95		94		63-130	1		20
Isopropylbenzene	100		100		70-130	0		20
p-Isopropyltoluene	110		110		70-130	0		20
Naphthalene	78		82		70-130	5		20
n-Propylbenzene	110		100		69-130	10		20
1,2,3-Trichlorobenzene	87		89		70-130	2		20
1,2,4-Trichlorobenzene	92		92		70-130	0		20
1,3,5-Trimethylbenzene	110		100		64-130	10		20
1,3,5-Trichlorobenzene	99		99		70-130	0		20
1,2,4-Trimethylbenzene	100		100		70-130	0		20
Ethyl ether	88		91		59-134	3		20
Isopropyl Ether	96		96		70-130	0		20
Tert-Butyl Alcohol	**68**	Q	70		70-130	3		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND

Project Number: 04.0190987.11

Lab Number: L2045734

Report Date: 10/28/20

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Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 03-05 Batch: WG1427027-3 WG1427027-4								
Ethyl-Tert-Butyl-Ether	91		91		70-130	0		20
Tertiary-Amyl Methyl Ether	87		88		66-130	1		20
1,4-Dioxane	76		84		56-162	10		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	95		97		70-130
Toluene-d8	101		99		70-130
4-Bromofluorobenzene	96		93		70-130
Dibromofluoromethane	99		102		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11
Lab Number: L2045734
Report Date: 10/28/20

DRAFT

Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,06-07 Batch: WG1427087-3 WG1427087-4

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Methylene chloride	93		100		70-130	7		20
1,1-Dichloroethane	100		100		70-130	0		20
Chloroform	95		100		70-130	5		20
Carbon tetrachloride	100		110		63-132	10		20
1,2-Dichloropropane	93		100		70-130	7		20
Dibromochloromethane	89		97		63-130	9		20
1,1,2-Trichloroethane	92		99		70-130	7		20
Tetrachloroethene	100		100		70-130	0		20
Chlorobenzene	99		100		75-130	1		25
Trichlorofluoromethane	110		110		62-150	0		20
1,2-Dichloroethane	95		96		70-130	1		20
1,1,1-Trichloroethane	100		100		67-130	0		20
Bromodichloromethane	90		98		67-130	9		20
trans-1,3-Dichloropropene	90		93		70-130	3		20
cis-1,3-Dichloropropene	89		95		70-130	7		20
1,1-Dichloropropene	100		110		70-130	10		20
Bromoform	83		92		54-136	10		20
1,1,2,2-Tetrachloroethane	90		97		67-130	7		20
Benzene	96		100		70-130	4		25
Toluene	100		100		70-130	0		25
Ethylbenzene	100		110		70-130	10		20
Chloromethane	110		110		64-130	0		20
Bromomethane	100		96		39-139	4		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11
Lab Number: L2045734
Report Date: 10/28/20

DRAFT

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,06-07 Batch: WG1427087-3 WG1427087-4								
Vinyl chloride	110		110		55-140	0		20
Chloroethane	120		120		55-138	0		20
1,1-Dichloroethene	110		110		61-145	0		25
trans-1,2-Dichloroethene	100		100		70-130	0		20
Trichloroethene	97		98		70-130	1		25
1,2-Dichlorobenzene	93		100		70-130	7		20
1,3-Dichlorobenzene	96		100		70-130	4		20
1,4-Dichlorobenzene	93		99		70-130	6		20
Methyl tert butyl ether	88		94		63-130	7		20
p/m-Xylene	105		110		70-130	5		20
o-Xylene	100		105		70-130	5		20
cis-1,2-Dichloroethene	97		99		70-130	2		20
Dibromomethane	94		100		70-130	6		20
1,2,3-Trichloropropane	90		96		64-130	6		20
Styrene	105		110		70-130	5		20
Dichlorodifluoromethane	120		120		36-147	0		20
Acetone	88		83		58-148	6		20
Carbon disulfide	100		100		51-130	0		20
2-Butanone	80		88		63-138	10		20
4-Methyl-2-pentanone	75		81		59-130	8		20
2-Hexanone	77		82		57-130	6		20
Bromochloromethane	99		100		70-130	1		20
Tetrahydrofuran	82		86		58-130	5		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11
Lab Number: L2045734
Report Date: 10/28/20

DRAFT

Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,06-07 Batch: WG1427087-3 WG1427087-4

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
2,2-Dichloropropane	110		110		63-133	0		20
1,2-Dibromoethane	95		96		70-130	1		20
1,1,1,2-Tetrachloroethane	93		100		64-130	7		20
Bromobenzene	96		100		70-130	4		20
n-Butylbenzene	110		110		53-136	0		20
sec-Butylbenzene	110		110		70-130	0		20
tert-Butylbenzene	90		93		70-130	3		20
o-Chlorotoluene	100		110		70-130	10		20
p-Chlorotoluene	100		110		70-130	10		20
1,2-Dibromo-3-chloropropane	63		65		41-144	3		20
Hexachlorobutadiene	91		96		63-130	5		20
Isopropylbenzene	110		110		70-130	0		20
p-Isopropyltoluene	110		110		70-130	0		20
Naphthalene	**45**	Q	**53**	Q	70-130	16		20
n-Propylbenzene	110		110		69-130	0		20
1,2,3-Trichlorobenzene	**47**	Q	**55**	Q	70-130	16		20
1,2,4-Trichlorobenzene	**63**	Q	72		70-130	13		20
1,3,5-Trimethylbenzene	100		110		64-130	10		20
1,3,5-Trichlorobenzene	87		94		70-130	8		20
1,2,4-Trimethylbenzene	100		110		70-130	10		20
Ethyl ether	92		100		59-134	8		20
Isopropyl Ether	91		95		70-130	4		20
Tert-Butyl Alcohol	80		86		70-130	7		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND

Project Number: 04.0190987.11

Lab Number: L2045734

Report Date: 10/28/20

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Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,06-07 Batch: WG1427087-3 WG1427087-4								
Ethyl-Tert-Butyl-Ether	88		95		70-130	8		20
Tertiary-Amyl Methyl Ether	87		93		66-130	7		20
1,4-Dioxane	76		78		56-162	3		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	101		101		70-130
Toluene-d8	102		101		70-130
4-Bromofluorobenzene	101		101		70-130
Dibromofluoromethane	101		99		70-130

DRAFT

SEMIVOLATILES

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045734

Project Number: 04.0190987.11 **Report Date:** 10/28/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045734-03
Client ID: NHP_MW-106
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/27/20 22:49
Analyst: PS

Date Collected: 10/21/20 10:15
Date Received: 10/21/20
Field Prep: Not Specified

Extraction Method: EPA 3510C
Extraction Date: 10/26/20 13:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ug/l	0.134	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	35		15-110

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045734

Project Number: 04.0190987.11 **Report Date:** 10/28/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045734-04
Client ID: NHP_MW-302S
Sample Location: MERRIMACK, NH

Date Collected: 10/21/20 11:38
Date Received: 10/21/20
Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/27/20 23:19
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 10/26/20 13:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	2.10		ug/l	0.144	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	37		15-110

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045734

Project Number: 04.0190987.11 **Report Date:** 10/28/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045734-05
Client ID: NHP_MW-302D
Sample Location: MERRIMACK, NH

Sample Depth:

Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/27/20 23:48
Analyst: PS

Date Collected: 10/21/20 09:30
Date Received: 10/21/20
Field Prep: Not Specified

Extraction Method: EPA 3510C
Extraction Date: 10/26/20 13:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ug/l	0.139	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	30		15-110

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045734

Project Number: 04.0190987.11 **Report Date:** 10/28/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045734-07
Client ID: NHP_MW-303DA
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/28/20 00:18
Analyst: PS

Date Collected: 10/21/20 09:05
Date Received: 10/21/20
Field Prep: Not Specified

Extraction Method: EPA 3510C
Extraction Date: 10/26/20 13:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	10.7		ug/l	0.134	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	32		15-110

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045734

Project Number: 04.0190987.11 **Report Date:** 10/28/20

DRAFT

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 10/27/20 17:05
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 10/26/20 13:30

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by 8270D-SIM - Mansfield Lab for sample(s): 03-05,07 Batch: WG1426624-1					
1,4-Dioxane	ND		ug/l	0.150	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	37		15-110

Lab Control Sample Analysis

Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND

Project Number: 04.0190987.11

Lab Number: L2045734

Report Date: 10/28/20

DRAFT

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by 8270D-SIM - Mansfield Lab Associated sample(s): 03-05,07 Batch: WG1426624-2 WG1426624-3								
1,4-Dioxane	92		91		40-140	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	36		37		15-110

DRAFT

METALS

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045734

Project Number: 04.0190987.11 **Report Date:** 10/28/20

DRAFT

SAMPLE RESULTS

Lab ID: L2045734-02 Date Collected: 10/21/20 11:45

Client ID: NHP_B-10S Date Received: 10/21/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	0.00170		mg/l	0.00050	--	1	10/26/20 21:30	10/27/20 09:16	EPA 3005A	1,6020B	AM
Cadmium, Total	ND		mg/l	0.00020	--	1	10/26/20 21:30	10/27/20 09:16	EPA 3005A	1,6020B	AM
Chromium, Total	ND		mg/l	0.00100	--	1	10/26/20 21:30	10/27/20 09:16	EPA 3005A	1,6020B	AM
Lead, Total	ND		mg/l	0.00100	--	1	10/26/20 21:30	10/27/20 09:16	EPA 3005A	1,6020B	AM
Manganese, Total	2.674		mg/l	0.00100	--	1	10/26/20 21:30	10/27/20 09:16	EPA 3005A	1,6020B	AM
Nickel, Total	ND		mg/l	0.00200	--	1	10/26/20 21:30	10/27/20 09:16	EPA 3005A	1,6020B	AM

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045734

Project Number: 04.0190987.11 **Report Date:** 10/28/20

DRAFT

SAMPLE RESULTS

Lab ID: L2045734-06 Date Collected: 10/21/20 10:50

Client ID: NHP_MW-303SA Date Received: 10/21/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	0.00148		mg/l	0.00050	--	1	10/26/20 21:30	10/27/20 09:21	EPA 3005A	1,6020B	AM
Cadmium, Total	1.511		mg/l	0.00020	--	1	10/26/20 21:30	10/27/20 09:21	EPA 3005A	1,6020B	AM
Chromium, Total	0.00109		mg/l	0.00100	--	1	10/26/20 21:30	10/27/20 09:21	EPA 3005A	1,6020B	AM
Lead, Total	ND		mg/l	0.00100	--	1	10/26/20 21:30	10/27/20 09:21	EPA 3005A	1,6020B	AM
Manganese, Total	0.4658		mg/l	0.00100	--	1	10/26/20 21:30	10/27/20 09:21	EPA 3005A	1,6020B	AM
Nickel, Total	0.4178		mg/l	0.00200	--	1	10/26/20 21:30	10/27/20 09:21	EPA 3005A	1,6020B	AM

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045734

Project Number: 04.0190987.11 **Report Date:** 10/28/20

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Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 02,06 Batch: WG1426692-1										
Arsenic, Total	ND		mg/l	0.00050	--	1	10/26/20 21:30	10/27/20 09:01	1,6020B	AM
Cadmium, Total	ND		mg/l	0.00020	--	1	10/26/20 21:30	10/27/20 09:01	1,6020B	AM
Chromium, Total	ND		mg/l	0.00100	--	1	10/26/20 21:30	10/27/20 09:01	1,6020B	AM
Lead, Total	ND		mg/l	0.00100	--	1	10/26/20 21:30	10/27/20 09:01	1,6020B	AM
Manganese, Total	ND		mg/l	0.00100	--	1	10/26/20 21:30	10/27/20 09:01	1,6020B	AM
Nickel, Total	ND		mg/l	0.00200	--	1	10/26/20 21:30	10/27/20 09:01	1,6020B	AM

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND

Project Number: 04.0190987.11

Lab Number: L2045734

Report Date: 10/28/20

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Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02,06 Batch: WG1426692-2								
Arsenic, Total	102		-		80-120	-		
Cadmium, Total	106		-		80-120	-		
Chromium, Total	98		-		80-120	-		
Lead, Total	106		-		80-120	-		
Manganese, Total	98		-		80-120	-		
Nickel, Total	97		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11
Lab Number: L2045734
Report Date: 10/28/20

DRAFT

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02,06 QC Batch ID: WG1426692-3 WG1426692-4 QC Sample: L2046224-03 Client ID: MS Sample												
Arsenic, Total	0.0006	0.12	0.1284	106		0.1232	102		75-125	4		20
Cadmium, Total	ND	0.051	0.05414	106		0.05380	105		75-125	1		20
Chromium, Total	0.00112	0.2	0.1961	97		0.1913	95		75-125	2		20
Lead, Total	ND	0.51	0.5511	108		0.5402	106		75-125	2		20
Manganese, Total	0.9160	0.5	1.386	94		1.349	87		75-125	3		20
Nickel, Total	ND	0.5	0.4835	97		0.4668	93		75-125	4		20

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11

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Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2045734-01A	Vial HCl preserved	A	NA		2.5	Y	Absent		8260-NH(14)
L2045734-01B	Vial HCl preserved	A	NA		2.5	Y	Absent		8260-NH(14)
L2045734-02A	Plastic 250ml HNO3 preserved	A	<2	<2	2.5	Y	Absent		NI-6020T(180),CR-6020T(180),PB-6020T(180),MN-6020T(180),AS-6020T(180),CD-6020T(180)
L2045734-03A	Vial HCl preserved	A	NA		2.5	Y	Absent		8260-NH(14)
L2045734-03B	Vial HCl preserved	A	NA		2.5	Y	Absent		8260-NH(14)
L2045734-03C	Vial HCl preserved	A	NA		2.5	Y	Absent		8260-NH(14)
L2045734-03D	Amber 250ml unpreserved	A	7	7	2.5	Y	Absent		A2-14-DIOXANESIM-PPB(7)
L2045734-03E	Amber 250ml unpreserved	A	7	7	2.5	Y	Absent		A2-14-DIOXANESIM-PPB(7)
L2045734-04A	Vial HCl preserved	A	NA		2.5	Y	Absent		8260-NH(14)
L2045734-04B	Vial HCl preserved	A	NA		2.5	Y	Absent		8260-NH(14)
L2045734-04C	Vial HCl preserved	A	NA		2.5	Y	Absent		8260-NH(14)
L2045734-04D	Amber 250ml unpreserved	A	7	7	2.5	Y	Absent		A2-14-DIOXANESIM-PPB(7)
L2045734-04E	Amber 250ml unpreserved	A	7	7	2.5	Y	Absent		A2-14-DIOXANESIM-PPB(7)
L2045734-05A	Vial HCl preserved	A	NA		2.5	Y	Absent		8260-NH(14)
L2045734-05B	Vial HCl preserved	A	NA		2.5	Y	Absent		8260-NH(14)
L2045734-05C	Vial HCl preserved	A	NA		2.5	Y	Absent		8260-NH(14)
L2045734-05D	Amber 250ml unpreserved	A	7	7	2.5	Y	Absent		A2-14-DIOXANESIM-PPB(7)
L2045734-05E	Amber 250ml unpreserved	A	7	7	2.5	Y	Absent		A2-14-DIOXANESIM-PPB(7)
L2045734-06A	Vial HCl preserved	A	NA		2.5	Y	Absent		8260-NH(14)
L2045734-06B	Vial HCl preserved	A	NA		2.5	Y	Absent		8260-NH(14)
L2045734-06C	Vial HCl preserved	A	NA		2.5	Y	Absent		8260-NH(14)

*Values in parentheses indicate holding time in days

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11

Lab Number: L2045734
Report Date: 10/28/20

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Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2045734-06D	Plastic 250ml HNO3 preserved	A	<2	<2	2.5	Y	Absent		CR-6020T(180),NI-6020T(180),PB-6020T(180),MN-6020T(180),AS-6020T(180),CD-6020T(180)
L2045734-07A	Vial HCl preserved	A	NA		2.5	Y	Absent		8260-NH(14)
L2045734-07B	Vial HCl preserved	A	NA		2.5	Y	Absent		8260-NH(14)
L2045734-07C	Vial HCl preserved	A	NA		2.5	Y	Absent		8260-NH(14)
L2045734-07D	Amber 250ml unpreserved	A	7	7	2.5	Y	Absent		A2-14-DIOXANESIM-PPB(7)
L2045734-07E	Amber 250ml unpreserved	A	7	7	2.5	Y	Absent		A2-14-DIOXANESIM-PPB(7)

*Values in parentheses indicate holding time in days

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045734

Project Number: 04.0190987.11 **Report Date:** 10/28/20

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GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: Data Usability Report

Project Name:	NH PLATING COMPANY SUPERFUND	**Lab Number:**	L2045734
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Footnotes

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

Terms

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

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

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

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

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

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

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

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

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

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

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

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

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

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

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

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

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

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

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

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

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

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

Report Format: Data Usability Report

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Data Qualifiers

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

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045734
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REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

LIMITATION OF LIABILITIES

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

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

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Certification Information

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

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
EPA TO-12 Non-methane organics
EPA 3C Fixed gases
Biological Tissue Matrix: EPA 3050B

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

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

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

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

B

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL

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

DRAFT

Date Rec'd in Lab: 10/21/20

ALPHA Job #: L2045734

Project Information

Project Name: NH Plating Company Superfund

Project Location: Merrimack, NH

Project #: 04.0190987.11

Project Manager: Michael Summerlin

ALPHA Quote #: NH DES Contract No. 1069535

Client Information

Client: NHDES

Address: 29 Hazen Drive

Concord, NH 03302

Phone: 603-271-3649

Fax:

Email: michael.summerlinjr@des.nh.gov

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information

☐ FAX ☒ EMAIL ☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #: 2589-00"4"

Regulatory Requirements/Report Limits

State/Fed Program: NHDES

Criteria: Sampling and Analysis Plan limits

Other Project Specific Requirements/Comments/Detection Limits:

Please also email login receipts and lab reports to tanya.justham@gza.com. Please provide excel files formatted for upload to the NHDES EMD and for GZA EQUIS upload.

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	VOCs 8260 NHDES List	1,4-dioxane	Total metals (As, Cd, Cr, Pb, Mn & Ni)	Cyanide									Sample Specific Comments	
45734-01	TRIP BLANK	10-21-20	0730	AQ	MB	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		2
-02	NHP_B-10S	10-21-20	1145	AQ	MM	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐		1
-03	NHP_MW-10S	10-21-20	1015	AQ	MM	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		5
-04	NHP_MW-302S	10-21-20	1138	AQ	MB	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		5
-05	NHP_MW-302D	10-21-20	0930	AQ	MB	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		5
-06	NHP_MW-303SA	10-21-20	1050	AQ	ED	☑	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐		4
-07	NHP_MW-303DA	10-21-20	0905	AQ	ED	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		5

MM 10-21-20

Container Type	V	A	P	P			-	-	-	-	-	-
Preservative	B	A	C	E			-	-	-	-	-	-

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	10-21-20/1547	[signature]	10/21/20 1547
[signature]	10/21/20 1855	Rob Maesto AM	10/21/20 1855
Rob Maesto	10/21/20 1950	[signature]	10/21/20 1950

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

FORM NO: 01-01 (HC) (rev. 12-Jan-12)

DRAFT

ANALYTICAL REPORT

Lab Number:	L2045998
Client:	GZA GeoEnvironmental, Inc. / NHDES PO Box 95 29 Hazen Drive Concord, NH 03302-0095
ATTN:	Michael Summerlin
Phone:	(603) 271-3649
Project Name:	NH PLATING COMPANY SUPERFUND
Project Number:	04.0190987.11
Report Date:	11/02/20

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

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

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

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11

Lab Number: L2045998
Report Date: 11/02/20

DRAFT

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2045998-01	TRIP BLANK	WATER	MERRIMACK, NH	10/22/20 07:30	10/22/20
L2045998-02	NHP_JCMW-2D	WATER	MERRIMACK, NH	10/22/20 12:10	10/22/20
L2045998-03	NHP_JCMW-2D DUP	WATER	MERRIMACK, NH	10/22/20 12:10	10/22/20
L2045998-04	NHP_JCMW-4D	WATER	MERRIMACK, NH	10/22/20 09:35	10/22/20
L2045998-05	NHP_MW-108S	WATER	MERRIMACK, NH	10/22/20 09:20	10/22/20
L2045998-06	NHP_MW-108S DUP	WATER	MERRIMACK, NH	10/22/20 09:20	10/22/20
L2045998-07	NHP_MW-304D	WATER	MERRIMACK, NH	10/22/20 12:45	10/22/20
L2045998-08	NHP_MW-303S	WATER	MERRIMACK, NH	10/22/20 10:20	10/22/20
L2045998-09	NHP_MW-303D	WATER	MERRIMACK, NH	10/22/20 09:10	10/22/20
L2045998-10	NHP_MW-106R	WATER	MERRIMACK, NH	10/22/20 12:40	10/22/20

Project Name:	NH PLATING COMPANY SUPERFUND	**Lab Number:**	L2045998
Project Number:	04.0190987.11	**Report Date:**	11/02/20

DRAFT

Case Narrative

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

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

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

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

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

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

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

Authorized Signature: Lisa Westerlind

Title: Technical Director/Representative

Date: 11/02/20

DRAFT

ORGANICS

DRAFT

VOLATILES

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045998-01
Client ID: TRIP BLANK
Sample Location: MERRIMACK, NH

Date Collected: 10/22/20 07:30
Date Received: 10/22/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 10/27/20 23:53
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045998-01 Date Collected: 10/22/20 07:30

Client ID: TRIP BLANK Date Received: 10/22/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	ND		ug/l	0.50	--	1
Trichloroethene	ND		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045998-01 Date Collected: 10/22/20 07:30

Client ID: TRIP BLANK Date Received: 10/22/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	95		70-130

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045998-02
Client ID: NHP_JCMW-2D
Sample Location: MERRIMACK, NH

Date Collected: 10/22/20 12:10
Date Received: 10/22/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 10/28/20 01:20
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045998-02 Date Collected: 10/22/20 12:10

Client ID: NHP_JCMW-2D Date Received: 10/22/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	0.76		ug/l	0.50	--	1
Trichloroethene	11		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	0.76		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045998-02 Date Collected: 10/22/20 12:10

Client ID: NHP_JCMW-2D Date Received: 10/22/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	100		70-130

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045998-03
Client ID: NHP_JCMW-2D DUP
Sample Location: MERRIMACK, NH

Date Collected: 10/22/20 12:10
Date Received: 10/22/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 10/28/20 01:42
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045998-03 Date Collected: 10/22/20 12:10

Client ID: NHP_JCMW-2D DUP Date Received: 10/22/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	0.73		ug/l	0.50	--	1
Trichloroethene	12		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	0.73		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045998-03 Date Collected: 10/22/20 12:10

Client ID: NHP_JCMW-2D DUP Date Received: 10/22/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	100		70-130

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045998-04
Client ID: NHP_JCMW-4D
Sample Location: MERRIMACK, NH

Date Collected: 10/22/20 09:35
Date Received: 10/22/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 10/28/20 02:04
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045998-04 Date Collected: 10/22/20 09:35

Client ID: NHP_JCMW-4D Date Received: 10/22/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	ND		ug/l	0.50	--	1
Trichloroethene	6.4		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045998-04 Date Collected: 10/22/20 09:35

Client ID: NHP_JCMW-4D Date Received: 10/22/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	100		70-130

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045998-05
Client ID: NHP_MW-108S
Sample Location: MERRIMACK, NH

Date Collected: 10/22/20 09:20
Date Received: 10/22/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 10/28/20 02:26
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	4.5		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	0.83		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045998-05 Date Collected: 10/22/20 09:20

Client ID: NHP_MW-108S Date Received: 10/22/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	2.6		ug/l	0.50	--	1
Trichloroethene	20		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	2.6		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045998-05 Date Collected: 10/22/20 09:20

Client ID: NHP_MW-108S Date Received: 10/22/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	97		70-130

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045998-06
Client ID: NHP_MW-108S DUP
Sample Location: MERRIMACK, NH

Date Collected: 10/22/20 09:20
Date Received: 10/22/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 10/27/20 22:22
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	4.6		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	0.65		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045998-06 Date Collected: 10/22/20 09:20

Client ID: NHP_MW-108S DUP Date Received: 10/22/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	2.9		ug/l	0.50	--	1
Trichloroethene	20		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	2.9		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045998-06 Date Collected: 10/22/20 09:20

Client ID: NHP_MW-108S DUP Date Received: 10/22/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	98		70-130

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045998-07
Client ID: NHP_MW-304D
Sample Location: MERRIMACK, NH

Date Collected: 10/22/20 12:45
Date Received: 10/22/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 10/27/20 22:45
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045998-07 Date Collected: 10/22/20 12:45

Client ID: NHP_MW-304D Date Received: 10/22/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	4.0		ug/l	0.50	--	1
Trichloroethene	37		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	4.0		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045998-07 Date Collected: 10/22/20 12:45

Client ID: NHP_MW-304D Date Received: 10/22/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	95		70-130

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045998-08
Client ID: NHP_MW-303S
Sample Location: MERRIMACK, NH

Date Collected: 10/22/20 10:20
Date Received: 10/22/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 10/27/20 23:09
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045998-08 Date Collected: 10/22/20 10:20

Client ID: NHP_MW-303S Date Received: 10/22/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	ND		ug/l	0.50	--	1
Trichloroethene	1.8		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045998-08 Date Collected: 10/22/20 10:20

Client ID: NHP_MW-303S Date Received: 10/22/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	95		70-130

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045998-09
Client ID: NHP_MW-303D
Sample Location: MERRIMACK, NH

Date Collected: 10/22/20 09:10
Date Received: 10/22/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 10/27/20 23:32
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045998-09 Date Collected: 10/22/20 09:10

Client ID: NHP_MW-303D Date Received: 10/22/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	1.6		ug/l	0.50	--	1
Trichloroethene	36		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	1.6		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045998-09 Date Collected: 10/22/20 09:10

Client ID: NHP_MW-303D Date Received: 10/22/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	95		70-130

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045998-10
Client ID: NHP_MW-106R
Sample Location: MERRIMACK, NH

Date Collected: 10/22/20 12:40
Date Received: 10/22/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 10/27/20 23:55
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045998-10 Date Collected: 10/22/20 12:40

Client ID: NHP_MW-106R Date Received: 10/22/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	0.82		ug/l	0.50	--	1
Trichloroethene	0.68		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	0.82		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045998-10 Date Collected: 10/22/20 12:40

Client ID: NHP_MW-106R Date Received: 10/22/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	94		70-130

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

DRAFT

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 10/27/20 19:15
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 06-10 Batch: WG1427453-5					
Methylene chloride	ND		ug/l	3.0	--
1,1-Dichloroethane	ND		ug/l	0.75	--
Chloroform	ND		ug/l	0.75	--
Carbon tetrachloride	ND		ug/l	0.50	--
1,2-Dichloropropane	ND		ug/l	1.8	--
Dibromochloromethane	ND		ug/l	0.50	--
1,1,2-Trichloroethane	ND		ug/l	0.75	--
Tetrachloroethene	ND		ug/l	0.50	--
Chlorobenzene	ND		ug/l	0.50	--
Trichlorofluoromethane	ND		ug/l	2.5	--
1,2-Dichloroethane	ND		ug/l	0.50	--
1,1,1-Trichloroethane	ND		ug/l	0.50	--
Bromodichloromethane	ND		ug/l	0.50	--
trans-1,3-Dichloropropene	ND		ug/l	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
1,3-Dichloropropene, Total	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	2.5	--
Bromoform	ND		ug/l	2.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	0.75	--
Ethylbenzene	ND		ug/l	0.50	--
Chloromethane	ND		ug/l	2.5	--
Bromomethane	ND		ug/l	1.0	--
Vinyl chloride	ND		ug/l	1.0	--
Chloroethane	ND		ug/l	1.0	--
1,1-Dichloroethene	ND		ug/l	0.50	--
trans-1,2-Dichloroethene	ND		ug/l	0.75	--
1,2-Dichloroethene, Total	ND		ug/l	0.50	--

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

DRAFT

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 10/27/20 19:15
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 06-10 Batch: WG1427453-5					
Trichloroethene	ND		ug/l	0.50	--
1,2-Dichlorobenzene	ND		ug/l	2.5	--
1,3-Dichlorobenzene	ND		ug/l	2.5	--
1,4-Dichlorobenzene	ND		ug/l	2.5	--
Methyl tert butyl ether	ND		ug/l	1.0	--
p/m-Xylene	ND		ug/l	1.0	--
o-Xylene	ND		ug/l	1.0	--
Xylenes, Total	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	0.50	--
Dibromomethane	ND		ug/l	5.0	--
1,2,3-Trichloropropane	ND		ug/l	5.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	5.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	5.0	--
2-Butanone	ND		ug/l	5.0	--
4-Methyl-2-pentanone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	2.5	--
Tetrahydrofuran	ND		ug/l	5.0	--
2,2-Dichloropropane	ND		ug/l	2.5	--
1,2-Dibromoethane	ND		ug/l	2.0	--
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--
Bromobenzene	ND		ug/l	2.5	--
n-Butylbenzene	ND		ug/l	0.50	--
sec-Butylbenzene	ND		ug/l	0.50	--
tert-Butylbenzene	ND		ug/l	2.5	--
o-Chlorotoluene	ND		ug/l	2.5	--
p-Chlorotoluene	ND		ug/l	2.5	--

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

DRAFT

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 10/27/20 19:15
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 06-10 Batch: WG1427453-5					
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--
Hexachlorobutadiene	ND		ug/l	0.50	--
Isopropylbenzene	ND		ug/l	0.50	--
p-Isopropyltoluene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	2.5	--
n-Propylbenzene	ND		ug/l	0.50	--
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--
Ethyl ether	ND		ug/l	2.5	--
Isopropyl Ether	ND		ug/l	2.0	--
Tert-Butyl Alcohol	ND		ug/l	10	--
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--
1,4-Dioxane	ND		ug/l	250	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	95		70-130

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

DRAFT

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 10/27/20 22:47
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-05 Batch: WG1427512-5					
Methylene chloride	ND		ug/l	3.0	--
1,1-Dichloroethane	ND		ug/l	0.75	--
Chloroform	ND		ug/l	0.75	--
Carbon tetrachloride	ND		ug/l	0.50	--
1,2-Dichloropropane	ND		ug/l	1.8	--
Dibromochloromethane	ND		ug/l	0.50	--
1,1,2-Trichloroethane	ND		ug/l	0.75	--
Tetrachloroethene	ND		ug/l	0.50	--
Chlorobenzene	ND		ug/l	0.50	--
Trichlorofluoromethane	ND		ug/l	2.5	--
1,2-Dichloroethane	ND		ug/l	0.50	--
1,1,1-Trichloroethane	ND		ug/l	0.50	--
Bromodichloromethane	ND		ug/l	0.50	--
trans-1,3-Dichloropropene	ND		ug/l	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
1,3-Dichloropropene, Total	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	2.5	--
Bromoform	ND		ug/l	2.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	0.75	--
Ethylbenzene	ND		ug/l	0.50	--
Chloromethane	ND		ug/l	2.5	--
Bromomethane	ND		ug/l	1.0	--
Vinyl chloride	ND		ug/l	1.0	--
Chloroethane	ND		ug/l	1.0	--
1,1-Dichloroethene	ND		ug/l	0.50	--
trans-1,2-Dichloroethene	ND		ug/l	0.75	--
1,2-Dichloroethene, Total	ND		ug/l	0.50	--

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

DRAFT

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 10/27/20 22:47
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-05 Batch: WG1427512-5					
Trichloroethene	ND		ug/l	0.50	--
1,2-Dichlorobenzene	ND		ug/l	2.5	--
1,3-Dichlorobenzene	ND		ug/l	2.5	--
1,4-Dichlorobenzene	ND		ug/l	2.5	--
Methyl tert butyl ether	ND		ug/l	1.0	--
p/m-Xylene	ND		ug/l	1.0	--
o-Xylene	ND		ug/l	1.0	--
Xylenes, Total	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	0.50	--
Dibromomethane	ND		ug/l	5.0	--
1,2,3-Trichloropropane	ND		ug/l	5.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	5.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	5.0	--
2-Butanone	ND		ug/l	5.0	--
4-Methyl-2-pentanone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	2.5	--
Tetrahydrofuran	ND		ug/l	5.0	--
2,2-Dichloropropane	ND		ug/l	2.5	--
1,2-Dibromoethane	ND		ug/l	2.0	--
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--
Bromobenzene	ND		ug/l	2.5	--
n-Butylbenzene	ND		ug/l	0.50	--
sec-Butylbenzene	ND		ug/l	0.50	--
tert-Butylbenzene	ND		ug/l	2.5	--
o-Chlorotoluene	ND		ug/l	2.5	--
p-Chlorotoluene	ND		ug/l	2.5	--

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

DRAFT

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 10/27/20 22:47
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-05 Batch: WG1427512-5					
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--
Hexachlorobutadiene	ND		ug/l	0.50	--
Isopropylbenzene	ND		ug/l	0.50	--
p-Isopropyltoluene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	2.5	--
n-Propylbenzene	ND		ug/l	0.50	--
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--
Ethyl ether	ND		ug/l	2.5	--
Isopropyl Ether	ND		ug/l	2.0	--
Tert-Butyl Alcohol	ND		ug/l	10	--
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--
1,4-Dioxane	ND		ug/l	250	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	98		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11
Lab Number: L2045998
Report Date: 11/02/20

DRAFT

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 06-10 Batch: WG1427453-3 WG1427453-4								
Methylene chloride	95		100		70-130	5		20
1,1-Dichloroethane	100		100		70-130	0		20
Chloroform	91		95		70-130	4		20
Carbon tetrachloride	92		96		63-132	4		20
1,2-Dichloropropane	99		100		70-130	1		20
Dibromochloromethane	82		88		63-130	7		20
1,1,2-Trichloroethane	92		99		70-130	7		20
Tetrachloroethene	100		110		70-130	10		20
Chlorobenzene	92		98		75-130	6		25
Trichlorofluoromethane	110		120		62-150	9		20
1,2-Dichloroethane	93		97		70-130	4		20
1,1,1-Trichloroethane	90		97		67-130	7		20
Bromodichloromethane	91		93		67-130	2		20
trans-1,3-Dichloropropene	79		80		70-130	1		20
cis-1,3-Dichloropropene	90		93		70-130	3		20
1,1-Dichloropropene	97		100		70-130	3		20
Bromoform	86		93		54-136	8		20
1,1,2,2-Tetrachloroethane	90		98		67-130	9		20
Benzene	98		100		70-130	2		25
Toluene	98		100		70-130	2		25
Ethylbenzene	94		100		70-130	6		20
Chloromethane	120		120		64-130	0		20
Bromomethane	81		74		39-139	9		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11
Lab Number: L2045998
Report Date: 11/02/20

DRAFT

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 06-10 Batch: WG1427453-3 WG1427453-4								
Vinyl chloride	120		130		55-140	8		20
Chloroethane	120		130		55-138	8		20
1,1-Dichloroethene	83		88		61-145	6		25
trans-1,2-Dichloroethene	96		100		70-130	4		20
Trichloroethene	87		96		70-130	10		25
1,2-Dichlorobenzene	96		100		70-130	4		20
1,3-Dichlorobenzene	98		100		70-130	2		20
1,4-Dichlorobenzene	96		100		70-130	4		20
Methyl tert butyl ether	77		65		63-130	17		20
p/m-Xylene	95		100		70-130	5		20
o-Xylene	95		100		70-130	5		20
cis-1,2-Dichloroethene	98		99		70-130	1		20
Dibromomethane	92		96		70-130	4		20
1,2,3-Trichloropropane	89		96		64-130	8		20
Styrene	90		100		70-130	11		20
Dichlorodifluoromethane	**150**	Q	**170**	Q	36-147	13		20
Acetone	85		100		58-148	16		20
Carbon disulfide	94		100		51-130	6		20
2-Butanone	88		88		63-138	0		20
4-Methyl-2-pentanone	88		96		59-130	9		20
2-Hexanone	88		95		57-130	8		20
Bromochloromethane	95		98		70-130	3		20
Tetrahydrofuran	100		110		58-130	10		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11
Lab Number: L2045998
Report Date: 11/02/20

DRAFT

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 06-10 Batch: WG1427453-3 WG1427453-4								
2,2-Dichloropropane	99		93		63-133	6		20
1,2-Dibromoethane	91		95		70-130	4		20
1,1,1,2-Tetrachloroethane	91		95		64-130	4		20
Bromobenzene	96		100		70-130	4		20
n-Butylbenzene	91		94		53-136	3		20
sec-Butylbenzene	94		100		70-130	6		20
tert-Butylbenzene	94		100		70-130	6		20
o-Chlorotoluene	96		100		70-130	4		20
p-Chlorotoluene	97		100		70-130	3		20
1,2-Dibromo-3-chloropropane	84		90		41-144	7		20
Hexachlorobutadiene	98		110		63-130	12		20
Isopropylbenzene	98		110		70-130	12		20
p-Isopropyltoluene	92		96		70-130	4		20
Naphthalene	**69**	Q	75		70-130	8		20
n-Propylbenzene	96		100		69-130	4		20
1,2,3-Trichlorobenzene	78		86		70-130	10		20
1,2,4-Trichlorobenzene	89		94		70-130	5		20
1,3,5-Trimethylbenzene	97		100		64-130	3		20
1,3,5-Trichlorobenzene	98		100		70-130	2		20
1,2,4-Trimethylbenzene	96		100		70-130	4		20
Ethyl ether	100		110		59-134	10		20
Isopropyl Ether	98		100		70-130	2		20
Tert-Butyl Alcohol	90		88		70-130	2		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND

Project Number: 04.0190987.11

Lab Number: L2045998

Report Date: 11/02/20

DRAFT

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 06-10 Batch: WG1427453-3 WG1427453-4								
Ethyl-Tert-Butyl-Ether	82		72		70-130	13		20
Tertiary-Amyl Methyl Ether	77		70		66-130	10		20
1,4-Dioxane	68		76		56-162	11		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	99		99		70-130
Toluene-d8	102		102		70-130
4-Bromofluorobenzene	101		102		70-130
Dibromofluoromethane	99		98		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11
Lab Number: L2045998
Report Date: 11/02/20

DRAFT

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-05 Batch: WG1427512-3 WG1427512-4								
Methylene chloride	88		87		70-130	1		20
1,1-Dichloroethane	89		88		70-130	1		20
Chloroform	90		90		70-130	0		20
Carbon tetrachloride	95		90		63-132	5		20
1,2-Dichloropropane	94		92		70-130	2		20
Dibromochloromethane	76		80		63-130	5		20
1,1,2-Trichloroethane	90		88		70-130	2		20
Tetrachloroethene	**61**	Q	**60**	Q	70-130	2		20
Chlorobenzene	94		93		75-130	1		25
Trichlorofluoromethane	110		110		62-150	0		20
1,2-Dichloroethane	92		95		70-130	3		20
1,1,1-Trichloroethane	96		91		67-130	5		20
Bromodichloromethane	85		84		67-130	1		20
trans-1,3-Dichloropropene	78		81		70-130	4		20
cis-1,3-Dichloropropene	80		82		70-130	2		20
1,1-Dichloropropene	97		92		70-130	5		20
Bromoform	65		71		54-136	9		20
1,1,2,2-Tetrachloroethane	86		88		67-130	2		20
Benzene	93		90		70-130	3		25
Toluene	94		93		70-130	1		25
Ethylbenzene	94		94		70-130	0		20
Chloromethane	80		78		64-130	3		20
Bromomethane	100		100		39-139	0		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11
Lab Number: L2045998
Report Date: 11/02/20

DRAFT

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-05 Batch: WG1427512-3 WG1427512-4								
Vinyl chloride	95		90		55-140	5		20
Chloroethane	110		100		55-138	10		20
1,1-Dichloroethene	93		87		61-145	7		25
trans-1,2-Dichloroethene	87		86		70-130	1		20
Trichloroethene	91		90		70-130	1		25
1,2-Dichlorobenzene	92		94		70-130	2		20
1,3-Dichlorobenzene	93		95		70-130	2		20
1,4-Dichlorobenzene	91		95		70-130	4		20
Methyl tert butyl ether	81		83		63-130	2		20
p/m-Xylene	90		95		70-130	5		20
o-Xylene	95		95		70-130	0		20
cis-1,2-Dichloroethene	86		86		70-130	0		20
Dibromomethane	88		89		70-130	1		20
1,2,3-Trichloropropane	81		90		64-130	11		20
Styrene	90		95		70-130	5		20
Dichlorodifluoromethane	84		81		36-147	4		20
Acetone	82		81		58-148	1		20
Carbon disulfide	88		84		51-130	5		20
2-Butanone	88		88		63-138	0		20
4-Methyl-2-pentanone	70		74		59-130	6		20
2-Hexanone	69		72		57-130	4		20
Bromochloromethane	88		89		70-130	1		20
Tetrahydrofuran	83		81		58-130	2		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11
Lab Number: L2045998
Report Date: 11/02/20

DRAFT

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-05 Batch: WG1427512-3 WG1427512-4								
2,2-Dichloropropane	89		82		63-133	8		20
1,2-Dibromoethane	83		88		70-130	6		20
1,1,1,2-Tetrachloroethane	86		87		64-130	1		20
Bromobenzene	90		91		70-130	1		20
n-Butylbenzene	99		100		53-136	1		20
sec-Butylbenzene	100		100		70-130	0		20
tert-Butylbenzene	90		89		70-130	1		20
o-Chlorotoluene	94		97		70-130	3		20
p-Chlorotoluene	94		96		70-130	2		20
1,2-Dibromo-3-chloropropane	64		65		41-144	2		20
Hexachlorobutadiene	83		81		63-130	2		20
Isopropylbenzene	96		96		70-130	0		20
p-Isopropyltoluene	99		99		70-130	0		20
Naphthalene	74		76		70-130	3		20
n-Propylbenzene	98		98		69-130	0		20
1,2,3-Trichlorobenzene	78		82		70-130	5		20
1,2,4-Trichlorobenzene	80		82		70-130	2		20
1,3,5-Trimethylbenzene	96		97		64-130	1		20
1,3,5-Trichlorobenzene	89		89		70-130	0		20
1,2,4-Trimethylbenzene	96		96		70-130	0		20
Ethyl ether	83		89		59-134	7		20
Isopropyl Ether	90		86		70-130	5		20
Tert-Butyl Alcohol	**64**	Q	**64**	Q	70-130	0		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND

Project Number: 04.0190987.11

Lab Number: L2045998

Report Date: 11/02/20

DRAFT

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-05 Batch: WG1427512-3 WG1427512-4								
Ethyl-Tert-Butyl-Ether	83		83		70-130	0		20
Tertiary-Amyl Methyl Ether	80		81		66-130	1		20
1,4-Dioxane	74		78		56-162	5		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	97		99		70-130
Toluene-d8	98		100		70-130
4-Bromofluorobenzene	97		97		70-130
Dibromofluoromethane	99		97		70-130

DRAFT

SEMIVOLATILES

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045998-02
Client ID: NHP_JCMW-2D
Sample Location: MERRIMACK, NH

Sample Depth:

Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/30/20 12:54
Analyst: PS

Date Collected: 10/22/20 12:10
Date Received: 10/22/20
Field Prep: Not Specified

Extraction Method: EPA 3510C
Extraction Date: 10/29/20 04:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	3.97		ug/l	0.139	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	56		15-110

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045998-03
Client ID: NHP_JCMW-2D DUP
Sample Location: MERRIMACK, NH

Date Collected: 10/22/20 12:10
Date Received: 10/22/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/30/20 13:17
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 10/29/20 04:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	3.89		ug/l	0.139	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	56		15-110

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045998-04
Client ID: NHP_JCMW-4D
Sample Location: MERRIMACK, NH

Sample Depth:

Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/30/20 13:40
Analyst: PS

Date Collected: 10/22/20 09:35
Date Received: 10/22/20
Field Prep: Not Specified

Extraction Method: EPA 3510C
Extraction Date: 10/29/20 04:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	2.18		ug/l	0.139	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	53		15-110

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045998-05
Client ID: NHP_MW-108S
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/30/20 14:04
Analyst: PS

Date Collected: 10/22/20 09:20
Date Received: 10/22/20
Field Prep: Not Specified

Extraction Method: EPA 3510C
Extraction Date: 10/29/20 04:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	0.414		ug/l	0.139	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	54		15-110

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045998-06
Client ID: NHP_MW-108S DUP
Sample Location: MERRIMACK, NH

Date Collected: 10/22/20 09:20
Date Received: 10/22/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/30/20 14:27
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 10/29/20 04:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	0.364		ug/l	0.144	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	53		15-110

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045998-07
Client ID: NHP_MW-304D
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/30/20 14:50
Analyst: PS

Date Collected: 10/22/20 12:45
Date Received: 10/22/20
Field Prep: Not Specified

Extraction Method: EPA 3510C
Extraction Date: 10/29/20 04:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	2.41		ug/l	0.139	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	54		15-110

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045998-09
Client ID: NHP_MW-303D
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/30/20 15:13
Analyst: PS

Date Collected: 10/22/20 09:10
Date Received: 10/22/20
Field Prep: Not Specified

Extraction Method: EPA 3510C
Extraction Date: 10/29/20 04:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	2.37		ug/l	0.144	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	54		15-110

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2045998-10
Client ID: NHP_MW-106R
Sample Location: MERRIMACK, NH

Sample Depth:

Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/30/20 15:37
Analyst: PS

Date Collected: 10/22/20 12:40
Date Received: 10/22/20
Field Prep: Not Specified

Extraction Method: EPA 3510C
Extraction Date: 10/29/20 04:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	0.410		ug/l	0.139	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	55		15-110

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

DRAFT

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 10/30/20 07:50
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 10/29/20 04:30

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by 8270D-SIM - Mansfield Lab for sample(s): 02-07,09-10 Batch: WG1427839-1					
1,4-Dioxane	ND		ug/l	0.150	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	71		15-110

Lab Control Sample Analysis

Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND

Project Number: 04.0190987.11

Lab Number: L2045998

Report Date: 11/02/20

DRAFT

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by 8270D-SIM - Mansfield Lab Associated sample(s): 02-07,09-10 Batch: WG1427839-2 WG1427839-3								
1,4-Dioxane	100		102		40-140	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	72		74		15-110

DRAFT

METALS

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

DRAFT

SAMPLE RESULTS

Lab ID: L2045998-05 Date Collected: 10/22/20 09:20

Client ID: NHP_MW-108S Date Received: 10/22/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	ND		mg/l	0.00050	--	1	10/26/20 21:30	10/27/20 10:27	EPA 3005A	1,6020B	AM
Cadmium, Total	0.08166		mg/l	0.00020	--	1	10/26/20 21:30	10/27/20 10:27	EPA 3005A	1,6020B	AM
Chromium, Total	0.00236		mg/l	0.00100	--	1	10/26/20 21:30	10/27/20 10:27	EPA 3005A	1,6020B	AM
Lead, Total	ND		mg/l	0.00100	--	1	10/26/20 21:30	10/27/20 10:27	EPA 3005A	1,6020B	AM
Manganese, Total	0.8713		mg/l	0.00100	--	1	10/26/20 21:30	10/27/20 10:27	EPA 3005A	1,6020B	AM
Nickel, Total	0.02866		mg/l	0.00200	--	1	10/26/20 21:30	10/27/20 10:27	EPA 3005A	1,6020B	AM

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

DRAFT

SAMPLE RESULTS

Lab ID: L2045998-06 Date Collected: 10/22/20 09:20

Client ID: NHP_MW-108S DUP Date Received: 10/22/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	ND		mg/l	0.00050	--	1	10/26/20 21:30	10/27/20 10:32	EPA 3005A	1,6020B	AM
Cadmium, Total	0.08820		mg/l	0.00020	--	1	10/26/20 21:30	10/27/20 10:32	EPA 3005A	1,6020B	AM
Chromium, Total	0.00241		mg/l	0.00100	--	1	10/26/20 21:30	10/27/20 10:32	EPA 3005A	1,6020B	AM
Lead, Total	ND		mg/l	0.00100	--	1	10/26/20 21:30	10/27/20 10:32	EPA 3005A	1,6020B	AM
Manganese, Total	0.9426		mg/l	0.00100	--	1	10/26/20 21:30	10/27/20 10:32	EPA 3005A	1,6020B	AM
Nickel, Total	0.03061		mg/l	0.00200	--	1	10/26/20 21:30	10/27/20 10:32	EPA 3005A	1,6020B	AM

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

Project Number: 04.0190987.11 **Report Date:** 11/02/20

DRAFT

SAMPLE RESULTS

Lab ID: L2045998-07 Date Collected: 10/22/20 12:45

Client ID: NHP_MW-304D Date Received: 10/22/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	0.00066		mg/l	0.00050	--	1	10/26/20 21:30	10/27/20 10:37	EPA 3005A	1,6020B	AM
Cadmium, Total	0.00312		mg/l	0.00020	--	1	10/26/20 21:30	10/27/20 10:37	EPA 3005A	1,6020B	AM
Chromium, Total	ND		mg/l	0.00100	--	1	10/26/20 21:30	10/27/20 10:37	EPA 3005A	1,6020B	AM
Lead, Total	ND		mg/l	0.00100	--	1	10/26/20 21:30	10/27/20 10:37	EPA 3005A	1,6020B	AM
Manganese, Total	0.3012		mg/l	0.00100	--	1	10/26/20 21:30	10/27/20 10:37	EPA 3005A	1,6020B	AM
Nickel, Total	0.04250		mg/l	0.00200	--	1	10/26/20 21:30	10/27/20 10:37	EPA 3005A	1,6020B	AM

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SAMPLE RESULTS

Lab ID: L2045998-08 Date Collected: 10/22/20 10:20

Client ID: NHP_MW-303S Date Received: 10/22/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	0.00106		mg/l	0.00050	--	1	10/26/20 21:30	10/27/20 10:43	EPA 3005A	1,6020B	AM
Cadmium, Total	0.5025		mg/l	0.00020	--	1	10/26/20 21:30	10/27/20 10:43	EPA 3005A	1,6020B	AM
Chromium, Total	0.00100		mg/l	0.00100	--	1	10/26/20 21:30	10/27/20 10:43	EPA 3005A	1,6020B	AM
Lead, Total	ND		mg/l	0.00100	--	1	10/26/20 21:30	10/27/20 10:43	EPA 3005A	1,6020B	AM
Manganese, Total	0.2614		mg/l	0.00100	--	1	10/26/20 21:30	10/27/20 10:43	EPA 3005A	1,6020B	AM
Nickel, Total	0.3051		mg/l	0.00200	--	1	10/26/20 21:30	10/27/20 10:43	EPA 3005A	1,6020B	AM

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Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 05-08 Batch: WG1426692-1										
Arsenic, Total	ND		mg/l	0.00050	--	1	10/26/20 21:30	10/27/20 09:01	1,6020B	AM
Cadmium, Total	ND		mg/l	0.00020	--	1	10/26/20 21:30	10/27/20 09:01	1,6020B	AM
Chromium, Total	ND		mg/l	0.00100	--	1	10/26/20 21:30	10/27/20 09:01	1,6020B	AM
Lead, Total	ND		mg/l	0.00100	--	1	10/26/20 21:30	10/27/20 09:01	1,6020B	AM
Manganese, Total	ND		mg/l	0.00100	--	1	10/26/20 21:30	10/27/20 09:01	1,6020B	AM
Nickel, Total	ND		mg/l	0.00200	--	1	10/26/20 21:30	10/27/20 09:01	1,6020B	AM

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

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Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 05-08 Batch: WG1426692-2								
Arsenic, Total	102		-		80-120	-		
Cadmium, Total	106		-		80-120	-		
Chromium, Total	98		-		80-120	-		
Lead, Total	106		-		80-120	-		
Manganese, Total	98		-		80-120	-		
Nickel, Total	97		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

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Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 05-08 QC Batch ID: WG1426692-3 WG1426692-4 QC Sample: L2046224-03 Client ID: MS Sample												
Arsenic, Total	0.0006	0.12	0.1284	106		0.1232	102		75-125	4		20
Cadmium, Total	ND	0.051	0.05414	106		0.05380	105		75-125	1		20
Chromium, Total	0.00112	0.2	0.1961	97		0.1913	95		75-125	2		20
Lead, Total	ND	0.51	0.5511	108		0.5402	106		75-125	2		20
Manganese, Total	0.9160	0.5	1.386	94		1.349	87		75-125	3		20
Nickel, Total	ND	0.5	0.4835	97		0.4668	93		75-125	4		20

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Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2045998-01A	Vial HCl preserved	A	NA		3.6	Y	Absent		8260-NH(14)
L2045998-01B	Vial HCl preserved	A	NA		3.6	Y	Absent		8260-NH(14)
L2045998-02A	Vial HCl preserved	A	NA		3.6	Y	Absent		8260-NH(14)
L2045998-02B	Vial HCl preserved	A	NA		3.6	Y	Absent		8260-NH(14)
L2045998-02C	Vial HCl preserved	A	NA		3.6	Y	Absent		8260-NH(14)
L2045998-02D	Amber 250ml unpreserved	A	7	7	3.6	Y	Absent		A2-14-DIOXANESIM-PPB(7)
L2045998-02E	Amber 250ml unpreserved	A	7	7	3.6	Y	Absent		A2-14-DIOXANESIM-PPB(7)
L2045998-03A	Vial HCl preserved	A	NA		3.6	Y	Absent		8260-NH(14)
L2045998-03B	Vial HCl preserved	A	NA		3.6	Y	Absent		8260-NH(14)
L2045998-03C	Vial HCl preserved	A	NA		3.6	Y	Absent		8260-NH(14)
L2045998-03D	Amber 250ml unpreserved	A	7	7	3.6	Y	Absent		A2-14-DIOXANESIM-PPB(7)
L2045998-03E	Amber 250ml unpreserved	A	7	7	3.6	Y	Absent		A2-14-DIOXANESIM-PPB(7)
L2045998-04A	Vial HCl preserved	A	NA		3.6	Y	Absent		8260-NH(14)
L2045998-04B	Vial HCl preserved	A	NA		3.6	Y	Absent		8260-NH(14)
L2045998-04C	Vial HCl preserved	A	NA		3.6	Y	Absent		8260-NH(14)
L2045998-04D	Amber 250ml unpreserved	A	7	7	3.6	Y	Absent		A2-14-DIOXANESIM-PPB(7)
L2045998-04E	Amber 250ml unpreserved	A	7	7	3.6	Y	Absent		A2-14-DIOXANESIM-PPB(7)
L2045998-05A	Vial HCl preserved	A	NA		3.6	Y	Absent		8260-NH(14)
L2045998-05B	Vial HCl preserved	A	NA		3.6	Y	Absent		8260-NH(14)
L2045998-05C	Vial HCl preserved	A	NA		3.6	Y	Absent		8260-NH(14)
L2045998-05D	Amber 250ml unpreserved	A	7	7	3.6	Y	Absent		A2-14-DIOXANESIM-PPB(7)
L2045998-05E	Amber 250ml unpreserved	A	7	7	3.6	Y	Absent		A2-14-DIOXANESIM-PPB(7)

*Values in parentheses indicate holding time in days

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Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2045998-05F	Plastic 250ml HNO3 preserved	A	<2	<2	3.6	Y	Absent		CR-6020T(180),NI-6020T(180),PB-6020T(180),MN-6020T(180),AS-6020T(180),CD-6020T(180)
L2045998-06A	Vial HCl preserved	A	NA		3.6	Y	Absent		8260-NH(14)
L2045998-06B	Vial HCl preserved	A	NA		3.6	Y	Absent		8260-NH(14)
L2045998-06C	Vial HCl preserved	A	NA		3.6	Y	Absent		8260-NH(14)
L2045998-06D	Amber 250ml unpreserved	A	7	7	3.6	Y	Absent		A2-14-DIOXANESIM-PPB(7)
L2045998-06E	Amber 250ml unpreserved	A	7	7	3.6	Y	Absent		A2-14-DIOXANESIM-PPB(7)
L2045998-06F	Plastic 250ml HNO3 preserved	A	<2	<2	3.6	Y	Absent		NI-6020T(180),CR-6020T(180),PB-6020T(180),MN-6020T(180),AS-6020T(180),CD-6020T(180)
L2045998-07A	Vial HCl preserved	A	NA		3.6	Y	Absent		8260-NH(14)
L2045998-07B	Vial HCl preserved	A	NA		3.6	Y	Absent		8260-NH(14)
L2045998-07C	Vial HCl preserved	A	NA		3.6	Y	Absent		8260-NH(14)
L2045998-07D	Amber 250ml unpreserved	A	7	7	3.6	Y	Absent		A2-14-DIOXANESIM-PPB(7)
L2045998-07E	Amber 250ml unpreserved	A	7	7	3.6	Y	Absent		A2-14-DIOXANESIM-PPB(7)
L2045998-07F	Plastic 250ml HNO3 preserved	A	<2	<2	3.6	Y	Absent		CR-6020T(180),NI-6020T(180),PB-6020T(180),MN-6020T(180),AS-6020T(180),CD-6020T(180)
L2045998-08A	Vial HCl preserved	A	NA		3.6	Y	Absent		8260-NH(14)
L2045998-08B	Vial HCl preserved	A	NA		3.6	Y	Absent		8260-NH(14)
L2045998-08C	Vial HCl preserved	A	NA		3.6	Y	Absent		8260-NH(14)
L2045998-08D	Plastic 250ml HNO3 preserved	A	<2	<2	3.6	Y	Absent		NI-6020T(180),CR-6020T(180),PB-6020T(180),MN-6020T(180),AS-6020T(180),CD-6020T(180)
L2045998-09A	Vial HCl preserved	A	NA		3.6	Y	Absent		8260-NH(14)
L2045998-09B	Vial HCl preserved	A	NA		3.6	Y	Absent		8260-NH(14)
L2045998-09C	Vial HCl preserved	A	NA		3.6	Y	Absent		8260-NH(14)
L2045998-09D	Amber 250ml unpreserved	A	7	7	3.6	Y	Absent		A2-14-DIOXANESIM-PPB(7)
L2045998-09E	Amber 250ml unpreserved	A	7	7	3.6	Y	Absent		A2-14-DIOXANESIM-PPB(7)
L2045998-10A	Vial HCl preserved	A	NA		3.6	Y	Absent		8260-NH(14)
L2045998-10B	Vial HCl preserved	A	NA		3.6	Y	Absent		8260-NH(14)
L2045998-10C	Vial HCl preserved	A	NA		3.6	Y	Absent		8260-NH(14)

*Values in parentheses indicate holding time in days

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Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2045998-10D	Amber 250ml unpreserved	A	7	7	3.6	Y	Absent		A2-14-DIOXANESIM-PPB(7)
L2045998-10E	Amber 250ml unpreserved	A	7	7	3.6	Y	Absent		A2-14-DIOXANESIM-PPB(7)

*Values in parentheses indicate holding time in days

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2045998

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GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

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Footnotes

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

Terms

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

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

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

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

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

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

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

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

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

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

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

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

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

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

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

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

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

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

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

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

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

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

Report Format: Data Usability Report

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Data Qualifiers

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

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

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REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

LIMITATION OF LIABILITIES

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

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

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Certification Information

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

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
EPA TO-12 Non-methane organics
EPA 3C Fixed gases
Biological Tissue Matrix: EPA 3050B

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

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

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

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

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193

Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 10/22/20

ALPHA Job #: L2045998

DRAFT

Project Information

Project Name: NH Plating Company Superfund

Project Location: Merrimack, NH

Project #: 04.0190987.11

Project Manager: Michael Summerlin

ALPHA Quote #: NH DES Contract No. 1068635

Client Information

Client: NHDES

Address: 29 Hazen Drive

Concord, NH 03302

Phone: 603-271-3549

Fax:

Email: michael.summerlinjr@des.nh.gov

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information/Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #: 2589-00"4"

Regulatory Requirements/Report Limits

State/Fed Program	Criteria
NHDES	Sampling and Analysis Plan limits

Other Project Specific Requirements/Comments/Detection Limits:

Please also email login receipts and lab reports to tanya.justham@gza.com. Please provide excel files formatted for upload to the NHDES EMD and for GZA EQUIS upload.

ANALYSIS

SAMPLE HANDLING

Filtration: ☐ Done ☒ Not Needed ☐ Lab to do

Preservation: ☐ Lab to do (Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	VOCs 8260 NHDES List	1,4-dioxane	Total metals (As, Cd, Cr, Pb, Mn & Ni)	Cyanide									Sample Specific Comments	
45998-01	TRIP BLANK	10-22-20	0730	AQ	MB	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		7
-02	NHP_JCMW-2D	10-22-20	1210	AQ	MB	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		5
-03	NHP_JCMW-2D DUP	10-22-20	1210	AQ	MB	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		5
-04	NHP_JCMW-4D	10-22-20	0935	AQ	MB	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		5
-05	NHP_MW-108S	10-22-20	0920	AQ	MM	☑	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐		6
-06	NHP_MW-108S DUP	10-22-20	0920	AQ	MM	☑	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐		6
-07	NHP_MW-304D	10-22-20	1245	AQ	MM	☑	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐		6
-08	NHP_MW-303S	10-22-20	1020	AQ	ED	☑	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐		4
-09	NHP_MW-303D	10-22-20	0910	AQ	ED	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		3
-10	NHP_MW-106R	10-22-20	1240	AQ	ED	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		5
					Container Type	V	A	P	P			-	-	-	-	-	-		
					Preservative	B	A	C	E			-	-	-	-	-	-		

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	10-22-20/1640	[signature]	10/22/20 1640
[signature]	10/22/20 1800	Rob Maestro	10/22/20 1800
Rob Maestro	10/22/20 2000	[signature]	10/22/20 2000

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

FORM NO. 01-01 (rev 3-Jan-19)

DRAFT

ANALYTICAL REPORT

Lab Number:	L2046371
Client:	GZA GeoEnvironmental, Inc. / NHDES PO Box 95 29 Hazen Drive Concord, NH 03302-0095
ATTN:	Michael Summerlin
Phone:	(603) 271-3649
Project Name:	NH PLATING COMPANY SUPERFUND
Project Number:	04.0190987.11
Report Date:	11/06/20

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

Certifications & Approvals: MA (M-MA030), NH NELAP (2062), CT (PH-0141), DoD (L2474), FL (E87814), IL (200081), LA (85084), ME (MA00030), MD (350), NJ (MA015), NY (11627), NC (685), OH (CL106), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #P330-17-00150), USFWS (Permit #206964).

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11

Lab Number: L2046371
Report Date: 11/06/20

DRAFT

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2046371-01	TRIP BLANK	WATER	MERRIMACK, NH	10/22/20 07:30	10/23/20
L2046371-02	NHP_JCMW-4D	WATER	MERRIMACK, NH	10/22/20 09:35	10/23/20
L2046371-03	NHP_MW-106R	WATER	MERRIMACK, NH	10/22/20 12:40	10/23/20
L2046371-04	NHP_MW-303S	WATER	MERRIMACK, NH	10/22/20 10:20	10/23/20
L2046371-05	NHP_MW-108S	WATER	MERRIMACK, NH	10/22/20 09:20	10/23/20
L2046371-06	NHP_MW-108S DUP	WATER	MERRIMACK, NH	10/22/20 09:20	10/23/20
L2046371-07	NHP_MW-304D	WATER	MERRIMACK, NH	10/22/20 12:45	10/23/20
L2046371-08	EQUIP BLANK	WATER	MERRIMACK, NH	10/22/20 11:15	10/23/20
L2046371-09	NHP_MW-404SA	WATER	MERRIMACK, NH	10/23/20 11:25	10/23/20
L2046371-10	NHP_MW-204S	WATER	MERRIMACK, NH	10/23/20 09:25	10/23/20
L2046371-11	NHP_MW-308D	WATER	MERRIMACK, NH	10/23/20 09:45	10/23/20
L2046371-12	NHP_MW-308S	WATER	MERRIMACK, NH	10/23/20 11:00	10/23/20
L2046371-13	NHP_MW-308S DUP	WATER	MERRIMACK, NH	10/23/20 11:00	10/23/20

Project Name:	NH PLATING COMPANY SUPERFUND	**Lab Number:**	L2046371
Project Number:	04.0190987.11	**Report Date:**	11/06/20

DRAFT

Case Narrative

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

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

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

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

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

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

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046371
Project Number: 04.0190987.11 **Report Date:** 11/06/20

DRAFT

Case Narrative (continued)

Perfluorinated Alkyl Acids by Isotope Dilution

L2046371-01, -03, -05, -07, -08, and -13: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

L2046371-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, -12, and -13: The MeOH fraction of the extraction is reported for the following compounds: Perfluorooctanesulfonamide (FOSA), N-Methyl Perfluorooctane Sulfonamide (NMeFOSA), N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA), N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE), and N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE) due to better extraction efficiency of the Surrogates (Extracted Internal Standards).

WG1430214-1, WG1430214-2, WG1430214-3, WG1430214-4, and WG1430214-5: The MeOH fraction of the extraction is reported for the following compounds: Perfluorooctanesulfonamide (FOSA), N-Methyl Perfluorooctane Sulfonamide (NMeFOSA), N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA), N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE), and N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE) due to better extraction efficiency of the Surrogates (Extracted Internal Standards).

The WG1430214-2/-3 LCS/LCSD recoveries, associated with L2046371-01 through -13, are below the acceptance criteria for perfluorooctadecanoic acid (pfoda) (29%/38%); however, it has been identified as a "difficult" analyte. The results of the associated samples are reported.

WG1430214-3 and WG1430214-5: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

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

Authorized Signature: Susan E O'Neil Susan O' Neil

Title: Technical Director/Representative Date: 11/06/20

DRAFT

ORGANICS

DRAFT

SEMIVOLATILES

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046371

Project Number: 04.0190987.11 **Report Date:** 11/06/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046371-01
Client ID: TRIP BLANK
Sample Location: MERRIMACK, NH

Date Collected: 10/22/20 07:30
Date Received: 10/23/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/05/20 00:53
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 11/04/20 11:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.86	--	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.86	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.86	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.86	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.86	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.86	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.86	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.86	--	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.86	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.86	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.86	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.86	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.86	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.86	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.86	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.86	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.86	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.86	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.86	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.86	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.86	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.86	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.86	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	46.4	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.86	--	1
Perfluorohexadecanoic Acid (PFHxDA)	ND		ng/l	3.72	--	1
Perfluorooctadecanoic Acid (PFODA)	ND		ng/l	3.72	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046371

Project Number: 04.0190987.11 **Report Date:** 11/06/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046371-01 Date Collected: 10/22/20 07:30

Client ID: TRIP BLANK Date Received: 10/23/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorododecane Sulfonic Acid (PFDoDS)	ND		ng/l	1.86	--	1
1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	ND		ng/l	4.64	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.86	--	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.86	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	89		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	113		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	92		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	73		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	85		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	88		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	92		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	84		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	78		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	78		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	83		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	76		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	84		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	60		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	81		40-144
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	72		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	76		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	69		33-143
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	**151**	Q	50-150
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	81		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046371

Project Number: 04.0190987.11 **Report Date:** 11/06/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046371-01
Client ID: TRIP BLANK
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/06/20 11:33
Analyst: SG

Date Collected: 10/22/20 07:30
Date Received: 10/23/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/04/20 11:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.86	--	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	18.6	--	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	18.6	--	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	46.4	--	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	46.4	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	78		1-87
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	64		50-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	63		50-150
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	85		50-150
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	78		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046371

Project Number: 04.0190987.11 **Report Date:** 11/06/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046371-02
Client ID: NHP_JCMW-4D
Sample Location: MERRIMACK, NH

Date Collected: 10/22/20 09:35
Date Received: 10/23/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/05/20 01:10
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 11/04/20 11:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	3.78		ng/l	1.86	--	1
Perfluoropentanoic Acid (PFPeA)	7.29		ng/l	1.86	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.86	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.86	--	1
Perfluorohexanoic Acid (PFHxA)	9.98		ng/l	1.86	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.86	--	1
Perfluoroheptanoic Acid (PFHpA)	9.38		ng/l	1.86	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.86	--	1
Perfluorooctanoic Acid (PFOA)	58.6	F	ng/l	1.86	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.86	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.86	--	1
Perfluorononanoic Acid (PFNA)	2.19		ng/l	1.86	--	1
Perfluorooctanesulfonic Acid (PFOS)	4.57	F	ng/l	1.86	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.86	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.86	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.86	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.86	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.86	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.86	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.86	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.86	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.86	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.86	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	46.5	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.86	--	1
Perfluorohexadecanoic Acid (PFHxDA)	ND		ng/l	3.72	--	1
Perfluorooctadecanoic Acid (PFODA)	ND		ng/l	3.72	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046371

Project Number: 04.0190987.11 **Report Date:** 11/06/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046371-02 Date Collected: 10/22/20 09:35

Client ID: NHP_JCMW-4D Date Received: 10/23/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorododecane Sulfonic Acid (PFDoDS)	ND		ng/l	1.86	--	1
1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	ND		ng/l	4.65	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.86	--	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.86	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	84		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	102		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	92		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	119		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	88		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	91		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	99		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	85		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	89		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	79		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	86		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	80		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	94		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	64		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	83		40-144
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	64		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	80		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	68		33-143
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	140		50-150
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	78		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046371

Project Number: 04.0190987.11 **Report Date:** 11/06/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046371-02
Client ID: NHP_JCMW-4D
Sample Location: MERRIMACK, NH

Sample Depth:

Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/06/20 11:40
Analyst: SG

Date Collected: 10/22/20 09:35
Date Received: 10/23/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/04/20 11:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.86	--	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	18.6	--	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	18.6	--	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	46.5	--	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	46.5	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	78		1-87
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	60		50-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	57		50-150
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	82		50-150
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	74		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046371

Project Number: 04.0190987.11 **Report Date:** 11/06/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046371-03
Client ID: NHP_MW-106R
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/05/20 01:43
Analyst: SG

Date Collected: 10/22/20 12:40
Date Received: 10/23/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/04/20 11:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.86	--	1
Perfluoropentanoic Acid (PFPeA)	2.73		ng/l	1.86	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.86	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.86	--	1
Perfluorohexanoic Acid (PFHxA)	2.98		ng/l	1.86	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.86	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.86	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.86	--	1
Perfluorooctanoic Acid (PFOA)	8.93	F	ng/l	1.86	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.86	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.86	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.86	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.86	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.86	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.86	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.86	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.86	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.86	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.86	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.86	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.86	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.86	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.86	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	46.6	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.86	--	1
Perfluorohexadecanoic Acid (PFHxDA)	ND		ng/l	3.73	--	1
Perfluorooctadecanoic Acid (PFODA)	ND		ng/l	3.73	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046371

Project Number: 04.0190987.11 **Report Date:** 11/06/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046371-03 Date Collected: 10/22/20 12:40

Client ID: NHP_MW-106R Date Received: 10/23/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorododecane Sulfonic Acid (PFDoDS)	ND		ng/l	1.86	--	1
1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	ND		ng/l	4.66	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.86	--	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.86	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	76		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	104		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	92		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	69		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	81		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	86		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	97		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	82		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	66		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	77		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	82		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	76		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	78		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	72		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	83		40-144
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	69		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	79		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	68		33-143
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	**153**	Q	50-150
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	86		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046371

Project Number: 04.0190987.11 **Report Date:** 11/06/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046371-03
Client ID: NHP_MW-106R
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/06/20 11:55
Analyst: SG

Date Collected: 10/22/20 12:40
Date Received: 10/23/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/04/20 11:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.86	--	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	18.6	--	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	18.6	--	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	46.6	--	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	46.6	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	80		1-87
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	62		50-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	62		50-150
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	88		50-150
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	81		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046371

Project Number: 04.0190987.11 **Report Date:** 11/06/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046371-04
Client ID: NHP_MW-303S
Sample Location: MERRIMACK, NH

Sample Depth:

Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/05/20 02:16
Analyst: SG

Date Collected: 10/22/20 10:20
Date Received: 10/23/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/04/20 11:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	8.34		ng/l	1.91	--	1
Perfluoropentanoic Acid (PFPeA)	12.0		ng/l	1.91	--	1
Perfluorobutanesulfonic Acid (PFBS)	2.90		ng/l	1.91	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.91	--	1
Perfluorohexanoic Acid (PFHxA)	15.4		ng/l	1.91	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.91	--	1
Perfluoroheptanoic Acid (PFHpA)	11.2		ng/l	1.91	--	1
Perfluorohexanesulfonic Acid (PFHxS)	1.97	F	ng/l	1.91	--	1
Perfluorooctanoic Acid (PFOA)	68.6	F	ng/l	1.91	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.91	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.91	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.91	--	1
Perfluorooctanesulfonic Acid (PFOS)	3.06	F	ng/l	1.91	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.91	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.91	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.91	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.91	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.91	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.91	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.91	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.91	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.91	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.91	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	47.7	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.91	--	1
Perfluorohexadecanoic Acid (PFHxDA)	ND		ng/l	3.81	--	1
Perfluorooctadecanoic Acid (PFODA)	ND		ng/l	3.81	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046371

Project Number: 04.0190987.11 **Report Date:** 11/06/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046371-04 Date Collected: 10/22/20 10:20

Client ID: NHP_MW-303S Date Received: 10/23/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorododecane Sulfonic Acid (PFDoDS)	ND		ng/l	1.91	--	1
1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	ND		ng/l	4.77	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.91	--	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.91	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	65		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	79		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	96		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	144		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	66		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	70		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	104		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	63		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	92		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	56		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	85		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	60		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	79		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	36		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	66		40-144
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	45		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	66		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	59		33-143
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	132		50-150
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	66		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046371

Project Number: 04.0190987.11 **Report Date:** 11/06/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046371-04
Client ID: NHP_MW-303S
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/06/20 12:09
Analyst: SG

Date Collected: 10/22/20 10:20
Date Received: 10/23/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/04/20 11:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.91	--	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	19.1	--	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	19.1	--	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	47.7	--	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	47.7	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	76		1-87
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	68		50-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	65		50-150
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	84		50-150
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	79		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046371

Project Number: 04.0190987.11 **Report Date:** 11/06/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046371-05
Client ID: NHP_MW-108S
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/05/20 02:33
Analyst: SG

Date Collected: 10/22/20 09:20
Date Received: 10/23/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/04/20 11:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	2.57		ng/l	1.81	--	1
Perfluoropentanoic Acid (PFPeA)	4.56		ng/l	1.81	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.81	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.81	--	1
Perfluorohexanoic Acid (PFHxA)	5.12		ng/l	1.81	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.81	--	1
Perfluoroheptanoic Acid (PFHpA)	4.20		ng/l	1.81	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.81	--	1
Perfluorooctanoic Acid (PFOA)	30.4	F	ng/l	1.81	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.81	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.81	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.81	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.81	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.81	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.81	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.81	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.81	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.81	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.81	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.81	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.81	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.81	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.81	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	45.2	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.81	--	1
Perfluorohexadecanoic Acid (PFHxDA)	ND		ng/l	3.62	--	1
Perfluorooctadecanoic Acid (PFODA)	ND		ng/l	3.62	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046371

Project Number: 04.0190987.11 **Report Date:** 11/06/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046371-05 Date Collected: 10/22/20 09:20

Client ID: NHP_MW-108S Date Received: 10/23/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorododecane Sulfonic Acid (PFDoDS)	ND		ng/l	1.81	--	1
1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	ND		ng/l	4.52	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.81	--	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.81	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	65		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	88		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	96		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	89		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	67		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	69		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	103		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	64		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	71		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	60		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	81		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	62		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	72		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	36		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	71		40-144
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	50		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	67		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	60		33-143
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	**160**	Q	50-150
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	62		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046371

Project Number: 04.0190987.11 **Report Date:** 11/06/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046371-05
Client ID: NHP_MW-108S
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/06/20 12:17
Analyst: SG

Date Collected: 10/22/20 09:20
Date Received: 10/23/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/04/20 11:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.81	--	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	18.1	--	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	18.1	--	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	45.2	--	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	45.2	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	79		1-87
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	69		50-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	65		50-150
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	87		50-150
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	82		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046371

Project Number: 04.0190987.11 **Report Date:** 11/06/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046371-06
Client ID: NHP_MW-108S DUP
Sample Location: MERRIMACK, NH

Date Collected: 10/22/20 09:20
Date Received: 10/23/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/05/20 02:49
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 11/04/20 11:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	2.66		ng/l	1.78	--	1
Perfluoropentanoic Acid (PFPeA)	5.01		ng/l	1.78	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.78	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.78	--	1
Perfluorohexanoic Acid (PFHxA)	5.59		ng/l	1.78	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.78	--	1
Perfluoroheptanoic Acid (PFHpA)	4.74		ng/l	1.78	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.78	--	1
Perfluorooctanoic Acid (PFOA)	34.8	F	ng/l	1.78	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.78	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.78	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.78	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.78	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.78	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.78	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.78	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.78	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.78	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.78	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.78	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.78	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.78	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.78	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	44.4	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.78	--	1
Perfluorohexadecanoic Acid (PFHxDA)	ND		ng/l	3.55	--	1
Perfluorooctadecanoic Acid (PFODA)	ND		ng/l	3.55	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046371

Project Number: 04.0190987.11 **Report Date:** 11/06/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046371-06 Date Collected: 10/22/20 09:20

Client ID: NHP_MW-108S DUP Date Received: 10/23/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorododecane Sulfonic Acid (PFDoDS)	ND		ng/l	1.78	--	1
1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	ND		ng/l	4.44	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.78	--	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.78	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	59		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	79		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	99		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	87		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	60		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	64		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	103		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	60		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	72		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	56		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	88		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	64		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	74		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	38		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	74		40-144
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	42		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	70		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	61		33-143
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	143		50-150
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	63		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046371

Project Number: 04.0190987.11 **Report Date:** 11/06/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046371-06
Client ID: NHP_MW-108S DUP
Sample Location: MERRIMACK, NH

Date Collected: 10/22/20 09:20
Date Received: 10/23/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/06/20 12:31
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 11/04/20 11:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.78	--	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	17.8	--	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	17.8	--	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	44.4	--	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	44.4	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	83		1-87
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	68		50-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	67		50-150
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	86		50-150
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	81		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046371

Project Number: 04.0190987.11 **Report Date:** 11/06/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046371-07
Client ID: NHP_MW-304D
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/05/20 03:06
Analyst: SG

Date Collected: 10/22/20 12:45
Date Received: 10/23/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/04/20 11:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	6.78		ng/l	1.80	--	1
Perfluoropentanoic Acid (PFPeA)	12.0		ng/l	1.80	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.80	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.80	--	1
Perfluorohexanoic Acid (PFHxA)	17.2		ng/l	1.80	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.80	--	1
Perfluoroheptanoic Acid (PFHpA)	15.7		ng/l	1.80	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.80	--	1
Perfluorooctanoic Acid (PFOA)	118	F	ng/l	1.80	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.80	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.80	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.80	--	1
Perfluorooctanesulfonic Acid (PFOS)	4.11	F	ng/l	1.80	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.80	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.80	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.80	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.80	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.80	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.80	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.80	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.80	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.80	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.80	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	45.1	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.80	--	1
Perfluorohexadecanoic Acid (PFHxDA)	ND		ng/l	3.61	--	1
Perfluorooctadecanoic Acid (PFODA)	ND		ng/l	3.61	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046371

Project Number: 04.0190987.11 **Report Date:** 11/06/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046371-07 Date Collected: 10/22/20 12:45

Client ID: NHP_MW-304D Date Received: 10/23/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorododecane Sulfonic Acid (PFDoDS)	ND		ng/l	1.80	--	1
1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	ND		ng/l	4.51	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.80	--	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.80	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	80		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	97		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	90		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	129		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	83		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	89		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	103		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	82		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	88		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	79		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	85		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	78		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	85		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	55		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	88		40-144
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	76		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	77		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	64		33-143
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	**170**	Q	50-150
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	80		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046371

Project Number: 04.0190987.11 **Report Date:** 11/06/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046371-07
Client ID: NHP_MW-304D
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/06/20 12:38
Analyst: SG

Date Collected: 10/22/20 12:45
Date Received: 10/23/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/04/20 11:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.80	--	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	18.0	--	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	18.0	--	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	45.1	--	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	45.1	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	77		1-87
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	63		50-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	58		50-150
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	83		50-150
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	78		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046371

Project Number: 04.0190987.11 **Report Date:** 11/06/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046371-08
Client ID: EQUIP BLANK
Sample Location: MERRIMACK, NH

Sample Depth:

Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/05/20 03:22
Analyst: SG

Date Collected: 10/22/20 11:15
Date Received: 10/23/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/04/20 11:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.76	--	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.76	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.76	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.76	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.76	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.76	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.76	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.76	--	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.76	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.76	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.76	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.76	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.76	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.76	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.76	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.76	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.76	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.76	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.76	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.76	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.76	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.76	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.76	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	44.0	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.76	--	1
Perfluorohexadecanoic Acid (PFHxDA)	ND		ng/l	3.52	--	1
Perfluorooctadecanoic Acid (PFODA)	ND		ng/l	3.52	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046371

Project Number: 04.0190987.11 **Report Date:** 11/06/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046371-08 Date Collected: 10/22/20 11:15

Client ID: EQUIP BLANK Date Received: 10/23/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorododecane Sulfonic Acid (PFDoDS)	ND		ng/l	1.76	--	1
1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	ND		ng/l	4.40	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.76	--	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.76	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	90		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	119		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	98		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	71		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	88		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	89		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	105		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	89		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	71		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	78		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	93		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	86		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	84		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	66		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	92		40-144
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	102		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	85		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	74		33-143
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	**168**	Q	50-150
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	104		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046371

Project Number: 04.0190987.11 **Report Date:** 11/06/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046371-08
Client ID: EQUIP BLANK
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/06/20 12:46
Analyst: SG

Date Collected: 10/22/20 11:15
Date Received: 10/23/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/04/20 11:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.76	--	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	17.6	--	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	17.6	--	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	44.0	--	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	44.0	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	77		1-87
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	57		50-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	56		50-150
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	82		50-150
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	75		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046371

Project Number: 04.0190987.11 **Report Date:** 11/06/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046371-09
Client ID: NHP_MW-404SA
Sample Location: MERRIMACK, NH

Date Collected: 10/23/20 11:25
Date Received: 10/23/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/05/20 03:39
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 11/04/20 11:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	7.92		ng/l	1.80	--	1
Perfluoropentanoic Acid (PFPeA)	16.4		ng/l	1.80	--	1
Perfluorobutanesulfonic Acid (PFBS)	3.00		ng/l	1.80	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.80	--	1
Perfluorohexanoic Acid (PFHxA)	20.8		ng/l	1.80	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.80	--	1
Perfluoroheptanoic Acid (PFHpA)	11.4		ng/l	1.80	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.80	--	1
Perfluorooctanoic Acid (PFOA)	76.7	F	ng/l	1.80	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.80	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.80	--	1
Perfluorononanoic Acid (PFNA)	2.01		ng/l	1.80	--	1
Perfluorooctanesulfonic Acid (PFOS)	3.81	F	ng/l	1.80	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.80	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.80	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.80	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.80	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.80	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.80	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.80	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.80	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.80	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.80	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	44.9	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.80	--	1
Perfluorohexadecanoic Acid (PFHxDA)	ND		ng/l	3.60	--	1
Perfluorooctadecanoic Acid (PFODA)	ND		ng/l	3.60	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046371

Project Number: 04.0190987.11 **Report Date:** 11/06/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046371-09 Date Collected: 10/23/20 11:25

Client ID: NHP_MW-404SA Date Received: 10/23/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorododecane Sulfonic Acid (PFDoDS)	ND		ng/l	1.80	--	1
1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	ND		ng/l	4.49	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.80	--	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.80	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	83		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	94		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	89		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	262		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	75		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	88		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	102		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	85		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	171		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	75		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	85		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	80		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	112		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	56		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	82		40-144
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	67		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	71		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	60		33-143
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	140		50-150
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	78		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046371

Project Number: 04.0190987.11 **Report Date:** 11/06/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046371-09
Client ID: NHP_MW-404SA
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/06/20 12:55
Analyst: SG

Date Collected: 10/23/20 11:25
Date Received: 10/23/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/04/20 11:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.80	--	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	18.0	--	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	18.0	--	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	44.9	--	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	44.9	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	71		1-87
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	65		50-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	65		50-150
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	73		50-150
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	68		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046371

Project Number: 04.0190987.11 **Report Date:** 11/06/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046371-10
Client ID: NHP_MW-204S
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/05/20 04:12
Analyst: SG

Date Collected: 10/23/20 09:25
Date Received: 10/23/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/04/20 11:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	9.77		ng/l	1.84	--	1
Perfluoropentanoic Acid (PFPeA)	24.0		ng/l	1.84	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.84	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.84	--	1
Perfluorohexanoic Acid (PFHxA)	32.4		ng/l	1.84	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.84	--	1
Perfluoroheptanoic Acid (PFHpA)	16.1		ng/l	1.84	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.84	--	1
Perfluorooctanoic Acid (PFOA)	88.6	F	ng/l	1.84	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.84	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.84	--	1
Perfluorononanoic Acid (PFNA)	3.04		ng/l	1.84	--	1
Perfluorooctanesulfonic Acid (PFOS)	3.45	F	ng/l	1.84	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.84	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.84	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.84	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.84	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.84	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.84	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.84	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.84	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.84	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.84	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	46.0	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.84	--	1
Perfluorohexadecanoic Acid (PFHxDA)	ND		ng/l	3.68	--	1
Perfluorooctadecanoic Acid (PFODA)	ND		ng/l	3.68	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046371

Project Number: 04.0190987.11 **Report Date:** 11/06/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046371-10 Date Collected: 10/23/20 09:25

Client ID: NHP_MW-204S Date Received: 10/23/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorododecane Sulfonic Acid (PFDoDS)	ND		ng/l	1.84	--	1
1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	ND		ng/l	4.60	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.84	--	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.84	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	73		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	86		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	90		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	121		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	74		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	78		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	100		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	69		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	79		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	59		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	85		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	63		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	63		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	43		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	68		40-144
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	48		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	64		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	61		33-143
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	141		50-150
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	75		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046371

Project Number: 04.0190987.11 **Report Date:** 11/06/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046371-10
Client ID: NHP_MW-204S
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/06/20 13:02
Analyst: SG

Date Collected: 10/23/20 09:25
Date Received: 10/23/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/04/20 11:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.84	--	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	18.4	--	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	18.4	--	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	46.0	--	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	46.0	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	78		1-87
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	62		50-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	62		50-150
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	83		50-150
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	79		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046371

Project Number: 04.0190987.11 **Report Date:** 11/06/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046371-11
Client ID: NHP_MW-308D
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/05/20 04:28
Analyst: SG

Date Collected: 10/23/20 09:45
Date Received: 10/23/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/04/20 11:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	8.25		ng/l	1.86	--	1
Perfluoropentanoic Acid (PFPeA)	14.9		ng/l	1.86	--	1
Perfluorobutanesulfonic Acid (PFBS)	2.06		ng/l	1.86	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.86	--	1
Perfluorohexanoic Acid (PFHxA)	22.9		ng/l	1.86	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.86	--	1
Perfluoroheptanoic Acid (PFHpA)	23.0		ng/l	1.86	--	1
Perfluorohexanesulfonic Acid (PFHxS)	2.14	F	ng/l	1.86	--	1
Perfluorooctanoic Acid (PFOA)	162	F	ng/l	1.86	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.86	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.86	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.86	--	1
Perfluorooctanesulfonic Acid (PFOS)	3.86	F	ng/l	1.86	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.86	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.86	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.86	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.86	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.86	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.86	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.86	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.86	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.86	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.86	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	46.6	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.86	--	1
Perfluorohexadecanoic Acid (PFHxDA)	ND		ng/l	3.73	--	1
Perfluorooctadecanoic Acid (PFODA)	ND		ng/l	3.73	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046371

Project Number: 04.0190987.11 **Report Date:** 11/06/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046371-11 Date Collected: 10/23/20 09:45

Client ID: NHP_MW-308D Date Received: 10/23/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorododecane Sulfonic Acid (PFDoDS)	ND		ng/l	1.86	--	1
1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	ND		ng/l	4.66	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.86	--	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.86	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	76		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	84		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	89		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	186		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	73		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	82		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	101		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	75		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	127		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	67		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	86		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	66		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	87		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	35		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	69		40-144
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	54		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	65		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	52		33-143
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	135		50-150
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	59		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046371

Project Number: 04.0190987.11 **Report Date:** 11/06/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046371-11
Client ID: NHP_MW-308D
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/06/20 13:09
Analyst: SG

Date Collected: 10/23/20 09:45
Date Received: 10/23/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/04/20 11:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.86	--	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	18.6	--	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	18.6	--	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	46.6	--	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	46.6	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	78		1-87
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	67		50-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	66		50-150
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	86		50-150
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	79		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046371

Project Number: 04.0190987.11 **Report Date:** 11/06/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046371-12
Client ID: NHP_MW-308S
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/05/20 04:45
Analyst: SG

Date Collected: 10/23/20 11:00
Date Received: 10/23/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/04/20 11:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	6.31		ng/l	1.93	--	1
Perfluoropentanoic Acid (PFPeA)	8.85		ng/l	1.93	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.93	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.93	--	1
Perfluorohexanoic Acid (PFHxA)	15.7		ng/l	1.93	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.93	--	1
Perfluoroheptanoic Acid (PFHpA)	28.8		ng/l	1.93	--	1
Perfluorohexanesulfonic Acid (PFHxS)	7.83		ng/l	1.93	--	1
Perfluorooctanoic Acid (PFOA)	506	F	ng/l	1.93	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.93	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.93	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.93	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.93	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.93	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.93	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.93	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.93	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.93	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.93	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.93	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.93	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.93	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.93	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	48.2	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.93	--	1
Perfluorohexadecanoic Acid (PFHxDA)	ND		ng/l	3.86	--	1
Perfluorooctadecanoic Acid (PFODA)	ND		ng/l	3.86	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046371

Project Number: 04.0190987.11 **Report Date:** 11/06/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046371-12 Date Collected: 10/23/20 11:00

Client ID: NHP_MW-308S Date Received: 10/23/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorododecane Sulfonic Acid (PFDoDS)	ND		ng/l	1.93	--	1
1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	ND		ng/l	4.82	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.93	--	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.93	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	83		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	86		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	85		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	195		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	80		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	93		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	99		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	81		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	155		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	77		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	82		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	68		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	102		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	42		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	63		40-144
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	48		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	57		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	53		33-143
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	146		50-150
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	75		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046371

Project Number: 04.0190987.11 **Report Date:** 11/06/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046371-12
Client ID: NHP_MW-308S
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/06/20 13:16
Analyst: SG

Date Collected: 10/23/20 11:00
Date Received: 10/23/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/04/20 11:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.93	--	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	19.3	--	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	19.3	--	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	48.2	--	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	48.2	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	65		1-87
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	61		50-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	62		50-150
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	67		50-150
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	62		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046371

Project Number: 04.0190987.11 **Report Date:** 11/06/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046371-13
Client ID: NHP_MW-308S DUP
Sample Location: MERRIMACK, NH

Date Collected: 10/23/20 11:00
Date Received: 10/23/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/05/20 05:02
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 11/04/20 11:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	6.04		ng/l	1.90	--	1
Perfluoropentanoic Acid (PFPeA)	8.38		ng/l	1.90	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.90	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.90	--	1
Perfluorohexanoic Acid (PFHxA)	15.4		ng/l	1.90	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.90	--	1
Perfluoroheptanoic Acid (PFHpA)	27.9		ng/l	1.90	--	1
Perfluorohexanesulfonic Acid (PFHxS)	8.08		ng/l	1.90	--	1
Perfluorooctanoic Acid (PFOA)	490	F	ng/l	1.90	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	3.26	F	ng/l	1.90	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.90	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.90	--	1
Perfluorooctanesulfonic Acid (PFOS)	2.13	F	ng/l	1.90	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.90	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.90	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.90	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.90	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.90	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.90	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.90	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.90	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.90	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.90	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	47.4	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.90	--	1
Perfluorohexadecanoic Acid (PFHxDA)	ND		ng/l	3.80	--	1
Perfluorooctadecanoic Acid (PFODA)	ND		ng/l	3.80	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046371

Project Number: 04.0190987.11 **Report Date:** 11/06/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046371-13 Date Collected: 10/23/20 11:00

Client ID: NHP_MW-308S DUP Date Received: 10/23/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorododecane Sulfonic Acid (PFDoDS)	ND		ng/l	1.90	--	1
1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	ND		ng/l	4.74	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.90	--	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.90	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	82		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	85		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	86		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	207		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	78		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	89		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	97		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	79		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	164		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	75		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	83		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	64		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	106		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	47		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	58		40-144
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	44		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	49		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	48		33-143
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	**154**	Q	50-150
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	67		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046371

Project Number: 04.0190987.11 **Report Date:** 11/06/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046371-13
Client ID: NHP_MW-308S DUP
Sample Location: MERRIMACK, NH

Date Collected: 10/23/20 11:00
Date Received: 10/23/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/06/20 13:23
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 11/04/20 11:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.90	--	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	19.0	--	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	19.0	--	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	47.4	--	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	47.4	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	58		1-87
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	54		50-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	56		50-150
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	64		50-150
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	57		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046371

Project Number: 04.0190987.11 **Report Date:** 11/06/20

DRAFT

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/05/20 00:03
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 11/04/20 11:20

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-13 Batch: WG1430214-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	--
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	--
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	--
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	2.00	--
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	--
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	2.00	--
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	--
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	--
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	--
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	--
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	--
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	--
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	--
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	2.00	--
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	--
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	--
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	--
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	--
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	--
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	--
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	--
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	50.0	--
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	2.00	--
Perfluorohexadecanoic Acid (PFHxDA)	ND		ng/l	4.00	--

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046371

Project Number: 04.0190987.11 **Report Date:** 11/06/20

DRAFT

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/05/20 00:03
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 11/04/20 11:20

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-13 Batch: WG1430214-1					
Perfluorooctadecanoic Acid (PFODA)	ND		ng/l	4.00	--
Perfluorododecane Sulfonic Acid (PFDoDS)	ND		ng/l	2.00	--
1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	ND		ng/l	5.00	--
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	2.00	--
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	2.00	--

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046371

Project Number: 04.0190987.11 **Report Date:** 11/06/20

DRAFT

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/05/20 00:03
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 11/04/20 11:20

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-13 Batch: WG1430214-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	86		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	109		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	91		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	73		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	85		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	90		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	96		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	86		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	72		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	82		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	91		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	86		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	86		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	74		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	93		40-144
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	76		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	84		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	75		33-143
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	137		50-150
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	90		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046371

Project Number: 04.0190987.11 **Report Date:** 11/06/20

DRAFT

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/06/20 11:12
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 11/04/20 11:20

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-13 Batch: WG1430214-1					
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	--
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	20.0	--
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	20.0	--
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	50.0	--
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	50.0	--

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	85		1-87
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	60		50-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	59		50-150
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	86		50-150
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	84		50-150

Lab Control Sample Analysis
Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11
Lab Number: L2046371
Report Date: 11/06/20

DRAFT

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-13 Batch: WG1430214-2 WG1430214-3

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorobutanoic Acid (PFBA)	113		112		67-148	1		30
Perfluoropentanoic Acid (PFPeA)	112		113		63-161	1		30
Perfluorobutanesulfonic Acid (PFBS)	105		110		65-157	5		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	131		123		37-219	6		30
Perfluorohexanoic Acid (PFHxA)	114		115		69-168	1		30
Perfluoropentanesulfonic Acid (PFPeS)	104		106		52-156	2		30
Perfluoroheptanoic Acid (PFHpA)	110		110		58-159	0		30
Perfluorohexanesulfonic Acid (PFHxS)	112		114		69-177	2		30
Perfluorooctanoic Acid (PFOA)	109		110		63-159	1		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	123		125		49-187	2		30
Perfluoroheptanesulfonic Acid (PFHpS)	122		115		61-179	6		30
Perfluorononanoic Acid (PFNA)	119		117		68-171	2		30
Perfluorooctanesulfonic Acid (PFOS)	121		119		52-151	2		30
Perfluorodecanoic Acid (PFDA)	110		111		63-171	1		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	124		128		56-173	3		30
Perfluorononanesulfonic Acid (PFNS)	122		112		48-150	9		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	108		120		60-166	11		30
Perfluoroundecanoic Acid (PFUnA)	108		106		60-153	2		30
Perfluorodecanesulfonic Acid (PFDS)	118		126		38-156	7		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	126		115		45-170	9		30
Perfluorododecanoic Acid (PFDoA)	116		114		67-153	2		30
Perfluorotridecanoic Acid (PFTrDA)	121		120		48-158	1		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND

Project Number: 04.0190987.11

Lab Number: L2046371

Report Date: 11/06/20

DRAFT

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-13 Batch: WG1430214-2 WG1430214-3								
Perfluorotetradecanoic Acid (PFTA)	114		112		59-182	2		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	92		78		50-150	16		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	119		116		50-150	3		30
Perfluorohexadecanoic Acid (PFHxDA)	117		115		50-150	2		30
Perfluorooctadecanoic Acid (PFODA)	**29**	Q	**38**	Q	50-150	27		30
Perfluorododecane Sulfonic Acid (PFDoDS)	125		122		50-150	2		30
1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	129		128		50-150	1		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	108		103		50-150	5		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	119		115		50-150	3		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND

Project Number: 04.0190987.11

Lab Number: L2046371

Report Date: 11/06/20

DRAFT

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

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-13 Batch: WG1430214-2 WG1430214-3

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	87		88		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	109		108		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	91		91		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	73		79		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	84		84		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	88		89		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	96		98		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	86		87		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	78		80		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	79		83		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	83		88		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	82		85		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	95		92		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	78		78		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	88		95		40-144
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	70		83		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	83		88		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	74		77		33-143
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	113		**151**	Q	50-150
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	89		87		50-150

Lab Control Sample Analysis

Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND

Project Number: 04.0190987.11

Lab Number: L2046371

Report Date: 11/06/20

DRAFT

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-13 Batch: WG1430214-2 WG1430214-3								
Perfluorooctanesulfonamide (FOSA)	108		106		46-170	2		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	104		103		50-150	1		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	103		102		50-150	1		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	98		93		50-150	5		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	113		109		50-150	4		30

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	83		84		1-87
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	61		63		50-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	60		64		50-150
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	85		87		50-150
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	79		81		50-150

Matrix Spike Analysis

Batch Quality Control

DRAFT

Project Name: NH PLATING COMPANY SUPERFUND

Project Number: 04.0190987.11

Lab Number: L2046371

Report Date: 11/06/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-13 QC Batch ID: WG1430214-4 QC Sample: L2046371-02 Client ID: NHP_JCMW-4D												
Perfluorobutanoic Acid (PFBA)	3.78	38	46.1	111		-	-		67-148	-		30
Perfluoropentanoic Acid (PFPeA)	7.29	38	50.4	113		-	-		63-161	-		30
Perfluorobutanesulfonic Acid (PFBS)	ND	33.7	36.9	109		-	-		65-157	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	35.6	44.2	124		-	-		37-219	-		30
Perfluorohexanoic Acid (PFHxA)	9.98	38	53.0	113		-	-		69-168	-		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	35.7	39.0	109		-	-		52-156	-		30
Perfluoroheptanoic Acid (PFHpA)	9.38	38	50.7	109		-	-		58-159	-		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	34.7	38.9	112		-	-		69-177	-		30
Perfluorooctanoic Acid (PFOA)	58.6F	38	99.2F	107		-	-		63-159	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	36.2	46.3F	128		-	-		49-187	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	36.2	42.2	117		-	-		61-179	-		30
Perfluorononanoic Acid (PFNA)	2.19	38	46.7	117		-	-		68-171	-		30
Perfluorooctanesulfonic Acid (PFOS)	4.57F	35.2	44.1F	112		-	-		52-151	-		30
Perfluorodecanoic Acid (PFDA)	ND	38	43.0	113		-	-		63-171	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	36.5	42.2F	116		-	-		56-173	-		30
Perfluorononanesulfonic Acid (PFNS)	ND	36.5	38.5	105		-	-		48-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	38	55.2F	145		-	-		60-166	-		30
Perfluoroundecanoic Acid (PFUnA)	ND	38	41.4	109		-	-		60-153	-		30
Perfluorodecanesulfonic Acid (PFDS)	ND	36.6	39.0	106		-	-		38-156	-		30
Perfluorooctanesulfonamide (FOSA)	ND	38	41.0	108		-	-		46-170	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	38	45.3	119		-	-		45-170	-		30
Perfluorododecanoic Acid (PFDoA)	ND	38	42.3	111		-	-		67-153	-		30

Matrix Spike Analysis

Batch Quality Control

DRAFT

Project Name: NH PLATING COMPANY SUPERFUND ***Lab Number:*** L2046371

Project Number: 04.0190987.11 ***Report Date:*** 11/06/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-13 QC Batch ID: WG1430214-4 QC Sample: L2046371-02 Client ID: NHP_JCMW-4D												
Perfluorotridecanoic Acid (PFTrDA)	ND	38	43.6	115		-	-		48-158	-		30
Perfluorotetradecanoic Acid (PFTA)	ND	38	42.7	112		-	-		59-182	-		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND	760	574	76		-	-		50-150	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	35.9	42.5	119		-	-		50-150	-		30
Perfluorohexadecanoic Acid (PFHxDA)	ND	38	43.2	114		-	-		50-150	-		30
Perfluorooctadecanoic Acid (PFODA)	ND	38	22.6	60		-	-		50-150	-		30
Perfluorododecane Sulfonic Acid (PFDoDS)	ND	36.8	40.3	110		-	-		50-150	-		30
1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	ND	36.6	48.1	131		-	-		50-150	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	35.4	34.9	99		-	-		50-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	35.9	38.1	106		-	-		50-150	-		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND	380	441	116		-	-		50-150	-		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND	380	426F	112		-	-		50-150	-		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND	380	388	102		-	-		50-150	-		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND	380	440	116		-	-		50-150	-		30

Surrogate (Extracted Internal Standard)	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	86				7-170
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	112				1-313
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	79				1-244

Matrix Spike Analysis

Batch Quality Control

DRAFT

Project Name: NH PLATING COMPANY SUPERFUND ***Lab Number:*** L2046371

Project Number: 04.0190987.11 ***Report Date:*** 11/06/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-13 QC Batch ID: WG1430214-4 QC Sample: L2046371-02 Client ID: NHP_JCMW-4D												

Surrogate (Extracted Internal Standard)	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	138				50-150
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	74				50-150
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	78				50-150
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	62				23-146
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	50				1-181
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	61				50-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	62				50-150
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	80				40-144
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	75				38-144
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	85				21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	89				30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	98				47-153
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	73				24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	67				33-143
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	75				50-150
Perfluoro[13C4]Butanoic Acid (MPFBA)	81				2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	100				16-173
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	77				1-87
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	85				42-146
Perfluoro[13C8]Octanoic Acid (M8PFOA)	83				36-149
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	76				34-146
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	91				31-159

Lab Duplicate Analysis
Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11
Lab Number: L2046371
Report Date: 11/06/20

DRAFT

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-13 QC Batch ID: WG1430214-5 QC Sample: L2046371-03 Client ID: NHP_MW-106R						
Perfluorobutanoic Acid (PFBA)	ND	ND	ng/l	NC		30
Perfluoropentanoic Acid (PFPeA)	2.73	2.84	ng/l	4		30
Perfluorobutanesulfonic Acid (PFBS)	ND	ND	ng/l	NC		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	ND	ng/l	NC		30
Perfluorohexanoic Acid (PFHxA)	2.98	3.01	ng/l	1		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	ND	ng/l	NC		30
Perfluoroheptanoic Acid (PFHpA)	ND	ND	ng/l	NC		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	ND	ng/l	NC		30
Perfluorooctanoic Acid (PFOA)	8.93F	8.77F	ng/l	2		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	ND	ng/l	NC		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	ND	ng/l	NC		30
Perfluorononanoic Acid (PFNA)	ND	ND	ng/l	NC		30
Perfluorooctanesulfonic Acid (PFOS)	ND	2.22F	ng/l	NC		30
Perfluorodecanoic Acid (PFDA)	ND	ND	ng/l	NC		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	ND	ng/l	NC		30
Perfluorononanesulfonic Acid (PFNS)	ND	ND	ng/l	NC		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	ND	ng/l	NC		30
Perfluoroundecanoic Acid (PFUnA)	ND	ND	ng/l	NC		30
Perfluorodecanesulfonic Acid (PFDS)	ND	ND	ng/l	NC		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	ND	ng/l	NC		30

Lab Duplicate Analysis
Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11
Lab Number: L2046371
Report Date: 11/06/20

DRAFT

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-13 QC Batch ID: WG1430214-5 QC Sample: L2046371-03 Client ID: NHP_MW-106R						
Perfluorododecanoic Acid (PFDoA)	ND	ND	ng/l	NC		30
Perfluorotridecanoic Acid (PFTrDA)	ND	ND	ng/l	NC		30
Perfluorotetradecanoic Acid (PFTA)	ND	ND	ng/l	NC		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND	ND	ng/l	NC		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	ND	ng/l	NC		30
Perfluorohexadecanoic Acid (PFHxDA)	ND	ND	ng/l	NC		30
Perfluorooctadecanoic Acid (PFODA)	ND	ND	ng/l	NC		30
Perfluorododecane Sulfonic Acid (PFDoDS)	ND	ND	ng/l	NC		30
1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	ND	ND	ng/l	NC		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	ND	ng/l	NC		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	ND	ng/l	NC		30

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	76		70		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	104		97		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	92		93		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	69		70		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	81		75		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	86		80		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	97		97		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	82		79		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	66		57		1-244

Lab Duplicate Analysis

Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND

Project Number: 04.0190987.11

Lab Number: L2046371

Report Date: 11/06/20

DRAFT

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-13 QC Batch ID: WG1430214-5 QC Sample: L2046371-03 Client ID: NHP_MW-106R

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	77		68		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	82		74		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	76		64		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	78		62		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	72		57		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	83		69		40-144
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	69		56		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	79		64		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	68		49		33-143
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	**153**	Q	**165**	Q	50-150
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	86		62		50-150

Lab Duplicate Analysis

Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND

Project Number: 04.0190987.11

Lab Number: L2046371

Report Date: 11/06/20

DRAFT

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-13 QC Batch ID: WG1430214-5 QC Sample: L2046371-03 Client ID: NHP_MW-106R						
Perfluorooctanesulfonamide (FOSA)	ND	ND	ng/l	NC		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND	ND	ng/l	NC		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND	ND	ng/l	NC		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND	ND	ng/l	NC		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND	ND	ng/l	NC		30

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	80		69		1-87
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	62		56		50-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	62		56		50-150
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	88		77		50-150
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	81		72		50-150

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11

Lab Number: L2046371
Report Date: 11/06/20

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Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2046371-01A	Plastic 250ml unpreserved	A	NA		2.1	Y	Absent		A2-537-ISOTOPE-36(14)
L2046371-02A	Plastic 250ml unpreserved	A	NA		2.1	Y	Absent		A2-537-ISOTOPE-36(14)
L2046371-02B	Plastic 250ml unpreserved	A	NA		2.1	Y	Absent		A2-537-ISOTOPE-36(14)
L2046371-03A	Plastic 250ml unpreserved	A	NA		2.1	Y	Absent		A2-537-ISOTOPE-36(14)
L2046371-03B	Plastic 250ml unpreserved	A	NA		2.1	Y	Absent		A2-537-ISOTOPE-36(14)
L2046371-04A	Plastic 250ml unpreserved	A	NA		2.1	Y	Absent		A2-537-ISOTOPE-36(14)
L2046371-04B	Plastic 250ml unpreserved	A	NA		2.1	Y	Absent		A2-537-ISOTOPE-36(14)
L2046371-05A	Plastic 250ml unpreserved	A	NA		2.1	Y	Absent		A2-537-ISOTOPE-36(14)
L2046371-05B	Plastic 250ml unpreserved	A	NA		2.1	Y	Absent		A2-537-ISOTOPE-36(14)
L2046371-06A	Plastic 250ml unpreserved	A	NA		2.1	Y	Absent		A2-537-ISOTOPE-36(14)
L2046371-06B	Plastic 250ml unpreserved	A	NA		2.1	Y	Absent		A2-537-ISOTOPE-36(14)
L2046371-07A	Plastic 250ml unpreserved	A	NA		2.1	Y	Absent		A2-537-ISOTOPE-36(14)
L2046371-07B	Plastic 250ml unpreserved	A	NA		2.1	Y	Absent		A2-537-ISOTOPE-36(14)
L2046371-08A	Plastic 250ml unpreserved	A	NA		2.1	Y	Absent		A2-537-ISOTOPE-36(14)
L2046371-08B	Plastic 250ml unpreserved	A	NA		2.1	Y	Absent		A2-537-ISOTOPE-36(14)
L2046371-09A	Plastic 250ml unpreserved	A	NA		2.1	Y	Absent		A2-537-ISOTOPE-36(14)
L2046371-09B	Plastic 250ml unpreserved	A	NA		2.1	Y	Absent		A2-537-ISOTOPE-36(14)
L2046371-10A	Plastic 250ml unpreserved	A	NA		2.1	Y	Absent		A2-537-ISOTOPE-36(14)
L2046371-10B	Plastic 250ml unpreserved	A	NA		2.1	Y	Absent		A2-537-ISOTOPE-36(14)
L2046371-11A	Plastic 250ml unpreserved	A	NA		2.1	Y	Absent		A2-537-ISOTOPE-36(14)
L2046371-11B	Plastic 250ml unpreserved	A	NA		2.1	Y	Absent		A2-537-ISOTOPE-36(14)
L2046371-12A	Plastic 250ml unpreserved	A	NA		2.1	Y	Absent		A2-537-ISOTOPE-36(14)
L2046371-12B	Plastic 250ml unpreserved	A	NA		2.1	Y	Absent		A2-537-ISOTOPE-36(14)

*Values in parentheses indicate holding time in days

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11

Lab Number: L2046371
Report Date: 11/06/20

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Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2046371-13A	Plastic 250ml unpreserved	A	NA		2.1	Y	Absent		A2-537-ISOTOPE-36(14)
L2046371-13B	Plastic 250ml unpreserved	A	NA		2.1	Y	Absent		A2-537-ISOTOPE-36(14)

*Values in parentheses indicate holding time in days

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11

Lab Number: L2046371
Report Date: 11/06/20

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PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
PERFLUOROALKYL CARBOXYLIC ACIDS (PFCAs)		
Perfluorooctadecanoic Acid	PFODA	16517-11-6
Perfluorohexadecanoic Acid	PFHxDA	67905-19-5
Perfluorotetradecanoic Acid	PFTA	376-06-7
Perfluorotridecanoic Acid	PFTrDA	72629-94-8
Perfluorododecanoic Acid	PFDoA	307-55-1
Perfluoroundecanoic Acid	PFUnA	2058-94-8
Perfluorodecanoic Acid	PFDA	335-76-2
Perfluorononanoic Acid	PFNA	375-95-1
Perfluorooctanoic Acid	PFOA	335-67-1
Perfluoroheptanoic Acid	PFHpA	375-85-9
Perfluorohexanoic Acid	PFHxA	307-24-4
Perfluoropentanoic Acid	PFPeA	2706-90-3
Perfluorobutanoic Acid	PFBA	375-22-4
PERFLUOROALKYL SULFONIC ACIDS (PFSAs)		
Perfluorododecanesulfonic Acid	PFDoDS	79780-39-5
Perfluorodecanesulfonic Acid	PFDS	335-77-3
Perfluorononanesulfonic Acid	PFNS	68259-12-1
Perfluorooctanesulfonic Acid	PFOS	1763-23-1
Perfluoroheptanesulfonic Acid	PFHpS	375-92-8
Perfluorohexanesulfonic Acid	PFHxS	355-46-4
Perfluoropentanesulfonic Acid	PFPeS	2706-91-4
Perfluorobutanesulfonic Acid	PFBS	375-73-5
FLUOROTELOMERS		
1H,1H,2H,2H-Perfluorododecanesulfonic Acid	10:2FTS	120226-60-0
1H,1H,2H,2H-Perfluorodecanesulfonic Acid	8:2FTS	39108-34-4
1H,1H,2H,2H-Perfluorooctanesulfonic Acid	6:2FTS	27619-97-2
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	4:2FTS	757124-72-4
PERFLUOROALKANE SULFONAMIDES (FASAs)		
Perfluorooctanesulfonamide	FOSA	754-91-6
N-Ethyl Perfluorooctane Sulfonamide	NEtFOSA	4151-50-2
N-Methyl Perfluorooctane Sulfonamide	NMeFOSA	31506-32-8
PERFLUOROALKANE SULFONYL SUBSTANCES		
N-Ethyl Perfluorooctanesulfonamido Ethanol	NEtFOSE	1691-99-2
N-Methyl Perfluorooctanesulfonamido Ethanol	NMeFOSE	24448-09-7
N-Ethyl Perfluorooctanesulfonamidoacetic Acid	NEtFOSAA	2991-50-6
N-Methyl Perfluorooctanesulfonamidoacetic Acid	NMeFOSAA	2355-31-9
PER- and POLYFLUOROALKYL ETHER CARBOXYLIC ACIDS		
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid	HFPO-DA	13252-13-6
4,8-Dioxa-3h-Perfluorononanoic Acid	ADONA	919005-14-4
CHLORO-PERFLUOROALKYL SULFONIC ACIDS		
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid	11Cl-PF3OUdS	763051-92-9
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid	9Cl-PF3ONS	756426-58-1
PERFLUOROETHER SULFONIC ACIDS (PFESAs)		
Perfluoro(2-Ethoxyethane)Sulfonic Acid	PFEESA	113507-82-7
PERFLUOROETHER/POLYETHER CARBOXYLIC ACIDS (PFPCAs)		
Perfluoro-3-Methoxypropanoic Acid	PFMPA	377-73-1
Perfluoro-4-Methoxybutanoic Acid	PFMBA	863090-89-5
Nonafluoro-3,6-Dioxaheptanoic Acid	NFDHA	151772-58-6

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046371

Project Number: 04.0190987.11 **Report Date:** 11/06/20

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GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: Data Usability Report

Project Name:	NH PLATING COMPANY SUPERFUND	**Lab Number:**	L2046371
Project Number:	04.0190987.11	**Report Date:**	11/06/20

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Footnotes

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

Terms

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

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

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

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

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

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

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

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

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

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

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

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

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

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

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

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

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

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

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

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

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

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

Report Format: Data Usability Report

Project Name:	NH PLATING COMPANY SUPERFUND	**Lab Number:**	L2046371
Project Number:	04.0190987.11	**Report Date:**	11/06/20

DRAFT

Data Qualifiers

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

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046371
Project Number: 04.0190987.11 **Report Date:** 11/06/20

DRAFT

REFERENCES

134 Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS) using Isotope Dilution. Alpha SOP 23528.

LIMITATION OF LIABILITIES

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

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

DRAFT

Certification Information

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

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
EPA TO-12 Non-methane organics
EPA 3C Fixed gases
Biological Tissue Matrix: EPA 3050B

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

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

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

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

CHAIN OF CUSTODY

PAGE 1 OF 2

ALPHA ANALYTICAL

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

DRAFT

Date Rec'd in Lab: 10/24/20

ALPHA Job #: L2046371

Project Information

Project Name: NH Plating Company Superfund

Project Location: Merrimack, NH

Project #: 04.0190987.11

Project Manager: Michael Summerlin

ALPHA Quote #: NH DES Contract No. 1069635

Client Information

Client: NHDES

Address: 29 Hazen Drive

Concord, NH 03302

Phone: 603-271-3649

Fax:

Email: michael.summerlin@des.nh.gov

☐ These samples have been previously analyzed by Alpha

Turn Around Time

☒ Standard ☐ RUSH (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information

☐ FAX ☒ EMAIL ☒ ADEx ☐ Add'l Deliverables

Data Deliverables

Billing Information

☒ Same as Client Info PO #: 2589.00*

Regulatory Requirements/Report Limits

State/Fed Program: NHDES

Criteria: Sampling and Analysis Plan limits

Other Project Specific Requirements/Comments/Detection Limits:

Please also email login receipts and lab reports to tanya.justham@gza.com. Please provide excel files formatted for upload to the NHDES EMD and for GZA EQUIS upload.

ANALYSIS

SAMPLE HANDLING
Filtration: ☐ Done ☒ Not Needed ☐ Lab to do
Preservation: ☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PFAS (NHDES List)	Sample Specific Comments	Container Type
46371-01	TRIP BLANK	10-22-20	0730	AQ	MB	☒		1
02	NHP_JCMW-4D	10-22-20	0935	AQ	MB	☒		2
03	NHP_MW-106R	10-22-20	1240	AQ	ED	☒		2
04	NHP_MW-303S	10-22-20	1020	AQ	ED	☒		2
05	NHP_MW-108S	10-22-20	0920	AQ	MM	☒		2
06	NHP_MW-108S-DUP	10-22-20	0920	AQ	MM	☒		2
07	NHP_MW-304D	10-22-20	1245	AQ	MM	☒		2
08	EQUIP BLANK	10-22-20	1115	AQ	MM	☒	[illegible]	2
09	NHP_MW-404SA	10-23-20	1125	AQ	MM	☒		2
10	NHP_MW-204S	10-23-20	0925	AQ	MM	☒		2

Container Type: P
Preservative: A

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	10-23-20/1920	[signature] AAL LAROCHE	10/23/20 1920
Rob Maeyto	10/23/20 2145	[signature] Rob Maeyto	10-23-20 1945
[signature]	10/24/20 0815	[signature]	10/23/20 2145
[signature]	10-24-20 10:01	[signature]	10-24-20 8:15
		[signature]	10/24/20 10:01

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

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CHAIN OF CUSTODY

PAGE 2 OF 2

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193

Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 10/24/20

ALPHA Job #: L2046371

Project Information

Project Name: NH Paving Company Superfund

Project Location: Merrimack, NH

Project #: 04.0193987.11

Project Manager: Michael Summerlin

ALPHA Quote #: NH DES Contract No. 1068535

Report Information - Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client Info PO #: 2589-00*

Regulatory Requirements/Report Limits

Standard Program: NHDES

Criteria: Sampling and Analysis Plan limits

Client Information

Client: NHDES

Address: 29 Hazen Drive

Concord, NH 03302

Phone: 603-271-3646

Fax:

Email: michael.summerlin@des.nh.gov

☐ These samples have been previously analyzed by Alpha

Turn Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

Please also email login receipts and lab reports to tanya.justhen@gza.com. Please provide excel files formatted for upload to the NHDES EMD and for GZA EQuIS upload.

ANALYSIS

PFAS (NHDES List)

SAMPLE HANDLING: Filtration: ☐ Done ☒ Not Needed ☐ Lab to do. Preservation: ☐ Lab to do. (Please specify below)

Sample Specific Comments

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PFAS (NHDES List)													
11	NHP_MW-308D	10-23-20	0945	AQ	ED	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		2
12	NHP_MW-308S	10-23-20	1100	AQ	ED	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		2
13	NHP_MW-308S DUP	10-23-20	1100	AQ	ED	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		2

MM 10-23-20

Container Type: P

Preservative: A

Relinquished By:	Date/Time	Received By:	Date/Time
Meyer Zak	10-23-20/1720	Julia LARCHE	10/23/20 1920
Rob Maestro 10/23/20 2145		Rob Maestro 10/23/20 1945	10/23/20 2145
		Riley Crenshaw	10-24-20
cc Sebear 10/24/20 0815			
Riley Crenshaw	10-24-20 10:00		10/24/20 10:01

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

DRAFT

ANALYTICAL REPORT

Lab Number:	L2046372
Client:	GZA GeoEnvironmental, Inc. / NHDES PO Box 95 29 Hazen Drive Concord, NH 03302-0095
ATTN:	Michael Summerlin
Phone:	(603) 271-3649
Project Name:	NH PLATING COMPANY SUPERFUND
Project Number:	04.0190987.11
Report Date:	11/02/20

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

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

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

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11

Lab Number: L2046372
Report Date: 11/02/20

DRAFT

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2046372-01	TRIP BLANK	WATER	MERRIMACK, NH	10/23/20 08:00	10/23/20
L2046372-02	NHP_MW-204S	WATER	MERRIMACK, NH	10/23/20 09:25	10/23/20
L2046372-03	NHP_MW-308D	WATER	MERRIMACK, NH	10/23/20 09:45	10/23/20
L2046372-04	NHP_MW-308S	WATER	MERRIMACK, NH	10/23/20 11:00	10/23/20
L2046372-05	NHP_MW-308S DUP	WATER	MERRIMACK, NH	10/23/20 11:00	10/23/20
L2046372-06	NHP_MW-404SA	WATER	MERRIMACK, NH	10/23/20 11:25	10/23/20

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046372
Project Number: 04.0190987.11 **Report Date:** 11/02/20

DRAFT

Case Narrative

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

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

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

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

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

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

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

Authorized Signature: Lisa Westerlind

Title: Technical Director/Representative Date: 11/02/20

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ORGANICS

DRAFT

VOLATILES

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046372

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046372-01
Client ID: TRIP BLANK
Sample Location: MERRIMACK, NH

Date Collected: 10/23/20 08:00
Date Received: 10/23/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 10/28/20 15:46
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046372

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046372-01 Date Collected: 10/23/20 08:00

Client ID: TRIP BLANK Date Received: 10/23/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	ND		ug/l	0.50	--	1
Trichloroethene	ND		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046372

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046372-01 Date Collected: 10/23/20 08:00

Client ID: TRIP BLANK Date Received: 10/23/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	98		70-130

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046372

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046372-02
Client ID: NHP_MW-204S
Sample Location: MERRIMACK, NH

Date Collected: 10/23/20 09:25
Date Received: 10/23/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 10/28/20 16:08
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	1.2		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	2.9		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046372

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046372-02 Date Collected: 10/23/20 09:25

Client ID: NHP_MW-204S Date Received: 10/23/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	ND		ug/l	0.50	--	1
Trichloroethene	3.9		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046372

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046372-02 Date Collected: 10/23/20 09:25

Client ID: NHP_MW-204S Date Received: 10/23/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	97		70-130

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046372

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046372-03
Client ID: NHP_MW-308D
Sample Location: MERRIMACK, NH

Date Collected: 10/23/20 09:45
Date Received: 10/23/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 10/28/20 16:30
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046372

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046372-03 Date Collected: 10/23/20 09:45

Client ID: NHP_MW-308D Date Received: 10/23/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	0.61		ug/l	0.50	--	1
Trichloroethene	0.80		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	0.61		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046372

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046372-03 Date Collected: 10/23/20 09:45

Client ID: NHP_MW-308D Date Received: 10/23/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	94		70-130

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046372

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046372-04
Client ID: NHP_MW-308S
Sample Location: MERRIMACK, NH

Date Collected: 10/23/20 11:00
Date Received: 10/23/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 10/28/20 16:52
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	13		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	0.81		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	3.6		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046372

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046372-04 Date Collected: 10/23/20 11:00

Client ID: NHP_MW-308S Date Received: 10/23/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	2.6		ug/l	0.50	--	1
Trichloroethene	110		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	2.6		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046372

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046372-04 Date Collected: 10/23/20 11:00

Client ID: NHP_MW-308S Date Received: 10/23/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	91		70-130

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046372

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046372-06
Client ID: NHP_MW-404SA
Sample Location: MERRIMACK, NH

Date Collected: 10/23/20 11:25
Date Received: 10/23/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 10/28/20 17:14
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	4.5		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	0.61		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046372

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046372-06 Date Collected: 10/23/20 11:25

Client ID: NHP_MW-404SA Date Received: 10/23/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	12		ug/l	0.50	--	1
Trichloroethene	0.62		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	12		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	6.9		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Isopropylbenzene	2.1		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046372

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046372-06 Date Collected: 10/23/20 11:25

Client ID: NHP_MW-404SA Date Received: 10/23/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	99		70-130

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046372

Project Number: 04.0190987.11 **Report Date:** 11/02/20

DRAFT

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 10/28/20 10:17
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-04,06 Batch: WG1427744-5					
Methylene chloride	ND		ug/l	3.0	--
1,1-Dichloroethane	ND		ug/l	0.75	--
Chloroform	ND		ug/l	0.75	--
Carbon tetrachloride	ND		ug/l	0.50	--
1,2-Dichloropropane	ND		ug/l	1.8	--
Dibromochloromethane	ND		ug/l	0.50	--
1,1,2-Trichloroethane	ND		ug/l	0.75	--
Tetrachloroethene	ND		ug/l	0.50	--
Chlorobenzene	ND		ug/l	0.50	--
Trichlorofluoromethane	ND		ug/l	2.5	--
1,2-Dichloroethane	ND		ug/l	0.50	--
1,1,1-Trichloroethane	ND		ug/l	0.50	--
Bromodichloromethane	ND		ug/l	0.50	--
trans-1,3-Dichloropropene	ND		ug/l	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
1,3-Dichloropropene, Total	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	2.5	--
Bromoform	ND		ug/l	2.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	0.75	--
Ethylbenzene	ND		ug/l	0.50	--
Chloromethane	ND		ug/l	2.5	--
Bromomethane	ND		ug/l	1.0	--
Vinyl chloride	ND		ug/l	1.0	--
Chloroethane	ND		ug/l	1.0	--
1,1-Dichloroethene	ND		ug/l	0.50	--
trans-1,2-Dichloroethene	ND		ug/l	0.75	--
1,2-Dichloroethene, Total	ND		ug/l	0.50	--

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046372

Project Number: 04.0190987.11 **Report Date:** 11/02/20

DRAFT

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 10/28/20 10:17
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-04,06 Batch: WG1427744-5					
Trichloroethene	ND		ug/l	0.50	--
1,2-Dichlorobenzene	ND		ug/l	2.5	--
1,3-Dichlorobenzene	ND		ug/l	2.5	--
1,4-Dichlorobenzene	ND		ug/l	2.5	--
Methyl tert butyl ether	ND		ug/l	1.0	--
p/m-Xylene	ND		ug/l	1.0	--
o-Xylene	ND		ug/l	1.0	--
Xylenes, Total	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	0.50	--
Dibromomethane	ND		ug/l	5.0	--
1,2,3-Trichloropropane	ND		ug/l	5.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	5.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	5.0	--
2-Butanone	ND		ug/l	5.0	--
4-Methyl-2-pentanone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	2.5	--
Tetrahydrofuran	ND		ug/l	5.0	--
2,2-Dichloropropane	ND		ug/l	2.5	--
1,2-Dibromoethane	ND		ug/l	2.0	--
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--
Bromobenzene	ND		ug/l	2.5	--
n-Butylbenzene	ND		ug/l	0.50	--
sec-Butylbenzene	ND		ug/l	0.50	--
tert-Butylbenzene	ND		ug/l	2.5	--
o-Chlorotoluene	ND		ug/l	2.5	--
p-Chlorotoluene	ND		ug/l	2.5	--

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046372

Project Number: 04.0190987.11 **Report Date:** 11/02/20

DRAFT

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 10/28/20 10:17
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-04,06 Batch: WG1427744-5					
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--
Hexachlorobutadiene	ND		ug/l	0.50	--
Isopropylbenzene	ND		ug/l	0.50	--
p-Isopropyltoluene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	2.5	--
n-Propylbenzene	ND		ug/l	0.50	--
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--
Ethyl ether	ND		ug/l	2.5	--
Isopropyl Ether	ND		ug/l	2.0	--
Tert-Butyl Alcohol	ND		ug/l	10	--
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--
1,4-Dioxane	ND		ug/l	250	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	103		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11
Lab Number: L2046372
Report Date: 11/02/20

DRAFT

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04,06 Batch: WG1427744-3 WG1427744-4								
Methylene chloride	95		96		70-130	1		20
1,1-Dichloroethane	100		96		70-130	4		20
Chloroform	100		100		70-130	0		20
Carbon tetrachloride	98		100		63-132	2		20
1,2-Dichloropropane	98		99		70-130	1		20
Dibromochloromethane	84		87		63-130	4		20
1,1,2-Trichloroethane	95		96		70-130	1		20
Tetrachloroethene	**68**	Q	**66**	Q	70-130	3		20
Chlorobenzene	100		100		75-130	0		25
Trichlorofluoromethane	110		110		62-150	0		20
1,2-Dichloroethane	97		100		70-130	3		20
1,1,1-Trichloroethane	100		100		67-130	0		20
Bromodichloromethane	90		90		67-130	0		20
trans-1,3-Dichloropropene	86		87		70-130	1		20
cis-1,3-Dichloropropene	87		88		70-130	1		20
1,1-Dichloropropene	110		110		70-130	0		20
Bromoform	71		69		54-136	3		20
1,1,2,2-Tetrachloroethane	90		91		67-130	1		20
Benzene	100		100		70-130	0		25
Toluene	100		100		70-130	0		25
Ethylbenzene	110		100		70-130	10		20
Chloromethane	80		79		64-130	1		20
Bromomethane	98		100		39-139	2		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11
Lab Number: L2046372
Report Date: 11/02/20

DRAFT

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04,06 Batch: WG1427744-3 WG1427744-4								
Vinyl chloride	100		100		55-140	0		20
Chloroethane	110		120		55-138	9		20
1,1-Dichloroethene	99		100		61-145	1		25
trans-1,2-Dichloroethene	96		95		70-130	1		20
Trichloroethene	98		98		70-130	0		25
1,2-Dichlorobenzene	100		100		70-130	0		20
1,3-Dichlorobenzene	110		100		70-130	10		20
1,4-Dichlorobenzene	100		100		70-130	0		20
Methyl tert butyl ether	88		90		63-130	2		20
p/m-Xylene	105		105		70-130	0		20
o-Xylene	110		95		70-130	15		20
cis-1,2-Dichloroethene	99		99		70-130	0		20
Dibromomethane	91		94		70-130	3		20
1,2,3-Trichloropropane	88		90		64-130	2		20
Styrene	105		100		70-130	5		20
Dichlorodifluoromethane	88		88		36-147	0		20
Acetone	90		100		58-148	11		20
Carbon disulfide	95		99		51-130	4		20
2-Butanone	81		82		63-138	1		20
4-Methyl-2-pentanone	70		75		59-130	7		20
2-Hexanone	67		74		57-130	10		20
Bromochloromethane	91		94		70-130	3		20
Tetrahydrofuran	72		59		58-130	20		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11
Lab Number: L2046372
Report Date: 11/02/20

DRAFT

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04,06 Batch: WG1427744-3 WG1427744-4								
2,2-Dichloropropane	97		96		63-133	1		20
1,2-Dibromoethane	89		90		70-130	1		20
1,1,1,2-Tetrachloroethane	99		96		64-130	3		20
Bromobenzene	100		99		70-130	1		20
n-Butylbenzene	110		110		53-136	0		20
sec-Butylbenzene	120		110		70-130	9		20
tert-Butylbenzene	100		100		70-130	0		20
o-Chlorotoluene	110		100		70-130	10		20
p-Chlorotoluene	110		100		70-130	10		20
1,2-Dibromo-3-chloropropane	59		68		41-144	14		20
Hexachlorobutadiene	94		89		63-130	5		20
Isopropylbenzene	110		110		70-130	0		20
p-Isopropyltoluene	110		110		70-130	0		20
Naphthalene	79		80		70-130	1		20
n-Propylbenzene	110		110		69-130	0		20
1,2,3-Trichlorobenzene	86		85		70-130	1		20
1,2,4-Trichlorobenzene	92		90		70-130	2		20
1,3,5-Trimethylbenzene	110		110		64-130	0		20
1,3,5-Trichlorobenzene	100		97		70-130	3		20
1,2,4-Trimethylbenzene	110		100		70-130	10		20
Ethyl ether	87		88		59-134	1		20
Isopropyl Ether	97		98		70-130	1		20
Tert-Butyl Alcohol	**62**	Q	**68**	Q	70-130	9		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND

Project Number: 04.0190987.11

Lab Number: L2046372

Report Date: 11/02/20

DRAFT

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04,06 Batch: WG1427744-3 WG1427744-4								
Ethyl-Tert-Butyl-Ether	91		91		70-130	0		20
Tertiary-Amyl Methyl Ether	83		86		66-130	4		20
1,4-Dioxane	68		78		56-162	14		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	100		95		70-130
Toluene-d8	102		101		70-130
4-Bromofluorobenzene	98		98		70-130
Dibromofluoromethane	100		95		70-130

DRAFT

SEMIVOLATILES

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046372

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046372-02
Client ID: NHP_MW-204S
Sample Location: MERRIMACK, NH

Sample Depth:

Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/31/20 00:09
Analyst: PS

Date Collected: 10/23/20 09:25
Date Received: 10/23/20
Field Prep: Not Specified

Extraction Method: EPA 3510C
Extraction Date: 10/29/20 07:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	0.374		ug/l	0.144	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	47		15-110

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046372

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046372-03
Client ID: NHP_MW-308D
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/31/20 00:31
Analyst: PS

Date Collected: 10/23/20 09:45
Date Received: 10/23/20
Field Prep: Not Specified

Extraction Method: EPA 3510C
Extraction Date: 10/29/20 07:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	0.169		ug/l	0.144	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	49		15-110

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046372

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046372-04
Client ID: NHP_MW-308S
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/31/20 00:53
Analyst: PS

Date Collected: 10/23/20 11:00
Date Received: 10/23/20
Field Prep: Not Specified

Extraction Method: EPA 3510C
Extraction Date: 10/29/20 07:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	3.12		ug/l	0.144	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	54		15-110

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046372

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046372-06
Client ID: NHP_MW-404SA
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/31/20 01:15
Analyst: PS

Date Collected: 10/23/20 11:25
Date Received: 10/23/20
Field Prep: Not Specified

Extraction Method: EPA 3510C
Extraction Date: 10/29/20 07:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ug/l	0.134	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	44		15-110

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046372

Project Number: 04.0190987.11 **Report Date:** 11/02/20

DRAFT

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 10/30/20 16:49
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 10/29/20 07:45

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by 8270D-SIM - Mansfield Lab for sample(s): 02-04,06 Batch: WG1427910-1					
1,4-Dioxane	ND		ug/l	0.150	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	37		15-110

Lab Control Sample Analysis

Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND

Project Number: 04.0190987.11

Lab Number: L2046372

Report Date: 11/02/20

DRAFT

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by 8270D-SIM - Mansfield Lab Associated sample(s): 02-04,06 Batch: WG1427910-2 WG1427910-3								
1,4-Dioxane	108		106		40-140	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	32		36		15-110

DRAFT

METALS

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046372

Project Number: 04.0190987.11 **Report Date:** 11/02/20

DRAFT

SAMPLE RESULTS

Lab ID: L2046372-06 Date Collected: 10/23/20 11:25

Client ID: NHP_MW-404SA Date Received: 10/23/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	0.02304		mg/l	0.00050	--	1	10/27/20 22:10	10/28/20 16:16	EPA 3005A	1,6020B	AM
Cadmium, Total	0.00029		mg/l	0.00020	--	1	10/27/20 22:10	10/28/20 16:16	EPA 3005A	1,6020B	AM
Chromium, Total	ND		mg/l	0.00100	--	1	10/27/20 22:10	10/28/20 16:16	EPA 3005A	1,6020B	AM
Lead, Total	ND		mg/l	0.00100	--	1	10/27/20 22:10	10/28/20 16:16	EPA 3005A	1,6020B	AM
Manganese, Total	10.69		mg/l	0.05000	--	50	10/27/20 22:10	10/28/20 18:45	EPA 3005A	1,6020B	AM
Nickel, Total	0.03040		mg/l	0.00200	--	1	10/27/20 22:10	10/28/20 16:16	EPA 3005A	1,6020B	AM

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046372

Project Number: 04.0190987.11 **Report Date:** 11/02/20

DRAFT

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 06 Batch: WG1427125-1										
Arsenic, Total	ND		mg/l	0.00050	--	1	10/27/20 22:10	10/28/20 14:42	1,6020B	AM
Cadmium, Total	ND		mg/l	0.00020	--	1	10/27/20 22:10	10/28/20 14:42	1,6020B	AM
Chromium, Total	ND		mg/l	0.00100	--	1	10/27/20 22:10	10/28/20 14:42	1,6020B	AM
Lead, Total	ND		mg/l	0.00100	--	1	10/27/20 22:10	10/28/20 14:42	1,6020B	AM
Manganese, Total	ND		mg/l	0.00100	--	1	10/27/20 22:10	10/28/20 14:42	1,6020B	AM
Nickel, Total	ND		mg/l	0.00200	--	1	10/27/20 22:10	10/28/20 14:42	1,6020B	AM

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND

Project Number: 04.0190987.11

Lab Number: L2046372

Report Date: 11/02/20

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Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 06 Batch: WG1427125-2								
Arsenic, Total	100		-		80-120	-		
Cadmium, Total	102		-		80-120	-		
Chromium, Total	90		-		80-120	-		
Lead, Total	101		-		80-120	-		
Manganese, Total	96		-		80-120	-		
Nickel, Total	89		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11
Lab Number: L2046372
Report Date: 11/02/20

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Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 06 QC Batch ID: WG1427125-3 WG1427125-4 QC Sample: L2046533-03 Client ID: MS Sample												
Arsenic, Total	0.04122	0.12	0.1661	104		0.1679	106		75-125	1		20
Cadmium, Total	ND	0.051	0.05503	108		0.05499	108		75-125	0		20
Chromium, Total	0.00140	0.2	0.1842	91		0.1858	92		75-125	1		20
Lead, Total	0.00128	0.51	0.5406	106		0.5373	105		75-125	1		20
Manganese, Total	4.668	0.5	4.870	**40**	Q	4.938	**54**	Q	75-125	1		20
Nickel, Total	0.00203	0.5	0.4510	90		0.4479	89		75-125	1		20

DRAFT

INORGANICS
&
MISCELLANEOUS

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11

Lab Number: L2046372
Report Date: 11/02/20

DRAFT

SAMPLE RESULTS

Lab ID: L2046372-04
Client ID: NHP_MW-308S
Sample Location: MERRIMACK, NH

Date Collected: 10/23/20 11:00
Date Received: 10/23/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Cyanide, Total	0.023		mg/l	0.005	--	1	10/27/20 20:50	10/28/20 11:43	1,9010C/9012B	CR

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11

Lab Number: L2046372
Report Date: 11/02/20

DRAFT

SAMPLE RESULTS

Lab ID: L2046372-05
Client ID: NHP_MW-308S DUP
Sample Location: MERRIMACK, NH

Date Collected: 10/23/20 11:00
Date Received: 10/23/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Cyanide, Total	0.021		mg/l	0.005	--	1	10/27/20 20:50	10/28/20 11:44	1,9010C/9012B	CR

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11

Lab Number: L2046372
Report Date: 11/02/20

DRAFT

SAMPLE RESULTS

Lab ID: L2046372-06
Client ID: NHP_MW-404SA
Sample Location: MERRIMACK, NH

Date Collected: 10/23/20 11:25
Date Received: 10/23/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Cyanide, Total	0.005		mg/l	0.005	--	1	10/27/20 20:50	10/28/20 11:45	1,9010C/9012B	CR

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046372

Project Number: 04.0190987.11 **Report Date:** 11/02/20

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Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 04-06 Batch: WG1427249-1										
Cyanide, Total	ND		mg/l	0.005	--	1	10/27/20 20:50	10/28/20 11:27	1,9010C/9012B	CR

Lab Control Sample Analysis

Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND

Project Number: 04.0190987.11

Lab Number: L2046372

Report Date: 11/02/20

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Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 04-06 Batch: WG1427249-2 WG1427249-3								
Cyanide, Total	86		88		85-115	2		20

Matrix Spike Analysis
Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11
Lab Number: L2046372
Report Date: 11/02/20

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Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 04-06 QC Batch ID: WG1427249-4 WG1427249-5 QC Sample: L2046372-06 Client ID: NHP_MW-404SA												
Cyanide, Total	0.005	0.2	0.195	95		0.205	100		80-120	5		20

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11

Lab Number: L2046372
Report Date: 11/02/20

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Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2046372-01A	Vial HCl preserved	A	NA		3.5	Y	Absent		8260-NH(14)
L2046372-01B	Vial HCl preserved	A	NA		3.5	Y	Absent		8260-NH(14)
L2046372-02A	Vial HCl preserved	A	NA		3.5	Y	Absent		8260-NH(14)
L2046372-02B	Vial HCl preserved	A	NA		3.5	Y	Absent		8260-NH(14)
L2046372-02C	Vial HCl preserved	A	NA		3.5	Y	Absent		8260-NH(14)
L2046372-02D	Amber 250ml unpreserved	A	7	7	3.5	Y	Absent		A2-14-DIOXANESIM-PPB(7)
L2046372-02E	Amber 250ml unpreserved	A	7	7	3.5	Y	Absent		A2-14-DIOXANESIM-PPB(7)
L2046372-03A	Vial HCl preserved	A	NA		3.5	Y	Absent		8260-NH(14)
L2046372-03B	Vial HCl preserved	A	NA		3.5	Y	Absent		8260-NH(14)
L2046372-03C	Vial HCl preserved	A	NA		3.5	Y	Absent		8260-NH(14)
L2046372-03D	Amber 250ml unpreserved	A	7	7	3.5	Y	Absent		A2-14-DIOXANESIM-PPB(7)
L2046372-03E	Amber 250ml unpreserved	A	7	7	3.5	Y	Absent		A2-14-DIOXANESIM-PPB(7)
L2046372-04A	Vial HCl preserved	A	NA		3.5	Y	Absent		8260-NH(14)
L2046372-04B	Vial HCl preserved	A	NA		3.5	Y	Absent		8260-NH(14)
L2046372-04C	Vial HCl preserved	A	NA		3.5	Y	Absent		8260-NH(14)
L2046372-04D	Plastic 250ml NaOH preserved	A	>12	>12	3.5	Y	Absent		TCN-9010(14)
L2046372-04E	Amber 250ml unpreserved	A	7	7	3.5	Y	Absent		A2-14-DIOXANESIM-PPB(7)
L2046372-04F	Amber 250ml unpreserved	A	7	7	3.5	Y	Absent		A2-14-DIOXANESIM-PPB(7)
L2046372-05A	Plastic 250ml NaOH preserved	A	>12	>12	3.5	Y	Absent		TCN-9010(14)
L2046372-06A	Vial HCl preserved	A	NA		3.5	Y	Absent		8260-NH(14)
L2046372-06B	Vial HCl preserved	A	NA		3.5	Y	Absent		8260-NH(14)
L2046372-06C	Vial HCl preserved	A	NA		3.5	Y	Absent		8260-NH(14)

*Values in parentheses indicate holding time in days

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11

Lab Number: L2046372
Report Date: 11/02/20

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Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2046372-06D	Plastic 250ml HNO3 preserved	A	<2	<2	3.5	Y	Absent		NI-6020T(180),CR-6020T(180),PB-6020T(180),MN-6020T(180),AS-6020T(180),CD-6020T(180)
L2046372-06E	Plastic 250ml NaOH preserved	A	>12	>12	3.5	Y	Absent		TCN-9010(14)
L2046372-06F	Amber 250ml unpreserved	A	7	7	3.5	Y	Absent		A2-14-DIOXANESIM-PPB(7)
L2046372-06G	Amber 250ml unpreserved	A	7	7	3.5	Y	Absent		A2-14-DIOXANESIM-PPB(7)

*Values in parentheses indicate holding time in days

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046372

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GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

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Footnotes

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

Terms

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

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

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

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

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

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

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

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

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

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

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

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

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

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

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

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

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

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

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

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

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

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

Report Format: Data Usability Report

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Data Qualifiers

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

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046372
Project Number: 04.0190987.11 **Report Date:** 11/02/20

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REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

LIMITATION OF LIABILITIES

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

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

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Certification Information

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

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
EPA TO-12 Non-methane organics
EPA 3C Fixed gases
Biological Tissue Matrix: EPA 3050B

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

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

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

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

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL

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

DRAFT

Date Rec'd in Lab: 10/23/20
ALPHA Job #: L2046372

Project Information

Project Name: NH Plating Company Superfund
Project Location: Merrimack, NH
Project #: 04.0190987.11
Project Manager: Michael Summerlin
ALPHA Quote #: NH DES Contract No. 1069635

Client Information

Client: NHDES
Address: 29 Hazen Drive
Concord, NH 03302
Phone: 603-271-3649
Fax:
Email: michael.summerlinjr@des.nh.gov

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)
Due Date: Time:

Report Information

☐ FAX
☒ ADEx

Data Deliverables

☒ EMAIL
☐ Add'l Deliverables

Billing Information

☒ Same as Client Info
PO #: 2589 00"4"

Regulatory Requirements/Report Limits

State/Fed Program: NHDES
Criteria: Sampling and Analysis Plan limits

Other Project Specific Requirements/Comments/Detection Limits:

Please also email login receipts and lab reports to tanya.justham@gza.com. Please provide excel files formatted for upload to the NHDES EMD and for GZA EQUIS upload.

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	VOCs 8260 NHDES List	1,4-dioxane	Total metals (As, Cd, Cr, Pb, Mn & Ni)	Cyanide									Sample Specific Comments	
~~3672~~ 03-01	TRIP BLANK	10-23-20	0800	AQ	MM	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		2
46372-02	NHP_MW-204S	10-23-20	0925	AQ	MM	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		5
-03	NHP_MW-308D	10-23-20	0945	AQ	ED	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		5
-04	NHP_MW-308S	10-23-20	1100	AQ	ED	☑	☑	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐		6
-05	NHP_MW-308S DUP	10-23-20	1100	AQ	ED	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐		1
-06	NHP_MW-404SA	10-23-20	1125	AQ	MM	☑	☑	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐		2
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		

MM 10-23-20

Container Type	V	A	P	P									
Preservative	B	A	C	E									

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	10-23-20/1920	[signature] LAROCHEN	10/23/20 1920
Rob Maesto	10/23/20 2145	Rob Maesto	10/23/20 1945
		[signature]	10/23/20 2145

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

FORM NO: 01-01 (rev. 3-JAN-17)

DRAFT

ANALYTICAL REPORT

Lab Number:	L2046531
Client:	GZA GeoEnvironmental, Inc. / NHDES PO Box 95 29 Hazen Drive Concord, NH 03302-0095
ATTN:	Michael Summerlin
Phone:	(603) 271-3649
Project Name:	NH PLATING COMPANY SUPERFUND
Project Number:	04.0190987.11
Report Date:	11/02/20

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

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

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

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11

Lab Number: L2046531
Report Date: 11/02/20

DRAFT

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2046531-01	TRIP BLANK	WATER	MERRIMACK, NH	10/26/20 08:00	10/26/20
L2046531-02	NHP_MW-302SA	WATER	MERRIMACK, NH	10/26/20 12:15	10/26/20
L2046531-03	NHP_MW-302DA	WATER	MERRIMACK, NH	10/26/20 10:25	10/26/20
L2046531-04	NHP_MW-308SA	WATER	MERRIMACK, NH	10/26/20 12:10	10/26/20
L2046531-05	NHP_MW-308DA	WATER	MERRIMACK, NH	10/26/20 10:30	10/26/20
L2046531-06	NHP_MW-309SA	WATER	MERRIMACK, NH	10/26/20 12:20	10/26/20
L2046531-07	NHP_MW-309DA	WATER	MERRIMACK, NH	10/26/20 10:40	10/26/20

Project Name:	NH PLATING COMPANY SUPERFUND	**Lab Number:**	L2046531
Project Number:	04.0190987.11	**Report Date:**	11/02/20

DRAFT

Case Narrative

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

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

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

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

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

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

Project Name:	NH PLATING COMPANY SUPERFUND	**Lab Number:**	L2046531
Project Number:	04.0190987.11	**Report Date:**	11/02/20

DRAFT

Case Narrative (continued)

Volatile Organics

L2046531-05: The sample has elevated detection limits due to the dilution required by the elevated concentrations of target compounds in the sample.

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

Authorized Signature: Tiffani Morrissey - Tiffani Morrissey

Title: Technical Director/Representative Date: 11/02/20

DRAFT

ORGANICS

DRAFT

VOLATILES

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046531

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046531-01
Client ID: TRIP BLANK
Sample Location: MERRIMACK, NH

Date Collected: 10/26/20 08:00
Date Received: 10/26/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 10/29/20 23:28
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046531

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046531-01 Date Collected: 10/26/20 08:00

Client ID: TRIP BLANK Date Received: 10/26/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	ND		ug/l	0.50	--	1
Trichloroethene	ND		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046531

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046531-01 Date Collected: 10/26/20 08:00

Client ID: TRIP BLANK Date Received: 10/26/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	96		70-130

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046531

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046531-02
Client ID: NHP_MW-302SA
Sample Location: MERRIMACK, NH

Date Collected: 10/26/20 12:15
Date Received: 10/26/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 10/29/20 23:52
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	23		ug/l	0.75	--	1
Chloroform	0.81		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	4.2		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046531

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046531-02 Date Collected: 10/26/20 12:15

Client ID: NHP_MW-302SA Date Received: 10/26/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	3.4		ug/l	0.50	--	1
Trichloroethene	47		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	3.4		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046531

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046531-02 Date Collected: 10/26/20 12:15

Client ID: NHP_MW-302SA Date Received: 10/26/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	97		70-130

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046531

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046531-03
Client ID: NHP_MW-302DA
Sample Location: MERRIMACK, NH

Date Collected: 10/26/20 10:25
Date Received: 10/26/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 10/30/20 00:15
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	0.79		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046531

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046531-03 Date Collected: 10/26/20 10:25

Client ID: NHP_MW-302DA Date Received: 10/26/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	1.3		ug/l	0.50	--	1
Trichloroethene	65		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1
Methyl tert butyl ether	2.0		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	1.3		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046531

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046531-03 Date Collected: 10/26/20 10:25

Client ID: NHP_MW-302DA Date Received: 10/26/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	95		70-130

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046531

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046531-04
Client ID: NHP_MW-308SA
Sample Location: MERRIMACK, NH

Date Collected: 10/26/20 12:10
Date Received: 10/26/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 10/30/20 00:38
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	18		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	2.3		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046531

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046531-04 Date Collected: 10/26/20 12:10

Client ID: NHP_MW-308SA Date Received: 10/26/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	10		ug/l	0.50	--	1
Trichloroethene	30		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	10		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	1.7		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046531

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046531-04 Date Collected: 10/26/20 12:10

Client ID: NHP_MW-308SA Date Received: 10/26/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	97		70-130

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046531

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046531-05 D
Client ID: NHP_MW-308DA
Sample Location: MERRIMACK, NH

Date Collected: 10/26/20 10:30
Date Received: 10/26/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 10/30/20 02:23
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	7.5	--	2.5
1,1-Dichloroethane	ND		ug/l	1.9	--	2.5
Chloroform	ND		ug/l	1.9	--	2.5
Carbon tetrachloride	ND		ug/l	1.2	--	2.5
1,2-Dichloropropane	ND		ug/l	4.4	--	2.5
Dibromochloromethane	ND		ug/l	1.2	--	2.5
1,1,2-Trichloroethane	ND		ug/l	1.9	--	2.5
Tetrachloroethene	ND		ug/l	1.2	--	2.5
Chlorobenzene	ND		ug/l	1.2	--	2.5
Trichlorofluoromethane	ND		ug/l	6.2	--	2.5
1,2-Dichloroethane	ND		ug/l	1.2	--	2.5
1,1,1-Trichloroethane	ND		ug/l	1.2	--	2.5
Bromodichloromethane	ND		ug/l	1.2	--	2.5
trans-1,3-Dichloropropene	ND		ug/l	1.2	--	2.5
cis-1,3-Dichloropropene	ND		ug/l	1.2	--	2.5
1,3-Dichloropropene, Total	ND		ug/l	1.2	--	2.5
1,1-Dichloropropene	ND		ug/l	6.2	--	2.5
Bromoform	ND		ug/l	5.0	--	2.5
1,1,2,2-Tetrachloroethane	ND		ug/l	1.2	--	2.5
Benzene	ND		ug/l	1.2	--	2.5
Toluene	ND		ug/l	1.9	--	2.5
Ethylbenzene	ND		ug/l	1.2	--	2.5
Chloromethane	ND		ug/l	6.2	--	2.5
Bromomethane	ND		ug/l	2.5	--	2.5
Vinyl chloride	ND		ug/l	2.5	--	2.5
Chloroethane	ND		ug/l	2.5	--	2.5
1,1-Dichloroethene	2.4		ug/l	1.2	--	2.5
trans-1,2-Dichloroethene	ND		ug/l	1.9	--	2.5

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046531

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046531-05 D
Client ID: NHP_MW-308DA
Sample Location: MERRIMACK, NH

Date Collected: 10/26/20 10:30
Date Received: 10/26/20
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	10		ug/l	1.2	--	2.5
Trichloroethene	270		ug/l	1.2	--	2.5
1,2-Dichlorobenzene	ND		ug/l	6.2	--	2.5
1,3-Dichlorobenzene	ND		ug/l	6.2	--	2.5
1,4-Dichlorobenzene	ND		ug/l	6.2	--	2.5
Methyl tert butyl ether	ND		ug/l	2.5	--	2.5
p/m-Xylene	ND		ug/l	2.5	--	2.5
o-Xylene	ND		ug/l	2.5	--	2.5
Xylenes, Total	ND		ug/l	2.5	--	2.5
cis-1,2-Dichloroethene	10		ug/l	1.2	--	2.5
Dibromomethane	ND		ug/l	12	--	2.5
1,2,3-Trichloropropane	ND		ug/l	12	--	2.5
Styrene	ND		ug/l	2.5	--	2.5
Dichlorodifluoromethane	ND		ug/l	12	--	2.5
Acetone	ND		ug/l	12	--	2.5
Carbon disulfide	ND		ug/l	12	--	2.5
2-Butanone	ND		ug/l	12	--	2.5
4-Methyl-2-pentanone	ND		ug/l	12	--	2.5
2-Hexanone	ND		ug/l	12	--	2.5
Bromochloromethane	ND		ug/l	6.2	--	2.5
Tetrahydrofuran	ND		ug/l	12	--	2.5
2,2-Dichloropropane	ND		ug/l	6.2	--	2.5
1,2-Dibromoethane	ND		ug/l	5.0	--	2.5
1,1,1,2-Tetrachloroethane	ND		ug/l	1.2	--	2.5
Bromobenzene	ND		ug/l	6.2	--	2.5
n-Butylbenzene	ND		ug/l	1.2	--	2.5
sec-Butylbenzene	ND		ug/l	1.2	--	2.5
tert-Butylbenzene	ND		ug/l	6.2	--	2.5
o-Chlorotoluene	ND		ug/l	6.2	--	2.5
p-Chlorotoluene	ND		ug/l	6.2	--	2.5
1,2-Dibromo-3-chloropropane	ND		ug/l	6.2	--	2.5
Hexachlorobutadiene	ND		ug/l	1.2	--	2.5
Isopropylbenzene	ND		ug/l	1.2	--	2.5
p-Isopropyltoluene	ND		ug/l	1.2	--	2.5
Naphthalene	ND		ug/l	6.2	--	2.5
n-Propylbenzene	ND		ug/l	1.2	--	2.5
1,2,3-Trichlorobenzene	ND		ug/l	6.2	--	2.5

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046531

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046531-05 D
Client ID: NHP_MW-308DA
Sample Location: MERRIMACK, NH

Date Collected: 10/26/20 10:30
Date Received: 10/26/20
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	6.2	--	2.5
1,3,5-Trimethylbenzene	ND		ug/l	6.2	--	2.5
1,3,5-Trichlorobenzene	ND		ug/l	5.0	--	2.5
1,2,4-Trimethylbenzene	ND		ug/l	6.2	--	2.5
Ethyl ether	ND		ug/l	6.2	--	2.5
Isopropyl Ether	ND		ug/l	5.0	--	2.5
Tert-Butyl Alcohol	ND		ug/l	25	--	2.5
Ethyl-Tert-Butyl-Ether	ND		ug/l	5.0	--	2.5
Tertiary-Amyl Methyl Ether	ND		ug/l	5.0	--	2.5
1,4-Dioxane	ND		ug/l	620	--	2.5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	98		70-130

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046531

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046531-06
Client ID: NHP_MW-309SA
Sample Location: MERRIMACK, NH

Date Collected: 10/26/20 12:20
Date Received: 10/26/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 10/30/20 01:01
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	5.2		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	1.4		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046531

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046531-06 Date Collected: 10/26/20 12:20

Client ID: NHP_MW-309SA Date Received: 10/26/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	3.1		ug/l	0.50	--	1
Trichloroethene	6.4		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	3.1		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046531

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046531-06 Date Collected: 10/26/20 12:20

Client ID: NHP_MW-309SA Date Received: 10/26/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	95		70-130

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046531

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046531-07
Client ID: NHP_MW-309DA
Sample Location: MERRIMACK, NH

Date Collected: 10/26/20 10:40
Date Received: 10/26/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 10/30/20 01:25
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	2.2		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	1.9		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046531

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046531-07 Date Collected: 10/26/20 10:40

Client ID: NHP_MW-309DA Date Received: 10/26/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	11		ug/l	0.50	--	1
Trichloroethene	68		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	11		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046531

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046531-07 Date Collected: 10/26/20 10:40

Client ID: NHP_MW-309DA Date Received: 10/26/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	97		70-130

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046531

Project Number: 04.0190987.11 **Report Date:** 11/02/20

DRAFT

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 10/29/20 18:49
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-04,06-07 Batch: WG1428500-5					
Methylene chloride	ND		ug/l	3.0	--
1,1-Dichloroethane	ND		ug/l	0.75	--
Chloroform	ND		ug/l	0.75	--
Carbon tetrachloride	ND		ug/l	0.50	--
1,2-Dichloropropane	ND		ug/l	1.8	--
Dibromochloromethane	ND		ug/l	0.50	--
1,1,2-Trichloroethane	ND		ug/l	0.75	--
Tetrachloroethene	ND		ug/l	0.50	--
Chlorobenzene	ND		ug/l	0.50	--
Trichlorofluoromethane	ND		ug/l	2.5	--
1,2-Dichloroethane	ND		ug/l	0.50	--
1,1,1-Trichloroethane	ND		ug/l	0.50	--
Bromodichloromethane	ND		ug/l	0.50	--
trans-1,3-Dichloropropene	ND		ug/l	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
1,3-Dichloropropene, Total	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	2.5	--
Bromoform	ND		ug/l	2.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	0.75	--
Ethylbenzene	ND		ug/l	0.50	--
Chloromethane	ND		ug/l	2.5	--
Bromomethane	ND		ug/l	1.0	--
Vinyl chloride	ND		ug/l	1.0	--
Chloroethane	ND		ug/l	1.0	--
1,1-Dichloroethene	ND		ug/l	0.50	--
trans-1,2-Dichloroethene	ND		ug/l	0.75	--
1,2-Dichloroethene, Total	ND		ug/l	0.50	--

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046531

Project Number: 04.0190987.11 **Report Date:** 11/02/20

DRAFT

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 10/29/20 18:49
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-04,06-07 Batch: WG1428500-5					
Trichloroethene	ND		ug/l	0.50	--
1,2-Dichlorobenzene	ND		ug/l	2.5	--
1,3-Dichlorobenzene	ND		ug/l	2.5	--
1,4-Dichlorobenzene	ND		ug/l	2.5	--
Methyl tert butyl ether	ND		ug/l	1.0	--
p/m-Xylene	ND		ug/l	1.0	--
o-Xylene	ND		ug/l	1.0	--
Xylenes, Total	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	0.50	--
Dibromomethane	ND		ug/l	5.0	--
1,2,3-Trichloropropane	ND		ug/l	5.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	5.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	5.0	--
2-Butanone	ND		ug/l	5.0	--
4-Methyl-2-pentanone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	2.5	--
Tetrahydrofuran	ND		ug/l	5.0	--
2,2-Dichloropropane	ND		ug/l	2.5	--
1,2-Dibromoethane	ND		ug/l	2.0	--
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--
Bromobenzene	ND		ug/l	2.5	--
n-Butylbenzene	ND		ug/l	0.50	--
sec-Butylbenzene	ND		ug/l	0.50	--
tert-Butylbenzene	ND		ug/l	2.5	--
o-Chlorotoluene	ND		ug/l	2.5	--
p-Chlorotoluene	ND		ug/l	2.5	--

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046531

Project Number: 04.0190987.11 **Report Date:** 11/02/20

DRAFT

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 10/29/20 18:49
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-04,06-07 Batch: WG1428500-5					
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--
Hexachlorobutadiene	ND		ug/l	0.50	--
Isopropylbenzene	ND		ug/l	0.50	--
p-Isopropyltoluene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	2.5	--
n-Propylbenzene	ND		ug/l	0.50	--
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--
Ethyl ether	ND		ug/l	2.5	--
Isopropyl Ether	ND		ug/l	2.0	--
Tert-Butyl Alcohol	ND		ug/l	10	--
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--
1,4-Dioxane	ND		ug/l	250	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	94		70-130

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046531

Project Number: 04.0190987.11 **Report Date:** 11/02/20

DRAFT

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 10/29/20 19:04
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 05 Batch: WG1428604-5					
Methylene chloride	ND		ug/l	3.0	--
1,1-Dichloroethane	ND		ug/l	0.75	--
Chloroform	ND		ug/l	0.75	--
Carbon tetrachloride	ND		ug/l	0.50	--
1,2-Dichloropropane	ND		ug/l	1.8	--
Dibromochloromethane	ND		ug/l	0.50	--
1,1,2-Trichloroethane	ND		ug/l	0.75	--
Tetrachloroethene	ND		ug/l	0.50	--
Chlorobenzene	ND		ug/l	0.50	--
Trichlorofluoromethane	ND		ug/l	2.5	--
1,2-Dichloroethane	ND		ug/l	0.50	--
1,1,1-Trichloroethane	ND		ug/l	0.50	--
Bromodichloromethane	ND		ug/l	0.50	--
trans-1,3-Dichloropropene	ND		ug/l	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
1,3-Dichloropropene, Total	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	2.5	--
Bromoform	ND		ug/l	2.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	0.75	--
Ethylbenzene	ND		ug/l	0.50	--
Chloromethane	ND		ug/l	2.5	--
Bromomethane	ND		ug/l	1.0	--
Vinyl chloride	ND		ug/l	1.0	--
Chloroethane	ND		ug/l	1.0	--
1,1-Dichloroethene	ND		ug/l	0.50	--
trans-1,2-Dichloroethene	ND		ug/l	0.75	--
1,2-Dichloroethene, Total	ND		ug/l	0.50	--

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046531

Project Number: 04.0190987.11 **Report Date:** 11/02/20

DRAFT

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 10/29/20 19:04
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 05 Batch: WG1428604-5					
Trichloroethene	ND		ug/l	0.50	--
1,2-Dichlorobenzene	ND		ug/l	2.5	--
1,3-Dichlorobenzene	ND		ug/l	2.5	--
1,4-Dichlorobenzene	ND		ug/l	2.5	--
Methyl tert butyl ether	ND		ug/l	1.0	--
p/m-Xylene	ND		ug/l	1.0	--
o-Xylene	ND		ug/l	1.0	--
Xylenes, Total	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	0.50	--
Dibromomethane	ND		ug/l	5.0	--
1,2,3-Trichloropropane	ND		ug/l	5.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	5.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	5.0	--
2-Butanone	ND		ug/l	5.0	--
4-Methyl-2-pentanone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	2.5	--
Tetrahydrofuran	ND		ug/l	5.0	--
2,2-Dichloropropane	ND		ug/l	2.5	--
1,2-Dibromoethane	ND		ug/l	2.0	--
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--
Bromobenzene	ND		ug/l	2.5	--
n-Butylbenzene	ND		ug/l	0.50	--
sec-Butylbenzene	ND		ug/l	0.50	--
tert-Butylbenzene	ND		ug/l	2.5	--
o-Chlorotoluene	ND		ug/l	2.5	--
p-Chlorotoluene	ND		ug/l	2.5	--

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046531

Project Number: 04.0190987.11 **Report Date:** 11/02/20

DRAFT

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 10/29/20 19:04
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 05 Batch: WG1428604-5					
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--
Hexachlorobutadiene	ND		ug/l	0.50	--
Isopropylbenzene	ND		ug/l	0.50	--
p-Isopropyltoluene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	2.5	--
n-Propylbenzene	ND		ug/l	0.50	--
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--
Ethyl ether	ND		ug/l	2.5	--
Isopropyl Ether	ND		ug/l	2.0	--
Tert-Butyl Alcohol	ND		ug/l	10	--
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--
1,4-Dioxane	ND		ug/l	250	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	89		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11
Lab Number: L2046531
Report Date: 11/02/20

DRAFT

Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04,06-07 Batch: WG1428500-3 WG1428500-4

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Methylene chloride	99		94		70-130	5		20
1,1-Dichloroethane	100		95		70-130	5		20
Chloroform	93		88		70-130	6		20
Carbon tetrachloride	89		84		63-132	6		20
1,2-Dichloropropane	100		96		70-130	4		20
Dibromochloromethane	82		82		63-130	0		20
1,1,2-Trichloroethane	93		92		70-130	1		20
Tetrachloroethene	100		97		70-130	3		20
Chlorobenzene	93		91		75-130	2		25
Trichlorofluoromethane	110		100		62-150	10		20
1,2-Dichloroethane	94		91		70-130	3		20
1,1,1-Trichloroethane	90		86		67-130	5		20
Bromodichloromethane	90		88		67-130	2		20
trans-1,3-Dichloropropene	80		75		70-130	6		20
cis-1,3-Dichloropropene	91		85		70-130	7		20
1,1-Dichloropropene	95		91		70-130	4		20
Bromoform	86		86		54-136	0		20
1,1,2,2-Tetrachloroethane	91		91		67-130	0		20
Benzene	100		96		70-130	4		25
Toluene	98		93		70-130	5		25
Ethylbenzene	94		92		70-130	2		20
Chloromethane	110		110		64-130	0		20
Bromomethane	64		68		39-139	6		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11
Lab Number: L2046531
Report Date: 11/02/20

DRAFT

Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04,06-07 Batch: WG1428500-3 WG1428500-4

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Vinyl chloride	120		110		55-140	9		20
Chloroethane	100		100		55-138	0		20
1,1-Dichloroethene	82		79		61-145	4		25
trans-1,2-Dichloroethene	97		92		70-130	5		20
Trichloroethene	92		89		70-130	3		25
1,2-Dichlorobenzene	99		95		70-130	4		20
1,3-Dichlorobenzene	99		95		70-130	4		20
1,4-Dichlorobenzene	100		94		70-130	6		20
Methyl tert butyl ether	83		76		63-130	9		20
p/m-Xylene	95		90		70-130	5		20
o-Xylene	95		90		70-130	5		20
cis-1,2-Dichloroethene	100		95		70-130	5		20
Dibromomethane	91		88		70-130	3		20
1,2,3-Trichloropropane	91		87		64-130	4		20
Styrene	90		90		70-130	0		20
Dichlorodifluoromethane	140		130		36-147	7		20
Acetone	82		88		58-148	7		20
Carbon disulfide	94		90		51-130	4		20
2-Butanone	82		82		63-138	0		20
4-Methyl-2-pentanone	87		86		59-130	1		20
2-Hexanone	85		84		57-130	1		20
Bromochloromethane	95		92		70-130	3		20
Tetrahydrofuran	100		95		58-130	5		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11
Lab Number: L2046531
Report Date: 11/02/20

DRAFT

Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04,06-07 Batch: WG1428500-3 WG1428500-4

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
2,2-Dichloropropane	97		94		63-133	3		20
1,2-Dibromoethane	88		87		70-130	1		20
1,1,1,2-Tetrachloroethane	91		88		64-130	3		20
Bromobenzene	100		96		70-130	4		20
n-Butylbenzene	92		85		53-136	8		20
sec-Butylbenzene	97		92		70-130	5		20
tert-Butylbenzene	94		90		70-130	4		20
o-Chlorotoluene	100		94		70-130	6		20
p-Chlorotoluene	99		93		70-130	6		20
1,2-Dibromo-3-chloropropane	87		85		41-144	2		20
Hexachlorobutadiene	99		95		63-130	4		20
Isopropylbenzene	100		96		70-130	4		20
p-Isopropyltoluene	93		86		70-130	8		20
Naphthalene	73		74		70-130	1		20
n-Propylbenzene	99		94		69-130	5		20
1,2,3-Trichlorobenzene	79		80		70-130	1		20
1,2,4-Trichlorobenzene	90		85		70-130	6		20
1,3,5-Trimethylbenzene	100		94		64-130	6		20
1,3,5-Trichlorobenzene	100		94		70-130	6		20
1,2,4-Trimethylbenzene	100		93		70-130	7		20
Ethyl ether	100		100		59-134	0		20
Isopropyl Ether	99		94		70-130	5		20
Tert-Butyl Alcohol	98		98		70-130	0		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND

Project Number: 04.0190987.11

Lab Number: L2046531

Report Date: 11/02/20

DRAFT

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04,06-07 Batch: WG1428500-3 WG1428500-4								
Ethyl-Tert-Butyl-Ether	87		80		70-130	8		20
Tertiary-Amyl Methyl Ether	83		75		66-130	10		20
1,4-Dioxane	70		68		56-162	3		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	99		98		70-130
Toluene-d8	101		103		70-130
4-Bromofluorobenzene	102		103		70-130
Dibromofluoromethane	97		96		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11
Lab Number: L2046531
Report Date: 11/02/20

DRAFT

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 05 Batch: WG1428604-3 WG1428604-4								
Methylene chloride	88		93		70-130	6		20
1,1-Dichloroethane	90		94		70-130	4		20
Chloroform	91		99		70-130	8		20
Carbon tetrachloride	87		92		63-132	6		20
1,2-Dichloropropane	90		92		70-130	2		20
Dibromochloromethane	79		83		63-130	5		20
1,1,2-Trichloroethane	94		96		70-130	2		20
Tetrachloroethene	**58**	Q	**62**	Q	70-130	7		20
Chlorobenzene	90		94		75-130	4		25
Trichlorofluoromethane	100		110		62-150	10		20
1,2-Dichloroethane	94		93		70-130	1		20
1,1,1-Trichloroethane	91		94		67-130	3		20
Bromodichloromethane	81		87		67-130	7		20
trans-1,3-Dichloropropene	82		82		70-130	0		20
cis-1,3-Dichloropropene	77		82		70-130	6		20
1,1-Dichloropropene	96		99		70-130	3		20
Bromoform	74		72		54-136	3		20
1,1,2,2-Tetrachloroethane	97		96		67-130	1		20
Benzene	92		92		70-130	0		25
Toluene	92		94		70-130	2		25
Ethylbenzene	92		97		70-130	5		20
Chloromethane	**53**	Q	**55**	Q	64-130	4		20
Bromomethane	64		73		39-139	13		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11
Lab Number: L2046531
Report Date: 11/02/20

DRAFT

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 05 Batch: WG1428604-3 WG1428604-4								
Vinyl chloride	86		97		55-140	12		20
Chloroethane	130		**140**	Q	55-138	7		20
1,1-Dichloroethene	88		95		61-145	8		25
trans-1,2-Dichloroethene	88		96		70-130	9		20
Trichloroethene	85		94		70-130	10		25
1,2-Dichlorobenzene	99		98		70-130	1		20
1,3-Dichlorobenzene	96		97		70-130	1		20
1,4-Dichlorobenzene	99		100		70-130	1		20
Methyl tert butyl ether	91		94		63-130	3		20
p/m-Xylene	90		95		70-130	5		20
o-Xylene	95		95		70-130	0		20
cis-1,2-Dichloroethene	93		97		70-130	4		20
Dibromomethane	89		94		70-130	5		20
1,2,3-Trichloropropane	95		93		64-130	2		20
Styrene	90		95		70-130	5		20
Dichlorodifluoromethane	73		80		36-147	9		20
Acetone	91		92		58-148	1		20
Carbon disulfide	82		88		51-130	7		20
2-Butanone	70		78		63-138	11		20
4-Methyl-2-pentanone	82		83		59-130	1		20
2-Hexanone	75		78		57-130	4		20
Bromochloromethane	86		94		70-130	9		20
Tetrahydrofuran	67		68		58-130	1		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11
Lab Number: L2046531
Report Date: 11/02/20

DRAFT

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 05 Batch: WG1428604-3 WG1428604-4								
2,2-Dichloropropane	90		95		63-133	5		20
1,2-Dibromoethane	90		90		70-130	0		20
1,1,1,2-Tetrachloroethane	84		88		64-130	5		20
Bromobenzene	93		92		70-130	1		20
n-Butylbenzene	100		100		53-136	0		20
sec-Butylbenzene	100		100		70-130	0		20
tert-Butylbenzene	90		92		70-130	2		20
o-Chlorotoluene	98		99		70-130	1		20
p-Chlorotoluene	98		98		70-130	0		20
1,2-Dibromo-3-chloropropane	72		76		41-144	5		20
Hexachlorobutadiene	86		84		63-130	2		20
Isopropylbenzene	98		100		70-130	2		20
p-Isopropyltoluene	100		100		70-130	0		20
Naphthalene	86		84		70-130	2		20
n-Propylbenzene	99		100		69-130	1		20
1,2,3-Trichlorobenzene	85		88		70-130	3		20
1,2,4-Trichlorobenzene	85		88		70-130	3		20
1,3,5-Trimethylbenzene	99		98		64-130	1		20
1,3,5-Trichlorobenzene	93		92		70-130	1		20
1,2,4-Trimethylbenzene	97		99		70-130	2		20
Ethyl ether	86		93		59-134	8		20
Isopropyl Ether	92		93		70-130	1		20
Tert-Butyl Alcohol	76		78		70-130	3		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND

Project Number: 04.0190987.11

Lab Number: L2046531

Report Date: 11/02/20

DRAFT

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 05 Batch: WG1428604-3 WG1428604-4								
Ethyl-Tert-Butyl-Ether	90		90		70-130	0		20
Tertiary-Amyl Methyl Ether	82		79		66-130	4		20
1,4-Dioxane	72		76		56-162	5		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	117		102		70-130
Toluene-d8	100		98		70-130
4-Bromofluorobenzene	101		96		70-130
Dibromofluoromethane	102		107		70-130

DRAFT

SEMIVOLATILES

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046531

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046531-02
Client ID: NHP_MW-302SA
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 11/02/20 12:30
Analyst: PS

Date Collected: 10/26/20 12:15
Date Received: 10/26/20
Field Prep: Not Specified

Extraction Method: EPA 3510C
Extraction Date: 10/30/20 12:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	0.636		ug/l	0.139	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	47		15-110

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046531

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046531-03
Client ID: NHP_MW-302DA
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 11/02/20 12:53
Analyst: PS

Date Collected: 10/26/20 10:25
Date Received: 10/26/20
Field Prep: Not Specified

Extraction Method: EPA 3510C
Extraction Date: 10/30/20 12:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	2.88		ug/l	0.144	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	50		15-110

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046531

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046531-04
Client ID: NHP_MW-308SA
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 11/02/20 13:39
Analyst: PS

Date Collected: 10/26/20 12:10
Date Received: 10/26/20
Field Prep: Not Specified

Extraction Method: EPA 3510C
Extraction Date: 10/30/20 12:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	0.552		ug/l	0.144	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	50		15-110

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046531

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046531-05
Client ID: NHP_MW-308DA
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 11/02/20 14:03
Analyst: PS

Date Collected: 10/26/20 10:30
Date Received: 10/26/20
Field Prep: Not Specified

Extraction Method: EPA 3510C
Extraction Date: 10/30/20 12:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	20.0		ug/l	0.139	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	47		15-110

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046531

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046531-07
Client ID: NHP_MW-309DA
Sample Location: MERRIMACK, NH

Sample Depth:

Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 11/02/20 14:26
Analyst: PS

Date Collected: 10/26/20 10:40
Date Received: 10/26/20
Field Prep: Not Specified

Extraction Method: EPA 3510C
Extraction Date: 10/30/20 12:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	7.81		ug/l	0.134	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	50		15-110

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046531

Project Number: 04.0190987.11 **Report Date:** 11/02/20

DRAFT

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 11/02/20 10:34
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 10/30/20 12:30

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by 8270D-SIM - Mansfield Lab for sample(s): 02-05,07 Batch: WG1428441-1					
1,4-Dioxane	ND		ug/l	0.150	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	49		15-110

Lab Control Sample Analysis

Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND

Project Number: 04.0190987.11

Lab Number: L2046531

Report Date: 11/02/20

DRAFT

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by 8270D-SIM - Mansfield Lab Associated sample(s): 02-05,07 Batch: WG1428441-2 WG1428441-3								
1,4-Dioxane	101		106		40-140	5		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	49		47		15-110

DRAFT

METALS

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046531

Project Number: 04.0190987.11 **Report Date:** 11/02/20

DRAFT

SAMPLE RESULTS

Lab ID: L2046531-06 Date Collected: 10/26/20 12:20

Client ID: NHP_MW-309SA Date Received: 10/26/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	0.01831		mg/l	0.00050	--	1	10/27/20 22:10	10/28/20 17:07	EPA 3005A	1,6020B	AM
Cadmium, Total	0.00041		mg/l	0.00020	--	1	10/27/20 22:10	10/28/20 17:07	EPA 3005A	1,6020B	AM
Chromium, Total	0.00100		mg/l	0.00100	--	1	10/27/20 22:10	10/28/20 17:07	EPA 3005A	1,6020B	AM
Lead, Total	ND		mg/l	0.00100	--	1	10/27/20 22:10	10/28/20 17:07	EPA 3005A	1,6020B	AM
Manganese, Total	0.5370		mg/l	0.00100	--	1	10/27/20 22:10	10/28/20 17:07	EPA 3005A	1,6020B	AM
Nickel, Total	0.01235		mg/l	0.00200	--	1	10/27/20 22:10	10/28/20 17:07	EPA 3005A	1,6020B	AM

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046531

Project Number: 04.0190987.11 **Report Date:** 11/02/20

DRAFT

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 06 Batch: WG1427125-1										
Arsenic, Total	ND		mg/l	0.00050	--	1	10/27/20 22:10	10/28/20 14:42	1,6020B	AM
Cadmium, Total	ND		mg/l	0.00020	--	1	10/27/20 22:10	10/28/20 14:42	1,6020B	AM
Chromium, Total	ND		mg/l	0.00100	--	1	10/27/20 22:10	10/28/20 14:42	1,6020B	AM
Lead, Total	ND		mg/l	0.00100	--	1	10/27/20 22:10	10/28/20 14:42	1,6020B	AM
Manganese, Total	ND		mg/l	0.00100	--	1	10/27/20 22:10	10/28/20 14:42	1,6020B	AM
Nickel, Total	ND		mg/l	0.00200	--	1	10/27/20 22:10	10/28/20 14:42	1,6020B	AM

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND

Project Number: 04.0190987.11

Lab Number: L2046531

Report Date: 11/02/20

DRAFT

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 06 Batch: WG1427125-2								
Arsenic, Total	100		-		80-120	-		
Cadmium, Total	102		-		80-120	-		
Chromium, Total	90		-		80-120	-		
Lead, Total	101		-		80-120	-		
Manganese, Total	96		-		80-120	-		
Nickel, Total	89		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11
Lab Number: L2046531
Report Date: 11/02/20

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Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 06 QC Batch ID: WG1427125-3 WG1427125-4 QC Sample: L2046533-03 Client ID: MS Sample												
Arsenic, Total	0.04122	0.12	0.1661	104		0.1679	106		75-125	1		20
Cadmium, Total	ND	0.051	0.05503	108		0.05499	108		75-125	0		20
Chromium, Total	0.00140	0.2	0.1842	91		0.1858	92		75-125	1		20
Lead, Total	0.00128	0.51	0.5406	106		0.5373	105		75-125	1		20
Manganese, Total	4.668	0.5	4.870	**40**	Q	4.938	**54**	Q	75-125	1		20
Nickel, Total	0.00203	0.5	0.4510	90		0.4479	89		75-125	1		20

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INORGANICS
&
MISCELLANEOUS

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11

Lab Number: L2046531
Report Date: 11/02/20

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SAMPLE RESULTS

Lab ID: L2046531-04
Client ID: NHP_MW-308SA
Sample Location: MERRIMACK, NH

Date Collected: 10/26/20 12:10
Date Received: 10/26/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Cyanide, Total	0.011		mg/l	0.005	--	1	10/30/20 11:30	10/30/20 15:19	1,9010C/9012B	CR

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046531

Project Number: 04.0190987.11 **Report Date:** 11/02/20

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Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 04 Batch: WG1428523-1										
Cyanide, Total	ND		mg/l	0.005	--	1	10/30/20 11:30	10/30/20 15:12	1,9010C/9012B	CR

Lab Control Sample Analysis

Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND

Project Number: 04.0190987.11

Lab Number: L2046531

Report Date: 11/02/20

DRAFT

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 04 Batch: WG1428523-2 WG1428523-3								
Cyanide, Total	96		97		85-115	1		20

Matrix Spike Analysis
Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11
Lab Number: L2046531
Report Date: 11/02/20

DRAFT

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 04 QC Batch ID: WG1428523-4 WG1428523-5 QC Sample: L2046659-04 Client ID: MS Sample												
Cyanide, Total	ND	0.2	0.180	90		0.184	92		80-120	2		20

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11

Lab Number: L2046531
Report Date: 11/02/20

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Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2046531-01A	Vial HCl preserved	A	NA		4.1	Y	Absent		8260-NH(14)
L2046531-01B	Vial HCl preserved	A	NA		4.1	Y	Absent		8260-NH(14)
L2046531-02A	Vial HCl preserved	A	NA		4.1	Y	Absent		8260-NH(14)
L2046531-02B	Vial HCl preserved	A	NA		4.1	Y	Absent		8260-NH(14)
L2046531-02C	Vial HCl preserved	A	NA		4.1	Y	Absent		8260-NH(14)
L2046531-02E	Amber 250ml unpreserved	A	7	7	4.1	Y	Absent		A2-14-DIOXANESIM-PPB(7)
L2046531-02F	Amber 250ml unpreserved	A	7	7	4.1	Y	Absent		A2-14-DIOXANESIM-PPB(7)
L2046531-03A	Vial HCl preserved	A	NA		4.1	Y	Absent		8260-NH(14)
L2046531-03B	Vial HCl preserved	A	NA		4.1	Y	Absent		8260-NH(14)
L2046531-03C	Vial HCl preserved	A	NA		4.1	Y	Absent		8260-NH(14)
L2046531-03E	Amber 250ml unpreserved	A	7	7	4.1	Y	Absent		A2-14-DIOXANESIM-PPB(7)
L2046531-03F	Amber 250ml unpreserved	A	7	7	4.1	Y	Absent		A2-14-DIOXANESIM-PPB(7)
L2046531-04A	Vial HCl preserved	A	NA		4.1	Y	Absent		8260-NH(14)
L2046531-04B	Vial HCl preserved	A	NA		4.1	Y	Absent		8260-NH(14)
L2046531-04C	Vial HCl preserved	A	NA		4.1	Y	Absent		8260-NH(14)
L2046531-04D	Plastic 250ml NaOH preserved	A	>12	>12	4.1	Y	Absent		TCN-9010(14)
L2046531-04E	Amber 250ml unpreserved	A	7	7	4.1	Y	Absent		A2-14-DIOXANESIM-PPB(7)
L2046531-04F	Amber 250ml unpreserved	A	7	7	4.1	Y	Absent		A2-14-DIOXANESIM-PPB(7)
L2046531-05A	Vial HCl preserved	A	NA		4.1	Y	Absent		8260-NH(14)
L2046531-05B	Vial HCl preserved	A	NA		4.1	Y	Absent		8260-NH(14)
L2046531-05C	Vial HCl preserved	A	NA		4.1	Y	Absent		8260-NH(14)
L2046531-05E	Amber 250ml unpreserved	A	7	7	4.1	Y	Absent		A2-14-DIOXANESIM-PPB(7)
L2046531-05F	Amber 250ml unpreserved	A	7	7	4.1	Y	Absent		A2-14-DIOXANESIM-PPB(7)

*Values in parentheses indicate holding time in days

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11

Lab Number: L2046531
Report Date: 11/02/20

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Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2046531-06A	Vial HCl preserved	A	NA		4.1	Y	Absent		8260-NH(14)
L2046531-06B	Vial HCl preserved	A	NA		4.1	Y	Absent		8260-NH(14)
L2046531-06C	Vial HCl preserved	A	NA		4.1	Y	Absent		8260-NH(14)
L2046531-06G	Plastic 250ml HNO3 preserved	A	<2	<2	4.1	Y	Absent		CR-6020T(180),NI-6020T(180),PB-6020T(180),MN-6020T(180),AS-6020T(180),CD-6020T(180)
L2046531-07A	Vial HCl preserved	A	NA		4.1	Y	Absent		8260-NH(14)
L2046531-07B	Vial HCl preserved	A	NA		4.1	Y	Absent		8260-NH(14)
L2046531-07C	Vial HCl preserved	A	NA		4.1	Y	Absent		8260-NH(14)
L2046531-07E	Amber 250ml unpreserved	A	7	7	4.1	Y	Absent		A2-14-DIOXANESIM-PPB(7)
L2046531-07F	Amber 250ml unpreserved	A	7	7	4.1	Y	Absent		A2-14-DIOXANESIM-PPB(7)

*Values in parentheses indicate holding time in days

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046531

Project Number: 04.0190987.11 **Report Date:** 11/02/20

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GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: Data Usability Report

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046531

Project Number: 04.0190987.11 **Report Date:** 11/02/20

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Footnotes

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

Terms

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

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

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

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

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

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

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

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

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

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

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

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

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

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

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

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

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

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

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

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

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

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

Report Format: Data Usability Report

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046531

Project Number: 04.0190987.11 **Report Date:** 11/02/20

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Data Qualifiers

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

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046531
Project Number: 04.0190987.11 **Report Date:** 11/02/20

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REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

LIMITATION OF LIABILITIES

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

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

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Certification Information

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

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
EPA TO-12 Non-methane organics
EPA 3C Fixed gases
Biological Tissue Matrix: EPA 3050B

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

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

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

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

CHAIN OF CUSTODY

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ALPHA ANALYTICAL

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

Date Rec'd in Lab: 10/26/20

ALPHA Job #: L2046531

Client Information

Client: NHDES
Address: 29 Hazen Drive
Concord, NH 03302
Phone: 603-271-3649
Fax:
Email: michael.summerlin@des.nh.gov

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: NH Plating Company Superfund
Project Location: Merrimack, NH
Project #: 04.0190987.11
Project Manager: Michael Summerlin
ALPHA Quote #: NH DES Contract No. 1069635

Turn Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information - Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client Info PO #: 2589-00'4"

Regulatory Requirements/Report Limits

State/Fed Program: NHDES
Criteria: Sampling and Analysis Plan limits

Other Project Specific Requirements/Comments/Detection Limits:

Please also email login receipts and lab reports to tanya.justham@gza.com. Please provide excel files formatted for upload to the NHDES EMD and for GZA EQuIS upload.

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify Below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	VOCs 8260 NHDES List	1,4-dioxane	Total metals (As, Cd, Cr, Pb, Mn & Ni)	Cyanide									Sample Specific Comments	Total # of Bottles
L2046531-01	TRIP BLANK	10-26-20	0800	AQ	MB	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		2
02	NHP_MW-302SA	10-26-20	1215	AQ	MB	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		5
03	NHP_MW-302DA	10-26-20	1025	AQ	MB	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		5
04	NHP_MW-308SA	10-26-20	1210	AQ	ED	☑	☑	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐		6
05	NHP_MW-308DA	10-26-20	1030	AQ	ED	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		5
06	NHP_MW-309SA	10-26-20	1220	AQ	MM	☑	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐		4
07	NHP_MW-309DA	10-26-20	1040	AQ	MM	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		5
					MM 10-26-20														

Container Type	V	A	P	P			-	-	-	-	-
Preservative	B	A	C	E			-	-	-	-	-

Relinquished By:	Date/Time	Received By:	Date/Time
Margaret Mills 10-26-20/1550	10/26/20 10-26-20	Melissa Wood	10/26/20 1550 10-26-20 1700 10/26/20 1575

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

FORM NO. 01-01 (MA) (rev. 9-Mar-19)

DRAFT

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ANALYTICAL REPORT

Lab Number:	L2046836
Client:	GZA GeoEnvironmental, Inc. / NHDES PO Box 95 29 Hazen Drive Concord, NH 03302-0095
ATTN:	Michael Summerlin
Phone:	(603) 271-3649
Project Name:	NH PLANTING COMPANY SUPERFUND
Project Number:	04.0190987.11
Report Date:	11/02/20

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

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

Project Name: NH PLANTING COMPANY SUPERFUND
Project Number: 04.0190987.11

Lab Number: L2046836
Report Date: 11/02/20

DRAFT

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2046836-01	TRIP BLANK	WATER	MERRIMACK, NH	10/27/20 07:30	10/27/20
L2046836-02	NHP_MW-301S	WATER	MERRIMACK, NH	10/27/20 09:00	10/27/20
L2046836-03	NHP_MW-400R	WATER	MERRIMACK, NH	10/27/20 10:40	10/27/20
L2046836-04	NHP_MW-401S	WATER	MERRIMACK, NH	10/27/20 09:45	10/27/20

Project Name:	NH PLANTING COMPANY SUPERFUND	**Lab Number:**	L2046836
Project Number:	04.0190987.11	**Report Date:**	11/02/20

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Case Narrative

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

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

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

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

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

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

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

Authorized Signature: Tiffani Morrissey - Tiffani Morrissey

Title: Technical Director/Representative Date: 11/02/20

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ORGANICS

DRAFT

VOLATILES

Project Name: NH PLANTING COMPANY SUPERFUND **Lab Number:** L2046836

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046836-01
Client ID: TRIP BLANK
Sample Location: MERRIMACK, NH

Date Collected: 10/27/20 07:30
Date Received: 10/27/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 10/30/20 20:44
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1

Project Name: NH PLANTING COMPANY SUPERFUND **Lab Number:** L2046836

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046836-01 Date Collected: 10/27/20 07:30

Client ID: TRIP BLANK Date Received: 10/27/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	ND		ug/l	0.50	--	1
Trichloroethene	ND		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1

Project Name: NH PLANTING COMPANY SUPERFUND **Lab Number:** L2046836

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046836-01 Date Collected: 10/27/20 07:30

Client ID: TRIP BLANK Date Received: 10/27/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	92		70-130

Project Name: NH PLANTING COMPANY SUPERFUND **Lab Number:** L2046836

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046836-02
Client ID: NHP_MW-301S
Sample Location: MERRIMACK, NH

Date Collected: 10/27/20 09:00
Date Received: 10/27/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 10/30/20 22:12
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1

Project Name: NH PLANTING COMPANY SUPERFUND **Lab Number:** L2046836

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046836-02 Date Collected: 10/27/20 09:00

Client ID: NHP_MW-301S Date Received: 10/27/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	ND		ug/l	0.50	--	1
Trichloroethene	ND		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1

Project Name: NH PLANTING COMPANY SUPERFUND **Lab Number:** L2046836

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046836-02 Date Collected: 10/27/20 09:00

Client ID: NHP_MW-301S Date Received: 10/27/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	100		70-130

Project Name: NH PLANTING COMPANY SUPERFUND **Lab Number:** L2046836

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046836-03
Client ID: NHP_MW-400R
Sample Location: MERRIMACK, NH

Date Collected: 10/27/20 10:40
Date Received: 10/27/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 10/30/20 22:34
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1

Project Name: NH PLANTING COMPANY SUPERFUND **Lab Number:** L2046836

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046836-03 Date Collected: 10/27/20 10:40

Client ID: NHP_MW-400R Date Received: 10/27/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	0.82		ug/l	0.50	--	1
Trichloroethene	2.3		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	0.82		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1

Project Name: NH PLANTING COMPANY SUPERFUND **Lab Number:** L2046836

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046836-03 Date Collected: 10/27/20 10:40

Client ID: NHP_MW-400R Date Received: 10/27/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	94		70-130

Project Name: NH PLANTING COMPANY SUPERFUND **Lab Number:** L2046836

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046836-04
Client ID: NHP_MW-401S
Sample Location: MERRIMACK, NH

Date Collected: 10/27/20 09:45
Date Received: 10/27/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 10/30/20 22:56
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	0.65		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1

Project Name: NH PLANTING COMPANY SUPERFUND **Lab Number:** L2046836

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046836-04 Date Collected: 10/27/20 09:45

Client ID: NHP_MW-401S Date Received: 10/27/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	2.8		ug/l	0.50	--	1
Trichloroethene	3.3		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	2.8		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1

Project Name: NH PLANTING COMPANY SUPERFUND **Lab Number:** L2046836

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046836-04 Date Collected: 10/27/20 09:45

Client ID: NHP_MW-401S Date Received: 10/27/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	93		70-130

Project Name: NH PLANTING COMPANY SUPERFUND **Lab Number:** L2046836

Project Number: 04.0190987.11 **Report Date:** 11/02/20

DRAFT

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 10/30/20 19:49
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-04 Batch: WG1428899-5					
Methylene chloride	ND		ug/l	3.0	--
1,1-Dichloroethane	ND		ug/l	0.75	--
Chloroform	ND		ug/l	0.75	--
Carbon tetrachloride	ND		ug/l	0.50	--
1,2-Dichloropropane	ND		ug/l	1.8	--
Dibromochloromethane	ND		ug/l	0.50	--
1,1,2-Trichloroethane	ND		ug/l	0.75	--
Tetrachloroethene	ND		ug/l	0.50	--
Chlorobenzene	ND		ug/l	0.50	--
Trichlorofluoromethane	ND		ug/l	2.5	--
1,2-Dichloroethane	ND		ug/l	0.50	--
1,1,1-Trichloroethane	ND		ug/l	0.50	--
Bromodichloromethane	ND		ug/l	0.50	--
trans-1,3-Dichloropropene	ND		ug/l	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
1,3-Dichloropropene, Total	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	2.5	--
Bromoform	ND		ug/l	2.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	0.75	--
Ethylbenzene	ND		ug/l	0.50	--
Chloromethane	ND		ug/l	2.5	--
Bromomethane	ND		ug/l	1.0	--
Vinyl chloride	ND		ug/l	1.0	--
Chloroethane	ND		ug/l	1.0	--
1,1-Dichloroethene	ND		ug/l	0.50	--
trans-1,2-Dichloroethene	ND		ug/l	0.75	--
1,2-Dichloroethene, Total	ND		ug/l	0.50	--

Project Name: NH PLANTING COMPANY SUPERFUND **Lab Number:** L2046836

Project Number: 04.0190987.11 **Report Date:** 11/02/20

DRAFT

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 10/30/20 19:49
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-04 Batch: WG1428899-5					
Trichloroethene	ND		ug/l	0.50	--
1,2-Dichlorobenzene	ND		ug/l	2.5	--
1,3-Dichlorobenzene	ND		ug/l	2.5	--
1,4-Dichlorobenzene	ND		ug/l	2.5	--
Methyl tert butyl ether	ND		ug/l	1.0	--
p/m-Xylene	ND		ug/l	1.0	--
o-Xylene	ND		ug/l	1.0	--
Xylenes, Total	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	0.50	--
Dibromomethane	ND		ug/l	5.0	--
1,2,3-Trichloropropane	ND		ug/l	5.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	5.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	5.0	--
2-Butanone	ND		ug/l	5.0	--
4-Methyl-2-pentanone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	2.5	--
Tetrahydrofuran	ND		ug/l	5.0	--
2,2-Dichloropropane	ND		ug/l	2.5	--
1,2-Dibromoethane	ND		ug/l	2.0	--
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--
Bromobenzene	ND		ug/l	2.5	--
n-Butylbenzene	ND		ug/l	0.50	--
sec-Butylbenzene	ND		ug/l	0.50	--
tert-Butylbenzene	ND		ug/l	2.5	--
o-Chlorotoluene	ND		ug/l	2.5	--
p-Chlorotoluene	ND		ug/l	2.5	--

Project Name: NH PLANTING COMPANY SUPERFUND **Lab Number:** L2046836

Project Number: 04.0190987.11 **Report Date:** 11/02/20

DRAFT

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 10/30/20 19:49
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-04 Batch: WG1428899-5					
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--
Hexachlorobutadiene	ND		ug/l	0.50	--
Isopropylbenzene	ND		ug/l	0.50	--
p-Isopropyltoluene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	2.5	--
n-Propylbenzene	ND		ug/l	0.50	--
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--
Ethyl ether	ND		ug/l	2.5	--
Isopropyl Ether	ND		ug/l	2.0	--
Tert-Butyl Alcohol	ND		ug/l	10	--
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--
1,4-Dioxane	ND		ug/l	250	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	101		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: NH PLANTING COMPANY SUPERFUND
Project Number: 04.0190987.11
Lab Number: L2046836
Report Date: 11/02/20

DRAFT

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04 Batch: WG1428899-3 WG1428899-4								
Methylene chloride	98		89		70-130	10		20
1,1-Dichloroethane	91		85		70-130	7		20
Chloroform	94		86		70-130	9		20
Carbon tetrachloride	87		78		63-132	11		20
1,2-Dichloropropane	98		93		70-130	5		20
Dibromochloromethane	84		86		63-130	2		20
1,1,2-Trichloroethane	97		98		70-130	1		20
Tetrachloroethene	**59**	Q	**60**	Q	70-130	2		20
Chlorobenzene	98		94		75-130	4		25
Trichlorofluoromethane	98		92		62-150	6		20
1,2-Dichloroethane	97		97		70-130	0		20
1,1,1-Trichloroethane	90		80		67-130	12		20
Bromodichloromethane	90		86		67-130	5		20
trans-1,3-Dichloropropene	84		86		70-130	2		20
cis-1,3-Dichloropropene	85		82		70-130	4		20
1,1-Dichloropropene	92		84		70-130	9		20
Bromoform	73		69		54-136	6		20
1,1,2,2-Tetrachloroethane	95		90		67-130	5		20
Benzene	98		88		70-130	11		25
Toluene	93		99		70-130	6		25
Ethylbenzene	98		93		70-130	5		20
Chloromethane	66		**58**	Q	64-130	13		20
Bromomethane	74		69		39-139	7		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: NH PLANTING COMPANY SUPERFUND

Project Number: 04.0190987.11

Lab Number: L2046836

Report Date: 11/02/20

DRAFT

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04 Batch: WG1428899-3 WG1428899-4								
Vinyl chloride	91		83		55-140	9		20
Chloroethane	110		120		55-138	9		20
1,1-Dichloroethene	93		82		61-145	13		25
trans-1,2-Dichloroethene	99		89		70-130	11		20
Trichloroethene	93		88		70-130	6		25
1,2-Dichlorobenzene	100		98		70-130	2		20
1,3-Dichlorobenzene	100		96		70-130	4		20
1,4-Dichlorobenzene	100		94		70-130	6		20
Methyl tert butyl ether	86		82		63-130	5		20
p/m-Xylene	95		90		70-130	5		20
o-Xylene	100		95		70-130	5		20
cis-1,2-Dichloroethene	91		84		70-130	8		20
Dibromomethane	94		88		70-130	7		20
1,2,3-Trichloropropane	90		87		64-130	3		20
Styrene	100		95		70-130	5		20
Dichlorodifluoromethane	77		68		36-147	12		20
Acetone	99		98		58-148	1		20
Carbon disulfide	88		81		51-130	8		20
2-Butanone	72		72		63-138	0		20
4-Methyl-2-pentanone	70		74		59-130	6		20
2-Hexanone	73		72		57-130	1		20
Bromochloromethane	92		83		70-130	10		20
Tetrahydrofuran	88		82		58-130	7		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: NH PLANTING COMPANY SUPERFUND
Project Number: 04.0190987.11
Lab Number: L2046836
Report Date: 11/02/20

DRAFT

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04 Batch: WG1428899-3 WG1428899-4								
2,2-Dichloropropane	79		72		63-133	9		20
1,2-Dibromoethane	90		95		70-130	5		20
1,1,1,2-Tetrachloroethane	93		91		64-130	2		20
Bromobenzene	95		92		70-130	3		20
n-Butylbenzene	98		93		53-136	5		20
sec-Butylbenzene	98		94		70-130	4		20
tert-Butylbenzene	88		83		70-130	6		20
o-Chlorotoluene	100		96		70-130	4		20
p-Chlorotoluene	100		98		70-130	2		20
1,2-Dibromo-3-chloropropane	68		63		41-144	8		20
Hexachlorobutadiene	74		82		63-130	10		20
Isopropylbenzene	96		93		70-130	3		20
p-Isopropyltoluene	97		93		70-130	4		20
Naphthalene	79		82		70-130	4		20
n-Propylbenzene	99		93		69-130	6		20
1,2,3-Trichlorobenzene	84		85		70-130	1		20
1,2,4-Trichlorobenzene	86		88		70-130	2		20
1,3,5-Trimethylbenzene	99		93		64-130	6		20
1,3,5-Trichlorobenzene	91		88		70-130	3		20
1,2,4-Trimethylbenzene	99		95		70-130	4		20
Ethyl ether	87		81		59-134	7		20
Isopropyl Ether	97		84		70-130	14		20
Tert-Butyl Alcohol	**68**	Q	**62**	Q	70-130	9		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: NH PLANTING COMPANY SUPERFUND

Project Number: 04.0190987.11

Lab Number: L2046836

Report Date: 11/02/20

DRAFT

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04 Batch: WG1428899-3 WG1428899-4								
Ethyl-Tert-Butyl-Ether	85		79		70-130	7		20
Tertiary-Amyl Methyl Ether	80		80		66-130	0		20
1,4-Dioxane	86		90		56-162	5		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	100		97		70-130
Toluene-d8	95		106		70-130
4-Bromofluorobenzene	97		96		70-130
Dibromofluoromethane	103		97		70-130

DRAFT

SEMIVOLATILES

Project Name: NH PLANTING COMPANY SUPERFUND **Lab Number:** L2046836

Project Number: 04.0190987.11 **Report Date:** 11/02/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046836-03
Client ID: NHP_MW-400R
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 11/01/20 21:53
Analyst: PS

Date Collected: 10/27/20 10:40
Date Received: 10/27/20
Field Prep: Not Specified

Extraction Method: EPA 3510C
Extraction Date: 10/29/20 10:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	0.982		ug/l	0.144	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	46		15-110

Project Name: NH PLANTING COMPANY SUPERFUND **Lab Number:** L2046836

Project Number: 04.0190987.11 **Report Date:** 11/02/20

DRAFT

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 11/01/20 13:16
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 10/29/20 10:45

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by 8270D-SIM - Mansfield Lab for sample(s): 03 Batch: WG1428015-1					
1,4-Dioxane	ND		ug/l	0.150	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	51		15-110

Lab Control Sample Analysis

Batch Quality Control

Project Name: NH PLANTING COMPANY SUPERFUND

Project Number: 04.0190987.11

Lab Number: L2046836

Report Date: 11/02/20

DRAFT

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by 8270D-SIM - Mansfield Lab Associated sample(s): 03 Batch: WG1428015-2 WG1428015-3								
1,4-Dioxane	102		103		40-140	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	43		49		15-110

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METALS

Project Name: NH PLANTING COMPANY SUPERFUND **Lab Number:** L2046836

Project Number: 04.0190987.11 **Report Date:** 11/02/20

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SAMPLE RESULTS

Lab ID: L2046836-02 Date Collected: 10/27/20 09:00

Client ID: NHP_MW-301S Date Received: 10/27/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	ND		mg/l	0.00050	--	1	10/29/20 22:25	10/30/20 13:17	EPA 3005A	1,6020B	AM
Cadmium, Total	0.1328		mg/l	0.00020	--	1	10/29/20 22:25	10/30/20 13:17	EPA 3005A	1,6020B	AM
Chromium, Total	ND		mg/l	0.00100	--	1	10/29/20 22:25	10/30/20 13:17	EPA 3005A	1,6020B	AM
Lead, Total	ND		mg/l	0.00100	--	1	10/29/20 22:25	10/30/20 13:17	EPA 3005A	1,6020B	AM
Manganese, Total	0.3644		mg/l	0.00100	--	1	10/29/20 22:25	10/30/20 13:17	EPA 3005A	1,6020B	AM
Nickel, Total	0.1152		mg/l	0.00200	--	1	10/29/20 22:25	10/30/20 13:17	EPA 3005A	1,6020B	AM

Project Name: NH PLANTING COMPANY SUPERFUND **Lab Number:** L2046836

Project Number: 04.0190987.11 **Report Date:** 11/02/20

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Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 02 Batch: WG1428042-1										
Arsenic, Total	ND		mg/l	0.00050	--	1	10/29/20 22:25	10/30/20 10:01	1,6020B	AM
Cadmium, Total	ND		mg/l	0.00020	--	1	10/29/20 22:25	10/30/20 10:01	1,6020B	AM
Chromium, Total	ND		mg/l	0.00100	--	1	10/29/20 22:25	10/30/20 10:01	1,6020B	AM
Lead, Total	ND		mg/l	0.00100	--	1	10/29/20 22:25	10/30/20 10:01	1,6020B	AM
Manganese, Total	ND		mg/l	0.00100	--	1	10/29/20 22:25	10/30/20 10:01	1,6020B	AM
Nickel, Total	ND		mg/l	0.00200	--	1	10/29/20 22:25	10/30/20 10:01	1,6020B	AM

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: NH PLANTING COMPANY SUPERFUND

Project Number: 04.0190987.11

Lab Number: L2046836

Report Date: 11/02/20

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Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02 Batch: WG1428042-2								
Arsenic, Total	107		-		80-120	-		
Cadmium, Total	110		-		80-120	-		
Chromium, Total	101		-		80-120	-		
Lead, Total	109		-		80-120	-		
Manganese, Total	102		-		80-120	-		
Nickel, Total	98		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: NH PLANTING COMPANY SUPERFUND
Project Number: 04.0190987.11
Lab Number: L2046836
Report Date: 11/02/20

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Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1428042-3 WG1428042-4 QC Sample: L2047004-04 Client ID: MS Sample												
Arsenic, Total	0.00114	0.12	0.1356	112		0.1306	108		75-125	4		20
Cadmium, Total	ND	0.051	0.05621	110		0.05522	108		75-125	2		20
Chromium, Total	0.00111	0.2	0.2049	102		0.2030	101		75-125	1		20
Lead, Total	0.00272	0.51	0.5670	111		0.5643	110		75-125	0		20
Manganese, Total	5.706	0.5	5.722	**3**	Q	5.685	**0**	Q	75-125	1		20
Nickel, Total	0.01651	0.5	0.5079	98		0.5069	98		75-125	0		20

Project Name: NH PLANTING COMPANY SUPERFUND
Project Number: 04.0190987.11

Lab Number: L2046836
Report Date: 11/02/20

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Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2046836-01A	Vial HCl preserved	A	NA		3.3	Y	Absent		8260-NH(14)
L2046836-01B	Vial HCl preserved	A	NA		3.3	Y	Absent		8260-NH(14)
L2046836-02A	Vial HCl preserved	A	NA		3.3	Y	Absent		8260-NH(14)
L2046836-02B	Vial HCl preserved	A	NA		3.3	Y	Absent		8260-NH(14)
L2046836-02C	Vial HCl preserved	A	NA		3.3	Y	Absent		8260-NH(14)
L2046836-02D	Plastic 250ml HNO3 preserved	A	<2	<2	3.3	Y	Absent		CR-6020T(180),NI-6020T(180),PB-6020T(180),MN-6020T(180),AS-6020T(180),CD-6020T(180)
L2046836-03A	Vial HCl preserved	A	NA		3.3	Y	Absent		8260-NH(14)
L2046836-03B	Vial HCl preserved	A	NA		3.3	Y	Absent		8260-NH(14)
L2046836-03C	Vial HCl preserved	A	NA		3.3	Y	Absent		8260-NH(14)
L2046836-03D	Amber 250ml unpreserved	A	7	7	3.3	Y	Absent		A2-14-DIOXANESIM-PPB(7)
L2046836-03E	Amber 250ml unpreserved	A	7	7	3.3	Y	Absent		A2-14-DIOXANESIM-PPB(7)
L2046836-04A	Vial HCl preserved	A	NA		3.3	Y	Absent		8260-NH(14)
L2046836-04B	Vial HCl preserved	A	NA		3.3	Y	Absent		8260-NH(14)
L2046836-04C	Vial HCl preserved	A	NA		3.3	Y	Absent		8260-NH(14)

*Values in parentheses indicate holding time in days

Project Name: NH PLANTING COMPANY SUPERFUND **Lab Number:** L2046836

Project Number: 04.0190987.11 **Report Date:** 11/02/20

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GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: Data Usability Report

Project Name:	NH PLANTING COMPANY SUPERFUND	**Lab Number:**	L2046836
Project Number:	04.0190987.11	**Report Date:**	11/02/20

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Footnotes

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

Terms

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

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

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

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

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

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

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

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

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

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

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

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

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

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

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

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

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

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

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

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

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

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

Report Format: Data Usability Report

Project Name:	NH PLANTING COMPANY SUPERFUND	**Lab Number:**	L2046836
Project Number:	04.0190987.11	**Report Date:**	11/02/20

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Data Qualifiers

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

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Project Name: NH PLANTING COMPANY SUPERFUND **Lab Number:** L2046836
Project Number: 04.0190987.11 **Report Date:** 11/02/20

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REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

LIMITATION OF LIABILITIES

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

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

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Certification Information

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

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
EPA TO-12 Non-methane organics
EPA 3C Fixed gases
Biological Tissue Matrix: EPA 3050B

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

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

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

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

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL

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

Date Rec'd in Lab: 10/27/20

ALPHA Job #: L2046836

Project Information

Project Name: NH Plating Company Superfund

Project Location: Merrimack, NH

Project #: 04.0190987.11

Project Manager: Michael Summerlin

ALPHA Quote #: NH DES Contract No. 1069635

Report Information Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #: 2589-00"4"

Regulatory Requirements/Report Limits

State/Fed Program	Criteria
NHDES	Sampling and Analysis Plan limits

Client Information

Client: NHDES

Address: 29 Hazen Drive

Concord, NH 03302

Phone: 603-271-3649

Fax:

Email: michael.summerlinjr@des.nh.gov

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

Please also email login receipts and lab reports to tanya.justham@gza.com.
Please provide excel files formatted for upload to the NHDES EMD and for GZA EQUiS upload.

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	VOCs 8260 NHDES List	1,4-dioxane	Total metals (As, Cd, Cr, Pb, Mn & Ni)	Cyanide									Sample Specific Comments	TOTAL # BOTTLES
46836-01	TRIP BLANK	10-27-20	0730	AQ	MB	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		2
-02	NHP_MW-301S	10-27-20	0900	AQ	ED	☑	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐		4
-03	NHP_MW-400R	10-27-20	1040	AQ	MM	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		5
-04	NHP_MW-401S	10-27-20	0945	AQ	MB	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		3
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
				MM 10-27-20		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		

Container Type	V	A	P	P			-	-	-	-	-	-
Preservative	B	A	C	E			-	-	-	-	-	-

Relinquished By:	Date/Time	Received By:	Date/Time
Megan [illegible]	10-27-20/1645	[illegible]	10/27/20 16[illegible]
[illegible]	10/27/20	[illegible]	10/27/17 00
[illegible]	10-27-20	[illegible]	10/27/20 [illegible]

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

FORM NO: 01-01(I-N) (rev. 3-JAN-12)

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ANALYTICAL REPORT

Lab Number:	L2046839
Client:	GZA GeoEnvironmental, Inc. / NHDES PO Box 95 29 Hazen Drive Concord, NH 03302-0095
ATTN:	Michael Summerlin
Phone:	(603) 271-3649
Project Name:	NH PLATING COMPANY SUPERFUND
Project Number:	04.0190987.11
Report Date:	11/10/20

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320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11

Lab Number: L2046839
Report Date: 11/10/20

DRAFT

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2046839-01	TRIP BLANK	WATER	MERRIMACK, NH	10/26/20 08:00	10/27/20
L2046839-02	NHP_MW-302DA	WATER	MERRIMACK, NH	10/26/20 10:25	10/27/20
L2046839-03	NHP_MW-302SA	WATER	MERRIMACK, NH	10/26/20 12:15	10/27/20
L2046839-04	NHP_MW-308SA	WATER	MERRIMACK, NH	10/26/20 12:10	10/27/20
L2046839-05	NHP_MW-308DA	WATER	MERRIMACK, NH	10/26/20 10:30	10/27/20
L2046839-06	NHP_MW-309SA	WATER	MERRIMACK, NH	10/26/20 12:20	10/27/20
L2046839-07	NHP_MW-309DA	WATER	MERRIMACK, NH	10/26/20 10:40	10/27/20
L2046839-08	NHP_MW-301S	WATER	MERRIMACK, NH	10/27/20 09:00	10/27/20
L2046839-09	NHP_MW-401S	WATER	MERRIMACK, NH	10/27/20 09:45	10/27/20

Project Name:	NH PLATING COMPANY SUPERFUND	**Lab Number:**	L2046839
Project Number:	04.0190987.11	**Report Date:**	11/10/20

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Case Narrative

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

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

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

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

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

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

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046839
Project Number: 04.0190987.11 **Report Date:** 11/10/20

DRAFT

Case Narrative (continued)

Perfluorinated Alkyl Acids by Isotope Dilution

L2046839-02, -04, -05, -07, and -08 (MEOH): Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

L2046839-04, -06, -07, -08, and -09: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

WG1431598-1, WG1431598-2, WG1431598-3, WG1431598-4, and WG1431598-5 (MEOH): Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

The WG1431598-2/-3 LCS/LCSD recoveries, associated with L2046839-01 through -09, are below the acceptance criteria for perfluorooctadecanoic acid (pfoda) (37%/34%); however, it has been identified as a "difficult" analyte. The results of the associated samples are reported.

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

Authorized Signature: Susan E O'Neil Susan O' Neil

Title: Technical Director/Representative Date: 11/10/20

DRAFT

ORGANICS

DRAFT

SEMIVOLATILES

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046839

Project Number: 04.0190987.11 **Report Date:** 11/10/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046839-01
Client ID: TRIP BLANK
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/08/20 00:44
Analyst: SG

Date Collected: 10/26/20 08:00
Date Received: 10/27/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/07/20 05:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.81	--	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.81	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.81	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.81	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.81	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.81	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.81	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.81	--	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.81	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.81	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.81	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.81	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.81	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.81	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.81	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.81	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.81	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.81	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.81	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.81	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.81	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.81	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.81	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	45.3	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.81	--	1
Perfluorohexadecanoic Acid (PFHxDA)	ND		ng/l	3.62	--	1
Perfluorooctadecanoic Acid (PFODA)	ND		ng/l	3.62	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046839

Project Number: 04.0190987.11 **Report Date:** 11/10/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046839-01 Date Collected: 10/26/20 08:00

Client ID: TRIP BLANK Date Received: 10/27/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorododecane Sulfonic Acid (PFDoDS)	ND		ng/l	1.81	--	1
1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	ND		ng/l	4.53	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.81	--	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.81	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	86		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	103		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	91		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	93		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	85		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	88		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	98		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	83		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	102		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	78		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	86		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	81		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	125		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	70		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	87		40-144
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	73		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	78		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	66		33-143
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	140		50-150
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	83		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046839

Project Number: 04.0190987.11 **Report Date:** 11/10/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046839-01
Client ID: TRIP BLANK
Sample Location: MERRIMACK, NH

Date Collected: 10/26/20 08:00
Date Received: 10/27/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/09/20 13:40
Analyst: RS

Extraction Method: ALPHA 23528
Extraction Date: 11/07/20 05:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.81	--	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	18.1	--	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	18.1	--	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	45.3	--	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	45.3	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	73		1-87
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	52		50-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	50		50-150
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	79		50-150
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	73		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046839

Project Number: 04.0190987.11 **Report Date:** 11/10/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046839-02
Client ID: NHP_MW-302DA
Sample Location: MERRIMACK, NH

Date Collected: 10/26/20 10:25
Date Received: 10/27/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/08/20 01:00
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 11/07/20 05:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	2.71		ng/l	1.83	--	1
Perfluoropentanoic Acid (PFPeA)	4.67		ng/l	1.83	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.83	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.83	--	1
Perfluorohexanoic Acid (PFHxA)	6.69		ng/l	1.83	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.83	--	1
Perfluoroheptanoic Acid (PFHpA)	7.48		ng/l	1.83	--	1
Perfluorohexanesulfonic Acid (PFHxS)	2.16		ng/l	1.83	--	1
Perfluorooctanoic Acid (PFOA)	68.4	F	ng/l	1.83	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.83	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.83	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.83	--	1
Perfluorooctanesulfonic Acid (PFOS)	4.06	F	ng/l	1.83	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.83	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.83	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.83	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.83	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.83	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.83	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.83	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.83	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.83	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.83	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	45.9	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.83	--	1
Perfluorohexadecanoic Acid (PFHxDA)	ND		ng/l	3.67	--	1
Perfluorooctadecanoic Acid (PFODA)	ND		ng/l	3.67	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046839

Project Number: 04.0190987.11 **Report Date:** 11/10/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046839-02 Date Collected: 10/26/20 10:25

Client ID: NHP_MW-302DA Date Received: 10/27/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorododecane Sulfonic Acid (PFDoDS)	ND		ng/l	1.83	--	1
1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	ND		ng/l	4.59	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.83	--	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.83	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	70		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	88		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	83		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	87		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	72		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	74		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	91		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	70		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	85		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	69		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	73		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	66		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	91		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	46		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	69		40-144
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	63		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	62		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	53		33-143
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	125		50-150
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	67		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046839

Project Number: 04.0190987.11 **Report Date:** 11/10/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046839-02
Client ID: NHP_MW-302DA
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/09/20 13:48
Analyst: RS

Date Collected: 10/26/20 10:25
Date Received: 10/27/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/07/20 05:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.83	--	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	18.3	--	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	18.3	--	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	45.9	--	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	45.9	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	67		1-87
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	50		50-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	**45**	Q	50-150
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	69		50-150
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	62		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046839

Project Number: 04.0190987.11 **Report Date:** 11/10/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046839-03
Client ID: NHP_MW-302SA
Sample Location: MERRIMACK, NH

Date Collected: 10/26/20 12:15
Date Received: 10/27/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/08/20 01:33
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 11/07/20 05:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	8.59		ng/l	1.82	--	1
Perfluoropentanoic Acid (PFPeA)	19.5		ng/l	1.82	--	1
Perfluorobutanesulfonic Acid (PFBS)	4.03		ng/l	1.82	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.82	--	1
Perfluorohexanoic Acid (PFHxA)	18.5		ng/l	1.82	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.82	--	1
Perfluoroheptanoic Acid (PFHpA)	12.2		ng/l	1.82	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.82	--	1
Perfluorooctanoic Acid (PFOA)	46.2	F	ng/l	1.82	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.82	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.82	--	1
Perfluorononanoic Acid (PFNA)	6.43		ng/l	1.82	--	1
Perfluorooctanesulfonic Acid (PFOS)	9.88	F	ng/l	1.82	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.82	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.82	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.82	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.82	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.82	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.82	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.82	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.82	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.82	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.82	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	45.5	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.82	--	1
Perfluorohexadecanoic Acid (PFHxDA)	ND		ng/l	3.64	--	1
Perfluorooctadecanoic Acid (PFODA)	ND		ng/l	3.64	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046839

Project Number: 04.0190987.11 **Report Date:** 11/10/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046839-03 Date Collected: 10/26/20 12:15

Client ID: NHP_MW-302SA Date Received: 10/27/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorododecane Sulfonic Acid (PFDoDS)	ND		ng/l	1.82	--	1
1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	ND		ng/l	4.55	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.82	--	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.82	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	70		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	83		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	83		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	189		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	68		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	73		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	92		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	66		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	133		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	59		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	77		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	59		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	106		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	37		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	62		40-144
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	41		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	55		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	46		33-143
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	132		50-150
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	59		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046839

Project Number: 04.0190987.11 **Report Date:** 11/10/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046839-03
Client ID: NHP_MW-302SA
Sample Location: MERRIMACK, NH

Date Collected: 10/26/20 12:15
Date Received: 10/27/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/09/20 14:02
Analyst: RS

Extraction Method: ALPHA 23528
Extraction Date: 11/07/20 05:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.82	--	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	18.2	--	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	18.2	--	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	45.5	--	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	45.5	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	67		1-87
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	57		50-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	54		50-150
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	75		50-150
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	67		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046839

Project Number: 04.0190987.11 **Report Date:** 11/10/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046839-04
Client ID: NHP_MW-308SA
Sample Location: MERRIMACK, NH

Sample Depth:

Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/08/20 02:06
Analyst: SG

Date Collected: 10/26/20 12:10
Date Received: 10/27/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/07/20 05:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	6.72		ng/l	1.86	--	1
Perfluoropentanoic Acid (PFPeA)	11.6		ng/l	1.86	--	1
Perfluorobutanesulfonic Acid (PFBS)	2.10		ng/l	1.86	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.86	--	1
Perfluorohexanoic Acid (PFHxA)	15.1		ng/l	1.86	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.86	--	1
Perfluoroheptanoic Acid (PFHpA)	10.8		ng/l	1.86	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.86	--	1
Perfluorooctanoic Acid (PFOA)	144	F	ng/l	1.86	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.86	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.86	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.86	--	1
Perfluorooctanesulfonic Acid (PFOS)	3.02	F	ng/l	1.86	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.86	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.86	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.86	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.86	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.86	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.86	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.86	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.86	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.86	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.86	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	46.4	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.86	--	1
Perfluorohexadecanoic Acid (PFHxDA)	ND		ng/l	3.72	--	1
Perfluorooctadecanoic Acid (PFODA)	ND		ng/l	3.72	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046839

Project Number: 04.0190987.11 **Report Date:** 11/10/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046839-04 Date Collected: 10/26/20 12:10

Client ID: NHP_MW-308SA Date Received: 10/27/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorododecane Sulfonic Acid (PFDoDS)	ND		ng/l	1.86	--	1
1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	ND		ng/l	4.64	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.86	--	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.86	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	63		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	76		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	75		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	140		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	63		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	68		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	81		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	63		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	96		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	56		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	65		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	55		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	80		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	34		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	58		40-144
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	36		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	51		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	38		33-143
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	145		50-150
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	**46**	Q	50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046839

Project Number: 04.0190987.11 **Report Date:** 11/10/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046839-04
Client ID: NHP_MW-308SA
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/09/20 14:17
Analyst: RS

Date Collected: 10/26/20 12:10
Date Received: 10/27/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/07/20 05:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.86	--	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	18.6	--	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	18.6	--	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	46.4	--	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	46.4	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	63		1-87
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	**49**	Q	50-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	**46**	Q	50-150
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	67		50-150
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	60		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046839

Project Number: 04.0190987.11 **Report Date:** 11/10/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046839-05
Client ID: NHP_MW-308DA
Sample Location: MERRIMACK, NH

Date Collected: 10/26/20 10:30
Date Received: 10/27/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/08/20 02:23
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 11/07/20 05:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.88	--	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.88	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.88	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.88	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.88	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.88	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.88	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.88	--	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.88	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.88	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.88	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.88	--	1
Perfluorooctanesulfonic Acid (PFOS)	2.77	F	ng/l	1.88	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.88	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.88	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.88	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.88	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.88	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.88	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.88	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.88	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.88	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.88	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	47.1	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.88	--	1
Perfluorohexadecanoic Acid (PFHxDA)	ND		ng/l	3.77	--	1
Perfluorooctadecanoic Acid (PFODA)	ND		ng/l	3.77	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046839

Project Number: 04.0190987.11 **Report Date:** 11/10/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046839-05 Date Collected: 10/26/20 10:30

Client ID: NHP_MW-308DA Date Received: 10/27/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorododecane Sulfonic Acid (PFDoDS)	ND		ng/l	1.88	--	1
1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	ND		ng/l	4.71	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.88	--	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.88	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	68		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	85		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	75		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	79		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	68		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	70		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	81		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	66		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	71		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	65		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	65		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	61		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	74		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	40		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	62		40-144
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	48		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	57		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	47		33-143
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	130		50-150
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	59		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046839

Project Number: 04.0190987.11 **Report Date:** 11/10/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046839-05
Client ID: NHP_MW-308DA
Sample Location: MERRIMACK, NH

Date Collected: 10/26/20 10:30
Date Received: 10/27/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/09/20 14:24
Analyst: RS

Extraction Method: ALPHA 23528
Extraction Date: 11/07/20 05:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.88	--	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	18.8	--	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	18.8	--	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	47.1	--	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	47.1	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	65		1-87
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	**45**	Q	50-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	**42**	Q	50-150
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	76		50-150
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	67		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046839

Project Number: 04.0190987.11 **Report Date:** 11/10/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046839-06
Client ID: NHP_MW-309SA
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/08/20 02:39
Analyst: SG

Date Collected: 10/26/20 12:20
Date Received: 10/27/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/07/20 05:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	8.11		ng/l	1.81	--	1
Perfluoropentanoic Acid (PFPeA)	13.1		ng/l	1.81	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.81	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.81	--	1
Perfluorohexanoic Acid (PFHxA)	15.9		ng/l	1.81	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.81	--	1
Perfluoroheptanoic Acid (PFHpA)	12.5		ng/l	1.81	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.81	--	1
Perfluorooctanoic Acid (PFOA)	97.1	F	ng/l	1.81	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.81	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.81	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.81	--	1
Perfluorooctanesulfonic Acid (PFOS)	3.27	F	ng/l	1.81	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.81	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.81	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.81	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.81	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.81	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.81	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.81	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.81	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.81	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.81	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	45.4	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.81	--	1
Perfluorohexadecanoic Acid (PFHxDA)	ND		ng/l	3.63	--	1
Perfluorooctadecanoic Acid (PFODA)	ND		ng/l	3.63	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046839

Project Number: 04.0190987.11 **Report Date:** 11/10/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046839-06 Date Collected: 10/26/20 12:20

Client ID: NHP_MW-309SA Date Received: 10/27/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorododecane Sulfonic Acid (PFDoDS)	ND		ng/l	1.81	--	1
1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	ND		ng/l	4.54	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.81	--	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.81	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	75		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	88		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	77		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	133		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	76		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	82		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	86		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	73		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	91		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	69		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	74		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	68		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	80		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	55		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	70		40-144
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	48		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	62		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	50		33-143
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	**165**	Q	50-150
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	63		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046839

Project Number: 04.0190987.11 **Report Date:** 11/10/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046839-06
Client ID: NHP_MW-309SA
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/09/20 14:31
Analyst: RS

Date Collected: 10/26/20 12:20
Date Received: 10/27/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/07/20 05:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.81	--	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	18.1	--	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	18.1	--	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	45.4	--	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	45.4	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	64		1-87
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	59		50-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	56		50-150
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	72		50-150
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	60		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046839

Project Number: 04.0190987.11 **Report Date:** 11/10/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046839-07
Client ID: NHP_MW-309DA
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/08/20 02:56
Analyst: SG

Date Collected: 10/26/20 10:40
Date Received: 10/27/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/07/20 05:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	1.85		ng/l	1.82	--	1
Perfluoropentanoic Acid (PFPeA)	3.62		ng/l	1.82	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.82	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.82	--	1
Perfluorohexanoic Acid (PFHxA)	5.16		ng/l	1.82	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.82	--	1
Perfluoroheptanoic Acid (PFHpA)	5.30		ng/l	1.82	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.82	--	1
Perfluorooctanoic Acid (PFOA)	37.2	F	ng/l	1.82	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.82	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.82	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.82	--	1
Perfluorooctanesulfonic Acid (PFOS)	3.04	F	ng/l	1.82	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.82	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.82	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.82	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.82	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.82	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.82	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.82	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.82	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.82	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.82	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	45.5	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.82	--	1
Perfluorohexadecanoic Acid (PFHxDA)	ND		ng/l	3.64	--	1
Perfluorooctadecanoic Acid (PFODA)	ND		ng/l	3.64	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046839

Project Number: 04.0190987.11 **Report Date:** 11/10/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046839-07 Date Collected: 10/26/20 10:40

Client ID: NHP_MW-309DA Date Received: 10/27/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorododecane Sulfonic Acid (PFDoDS)	ND		ng/l	1.82	--	1
1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	ND		ng/l	4.55	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.82	--	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.82	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	71		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	86		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	77		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	93		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	75		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	77		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	85		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	68		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	80		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	65		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	71		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	60		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	77		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	42		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	61		40-144
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	59		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	55		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	47		33-143
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	**164**	Q	50-150
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	60		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046839

Project Number: 04.0190987.11 **Report Date:** 11/10/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046839-07
Client ID: NHP_MW-309DA
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/09/20 14:38
Analyst: RS

Date Collected: 10/26/20 10:40
Date Received: 10/27/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/07/20 05:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.82	--	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	18.2	--	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	18.2	--	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	45.5	--	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	45.5	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	68		1-87
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	52		50-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	**48**	Q	50-150
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	72		50-150
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	64		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046839

Project Number: 04.0190987.11 **Report Date:** 11/10/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046839-08
Client ID: NHP_MW-301S
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/08/20 03:13
Analyst: SG

Date Collected: 10/27/20 09:00
Date Received: 10/27/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/07/20 05:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	4.42		ng/l	1.87	--	1
Perfluoropentanoic Acid (PFPeA)	6.14		ng/l	1.87	--	1
Perfluorobutanesulfonic Acid (PFBS)	3.79		ng/l	1.87	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.87	--	1
Perfluorohexanoic Acid (PFHxA)	7.85		ng/l	1.87	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.87	--	1
Perfluoroheptanoic Acid (PFHpA)	6.79		ng/l	1.87	--	1
Perfluorohexanesulfonic Acid (PFHxS)	2.21	F	ng/l	1.87	--	1
Perfluorooctanoic Acid (PFOA)	47.2	F	ng/l	1.87	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.87	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.87	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.87	--	1
Perfluorooctanesulfonic Acid (PFOS)	2.34	F	ng/l	1.87	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.87	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.87	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.87	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.87	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.87	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.87	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.87	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.87	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.87	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.87	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	46.7	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.87	--	1
Perfluorohexadecanoic Acid (PFHxDA)	ND		ng/l	3.74	--	1
Perfluorooctadecanoic Acid (PFODA)	ND		ng/l	3.74	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046839

Project Number: 04.0190987.11 **Report Date:** 11/10/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046839-08 Date Collected: 10/27/20 09:00

Client ID: NHP_MW-301S Date Received: 10/27/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorododecane Sulfonic Acid (PFDoDS)	ND		ng/l	1.87	--	1
1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	ND		ng/l	4.67	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.87	--	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.87	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	56		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	72		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	80		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	81		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	56		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	58		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	88		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	54		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	65		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	51		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	71		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	52		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	69		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	26		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	59		40-144
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	30		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	53		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	36		33-143
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	127		50-150
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	**37**	Q	50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046839

Project Number: 04.0190987.11 **Report Date:** 11/10/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046839-08
Client ID: NHP_MW-301S
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/09/20 14:45
Analyst: RS

Date Collected: 10/27/20 09:00
Date Received: 10/27/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/07/20 05:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.87	--	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	18.7	--	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	18.7	--	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	46.7	--	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	46.7	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	66		1-87
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	50		50-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	**48**	Q	50-150
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	73		50-150
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	65		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046839

Project Number: 04.0190987.11 **Report Date:** 11/10/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046839-09
Client ID: NHP_MW-401S
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/08/20 03:29
Analyst: SG

Date Collected: 10/27/20 09:45
Date Received: 10/27/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/07/20 05:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	4.25		ng/l	1.81	--	1
Perfluoropentanoic Acid (PFPeA)	5.25		ng/l	1.81	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.81	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.81	--	1
Perfluorohexanoic Acid (PFHxA)	5.73		ng/l	1.81	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.81	--	1
Perfluoroheptanoic Acid (PFHpA)	4.19		ng/l	1.81	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.81	--	1
Perfluorooctanoic Acid (PFOA)	24.3	F	ng/l	1.81	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.81	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.81	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.81	--	1
Perfluorooctanesulfonic Acid (PFOS)	3.04	F	ng/l	1.81	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.81	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.81	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.81	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.81	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.81	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.81	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.81	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.81	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.81	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.81	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	45.4	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.81	--	1
Perfluorohexadecanoic Acid (PFHxDA)	ND		ng/l	3.63	--	1
Perfluorooctadecanoic Acid (PFODA)	ND		ng/l	3.63	--	1

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046839

Project Number: 04.0190987.11 **Report Date:** 11/10/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046839-09 Date Collected: 10/27/20 09:45

Client ID: NHP_MW-401S Date Received: 10/27/20

Sample Location: MERRIMACK, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorododecane Sulfonic Acid (PFDoDS)	ND		ng/l	1.81	--	1
1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	ND		ng/l	4.54	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.81	--	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.81	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	82		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	98		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	88		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	126		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	84		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	89		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	95		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	80		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	86		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	70		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	78		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	68		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	82		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	51		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	69		40-144
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	50		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	60		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	51		33-143
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	**180**	Q	50-150
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	63		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046839

Project Number: 04.0190987.11 **Report Date:** 11/10/20

SAMPLE RESULTS

DRAFT

Lab ID: L2046839-09
Client ID: NHP_MW-401S
Sample Location: MERRIMACK, NH

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/09/20 14:53
Analyst: RS

Date Collected: 10/27/20 09:45
Date Received: 10/27/20
Field Prep: Not Specified

Extraction Method: ALPHA 23528
Extraction Date: 11/07/20 05:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.81	--	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	18.1	--	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	18.1	--	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	45.4	--	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	45.4	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	62		1-87
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	55		50-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	51		50-150
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	71		50-150
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	63		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046839

Project Number: 04.0190987.11 **Report Date:** 11/10/20

DRAFT

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/07/20 23:54
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 11/07/20 05:00

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-09 Batch: WG1431598-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	--
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	--
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	--
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	2.00	--
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	--
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	2.00	--
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	--
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	--
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	--
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	--
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	--
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	--
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	--
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	2.00	--
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	--
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	--
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	--
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	--
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	--
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	--
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	--
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	--
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	50.0	--
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	2.00	--

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046839

Project Number: 04.0190987.11 **Report Date:** 11/10/20

DRAFT

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/07/20 23:54
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 11/07/20 05:00

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-09 Batch: WG1431598-1					
Perfluorohexadecanoic Acid (PFHxDA)	ND		ng/l	4.00	--
Perfluorooctadecanoic Acid (PFODA)	ND		ng/l	4.00	--
Perfluorododecane Sulfonic Acid (PFDoDS)	ND		ng/l	2.00	--
1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	ND		ng/l	5.00	--
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	2.00	--
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	2.00	--

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046839

Project Number: 04.0190987.11 **Report Date:** 11/10/20

DRAFT

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/07/20 23:54
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 11/07/20 05:00

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-09 Batch: WG1431598-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	78		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	93		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	82		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	72		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	73		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	78		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	85		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	76		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	82		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	73		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	75		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	73		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	105		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	57		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	78		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	25		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	68		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	71		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	60		33-143
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	128		50-150
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	77		50-150

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046839

Project Number: 04.0190987.11 **Report Date:** 11/10/20

DRAFT

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/09/20 13:19
Analyst: RS

Extraction Method: ALPHA 23528
Extraction Date: 11/07/20 05:00

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-09 Batch: WG1431598-1					
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	--
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	20.0	--
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	20.0	--
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	50.0	--
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	50.0	--

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	70		1-87
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	**43**	Q	50-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	**41**	Q	50-150
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	76		50-150
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	67		50-150

Lab Control Sample Analysis
Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11
Lab Number: L2046839
Report Date: 11/10/20

DRAFT

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-09 Batch: WG1431598-2 WG1431598-3								
Perfluorobutanoic Acid (PFBA)	118		108		67-148	9		30
Perfluoropentanoic Acid (PFPeA)	119		110		63-161	8		30
Perfluorobutanesulfonic Acid (PFBS)	118		111		65-157	6		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	136		121		37-219	12		30
Perfluorohexanoic Acid (PFHxA)	119		108		69-168	10		30
Perfluoropentanesulfonic Acid (PFPeS)	112		110		52-156	2		30
Perfluoroheptanoic Acid (PFHpA)	116		106		58-159	9		30
Perfluorohexanesulfonic Acid (PFHxS)	116		112		69-177	4		30
Perfluorooctanoic Acid (PFOA)	119		108		63-159	10		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	136		126		49-187	8		30
Perfluoroheptanesulfonic Acid (PFHpS)	122		108		61-179	12		30
Perfluorononanoic Acid (PFNA)	117		109		68-171	7		30
Perfluorooctanesulfonic Acid (PFOS)	125		108		52-151	15		30
Perfluorodecanoic Acid (PFDA)	115		107		63-171	7		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	137		122		56-173	12		30
Perfluorononanesulfonic Acid (PFNS)	126		107		48-150	16		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	119		116		60-166	3		30
Perfluoroundecanoic Acid (PFUnA)	116		108		60-153	7		30
Perfluorodecanesulfonic Acid (PFDS)	121		110		38-156	10		30
Perfluorooctanesulfonamide (FOSA)	113		107		46-170	5		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	113		110		45-170	3		30
Perfluorododecanoic Acid (PFDoA)	125		112		67-153	11		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND

Project Number: 04.0190987.11

Lab Number: L2046839

Report Date: 11/10/20

DRAFT

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-09 Batch: WG1431598-2 WG1431598-3								
Perfluorotridecanoic Acid (PFTrDA)	120		110		48-158	9		30
Perfluorotetradecanoic Acid (PFTA)	117		108		59-182	8		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	66		70		50-150	6		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	123		114		50-150	8		30
Perfluorohexadecanoic Acid (PFHxDA)	102		98		50-150	4		30
Perfluorooctadecanoic Acid (PFODA)	**37**	Q	**34**	Q	50-150	8		30
Perfluorododecane Sulfonic Acid (PFDoDS)	126		114		50-150	10		30
1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	144		131		50-150	9		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	110		97		50-150	13		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	121		109		50-150	10		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND

Project Number: 04.0190987.11

Lab Number: L2046839

Report Date: 11/10/20

DRAFT

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

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-09 Batch: WG1431598-2 WG1431598-3

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	82		79		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	97		95		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	88		81		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	82		78		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	79		76		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	82		79		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	96		84		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	79		77		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	101		94		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	79		74		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	82		78		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	78		72		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	114		108		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	66		65		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	79		77		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	26		24		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	73		69		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	74		72		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	64		61		33-143
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	122		123		50-150
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	87		80		50-150

Lab Control Sample Analysis

Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND

Project Number: 04.0190987.11

Lab Number: L2046839

Report Date: 11/10/20

DRAFT

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-09 Batch: WG1431598-2 WG1431598-3								
Perfluorooctanesulfonamide (FOSA)	112		105		46-170	6		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	98		110		50-150	12		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	101		104		50-150	3		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	94		98		50-150	4		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	109		114		50-150	4		30

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	73		68		1-87
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	**44**	Q	**42**	Q	50-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	**41**	Q	**41**	Q	50-150
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	76		69		50-150
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	70		64		50-150

Matrix Spike Analysis

Batch Quality Control

DRAFT

Project Name: NH PLATING COMPANY SUPERFUND

Project Number: 04.0190987.11

Lab Number: L2046839

Report Date: 11/10/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-09 QC Batch ID: WG1431598-4 QC Sample: L2046839-02 Client ID: NHP_MW-302DA												
Perfluorobutanoic Acid (PFBA)	2.71	36.9	43.9	111		-	-		67-148	-		30
Perfluoropentanoic Acid (PFPeA)	4.67	36.9	46.8	114		-	-		63-161	-		30
Perfluorobutanesulfonic Acid (PFBS)	ND	32.8	38.1	116		-	-		65-157	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	34.6	45.3	131		-	-		37-219	-		30
Perfluorohexanoic Acid (PFHxA)	6.69	36.9	48.4	113		-	-		69-168	-		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	34.7	38.0	109		-	-		52-156	-		30
Perfluoroheptanoic Acid (PFHpA)	7.48	36.9	48.8	112		-	-		58-159	-		30
Perfluorohexanesulfonic Acid (PFHxS)	2.16	33.8	40.0F	112		-	-		69-177	-		30
Perfluorooctanoic Acid (PFOA)	68.4F	36.9	110F	113		-	-		63-159	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	35.2	44.8F	127		-	-		49-187	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	35.2	41.7	119		-	-		61-179	-		30
Perfluorononanoic Acid (PFNA)	ND	36.9	43.9	119		-	-		68-171	-		30
Perfluorooctanesulfonic Acid (PFOS)	4.06F	34.3	45.8F	122		-	-		52-151	-		30
Perfluorodecanoic Acid (PFDA)	ND	36.9	43.3	117		-	-		63-171	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	35.5	44.6F	126		-	-		56-173	-		30
Perfluorononanesulfonic Acid (PFNS)	ND	35.5	40.0	113		-	-		48-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	36.9	47.4F	128		-	-		60-166	-		30
Perfluoroundecanoic Acid (PFUnA)	ND	36.9	44.1	119		-	-		60-153	-		30
Perfluorodecanesulfonic Acid (PFDS)	ND	35.6	38.2	107		-	-		38-156	-		30
Perfluorooctanesulfonamide (FOSA)	ND	36.9	39.7	107		-	-		46-170	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	36.9	44.6	121		-	-		45-170	-		30
Perfluorododecanoic Acid (PFDoA)	ND	36.9	43.7	118		-	-		67-153	-		30

Matrix Spike Analysis

Batch Quality Control

DRAFT

Project Name: NH PLATING COMPANY SUPERFUND

Project Number: 04.0190987.11

Lab Number: L2046839

Report Date: 11/10/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-09 QC Batch ID: WG1431598-4 QC Sample: L2046839-02 Client ID: NHP_MW-302DA												
Perfluorotridecanoic Acid (PFTrDA)	ND	36.9	42.7	116		-	-		48-158	-		30
Perfluorotetradecanoic Acid (PFTA)	ND	36.9	42.4	115		-	-		59-182	-		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND	739	516	70		-	-		50-150	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	34.9	41.5	119		-	-		50-150	-		30
Perfluorohexadecanoic Acid (PFHxDA)	ND	36.9	37.9	103		-	-		50-150	-		30
Perfluorooctadecanoic Acid (PFODA)	ND	36.9	20.2	55		-	-		50-150	-		30
Perfluorododecane Sulfonic Acid (PFDoDS)	ND	35.8	43.2	121		-	-		50-150	-		30
1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	ND	35.6	51.3	144		-	-		50-150	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	34.4	35.4	103		-	-		50-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	34.9	37.3	107		-	-		50-150	-		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND	369	458	124		-	-		50-150	-		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND	369	416F	113		-	-		50-150	-		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND	369	374	101		-	-		50-150	-		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND	369	442	120		-	-		50-150	-		30

Surrogate (Extracted Internal Standard)	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	89				7-170
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	93				1-313
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	95				1-244

Matrix Spike Analysis

Batch Quality Control

DRAFT

Project Name: NH PLATING COMPANY SUPERFUND ***Lab Number:*** L2046839

Project Number: 04.0190987.11 ***Report Date:*** 11/10/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-09 QC Batch ID: WG1431598-4 QC Sample: L2046839-02 Client ID: NHP_MW-302DA												

Surrogate (Extracted Internal Standard)	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	130				50-150
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	61				50-150
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	69				50-150
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	72				23-146
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	49				1-181
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	**39**	Q			50-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	**46**	Q			50-150
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	69				40-144
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	67				38-144
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	75				21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	76				30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	90				47-153
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	66				24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	56				33-143
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	69				50-150
Perfluoro[13C4]Butanoic Acid (MPFBA)	74				2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	91				16-173
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	67				1-87
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	76				42-146
Perfluoro[13C8]Octanoic Acid (M8PFOA)	73				36-149
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	71				34-146
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	83				31-159

Lab Duplicate Analysis
Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11
Lab Number: L2046839
Report Date: 11/10/20

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Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-09 QC Batch ID: WG1431598-5 QC Sample: L2046839-03 Client ID: NHP_MW-302SA						
Perfluorobutanoic Acid (PFBA)	8.59	9.00	ng/l	5		30
Perfluoropentanoic Acid (PFPeA)	19.5	19.6	ng/l	1		30
Perfluorobutanesulfonic Acid (PFBS)	4.03	4.26	ng/l	6		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	ND	ng/l	NC		30
Perfluorohexanoic Acid (PFHxA)	18.5	19.7	ng/l	6		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	ND	ng/l	NC		30
Perfluoroheptanoic Acid (PFHpA)	12.2	13.1	ng/l	7		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	ND	ng/l	NC		30
Perfluorooctanoic Acid (PFOA)	46.2F	48.9F	ng/l	6		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	ND	ng/l	NC		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	ND	ng/l	NC		30
Perfluorononanoic Acid (PFNA)	6.43	7.18	ng/l	11		30
Perfluorooctanesulfonic Acid (PFOS)	9.88F	11.6F	ng/l	16		30
Perfluorodecanoic Acid (PFDA)	ND	ND	ng/l	NC		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	ND	ng/l	NC		30
Perfluorononanesulfonic Acid (PFNS)	ND	ND	ng/l	NC		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	ND	ng/l	NC		30
Perfluoroundecanoic Acid (PFUnA)	ND	ND	ng/l	NC		30
Perfluorodecanesulfonic Acid (PFDS)	ND	ND	ng/l	NC		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	ND	ng/l	NC		30

Lab Duplicate Analysis
Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11

Lab Number: L2046839
Report Date: 11/10/20

DRAFT

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-09 QC Batch ID: WG1431598-5 QC Sample: L2046839-03 Client ID: NHP_MW-302SA						
Perfluorododecanoic Acid (PFDoA)	ND	ND	ng/l	NC		30
Perfluorotridecanoic Acid (PFTrDA)	ND	ND	ng/l	NC		30
Perfluorotetradecanoic Acid (PFTA)	ND	ND	ng/l	NC		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND	ND	ng/l	NC		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	ND	ng/l	NC		30
Perfluorohexadecanoic Acid (PFHxDA)	ND	ND	ng/l	NC		30
Perfluorooctadecanoic Acid (PFODA)	ND	ND	ng/l	NC		30
Perfluorododecane Sulfonic Acid (PFDoDS)	ND	ND	ng/l	NC		30
1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	ND	ND	ng/l	NC		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	ND	ng/l	NC		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	ND	ng/l	NC		30

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	70		66		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	83		81		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	83		79		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	189		164		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	68		64		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	73		68		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	92		85		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	66		61		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	133		111		1-244

Lab Duplicate Analysis

Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND

Project Number: 04.0190987.11

Lab Number: L2046839

Report Date: 11/10/20

DRAFT

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-09 QC Batch ID: WG1431598-5 QC Sample: L2046839-03 Client ID: NHP_MW-302SA

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	59		54		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	77		67		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	59		52		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	106		85		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	37		31		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	62		56		40-144
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	41		35		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	55		50		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	46		42		33-143
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	132		144		50-150
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	59		53		50-150

Lab Duplicate Analysis

Batch Quality Control

Project Name: NH PLATING COMPANY SUPERFUND

Project Number: 04.0190987.11

Lab Number: L2046839

Report Date: 11/10/20

DRAFT

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-09 QC Batch ID: WG1431598-5 QC Sample: L2046839-03 Client ID: NHP_MW-302SA						
Perfluorooctanesulfonamide (FOSA)	ND	ND	ng/l	NC		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND	ND	ng/l	NC		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND	ND	ng/l	NC		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND	ND	ng/l	NC		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND	ND	ng/l	NC		30

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	67		63		1-87
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (d3-NMeFOSA)	57		**49**	Q	50-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (d5-NEtFOSA)	54		**48**	Q	50-150
2-(N-Methyl-d3-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d7-NMeFOSE)	75		71		50-150
2-(N-Ethyl-d5-Perfluoro-1-Octanesulfonamido)ethan-d4-ol (d9-NEtFOSE)	67		63		50-150

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11

Lab Number: L2046839
Report Date: 11/10/20

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Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2046839-01A	Plastic 250ml unpreserved	A	NA		2.0	Y	Absent		A2-537-ISOTOPE-36(14)
L2046839-02A	Plastic 250ml unpreserved	A	NA		2.0	Y	Absent		A2-537-ISOTOPE-36(14)
L2046839-02B	Plastic 250ml unpreserved	A	NA		2.0	Y	Absent		A2-537-ISOTOPE-36(14)
L2046839-03A	Plastic 250ml unpreserved	A	NA		2.0	Y	Absent		A2-537-ISOTOPE-36(14)
L2046839-03B	Plastic 250ml unpreserved	A	NA		2.0	Y	Absent		A2-537-ISOTOPE-36(14)
L2046839-04A	Plastic 250ml unpreserved	A	NA		2.0	Y	Absent		A2-537-ISOTOPE-36(14)
L2046839-04B	Plastic 250ml unpreserved	A	NA		2.0	Y	Absent		A2-537-ISOTOPE-36(14)
L2046839-05A	Plastic 250ml unpreserved	A	NA		2.0	Y	Absent		A2-537-ISOTOPE-36(14)
L2046839-05B	Plastic 250ml unpreserved	A	NA		2.0	Y	Absent		A2-537-ISOTOPE-36(14)
L2046839-06A	Plastic 250ml unpreserved	A	NA		2.0	Y	Absent		A2-537-ISOTOPE-36(14)
L2046839-06B	Plastic 250ml unpreserved	A	NA		2.0	Y	Absent		A2-537-ISOTOPE-36(14)
L2046839-07A	Plastic 250ml unpreserved	A	NA		2.0	Y	Absent		A2-537-ISOTOPE-36(14)
L2046839-07B	Plastic 250ml unpreserved	A	NA		2.0	Y	Absent		A2-537-ISOTOPE-36(14)
L2046839-08A	Plastic 250ml unpreserved	A	NA		2.0	Y	Absent		A2-537-ISOTOPE-36(14)
L2046839-08B	Plastic 250ml unpreserved	A	NA		2.0	Y	Absent		A2-537-ISOTOPE-36(14)
L2046839-09A	Plastic 250ml unpreserved	A	NA		2.0	Y	Absent		A2-537-ISOTOPE-36(14)
L2046839-09B	Plastic 250ml unpreserved	A	NA		2.0	Y	Absent		A2-537-ISOTOPE-36(14)

*Values in parentheses indicate holding time in days

Project Name: NH PLATING COMPANY SUPERFUND
Project Number: 04.0190987.11

Lab Number: L2046839
Report Date: 11/10/20

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PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
PERFLUOROALKYL CARBOXYLIC ACIDS (PFCAs)		
Perfluorooctadecanoic Acid	PFODA	16517-11-6
Perfluorohexadecanoic Acid	PFHxDA	67905-19-5
Perfluorotetradecanoic Acid	PFTA	376-06-7
Perfluorotridecanoic Acid	PFTrDA	72629-94-8
Perfluorododecanoic Acid	PFDoA	307-55-1
Perfluoroundecanoic Acid	PFUnA	2058-94-8
Perfluorodecanoic Acid	PFDA	335-76-2
Perfluorononanoic Acid	PFNA	375-95-1
Perfluorooctanoic Acid	PFOA	335-67-1
Perfluoroheptanoic Acid	PFHpA	375-85-9
Perfluorohexanoic Acid	PFHxA	307-24-4
Perfluoropentanoic Acid	PFPeA	2706-90-3
Perfluorobutanoic Acid	PFBA	375-22-4
PERFLUOROALKYL SULFONIC ACIDS (PFSAs)		
Perfluorododecanesulfonic Acid	PFDoDS	79780-39-5
Perfluorodecanesulfonic Acid	PFDS	335-77-3
Perfluorononanesulfonic Acid	PFNS	68259-12-1
Perfluorooctanesulfonic Acid	PFOS	1763-23-1
Perfluoroheptanesulfonic Acid	PFHpS	375-92-8
Perfluorohexanesulfonic Acid	PFHxS	355-46-4
Perfluoropentanesulfonic Acid	PFPeS	2706-91-4
Perfluorobutanesulfonic Acid	PFBS	375-73-5
FLUOROTELOMERS		
1H,1H,2H,2H-Perfluorododecanesulfonic Acid	10:2FTS	120226-60-0
1H,1H,2H,2H-Perfluorodecanesulfonic Acid	8:2FTS	39108-34-4
1H,1H,2H,2H-Perfluorooctanesulfonic Acid	6:2FTS	27619-97-2
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	4:2FTS	757124-72-4
PERFLUOROALKANE SULFONAMIDES (FASAs)		
Perfluorooctanesulfonamide	FOSA	754-91-6
N-Ethyl Perfluorooctane Sulfonamide	NEtFOSA	4151-50-2
N-Methyl Perfluorooctane Sulfonamide	NMeFOSA	31506-32-8
PERFLUOROALKANE SULFONYL SUBSTANCES		
N-Ethyl Perfluorooctanesulfonamido Ethanol	NEtFOSE	1691-99-2
N-Methyl Perfluorooctanesulfonamido Ethanol	NMeFOSE	24448-09-7
N-Ethyl Perfluorooctanesulfonamidoacetic Acid	NEtFOSAA	2991-50-6
N-Methyl Perfluorooctanesulfonamidoacetic Acid	NMeFOSAA	2355-31-9
PER- and POLYFLUOROALKYL ETHER CARBOXYLIC ACIDS		
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid	HFPO-DA	13252-13-6
4,8-Dioxa-3h-Perfluorononanoic Acid	ADONA	919005-14-4
CHLORO-PERFLUOROALKYL SULFONIC ACIDS		
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid	11Cl-PF3OUdS	763051-92-9
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid	9Cl-PF3ONS	756426-58-1
PERFLUOROETHER SULFONIC ACIDS (PFESAs)		
Perfluoro(2-Ethoxyethane)Sulfonic Acid	PFEESA	113507-82-7
PERFLUOROETHER/POLYETHER CARBOXYLIC ACIDS (PFPCAs)		
Perfluoro-3-Methoxypropanoic Acid	PFMPA	377-73-1
Perfluoro-4-Methoxybutanoic Acid	PFMBA	863090-89-5
Nonafluoro-3,6-Dioxaheptanoic Acid	NFDHA	151772-58-6

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046839

Project Number: 04.0190987.11 **Report Date:** 11/10/20

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GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

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Footnotes

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

Terms

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

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

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

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

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

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

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

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

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

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

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

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

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

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

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

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

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

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

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

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

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

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

Report Format: Data Usability Report

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Project Number:	04.0190987.11	**Report Date:**	11/10/20

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Data Qualifiers

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

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Project Name: NH PLATING COMPANY SUPERFUND **Lab Number:** L2046839
Project Number: 04.0190987.11 **Report Date:** 11/10/20

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REFERENCES

134 Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS) using Isotope Dilution. Alpha SOP 23528.

LIMITATION OF LIABILITIES

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

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

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Certification Information

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

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
EPA TO-12 Non-methane organics
EPA 3C Fixed gases
Biological Tissue Matrix: EPA 3050B

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

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

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

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

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL

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

Date Rec'd in Lab: 10/27/20

ALPHA Job #: L2046839

Project Information

Project Name: NH Plating Company Superfund

Project Location: Merrimack, NH

Project #: 04.0190987.11

Project Manager: Michael Summerlin

ALPHA Quote #: NH DES Contract No. 1069635

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information

☐ FAX ☒ ADEx

Data Deliverables

☒ EMAIL ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #: 2589-00"4"

Regulatory Requirements/Report Limits

State/Fed Program: NHDES

Criteria: Sampling and Analysis Plan limits

Client Information

Client: NHDES

Address: 29 Hazen Drive

Concord, NH 03302

Phone: 603-271-3649

Fax:

Email: michael.summerlinjr@des.nh.gov

☐ These samples have been Previously analyzed by Alpha

Other Project Specific Requirements/Comments/Detection Limits:

Please also email login receipts and lab reports to tanya.justham@gza.com.
Please provide excel files formatted for upload to the NHDES EMD and for GZA EQUiS upload.

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PFAS (NHDES List)	Sample Specific Comments	TOTAL # BOTTLES
46839-01	TRIP BLANK	10-26-20	0800	AQ	MB	☑		1
02	NHP_MW-302DA	10-26-20	1025	AQ	MB	☑		2
03	NHP_MW-302SA	10-26-20	1215	AQ	MB	☑		2
04	NHP_MW-308SA	10-26-20	1210	AQ	ED	☑		2
05	NHP_MW-308DA	10-26-20	1030	AQ	ED	☑		2
06	NHP_MW-309SA	10-26-20	1220	AQ	MM	☑		2
07	NHP_MW-309DA	10-26-20	1040	AQ	MM	☑		2
08	NHP_MW-301S	10-27-20	0900	AQ	ED	☑		2
09	NHP_MW-401S	10-27-20	0945	AQ	MB	☑		2
			MM 10-27-20					

Container Type	P											
Preservative	A											

Relinquished By:	Date/Time	Received By:	Date/Time
[illegible]	10-27-20/1045	[illegible]	10/27/20 16:15
[illegible]	10/27/20	[illegible]	10-27-20/70
[illegible]	10-27-20	Weena Mar	10/27/20 19:10
Weena Mar	10/27/20 2000	[illegible]	10/27/20 2000
[illegible]	10/27/20 2030	[illegible]	10/27/20 20:30

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

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GZA GeoEnvironmental, Inc.